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# QUINE'S POOR TOM

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## *ABSTRACT*

*Section 31 of Quine's Word and Object contains an eyebrow-raising argument, purporting to show that if an agent, Tom, believes one truth and one falsity and has some basic logical acumen, and if belief contexts are always transparent, then Tom believes everything. Over the decades this argument has been debated inconclusively. In this paper I clarify the situation and show that the trouble stems from bad presentation on Quine's part.*

***Keywords:*** *belief contexts, referential transparency, opacity, Quine, perspicuity*

## Introduction

Section 31 of Quine's *Word and Object* contains an eyebrow-raising argument. The argument purports to show that if an agent, Tom, believes one truth and one falsity and has some basic logical acumen, and if belief contexts are always transparent (what this comes to is explained at the beginning of Section 1, but the basic idea will already be familiar to many readers), then Tom believes everything. Quine's larger aim with this argument was to show that we cannot always treat belief contexts as transparent.

Philosophers have debated this argument over the decades, inconclusively. A perceptive but not fully adequate objection appeared in Sleigh (1966). Widerker (1977) and Sayward (2007) levelled criticisms at Sleigh's objection which have not been properly assessed. Thus, the overall

impression one may get from the literature on this argument is that it was questioned at one time (by Sleigh) but then vindicated (by Widerker and Sayward). This impression is mistaken. My aim in this paper is to sort this out and attain a better view of the status of Quine's provocative argument and what might be objectionable about it.

To anticipate, the view I will propose regarding this argument is as follows. Quine here had all the makings of a perspicuous argument which does indeed lead to the desired conclusion that belief contexts cannot always be treated as transparent. But he instead presented a provocative argument for a very striking conclusion, the sort of conclusion that makes one think "How could *that* be?", out of which *then* falls the desired bigger-picture conclusion that belief contexts cannot always be treated as transparent.

The plan of this paper is as follows. In Section 1 I present Quine's argument. In Section 2 I present Sleigh's objection. In Section 3 I consider Sayward's objection to Sleigh's objection and argue that it fails. In Section 4 I consider Widerker's objection, granting him a point against Sleigh but suggesting that his main point is suspect. I end in Section 5 by showing how Quine could have argued. Widerker will turn out to be right in his basic idea that Quine's argument can be modified to yield a better argument, although the modification is not the one proposed by Widerker. This opens the way to a deeper understanding of what is wrong with Quine's argument.

## 1. Quine's Argument

Before we proceed to Quine's argument, let us rehearse Quine's definition of referential transparency. (Familiar readers can skip this and the following paragraph.) Quine defines transparency in terms of "modes of containment ... of singular terms or sentences in singular terms or sentences". Definite descriptions count here as singular terms. For Quine, a mode of containment $\varphi$ is *referentially transparent* iff, "whenever an occurrence of a singular term $t$ is purely referential in a term or sentence $\psi(t)$, it is purely referential also in the containing term or sentence $\varphi(\psi(t))$" (Quine 1960, 144). For a singular term $t$ to be purely referential in a term or sentence is for it to occupy a purely referential position there. Quine's criterion for a position's being purely referential is that the position "must be subject to the substitutivity of identity" (Quine 1960, 142).

To explain with an example: the occurrence of "John" in the statement "John is happy" is purely referential, since substituting another term which

refers to the same person could not turn this statement from true to false or from false to true. Now consider the mode of containment "It is true that …". This mode of containment seems to be referentially transparent (or just "transparent" for short), since "John" in "It is true that John is happy" seems purely referential just as in "John is happy". By contrast, it is doubtful whether a mode of containment such as "Lois Lane believes that …" may always be regarded as transparent. After all, we may happily grant that Lois Lane believes that Superman can fly but deny, or at least hesitate to affirm, that Lois Lane believes that Clark Kent can fly. Quine here wants to vindicate this doubt, by arguing that such modes of containment - belief contexts - cannot always be regarded as transparent.

Now, Quine assumes that Tom believes the true sentence "Cicero denounced Catiline" and the false sentence "Tully did not denounce Catiline". That these sentences are (in a sense) contradictories, and that they are about the same person, is not essential for Quine's argument. These things were needed for earlier, separate arguments in chapter IV of *Word and Object*.

Here is the argument:

> Where "*p*" represents a sentence, let us write "δ*p*" (following Kronecker) as short for the description:
>
> the number *x* such that ((*x* = 1) and *p*) or ((*x* = 0) and not *p*).
>
> We may suppose that poor Tom, whatever his limitations regarding Latin literature and local philanthropies, is enough of a logician to believe a sentence of the form "δ*p* = 1" when and only when he believes the sentence represented by "*p*". But then we can argue from the transparency of belief that he believes everything. For, by the hypothesis already before us,
>
> (3) Tom believes that δ(Cicero denounced Catiline) = 1.
>
> But, whenever "*p*" represents a true sentence,
>
> δ*p* = δ(Cicero denounced Catiline).
>
> But then, by (3) and the transparency of belief,
>
> Tom believes that δ*p* = 1,

> from which it follows, by the hypothesis about Tom's logical acumen, that
>
> (4) Tom believes that *p*.
>
> But "*p*" represented any true sentence. Repeating the argument using the falsehood "Tully did not denounce Catiline" instead of the truth "Cicero denounced Catiline", we establish (4) also where "*p*" represents any falsehood. Tom ends up believing everything. (Quine 1960, 148-149)

## 2. Sleigh's Objection

Sleigh's objection to the above argument takes the form of a dilemma concerning the interpretation of Quine's hypothesis about Tom's logical acumen. In Sleigh's reconstruction of Quine's argument, the hypothesis runs as follows:

(AmbigAcumen) Tom believes that $\delta p = 1$ if and only if Tom believes *p*. (Sleigh 1966, 92)

(The label is my own – Sleigh dubs it "(4)". I do not know if Sleigh had a reason for omitting "that" before the "*p*" at the end or if it was just a slip.)

Sleigh notes that, intuitively, (AmbigAcumen) is ambiguous between a transparent and an opaque reading. The crux of his objection is contained in the following passage[1]:

> But [(AmbigAcumen)] asserts the relevant acumen of Tom only if "$\delta p$" in [(AmbigAcumen)] is taken opaquely, in which case the argument is simply invalid. Obviously, [a transparent disambiguation of (AmbigAcumen)] does not express the idea of Tom's acumen.[2] (Sleigh 1966, 93)

In other words, either we understand (AmbigAcumen) transparently, in which case it is obviously not something which would hold of Tom in

[1] The square brackets contain replacements, more convenient for present purposes, for Sleigh's labels.

[2] You may notice that Sleigh talks of a referring term, rather than a context (or "mode of containment"), as being opaque, and locates the ambiguity there. Locating the ambiguity in the mode of containment "believes (...)" arguably makes more sense, and certainly fits better with Quine's official terminology – but that is a minor quibble which does not matter for our purposes.

virtue of any logical acumen he may have, or we understand it opaquely, in which case it cannot be used in Quine's argument.

A further point Sleigh could have made here is that, unlike (AmbigAcumen) as reformulated by Sleigh using that-clauses, Quine's original formulation of his hypothesis about poor Tom's acumen is put in terms of *sentences*. (Recall, Quine writes "We may suppose that poor Tom, whatever his limitations regarding Latin literature and local philanthropies, is enough of a logician to believe a sentence of the form "$\delta\ p = 1$" when and only when he believes the sentence represented by '*p*'".) This all but ensures an opaque reading.

## 3. Sayward's Objection to Sleigh's Objection

Sayward objects to Sleigh's objection on the grounds that Sleigh has not argued for the claim that (AmbigAcumen) read transparently does not express the idea of Tom's acumen. When discussing Quine's argument, Sayward uses a construction involving sets in place of Quine's one involving numbers, but the essential thing is that, like Sleigh, he uses notation to disambiguate (AmbigAcumen) (writing "BELIEVES" for the transparent reading and "believes" for the opaque). We will abstract from the distracting details by simply using the names "(TransparentAcumen)" and "(OpaqueAcumen)".

> What Quine supposed about poor Tom's logical acumen was, according to Sleigh, this:
>
> [(OpaqueAcumen)]
>
> not this
>
> [(TransparentAcumen)]
>
> But apart from that point—a point of how to interpret the biconditionals which occur in the argument as premises—Sleigh offers no objection.
>
> Now, the interesting question is not whether the type of logical acumen of which Quine spoke is expressed by [(TransparentAcumen)] but whether there is any logical acumen fairly broadly shared among us which is expressed by that sentence. (...)
>
> So if Sleigh's point is to carry much weight it must take the form of a claim that no logical acumen, or at least none at all widely shared,

> is expressed by [(TransparentAcumen)]. But so far as I can see that simply goes unargued in his paper. Indeed, so far as I can see the paper contains no argument that the logical acumen to which Quine referred is not expressed by [(TransparentAcumen)]. It is simply and baldly asserted. (Sayward 2007, 57-58)

This objection can be convincingly rebutted. Firstly, it gets the dialectic wrong. Quine, for his argument to be plausible, needs his hypothesis about Tom's logical acumen to be about some genuine, plausible kind of logical acumen. It is perfectly fair to point out that this only seems to be so if we take the hypothesis opaquely, in which case it doesn't support the argument. That is already a good objection, without a further argument that it is *not* the case that (TransparentAcumen) does express logical acumen after all.

But there is a much stronger response to be made to Sayward's objection to Sleigh's objection: Sleigh *does* give an argument that no logical acumen is expressed by (TransparentAcumen)! Sayward's claim that he does not do so is a sheer mistake. It is true that Sleigh prefaces his claim that no logical acumen is expressed by (TransparentAcumen) with "Obviously", but he does not leave the matter there. He goes on to argue for what he has claimed is obviously the case. The argument comes at the end of his note and runs as follows (I have, for ease of reading, removed the subscript notation which he applies to singular terms to disambiguate between transparent and opaque, and simply put bracketed specifications of the intended reading next to "believes" instead):

> Obviously, (4') does not express the idea of Tom's acumen. Consider:
>
> (9) Tom believes [transparent] that [$\delta p$] = 1.
>
> and
>
> (10) Tom believes [opaque] that [2-1] = 1.
>
> Given (10), (9) is true provided the sentence represented by "*p*" is true. But we cannot infer from this that Tom believes the sentence represented by "*p*" even if every singular term in "*p*" is taken transparently and even if Tom is overflowing with logical acumen. (Sleigh 1966, 93)

Clearly, this is an argument – so Sayward is just wrong in saying that Sleigh doesn't offer one. It seems to be a perfectly good argument, too –

although I think it was unnecessary to make "believes" in (10) opaque, and as will become clear, this makes Sleigh more vulnerable to *Widerker's* criticism, which we will consider in the next section.

Finally, in case there is any remaining doubt, here is another argument that (TransparentAcumen) does not express any sort of logical acumen. We can express (TransparentAcumen) as follows:

(TransparentAcumen) Tom believes [transparent] that $\delta p = 1$ when and only when he believes [transparent] that *p*.

Now, let us plug in some truth for "*p*" which not everyone with logical acumen knows – say, "Quine was born in 1908":

Tom believes [transparent] that δ(Quine was born in 1908) = 1 when and only when he believes [transparent] that Quine was born in 1908.

Now, substituting "1" for the co-extensive "δ(Quine was born in 1908)", we get

Tom believes [transparent] that 1 = 1 when and only when he believes [transparent] that Quine was born in 1908.

This is plainly not something we should require of a reasoner. Using "of" to induce a transparent reading, so that the point reads more intuitively: a reasoner may fail to believe, of Quine, that he was born in 1908. They may not have any beliefs about Quine at all. Obviously, they should not in that case – by the "only when", which is essential to Quine's argument – fail to believe, of 1, that it is equal to 1. But we obtained this wrong result just by substituting co-extensive terms in an instance of (TransparentAcumen). Therefore (TransparentAcumen) does not express any sort of logical acumen. Rather, it seems like something we definitely *shouldn't* conform to. We have now completely diffused Sayward's objection to Sleigh's objection.

## 4. Widerker's Objection to Sleigh's Objection

At the heart of Widerker's objection to Sleigh's objection is the observation that Quine is arguing, not that the assumption that there are transparent belief contexts leads to absurdity, but that the assumption that belief contexts are *invariably* transparent leads to absurdity. It is hard to deny that Widerker is right about this interpretative point. Widerker quotes Quine's summary of the lesson of his argument:

> Thus in declaring belief invariably transparent ... we would let in too much. (Quine 1960, 135)

And draws attention to the last two sentences of Sleigh's article:

> That the transparent sense of belief is odd is beyond doubt. That it is as odd as Quine suggests does seem doubtful. (Sleigh 1966, 93)

Widerker suggests that

> [Sleigh's] criticism of Quine stems from the fact that he interprets Quine's argument as being directed against the intelligibility of the transparent sense of belief. However that's not the case. Quine uses his argument only to show that the transparent sense can't be the only sense appropriate for the analysis of belief contexts. In other words, Quine is not arguing against the transparent sense of belief as such, but against the attempt to treat all belief contexts transparently. (Widerker 1977, 357)

What I will now argue is that, while it is a fair point that Sleigh does seem to interpret Quine's argument as Widerker says he does, and that this isn't correct, the core of Sleigh's objection still applies.[3]

Unlike Sayward, Widerker allows that (TransparentAcumen) does not actually capture any logical acumen. This can be seen from this passage from a footnote occurring in Widerker's diagnosis of Sleigh's misinterpretation:

> If Quine would be arguing against the transparent sense of belief alone, then indeed Sleigh's charge would be correct because in such a case Quine would be arguing from a premise (that about Tom's logical acumen) which is not captured adequately by the transparent sense of belief. (Widerker 1977, 358, fn. 7)

His criticism is this: once we recognize that Quine is arguing on the assumption that all belief contexts are transparent, then the needed (TransparentAcumen) *follows from* (AmbigAcumen), allowing Quine's argument - supposing it is not quite right, or unfortunately enthymematic, as it stands - to be easily patched up:

[3] If I am right, Widerker's claim that Sleigh's objection *stems from* his misinterpretation is also doubtful – though this causal question about Sleigh's thought process is not important for my purposes in this paper.

> It is not difficult, however, to meet this objection. We may certainly agree with Sleigh that a valid derivation of [the conclusion that Tom believes any arbitrary truth[4]] rests on [(TransparentAcumen)] and that it can't be identified with [(AmbigAcumen)], but nevertheless [(TransparentAcumen)] follows from [(AmbigAcumen)] given the assumption that all belief contexts are transparent. (Widerker 1977, 356)

One problem with this is that the acumen hypothesis in Quine's original argument is not (AmbigAcumen), but is put in terms of belief in sentences, which, as I noted at the end of Section 2, all but ensures an opaque reading. But there is, I think, a deeper problem with this defense of Quine's argument. The defense trades on a subtly objectionable handling of the idea of what follows from an ambiguous statement. I will try to bring this out with an analogy. Consider the ambiguity of "bank" in English, whereby it may mean either a money bank or a river bank. Now consider the following argument:

> Suppose John has some money, and suppose that he has enough civic common sense to put it in the bank. Now, suppose that "bank" in English always meant a river bank. In that case John's money is in a river bank.

I submit that there is something objectionable about this argument, and that it is objectionable in a way analogous to Quine's argument. Furthermore, suppose we discharge the assumptions and outline the putative lesson of the argument as follows:

> If John has some money and a certain basic kind of civic common sense, and if "bank" always means a river bank, then John's money is in a river bank.

This is an objectionable statement, objectionable in a way analogous to the putative lesson of Quine's argument.

Now let us consider an objection to the bank argument analogous to Sleigh's objection to Quine's argument:

[4] Widerker notes that his reconstructed argument can be repeated with any arbitrary falsity. Thus putting two iterations of the argument together yields the conclusion that Tom believes everything.

> For the assumption about John's civic common sense to be about something which plausibly does constitute civic common sense, "bank" needs to be given its money bank reading, but for it to lead to the conclusion that John's money is in a river bank, "bank" needs to be given its river bank reading.

I think this objection, like Sleigh's, is quite compelling. Now let us consider a criticism of this Sleigh-style objection to the bank argument analogous to Widerker's criticism of Sleigh's objection:

> It is not difficult to meet this objection. We may certainly agree that the conclusion that John's money is in a river bank rests on the river-bank reading of the ambiguous claim that John's money is in a bank, but it does follow from that ambiguous claim given the assumption that "bank" always means a river bank.

This seems dubious. If a claim is ambiguous between two readings, some things will follow from it on one reading, and some things will follow from it on another. You can't treat it as a thing which can be combined with an assumption ("bank" always means a river bank), whose truth would make one of the readings impossible, to yield the consequences of the other reading.

But what am I saying? Maybe you can so treat an ambiguous claim. (After all, what would stop you?) Perhaps the point is that you shouldn't, for if you do you get dubious results which may impress some but which make others - such as Sleigh and myself - want to object.

At this point it becomes important to note, something which Sleigh did not, that in both the belief case and the bank case, we do have before us all that we need to argue for the desired linguistic conclusions. All this tussling over Quine's argument really has no bearing on whether or not you can show that not all belief contexts are transparent; the fundamental problem with Quine's argument is more of a matter of presentation than it may seem. Let me try to make this clearer by showing how Quine *could* have argued.

## 5. How Quine Could Have Argued

Instead of trading on an ambiguity, by baiting us with the plausible reading of an ambiguous assumption and then switching to its implausible reading in order to deliver a striking, paradoxical conclusion, Quine could have argued as follows:

Surely,

(1) There is a reading of (AmbigAcumen) which *does* express some logical acumen.

Now, suppose for the sake of argument that

(2) All belief contexts are transparent.

In that case, (AmbigAcumen) would unambiguously amount to (TransparentAcumen), and if Tom conformed to *that*, and if he believed one truth and one falsity, he would believe everything (as Quine's manipulations with the "δ" device show). But this is absurd, and so, by (1), (2) cannot be the case. Q.E.D.

Presenting things perspicuously, we can see that the real engine of Quine's argument - the series of manipulations with the "δ" device - is actually just another argument that (TransparentAcumen) doesn't express any sort of logical acumen. I.e., that which Sayward, who was trying to defend Quine's argument, mistakenly claimed that Sleigh had not provided, and which I provided another instance of for good measure.

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# OPEN BORDERS AND THE IDEALITY OF APPROACHES: AN ANALYSIS OF JOSEPH CARENS' CRITIQUE OF THE CONVENTIONAL VIEW REGARDING IMMIGRATION

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## *ABSTRACT*

*Do liberal states have a moral duty to admit immigrants? According to what has been called the "conventional view", this question is to be answered in the negative. One of the most prominent critics of the conventional view is Joseph Carens. In the past 30 years Carens' contributions to the open borders debate have gradually taken on a different complexion. This is explained by the varying "ideality" of his approaches. Sometimes Carens attempts to figure out what states would be obliged to do under otherwise perfectly just conditions (i.e., he attempts to establish an ideal). At other times, he is more interested in what to do, given the (not fully just) world that we actually live in. In my view, the relevance of the ideal/non-ideal theory debate to the open borders debate (and the ethics of migration more generally) has not yet received sufficient attention. My aim in this paper therefore is to show in detail how Carens' varying approaches affect his critique of the conventional view. To this effect I analyse three of his papers: "Aliens and Citizens: The Case for Open Borders" (1987), "Realistic and Idealistic Approaches to the Ethics of Migration" (1996), and "Who Should get in? The Ethics of Immigration Admissions" (2003).*

***Keywords****: migration ethics, ideal/non-ideal theory, Joseph Carens, open borders*

## Introduction

Do liberal states have a moral duty to admit immigrants? According to what has been called the "conventional view", this question is to be answered in the negative. Liberal states do not have a strong duty to admit immigrants; or at least they do not have a duty to admit *all* immigrants. In this respect, liberal states have been claimed to resemble clubs (Walzer 1984, 14-39; see also Wellman 2008). Just as the members of a club may award or reject membership based on (almost) any criteria, we should consider liberal states to be free to award or deny membership based on (almost) any criteria as well. That is, how many immigrants they admit and which ones they admit, is (largely) up to them. Michael Walzer, one of the conventional view's main proponents, puts it as follows:

> The distribution of membership is not pervasively subject to the constraints of justice. Across a considerable range of the decisions that are made, states are simply free to take in strangers (or not)—much as they are free, leaving aside the claims of the needy, to share their wealth with foreign friends, to honor the achievements of foreign artists, scholars, and scientists, to choose their trading partners, and to enter into collective security arrangements with foreign states. (Walzer 1984, 61)

The conventional view arguably reflects how most people in Western societies think about immigration. Nevertheless, in recent years it has provoked strong criticism. Scholars have argued that liberal states do have a strong moral duty to admit immigrants; e.g., because this is implied by the democratic theory of popular sovereignty (e.g., Abizadeh 2008) or because more open borders are a way of compensating for injustices such as poverty or human rights violations (e.g., Wilcox 2007).

One of the most prominent critics of the conventional view is Joseph Carens. Carens believes that borders should be (far) more open than they currently are. His argument for this claim rests on the idea that citizenship, though of tremendous influence on people's prospects of having a fulfilled life, is not the result of personal efforts or achievements. It is rather something that we are "born into". If one is lucky, one comes into the world within the borders of a state such as Austria. But one may as well be born in Bangladesh, or Sudan, or North Korea, and be doomed to a life in poverty. This does not seem fair. Thus, for Carens citizenship is "the modern equivalent of feudal privilege" (1987; see also, e.g., 1996, 169).
One *prima facie* puzzling feature of Carens' critique of the conventional view is that it comes in different degrees, or is situated on different levels. In some of his publications Carens rejects the conventional view

altogether, advocating radical openings of our borders. On other occasions, in contrast, he suggests only minor departures from the *status quo*, e.g., rethinking some of the selection criteria for immigrants. This difference is explained by the fact that Carens considers the open borders debate from different perspectives. Sometimes he tries to figure out what states would be obliged to do under otherwise perfectly just conditions. He tries to establish an ideal; something that we can orient ourselves by. At other times Carens is more interested in what to do, given the world we live in – a world which involves injustices, in which many policies must be regarded as infeasible, in which there are limits as to what we can demand of people, etc. Put differently, his approach varies in how "ideal" or "non-ideal" it is (see Valentini 2012).

In my view, the relevance of the ideal/non-ideal theory debate to the open borders debate (and the ethics of migration more generally) has not yet received sufficient attention. My aim in this paper therefore is to show in detail how Carens' critique of the conventional view puts on a different complexion depending on the "ideality" of the approach that he takes. To this effect I will analyse three of Carens' papers. In the second chapter I will investigate what is probably his most famous article, "Aliens and Citizens: The Case for Open Borders", dating back to 1987. In the third chapter I will analyze Carens' 1996 article "Realistic and Idealistic Approaches to the Ethics of Migration". Finally, in the fourth chapter, I will be concerned with a more recent article entitled "Who Should get in? The Ethics of Immigration Admissions" (2003). Before going *in medias res*, however, some words are in order regarding the distinction between ideal and non-ideal theory.

## 1. Ideal vs. Non-Ideal Theory

The distinction between ideal and non-ideal theorizing has been drawn in a variety of different ways (e.g. Rawls 1971, 8-9, 244-248; Farelly 2007, 844; for an overview see Valentini 2012). In "Realistic and Idealistic Approaches to the Ethics of Migration" (1996, 157) Carens himself provides a definition. In his understanding, ideal and non-ideal theorizing differ with respect to how large they allow the "gap" between *is* and *ought* to be.

According to non-ideal theory (e.g., Farelly 2007; Galston 2010; Gaus 2017; Horton 2010), the gap between *is* and *ought* must not be too big. This is because morality is taken to be essentially action-guiding, and if it were to prescribe actions which cannot be performed here and now (because they demand too much in terms of human psychology, because

they are politically infeasible, etc.) then it could not fulfill this function. It would miss its point. Ideal theorists (e.g., Cohen 2009; Estlund 2017) reject this claim. They believe that what *ought* to be is widely independent of what *is*, often because of what has been called the problem of "adaptive preference formation". Suppose one allowed empirical facts to restrict moral prescriptions in the way non-ideal theorists do. Then, the worry goes, we would often be satisfied with too little (in terms of justice); we would accept the *status quo* even if it were somewhat or considerably unjust.

Carens illustrates the problem with extremely non-ideal approaches by the example of slavery in America of the 17th and 18th century (1996, 164-165). As slavery was a stable social institution by this time, as there was only little emotional identification with the slaves, as slave-owners had a strong interest in maintaining things as they were, and as abolishing slavery was politically infeasible, non-ideal theorists would be forced to say that slavery was morally permissible. But this conclusion is unacceptable. Thus, ideal theorists argue, philosophers need not (or only somewhat) be concerned with actual empirical facts. Moral considerations should be guided by ideals; they should be about what is possible under *ideal* (rather than actual) circumstances.

In the following quote Farelly summarizes the main problems of each of the two approaches, both the ideal and the non-ideal one:

> At the extreme of fact-*in*sensitivity (what we can call *extreme ideal theory*), one runs the risk of invoking an account of justice that fails to function as an adequate guide for our collective action in the real, non-ideal world. At the opposite end of the spectrum is the danger that all existing constraints (even those imposed by an unjust social structure) are taken as legitimate constraints and thus justice simply reaffirms the status quo (Farelly 2007, 846).

By speaking of "extremes" and of the "ends of a spectrum", Farelly's quote points to an important qualification. Only few philosophers (but see, e.g., Cohen 2009 for the ideal side) advocate ideal or non-ideal theorizing in their extreme forms. Commonly, what is claimed is not that empirical facts restrict moral prescriptions in the sense of strictly determining them or that empirical facts do not have any implications for the validity of moral prescriptions at all, but rather that the *ought* depends on the *is* to a certain (smaller or larger) degree. Thus, on most of the accounts that have been proposed, and certainly on the account that is assumed here, the distinction between ideal and non-ideal theory is best thought of as a spectrum (Hamlin and Stemplowska 2012; Mason 2004; Valentini 2012).

Discussions about ideal and non-ideal theory have often focused on which level of analysis is the most appropriate one (see, e.g., Cohen 2009; Farelly 2007). When we reason about justice or morality in general should we take a more ideal or a more non-ideal approach? Some philosophers have suggested, however, that each of these levels of analysis is legitimate. They do not exclude but rather complement each other. For some purposes more ideal and for other purposes more non-ideal approaches are appropriate (e.g. Hamlin and Stemplowska 2012; Mason 2004; Rawls 1971; Valentini 2012). This is the view Carens subscribes to — and that I find most plausible — as well.

In "Realistic and idealistic approaches to the ethics of migration" (1996, 168-169) Carens explicitly claims that regarding questions of migration there is no such thing as a correct degree of idealization. If one is interested in establishing action-guiding prescriptions one should look at things from a non-ideal perspective. If one's aim is to evaluate certain institutions or practices or to establish long-term goals, in contrast, an ideal approach is more appropriate:

> […] what is at stake here is more a matter of differing sensibilities and strategies of inquiry than of logically incompatible positions. […] Each approach has something important to contribute to the ethics of migration. (Carens 1996, 156-157)

> Ultimately what is needed is a full range of reflections, each self-conscious and explicit about its own purposes and presuppositions. There is no uniquely satisfying perspective on the ethics of migration. (Carens 1996, 169)

This is a very important point for understanding Carens' work. As mentioned, he has looked at the open borders debate both from ideal and non-ideal perspectives. One may be led to think that this is explained by revision, i.e., by the fact that Carens first considered ideal approaches to be more appropriate, but later came to the conclusion that it is better to take a non-ideal stance. However, in light of the above remarks this might not be true. Carens seems to believe that each of the different levels of analysis has its merits. Each of them helps us to gain a better understanding of what states ought to do with regard to admitting immigrants.

## 2. Aliens and Citizens: The Case for Open Borders

"Aliens and Citizens: The Case for Open Borders" marks the beginning of Carens' engagement with the ethics of migration. Carens' perspective in this article is mostly the perspective of extreme ideal theory. What he is interested in is not what states are morally obliged to do, given the circumstances that actually obtain (although such considerations play some role in his discussion of Rawls). The paper is rather about justice in an ideal sense.

From a largely ideal point of view the conventional view turns out to be wrong, according to Carens. Liberal states do have a moral duty to admit immigrants, and they have this duty not only with respect to *some* of their would-be citizens, but with respect to *nearly all of them*. Put differently, Carens believes that borders should be widely open: "[…] borders should generally be open and […] people should normally be free to leave their country of origin and settle in another, subject only to the sorts of constraints that bind current citizens in their new country" (1987, 251).[1]

Carens considers what he takes to be the three main approaches to political theory: property rights theories, John Rawls' theory of justice, and utilitarianism. He attempts to show that each of these theories implies his above claim, i.e., that borders should be much more open than they currently are.

### 2.1. Property Rights Theories

In arguing for the conventional view people often stress the fact that the state they are citizens of is *their* state. This might be interpreted as an appeal to property rights, or more specifically, to collective property rights. A state, the argument goes, is the citizens' collective property. In some sense it is owned by them. Therefore, the citizens can exclude whomever they want.

Is this line of reasoning convincing? Does an appeal to property rights really lend support to the conventional view? Carens denies that this is actually the case. In particular, he attempts to refute the above argument by the example of the most prominent contemporary proponent of property rights theory, namely Robert Nozick (1974).

[1] For more recent arguments for open borders, see Abizadeh (2008) and Wilcox (2007). For objections against Carens' arguments, see Blake (2005) and Miller (2005).

Nozick starts from the assumption that people have certain natural rights, including the rights to acquire and use property and to enter into voluntary exchanges. Moreover, he assumes that the sole purpose of the state is to protect people on a certain territory from violations of these rights. On such a view, Carens argues, states do not have a right to restrict immigration (1987, 253-254). Suppose a US farmer hires a Mexican worker. Since this is a voluntary exchange, the state must not prevent the farmer and the worker from doing so; it is even obliged to protect their right against other people's interferences. But suppose the Mexican worker does not have any job offer. Is Nozick's minimal state at least justified in excluding him under these circumstances? No, Carens argues. As long as the Mexican does not violate the natural rights of other individuals the state must not exclude him in this case either. On Nozick's account, who enters a state is none of the state's business. It exclusively depends on the individuals living within the state's borders. They can admit and exclude whomever they want, citizen or non-citizen. The state, however, is not justified in restricting immigration.

### 2.2. Rawls' Theory of Justice

In "A Theory of Justice" (1971) Rawls explicitly distinguishes between ideal and non-ideal approaches to justice. Although Rawls himself does not discuss questions of immigration (starting from his assumptions they simply do not arise), Carens believes that his theory can be expanded to cover such issues.

Rawls attempts to justify his principles of justice by reference to a hypothetical and ahistoric formation of a contract. The terms of this contract are negotiated behind a "veil of ignorance", i.e., the parties of the contract do not have knowledge about their class, their sex, their race, their goals and so on. Carens (1987, 256) argues that one's citizenship should also be among the things that are covered by the "veil of ignorance". After all, citizenship is exactly one of those contingent features Rawls attempted to get rid of to promote impartiality.

According to Carens, the "veiling" of one's citizenship would not affect the general terms of the contract. The parties would still agree on the principles set out by Rawls: the first principle that guarantees an equal set of basic liberties for all people; and the second principle, according to which social and economic inequalities are justified only if they are to the greatest benefit of the worst-off and the positions attached to them are open to all people under fair conditions. That said, the basic liberties of the first principle would now also involve the principle of freedom of movement between states. This is because even under ideal conditions people can

have reason to migrate from one country to another. They can fall in love with a citizen of a foreign country; they may want to migrate for economic or religious reasons; and so on. Since the parties of the hypothetical contract *ex hypothesi* reason from the perspective of those that are made worst-off by a restriction they would therefore agree that the right to migrate should be one of the basic liberties (Carens 1987, 259-262).

The above holds true, according to Carens, even if we take into consideration a qualification made by Rawls. Rawls maintains that a liberty may be restricted if it threatens public order and thus other liberties. At first sight it might seem as if an unrestricted right to migrate inevitably threatens public order. However, Carens argues that this is actually very unlikely. Under ideal circumstances citizens would not protest against just regulations and states would be just as well (which means that the likelihood of mass migration would be low).

In addition, Carens (1987) points out that Rawls himself recommended great caution in applying the above "public order restriction". Starting from his non-ideal theory (where historical contingencies and actual injustices are taken into account) at least some restrictions on immigration turn out to be justified. Carens (1987) considers three cases: first, the case of people who aim at overthrowing just institutions; second, the case of mass immigration into one state; and third, the case in which the right of freedom of movement is restricted for the sake of economic gains.

According to Carens, in the first and in the second case some restrictions on immigration are justifiable. Both people threatening national security and mass immigration have the potential to lead to a breakdown of public order. In the third case, restrictions may be justifiable in principle. In ideal theory Rawls grants basic liberties priority over social and economic gains. This "lexical priority" is weakened in non-ideal theory, however. If the economic gains at issue benefit the worst-off and promote justice, Rawls allows them to override basic liberties for some time. Carens (1987, 262-263) argues, however, that these conditions are probably not sufficiently met in the case of restricting immigration. First, it is not clear how restricting immigration should benefit the worst-off. It seems, to the contrary, that immigration itself in many cases benefits the worst-off economically. Second, even if the first point did not hold, we would very likely have more effective means of improving the situation of the worst-off than by restricting immigration.

To sum up Carens' interpretation, Rawls' ideal theory implies that states are not justified in restricting immigration and that, consequently, open

borders should be our long-term goal. Non-ideal theory implies that restrictions are justifiable, but only in a small number of cases.

### 2.3. Utilitarianism

According to utilitarianism, the moral rightness of an action depends on its contributing to the maximization of utility (defined, e.g., as pleasure, preferences or interests). At first sight, restrictions on immigration may seem justified on utilitarian grounds. After all, do not at least some citizens suffer economically from immigrants entering their state?

In response to this argument, Carens points out that according to utilitarianism, "everyone is to count for one and no one for more than one" (1987, 263). This means that not only the utility of *some* of the state's current citizens has to be taken into consideration, but the utility of *all* of its citizens and, even more importantly, all *aliens* as well. Since there are probably citizens who benefit from more open borders, since there are surely very many aliens who do so, and since the free mobility of labour is said to be to everyone's economic advantage, restrictions do not seem justified from a utilitarian point of view either. Restrictions may only be justified, Carens argues, if one takes into consideration certain unreasonable, shortsighted or evil pleasures or displeasures (like the fear of one's culture becoming suppressed or racial prejudice). Even under this (supposedly wrongheaded) assumption, however, the restrictions would only be minor compared to those that are actually in place (Carens 1987, 263-264).

Since significant restrictions on immigration can be justified on neither property rights theories, nor Rawlsian, nor utilitarian grounds, Carens concludes that it is very unlikely that the conventional view is true. States do have a moral duty to admit immigrants. Borders should be far more open than they currently are. This is the ideal we ought to strive for (Carens 1987, 270).

## 3. Realistic and Idealistic Approaches to the Ethics of Migration

"Realistic and Idealistic Approaches to the Ethics of Migration" focuses explicitly on the distinction between ideal and non-ideal theorizing. In this way, the article differs from most of Carens' other publications. Instead of arguing for a particular conclusion regarding the open borders debate, Carens is rather interested in what conclusions might be implied by taking more ideal or more non-ideal approaches, and how one should conceive of the relation between ideal and non-ideal theorizing.

### 3.1. Empirical Restrictions

According to non-ideal theory, moral prescriptions are restricted by empirical facts. This raises the question of what kinds of empirical facts are relevant. With respect to the ethics of migration, Carens (1996, 158) argues that the most important kinds of facts are (1) institutional, (2) behavioural and (3) political facts.

The most significant institutional restriction is claimed to arise from the existence of a system of sovereign and independent states. According to Carens, this system is so firmly established that if moral prescriptions require substantial departures from it then they cannot function to guide our actions: "An ethics of migration that requires abolition or even radical transformation of the state system is not a morality that can help us to determine what is to be done in practice" (Carens 1996, 159). One implication of this acknowledgment of the modern state system is that one also has to acknowledge states' sovereignty with regard to immigration. One has to acknowledge that states have the authority to exclude aliens, or at least most aliens, as they like (Carens 1996, 159-160).

The second kind of facts that should be taken into consideration within non-ideal approaches to the ethics of migration are facts about human behaviour. According to Carens, moral prescriptions must not be too demanding. They must not prescribe what most people most of the time are unable to do, or cannot be realistically expected to do. With respect to the open borders debate this means, e.g., that states cannot be judged by standards such as admitting all refugees that seek asylum. Such a standard would simply be too ambitious. It would place too big of a burden on the state and its citizens (Carens 1996, 158-159).

The third kind of restriction Carens discusses in "Realistic and Idealistic Approaches to the Ethics of Migration" are political restrictions. From a non-ideal point of view morality should confine itself to politically feasible prescriptions. Opening all gates between all states may be a noble ideal, but policies such as this do not have a chance of being implemented. On non-ideal accounts elaborating them and discussing them appears to be a waste of time (Carens 1996, 159-160). Furthermore, one has to keep in mind the risk of a backlash against immigrants and refugees by the current citizens of a state. If restrictions on immigration are weakened, citizens can easily get the impression that borders are "out of control" and demand regulations that are even harsher than the prior ones in force.

One might argue that such a reaction is unjust, or racist, or unreasonable. But that's beside the point, according to Carens (1996, 160): "There is no

point in wasting time considering whether the popular reaction is racist or whether the politicians might be able to prevent such a reaction if they expended vast amounts of political capital to do so." This stands in stark contrast to Carens' view in "Aliens and Citizens", as discussed in the previous section. Looking at the issue from an idealistic perspective, Carens there argued that "evil pleasures" or "evil reactions" should not be taken into consideration in determining what we morally ought to do (see his discussion of utilitarianism).

### 3.2. Considerations about Effectiveness

In addition to the above three restrictions, Carens argues that the strength of our moral obligations is also affected by their effectiveness. Having effects — being action-guiding — is what morality is all about, according to the non-ideal approach. So the less effective a moral prescription is, the weaker it should be considered to be. What makes moral prescriptions effective? Carens (1998, 160) discusses three kinds of preconditions.

The first precondition is psychological. In order for morality to be effective, there has to be some kind of emotional identification with the moral subject. The stronger the emotional identification is, the more effective and thus the stronger our moral obligations are. Since people typically identify more strongly with citizens of their own country than with aliens, this means that we have stronger moral obligations towards the former than the latter. The state is morally justified to weigh the interests of its citizens higher than the interests of those who want to become part of the state (Carens 1996, 160-161).

The second precondition for an effective morality is sociological. Carens points out that moral prescriptions are most effective when they correspond to our long-term interests. Thus, on non-ideal accounts one cannot demand that people continuously act against what they regard as being best for them in the long run (that they are "saints" or "heroes"). The clearer a moral prescription counteracts people's long-term interests, the weaker it is. For example, giving half of our wealth to the migrants and refugees of the world is something that morality just cannot demand on non-ideal accounts (Carens 1996, 161-163).

Finally, Carens discusses an "epistemological" precondition. From an epistemological point of view, he argues, morality is most effective if it corresponds to our local moral knowledge: to people's common beliefs about right and wrong. The assumption that states are widely free to admit or exclude aliens is supposed to be part of this knowledge. It is reflected

both by our practices and principles. So on a non-ideal account there is no point in demanding to depart from this view (Carens 1996, 163-164).

Although Carens repeatedly emphasizes that non-ideal approaches do not rule out any criticism of the prevailing circumstances whatsoever, it is easy to see that the account he describes yields a morality that stands in stark contrast to his view in "Aliens and Citizens". If we take the above restrictions and preconditions into account, the conventional view turns out to be quite correct: states do not have a strong moral duty to admit immigrants.

Looking at things from an ideal perspective, however, Carens (1996, 169) still seems to believe that the conventional view turns out to be false and that borders should be more open than they currently are. After all, in this case the above restrictions and preconditions do not have to be taken into account. The question is not how migration should be regulated, given that the world is divided into nation states, given that people behave and think in certain ways, etc., but how migration should be regulated *ideally*, i.e., in an otherwise just world.

As pointed out above, in this paper Carens neither argues in favour of the non-ideal nor in favour of the ideal approach. He believes that both perspectives have their strengths and weaknesses. "Each approach has something important to contribute to our understanding of the ethics of migration. Yet I think that each approach typically brings one set of concerns into focus and simultaneously screens another from view" (Carens 1996, 157). The strength of the non-ideal approach is its relevancy. It is able to tell us what to do here and now. However, as explained, such an approach also tends to legitimize the current circumstances, even if they are (somewhat) unjust (Carens 1996, 164-165). The strength of the ideal approach is that it does not have this tendency. It is less tied to the current circumstances, and thus has more critical potential (Carens 1996, 166-167). Carens argues, however, that the idealistic approach suffers from a number of problems as well.

First, by taking an idealistic approach one's focus often shifts from the actual problem to very fundamental questions. One starts discussing the ethics of migration but ends up thinking about what a just world order would look like in general — a question that is (a) largely independent from the ethics of migration and (b) very hard to answer (Carens 1996, 167). Second, even if one succeeded in figuring out what a just world order would look like this would not tell us how to get from our current non-ideal circumstances to the ideal. This transition is not always straightforward. It is not necessarily most effective to change the actual

circumstances in such a way that they are closer to the ideal (in an absolutely just world borders may be open; that does not mean, however, that the fastest or best way to open borders is starting to open borders here and now) (Carens 1996, 168). Third, by looking at migration from an ideal perspective a number of important problems disappear from view. For example, in an absolutely just world there would not be any refugees (refugees are *per definitionem* the product of unjust circumstances) (Carens 1996, 168).

## 4. Who Should Get in? The Ethics of Immigration Admissions

In "Who Should Get in? The Ethics of Immigration Admissions" Carens approaches the open borders debate from the perspective of extreme (or rather extreme) non-ideal theory. The non-ideal circumstances that are taken into consideration are mainly institutional and behavioural ones. Carens presupposes that the world is divided into sovereign and independent states and that these states have a "broad sovereign right to control immigration" (2003, 95). Furthermore, he also grants the way in which states actually exercise this right.

Strikingly, and in contrast to what is suggested in "Realistic and Idealistic Approaches to the Ethics of Migration", Carens comes to the conclusion that on such an approach the conventional view does *not* turn out to be right (2003, 95, 110). According to the conventional view, states' right to control immigration implies that the admission and exclusion of immigrants is not a moral issue. In fact, however, most states do treat immigration as a moral issue. Most importantly, almost all liberal democratic states acknowledge that they are morally obliged to admit immigrants in at least two cases: (1) in cases in which the immigrants are immediate family members of current citizens and residents, and (2) in the case of refugees.

### 4.1. Family Reunion

First, Carens points out that almost all liberal democratic states grant admission to current citizens' immediate family members, such as their children or spouses. This is true even for states that are known for strict immigration policies, and in many cases it is true not only for current citizens, but even for non-citizen residents (e.g., students, visiting professionals, or visiting workers) (Carens 2003, 96).

What is the reason for this generosity? Carens (2003, 96) argues that the reason is a felt moral obligation from the side of states and their

representatives. States feel that they have a moral obligation to admit the immediate family members of their current citizens and residents. The obligation is felt not towards the outside family members, Carens (2003, 97) suggests. In this case it would be unclear why those people should be given priority over, e.g., people in extreme poverty. Rather, the obligation is supposed to be one towards the citizens or residents of the state itself. States consider themselves under an obligation to take into account the vital interests of their citizens and (in many cases) residents. Family reunion clearly exemplifies a vital interest. People's quality of life can be significantly impaired by being separated from their children, parents or siblings. Thus, most liberal democratic states ensure that citizens and residents can get their immediate family members to join them.

It might be objected that family reunions can take place not only within a given state, but outside of it as well. Each citizen and resident has a right to leave. So instead of his/her family joining him/her the citizen or resident could go to wherever his/her family currently lives as well (given that s/he will be admitted there). Does not this cast doubt on there being a moral right to family reunion? Carens responds by pointing out that citizens and residents do not only have a vital interest in family reunion, but a vital interest to continue living where they have lived as well. The state has to take this preference into account, and thus cannot shake off its obligation to admit the immediate family members of current citizens and residents by referring to the possibility of an external reunion (Carens 2003, 97).

### 4.2. Refugees

The second case in which most liberal democratic states acknowledge that they are under a moral obligation to admit immigrants is the case of refugees. One can distinguish between two kinds of refugees: (1) refugees that have been determined to be refugees by the UN High Commissioner for Refugees, and (2) asylum seekers, i.e., people who directly turn to the states they want to immigrate to and are selected by these countries (Carens 2003, 99-100).

In the case of refugees determined by the UN High Commissioner for Refugees, states normally do not consider themselves to be under a moral obligation to admission. Resettlement refugees have already found a safe place outside their home country. Thus, given states' broad right to control immigration, there does not seem to be a duty to admit them. States that do so (Carens mentions Canada and Sweden as countries that have admitted particularly many refugees in recent years, and the US as the leader in absolute numbers) certainly deserve praise. But states that do not, must not be blamed (Carens 2003, 100).

In the case of asylum seekers states' right to control immigration is restricted legally. According to the 1951 Geneva Convention Relating to the Status of Refugees and its 1967 protocol (signed by all European and North American states), people claiming to be refugees have a right to be heard by the state they want to immigrate to, and if their claim turns out to be correct, they have a right to stay. Carens (2003, 101) argues that this regulation is based on a moral obligation. In addition to their legal rights, asylum seekers also have a *moral* right to be heard, and if determined to be refugees, to stay. Unlike refugees, these people cannot simply be sent back to where they came from. In their home country they are in danger of being tortured or killed. According to Carens (2003, 102), states thus have a "deep moral obligation towards asylum seekers".

In addition to the cases of family reunion and refugees, Carens points out that, in some sense, states also treat ordinary cases of immigration as moral issues, i.e., cases in which the people who want to immigrate do not have any special rights to be admitted. States commonly consider themselves to be free to admit and exclude as many of these people as they like. However, they do not consider themselves to be free to do so on the basis of just any criteria. In particular, they believe that it would not be morally permissible for them to choose people on the basis of discriminatory criteria, giving preference, for example, to a certain sex, or a certain race (Carens 2003, 103-110).

One of the things Carens' article demonstrates quite clearly, and that was also emphasized in "Realistic and Idealistic Approaches to the Ethics of Migration" (1996, 159), is that even a non-ideal approach allows for at least some degree of criticism. Carens does not approve of any aspect of the *status quo*. He acknowledges that liberal democratic states do sometimes determine admission and exclusion on the basis of discriminatory criteria. For example, he criticizes Germany's *Aussiedler* policy which gives preference to people of a certain ethnicity (2003, 109-110). He also criticises some other practices regarding immigration, e.g., the US' giving higher priority to citizens than to non-citizen residents with regard to the admission of immediate family members (2003, 98) or long waiting periods for the admission of children and spouses from some parts of the world in Canada (2003, 99).

This critical potential allows Carens to reject the conventional view even based on his non-ideal approach in "Who Should Get in? The Ethics of Immigration Admissions". According to the conventional view, states do not have a moral duty to admit immigrants. In fact, however, states behave as if they had such a duty. Although it is often politically unpopular and

economically disadvantageous, they admit immediate family members and refugees and try to act morally correct in cases of ordinary immigration as well. This demonstrates, according to Carens, that the conventional view turns out to be wrong from a non-ideal perspective as well:

> The conventional view is that acceptance of the state's broad general right to control immigration means that morality has little role to play with regard to admissions. […] In practice, however, liberal democratic states do not treat their admissions decisions as morally unfettered. […] Even a minimalist account of the moral limits widely accepted by liberal democratic states imposes much greater restrictions on the states' discretion with regard to immigration than the conventional view allows. (Carens 2003, 95)

## 5. Concluding remarks

In the past 30 years Joseph Carens' contributions to the open borders debate have gradually taken on a different complexion. Starting at an extremely ideal level of analysis, Carens has become more and more concerned about what we ought to do under current non-ideal circumstances. The three articles analyzed in this paper reflect this shift quite clearly.

In "Aliens and Citizens: The Case for Open Borders" (1987) Carens looks at the open borders debate from the perspective of ideal theory. He is interested in how immigration ought to be regulated in a perfectly just world. In "Realistic and Idealistic Approaches to the Ethics of Migration" (1996), both the idealistic and the non-idealistic approach are discussed, with Carens suggesting that both perspectives are important, and that they complement rather than exclude each other. In "Who Should Get in? The Ethics of Immigration Admissions" (2003), finally, Carens examines the open borders debate at an extremely non-ideal level of analysis.

The common thread that runs through all of these works is Carens' opposition to the conventional view regarding immigration (the view that liberal states do not have a strong duty to admit immigrants; or at least, they do not have a duty to admit all immigrants). Understandably, this opposition manifests itself most clearly in "Aliens and Citizens", where empirical realities are hardly taken into consideration at all. However, contrary to what is predicted in "Realistic and Idealistic Approaches to the Ethics of Migration", the opposition is even present in the non-ideal analysis of "Who Should Get in?".

The aim of this paper was mainly illustrative. In closing, however, let me also make two brief critical remarks: one that pertains to Carens' critique of the conventional view, and one that pertains to ethical debates about open borders more generally.

First, it seems to me that some of Carens' arguments rest on a slight misrepresentation of their target, i.e., the conventional view. He suggests that the conventional view does not only attribute *little* role to morality with regard to admissions, but almost, or even literally, none. In "Aliens and Citizens", for example, the conventional view is introduced as the view that states "[…] may choose to be generous in admitting immigrants, but they are under no [sic!] obligation to do so" (1987, 251). But only few philosophers have held the conventional view in such an extreme form. In particular, this is not how the view was defended by the philosopher who has been Carens' main target, namely Michael Walzer. In "Spheres of Justice" (1984, 41) Walzer explicitly notes that states can be compared to families, and that they thus have at least some moral obligation to admit family members of current citizens and, in some cases, displaced ethnic nationals. Moreover, Walzer (1984, 33) concedes that there is a moral obligation to admit refugees seeking asylum (Wilcox 2009, 2-3).

Second, while my focus in this paper was on Carens, its conclusions are supposed to apply more widely. In the end any philosopher's stance on the debate about open borders (and the ethics of migration more generally) is influenced by the ideality of his or her approach. This methodological insight has not yet received sufficient attention. While Carens himself is admiringly aware of it, other participants of the debate have (largely) failed to realize that their claims are contingent on the extent to which they account for empirical facts. Hopefully, my considerations show that the fundamental question of how ideal or non-ideal one's approach should be cannot simply be bracketed. Discussions about liberal states' duties with regard to immigration will benefit much from making underlying ideality-assumptions explicit, and from assessing them in ways similar to those employed by Carens.

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# ANAXAGORAS, THE THOROUGHGOING INFINITIST: THE RELATION BETWEEN HIS TEACHINGS ON MULTITUDE AND ON HETEROGENEITY

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## *ABSTRACT*

*In the analysis of Anaxagoras' physics in view of the relation between his teachings on multitude and heterogeneity, two central questions emerge: 1) How can the structure of the universe considered purely mereo-topologically help us explain that at the first cosmic stage no qualitative difference is manifest in spite of the fact that the entire qualitative heterogeneity is supposedly already present there? 2) How can heterogeneity become manifest at the second stage, resulting from the noûs intervention, if according to fragment B 6 such a possibility requires the existence of "the smallest", while according to the general principle stated in fragment B 3 there is not "the smallest" but always only "a smaller"? This paper showcases the perplexity of these two questions but deals only with the former. The answer follows from Anaxagoras' being a thoroughgoing infinitist in the way in which no Greek physicist was: the principle of space isotropy operative in geometry is extended to physics as well. So any two parts of the original mixture are similar to each other not only in view of the smaller-larger relation but also because each contains everything that the other one contains. This in effect means that at the stage of maximal possible heterogeneity each part of any part contains infinitely many heterogeneous parts of any kind whatsoever. So, neither can there be homogeneous parts in view of any qualitative*

*property, nor can there be predominance in quantity of parts of any kind that would make some property manifest.*

***Keywords*****:** *Anaxagoras, infinitism, mereo-topology, gunk, cosmogony, singular cosmic event, fractal universe, double world order*

## 1. Introduction

The relation between Anaxagoras' cosmology and contemporary analytic philosophy is twofold. On one hand, there are authors who mention Anaxagoras as somebody whose ideas can be viewed as a kind of anticipation of certain notions, such as the notion of *gunk*, of *the fractal universe* or of *the singular cosmic event*, which have been introduced and discussed in contemporary analytic metaphysics and physics. On the other hand, there are those who try to clarify Anaxagoras' doctrine by using the method and conceptual apparatus of analytic philosophy. The approach of this paper is closer to that of the latter group, for we shall focus on Anaxagoras' teachings on multitude and on heterogeneity in order to present his cosmology in a consistent manner and to connect the two teachings by filling up gaps in the often only implicit argumentation that can be found in the doxography of ancient philosophy. Hopefully, the resulting interpretation might be also of help in contemporary metaphysical debates such as those concerning the structure of physical continua in general and variety of cosmological models in particular.

We shall start with Anaxagoras' teaching on multitude, because there are statements and arguments that can be understood in purely mereo-topological terms and which as such suggest what the structure of the universe looks like in view of how its parts are related regardless of what those parts are specifically. After elucidating this point, the first of the two central questions will arise: How can such a structure afford the explanation of Anaxagoras' claim that no qualitative difference could be manifest (ἔνδηλος) in the original mixture of everything with everything? This question is rendered particularly perplexing when we take into consideration an additional claim of Anaxagoras, namely that the entire qualitative heterogeneity, which is to be manifest only after the intervention of *noûs*, has been actually present in the original mixture from eternity (ἐξ αἰῶνος).

Giving the answer to the above question will complete the main task of the paper. But, at the end, we shall also address the second central question,

complementary to the first one, and mention difficulties related to it. Namely, given the way in which the teaching on multitude provides the explanation of *why* in the original mixture no qualitative difference can be manifest, it is not easy to give an account consistent with various statements of Anaxagoras about heterogeneity, which he claims *may* become manifest due to the motion caused by *noûs*. However, the answer to this question will be postponed for another occasion.

## 2. Interlude: Classical Scholarship meets Analytic Philosophy*

In the course of almost century and a half[1] of intense scholarly work, Anaxagoras has been interpreted in radically different, mutually incompatible and divergent ways, probably more so than any other Presocratic. This diagnosis of the state of affairs of Anaxagorean scholarship has been stated already in the 1950s by J. E. Raven (1954, 123) who managed to detect a tendency towards "undue complication" common to all competing reconstructions formulated *up to then*. Interestingly, this has become the general opinion applicable also to almost all reconstructions formulated *since then* (as evidenced in McKirahan 2010, 229) and it is characteristic of both types of authors mentioned in the Introduction. The situation up to the '50s can be characterised by the prevalence of the "old-fashioned nothing-but-philologist" approach (Cleve 1973, x), detached from (what were then its contemporary) goings-on in philosophy, so that Anaxagoras was reserved for the classicists. However, a paradigm shift in classical scholarship due primarily to Gregory Vlastos[2] opened up new vistas of research: *analytic ancient philosophy* was born through the application of the tools of logic and analytic metaphysics *alongside* the tools of classical philology in the study of ancient texts. All

* *Note*. In what follows, the text is divided into two levels represented by differently sized fonts. The first, "main level" contains all and only those elements which are essential for understanding what we consider to be the accurate reconstruction of Anaxagoras' teaching on the relation between multitude and heterogeneity. For this reason, we have made it as free as possible of all but the most relevant references to the original texts of the fragments and ancient doxographical reports. We introduced the second level (written in smaller font) in order to provide detailed references to and critical discussions of previous attempts at articulating Anaxagoras' metaphysics. Nonetheless, the main level can be read independently of the second.

[1] It is safe to claim that interest in Anaxagoras' theory began to grow rapidly after the publication of Tannery's classical exposition in 1887.

[2] For details about the ground-breaking novelties of Vlastos' approach see, e.g. Burnyeat (1992), Mourelatos (1993), and Graham's introduction in Vlastos (1995).

the prerequisites for a *philosophical reconstruction* (in the sense of Cleve) of Anaxagoras were thus made available. It might be claimed that Felix M. Cleve was anticipating the developments in the '50s since his original publication concerning Anaxagoras appeared in 1917.[3] The present reconstruction can be seen as a continuation of the tradition which he inaugurated.

> As to the authors of the first type mentioned in the *Introduction*, i.e. contemporary metaphysicians, they acknowledge not only that Anaxagoras deserves a rightful place in the history of mereology (see, e.g. Mann and Varzi 2006, 593) but also that his style of mereology (details of which are worked out in this paper) represents a relevant contender in various ongoing mereological debates (Rosen and Dorr 2002, 165–6), primarily owing to the fact that his conception can (and, as we believe, should) be seen as a form of *gunkology*, i.e. an *ante litteram* articulation of what came to be known as gunk (following Lewis 1991, 20 et passim). The idea that Anaxagoras was a gunk-theorist is not new. Sider (1993), Markosian (2004 and 2005), Nolan (2006), and Hudson (2007) all credit Anaxagoras' metaphysics with the notion of gunk.
>
> Some authors have also suggested using tools of Mandelbrot's fractal geometry (Mandelbrot 1983) and topology as a means by which we might arrive at an adequate model of the Anaxagorean universe (see, e.g. Graham 1994, 109, Graham 2006, 213 and Drozdek 2005, 173ff.). Probably the most elaborate of such attempts can be found in the works of Petar Grujić (Grujić 2001, 2002, 2006). Section **4.5.** of the present paper presents a novel approach to Anaxagorean fractals.

## 3. Multitude from a Merely Mereo-Topological Point of View

### 3.1. The Universe as a Gunk

Citing Anaxagoras, Simplicius in *Phys*. 166.15–16 says that "neither of the small is there the smallest, but always a smaller (οὔτε τοῦ σμικροῦ ἐστι τοὐλάχιστον ἀλλὰ ἔλασσον ἀεί)", adding that "nor is there the largest" (οὔτε τὸ μέγιστον). Immediately after this, Simplicius cites Theophrastus, according to whom Anaxagoras' statement that "everything is in everything" (πάντα ἐν παντί) is "based" (διότι) on the fact that in view of everything large and small there are "infinitely many larger and smaller" (ἐνμεγέθει καὶ σμικρότητι ἄπειρα).

[3] *Die Philosophie des Anaxagoras: Versuch einer Rekonstruktion*, Vienna, 1917; the first English translation appeared in 1949.

The aforementioned quotations from Simplicius constitute Anaxagoras' fragment DK 59 B 3. But what he says there might, on the first reading, be seen as contradicting what he said previously in B 1 ("in the beginning of his *Physics*", as Simplicius informs us), namely that "air and aether *covered* all things (πάντα γὰρ ἀήρ τε καὶ αἰθὴρ κατεῖχεν), both being unlimited, for these are *the largest* (μέγιστα) among all things both in quantity and in magnitude (πλήθει καὶ μεγέθει)" (*emphasis added*). How can air and aether be largest, if there is no largest? This apparent contradiction can easily be explained away by taking into account what Anaxagoras himself says in B 2. What he says in B 1 holds *only after* "air and aether were separated off (ἀποκρίνονται) from the all-encompassing multitude (ἀπὸ τοῦ πολλοῦ τοῦ περιέχοντος)". Simply put, at that stage air and aether are *the only two* differentiated manifest things (χρήματα)—hence, by default, largest—and as such they cover all other non-yet-manifest things. The point is that the cosmogonical process is *gradual*: separating-off happens in successive stages (ἀποκρίνεσθαι κατὰ τάξιν), as Simplicius says *in Phys* 460.30. Therefore, what Anaxagoras says in B 3 holds *globally*, for the entire universe as a whole (τὸ ὅλον), which as such contains both the manifest and the not-yet-manifest things, as well as *locally*, for any of the things which are becoming manifest.

In view of the previous explanation of the fact that B 3 holds for all things in the universe, one is naturally led to the question about *what concretely* these things supposedly are, of which it is said that there are always smaller and larger ones. The answer to this question varies from one interpreter to another.

> This question is usually construed as the task of listing the basic or non-basic ingredients of Anaxagoras' ontology which essentially amounts to finding (some or all of) the referents of the often-repeated Anaxagoras' technical general term χρήματα, i.e. "things" or "stuffs". According to a classificatory scheme due to Patricia Curd (Curd 2007, Essay 2), the scholars can be classified depending on how permissive they take Anaxagoras to be in his conception of "things". The views fall into three groups, ascribing Anaxagoras' an *austere*, a *moderate* or an *expansive* ontology.
>
> Authors who adhere to the first option tend to advocate a *reductive* reading of the extant texts (based upon what Anaxagoras himself says in B 15), which results in limiting the list of basic ingredients to the *opposites* (i.e. the hot and the cold, the wet and the dry, etc.).[4] Contrary to them, the "expansionists" favour a *non-discriminative* reading on which all the stuffs

[4] See, e.g. Tannery (1886) and (1887), Burnet (1975), Cornford (1975), Vlastos (1975), Schofield (1980), Inwood (1986), Marmodoro (2015, 2017).

(πάντα χρήματα) are treated as being ontologically on a par and for this reason it maximally expands the list of ingredients so as to include all the stuffs it could possibly include, namely the opposites, the elements (fire, water, earth, and air), the seeds (σπέρματα), homoeomerous material things such as meat and gold, human beings, plants, etc. [5] Finally, "moderationists" tend to be less inclusive than expansionists whilst at the same time being less exclusive than "reductionists" (see, e.g. Curd 2007).

Curd's classificatory scheme can be nuanced even further if we raise the question what sort of stuffs Anaxagoras has in mind. For instance, reductionists typically treat the ingredients as being primarily *qualitative* in nature, i.e. they subscribe to a broadly *non-hyletic* reading of Anaxagoras' ontology. Namely, they interpret the opposites as immaterial yet nonetheless physical substance-like "quality-things" (Cornford 1975, 305) or *tropes*, i.e. instantiated properties (Marmodoro 2017, 3-4). On such an interpretation, Anaxagoras turns out to be a *bundle-theorist*: the ontologically secondary stuffs are nothing over and above mere bundles of (adequately co-located) properties. In Marmodoro's account (which can be seen as an elaboration of Vlastos' thesis (Vlastos 1950, 329, notes 39 and 61)), opposites become causally efficient physical *powers* (δυνάμεις) (Marmodoro 2017, 31-45). On the other hand, both the expansionists and the moderationists are committed to some version of a broadly *materialistic* reading of Anaxagoras' ontology. We thus find interpretations of Anaxagorean material stuffs as either (i) *particulate* in structure with each of these particles being either *infinitely divisible* [6] or *infinitely small* (infinitesimal) (Sorabji 1988), or (ii) akin to *chemical compounds*, i.e. quasi-molecular in structure.[7] According to (i) stuffs turn out to be grainy and resembling sifted powders whilst according to (ii) they blend like liquids or pastes.

For our purposes, it is important to note that practically all of these interpretations focus on the mereological aspects of Anaxagoras' theory, i.e. on the way in which he explains the mutual relations of μοῖραι (usually rendered as "parts", "portions", or "shares" depending on the translation) of his (material or immaterial) stuffs. Hence "large/r" and "small/er" refer to magnitudes (μέγεθος) of parts of Anaxagorean stuffs.

We take fragment B 3 as central to our mereo-topological interpretation of Anaxagoras' notions of small and large. Some interpreters seem to disagree and think that Anaxagoras, at least in certain contexts, takes "small" and "large" to refer to relations of an ingredient of a mixture to the mixture itself. Typically—and we are somewhat simplifying things here for the

[5] See, e.g. Guthrie (1965), Peck (1926), Barnes (1979), Mourelatos (1986), Furth (1991), Graham (1994).
[6] See, e.g. Guthrie (1965), Kerferd (1969), and the discussion in Essay 3 of Curd (2007).
[7] See, e.g. Barnes (1979) and Inwood (1986).

> sake of exposition—they emphasise the fragment B 4b wherein Anaxagoras is reported to have said that, in the original mixture, nothing was manifest "for the mixture of all things prevented it." Now once the claim from B 1 that "nothing was manifest on account of smallness" is taken into consideration, a case can be made that smallness and the state of ingredients' being mixed are co-referential. So proposals are put forth according to which "small" refers to an ingredient's being *submerged into* the mixture so as not to be manifest, and "large" to its being *emergent from* the mixture so as to be manifest (Curd 2007, 35, 183–7); similar proposals can be found in (Inwood 1986) where "small" and "large" are rendered, respectively, as "being mixed" and "being separated out", and in (Furth 1991), where "latency" and "manifestness" are used. We cannot fully engage with these proposals on this occasion. It is worth noting though that even these interpretations cannot fully avoid understanding "large" and "small" in a mereological way, at least insofar as properties such as *being submerged* and *being mixed* seem bound to be understood in terms of the relation of *being included into* a mixture.

However the aforementioned answers to what *concretely* that which is smaller and that which is larger differ amongst themselves, it seems hardly contestable that "a smaller" and "a larger" can *generally* be understood as meaning "a smaller part" and "a larger part" of something that exists. After all, Anaxagoras himself uses "parts" (μοῖραι) when he says that "everything contains parts of everything (πάντα παντὸς μοῖραν μετέχει)". So, the Anaxagorean universe (τὸ ὅλον) becomes a *gunk* in the sense of David Lewis (1991, 20 et passim), because *gunk* is defined as that of which each part has a proper part. Moreover, since in the above quotations it is said of each part that there is always a smaller as well as a greater part, it is not only *the gunkness axiom* but also *its inverse* that is applicable to the universe as everything that exists: each part *has* a proper part and *is* a proper part of some other part (Arsenijević and Adžić 2014, 141-141).

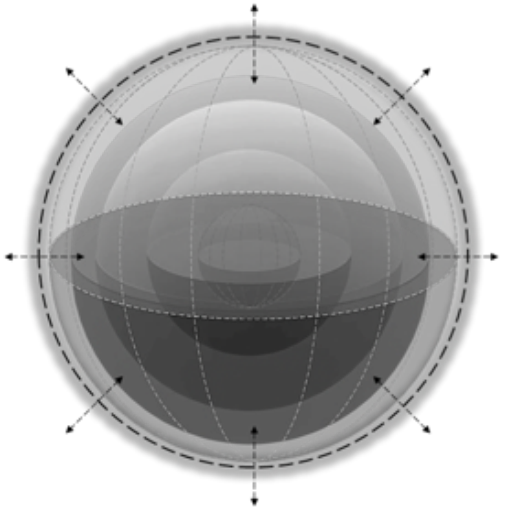

***Diagram 1***

Now, given the above understanding of the relation between parts, whatever they may be, the structure of the Anaxagorean universe—or at least its first approximation—formulated in purely mereo-topological terms may be represented in the following way: the universe consists of an infinite number of nested spheres (*diagram 1*)—or regions topologically homeomorphic to them—ordered by the *inclusion relation*, where every sphere contains infinitely many spheres as its proper parts and is contained in infinitely many different spheres included into each other, and where between any two spheres there is a sphere larger than one of the two and smaller than the other.

### 3.2. Ἀπειράκις ἄπειρα: An Infinite Number of Endless Series of Nested Parts

The above mereo-topological representation of the structure of the Anaxagorean universe turns out to be incomplete, since it represents just one endless series of parts, while *in Phys*. 460.4ff. Simplicius says that, according to Aristotle's account, Anaxagoras holds that the universe (τὸ ὅλον), as well as each of its parts (μοῖραι), contains "infinitely many [such] unlimiteds" (ἀπειράκις ἄπειρα). This additional characterization is of crucial importance because without it we could speak only of parts *included* into each other but not of parts that *lie apart* from each other or

of parts that *overlap*. In *diagram 2* three different endless series are represented, where each of them contains parts that lie apart from some of the parts of the other two (like the endless series SL', SM' and SR') as well as parts that overlap with some parts of the other two (like the endless series SL" and SM", and SM" and SR"). At the same time, all represented parts of the three endless series are included into a fourth endless series (like SE), but it should be noticed that through the broadening of each of the three endless series by more parts into which the represented parts are included, the three respective points will finally be reached, after which parts of the three series start to overlap with parts of the endless series to which SE belongs.

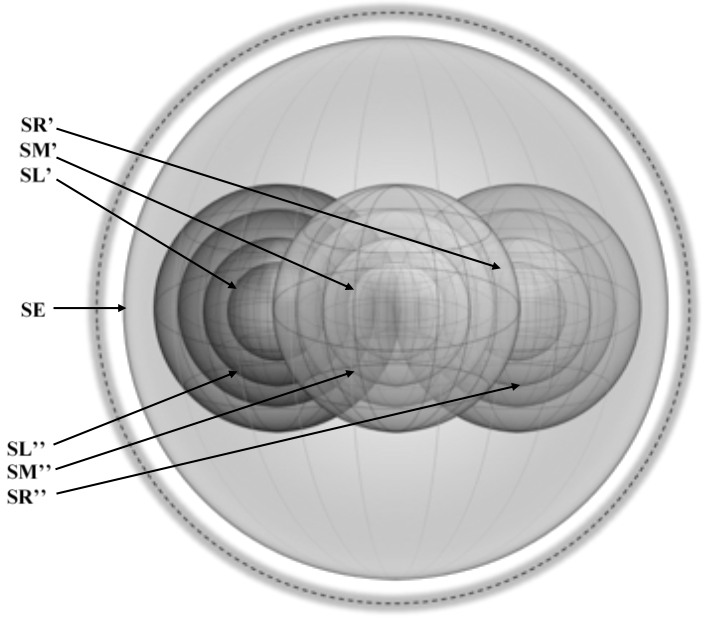


***Diagram 2***

What the last, completed representation in effect shows is that the whole infinite three-dimensional space is covered by the parts of the universe, for by starting from *any* part whatsoever, in *any* direction *outwards* there is an endless series of parts into which the given part is included, just as in *any* direction *inwards* there is an endless series of parts which are included in the given part. In other words, the Anaxagorean universe can be formally represented by means of a region-based system of the infinite three-

dimensional continuum.[8] This is justified by the fact that, historically, Anaxagoras' theory can be seen as an anticipation of Aristotle's theory of the continuum (Ehrlich 2005, 490).

### 3.3. Anaxagoras against Zeno: Multitude without Proper Units

Anaxagoras' mereo-topological account of multitude represents arguably one of the first elaborate reactions to Zeno's argument against plurality. While Leucippus and Democritus used Zeno's arguments in the proof that there must be atoms, for otherwise there could allegedly be no plurality (Arist. *De gen. et corr*. 315 a15ff.), Anaxagoras rejected Zeno's assumption that any multitude whatsoever could exist only if there were proper units of which it would consist.

> The general consensus among the vast majority of scholars is that Zeno's arguments against plurality were the most important external stimulus to Anaxagoras' teachings on multitude. A venerable tradition detects in Anaxagoras an "unmistakable dependence upon Zeno" (to put it in Raven's words).[9] On the other hand, there are authors who are skeptical towards such an attitude and who think that "there is no reason to suspect that Zeno influenced Anaxagoras at all" (as Inwood claims).[10] Finally, there are even those who think that Zeno was answering to Anaxagoras.[11] Seeing how the relevant doxographical and biographical reports are imprecise enough so as not to favour any one of the aforementioned chronological orderings, our decision to side with the authors of the first group in what follows shall be justified on the basis of the internal logic of Anaxagoras' teachings.
>
> As far as the relation of Anaxagoras' and the atomists' teachings is concerned, the ancient accounts are even more uncertain which detracts modern and contemporary scholars alike from taking sides. Similarly to the previous dilemma, we also believe that here the internal logic of Anaxagoras' teachings points (rather unambiguously) to the fact that his theory was originally formulated with the intention of answering not only to Zeno but also to Leucippus and Democritus (whose theory is, again as a matter of general scholarly consensus, considered the first answer to Zeno's arguments[12]).

[8] For a region-based axiomatization of a three-dimensional continuum see Tarski (1929); for the two-dimensional case, see Arsenijević and Adžić (2014), and Hellman and Shapiro (2018).
[9] See, e.g. Tannery (1887), Zeller (1922), Cornford (1975), Raven (1954), Kirk and Raven (1977), Guthrie (1965), Vlastos (1975), McKirahan (2010).
[10] See, e.g. Furley (1976), Barnes (1979), Schofield (1980), Inwood (1986).
[11] See, e.g. Windelband (1892), Luria (1932), Mau (1957).
[12] The *locus classicus* is Burnet (1975, 334).

In the first branch of his *double reductio ad absurdum* argument against plurality, Zeno has concluded that nothing can consist of entities without magnitude (DK 29 B 2). Since Anaxagoras never mentions such entities, we may take for granted that he agrees or that he would agree with Zeno about this. However, while in the second branch (DK 29 B 1) of his argument Zeno has concluded that the multitude cannot consist of entities having magnitude either, because the infinite divisibility of the continuum (τὸ συνεχές) precludes the existence of proper units (κυρίως ἕν)[13], Anaxagoras rejects that the existence of proper units is a necessary condition for the existence of multitude, since parts need not be taken as constituents that are *ontologically prior to* the whole. There can be multitudes *without simples* (DK 59 B 3; cf. also B 6: "the smallest [i.e. a minimum] does not exist (τοὐλάχιστον μὴ ἔστιν εἶναι)").[14] The universe is such a multitude, since it contains no simples. But is then the universe itself a complex that can be considered as a unity at all?

### 3.4. Anaxagoras against Anaximander: In what Sense is τὸ ὅλον a Unity?

Since according to the *inverse gunkness axiom* there is no sphere encompassing all the endless series of nested parts, the universe cannot be identified with any one sphere of the infinitely many endless spheres. The question is then in what sense τὸ ὅλον is to be understood at all. The answer to this question will complete our interpretation of Anaxagoras' teaching on the structure of the universe viewed from a purely mereo-topological standpoint. The problem is to find a meaning in which the universe could be said to be unified and in that sense something that is *one*. After all, though we translate τὸ ὅλον as *universe*, it literally means *the whole*, which leaves open the question of the sense in which *the whole* could be said to be *one* at all. This question—which arises naturally in the course of examining the very notion of "Anaxagorean universe"—had not been previously addressed in the literature on Anaxagoras, at least as far as we know. Answering it ought to be considered a desideratum for every reconstruction of Anaxagoras' cosmology which aims to be complete.

The solution can be found in the above explanation of ἀπειράκις ἄπειρα. In spite of the fact that there is not just an infinite number of parts but also an infinite number of endless series of nested parts, *any two* parts, as it is shown above, are *connected* by being contained in a third part. In view of

[13] Zeno famously proclaimed: "If you give me a unit, then I will give you multitude" (DK 29 A 16; cf. also Simpl. *in Phys*. 138.29–33 and 144.15).
[14] This represents a part of what Strang calls the "hard core of Anaxagoras' physics" (Strang 1975, 361).

this fact, all that exists is *interconnected all over the world.* It is this *interconnectedness* that makes the universe a *whole* that can be said to be something that is *one*.

The point can be illustrated by the comparison of the Anaxagorean universe with one of the possible interpretations of Anaximander's many-worlds thesis, according to which his ἄπειρον generates an infinite number of universes, the plurality of which is to be understood only as *the multiverse* and not as *the universe* any longer. So, reporting on Theophrastus' account of Anaximander's originative substance, Simplicius (*in Phys.* 24.13), Hippolytus (*Ref.* I, 6) and Ps.-Plutarch (*Strom.* 2) use the plural forms of *cosmos* and *heaven* (κόσμοι καὶ οὐρανοί), implying clearly that they are not parts of one and the same *universe* (see *diagram 3*), as the parts of the Anaxagorean τὸ ὅλον *are*, in the way in which it is explained above.

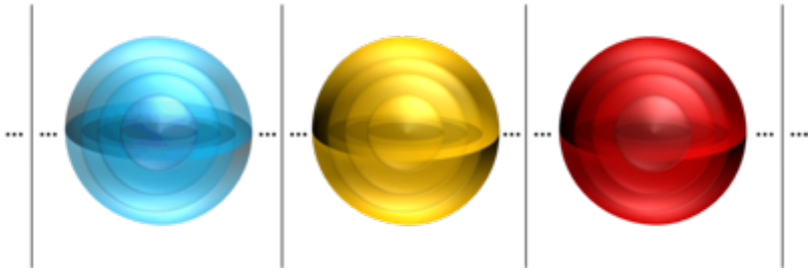

***Diagram 3***

Anaximander's "plurality of worlds" thesis has received considerable attention in scholarly literature with three main lines of interpretation having been formulated: Anaximander believed in (i) infinitely many *separate single* worlds *succeeding* one another in time[15], (ii) infinitely many *co-existent yet separate* worlds[16], and (iii) a *single* world.[17] Even though historians have not reached a general consensus on the matter, the majority favour option (i) as being the closest in spirit to what Anaximander possibly could have had in mind. Option (iii) is most difficult to fit with the extant *testimonia* which explicitly speak of "infinite worlds" (ἀπείροι κόσμοι) (Aët. *Placita*, 3, 3, and Pseudo-Plutarch ad loc.). Authors

[15] This is the Zellerian tradition: see, e.g. Zeller (1922), Cornford (1934), Finkelberg (1994).
[16] This is the Burnetian tradition: see, e.g. Burnet (1975), West (1971), McKirahan (2010).
[17] See, e.g. Kahn (1960), Kirk and Raven (1977).

who favour it tend to discredit Theophrastus' account as guilty of "a false and anachronistic attribution" (Kirk and Raven 1977, 123). Namely, they believe that Theophrastus identified what Anaximander was saying with the atomists' thesis—their worlds are also infinite in number and successive (DL IX, 31; cf. also Simpl. *in Phys*. 1121.5)—and accuse the entire doxographical tradition, which relies upon Theophrastus, of being guilty of the same mistake. For the purposes of our illustration, it is not necessary to go into any minute details and take a decisive stance on the matter which of the above interpretations is the right one. For the sake of argument, we consider option (ii), since it provides a striking contrast with Anaxagoras' theory. Similarly to Anaximander's ἄπειρον which is spacious enough so as to encompass (περιέχειν) (Hyp. *Ref*. I, 6) infinitely many co-existent yet separate universes (which then makes it a multiverse), Anaxagoras' universe is as spacious so as to contain infinitely many worlds. However, it could not be said that there actually are many worlds in Anaxagoras' universe since they are *not separated* but are *all interconnected* in the manner explained above.

## 4. Heterogeneity in View of the Mereo-Topological Structure of the Universe

### 4.1. Anaxagoras against Anaximander once Again: The Universe Heterogeneity at the Basic Level

Anaximander and Anaxagoras agree that, though the world is obviously heterogeneous at the level of appearance, this represents a fact whose origin one ought to seek by appealing to a more basic level of reality. What they disagree about is that, while Anaximander assumes that the underlying ontological basis (ἀρχή), which he calls τὸ ἄπειρον, is not only *infinite* but also *qualitatively indefinite* (ἀόριστον), so that qualitative opposites (ἐναντία) are only to come into being through the differentiation of it, Anaxagoras endorses the Parmenidean *ex nihilo nihil* principle and claims that, if there is ever to be heterogeneity, it must have been already present in the original stuff from eternity (cf. Galen, *De nat. fac*. I 2, 4).

We arrive at the indefiniteness of Anaximander's ἄπειρον indirectly via Theophrastus' account of Anaximenes (ap. Simpl. *Phys*. 24.26): "Anaximenes […], a companion of Anaximander, also says that the underlying nature is one and *infinite* like him, but not *indefinite* as Anaximander said but definite." (*emphasis added*)

As far as Parmenides' principle is concerned, the wording of the canonical Latin version most people are familiar with is more similar to the principle enunciated by Lucretius in *De Rer. Nat*. 1.156 (*nil posse creari de nihilo*) than it is to fragment B 8 of Parmenides' poem Περὶ φύσεως. There

> Parmenides says that "what is" is uncreated for he does not allow us neither to say nor to think (οὐ γὰρ φατὸν οὐδὲ νοητόν) that it is created "from that which is not" (ἐκ μὴ ἐόντος). The clearest attribution of the *ex nihilo* principle to Anaxagoras is to be found in DK 59 B 10 (Scholium on Gregory of Nazianzus, *Patrologia Graeca* 36 911 Migne): "Anaxagoras discovered the old belief that nothing comes from that which is not in any way whatsoever (Ὁ δὲ Ἀναξαγόρας παλαιὸν εὑρὼν δόγμα ὅτι οὐδὲν ἐκ τοῦ μηδαμῇ γίνεται)."

But then, the question arises whether the heterogeneity at the basic level is present there *in the same way* in which it is present at the level of appearance. For, if it were so, what could the difference between the two levels consist in at all? This is how we come to the first of the two central questions mentioned in the Introduction: How does the mereo-topological structure (explained in section **3.**) help us in explaining the heterogeneity of the original mixture of everything with everything?

### 4.2. The Meaning of ἐν παντὶ πάντα Principle in accordance with the Mereo-Topological Structure of the Universe: The Maximal Heterogeneity in the Original State of the Universe

According to the *everything in everything* principle (ἐν παντὶ πάντα), one of the main ontological principles of Anaxagoras' cosmology, everything contains parts of everything. When applied to the *original mixture* of everything with everything, it means not only that the mixture contains everything that can ever become manifest (ἔνδηλος), but more than this, it denotes the *maximal possible heterogeneity* of everything with everything. If so, it can be *proved*, on the basis of the purely mereo-topological structure of the universe that in the original mixture (σύμμιξις) there is *no part* that is *homogeneous in itself* in regard to *any qualitative property* whatsoever. But before we turn to this proof, we must consider *why* the *maximal possible heterogeneity* is to be assumed at all.

Proceeding analytically, we may notice that, *without* any further principle in addition to the *ex nihilo nihil* principle, there is *no reason* why *any specific* distribution of heterogeneity would be assumed to be present in the original mixture. But then, in modern terminology, it is the *principle of indifference* that forces us to assume that heterogeneity at the basic level is maximal. More precisely, once it is supposed that we ought to assume nothing else but what is needed for the very existence of heterogeneity, the state of *maximum entropy* suffices, while at the same time any other state would represent some *order* that requires an additional reason or preference. *Principia praeter neccessitatem non sunt multiplicanda*. This shows why the meaning of ἐν παντὶ πάντα principle just explained is required for the proof of the non-existence of homogeneous parts in the

original mixture. It should be noted that we take entropy here in the most general sense as indicating a state of *maximal disorder* of original mixture. However, one should be careful not to take this as implying that Anaxagoras' original mixture is a *dynamic system*; quite the contrary, it is a *static system* until *noûs* introduces kinematic factors, i.e. motion into it.[18]

> It is worth noting that the above type of reasoning was not unheard of in ancient Greek philosophy. Aristotle reports (*De caelo* 295 b 10–16) that Anaximander thought the Earth does not move due to its equidistance from the edges of the universe. Being so positioned, there is no reason why it should move in one direction rather than any other and so it remains at rest at the centre of the universe. Similarly, there is no reason why Anaxagoras' original mixture should be heterogeneous in any particular way different from the heterogeneity in the state of maximal entropy; the obtaining of any other heterogeneous state would require there to be some ground for imposing order (however minimal) on the default distribution of entities which comes about solely through the minimal conditions for the existence of heterogeneity.[19]

### 4.3. The Proof that in the Original Mixture there can be no Homogeneous Parts

Once we have adopted the above explanation of the ἐν παντὶ πάντα principle, it becomes a nice piece of exercise to formulate the proof of the non-existence of homogeneous parts, where it is in accordance with the principle of charity to suppose that Anaxagoras had some such proof in mind.

As in 3.1., where by speaking about "small" and "large" we did not have to decide between different interpretations concerning what concretely that which is small and that which is large are, so now again we do not have to worry about what "everything" (πάντα) may refer to, since Anaxagoras himself explicitly says that "everything contains parts of everything" (πάντα παντὸς μοῖραν μετέχει) (DK 59 B 6 and B 16), so that the proof of the non-existence of homogeneous parts does not depend on how

[18] In other words, it could not be said that Anaxagoras' universe *reached* a state of maximum entropy given the infinite time (ἄπειρον χρόνον) that passed before the intervention of *noûs* (cf. Arist. *Phys*. 250 b 26), during which entropy could have *gradually increased*. Thus, strictly speaking, it would be misleading to describe Anaxagoras' universe as a 'primeval chaos' in the sense of contemporary *chaos theory* as, e.g. Graham seems to do (cf. Graham 1994, 108ff. and Graham 2006, 301).

[19] Rescher (1960) provides a historical overview of occurrences of the problem of options without preference, the first of which is Anaximander's argument concerning Earth's position.

concretely "parts" are conceived, whether as opposites, seeds, tropes, properties of underlying hyletic substances (ὑποκείμενα) or as ontological ἀρχαί of any other kind whatsoever.

A good and reliable example that we shall use in the proof are *colours*, since they are one of Anaxagoras' own examples for the non-existence of homogeneous parts in the original mixture of everything with everything. He says that, though all colours are present in the original mixture, no colour is manifest (οὐδὲ χροιὴ ἔνδηλος ἦν οὐδεμία) (DK 59 B 4b). This might be taken as equivalent to saying that there is no part that is homogeneous in view of any colour whatsoever. However, it is not so, since the statement that no colour is manifest only *implies* that there is no part homogeneous in view of any colour, for if there were such a part, some colour would be manifest in the original mixture. But, as we shall see, an additional step is necessary in order to show that the implication holds in the reverse direction as well. To say that no colour is manifest is more than to say that there are no homogeneous parts in view of any colour.

Let us suppose that there is a part for which it is true that *redness* is present in each of its parts. Wittgenstein would then say that this part is *certainly* homogeneous in regard to its *colour* (Wittgenstein 1929).[20] Not so Anaxagoras! From the mereo-topological point of view, given that each part is infinitely complex, the fact that *redness* is present in each part of the given part does not preclude that some *other* colour is also present in each of the parts. As an analogy, according to Dedekind (1872) and Cantor (1895), there is no segment of the field of positive real numbers represented by a straight line endless on one side in which there are no *rational* numbers, but this does not mean that there is any segment in which there are no *irrational* numbers as well. The analogy is not jeopardised by the fact that in the case of the Dedekind-Cantor axiom the rationals and irrationals are extensionless while Anaxagoras' parts are not. After all, both rationals and irrationals can be represented as *stretches* between rational and irrational numbers respectively. The point-based and the stretch-based systems are mutually obtainable with the use of two sets of suitably chosen translation rules (Arsenijević and Kapetanović 2008).

The analogy between the case of colours and the case of numbers has to do only with the nature of infinity. The infinite complexity makes it possible for there to be *enough room* for an infinite number of red parts and an infinite number of yellow parts to be present in any part of a given part, as it is the case with the overlapping parts of the series of red spheres and the series of yellow spheres in *diagram 4* below. In the same diagram there is

[20] Cf. Ramsey (1923), Schlick (1969), Waismann (1971, 57–58).

also a common part of the red, yellow and blue spheres, in which all the three colours are present in each of its parts. So, if ἐν παντὶ πάντα *principle* implies the *maximal possible heterogeneity*, there can be no part homogeneous in view of any colour. By generalizing the result, we get that there can be no part homogeneous in view of a property of any kind whatsoever. Such a generalization is justified in light of B 10, where it is explicitly stated that what holds in the case of colours holds in the same way (τὸ αὐτὸ) in the case of other properties (e.g. "light" and "heavy").

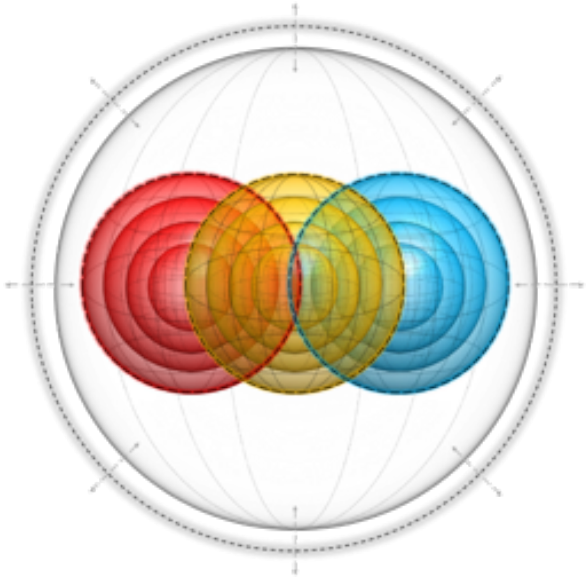

***Diagram 4***

### 4.4. The Proof that in the Original Mixture no Colour can be Manifest

As a nice illustration of the difference between Anaximander and Anaxagoras in view of the *explanation* of the fact about which they would agree—that at the basic level of reality no colour is manifest—we may consider the famous Newton's experiment (cf. *Opticks*, Book 1, Part II, Prop. II, Theor. II et passim) in which a narrow beam of sunlight, in which no colour is manifest, passes through a triangular glass prism and, after having been projected on a wall, appears as a rainbow bend of manifest colours (see *diagram 5*).

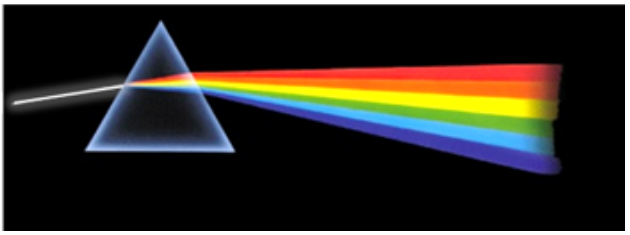

***Diagram 5***

If we take the beam of sunlight before it passes through a triangular glass prism as representative of the original state in which nothing is manifest and the rainbow bend of colours as representative of the level of appearance, Anaximander would say that the sunbeam originally contains *no colour at all*, while Anaxagoras would say that it contains *all the colours* that are to appear in the rainbow bend of colours. Now, independently of the explanation of *how* and *why* non-manifest colours *become* manifest, Anaxagoras has to explain in the first place *why* colours are *not manifest* in the sunbeam, given that they are presumably present in it. As we have suggested above, the very fact that in the original mixture there are no homogeneous parts whatsoever does not suffice. Namely, one could use the idea of Empedocles' physics and say that one (monochromatic) colour could be *predominant* and as such *manifest* in the beam of sunlight. In order to show that this is not possible according to Anaxagoras' assumptions, we have to compare his physics with the physics of Empedocles.

> For our purposes, it is not important to work out precisely and decide definitively whether Empedocles influenced Anaxagoras or vice versa, or which of the two philosophers is older and which younger. These questions are somewhat controversial, especially because of what Aristotle says in *Met*. 984 a 11, namely that "Anaxagoras was prior (πρότερος) to Empedocles in age yet posterior [ὕστερος: literally, later] in his activities". It suffices that Empedocles' theory could have been known to Anaxagoras (and vice versa) without there being any need for assuming any interdependence or interaction between the two theories for our comparison to work. However, since we intend to occasionally compare certain aspects of Anaxagoras' theory with those of Empedocles' theory for illustrative purposes, it is necessary to state the basic tenets of Empedocles' physics in order for such illustrations to function as intended. Here as elsewhere, we do not wish to engage in various scholarly controversies but rather to provide a minimalist account of those aspects of

> Empedocles' theory which are sufficient for elucidating our points about Anaxagoras.
>
> The central part of Empedocles' poem is DK 31 B 17. There we find out that the basic items of Empedocles' ontology are the elemental "roots" (ῥιζώματα)—fire, water, air, and earth—and that they are involved in a continuous and infinite cycle governed by two cosmic powers, Love and Strife (i.e. the attractive and the repulsive force, respectively). The cosmic cycle is divided into four stages, the first being the so-called "triumph of Love", i.e. an ideal limit to the process of gradual mixing and interpenetrating of the roots represented by a sphere, and the last being the "triumph of Strife" where the roots are completely separated as if the sphere were cut apart in four sections. Contrary to Barnes (1979, 242–243), the triumph of Love should not be conceived as the "homogenous sphere"—the actually completed mixing of the roots—but only as a never-completing process of their mutual interpenetration. The other two stages are transitional between these two extremes. It is important to note that even though during the triumph of Love the roots "run through each other" (DK 31 B 21), they nonetheless remain qualitatively distinct no matter how thorough the mixture might be — "*they are always unchanged in a cycle*" (DK 31 B 17, *emphasis added*) in the sense that they can *never* completely interpenetrate so as to become co-located. There are no traces of any other elements in, say, water. In other words, water is not predominantly water but water through and through. Any interpretation that does not take this into account ought to be rejected.

The crucial thing is that Empedocles' cosmology doesn't allow the state of *maximum entropy*. Namely, however fire, water, earth, and air as the heterogeneous "roots" (ῥιζώματα) of everything were mixed, there could be no part of the universe in which they would be co-located. The roots may be mixed *more and more again*, but *never absolutely*, since there where one of them is present, no other can be. However, the mereo-topological structure of the Anaxagorean universe allows the state of *maximum entropy* in which there is no part not containing *everything*. In such a state, there can be *no predominance in quantity* (ἐπικρατεῖν πλήθει) of any property (colour in our case), since (the number of heterogeneous parts being *infinite*) any two sets such that the members of one of them and the members of the other are heterogeneous amongst themselves are *equinumerous*.

> Interpretations according to which predominance is understood as predominance in quantity are not rare. The above discussion suffices to show why such views cannot be satisfactory. Surprisingly, this kind of view can be found even in authors who recognize the gunky nature of Anaxagoras' universe, e.g. in the works of Anna Marmodoro (2015, 2017). Marmodoro tries to show that Anaxagoras' infinitism is not incompatible

with the predominance of quantity with the use of the example of prime numbers whose density is greater at initial segments than it is in the further expansion of the infinite series of natural numbers (Marmodoro 2017, 97). But this example is inadequate in the context of Anaxagoras' cosmology because it concerns the comparison in density between different *segments* that have *finitely many* members, while each part of the Anaxagoras' universe contains only parts which themselves presumably contain an *infinite* number of parts.

### 4.5. The Thoroughgoing Infinitism: From the Mathematical Principle of Space Isotropy to Anaxagoras' Fractal Structure of the Physical Universe

One of the basic assumptions practically operative during the whole history of Greek geometry can be called the *principle of space isotropy*. Generally, this principle refers to *uniformity of space* in all directions, which is, especially in the case of Greek geometry, essential for the similarity between any two parts of the same dimension in view of divisibility and magnitude, be these parts one-dimensional segments, two-dimensional areas or three-dimensional regions. The principle, in the context of Greek geometry, amounts to the following two tenets. First, all segments, areas and regions are endlessly divisible no matter how division is performed, meaning that there are no indivisible parts of entities of any dimension whatsoever. Second, in spite of the infinite divisibility, there are no parts that are either infinitely smaller or infinitely larger than any given part of some geometrical entity of the same dimension, so that all parts that are of the same dimension belong to one and the same category: there are no infinitely small just as there are no infinitely large parts.[21]

Now, one of the nicest *reductio ad absurdum* arguments in the whole history of Greek philosophy might appear as being directed against the principle of isotropy. This is the proof of Leucippus and/or Democritus in favour of the existence of atoms. The proof is reproduced in detail by Aristotle in *De gen. et corr.* 315 a 15ff. It runs as follows.

Let us suppose, following the principle of isotropy, that a given body is divisible everywhere (σῶμα πάντῃ διαιρετόν), and also that it is *simultaneously* (ἅμα) divided everywhere where it is divisible. What will remain at the end of such a division? It is impossible that what remains are some entities of a lower dimension, because this would mean that the original body could be recomposed out of them, which is precluded by what Aristotle calls *Zeno's axiom* (*Met.* 1001 b 7). But it is also impossible

[21] The second tenet is codified by what Stolz has called *Archimedes' axiom* (Stolz 1881 and 1883).

that what remains are entities of the same dimension as the original body was before division, since they would then be further divisible, which is contrary to the hypothesis that the original body has been divided everywhere. So, in order to avoid the contradictions along both branches of the argument, we must assume that, contrary to the hypothesis, the body is not divisible everywhere.

Aristotle praises the argument as the attempt to reply to Zeno's proof against plurality by questioning some other, tacit hypothesis instead of the main hypothesis that the plurality exists, but he considers the atomist argument not conclusive either. His own solution is that what ought to be rejected is not the hypothesis that the given body is divisible everywhere but only that it is divisible *simultaneously* (ἅμα) everywhere where it is divisible. In such a way the rejection of the principle of isotropy is avoided.

In his comment of the atomists' argument in *De caelo* 303 a 20 and 306 a 26, Aristotle explicitly accuses them of "coming into conflict with our most exact science, namely mathematics" which could be understood as a criticism directed against their apparent violation of the principle of space isotropy. However, according to the interpretation Vlastos has offered to Furley (in Furley 1984, 513, note 17), and with which we agree, the "conflict" is to be understood as the incongruence between *mathematics* and *the physics of Leucippus and Democritus* rather than as the incompatibility between their understanding of mathematics with one of the basic mathematical principles, namely the principle of space isotropy. After all, Democritus was known as a great mathematician[22], and it is highly unlikely that he wanted to question one of the basic principles of geometry.

We come now to what is our main concern, that is, to what Anaxagoras has to say about the relation between mathematics and physics. What we have said in 3.1. and 3.3. clearly implies that Anaxagoras does not want to question the principle of isotropy in mathematics. So, the question is only how he would react to the above argument of Leucippus and Democritus, independently of whether we assume that he was acquainted with it or not. Given that he often speaks of parts of the universe in the unqualified sense and that in his teaching there is nowhere any trace of atomism, we can take for granted that he would not agree with the conclusion of the atomist *reductio ad absurdum* argument. And then, given that he speaks nowhere of the extensionless entities of any kind whatsoever, the only reasonable option is that he would say that the set of alternatives offered in the

[22] As is evidenced by the list of his mathematical works given in DK 68 A 31.

conclusion is *not exhaustive*. He would simply say that by any division whatsoever one can get nothing else but something that is also divisible.

What we may infer from the above analysis of what Anaxagoras should have to say on the basis of his teaching taken as a whole is that he is, contrary to all other Greek philosophers including Aristotle, a *thoroughgoing infinitist*: in Anaxagoras the validity of the *principle of isotropy* is not restricted to *mathematics*, but it holds in relation to *physics* as well. More elaborately put, all parts of the universe in its original state are similar not only *mathematically*, in the sense of *space isotropy*, but also *physically*, in view of *what* they contain, since each contains everything that any other contains.

> It is strange how many authors tend to classify Anaxagoras among precursors of non-Archimedean mathematics when he is obviously a *thoroughgoing anti-infinitesimalist* (so much so that he has been described as anticipating Bolzano and Cantor (Sinnige 1971, 129–137). However, Raven (1954) and others[23] see him as a revolutionary who introduces the notion of the infinitesimal. Such interpretations are probably motivated by fragment B 1[24] where the words ἄπειρα σμικρότητα and τὸ σμικρὸν ἄπειρον ἦν appear which are usually rendered as "infinite smallness" or "infinitely small". However, this should be read in light of what Anaxagoras says in B 3: the fact that "of the small there is always a smaller" does not entail that there is actually anything which would be infinitely small. The "infinitely small" is to be understood in the sense of containing infinitely many smaller parts (since "there is always a smaller"), and not as being itself infinitely small, i.e. infinitesimal.
>
> Interestingly, even though Vlastos originally[25] endorsed the non-Archimedean reading of Anaxagoras, he later came to endorse the opposite view, which we share. We reproduce the remarks from the revised version of his paper *in extenso* (Vlastos 1975, 341, note 1): "I have made no substantive changes in the text, with one exception: I have eliminated references to 'the infinitesimal' and even to 'the infinitely small' in Anaxagoras. As I have since come to see (in the course of trying to thread my way through Zeno's paradoxes) the notion of 'the infinitesimal' is a confused one, and even the expression 'infinitely small' is misleading. There is some excuse for using the latter, since Anaxagoras himself said practically the same thing in such a phrase as τὸ σμικρὸν ἄπειρον ἦν. There is none whatever for using the former, for there is absolutely no basis in the

[23] Cf. also Kirk and Raven (1977), Guthrie (1965), Sorabji (1988), Gershenson and Greenberg (1964).
[24] It is interesting to note how reading of B 1 *in isolation* causes similar problems to those we resolved in 3.1.
[25] "The Physical Theory of Anaxagoras" appeared in 1950 and was included in Allen and Furley's (1975) collection.

> fragments for thinking that Anaxagoras was guilty of the confusions epitomized by that term. *In B 3 he gives us an admirably precise statement of what he means*." (*emphasis added*) In addition to this, most historians of ancient Greek mathematics would agree that it was Archimedean in that it contained no references whatsoever to infinitesimals.

Now, given that *any* part of the universe contains infinitely many parts not only in the purely mereo-topological sense but also if these parts are taken as containing the physical heterogeneity of the universe as the whole, then given the principle of *maximal heterogeneity* that holds for the *original mixture of everything with everything*, the universe in its original state is *fractal* in the sense that *any two parts* are *similar to each other* not only in view of the *smaller-larger* relation that holds between the parts contained in them—"the parts of the large and the small are equal in quantity" (ἴσα πλῆθος ἐντοῖσι μείζοσί τε καὶ ἐλάσσοσι)—but also in view of the fact that *every* part is similar to *any* other part in regard to *what* they contain.

This conclusion can be confirmed by a direct quotation from Simplicius (*in Phys*. 460.4ff. = DK 59 A 45), where he speaks of Aristotle's account of *homoeomeries*, i.e. of "parts similar amongst themselves". It is explicitly said there that each of the homoeomeries (ἑκάστην ὁμοιομέρειαν) is similar to the whole (ὁμοίως τῷ ὅλῳ) in that it contains everything within it (πάντα ἔχουσαν ἐνυπάρχοντα). This is represented in *diagram 6*:

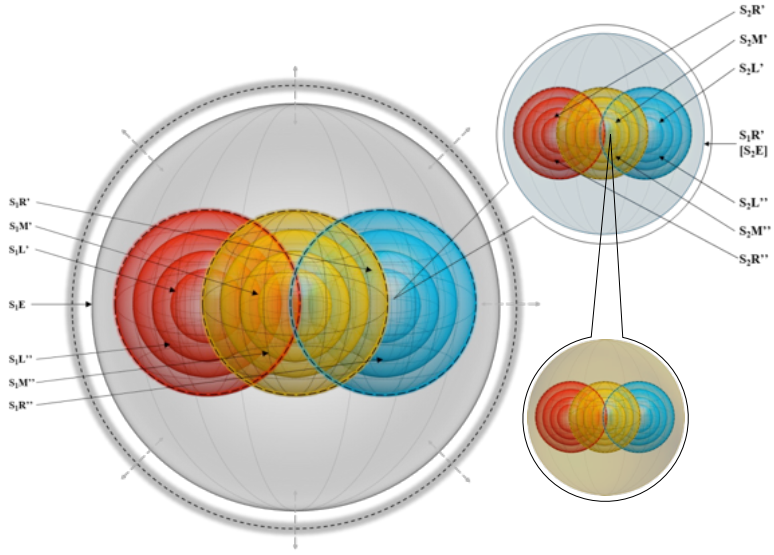


***Diagram 6***

Even though both Aristotle (see, e.g. *Phys*. 203 a 19–33) and the entire doxographical tradition unanimously ascribe some kind of "homoemerism" to Anaxagoras and repeat it (*ad nauseam*) as a defining feature of his theory, many modern authors deny that there can be "Anaxagorean homoeomerism". These include, among others, Peck (1926), Guthrie (1965), Furley (1967), Graham (1994), Mathewson (1958) and Curd (2007). Others, such as Barnes (1979) and Teodorsson (1982), just deny it the role of a fundamental principle of Anaxagoras' physics. While it is true that the term ὁμοιομερές and its cognates do not appear in the extant fragments (B-fragments), and that it was probably coined by Aristotle, this does not mean however that Anaxagoras could not have been an *ante litteram* "homoeomereologist" (the term is Lanza's (1966, 50)): he "could have articulated the concept of homoeomereity without having used Aristotle's terminology" (Sisko 2009, 92).

It is important to note that homoeomerism is primarily a mereo-topological notion, since it deals with the like-partedness in terms of the larger-smaller, the parthood and inclusion relations, as well as in terms of spatial partitioning, i.e. infinite divisibility.[26] As such, it can also be formalised by means of some region-based theory as discussed in 3.2. Interestingly, by basing spatial regions upon spheres, the above representation (*diagram 6*) also agrees with Simons' formal account of homoeomeries (cf. Simons 2003, 220). Such a characterisation of homoeomerism would be purely *quantitative*.

However, there is also a *qualitative* aspect to homoeomerism, since the like-partedness also has to do with the likeness-in-kind of the parts and the whole to which they belong. In other words, Anaxagoras' homoeomerism demands that parts and wholes be similar in view of non-quantitative properties as well (this explains the appearance of colours on *diagram 6* above[27]). In light of the everything-in-everything principle, this means that the universe as a whole and any of its spatial sub-regions (parts) are homeoemerous, since they are *exactly alike* in view of *all* quantitative and qualitative properties. This also shows why translating ὁμοιομέρειαι as "homogenous parts" or "homogenous stuffs" is *wrong*[28] — namely, just as the original mixture is *maximally possibly heterogeneous*, so are all of its parts as well.

It is interesting to note that some authors, like Anna Marmodoro, consider the previously described structural complexity of Anaxagorean universe in its original state as "defying representation", "incomprehensible" or "unintelligible" (Marmodoro 2017, 112–113). However, in light of Sextus

[26] This has been emphasized already in Sisko (2009) and in Sharvy (1983).
[27] Here, as well as in 4.4., colours are taken as an illustration standing for all other properties.
[28] As is done in, e.g. Curd (2007). It could be said that the mixture and its parts are *quasi-homogenous* since they are thoroughly mixed.

> Empiricus' distinction (which can be taken as *locus classicus*: *Adv*. *Phys*. 390–392) between objects that are *perceptible* (αἰσθητά), *imaginable* (φαντασιωτά[29]) and *intelligible* (νοητά), it is not clear why the structure of Anaxagoras' universe and its parts would not be said to be intelligible in spite of the fact that it is neither perceptible nor imaginable. Namely, it could be stated to be unintelligible only after it were proved that the very notion of such a structure is self-contradictory. But, given that region-based mereo-topology and fractal geometry, which serve as *mathematical* models of Anaxagoras' physics, are not inconsistent, being as such intelligible, there is no reason why the same would not hold for Anaxagoras' *physics* as well, i.e. for his theory of the fractal and homoeomeric physical universe, in its original state at least.

So, if the universe were counterfactually broken into whatever number of parts, they would all be completely similar amongst themselves. In *that* sense the universe can be said to be *fractal*. The principle of *fractality of the physical universe* is in *congruence* with the principle of *space isotropy*, and in that sense Anaxagoras is the only Greek physicist who, due to his thoroughgoing infinitism, has made physics completely congruent with mathematics.

The only aspect in which the parts obtained by a counterfactual breaking-apart of the universe were not similar to the original whole consists in the fact that for them the *inverse gunkness axiom* would not hold any longer. But this follows analytically from the fact that they are *proper parts* of the universe, while the universe as a *whole* (τὸ ὅλον) is not a proper part of anything. However, for any part being a *proper part of the universe* and not as something obtained by a counterfactual breaking-apart of the universe, the *inverse gunkness axiom* does hold, since there is no largest sphere encompassing either a part of the universe or the universe as a whole.

> Similarly to the case of Anaximander discussed in 3.4. above, there are authors who attribute to Anaxagoras the "plurality of worlds" thesis on account of DK 58 B 4a, with the usual interpretation viewing Anaxagorean universe as containing multiple separate yet co-existent worlds (see, e.g. Burnet 1975 or Barnes 1979). However, such a reading seems to flatly contradict both what Anaxagoras himself emphasises in fragment B 8—"in *the one* cosmos (ἐν τῷ ἑνὶ[30] κόσμῳ)" (*emphasis added*)—and what Aristotle and Simplicius attribute to him, namely that he only believes and, consequently, speaks of *a single* cosmos only (ἕνα τὸν κόσμον) (cf. Arist. *Phys*. 250 b 18ff. and Simpl. *in Phys*. 178.25). So, even Simplicius who, as

[29] From the verb φαντασιόω employed by Sextus himself ad loc.

[30] ἑνὶ can here be taken as indicating either *uniqueness* or *internal unity* of a given cosmos. We see no reason not to take it in the first sense.

Gregory (2007, 109) rightfully notices, tended to find more many-worlds theorists than there actually were, nowhere classifies Anaxagoras as one of them. The fundamental obstacle to any many-worlds interpretation of Anaxagoras, which constitutes a s*ufficient* reason for rejecting it, is the aforementioned fact that the statement about the existence of separate "worlds" would violate the *inverse gunkness axiom*, which guarantees the interconnectedness of all parts of the universe taken as a whole (τὸ ὅλον) (see 3.4. above). In other words, one cannot maintain the many-worlds interpretation without thereby sacrificing a basic tenet of Anaxagoras' teaching on multitude (B 3). An additional reason for rejecting such a reading would be that Anaxagoras simply could not *individuate* multiple co-existent worlds within the universe as a whole (τὸ ὅλον) if these worlds ought to be *all exactly alike* (Vlastos 1975, 359).

However, there is another line of interpretation which allows us to speak—albeit *only metaphorically*—about many worlds in Anaxagoras without thereby contradicting any of the points which we previously established. This so-called "Leibnizian reading" of Anaxagoras' many-worlds thesis has been recently advocated by John E. Sisko (2003). The basic idea is that Anaxagoras can be seen as endorsing an early version of the Leibnizian monadological thesis according to which there exist "worlds within worlds to infinity" (*mundi in mundis ad infinitum*) (cf. Leibniz A VI, 2, 226). Such an interpretation essentially depends on the *fractality* of the universe in the above explained sense. The following explanation should be taken as holding at least for the original mixture without thereby suggesting anything about the state after the intervention of *noûs*.

As Strang has justly emphasised (by focusing especially on fragment B 6), complexity for Anaxagoras is not a function of size (Strang 1975, 366). Put into more technical terms, this basically corresponds to an important feature of fractals, namely *invariance under scaling* (i.e. transformation of scale). This gets us to the most important feature of fractals — *self-similarity*: fractals which are invariant under ordinary geometric similarity are called self-similar (Mandelbrot 1982, 18).[31] For Anaxagoras, structural complexity is *recursive* all the way up and all the way down. The universe as a whole and all of its parts are structured in exactly the same manner. In effect, the notion of self-similarity in this sense also corresponds to the previously explained notion of homeomereity: if we were to zoom into any part of the universe with a theoretical microscope (illustrated in *diagram 6* above) we could observe that it is exactly alike in every respect—that is, not only in view of all structural and quantitative but also in view of all qualitative properties—to the universe as a whole. However, this should not be taken as suggesting that there is ever more than one world in the Anaxagorean universe. Every part of the universe is a "world" only metaphorically in virtue of the universe as a whole being self-replicating

[31] Interestingly, Leibniz was probably the first to study self-similarity.

and everywhere self-similar. And, finally, as Grujić rightfully notes, fractality is congruent with isotropy (Grujić 2002, 51).

## 5. Necessity of Existence of two Different Successive Stages of the Universe: The Intervention of *Noûs* as the Singular Cosmic Event

By generalising the example concerning colours, we have concluded in 4.4. that in the state of maximum entropy of the original mixture there is no property of any kind whatsoever that could be manifest, which is the consequence of the *mereo-topological structure* of the universe *and* the *maximal possible heterogeneity* assumption. This in effect means that, if different "things" (χρήματα) present in the original mixture, however concretely specified, are to become manifest, this can happen only in a state of the universe which is *radically different* from the state of maximum entropy. To explain in which way the difference between the two states is to be understood exactly, and how it is brought about through the intervention of *noûs*, represents a big task which lies outside the scope of this paper. But, without going into detail, we may put in general terms in what sense the difference must be *radical* and why the two states must be *chronologically successive*, thus vindicating speaking about them as different *stages* of the universe. The comparison with Empedocles' cosmology may be of use again.

As we have seen in 4.4., Empedocles' cosmology doesn't allow the state of the *maximal possible* heterogeneity within the parts of the universe, because it is impossible for any two "roots" of everything to be completely co-located in one and the same part. Any complex part actually contains some finite number of strictly separated parts, each of them occupied by a single "root", and though this number *can always* be greater than it actually is, it can *never* become infinite. So, the infinity related to the number of parts is only *potential* in Aristotle's sense. Consequently, any difference between any two states—no matter how close one of them is to the triumph of Love in view of the greatness of the number of heterogeneous parts present in the mixture of "roots" in any of the parts of the universe—must always be a *matter of degree*. Contrary to this, in Anaxagoras' cosmology the original mixture is *the single state* in which entropy is maximal and from which any other state differs *radically* and not only in degree. Due to this radical difference, any state of the universe that is not the original state may occur *only after* the original state, belonging as such to the *second stage* of the universe viewed chronologically.

The transition from the first stage, which was the state of the universe from eternity (ἐξ αἰῶνος), to the second stage, in which what was

undistinguishable in the original mixture is to become manifest (ἔνδηλος), is caused by *noûs*, whose intervention *as the singular event* in the Anaxagorean cosmogony is in that respect similar to the *big bang* in modern cosmology.

> What makes Anaxagoras' cosmogony *unique* in the history of ancient Greek cosmogony is exactly the postulating of such a singular event. This is evidenced by both Aristotle (*Phys*. 187 a 21ff.) and Simplicius (*in Phys*. 154.30) who agree that for Anaxagoras the "cosmos was born *only once* (ἅπαξ γενόμενος ὁ κόσμος)" (*emphasis added*), i.e. it *began* at some instant (νῦν). Interestingly, Aristotle even criticises Anaxagoras on this account in *Phys*. 252 a 15ff., claiming that such a singular event is "no longer to be considered as a work of nature (οὐκέτι φύσεως ἔργον)"; in other words, it is non-natural and inexplicable. Thus, Anaxagoras might be seen as the first proponent and Aristotle as the first opponent of Big Bang type of theories (cf. Gregory 2007, 172). This salient feature of Anaxagorean cosmogony is usually not sufficiently emphasised in the relevant literature but rather only incidentally touched upon (case in point being Gregory 2007). However, Cleve proposed a reading similar to the one developed in this paper already in 1917 — to him it was "evident" that "cosmogony had to start from one point" and that Anaxagoras in thinking that was "alone, almost[32], among the philosophers of ancient Greece" (cf. Cleve 1973, 45, 132ff.).[33] Cleve explicitly says that "the 'beginning of cosmopoeia' (ἀρχὴ τῆς κοσμοποιίας) *must have been meant as a true beginning in time*." (Cleve 1973, 134; *emphasis added*)

The above results obtained analytically from Anaxagoras' teachings on multitude and on heterogeneity taken as a whole should be faced with the following passage from Simplicius (*in Phys*. 461.10–16):

> […] Anaxagoras […] gave a riddled double account of the [world] order: the one general (ἡνωμένην), intelligible (νοητὴν), always present and time-independent (οὐ χρόνῳ), (for it does not change in time), subsistent both in view of what is (οὐσίας) and in view of what can be (δυνάμεως); the other distinguished from the former (διακεκριμένην ἀπὸ ταύτης) but in accordance with it (κατὰ ταύτην), which comes into being due to the demiurgic *noûs* (ὑπὸ τοῦ δημιουργικοῦ νοῦ).

[32] This restriction is due to the fact that Simplicius also mentions Archelaos and Metrodoros of Chios as advancing similar theses to Anaxagoras' in regard to cosmogony (cf. *in Phys*. 1121.21).

[33] Interestingly enough, Cleve had no modern cosmological model such as the Big Bang that could have motivated his interpretation. Lemaître proposed it in 1927 and the very term "big bang" appeared only in 1949.

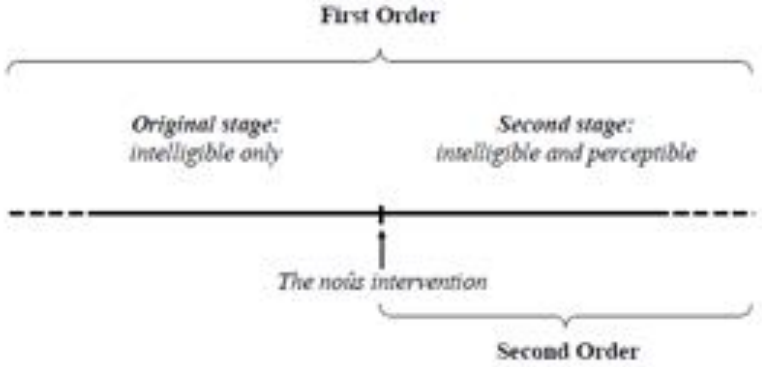


***Diagram 7***

In view of our reconstruction, the explanation of the "riddled double account of the world order" is straightforward (see *diagram 7*). The "first order" is "general" (or "uniform") because it concerns the purely mereo-topological structure of the universe, which is "always present and time-independent" due to the fact that the relation between the universe as a whole and its parts as well as the relations between its parts remain *the same* independently of how the cosmic stuff is distributed or redistributed in view of non-manifest or manifest heterogeneity. This explains, at the same time, why the "second order" is "in accordance with the first one" in spite of the fact that it concerns the second stage of the universe at which what was undistinguishable has become manifest, and which makes the second order "distinguished" from the first one. And then, the "generality" of the first order along with the relation between the two orders explains why the "first order" is "intelligible" also in regard to the first stage of the universe where no heterogeneity is manifest, since its intelligibility does not depend on perceptual distinguishability. And finally, the fact that the difference between two orders is not a matter of degree, there must be a singular event that, due to the "demiurgic *noûs*", separates the two successive stages of the universe.

Simplicius ascribes double world order to Anaxagoras also in *in Phys.* 157.17 and *in Cael*. 608.32. Some of Simplicius' remarks in the surrounding text have been taken by some interpreters, like Curd and Schofield, as indicative of his Neoplatonic interpretation of Anaxagoras, which they themselves consider unacceptable (Curd 2007, 214) and "hopelessly ahistorical" (Schofield 1996, 5). In Simplicius' differentiation between what is *noetic* and what is *perceptible* Curd finds speaking of two different "ontological levels" (Curd 2007, 212, 214). In similar vein,

Schofield finds in *in Phys.* 34.18ff. a picture on which Anaxagoras posits an original *ur*-condition of unity, a "purely intelligible *kosmos*" that ensues from the original *ur*-condition, and finally our perceptible *kosmos* as a derivation of the intelligible *kosmos* (Schofield 1996, 4).

However, there is no good reason to take Simplicius' speaking of "the ordering that is [only] intelligible" and "that which is perceptible" as relating to two different *ontological levels*, since he himself *explains* this rather *epistemological* than ontological difference by claiming that in the former "all things were together" while in the latter "they have been made separate from that unification by demiurgic *noûs*" (*in Cael*. 608.32ff.). This can be completely understood with our explanation given above and illustrated in *diagram 7*, where the difference in question is represented "*horizontally*", as the difference between chronologically successive stages and not "*vertically*", as the difference between ontological levels. After all, the alleged Neoplatonic rendering of Anaxagoras does not fit well with what Simplicius states elsewhere about Anaxagoras' cosmology. For instance, as we have seen, in B 2 he ascribes to Anaxagoras the claim that "air and aether were separated off (ἀποκρίνονται) from the all-encompassing multitude (ἀπὸ τοῦ πολλοῦ τοῦ περιέχοντος)". Separation of air and aether appears to be the initial separation from the original mixture (according to B 2) so that air and aether "covered all things" (according to B 1 and B 2 taken together), and the text suggests that such a separation was an eminently *hyletic* affair and not some Neoplatonic emanation from an intelligible realm.

And finally, if we wanted to reject the Neoplatonic interpretation and yet at the same time avoid the suggested interpretation according to which there must be the *singular event* in Anaxagoras' cosmology—something that is indeed incongruent with the "spirit" of the whole Greek philosophy—we might take the account of the "original state" as the *counterfactual description* of what the universe *would look like if* all the things were mixed together, from which *de facto* any state of the universe is always more or less different.[34] But, no matter how ingenious and exciting this interpretation may make Anaxagoras appear to today's analytic philosophers, it is of course highly unlikely that Anaxagoras actually made such a proposal. On the other hand, as for those who have an affinity for finding in Anaxagoras' teaching early anticipations of significant notions and ideas of contemporary physics, they can be said to be right when taking the idea of the *noûs* intervention as *the singular event* as a precursor of the Big Bang theory.

[34] Such an interpretation has been advanced in Fränkel (1955) and Vlastos (1959).

## 6. Concluding Remark

In the present article we have tried to give a consistent and historically authentic answer to the first of the two central questions concerning the relation between Anaxagoras' teachings on multitude and on heterogeneity, which explains why in the original mixture nothing was manifest in spite of the fact that everything that has become manifest at the second stage of the universe, resulting from the intervention of *noûs*, must have been already present there from eternity.

The second central question is complementary to the first one. How *the manifest heterogeneity* is possible at all, given that the first cosmic order is general, remaining the same forever? The answer to this question is tricky and requires an insightful philological in addition to an inventive philosophical analysis, because Anaxagoras is explicit in B 6 that "*if it is not possible* that there is the smallest, *it would not be possible* to be separated (χωρισθῆναι) or to come into being by itself, but just as at the beginning (ὅπωσπερ ἀρχήν) so also now (καὶ νῦν), everything *would be* together (πάντα ὁμοῦ)". A way must be found to reconcile this claim with the general principle stated in B 3, that "of the small there is not the smallest, but always a smaller". Postponing the answer to this difficult question to some later occasion, we may only note that, if Anaxagoras is to be interpreted in a consistent manner, then either we are wrong when claiming that B 3 states the principle of the general order or there is some way to explain in what sense the necessity of "the smallest" at the level of appearance, stated in B 6, does not contradict the general principle stated in B 3.

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# INVESTING AND INTENTIONS IN FINANCIAL MARKETS

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## *ABSTRACT*

*Ethical investors are widely thought of as having two main goals. The negative goal of avoiding their investments to be morally tainted. The positive goal to further a certain ethical value they embrace or some normatively laden idea they hold by investing their money in a certain company. In light of these goals, the purpose of this paper is to provide an account of how we can explicitly include investors' intentions when conceiving of ethical investment. The central idea is that an investor's intentions may act as both a negative and a positive qualifier for making investing ethical. If we subscribe to this account, there are interesting upshots with respect to how ethical investing compares to ethical giving as effective altruists construe it.*

***Keywords:*** e*thical investment, intentions, negative qualifier, positive qualifier, ethical giving*

## Introduction

It is a common idea in the literature on ethical investment that ethical investors are motivated by two main goals when investing ethically – one negative and one positive (e.g. Mackenzie and Lewis 1999; Hudson 2005; Beal, Goyen, and Phillips 2005; von Wallis and Klein 2015; de Bruin et al.

2018).[1] On the one hand, they want to avoid that their investments are somehow morally tainted. Hudson describes that they feel the duty "of not-profiting from bad corporate behavior" (2005, 641). Lewis and Mackenzie (2000) find that 84% of ethical investors wish to avoid harmful companies, and that 69% want their investments to be ethically clean. On the other hand, ethical investors want to support companies with a positive impact on society. In the study by Lewis and Mackenzie, 73% of ethical investors reported this motive. Beal et al. find one main motive of ethical investors to be to positively "contribute to social change" (2005, 67).

Given this clear picture, it is somewhat surprising that ethical investors' intentions do not have a more systematic place in ethical investment theory or get a more explicit treatment in the literature. To give just two examples: in an influential paper, Irvine (1987, 238) states that some people think investors' intentions matter in judging investments – but does not go into more detail than that. Sandbu (2012), by contrast, elaborates on delegated agency and collective intention, but does not develop the more basic picture of how individuals' intentions play a role in ethical investment. The purpose of this paper is to do just this, i.e. to provide an account of how we can explicitly include investors' intentions when conceiving of ethical investment. The central idea is that an investor's intentions may act as both a negative and a positive qualifier for making investment ethical.

After briefly leading into the topic of qualifiers of ethical investment (Section 1), I shall argue that intentions play a role when judging investors who want to avoid morally tainted investments (Section 2). Namely, in analogy to other cases of people somehow being involved in somebody else's wrongdoing, whether a certain investor exhibits a mens rea makes for a meaningful qualifier of ethical investment. I proceed to argue that the very action of ethical investing with the goal to have a positive impact on society is best understood as an action which requires a double intention (Section 3); namely, the intention to create a positive financial return for oneself as well as the intention to promote some value one embraces or some normatively laden idea one holds. I conclude by highlighting two upshots of my suggested role of intentions in ethical investment theory (Section 4). I develop these upshots by means of a comparison with practices of ethical giving as construed by effective altruists (e.g. MacAskill 2015; Singer 2015; Pummer 2016). On the negative side, I show

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that addressing the issues of agent-neutrality and demandingness is more complicated when we aim to invest rather than to give ethically. On the positive side, however, taking into account intentions also helps us to acquire a more honest perspective on what promoting ethical causes by allocating our money to them means and entails.

My goal in this essay is not to convince committed consequentialists that intentions matter for evaluating whether certain investments are ethically right. It is better understood as an effort to highlight how we may make room for intentions in existing approaches to ethical investment, if we think they do play a role. That being said, notably Section 3 may be read as purely conceptual effort of developing an idea of what ethical investment with the positive goal of furthering a certain good is; i.e. as putting forward metaphysical considerations that are not necessarily tied to questions of normative evaluation.

## 1. Ethical Investment

When we speak of investing something this means that we as investors expect some kind of positive return for ourselves in the future from this investment.[2] Generally speaking, the return on an investment might be of material (notably: financial) or immaterial nature. We invest in our own education, e.g. by attending university, to acquire knowledge and to make us more employable. Some parents invest in their children, so that they can show them off at a later time. Or we may invest in a certain stock to create some financial return.

This future return on investment plays a crucial role in distinguishing investing money from donating money, or from doing nothing with our money. Consider that when you invest money, you expect a return for yourself. Thus, the return on investment is not the same as the benefits secured by others, namely those who profit from, say, charitable giving. Also, when you donate money, you do not expect any return for yourself other than maybe a mental return of feeling good about yourself.[3] But even this "warm glow" sometimes associated to giving money to a charity is not

[2] An investment turning out to create a negative return still counts as an investment. But it typically will be the expected positive return which motivates the investment in the first place.

[3] As Mackenzie and Lewis (1999) find in their study of ethical investors' motivations, ethical investors are well aware of this difference. For instance, they quote one investor who explains his motives like follows. "We felt we had some spare cash. . . . if it went down the plug hole then it wouldn't be that disastrous and we felt it was a good thing to put money into it. I saw it more as a donation I think than an investment probably" (1999, 445).

the same as a return on investment – as it is felt immediately rather than realized in the future. Finally, as hiding cash under our pillow does not generate any future cash flows, doing so does not count as investing money. For reasons of simplicity, let us focus on a straightforward case of financial investment in the following: investing your money by buying publicly traded shares of a certain corporation on the stock market, expecting a positive financial return, e.g. in the form of dividend payments or a rising stock price.

What could qualify such financial investment as ethical? In line with the two main goals of ethical investors, two qualifiers suggest themselves – one positive, one negative.[4] Either, ethical investments are those financial investments which are in no way morally tainted. The ethical idea here may be described as two-part. On the one hand, since the financial return to ourselves is an instance of us profiting from what a certain company does, we want this return to be clean. On the other hand, we do not want the money we invest to contribute to ethically dubious corporate practices. Generally speaking, we satisfy this qualifier if we neither passively profit from nor actively assist in ethically dubious operations, i.e. if the company we invest in is ethically clean.

Alternatively, we might say that ethical investments are those financial investments which further some value we embrace or some normatively laden idea we hold. The ethical idea underlying this qualifier is not so much a defensive one (to prevent bad things) but a productive one (to further good things). We do not merely want the company's operations to be ethically clean. We want them to actively contribute something to a certain ethical cause.

Historically speaking, it seems fair to say that the main theoretical efforts have been directed at understanding how to conceive of an ethically clean investment, i.e. how we can avoid investments in companies that are perceived to be ethically problematic (de Bruin et al. 2018). Irvine (1987) argues that the problem lies not so much with financially benefitting from bad companies, but with investors enabling companies to do wrong (but cf. also Larmer 1997; Langtry 2002). Sandbu (2012), by contrast, thinks that what makes certain investments morally objectionable is neither benefitting from nor enabling corporate wrongdoing, but being complicit in it. But there also have been notable efforts to make sense of the ethics in ethical investment by focusing on the good ethical investors can do by "using their financial powers to promote positive societal goods, such as

[4] Nothing inherently speaks against the idea that a combination of the two qualifiers is possible – or potentially even desirable.

social justice and environmental sustainability" (de Bruin et al. 2018). This can be done, for instance, by only making investments in certain industries known for (or promising to be) creating sustainable energy solutions. Alternatively, one might try to actively use one's influence as a shareholder to push corporate management in a certain direction (e.g. Mackenzie 1997; Sandberg 2008; 2011; Leys, Vandekerckhove, and Van Liedekerke 2009).

## 2. Intentions as a Negative Qualifier for Ethical Investment

Given that the discussion surrounding negative qualifiers of ethical investment emphasizes how we are not to passively profit from or actively assist in corporate wrongdoing, there is a natural place to integrate considerations about the ethical investor's intentions. Namely, by drawing an analogy to the literature which discusses, quite generally speaking, how we are to morally evaluate somebody's being involved in somebody else's wrongdoing. Especially in legal philosophy, there is a rich literature as to how the intentions of him who benefits from, enables, or is complicit in wrongdoing are morally and legally relevant (e.g. Duff 1990; 2007; Moore 2007; 2009). This is because determining solid grounds for accomplice liability is crucial with respect to the legal doctrine of *aiding and abetting*.

If we combine ethical investment theory discussing moral taint and common themes in accomplice liability theory, what we get is a more complete picture. The more objective factors of moral taint – i.e. whether one benefits from, enables, or is complicit in wrongdoing – are complemented with more subjective factors – like the "accomplice's" intentions. Applying, for instance, Duff's (1990) insights about accomplice liability in the context of ethical investing, here is an example how such a combination might look like.

Suppose an investor buys shares of a company (and subsequently receives dividend payments from this company) which simply dumps nuclear waste in the sea. This is an example of a "directly evil" company in Irvine's (1987, 234) terms. Following Duff, in this case there are four different scenarios of how this objectively morally tainted investment might be subjectively morally tainted – or excused. For intuitively it does make a normative difference whether the investor

(i) *intends to assist* the company; i.e. he wants the nuclear waste to be dumped in the sea and his investment to make a contribution towards this practice,
(ii) *intentionally assists* the company; i.e. he does not want the nuclear waste to be dumped in the sea, but he still has a stake

in the company being able to successfully do so (e.g. because this increases revenues and thus dividend payments) and wants to support this practice by investing in the company,

(iii) *knowingly assists* the company; i.e. he does not intend that his investment will help the company to dump the nuclear waste, but foresees that it will do so, or

(iv) *unknowingly assists* the company; i.e. by investing his money he assists the company in its practice of dumping the nuclear waste, but he did not foresee this effect of his investment.

What this classification does is to describe the different levels of *mens rea* the investor might exhibit. The *mens rea* of him who profits from or aids and abets certain wrongdoings is, in turn, a major factor in most legal systems as to whether that person should be held responsible.[5] The straightforward analogy to other cases of being involved in wrongdoing and how neatly the two areas complement each other make for strong arguments why this constitutes a good systematic place for intentions in ethical investment theory.

If we accord intentions the role of an additional negative qualifier of ethical investment, several different scenarios of how the two qualifiers might combine become possible. The one in which an ethical investor tries to subjectively excuse an objectively morally tainted investment by pointing to his lack of *mens rea* strikes me as the empirically most relevant one. It is also the one Irvine (1987, 238) briefly mentions. But there are other options.

Suppose a big institutional investor buys a significant number of shares of a hitherto ethically clean tech corporation – which just publicly announced it is considering using its knowledge for producing innovative weapon systems. Further suppose that the investor explicitly buys the stock to signal to the corporation that it endorses its plans to go into the arms business. Why? Because this promises huge dividend payments. As it turns out, the tech corporation eventually decides against producing the weapon system. It thus remains an objectively morally untainted corporation. Yet, it would seem strange to consider the institutional investor's investment to be completely clean. The subjective moral taint due to the investor's intentions seems sufficient to forbid the conclusion that this particular

[5] While in most jurisdictions satisfying either (i) or (ii) is required for being found guilty of aiding and abetting, in some jurisdictions satisfying (iii) is enough (Duff 1990). The situation also tends to be evaluated differently, if we were not considering a "directly evil" company, but an "indirectly evil one" (Irvine 1987, 234), as this increases the distance between the investor and the wrongdoing.

investment is morally untainted; even if the investor never profited from morally tainted corporate practices.

In yet a different scenario, the investment of those who buy "sin stocks" might be found to not only be objectively morally tainted, but on top subjectively so. If the investor consciously and willingly buys these stocks with the intention to promote, say, tobacco consumption, one might reach this conclusion. Finally, one might assume the position that only those investments which are neither objectively nor subjectively tainted should be considered fulfilling the negative qualifier of ethical investment.[6]

Apart from the seamless integration and the force of the analogy, there is yet another reason which speaks in favor of letting intentions play a role as regards the negative qualifier. Consider that *exclusively* basing the moral evaluation of an investment on how the investor passively profits from or actively assists in corporate wrongdoing puts considerable weight on how closely the investor is connected to the wrongdoing. Given the loose connection between individual stock purchases and corporate practices, one might reasonably argue that the idea of objective moral taint is actually weak. An investor might ask: "Why should I be blamed for a particular investment, if me buying some shares actually has no effect on what the corporation does?"

What this investor has in mind when asking this question are two typical, general objections to the practice of ethical investing (Hudson 2005, 645–53; Sandbu 2012, 100–101). First, the *old stock-objection*; i.e. the thought that the investor does not in fact give the company money. Financial markets for the most part are secondary markets, in which investors do not give money directly to the corporation, but rather to the previous owner of the shares. This makes for a less direct connection between the investor's money and the company's actions. Second, the *small purchase-objection*; i.e. the idea that individual investors do not possess enough market power to change stock prices. This makes it exceedingly difficult for investors to influence corporate policies.

Irvine (1987, 240–42), for one, makes some efforts to refute both objections. He holds that investors might only buy old stock, but that raising the demand for old stock certainly is a factor in creating new stock offerings – in which the company more directly gets money from its

[6] Just how we should weigh objective and subjective factors of moral taint when reaching an all-things-considered evaluative judgment about a certain investment is yet a different question; probably one which does not allow for a general answer but needs to be decided on a case-by-case basis. In any case, this issue is beyond the scope of this paper.

investors. Also, he holds that what morally matters is not so much whether my investment does make a difference, but what would happen if everybody acted the way I do.

I think Irvine's replies are successful to the extent that they show that investors cannot simply deny ethical responsibility for their investments altogether. Even in light of financial markets largely being secondary markets in which most investors possess no market power, it does make sense to speak of objectively morally tainted investments. At the same time, given the typically minimal ways in which one investor might profit from or assist in corporate wrongdoing, it does make sense to think about alternative ways in which investments might be morally tainted. One thing this allows us to do, is to come up with a stronger case in favor of holding investors responsible. Objective moral taint might be weak. But if paired with a certain recklessness or negligence on the investor's part, i.e. with a certain level of *mens rea*, we have a stronger moral hold on unethical investors.

## 3. Intentions as a Positive Qualifier for Ethical Investment

A natural starting point to make sense of ethical investors' stated goal to further some ethical cause with their investment is to say that they want to do two things at once (cf. Lewis and Mackenzie 2000; Beal, Goyen, and Phillips 2005; Hudson 2005). By investing money, they want to secure a future financial return for themselves – often because fiduciary duties require them to do so. But, by investing money, they also want to further some ethical cause.

In economic terminology, we can explain ethical investors' behavior, for instance, by integrating positive effects for an ethical cause in their utility function (Beal, Goyen, and Phillips 2005, 72). In philosophical terms, I think we can best capture the nature of this particular kind of ethical investment by saying that the ethical investors are performing an action with a double intention. They do not only intend to make a future financial return, but also intend to promote some value they embrace or some normatively laden idea they hold.

Consider an example. If you use your money to buy shares of a certain corporation, intending to generate a future financial return for yourself, but at the same time also intending to thereby further feminism, this would then count as an instance of ethical investment. In principle, every ethical cause could form the basis for such an ethical investment. This broadening of scope is welcome. Narrower concepts like sustainable investment or (to

a lesser extent) socially responsibly investment risk to obscure that there is a huge variety of ethical causes we can promote by investing our money in the right way, from feminism to equality or inclusion.[7]

What calling for a double intention does is to give us a clear idea of when and why a certain financial investment positively qualifies as ethical. Whenever you invest based on such a double intention you invest ethically precisely because you have this double intention. It also allows us to distinguish ethical investment from related practices.

On the one hand, ethical investment is unlike what one might call venture philanthropy (Köb 2018). Venture philanthropists give money to corporations (mostly start-ups) so as to generate a certain social impact. They are willing to do so without expecting any financial return. This is not to say that financial returns never ensue. But without the intended financial return for oneself, venture philanthropy is much closer to donating than to investing money. On the other hand, ethical investment as understood here is unlike shareholder activism (Sparkes 2001; Sandberg 2011). Like ethical investors, shareholder activists want to promote a certain cause. But how that goal connects to the investment made differs. Ethical investors seek to have a social impact by investing. By performing one action only, they simultaneously want to generate future financial returns and to have social impact. For shareholder activists, investing in certain companies only is a necessary means to then have social impact in a second step. Without being shareholders first, they cannot be shareholder activists actively seeking to influence corporate policies.[8] Finally, the particularly direct connection between investing money and thereby creating social impact also is what distinguishes ethical investors from those who practice "classical" financial investment, to then donate (a part of) the proceeds.[9] Again, what we see here are two distinct actions – one investment and one donation – rather than just one action – an ethical investment.[10]

[7] It is an independent question of whether all values are *normatively suitable* for ethical investment understood as action with a double intention. One might also wonder whether all values are equally *practically suitable*.

[8] Not all shareholder activism aims at having a social impact. There certainly are long-term and large investors who seek to actively influence corporate policies by using their power as shareholders, but who do so, for instance, in view of influencing that corporation's strategic decisions in ways they seem fit to increase long-run profitability (Ryan and Schneider 2002).

[9] This is closely related to the practice of "earning to give" (Singer 2015, ch. 4); see more on this below.

[10] Beal et al. (2005, 70) seem to suggest that we can also call those "ethical investors" who invest in ethically oriented mutual funds solely because this promises superior financial

To summarize, conceiving of the positive qualifier of ethical investment in terms of requiring an action with a double intention allows us to make ethical investing an investment strictly speaking (i.e. with intended financial returns for ourselves), to emphasize that the good done is done by investing (and not by activism in corporate committees), and that we are dealing with one action only (rather than two separate ones, investment and donation, of which only the latter promises ethical worth).

Note that the role intentions play with respect to the negative and the positive qualifier is not analogous. As regards the negative qualifier, an investor's intentions for investing must look in a certain way to not morally taint the investment. We must not, for instance, intend to profit from morally tainted corporate practices, if we want that investment to be ethical. By contrast, as regards the positive qualifier, there has to be a second intention beyond the one to make a financial return to make the investment ethical.

While the stylized picture seems to suggest that investors, when investing ethically, either aim for a morally untainted investment or for investments which have a social impact, it remains a possibility to combine the two paradigms. Put differently, we can come up with a particularly demanding idea of what ethical investment requires by combining the two intention-based qualifiers. In this case, ethical investments would only be those investments where our intentions for investing do not exhibit any kind of mens rea, and where we have the additional intention to further an ethical cause.[11]

While I think it is uncontroversial that combining the two paradigms would lead to a particularly demanding idea of what ethical investment requires, I think it is unclear which paradigm, on its own, is the more demanding one. Intuitively, one might feel like satisfying the negative qualifier is a negative moral duty of ours, while satisfying the positive qualifier is a positive duty. In addition, it seems to be a widely shared intuition that negative duties (like not to harm anyone) are for the most part easy to fulfil, whereas positive duties (like duties to aid) can be very demanding to fulfil (e.g. Lichtenberg 2010, 557–58). In fact, as Lichtenberg notes, it is precisely because "once we admit … [positive] duties into the moral realm

performance. I think it is preferable not to call such investors "ethical investors" strictly speaking, but to use the more cumbersome formulation "investors in ethical funds". Why I think this will become clearer in the next section, where I discuss the issue of merely foreseeing (rather than intending) and ethical impact of one's investment.

[11] We could make this idea of what ethical investment requires even more demanding by adding objective moral taint qualifiers, i.e. by not exclusively taking the investor's intentions into account when evaluating the investment.

they threaten to take over and invade our lives … [because of being] relentlessly demanding" (2010, 557), that the very existence of positive duties sometimes is disputed – and that, if their existence is conceded, they are mostly conceived of as limited or "imperfect" duties. All of this seems to support the idea that the positive qualifier is the more demanding one. It would then make sense to say that an investment which satisfies the negative qualifier at least is "not morally blameworthy", whereas an investment which satisfies the positive qualifier is "morally praiseworthy". Alas, Lichtenberg points out that there is something very wrong with this picture. Especially in a globalized world where everything is connected (and global financial markets are a prime example of this), "our most humdrum activities may harm people in myriad ways we have never thought about before … [all the while being] seamlessly woven into our normal routines" (2010, 558). Lichtenberg proceeds to cogently argue that even to only fulfill our negative duties turns out to be very demanding and to require our undivided attention. Thus, I think we are well-advised to remain agnostic on the question of which paradigm for ethical investment, on its own, is more demanding.

### 3.1. Ethical Investment, Intention, and Foresight

There are two prominent worries one might have with respect to this salient role for intentions as regards the positive qualifier of ethical investment. First, why is it not enough to foresee (rather than intend) the positive effects? Second, what about cases in which we err, i.e. cases in which the intended positive effects never ensue?

In order to see why foresight is insufficient as a positive qualifier, it is important to understand what performing an action with a double intention quite generally means. If an action features a double intention, this means that we are trying to bring about two different effects by one action. But, as Walzer (1977) argues, actions which have two effects because of a double intention are different from actions which have intended effects and foreseen effects – as familiar from discussions of the doctrine of double effect (e.g. Aquinas *Summa Theologica II-II*, Q. 64, art. 7; Thomson 1976).

Against the background of strategic bombing cases as used in just war theory, Walzer argues that the doctrine of double effect actually is too lenient a moral principle for telling permissible strategic bombings from impermissible ones (1977, 151–59). He thinks that it is not enough *not to intend* the harm done to civilians (which constitutes a foreseen side effect). Instead, we must *intend not to* harm the civilians to make the bombing permissible. This is what Walzer refers to as the idea of double intention.

> The principle of double effect … stands in need of correction. Double effect is defensible … only when the two outcomes are the product of a *double intention*: first, that the 'good' be achieved; second, that the foreseeable evil be reduced as far as possible. … Simply not to intend the death of civilians is too easy … What we look for in such cases is some sign of a positive commitment to save civilian lives. (Walzer 1977, 155–56)

Walzer goes on to explain that a straightforward sign of such a positive commitment on the soldiers' part is if, for instance, they risk their own lives in order to save more civilian lives. This is because, by risking their own lives, they put their first intention (i.e. to harm the enemy) at risk in light of the second intention they have (i.e. to save civilians). They would not be willing to compromise their first intention in this way if they merely did not intend to harm civilians. Thus, for Walzer, choosing a course of action which weighs and balances two effects is a sign that we are acting with a double intention.

For now, we do not need to trouble ourselves with the moral implications of performing an action with a double intention. I only want to rely on Walzer's idea that the big difference between an action which features a pair of intention and non-intention (i.e. intended and foreseen effects) and an action which features a double intention (i.e. two different effects, both of which are intended), is that in the latter case we balancing effects. With this idea of balancing in place, I think there are two empirical arguments for why double intention makes for a meaningful positive qualifier of ethical investment.

First, many ethical investors are willing to sacrifice some financial return for making a positive social impact – and consider themselves ethical investors for precisely this reason (Mackenzie and Lewis 1999; Berry and Yeung 2013). Now some of these investors might believe they have to give up financial return when investing ethically for the wrong reasons. For instance, they might think that ethical investments underperform in comparison to more traditional ones, when there still is no conclusive data to this effect (Richardson and Cragg 2010; von Wallis and Klein 2015). Still, it remains true that many investors are willing to balance financial returns and positive effects for an ethical cause.

Second, commonsense perceptions about what it takes to be an ethical investor point in the direction that merely foreseeing positive effects for an ethical cause is not enough. Knobe's (2003) research in experimental philosophy highlights that people are more reluctant to ascribe intentional action if people claim to further some positive ethical cause than if they do

some harm. Take the hypothetical situation in which the vice-president of some company says: "I don't care at all about helping the environment. I just want to make as much profit as I can. Let's start the new program". As Knobe reports, only 23 percent of the subjects confronted with this statement held that the vice-president intentionally helped the environment (2003). By contrast, if "help" was replaced with "harm", 82 percent held that the vice-president intentionally harmed the environment. As Knobe argues, "this effect is best explained in terms of the role that moral considerations play in people's concept of intentional action" (2003, 194). Another upshot is that we have to clear a particularly high bar to convince other people that we act ethically. The double intention-qualifier of ethical financial investment just reflects this.[12]

These two empirical arguments come down to how people intuitively conceive of ethical investment, i.e. to ordinary language arguments of some kind. Hudson (2005) on the other hand gives a theoretical argument that ethical investors cannot at the same time realize average market returns (i.e. that kind of return one usually makes when investing) and further an ethical cause by rewarding good companies by investing their money in them. One of Hudson's main ideas is that ethical investors are, as it were, always late to the party. They only start investing in companies once they "go ethical". But at this late point the notoriously fast financial market will already have factored in the effects of the ethical policy change on future corporate revenues; i.e. stock price will have risen if ethics indeed pays. Hudson concludes that

> although ethical investors should make a rate of return related to systematic risk, they will not have any effect on corporations, and thus cannot punish bad (or reward good) corporations or affect corporate behavior. (Hudson 2005, 642)

This is a market-theoretical argument that investors cannot realize market returns on financial investments and further a certain ethical cause by rewarding good companies. Thus, ethical investors would need to balance these two goals – the most obvious approach being to sacrifice some financial return in view of thereby being able to create positive impact.

Apart from these empirical and theoretical arguments, there still is Walzer's normative argument in favor of double intention being required.

[12] Knobe's experiment only contrasts helping and harming scenarios for cases in which the vice-president *denies* having an intention other than to make profit. But it is plausible that these results transfer to cases in which the vice-president *claims* to have a double intention: to make profit and to help the environment.

Closely tied to Walzer's description of what an action with a double intention *is*, there is an argument about the normative difference it makes to perform an action with a double intention. Although this is somewhat implicit in traditional formulations of the doctrine of double effect (cf. Mangan 1949, 43; Connell 1967, 1021), it is an essential part of the doctrine that ethical agents have to regret causing the foreseen harm. Put differently, it is

> a misinterpretation to claim that the principle of double effect shows that agents may permissibly bring about harmful effects provided that they are merely foreseen side effects of promoting a good end. Applications of double effect always presuppose that some kind of proportionality condition has been satisfied. (McIntyre 2012)

In order for the doctrine of double effect to make a normative difference in how we evaluate a certain action, the proportionality condition needs to be satisfied; i.e. the agent must be disposed to avoid as much harm as possible. In this context, Walzer's terminology of performing an action with a double intention can be interpreted as one particularly promising way of expressing this aspect of the doctrine.

So this is the normative argument for why, to speak of making an ethical investment. It would be too easy to consider a certain financial investment ethical as soon as we intend to generate a financial return for ourselves, and also foresee that this will have good effects for, say, feminism. (Or even weaker: if we do not intend to outright hinder political, economic, personal, and social equality of sexes.) The good effects for the ethical cause must stand in good proportion to the financial return for ourselves. We need to be disposed to weigh them against each other to qualify as ethical investors.

To be sure, Walzer talks about balancing intended good effects and undesired bad effects so as to act ethically. This is not quite what we face in cases of ethical investment. Here we are talking about balancing good effects for ourselves (the financial return) and positive effects for some ethical cause. Still, I think that a kind of Walzerian argument in favor of a double intention applies to the case of ethical investment. Notably because there is no apparent reason for why intending rather than merely foreseeing something should only make a moral difference when we judge cases of harming (in contrast to helping). Experimental research like Knobe's merely suggests a difference in size as regards the moral difference made, not a complete disappearance.

Note that it is an option to conceptually include double intentions as regards the definition of ethical investment, without also committing oneself to the idea that double intentions evaluatively matter. Committed consequentialists would deny that the distinction between performing an action with a double intention versus performing an action with a pair of intention and non-intention evaluatively matters. But such a consequentialist position is not entirely incompatible with my suggestions of taking into account investors' double intentions as regards ethical investment. We can keep metaphysical and normative considerations separate.

Those who think investor intentions make a normative difference may regard double intentions as an *ethical* qualifier. It is what makes investment ethically right. By contrast, those who think intentions do not matter evaluatively may regard double intentions as a purely *conceptual* qualifier. Put differently, the latter might accept that we can meaningfully *call* a certain investment an ethical investment in light of the investor's intentions. They could accept this, not because they think intentions are normatively important, but because they realize intentions play a role in ordinary language conceptions of ethical investment and make for a useful qualifier to distinguish ethical investment from related practices.

### 3.2. Error Cases

As a further objection to how a double intention makes a normative difference, one might think of error cases. Suppose there is some investor who buys shares of a tobacco company with the intention to financially profit and the intention to help cure lung cancer by investing in this company. Unless the tobacco company completely changes its business model, he is mistaken if he expects that his investment will further this particular ethical cause. But it seems that, based on double intentions as qualifier, we could say that his investment qualifies as ethical because he has the right intentions. This is counterintuitive.

Now, error cases like this have a long tradition as counterarguments to normative ethical theories stressing the importance of the intentions with which we act. This essay neither is the right place to settle this debate between consequentialist and deontologists, nor intended to do so.

However, there is an interesting elaboration of error case-objections which creates troubles that are idiosyncratic to the case of ethical investment. Suppose the old stock-objection and the small purchase-objection actually go through. This would mean that most ethical investors aiming at furthering a particular ethical cause by correspondingly investing their

money would *always* be mistaken about the effects of their actions. Maybe not as obviously as the tobacco company investor aiming to cure lung cancer. But investors would constantly act based on a certain intention, but never achieve the intended goal. We would be dealing with a generalized "error theory" rather than with individual error cases. In such a scenario, would double intentions continue to make a normative difference?

I think the best reply to this objection just is to insist that we are not in a scenario in which ethical investments make no difference to corporate policies. Firstly, we need to acknowledge Irvine's above-mentioned, cogent replies to the old stock- and the small purchase-objection. In addition, I think that especially against the background of managers being rewarded based on short-run financial market performance, i.e. quarterly developments of a corporation's stock price, there is a straightforward way in which ethical investors can make a difference. Consider the following scenario. First, a company announces efforts to become (more) ethical. Second, this affects share price in two ways. On the one hand, if ethics pays, or is perceived to be paying, or is perceived to be a "must have" for corporations willing to remain in the market (if only for regulatory reasons), this positively affects share price. On the other hand, there is the increased demand for that stock by ethical investors which also drives stock price upward. As we are only considering the short run, even small changes in demand, which can be caused by market participants with comparatively little market power, matter. Third, this positive market feedback leads to positive feedback for the managers who decided to become more ethical. Fourth, the managers learn that they get rewarded if the company becomes more ethical. Fifth, they decide to make even more efforts to become even more ethical. And then the circle begins anew.

Finally, there is an entire class of consequentialist arguments wrestling with the problem that for collectively caused outcomes consequentialism seems to reach the wrong verdict. Think of climate change. While it is agreed that, if everybody flies a lot, this will contribute to global warming, one might have the impression that an individual's actions have no effect; because one person's emissions make no perceptible difference on a global scale, because the plane would have flown anyway irrespective of whether I am on board, and so on. Thus, it seems like the individual action of me flying to a conference cannot be considered wrong on consequentialist grounds – which seems problematic. But, for instance, Kagan (2011) provides a powerful argument against this conclusion. He stresses how the fact that our behavior *might* make a difference is enough for consequentialists to reach the right verdict. Even if the odds of me making a difference are small, as long as the effects in case I do make a difference are significant and negative, consequentialist calculus based on expected

utility will reach the right conclusion; e.g. that I should not be flying to that conference.

Transferred to our context the argument would be that, even if it is unlikely that our ethical investment makes any difference with respect to which policies a corporation adopts, it might do so. Sometimes our purchase might be what tips the scales – which is why it is right (on consequentialist grounds) to make it. Consequently, also our intentions to promote a certain ethical cause by investing correspondingly cannot be considered to always be misguided.

## 4. Ethical Investing and Ethical Giving

If one adopts the idea of acting with a double intention as positive qualifier for ethical investment, this has interesting upshots. They are most clearly revealed if we compare ethical investment to a different practice with the declared goal to achieve positive ethical effects by reallocating money; namely, ethical giving as construed by *effective altruists* (e.g. MacAskill 2015; Singer 2015; Pummer 2016). In recent years, effective altruists have put forward arguments about how we should donate to charities. The general idea is simple and might be summarized like this: we ought to give a large amount of our income to those charities which most efficiently fight the most pressing normative issues.

There are some problems that effective altruism and ethical investment as understood in this essay share. The methodological worries effective altruists face, e.g. about observational bias or quantification bias (Gabriel 2017), are just as pressing for ethical investors. Also, for both giving and investing, they stand alongside hard to answer empirico-scientific questions of cause and effect. Only if we get the empirical aspect right, a donation or investment can do the good it is intended to do. Take the feminism example again. If we want to further feminism by investing our money, then we need high-quality empirical evidence as well as good theories to form a reliable picture of which activities of which corporations further feminism.

One classic historical case is that of the mechanization of housework, e.g. the advent of washing machines between the 1950s and 1970s. By drastically reducing the amount of time needed for washing, those corporations selling washing machines freed up time – which the women could use, for instance, for taking up a job of their own. Freeing women from housework, which is unpaid and typically not even recognized as work, is a positive effect those corporations achieve by selling what they

sell. So investing in producers of washing machines and related devices should have seemed like a good option for ethical investment. However, the predicted effects never occurred. Although the time saving by using a washing machine was real, the advent of washing machines also led to a rise in hygiene standards. The time saved by washing faster was then spent to wash more than before (Kettschau 1990).

But there also are problems ethical investors have that effective altruists – at least *prima facie* – do not need to trouble themselves with. These additional problems are a consequence of effective altruists not aiming for two (potentially conflicting) effects with their donations. A simple example highlighting the importance of this difference is to look at *optimal* giving. Arguably, the morally best strategy for donations is to give all of your income away, as even for your last dollar, those receiving it are very likely to have a higher marginal utility from it than you. By contrast, the maximally good investment cannot be to exclusively and maximally further the chosen ethical cause up to the point where there is no financial return left. This is for conceptual reasons. If you completely renounced on a financial return to maximally further the chosen ethical cause, we would not be dealing with an instance of ethical *investment* any longer. When practicing ethical investment, we need to consider two dimensions and reach balanced decisions.

At first one might think that, even if this complicates things, this is a problem effective altruists likewise know. After all, effective altruists are quite used to balancing two dimensions. For example, when they decide on whether to enter a certain (well-paying) career in order to "earn to give". Or when they decide how much of their overall income they want to give away. Effective altruists have come up with answers as to what to do in these cases (cf. Pummer 2016; Singer 2015; MacAskill 2015). But the decisions effective altruists face are not analogous to the ones ethical investors face.

Consider the "how much to give" decision. If we decide to economize so as to be able to spend 50 percent of our income on donations, then we do balance two dimensions. Namely, we balance considerations about how much we need to live a decent life with considerations about how much the money we economize would help others. This seems rather similar to the decision of how much financial return we are willing to sacrifice in order to also have a positive effect for a certain ethical cause. But the decisions are not analogous, as for the decision of "how much to give" the two dimensions are independent of each other. As effective altruist you can do the following thing. First, you decide on the place where your money should go to. That is, you select the best charity. Second, you decide

whether to donate 30, 40, or 50 percent of your income to that charity. (Or the other way around.) How much you are willing to spend is independent from how effective your donation will be.

This is not the case for ethical investment. When investing ethically, you cannot first decide how much of your financial return you are willing to sacrifice and then decide on the best place to allocate that money. You necessarily make a decision in these two dimensions at once. When investing money ethically, each investment option is characterized by offering a *pair* of effects. One partial effect is your financial return. The other partial effect is the positive effect for an ethical cause.

Imagine the following scenario to illustrate this. In a first step, you decide that you are willing to accept a financial return on investment which is 50 percent lower than the average market return – say 3 percent instead of 6 percent. But when making this choice to accept a 3 percent return (but no less), you have considerably limited your set of options for your second choice, i.e. the choice of where your money should go to. Your preferred corporation from an ethical point of view, i.e. that corporation which most efficiently furthers your chosen ethical cause, might not be an investment option for you any longer. You might be unable to "afford" to invest in the best corporation, as it simply offers too low a financial return. In this sense, what used to be *two independent* choices is now *one interdependent* choice. You no longer separately decide on how much to give and where to give, you decide on a financial-and-ethical-effect pair. It is only the *relative size* of financial return to ethical effect you choose.

This might plausibly lead to hard choices. It might lead to hard choices in the sense that, in whichever way you decide, you cannot achieve all of your goals. For instance, you might find yourself in a situation in which, in order to invest in that corporation you deem best from an ethical point of you, you need to make even harsher economizations in your retirement savings. This is particularly problematic as corporations promoting those ethical causes typically favored by effective altruists tend to offer comparably low financial returns. There just is not much money to be made in fighting diseases which predominantly affect the poor. This is why such endeavors are in need of donations in the first place.

This might also lead to hard choices in the sense of choices which are psychologically harder to make. Consider Singer (2015, 28–31) telling the story of Julia, an enthusiastic effective altruist struggling with the fact that her commitment to effective altruism seems to imply that she cannot have an ice cream from time to time.

> When shopping, she would constantly ask herself, 'Do I need this ice cream as much as a woman living in poverty elsewhere in the world needs to get her child vaccinated?' That made grocery shopping a maddening experience, so she and ... [her husband] made a decision about what they would give away over the next six months and then drew up a budget based on what was left. Within that budget, they regarded the money as theirs, to spend on themselves. Now Julia doesn't scrimp on ice cream because, as she told the class, 'Ice cream is really important to my happiness.' (Singer 2015, 29–30)

It is easy to see how big a psychological relief Julia's solution of drawing up a budget and spending 50 percent – no more, no less – of her income on donations is. In abstract terms, this is a form of cognitive unburdening. We decide once how much we want to spend, and do not have to deal with the worry of violating the consequentialist principle of agent-neutrality for some time. Unfortunately, this is not something ethical investors can do. For each investment choice they make they are confronted with how they can do even more good. Consequentialism's demandingness hits them with full force (cf. Chappell 2009).

In principle, there are no theoretical problems that keep consequentialists from reaching reasoned conclusions about which financial-return-ethical-effect pair is the best. After all, both dimensions of ethical investments arguably can be expressed in some form of utilitarian calculus. Yet, given that each investment option features such a pair, the need for a systematic way to address agent-neutrality – and to justify why it might be alright to sacrifice this consequentialist tenet from time to time (as Julia does) – is exceedingly pressing for ethical investment.

Finally, the situation might not only lead to hard choices for ethical investors, but also for those aiming to run their firms ethically. Consider that in order to be a viable investment option, entrepreneurs might face the choice of doing less good to create higher financial returns. For only if they generate at least a "sufficient" financial return, they will appear on the radar of those seeking to invest ethically. This is an extremely pernicious effect. In order to attract more money for their ethical cause they have to be, so to speak, less ethical. Not in the sense of being less efficient in fighting poverty or diseases. But in simply allocating less money for these activities and reserving more money to pay dividends to investors. The mechanics just described might ultimately mean that there is a set of typical organizations which qualify for ethical investment purposes and a set of typical organizations which qualify for ethical giving, with the two sets not overlapping.

### 4.1. A Positive Upshot

Because dealing with worries of agent-neutrality and demandingness is more complicated when we aim to invest rather than to give ethically, one might feel like getting ethical investment right is more difficult than getting ethical giving right. And yet, if we invest ethically, good things follow.

First, consider that there is much more money going round seeking to be invested than seeking to be donated (von Wallis and Klein 2015, 62). This is because many of those seeking to allocate considerable amounts of money are bound by fiduciary duties not to simply donate but to invest the money at their disposal. This means that, judging by the amount of money to be allocated, the potential impact of ethical investing by far exceeds that of ethical giving.

Second, if ethical investment were practiced widely, it would plausibly have a systemic impact – which some people accuse effective altruists of not paying enough attention to (Srinivasan 2015). Like ethical consumerism does, practicing ethical investment forces corporations to thoroughly rethink their business. That is to say, it does more than just to redistribute money.

Most notably, however, ethical investment furthers honesty about what it means and entails to promote ethical causes by re-allocating money – in a way that ethical giving does not. Ethical investment might be hard and messy. But it is more honest in the sense that the option of compartmentalization practiced by Singer's Julia – seemingly endorsed by some effective altruists – is not even on the table. What I mean by this is that we can reasonably accuse Julia of falling prey to the moral variant of the well-known cognitive bias of *mental accounting*. Namely, to allow ourselves a "little immorality" here and there in light of having done something moral first (Sachdeva, Iliev, and Medin 2009; Merritt, Effron, and Monin 2010). Investing money with a double intention does not accommodate such hand-waving, but sharply highlights the normative troubles we need to deal with. It highlights normative troubles that effective altruists only *prima facie* do not have to troubles themselves with.

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# BOOK REVIEW

Carlo Rovelli
***THE ORDER OF TIME***
**Riverhead books, 2018**
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**ISBN-10: 073521610X**

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Carlo Rovelli's new book covers a plethora of different perspectives on time. Included are scientific, philosophical, mundane, historical and cultural viewpoints. *The Order of Time* is written in an enthusiastic, lively manner. Rovelli wrote the original version in Italian, and it was translated to English by Simon Carnell and Erica Segre.

In the introductory section, Rovelli notes that time is inextricably tied to human life and our familiar experience of the world. We live in time like fish in the water. Time flows. This seems unquestionably true and universal. Yet "reality is often very different from what it seems", contends Rovelli. "Neither is the structure of time what it seems to be: it is different from this uniform, universal flowing", he continues. Rovelli admits that the nature of time remains somewhat of a mystery. This is comparable to other unsolved scientific/philosophical issues, like the origin of the universe and its life, and the nature of mind and consciousness.

The first part of the book (Chapters 1–5) begins with an observation that the variable *t*, which designates the evolving of things in time, has figured prominently in many equations of physics. This encompasses the foundations of Newtonian dynamics, Maxwell's electromagnetism, Schrödinger's equation, and quantum field theory that describes the behavior of subatomic particles. The rest of the chapter centers around physical theories that pertain to time, namely the central results of relativity, thermodynamics, and the quantum theory. These results are radically at odds with our commonsensical picture of time. Physics debunks the unity of time and its unidirectionality. Rovelli's favorite example is the demolition of the present moment. For him, this "is the most astounding conclusion arrived at in the whole of contemporary physics". Due to time dilation, there is no cosmically extended now (here Rovelli

does not lean on the relativity of simultaneity, which implies that the past, the present, and the future are all equally real). In his summary, modern physics teaches us that time "is like holding a snowflake in your hands: gradually, as you study it, it melts between your fingers and vanishes". Then Rovelli goes on to assess the role of time-keeping and clock synchronization technologies that have appeared during history. Aristotle's relationism and Newton's absolutism are compared, and Einstein is presented as synthetizing them with equating gravitational field and space-time. The first part ends by considering the ramifications of quantum mechanics—granularity, indeterminacy, and the relational aspect of physical variables—each one destroying "further the little that was left of our idea of time".

The second part (Chapters 6–8) is more philosophical, including an argument for process metaphysics, a take on the presentism/eternalism and tensed/tenseless language debates, and discussion on the relational character of time in light of elementary quantum mechanics. The last part (Chapters 9–13) considers the relation between physical time and human perception of it, how temporal experience may be emergent, how we necessarily always have a particular perspective on things, the primacy of entropy over energy, causality and asymmetry, personal identity and selfhood, neural basis of temporal cognition, and the phenomenology of time. Rovelli concludes that "the world *is* a quantum one", so "in the elementary grammar of the world, there is neither space nor time". The most fundamental level of reality (that we know of) has little resemblance to the time we experience in our lives.

The scope of the book is wide and impressive. I cannot think of a detail that *The Order of Time* omits. My review cannot therefore deal with the whole book. Below are my two cents on the aspects that I found most intriguing and controversial.

One of the most insightful points in the book is the explanation of our experience of the direction of time. For us, the events of the world always proceed from past to future, never *vice versa*. We do not remember the future or predict the past. To explain our experience of time's arrow in chapter 2, Rovelli leans on Boltzmann's idea: we see irreversible thermal processes because of our blurred vision of the world:

> The difference between past and future is deeply linked to this blurring. . . So if I could take into account all the details of the exact, microscopic state of the world, would the characteristic aspects of the flowing of time disappear? Yes. If I observe the microscopic state of things, then the difference between past and future vanishes.

I found this to be very convincing, perfectly naturalistic explanation. There is no need to posit consciousness that is somehow emerged from the physical of whose property time's arrow would be. Nor is there a need for a Kantian *a priori* forms of sensibility, which putatively dictate the direction of time to us. On a macroscopic scale, it is utterly improbable that entropy would decrease. The increasement of disorder in our environment gives us the arrow of time. No dubious emergentist or suspect transcendental arguments are needed. The direction of time is a matter of the scale at which we are looking at the world.

A central argument of the book seems to be that time is not fundamental or ultimate, or even that time does not exist. In chapter thirteen, Rovelli puts the point as follows: "We can see the world without time: we can perceive with the mind's eye the profound structure of the world where time as we know it no longer exists". If I understand this assertion correctly, the author tries to establish that deep down the world is without time (the title of the second part of the book is "The World Without Time"). So Rovelli entertains with the idea that time does not exist. But he does not elaborate on the notion of 'real.' He thinks it is a fuzzy one. In chapter seven, he claims that the answer to question of what is 'real' "is that this is a badly put question, signifying everything and nothing. Because the adjective "real" is ambiguous; it has a thousand meanings." It is easy to agree that the term 'real' is multifaceted. But I think this is a crucial concept, something which should be spelled out. When reading the book, I found it difficult to grasp what is meant by the timelessness of the world, or the unreality of time. Although Rovelli does not say that time is an illusion,[1] I think he does imply that, among others, order, direction, and flow of time are not elementary features of reality. I can think of three challenges to this argument.

First, if time is equated to temporal order, there is a way to argue for a partial temporal structure (Rovelli mentions this in Chapter 3). If light, or any other electromagnetic spectrum frequency, from an earlier event reaches a later event, this order does not change. This temporal order is invariant. All observers agree that the sending of the signal is before, and the receiving of the signal is after. Special relativity shows that an absolute, objective, and universal distinction between past, present, and future does not exist. And it indeed shows that "the 'present of the universe' does not exist", as Rovelli writes. The special theory is in tension with the A-theory of time and presentism. But the theory still retains the immutable temporal order of before-after relations à la the B-theory.

[1] Some commentators, like Andrew Jaffe in his *Nature* review, read Rovelli as claiming that time is an illusion.

Second, Rovelli maintains that as the world is made of events, not things, there are ongoing processes deep down. Events are dynamic as opposed to static things. "Change is ubiquitous", he proclaims. In his view:

> The entire evolution of science would suggest that the best grammar for thinking about the world is that of change, not of permanence. Not of being, but of becoming. (…) We can think of the world as made up of *things*. Of *substances*. Of *entities*. Of something that *is*. Or we can think of it as made up of *events*. Of *happenings*. Of *processes*. Of something that *occurs*. Something that does not last, and that undergoes continual transformation, that is not permanent in time. The destruction of the notion of time in fundamental physics is the crumbling of the first of these two perspectives, not of the second. It is the realization of the ubiquity of impermanence, not of stasis in a motionless time.

As Rovelli sees the world ultimately as a network of events, there is change. If there is change, it sounds strange to say that there is no time.[2] Arguably the most pervasive theme one can find in the history of philosophy of time (paradigmatically, in the work of Aristotle) is that time is a measure or dimension of change. If there are physical processes it seems there is temporality. Compare this to Parmenides' or McTaggart's classical arguments for the unreality of time. Parmenides thought that because describing the world with temporal concepts is contradictory, reality, as opposed to what it seems, is changeless and therefore atemporal. In a similar vein, McTaggart argued that the A-series is internally contradictory, because an event cannot have all three A-properties, past, present and future. We are left with the B-series. Its before-after relations do not necessarily indicate earlier and later than relations; the C-series encompasses some type of before-after relations, ordering of letters and numbers, for example. But it contains no change and hence no time. And there is the more recent defense of anti-realism about time that comes from Barbour, who contends that motion is an illusion, and therefore time is unreal. If change is essential to Rovelli's metaphysics, why not time? The two are intimately connected. Rovelli does not explain how change and time could be sharply distinguished.

Third, although I found the Boltzmannian idea of blurring as a source of our experience of the direction of time convincing, time's arrow should not

[2] Confusingly, Rovelli claims in this section that "if by 'time' we mean nothing more than happening, then everything is time. There is *only* that which exists in time." It is difficult to square such claim with another claim made at the beginning of the same chapter, which alludes to the "destruction of the notion of time in fundamental physics."

be conflated with its flow. The former cannot be located on molecular level, but the latter can. Thermal processes involve change. Warming up means more agitation of molecules and *vice versa* for cooling down. And change is a very good candidate for our experience of the passage of time. We do not get the unidirectionality of time from change alone, but it is feasible that a sense of passage is rooted in perceivable change (this is roughly Hume's argument). If we could see atomic motions or vibrations, this could give us the notion of flow without a direction.

Rovelli has written an intricate and thought-provoking book. It treats the convoluted problem of the nature of time from multiple perspectives. *The Order of Time* is truly a versatile book. I also very much appreciate the kind and courteous way of writing. Rovelli does not aggressively attack the views he disagrees with. For example, he is very critical of presentism, but leaves room for people to disagree with him, like Lee Smolin and George Ellis. In footnote 34 he notes:

> Both insist that there must exist a privileged time and a real present, even if these are not captured by current physics. Science is like affection: those who are dearest to us are those with whom we have the liveliest disagreements.

I wish such politeness would become the model for intellectual debates across the board.

I strongly suggest the book for anyone interested in the study of time. It is a beautiful inclusion of rigorous science, insightful philosophy and fine poetry. However, I do not think it achieves what I understood to be its main goal, to wit, a proper account of the world without time. To combine my three critical points, Rovelli fails to show that the world is essentially timeless, because: 1) there is temporal order, earlier and later, in special relativity; 2) assuming his event-metaphysics, change is fundamental, and as change is intimately connected to time, there is something temporal deep down; 3) change is consistent with non-directional passage of time.

ABSTRACTS (IN CROATIAN)

## QUINEOV JADNI TOM

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### SAŽETAK

Odjeljak 31 u Quineovoj knjizi Word and Object sadrži argument koji izaziva nedoumice: nastojeći pokazati da ako djelatnik, Tom, vjeruje u jednu istinu i jednu neistinu te posjeduje određenu logičku sposobnost, i ako su konteksti vjerovanja uvijek transparentni, onda Tom vjeruje u sve. U posljednjim desetljećima o ovom se argumentu raspravljalo bez konkluzivnih zaključaka. U ovom radu pojašnjavam situaciju i pokazujem da problem proizlazi iz Quinove loše prezentacije.

**Ključne riječi: k**onteksti vjerovanja; referencijalna transparentnost; neprozirnost; Quine; jasnost

## OTVORENOST GRANICA I IDEALNOST PRISTUPA: ANALIZA JOSEPH CARENSOVE KRITIKE KONVENCIONALNOG GLEDIŠTA NA IMIGRACIJE

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### SAŽETAK

Imaju li liberalne države moralnu dužnost primanja imigranata? Prema onome što se naziva “konvencionalnim stavom“, na ovo pitanje treba dati negativan odgovor. Jedan od najistaknutijih kritičara konvencionalnog stajališta je Joseph Carens. U proteklih 30 godina Carensovi su doprinosi raspravi o otvorenim granicama postepeno mijenjali izgled. To se objašnjava različitom “idealnošću” njegovih pristupa. Ponekad Carens pokušava shvatiti što bi države bile dužne učiniti u inače savršeno pravednim uvjetima (tj. on pokušava ostvariti ideal). Ponekad ga više zanima kako djelovati, s obzirom na (ne sasvim pravedan) svijet u kojem zapravo živimo. Po mom mišljenju, važnost rasprave o idealnoj/ne idealnoj teoriji za raspravu o otvorenim granicama (i općenitije o etici migracija) još nije dobila dovoljno pozornosti. Moj je cilj u ovom radu

detaljno prikazati kako Carensovi različiti pristupi utječu na kritiku konvencionalnog stajališta. U tu svrhu analiziram tri njegova rada: Aliens and Citizens: The Case for Open Borders (1987), Realistic and Idealistic Approaches to the Ethics of Migration (1996) i Who Should get in? The Ethics of Immigration Admissions (2003).

**Ključne riječi:** etika migracija; idealna/neidealna teorija; Joseph Carens; otvorene granice

## ANAKSAGORA, BESPRIJEKORNI INFINITIST: ODNOS IZMEĐU NJEGOVIH POUČAVANJA O MNOŠTVU I HETEROGENOSTI

MILOŠ ARSENIJEVIĆ
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SAŠA POPOVIĆ
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MILOŠ VULETIĆ
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### SAŽETAK

U analizi Anaksagorove fizike, s obzirom na odnos između njegovih poučavanja o mnoštvu i heterogenosti, pojavljuju se dva središnja pitanja: 1) Kako nam struktura svemira, razmatrajući je kao čisto mereotopološku, može pomoći objasniti da u prvom kozmičkom stadiju nema kvalitativne razlike unatoč činjenici da je cjelokupna kvalitativna heterogenost navodno već ondje prisutna? 2) Kako se heterogenost može manifestirati u drugoj fazi, koja je posljedica intervencije noûsa, ako prema fragmentu B 6 takva mogućnost zahtijeva postojanje "najmanjeg", dok prema općem principu navedenom u fragmentu B 3 ne postoji "najmanji", nego uvijek samo "manji"? Ovaj rad ukazuje na kompleksnost ova dva pitanja, ali bavi se samo prvim pitanjem. Odgovor slijedi iz toga da je Anaksagora bio besprijekorni infinitist kao niti jedan grčki fizičar: princip izotropije prostora koji se koristi u geometriji proširuje se na fiziku. Stoga su bilo koja dva dijela izvorne smjese slična jedan drugom, ne samo s obzirom na odnos manjeg i većeg, već i zbog toga što svaki sadrži sve što sadrži drugi. To zapravo znači da u fazi maksimalne moguće heterogenosti svaki dio bilo kojeg dijela sadrži beskonačno mnogo heterogenih dijelova bilo koje vrste. Dakle, niti mogu postojati homogeni dijelovi s obzirom na bilo kakvo kvalitativno

svojstvo, niti mogu količinski prevladavati dijelovi određene vrste koji bi učinili neko svojstvo manifestnim.

**Ključne riječi:** Anaksagora; infinitizam, mereo-topologija; gunk; kozmogonija; singularni kozmički događaj; fraktalni svemir; dvostruki svjetski poredak

## INVESTIRANJE I NAMJERE NA TRŽIŠTU FINANCIJA

CARL DAVID MILDENBERG
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## SAŽETAK

Smatra se da etični ulagači imaju dva glavna cilja. Negativni cilj izbjegavanja moralno sumnjivih ulaganja. Pozitivan cilj je promovirati određenu etičku vrijednost koju prihvaćaju ili neku normativno obojenu ideju koju imaju kada ulažu svoj novac u određeno poduzeće. U svjetlu ovih ciljeva, svrha ovog rada je dati objašnjenje kako na eksplicitan način možemo uključiti namjere investitora prilikom osmišljavanja etičkog ulaganja. Središnja ideja je da namjere investitora mogu djelovati i kao negativan i kao pozitivan kvalifikator za etičko ulaganje. Ako prihvatimo ovo objašnjenje, dobivamo zanimljive ishode u vezi s tim kako se etičko ulaganje može usporediti s etičkim davanjem, kako ga shvaćaju učinkoviti altruisti.

**Ključne riječi:** etičko ulaganje; namjere; negativni kvalifikator; pozitivni kvalifikator; etičko davanje

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MATIAS SLAVOV
The University of California, Los Angeles

### SAŽETAK

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