1 Introduction

1.1 Aims and Argument

This Element provides an overview of how some of the most philosophically influential thinkers of classical antiquity theorised about properties. It puts in relief the inquiries, problems and solutions the ancients were pursuing while engaged in dialogue with each other, within their philosophical *milieu*. Furthermore, it aims to make their different theories of properties known and accessible to today's philosophers, thus tracking the genealogy of some of our current metaphysical positions and debates on the topic.

We will examine whether the ancient Greek philosophers under consideration thought of properties as particulars or universals; and, furthermore, how they conceived of and accounted metaphysically for the occurence of properties in the world and their instantiation in objects, the qualification of objects by properties, the resemblance between objects with respect to their properties, and the oneness of complexes of properties as individual objects – an important and difficult question for ancient and modern philosophers alike.

Some of the interpretations put forward here will surprise the reader, because they throw off centre an entrenched scholarly approach concerning how the ancients thought about properties. It is a philosophical commonplace to identify Plato and Aristotle as the two main players in the ancient debate on properties, and to interpret both of them as positing universals, which are transcendent for the one and immanent for the other; that is, for Plato, existing independently from the concrete particular objects in the world (*ante res*), and for Aristotle, existing as dependent on such objects (*in rebus*). Here I will show that the two main players who shaped our modern metaphysics of properties, and ought to be given the central stage, are instead Anaxagoras, on the one hand (for whom properties are particular), and Aristotle, on the other (for whom properties are universal), with Plato innovating, experimenting and vacillating 'in-between', as it were, the positions of his predecessor and his successor.[1]

We need, I contend, to delve into Anaxagoras's, Plato's and Aristotle's views and study them comparatively (as it is rarely done; Mann (2000) is a notable exception) to understand them fully; their respective theories of properties were

[1] The reader might want to ask why these three and not other ancient Greek thinkers are included here. This Element does not aim to cover in full all that the ancients thought about properties, but rather to reconstruct the *fil rouge* that runs through the main theories of properties in antiquity which have shaped the development of today's metaphysics of properties, and for this Anaxagoras, Plato and Aristotle are the three key figures.

developed by each trying to solve philosophical problems that were left open by their precedecessors, or taking forward solutions left undeveloped.[2]

1.2 Qualification and Similarity

A common way at least in modern philosophy to introduce the question of what properties are is *via* the problem of qualitative similarity. There are innumerable instances of qualitative similarity in the world: my table and my chair are each and both brown; we are all human beings; these two triangles have the same shape; and so on. Philosophers treat qualitative similarity as a given fact; D. M. Armstrong calls it a 'Moorean fact': '[T]he fact of sameness of type is a Moorean fact: one of the many facts which even philosophers should not deny, whatever philosophical account or analysis they give of such facts. Any comprehensive philosophy must try to give some account of Moorean facts. They constitute the compulsory questions in the [= any] philosophical examination paper' (1980: 442).

A. S. Maurin explicates Armstrong's words, and the significance for philosophers of acknowledging something as a Moorean fact, thus: 'Facts that we on pain of irrationality understand, cannot doubt, and must accept as true – in other words, Moorean facts – are facts that must be given what Moore calls 'an analysis' and what later philosophers have called 'an account' or 'an explanation'. And what accounts for or (metaphysically) explains these facts is neither trivial nor incontrovertible' (2022:7).

Suppose that we all agree that qualitative similarity is a Moorean fact, and we try to explain it. What conceptual tools do we need to provide such an explanation? Let us start by asking ourselves this (challenging) question: can we conceptualise two objects that are qualitatively similar to one another (e.g. they are both round), but share nothing in common in their respective constitutions? If we cannot, that is if we need to posit that they share something in common in their respective constitutions, what will this be, and how will it feature in our ontology? Alternatively, we can treat qualitative similarity as a brute fact, with no additional item in the ontology underpinning it; but appealing to brute facts is never an uncontroversial choice, and rarely a favourite one among philosophers.

D. M. Armstrong and D. Lewis are modern representatives of opposing ways of answering the question of what accounts for qualitive similarity. They agree the question demands an answer; but Lewis argues that

[2] This Element includes material drawn from other publications of mine, as indicated case by case; that material is here embedded in a new overall argument and in most cases developed further/in new directions with respect to the previously published version.

> [t]here are three ways to give an account. (1) 'I deny it [i.e. qualitative similarity]' – this earns a failing mark [in the proverbial philosophical examination paper mentioned by Armstrong] if the fact is really Moorean. (2) 'I analyse it thus' – this is Armstrong's response to the facts of apparent sameness of type. Or (3) 'I accept it as primitive'. Not every account is an analysis! A system that takes certain Moorean facts as primitive and unanalyzed cannot be accused of failing to make a place for them. It neither shirks the compulsory question nor answers it by denial. It does give an account. (1983: 352)

Armstrong doesn't think so: for him, saying 'It's ultimate' or 'It's primitive' or 'It's brute' doesn't count as giving an account or explanation. If qualitative similarity is to be explained, something has to be added to the ontology that resembling objects share.

Enter properties! As Maurin notes, 'That properties can fill this [explanatory] need is accepted by most' today (2022: 6), and, I add, by the ancient Greeks, too. While the reader is encouraged to think of where they stand (and why) on this matter, the ancient Greek philosophers would have sided with Armstrong, both in thinking that qualitative similarity is (what we call) a Moorean fact, and in being unsatisfied with the idea that qualitative similarity is metaphysically primitive.[3]

In seeking an account of resemblance by way of this approach, the ancients – speaking broadly – proceed with an implicit acceptance of what has become known as the *Principle of Sufficient Reason*, namely that everything has a reason or a cause. An interesting, controversial and thought-provoking discussion of the principle and its ancient 'roots' is in Della Rocca (2020). In their theories of properties and property qualification, the ancients all aim to identify the *reason* that is *sufficient* to explain why something comes to be qualified in a certain way, and therefore also qualitatively similar to other things, by means of what I call the *Contagion Principle*. According to this principle, *x* becomes (or, is) *f* because *y*, which is already *f*, transmits (or, has transmitted) *f-ness* to *x*, which is (or was) not already *f*. This basic and, I contend, intuitive principle underpins the different models that individual ancient thinkers propose to account for property possession and similarity, as I will show in the sections to follow.

[3] Anaxagoras will ultimately not be able to do better than assume that qualification and similarity are brute facts in the case of his fundamental entities, the so-called Opposites; Plato, too, will have to posit that his Forms are primitively *f*, to block the *Third Man Argument*; and Aristotle does the same with his forms in his *Essence Regress*, as we will see in the relevant sections of this Element. The fact that these philosophers conclude their quest for explanation having accepted some primitives, does not however undermine the fact that they were genuinely engaged in seeking a primitives-free explanation.

Developing a suitable theory of property qualification that accounts for qualitative similarity became progressively one of greatest metaphysical challenges for the ancients. Here I will present how the challenge arose in Anaxagoras's account of the natural world; how much it troubled Plato; and how Aristotle made significant progress in addressing it. These three thinkers all addressed the question through pioneering ideas, which their successors have continued to explore to the present day.

1.3 The *One over Many Principle*

How do properties fulfil their explanatory role for qualitative similarity? It is generally assumed that they do so by what has become known as the *One over Many Principle*, that is: one and the same property is shared by many resembling objects. This principle is widely accepted in both ancient and modern metaphysics. Maurin reports a mainstream way of thinking of the issue:

> Many of those in favour of the existence of properties – including Plato, but see also (and perhaps especially) Armstrong (1978) – have then tied this problem to an argument: *the argument from the One over Many*. Here the idea has been that the sort of 'sameness' to which the fact of the One over Many […] draws our attention is most straightforwardly made sense of by literally accepting that there is one thing – the universal – that distinct objects share. (2022: 7, italics in the original)

Maurin adds an insightful observation, namely that 'one might get the impression that given this fact, (universal-)realism is inevitable. . . . Even if the fact of the One over Many – in appealing to 'sameness' and 'oneness' – on its surface seems especially suited to universal realism, that fact is better understood as neutral when it comes to which solution we ought to prefer'. (2022: 8)

I endorse the observation and I will show that, with respect to ancient metaphysics, the claim that qualitative similarity is explained through the *One over Many Principle* is misleading in its generality, because Anaxagoras, Plato and Aristotle have significantly different ways of implementing the principle. The issue of what is *One over Many* – that is, common among resembling objects – intersects with the issue of how the One is 'in' the Many.

1.4 How Is the One 'in' the Many?

If qualitative similarity among objects is explained by the presence of one and the same property 'in' the similar objects, how are properties 'in' the world? Two alternatives are in play in ancient metaphysics: the first is Anaxagoras's and the second Aristotle's. According to Anaxagoras, as we will see in Section 2, properties have their own spatial location; they don't depend on

objects for it.[4] If however properties have a spatial location of their own, as particulars do, can properties be multiply located at once, so that one and the same property is in many objects? We will see that Anaxagoras addresses this problem by thinking of properties as mereologically distributed: a property (as a whole) is multilocated on account of its parts having different locations. Thus, resembling objects, for Anaxagoras, are such because they have within their respective constitutions parts of one and the same property.[5]

It is important to note here that difficulties emerge from Anaxagoras's account. First, the idea presupposed by this view, that properties have parts, is challenging and far from intuitive. *Ditto* for the idea that being qualified, for an object, is possessing parts of the property. We are familiar with the thought that material objects have parts, but Anaxagoras posits that properties have parts, and such parts are individuated independently of the objects the properties qualify. Second, the view that one and the same property is in many objects on account of the distribution of its parts among the objects raises the following problem: dividing up a property into parts, which are in objects somehow as functional 'proxies' of the property itself, appears to undermine the assumption that the property is one; for the property's parts serving as its proxies multiply the property, by qualifying the objects as if the property itself were in each of them. We will examine the metaphysical problems of attributing such a role and function to parts of properties, as well as investigate how each property part is individuated as that part. We will additionally consider whether postulating that one property is in the many by the distribution of its parts can serve as a sound solution to the problem of qualitative similarity. More generally, we will examine Anaxagoras's mereology of properties in Section 2 ; and its development, critical discussion and finally abandonment by Plato in Section 3.

Aristotle develops a very different metaphysics of properties from that of his predecessors, with an alternative account of qualification and qualitative similarity also, as we will see in Section 4. His most significative departure from Anaxagoras (and Plato) is to posit that properties are universals, which are 'in' the world as 'instantiated' in objects. The crux is how to understand what it is for a universal to be instantiated, and even multiply instantiated, that is: recurring whole in multiple locations at once. Explaining what being instantiated in

[4] Anaxagoras does not draw a sharp distinction in his system between properties and things (even if properties are more fundamental than things because properties make things up); Vlastos for example refers to Anaxagoras's properties with the expression 'substantial "quality-things"' (1950: 42).

[5] We will see in what follows that for Anaxagoras it is not the presence of a mere part of a property F that qualifies an object as a being *f*, but rather the presence of a preponderance of parts of the property F in the object that achieves this metaphysical result.

concrete particulars amounts to was a major challenge for Aristotle, and has continued to be a challenge for all philosophers who endorse a metaphysics of properties that is broadly Aristotelian. Aristotle's position, I contend, has not yet been studied adequately in the relevant literature, despite such literature being vast. According to the mainstream view, in the scholarly literature and also in ongoing discussions of Aristotle's theory in current metaphysics, instantiation is a single metaphysical phenomenon (while, I argue, there are *two* distinct ones that are confusedly referred to with the same term); and further, a universal is instantiated by combining hylomorphically with matter. This latter interpretation of Aristotle's position makes it generally unappealing and objectionable. On this account, many think that Aristotle's theory of recurrent universals and their instantiation in objects isn't philosophically sound. I will argue in Section 4 that it is sound, on a certain interpretation of Aristotle's key tenets.

The overall argument I will develop in this Element, across Sections 2, 3 and 4, is that there are two main positions in ancient metaphysics with respect to the explanation of qualification and of qualitative similarity among objects – I call them the *Distributive Model* and the *Recurrence Model* respectively. Anaxagoras and Plato (at least in most of his work, until his fresh start in the *Timaeus*) thought that properties are (respectively, physical or transcendent) particulars, which are distributed to the many objects in the world through their parts; for example, the pot is hot because it has part(s) of the property Hot in it. Aristotle thought instead that properties are abstract individual entities which recur in the many objects in the world; the pot is hot because the property Hot recurs whole in it (and in all other objects that are hot). I will argue here that only Aristotle's *Recurrence Model* successfully explains similarity. However, even if the *Distributive Model* is not able to deliver a philosophically sound account of qualitative similarity, both accounts were historically very influential, and for that time, tremendously innovative. Our history of the development of the metaphysics of properties, as we think of it today, would not be accurate or complete if we did not try to understand, not only where its pioneers succeeded, but also where they failed in charting what was then all new conceptual space.

Furthermore, on either the *Distributive* or the *Recurrence Model*, there is a problem that cannot be investigated in full in the present work, which I flag here for its importance for both the history of philosophy and for philosophy in general. Although Anaxagoras, Plato and Aristotle were adamant that it is not properties that change when 'in' the object (e.g. when a red rose changes in colour, it is not the redness in the rose that changes, but only the rose), Plato and especially Aristotle were aware that something happens to a property when it is 'in' an object and qualifies it. However, what it is that happens to the property

still remains for us to conceptualise; neither we, nor the ancients have a term to refer to it. Let us say that when 'in' an object the property φs, using the verb 'to φ' as a placeholder. It is important that we endevour to understand what 'to φ' stands for; else we are pulled into theories of substance such as the Bundle Theory (whose difficulties are not within my remit to discuss here).

1.5 The Universality of Properties

The discussion of how One property is 'in' the Many, by distribution or by recurrence, sheds light on a related and much debated issue, namely whether the ancients conceived of properties as universals. While it is a commonplace, as already mentioned, to think that both Plato and Aristotle posited universal properties (only that for the former they are *ante res* and for the latter *in rebus*), this is not an accurate understanding of their positions. Plato explores alternative possibilities concerning this issue; but I argue that his position is that Forms are particular (Marmodoro 2021), while for example G. Fine (1993) and Harte (2008), among others, argue that they are universal, with many scholars simply assuming the latter view by default (e.g. Silverman, and Orilia & Paolini Paoletti in their respective *Stanford Encyclopedia of Philosophy* entries).[6] My view is that Plato's Forms are particulars, each of which is the unique *one* property type, which *many* similar objects have in common, and which explains their similarity; but each Form is also universal, in the specific sense that it is distributed in parts across the many similar objects (as Anaxagoras's Opposites are, particular and universal in the same way as Plato's Forms are, only that Anaxagoras's Opposites are physical, and not transcendent entities as Plato's property types are).

With respect to the status of Aristotle's forms, it is uncontroversial that they are universal, each recurring whole in multiple objects; but how to understand their universality is a debated issue. I will show that the way to understand the universality of Aristotle's forms is by abstraction from the objects they qualify; that is, if the chair and the table are brown, we can abstract the universal 'brownness' from each of the two objects in which it recurs, and thereby individuate it. This is how Aristotle conceives of the recurrence of properties: a property recurs because it can be abstracted from this or the other object.

[6] Silverman, Allan, 'Plato's Middle Period Metaphysics and Epistemology', *The Stanford Encyclopedia of Philosophy* (Fall 2022 Edition), Edward N. Zalta & Uri Nodelman (eds.), https://plato.stanford.edu/archives/fall2022/entries/plato-metaphysics/; Orilia, Francesco and Paolini Paoletti, Michele, 'Properties', *The Stanford Encyclopedia of Philosophy* (Spring 2022 Edition), Edward N. Zalta (ed.), https://plato.stanford.edu/archives/spr2022/entries/properties/.

1.6 Methodological Issues

This Element will introduce the reader to core ideas concerning the metaphysics of properties, studied from the complementary perspectives of scholars working on ancient philosophy as well as that of today's philosophers. The underlying methodological assumption is that we can understand what the ancients thought only from our own standpoint today.[7] To build conceptual bridges between them and us, for the sake of philosophical understanding, it is necessary to use modern terminology (such as 'qualification' or 'instantiation'). Even more importantly, it is necessary to acknowledge that there are (still) unexplored metaphysical insights to interpret in the ancient texts, as we will see in what follows, and much 'filling in' to be done to bring out what the ancients thought, but did not say in full.[8] This 'filling in' needs be done with due sensitivity to the historical and philosophical context in each case. But we need to recognise that we always 'fill in' when interpreting the ancients; so 'filling in' should become explicit and discussed as a philosophical contribution by the interpreter, aiming to show what the ancients thought or what would make their thought intelligible to us.

2 Anaxagoras's Opposites

Anaxagoras is an early Greek thinker whose significance is hard to overestimate in relation to the development of metaphysics, as we know it today. His ontology is built out of properties, the physical Opposites (such as the Hot, Cold, Wet, Dry, etc.), around which all Ionian cosmologies pivot at his time.[9] Anaxagoras, however, has his own original way of conceiving of the Opposites, as governed by mathematical and metaphysical principles that he pioneers. His principles are preserved to us in a handful of fragments, and yet, they have been at the centre of much controversy since antiquity and have had profound impact on Anaxagoras's philosophical successors, especially on Plato (as we will see in Section 3).

[7] I have articulated and defended with arguments this methodological approach in Marmodoro (2022b).

[8] I will illustrate, rather than define, what I mean 'filling in' by using some of my own interpretative work; for example, when Anaxagoras talks of the *preponderance of infinitesimals* in things, can we even conceptualise this thought, and if we can, what conception of infinity do we need to 'fill in'? Furthermore, I attribute an ontology of *qualitative gunk* to Anaxagoras; am I also thereby attributing *gunky spacetime* to him as well? Where does the 'attribution' end? These are examples of the type of interpretative issues I encountered in my work on Anaxagoras (in Marmodoro 2017).

[9] I capitalise Opposites when talking specifically about how Anaxagoras conceives of them, to indicate that his is not an ordinary conception.

2.1 Properties as Physical Particulars

In the extant fragments of Anaxagoras's work we find an indicative, even if not exhaustive, list of what properties there are in his world. According to fragment B4b, at a primordial stage in the history of the universe there exist the Opposites (e.g. the Wet and the Dry, the Hot and the Cold, the Bright and the Dark), stuffs (e.g. earth) and the so-called seeds.[10] All these items exist in a state of extreme mixture (a state that elsewhere, for example B1, B6, B11 and B12, Anaxagoras describes in terms of 'everything in everything'; to this we will return in Section 2.4). In B4b we read that,

> [b]efore there was separation off, because all things were together, there was not even any colour evident; for the mixture of all things prevented it, of the wet and the dry and of the hot and the cold and of the bright and the dark, and there was much earth present and seeds unlimited in number, in no way similar to one another. Since these things are so, it is right to think that all things were present in the whole.[11]

There is general agreement among scholars that Anaxagoras's Opposites (the Hot, the Cold, the Wet, the Dry, as representative examples) are metaphysically irreducible in his system; they don't derive from anything else more primitive than themselves. There is however more than the Opposites in Anaxagoras's world: as we just saw, earth is mentioned in B4b. Earth is not irreducible: in B15 we read that,

> [t]the dense and the wet and the cold and the dark come together here, where <the> earth is now; but the rare and the hot and the dry <and the bright> moved out to the far reaches of aether.

Taking earth as an example of stuff, and assuming that the same will apply *mutatis mutandis* to all kinds of stuffs, B15 indicates that while the Opposites are irreducible for Anaxagoras, stuffs (and hence objects made out of stuffs) are derivative from them.[12] How so? By aggregation and dissociation; we know from B4b (and from other fragments) that the Opposites can be moved spatially: they could be separated off from the primordial state of extreme mixture.

[10] I have discussed Anaxagoras's ontology and the fundamentality relations among what there is in it, in Marmodoro (2015, and 2017, Section 1.5). I don't reproduce here all my arguments.

[11] The quotations and translations of Anaxagoras's texts here provided, unless otherwise specified, are from Curd (2007).

[12] While there is general agreement on the fundamentality of the Opposites, scholars have taken different views on the issue of what else is fundamental in Anaxagoras's system. Curd (2007: 153ff) offers a helpful summary of the positions in the debate and of the arguments from all sides.

Nous, another fundamental entity in Anaxagoras's system, serves as the generator of spatial movement in the universe, by giving rise to a cosmic vortex that reshuffles 'things' (I use the term generically here); in B13 we read that

> [w]hen *Nous* began to move [things], there was separation off from the multitude that was being moved, and whatever *Nous* moved, all this was dissociated; and as things were being moved and dissociated, the revolution made them dissociate much more.

The shuffling around of the Opposites – their aggregration and separation – by means of a cosmic vortex started by *nous* gives rise to the ordinary objects of our experience, which furnish Anaxagoras's world at a successive, less primordial stage (as we know for example from B4a, which mentions the existence of human beings, other animals, plants, artefacts, households, cities and heavenly bodies).[13]

There is clear textual evidence that Anaxagoras thinks of the Opposites as subject to physical causation of different kinds. For instance, as we saw, they are impacted upon and set in movement by the cosmic vortex generated by *nous*, which can make them (or more precisely their parts) change spatial location. That the Opposites can be impacted upon by the vortex indicates that they are neither transcendent properties (like Plato's Forms) nor abstract properties (like Aristotle's forms). Anaxagoras's Opposites are physical particular properties; they exist in nature and are located in space. They are in the world 'directly', not by inhering in matter or qualifying an object. It might perhaps be a (philosophical) commonsense expectation that Anaxagoras would think of the Opposites as qualifying matter; but I submit that this is not the case. There are numerous reasons that make it plausible to hold that Anaxagoras's ontology does not include matter, as a substratum underlying the properties. First, an argument *ex silentio*: matter is never mentioned in the extant fragments.[14] Second, in a world where stuffs are metaphysically

[13] In the inventory of what there is in Anaxagoras's world there are seeds too, as we saw in B4b. What are they? The answer is not uncontroversial among scholars; but it does not bear significantly on the question of what metaphysics of properties Anaxagoras holds. For present purposes, we can take the example provided in B10, animal seed, as an instance of what Anaxagoras means when talking of seeds in general; from B10 we learn that the seeds are made out of stuffs, such as nail, hair, bone and so on. But stuffs are made out of Opposites. Thus, neither stuffs nor seeds are fundamental, for they are composed from Opposites and thus derivatives from them. Why does Anaxagoras include seeds in his ontology and for what purpose? Again, scholars disagree, but the question does not affect how we understand his metaphysics of properties. I contend that seeds are for Anaxagoras physical structures, around which the Opposites can cluster according to certain asymmetric patterns that explain the asymmetry of certain entities derivative from the Opposites (e.g. an organism, in contrast to a lump of earth).

[14] This cannot of course be a decisive argument by itself, for Anaxagoras's work has not been preserved in its entirety.