Parts of Universals: An Essay on Aristotle's *Categories*

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I have wanted to get my Ph.D. since my mother first told me, sometime during elementary school, that a Ph.D. is the best thing you can do in school. I liked school, and I wanted to be the best. It never occurred to me to do anything else with my life.

It also never occurred to me how difficult it would be. School came easily then, but graduate school, as it turns out, is somewhat more challenging than elementary school. I never would have accomplished my dream had it not been for the incredible assistance and support of a huge number of people. It gives me great pleasure to acknowledge these debts here.

First, I have been fortunate to learn from a truly inspiring group of faculty, both as an undergraduate and as a graduate student. Jason Kawall, my advisor at Colgate University, was the first person to encourage me to major in philosophy. Nearly a decade after that conversation he attended my first presentation at the American Philosophical Association. He remains a good friend, and I am extraordinarily grateful to him for his kindness, his insight, and the occasional beer.

While at Colgate, I was also fortunate to study with David Dudrick, Maudemarie Clark, Jerry Balmuth, Ed Witherspoon, and David McCabe. These were exacting scholars and thoughtful teachers who pushed me to see connections between ideas that I hadn't seen previously, who criticized me in ways I had never been criticized, and who helped me in ways that changed my life. Paul Audi, who was a Visiting Assistant Professor during my junior year, helped me through an existential crisis of sorts, and it is always a pleasure to run into him at conferences, especially when he decides to play the Super Mario Bros. theme song on a grand piano.

My first attempt to get into a Ph.D. program, straight out of Colgate, was a failure, but I did succeed in gaining admission to the Master's program at the University of Wisconsin-Milwaukee. Looking back, this was a blessing in disguise, however bruised my ego may have been. At UW-Milwaukee, I had the distinct pleasure to learn from Bob Schwartz, Michael Liston, Bill Bristow, Fabrizio Mondadori, Richard Tierney, and Aaron Schiller. I didn't always see eye to eye with Bob about philosophy, but he agreed to advise my thesis anyway. I recall, with fondness now, the countless hours spent on my meta-logic final for Michael, including one exhausting evening spent pulling an all-nighter in the seminar room with a large cheese pizza, two liters of soda, and a blackboard littered with attempts at proofs. Richard is the one who introduced me to the mysteries of Aristotle's metaphysics. I have no idea what he'd make of my dissertation, but I hope that it would go over better than my paper on *Physics* I.7. I wish I could go back in time to take Bill's seminar on Kant's first *Critique* and Fabrizio's seminar on the problem of individuation in the Middle Ages. Those were fantastic courses, but I suspect I got only a fraction out of them what I could have gotten out of them, and that what I missed was my fault. Now that I know a little something about how to do the history of philosophy, I suspect that these would be among my favorite classes of all time. Finally, I never fell in love with Sellars, despite Aaron's best efforts, but I did enjoy all that time playing Beatles Rock Band.

My second attempt to get into a Ph.D. program was more successful, and I was delighted to gain admission to the University of Virginia. Much to Bob's chagrin, I came here initially to study contemporary metaphysics with Trenton Merricks, but my first year seminar on Plato's *Theaetetus* with Dan Devereux changed the entire trajectory of my career. It took me a couple of years to decide to switch to ancient philosophy as my research focus, but metaphysics has remained a central part of my research program. Trenton has always

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This dissertation does not look much like the dissertation I planned on writing when I moved to Charlottesville seven years ago. It doesn't even look much like the dissertation I planned on writing when I decided to specialize in ancient philosophy. It was Dan who suggested I write about Aristotle's *Categories*. When I protested that I had no idea how to write two hundred pages about such a short work, he looked at me quizzically and demanded to know who had told me I had to write two hundred pages. A few years later, and I've written a dissertation well over two hundred pages on Aristotle's *Categories*. I'm not sure it's the dissertation Dan had in mind when he suggested the topic, but I hope it's not too far off the mark. I didn't really know how to do the history of philosophy when I first decided to work with Dan, and some readers of this dissertation will conclude that I still don't know how to do the history of philosophy. But Dan has always supported my idiosyncratic approach to these texts. He has always supported my continuing interests in metaphysics, and he has always been an extraordinarily generous reader of my work. This dissertation would not exist without his encouragement and mentorship, and I am exceedingly grateful for his kindness and for countless meetings at Michael's Bistro. I could not have asked for a better dissertation advisor.

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responding to criticisms they each raised during my defense of my dissertation proposal, but I doubt either of them are convinced. I hope at least that my most recent efforts are marginally more persuasive than my original ones, and I thank them both for helping me as much as they have.

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It is often said that in graduate school you learn as much from your peers as you do from your professors. I am happy to report that this is confirmed by my own experience. At UW-Milwaukee, I was blessed to be part of a cohort that included Justin D'Ambrosio, Justin Bernstein, Dan Rosenberg, and Meredith McFadden. The first time we all got together for drinks, I think we argued for hours about anything and everything. I remember thinking I had finally found my people. I am grateful to them all for too many nights of shufflepuck or bumper pool, even though Dan stole my job as a karaoke host. Special thanks to Meredith for sharing my love of musicals and introducing me to The West Wing and Doctor Who.

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More than by anyone else, however, my philosophical career has been shaped by my cohort and colleagues at the University of Virginia. My cohort – Matt Duncan, Ralph DiFranco, and Adam Tiller – are all great philosophers, and some of my favorite people. I will never forget the first-year party wagon to Blandy Farm, buffalo chicken subs at Club 3, that summer playing Wii in the library, listening to DeBarge on the way home after a long night of writing, Super Mario 64 days, or entirely too many hours hanging out in the grad lounge talking philosophy. As the last one left, I can say that it was truly an honor to call you my colleagues and friends.

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I should also thank some of the graduate students at Stanford University where, three years ago, I was given the opportunity to spend a semester. I fell in love with both

Stanford and the Bay Area, and I often wish I could go back. The graduate student community there made me feel at home immediately, and I learned a great deal from them. Thanks to Katy Meadows, Huw Duffy, John Turman, Steve Woodworth, Grace Paterson, Nick DiBella, Jared Parmer, Jonathan Ettel, Nathan Hauthaler, Kelvin Yang, Shane Steinert-Threlkeld, Adam Simon, and fellow UW-Milwaukee alumni Meica Magnani and J.T. Chipman, for providing a fantastic environment to live and learn. Thanks as well to Keren Wilson, who was visiting Stanford from Ohio State at the same time, and whose kindness and patient approach to Aristotle are both things I admire very much. Special thanks go to Katy and Huw, who have been regular sources of support both philosophical and personal over the intervening three years, and who very generously let me crash with them when I was lucky enough to return to the Bay Area to give a paper at the APA Pacific. Thanks as well to the faculty at Stanford, especially Alan Code, for being so generous with a visiting student. I learned a great deal.

Graduate school has a way of taking over your life, but I have been fortunate at various points to meet folks outside the world of philosophy who have, in some ways, been just as important to me as my colleagues and teachers. In Milwaukee, I always enjoyed spending time with Crystal Plahuta, the raddest ska-loving philosopher of all time, Jess Popilek, my first bartender friend who introduced me to Robot Chicken, and Samm Schremp, one of my first and favorite students. I love seeing what you all are up to, and am glad we're all still in touch. Special thanks to Crystal for trusting me enough to sell me her beloved copy of David Lewis's *Parts of Classes*, even though I wasn't the highest bidder in her silent auction, which was the inspiration for the title of my dissertation.

Life in Charlottesville outside of the academy has been more of a struggle. The last three years in particular were not a lot of fun. There were times when I seriously doubted my

ability to finish this dissertation. Because of goings on in my personal life, my heart wasn't in it. My heart wasn't in anything. The fact that I was able to finish is a testament to the support I had from a few very good friends. To Lee Kussman, Kati Runkle, Kirsten White, and Arianne LeMaster: thank you, from the bottom of my heart. You all put up with me at my absolute worst, and I'll never be able to sufficiently repay that debt. If there's ever anything I can do to repay some of it, I hope you never hesitate to ask.

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Last, but not in any way least, I must thank my parents. Words fail me at this point. This dissertation would not have been written without them. It would not have been worth writing without them. Their unfailing support is the greatest gift I have ever received in my life, and I was so lucky to have them present at my dissertation defense. I hope I've made them proud. It is with an incredible amount of love that I dedicate this dissertation to them both.

INTRODUCTION

Aristotle's *Categories* is a strange work. Unlike most of his works, it begins without preamble, opening abruptly with a discussion of the linguistic relations of homonymy, synonymy, and paronymy (1a1-15).[1] Nor does it seem particularly unified. It is hard to see what this initial discussion has to do with the second chapter's fourfold division of reality based on two metaphysical predication relations, being SAID OF a subject and being PRESENT IN a subject (1a20-1b9).[2] Subsequent chapters careen wildly from topic to topic: Chapter 4 presents the ten categories of being, Chapters 5-9 explore some but not all of these categories, and Chapters 10-15 – the so-called *Postpraedicamenta* – explore a heterogeneous collection of topics whose relevance to the preceding nine chapters is opaque at best. This makes it difficult to know what the *Categories* is supposed to be about or what role it is supposed to play in Aristotle's corpus. Thus, Stephen Menn says that "[i]t is not obvious either what subject the book is supposed to be treating or what discipline it is supposed to belong to" (Menn 1995: 311-312).[3]

Much of the recent secondary literature on the *Categories*, however, treats it as in the first instance a work of metaphysics. Many commentators focus on the metaphysical predication relations introduced in *Categories* 2, the ten categories of being presented in *Categories* 4, and, especially, the detailed discussion of substance in *Categories* 5, treating these as the centerpiece of the treatise. If these are indeed the centerpiece of the treatise, then it

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1 All references to Aristotle's *Categories* and *De Interpretatione* will be from J.L. Ackrill's translation in his (1963).

2 For the claim that Aristotle's two predication relations are *metaphysical* rather than *linguistic*, see, e.g., Ackrill (1963: 75), Moravcsik (1967), Michael Loux (1991: 18), Russell Dancy (1975: 340), and Frank Lewis (1991: 54). I borrow the use of small capitalization to pick out Aristotle's two predication relations from Casey Perin (2007).

3 Compare Michael Frede: "The presence of the *Postpraedicamenta* and the further fact that there is a clear gap in the text between the first part of the treatise and the *Postpraedicamenta*, which may be quite extensive, do make it almost impossible to say with any confidence what the treatise originally was meant to be about" (Frede 1981/1987: 31).

seems plausible to hold that the *Categories* is in some recognizable sense a work of metaphysics.

This approach can be challenged in two ways. The first is to point out that it presupposes that Aristotle's subject matter is *things* rather than *words*. That is, it presupposes that the aforementioned predication relations and categories of being are concerned with things rather than words, that the predication relations are *metaphysical* rather than *linguistic*, and that the categories categorize *entities* rather than *terms*. A long and distinguished history of interpretation, however, holds that these presuppositions are mistaken, and that Aristotle is primarily interested in words rather than things (Frede 1981/1987: 30).

Some passages seem to support this alternative. In the first chapter, for example, Aristotle says that "of things that are said some involve combination (συμπλοκὴν) while others are said without combination (ἄνευ συμπλοκῆς)" (1a16-17), and he includes both the species Man and the species Ox as among the "things that are said" (τὰ λεγόμενα). Likewise, in *Categories* 4, Aristotle says that "of things said without combination, each signifies (σημαίνει) either substance or quantity or qualification or a relative or where or when or being-in-a-position or having or doing or being-affected" (1b25-27). Here Aristotle appears to be saying that what the categories *categorize* – what the categories are categories *of* – are *predicates*.

Both passages seem to imply that the *Categories* is a treatise about words. Both passages seem to focus on τὰ λεγόμενα[4], treating not only the species Man and Ox, but the

[4] Peter van Inwagen has recently defended the view that properties are *unsaturated assertibles* (van Inwagen 2004/2014: 178). An assertible is something like a proposition; it is something that can be *said*, and does not need completion by anything else that can be said. An unsaturated assertible, by contrast, is something that can be said, but as it stands is incomplete. Thus, while 'Chicago has a population of over 2 million people" is an assertible, "has a population of over 2 million people" is an unsaturated assertible. The view that properties are unsaturated assertibles – or, as van Inwagen sometimes says, "things that can be said of things" – seems similar in important respects to the idea that universals are τὰ λεγόμενα. Both views are inconsistent, for

categories themselves, as τὰ λεγόμενα, when such entities – as we shall see shortly – are universals. Moreover, the passage from chapter 4, which sets the agenda for much of what follows, suggests that the ensuing discussion will be about predicates, that is, words.

This view about the subject matter of the *Categories* is also supported by a certain ancient idea about the place of the treatise in Aristotle's corpus:

> [T]he present order of the books of the *Organon*, however, rests on the view that the *Categories* treats of categorematic terms that are the building-blocks for propositions, which the *De Interpretatione* deals with, and these, in turn, are the material for arguments, which are discussed in the *Analytics*, but also in the *Topics* and *Sophistici Elenchi* (Frede 1983/1987: 20).

The idea is that the works of the *Organon* form a series of logical works beginning with the basic items logic is concerned with, namely, terms. Progressively more complex items are then built up from terms: terms can be combined to produce propositions, and propositions can be combined to produce arguments. Successive works therefore treat of successively more complicated items. The idea that the *Categories* was the first work to be read in the *Organon*, and that it was to be followed by the *De Interpretatione*, rose to prominence in the second century A.D. (ibid.: 18), and goes hand in hand with the idea that the *Categories* treats of terms or words rather than things.[5]

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example, with various well-known claims made about properties both in antiquity and today. For instance, as van Inwagen points out, if properties are unsaturated assertibles, it makes no sense to say that properties are *wholly present* in each of their instances (ibid.). Likewise, if properties are τα λεγόμενα, then it probably makes no sense to distinguish, as Plato does in the *Phaedo*, between Tallness itself and the Tallness-in-Simmias (102cff.). For that distinction presupposes that Tallness of any sort could be *in* an object, and τὰ λεγόμενα, like van Inwagen's unsaturated assertibles, cannot be *in* objects. I think it is important to see how radical such a view of properties is. Van Inwagen's paper is useful in this connection.

[5] Frede observes that this view about the role of the *Categories* in Aristotle's corpus went hand in hand with a view about the proper title of the treatise itself. The name '*Categories*' itself suggests that the work treats of categorematic (as opposed to syncategorematic) terms (Frede 1981/1987: 29). It is therefore surprising to find that this title is the one that comes down to us from antiquity, and that many contemporary scholars think the *Categories* is to be followed by *De Interpretatione*, given that these same scholars tend to view the work as a

While this reading of the *Categories* has a long and distinguished history, there are good reasons why it has fallen out of favor. Perhaps the most obvious is the aforementioned passage from *De Interpretatione* 7 wherein Aristotle claims that "of actual things (τῶν πραγμάτων) some are universals (τὰ καθὸλου), others particular (τὰ καθ᾽ἕκαστον)" (17a38). Universals are *things* (τὰ πράγματα) in the *Categories* ontology. Were the *Categories* about words, we might have expected Aristotle to say that among actual things there are only particulars and that, to the extent that there are universals at all, these are only *signs*. But Aristotle does not hint at any ontological gulf between universals and particulars in this passage. Both are included among τὰ πράγματα. Despite their differences, then, both universals and particulars are members of the ontology of *De Interpretatione*. Absent some reason to suspect an important difference between the ontology of that work and the *Categories,* I submit that universals ought also to be included in the ontology of the latter. That means that we cannot infer from the fact that universals are τὰ λεγόμενα that they are not also things to be included in the ontology, which in turn means we cannot infer from the fact that universals are τὰ λεγόμενα that the *Categories* is about words rather than things.

Further evidence in support of the idea that the *Categories* is indeed about things comes from the fact that immediately after including the species Man as among the τὰ λεγόμενα, Aristotle says that "Of things there are (Τῶν ὄντων) some are *said of* (λέγεται) a subject but are not *in* any subject. For example, man is said of a subject, the individual man, but is not in any subject" (1a20-22). Here we find Aristotle telling us that the species Man is among the things there are while at the same time affirming that Man is SAID OF an underlying subject. One way to reconcile these passages is to insist that τὰ λεγόμενα are a

work of metaphysics. This latter view presumes that the work is about things rather than words, a view that fits ill with the title and role the *Categories* is given today.

subset of the things there are, and that some of the things there are can also be SAID OF other things. Another reconciliation strategy holds that in *Categories* 1 Aristotle is discussing the *word* 'man' whereas in *Categories* 2 he is discussing the *thing* Man.

I prefer the second strategy. It's clear that in the second chapter of the *Categories* Aristotle is talking about things, not words. He clearly means to *distinguish* τὰ λεγόμενα from τὰ ὄντα. To see this, consider those entities that are both SAID OF and IN a subject, such as the universal Color. It is supposed to be *one and the same thing* that is both SAID OF a subject and IN a subject (which is not, of course, to say that such entities are *individual and one in number*, in Aristotle's sense). But, as Martin Tweedale observes, "the word 'colour' is not in a body" (Tweedale 1987: 415). It must be a *thing* – a *universal* – that is IN body. From this it follows that it must be a *thing* – that very same universal – that is SAID OF a subject. That which is SAID OF a subject, then, must be a thing, not a word. *Categories* 1, then, is discussing the *word* 'man' while *Categories* 2 is discussing the *thing* Man. Further evidence for this comes from the fact that in *Categories* 5, Aristotle says that "It is clear (φανερὸν) from what has been said that if something is said of a subject both its name (τοὔνομα) and its definition (λὸγον) are necessarily predicated of (κατηγορεῖσθαι) the subject" (2a19-21). As Tweedale points out, this implies that those things that are SAID OF an underlying subject "*have* names, not *are* names" (ibid.).

Nor should we suppose that the categories are categories of *predicates* rather than *things*. As Michael Wedin has pointed out, such a view implies that nothing will belong to a category unless it is a predicate (Wedin 2000: 103). But this has the intolerable consequence that *primary substances* will be excluded from every category, including the category of substance (ibid.). For Aristotle's paradigmatic examples of primary substances, such as *the individual man* (ὁ τις ἄνθρωπος) or *the individual horse* (ὁ τις ἵππος) (2a11-14), are surely not

predicates, and must therefore be excluded from the categories if the categories are categories of predicates.

Much of what Aristotle goes on to say makes better sense on the view that the categories are categories of things rather than predicates. Consider especially his discussion in chapter 8 of qualities. There Aristotle defines a quality as "that in virtue of which things are said to be qualified somehow" (8b25), and emphasizes a kind of priority of the quality over true statements about having the quality: "Thus honey because it possesses sweetness (γλυκύτητα) is called sweet (γλυκύ)". This passage would not make a great deal of sense if the category of quality were a category of predicates. Indeed, the claim seems straightforwardly false, for honey does *not* possess (in the relevant sense) the *predicate* 'sweetness': we would not say that honey is *sweetness*. Rather, honey possesses the *thing* – that is, the *quality* – sweetness, and it is in virtue of this fact that we may say that honey is *sweet*. It is difficult at best to reconcile Aristotle's discussion of quality with the view that the categories are categories of predicates.

Look again at the beginning of *Categories* 4, in which Aristotle says that "of things said without combination each signifies either some substance or quantity or quality or relative or where or when or being-in-a-position or having or doing or being-affected" (1b25-27). Earlier we said that this indicated that the categories of being categorize predicates because it opens with a discussion of things said, which are words. But Aristotle says that each thing spoken without combination *signifies* (σημαίνει) one of the categories, and "it is implausible to suppose that what each *signifies* is linguistic" (ibid.: 106). What is *said* is indeed linguistic, but Aristotle is quick to point out that these linguistic items *signify*, and what they signify is not itself linguistic. The categories, and the things falling under

categories, are not predicates, but things. As J.L. Ackrill says, "[t]he categories classify things, not words" (Ackrill 1963: 73).

I conclude that the *Categories* is indeed about things rather than about words. Its subject matter, then, cannot count against treating it as a work of metaphysics.

That brings us to the second argument against treating the *Categories* as a work of metaphysics. Menn points out that the *Categories* is not a work of first philosophy in Aristotle's sense (Menn 1995: 311). Aristotle describes first philosophy as "the study of first causes (τὰ πρῶτα αἴτια) and principles (τὰς ἀρχὰς)" (*Met.* A 981b28-29), but the *Categories* says almost nothing about causes (ibid.: 312). To the extent that metaphysics is to be identified with first philosophy, then the *Categories* is not a work of metaphysics.

Menn himself suggests that the *Categories* is better understood as a "manual of dialectic" that "*teaches* the art of dialectic by giving principles for constructing dialectical arguments (ibid.: 314-315). On this view, the *Categories* takes a rather different place in the *Organon* than that described earlier. Instead of being followed immediately by *De Interpretatione*, the *Categories* would be a prelude to the *Topics*.

The view that the *Categories* is intended to be followed by the *Topics* is itself an ancient view, dating back to the idea that the proper title of the *Categories* is instead the Πρὸ Τῶν Τοπῶν. As Frede points out, that title is extremely well attested in antiquity:

> Andronicus again is the first person of those known to us by name who knew this title. It is, however, also mentioned by Porphyry, Andronicus, Simplicius, Boethius, Olympiodorus, Elias, the anonymous scholiast in Urbinas 25, and the writer of ms. Wat. Gr. 1021. Even in the second century A.D., there were two scholars who preferred this title; Adrastus, who seems to have researched this question, and Herminus, who gained a reputation

> precisely as an interpreter of the *Categories*. Olympiodorus even claims that the majority of scholars preferred this title…In connection with this, we should at least note that the catalog of Theophrastus's writings also has an entry Ta pro ton topon (Frede 1983/1987: 19).

This view of the title and role of the *Categories* is supported by the close similarities between the *Categories* and the *Topics*, especially between the list of categories that we find in *Categories* 4 and *Topics* A.9.[6] Indeed, Frede adds that:

> [O]n reading *Top.* I.8 and 9, one could easily come to think that, as a preparation for the *Topics*, one really needs a discussion of predicables (which Porphyry then provided) and a treatment of the categories. Chapters 4-9 of our text, without a doubt, were closest to this among the surviving writings of Aristotle. Some of the remaining material may well have also seemed useful for the *Topics*…It certainly was not completely misguided to regard our treatise as an introduction to the *Topics* (ibid.: 20).

These considerations led many in antiquity to give the *Categories* a different name and a different role in Aristotle's corpus. That different role, combined with Menn's observation that the *Categories* is clearly not a work of first philosophy, may tell against the view that the *Categories* is a work of metaphysics.

Despite these considerations, it seems quite clear that there is some intelligible sense in which the *Categories* is a work of metaphysics, even if it is not a work of first philosophy in Aristotle's technical sense. By this I mean that it can be profitably read as treating of topics of metaphysical import, even if it is not strictly speaking a metaphysical treatise.

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[6] For helpful discussion of the similarities between these two chapters, see Frede (1981/1987) and Malink (2007).

One reason to think so is that, as Frede points out, the connection between the *Categories* and the *Topics* is too narrow. Precisely those considerations that led ancient scholars to suppose that the *Categories* is properly placed before the *Topics* ultimately led to the opposite view:

> [T]he consideration that led to the new title seems, rather, to have been that a theory of the predicables and a theory of the categories were required not just for dialectic but for the whole of logic; thus, the particular connection to the *Topics* would seem much too narrow (ibid.).

This suggests that while Menn is right to focus on the importance of the *Categories* for the science of dialectic, that is not all for which the *Categories* is important. That in turn implies that we cannot infer from Menn's observations that the *Categories* is not in some way a work of metaphysics. I agree with Frede, then, when he says that "[i]t is difficult to imagine an arrangement of the books of the *Organon*, which makes systematic sense, that has the *Topics* immediately following the *Categories*" (ibid.).

Ancient considerations about the importance of a theory of predicables aside, there can also be no doubt that the discussion of substance in *Categories* 5 is the centerpiece of the work. Nor can there be any doubt that that discussion includes some undeniably metaphysical commitments. More generally, the predication relations introduced in *Categories* 2 and the categories of being introduced in *Categories* 4, together with the aforementioned discussion of substance, constitute the core of the *Categories*. To the extent that these chapters are discussions of metaphysics, or at least have implications for metaphysics, I conclude that it is reasonable and profitable to treat the *Categories* as a work of metaphysics.[7]

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[7] See, however, n. 5.

Treating the *Categories* as a work of metaphysics, it is natural to begin our study with the two predication relations introduced in *Categories* 2: being SAID OF an underlying subject and being PRESENT IN an underlying subject (1a20-1b9). Together these generate four types of entity. *Primary substances* (ἀι πρώται οὐσίαι), such as Socrates, are those entities that are *neither* SAID OF *nor* IN a subject (1b3-4). *Secondary substances* (ἀι δεύτεραι οὐσίαι), such as the species Man or the genus Animal, are SAID OF but not IN underlying subjects (1a21-22). *Non-substantial universals*, such as *color*, are *both* SAID OF *and* PRESENT IN underlying subjects (1a30-1b2).[8] *Non-substantial individuals*, such as an individual bit of whiteness (τὸ τὶ λευκὸν), are IN but not SAID OF a subject (1a23-29).

All of the entities categorized by the ten categories of being in *Categories* 4 fall within one of these four larger types. Entities belonging to the category of substance, for example, are either primary substances neither SAID OF nor IN a subject or secondary substances SAID OF but not IN underlying subjects. Entities belonging to the category of quality are either non-substantial universals both SAID OF and IN underlying subjects or non-substantial individuals IN but not SAID OF a subject. Indeed, entities belonging to any of the nine non-substance categories will be either non-substantial universals or non-substantial individuals.

This fourfold division of beings generates a number of interesting questions. For example, are non-substantial individuals *particulars* or *universals*?[9] Aristotle provides a cryptic account of the PRESENT IN relation according to which "[b]y in a subject (ἐν ὑποκειμένῳ) I mean what is in something, not as a part (μὴ ὡς μέρος), and cannot exist separately (χωρὶς)

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8 Of course, Aristotle does not think that non-substantial universals will be SAID OF and PRESENT IN the *same* underlying subjects. On the contrary, they will bear these metaphysical relations to mutually exclusive kinds of entity. Non-substantial universals are SAID OF the non-substantial individuals of which they are the species and genera, while they are PRESENT IN primary substances.

9 Defenders of the view that non-substantial individuals are *particulars* include Ackrill 1963, Robert Heinaman 1981, Daniel Devereux 1992, and Wedin 1993 and 2000. Defenders of the view that non-substantial individuals are *universals* include G.E.L. Owen 1965, Michael Frede 1987, Loux 1991, Lewis 1991, Russell Dancy 1975, and Mehmet Erginel 2004.

from what it is in" (1a24-25). This last clause – known as *the inseparability requirement* – led Ackrill to suppose that "only *individuals* in non-substance categories can be 'in' individual substances" (Ackrill 1963: 74).[10] Other passages in the *Categories*, however, seem to conflict with this claim. At 2a39-2b3, for example, Aristotle claims that there are universals that are PRESENT IN primary substances. At 3a4-6, meanwhile, Aristotle holds that particulars can be PRESENT IN secondary substances. Both passages call into question Ackrill's claim that non-substantial individuals are particulars. 2a39-2b3 suggests that inseparability is compatible with being a universal, since non-substantial universals are PRESENT IN a subject and so inseparable from that subject despite being a universal, while 3a4-6 indicates that non-substantial individuals are PRESENT IN multiple subjects, which not only suggests that these items are universals, but lends further support to the idea that being a universal is compatible with the inseparability requirement.

A second question concerns the status of secondary substances. On what grounds does Aristotle take the species and genera of primary substances themselves to be substances? Some philosophers have worried that unless the answer to this question is the same as the answer to the question of why Aristotle takes *primary* substances to be substances, Aristotle "would be vulnerable to the objection that [his view] assigns a label of fundamental ontological importance to two radically different types of entity for no apparent reason" (Kohl 2008: 155).[11]

Last but not least, there is a puzzle about the ontological priority of primary substances. According to Aristotle, "if the primary substances did not exist (εἶναι) it would

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10 Context makes clear that by 'individuals' Ackrill means to refer to *particulars*.

11 A similar worry seems to motivate Casey Perin, who claims that unless primary and secondary substances are substances for the same reason, "Socrates and his genus or species are homonyms with respect to the term or name 'substance'", which is in violation of the claim that "for Aristotle in the *Categories* *x* is an *F* more than *y* only if *x* and *y* are *F*s in precisely the same sense, that is, only if the term or name '*F*' has the same meaning when it is applied to *x* as it has when it is applied to *y*" (Perin 2007: 133)

be impossible for any of the other things to exist" (2b4-6). This suggests that there is some asymmetric relation obtaining between primary substances and all other entities, and the most obvious such relation is a relation of existential independence: the primary substances can exist without other entities, but not vice versa. But commentators have rightly pointed out that primary substances are *not* existentially independent of other entities (Loux 1991: 48; Corkum 2008: 66). Primary substances cannot, for example, exist without secondary substances. The puzzle, then, is this: what is the asymmetric relation that Aristotle has in mind at 2b4-6, in virtue of which it is true to say that primary substances are ontologically prior to other entities?

Discussion of these three topics has dominated the recently scholarly literature on the *Categories*. But an interesting feature of these discussions is that they have taken place in relative isolation from one another. With the exception of Michael Wedin's *Aristotle's Theory of Substance*, no work has undertaken a systematic treatment of the *Categories* that attempts to answer these three questions in a unified way. The goal of my dissertation is to rectify this situation. I will offer an interpretation of the *Categories* that gives answers to all three questions discussed above, and I shall do so by beginning from some very general remarks about Aristotle's early ontology. In particular, I begin with an examination of what Aristotle has to say about universals. It is my belief that what Aristotle has to say about universals provides the key to unlocking a unified interpretation of the *Categories*.

In the remainder of this introduction, I will briefly outline each of the chapters of the dissertation.

CHAPTER ONE

Aristotle was not a nominalist.[12] But his definition of universals in *de Interpretatione* 7, according to which a universal is "that which is by its nature (πέφυκε) predicated of (κατηγορεῖσθαι) a number (πλειόνων) of things" (17a39-40), does not give us much information about what sort of thing universals are supposed to be. This definition tells us how universals *behave*, but it doesn't tell us what universals *are*.

Three accounts of universals are considered and rejected before I develop my preferred account. First, I argue against the view that Aristotle took universals to be *sets*. This is perhaps the most common view in the literature (Cresswell 1975: 243; Tweedale 1987: 425; Kirwan 1993: 174; Code 1986: 418).[13] Second, I argue against Hugh Benson's claim that Aristotle took universals to be *sortals* (Benson 1988: 284). Finally, I consider and reject Lynne Spellman's view of universals, which – like the view I will eventually defend – takes species and genera to be "some sort of collection" but denies that these are *universals* (Spellman 1995: 41-43).

The alternative I propose treats universals of every sort as *wholes*. This view has been suggested by Mario Mignucci (2000: 6) and Phil Corkum (2015: 809), but it has not to my knowledge been defended in its full generality by anyone. I argue that Aristotle's claims about parts and wholes in *Metaphysics* Δ.25 and Δ.26 show that Aristotle took universals to be wholes. For example, Aristotle claims that "the results of any non-quantitative division (διαιρεθείη) of a species (εἶδος) are also called its portions (μόρια); that is why people assert

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12 By 'nominalism' here I mean the view that D.M. Armstrong calls *predicate nominalism*. For the claim that Aristotle was not a nominalist, see, e.g., Martin Tweedale (1987), Gail Fine (1983/2003), and Terence Irwin (1988). A.C. Lloyd (1966) also holds that Aristotle was not a nominalist, but he does not specify what he means by nominalism. For discussion of Lloyd's position, see Wedin (2000: 86; fn. 30).

13 Code himself rejects the view that Aristotelian universals are sets, but says that a "modern reader" might be most comfortable interpreting Aristotle as holding that "in some sense natural kind terms are names, but what they name are sets" (Code 1986: 418).

that species are portions of their genus" (1023b18-19).[14] More tellingly, he argues that "For what is universal (καθόλου) and what is said to be as a whole (ὅλως), implying that it is a certain whole (τὸ ὅλον), is universal as containing several things (πολλὰ περιέχον), by being predicated of each of them and by their all – each one – being one thing; as for instance man, horse, god, because they are all animals" (1023b30-33). These passages, I suggest, give us strong evidence in favor of the view that universals are wholes.

In addition to these textual considerations, I present two positive arguments in favor of the view that universals are wholes. The first relies on Aristotle's claim that "if you will call (ἐρεῖς) the individual man grammatical (γραμματικὸν) it follows that you will call both man and animal grammatical" (3a4-6). Various commentators have pointed out that this seems to imply that a secondary substance can take contraries simultaneously (Wedin 2000: 100; Perin 2007; 142). How could this be? I argue that it can be so if we regard secondary substances as wholes composed of parts. To say that the species Man is both virtuous and vicious, then, is to say no more than that the species Man has a part that is virtuous and a part that is vicious. This is no contradiction, and the general strategy employed here mirrors the strategy employed by Plato in his argument for the tripartite division of the soul in *Republic* IV.

The second positive argument in favor of taking universals to be wholes attempts to reconcile two apparently conflicting claims: (a) the idea that Aristotle has a "peculiarly weak" conception of an individual (Harte 2010: 122); and (b) Aristotle's clear commitment to the ontological priority of primary substance. The tension is this: to say that Aristotle has a "peculiarly weak" notion of an individual is to say that "the particulars of Aristotle's *Categories* emerge at precisely the point at which the differences between things are no longer

[14] All references to *Metaphysics* Δ will be to Christopher Kirwan's translation in his (1993).

salient for the purpose at hand" (ibid.). They are simply the residue of a process of division, rather than robust entities of their own kind. But how could the residue of a process of division stand at the foundation of Aristotle's ontology? Thinking of individuals in this weak fashion fits more naturally with a Platonic view according to which the ontologically prior entities are universals rather than individuals. How, then, to reconcile these two claims?

I argue that taking universals to be wholes composed of individuals lets us reconcile these competing ideas. For if we stop thinking of individuals as the residue of a process of division, and instead think of universals as what you get in a process of *composition*, we can on the one hand agree with Harte that "we should resist the idea that the step that is taken from the universal to particular is one that marks some boundary that is fundamental for the Aristotelian relation in view", while simultaneously respecting Aristotle's claim that primary substances are the ontologically fundamental entities.

CHAPTER TWO

To say that Aristotle took universals to be wholes is a start towards a full account of Aristotle's treatment of universals. To complete that account, we must say something about what sorts of wholes universals are supposed to be.

Aristotle's discussion in *Metaphysics* Δ.26 makes clear that he is a *pluralist* about wholes. There are irreducibly different kinds of wholes. The more familiar kind are those Aristotle refers to as "continuous (συνεχὲς) and limited (πεπερασμένον)", and whose parts "make up one thing (ἢ ὡς ἐκ τούτων τὸ ἓν)". For example, a tree is a whole of this kind. It is composed of parts – its roots, trunk, branches, and leaves – such that those parts "make up one thing", and the tree is both continuous and limited: it has well-defined boundaries in both time and space, and there are no spatiotemporal gaps in it. Call this an *integral whole*.

Universals are not like integral wholes. But Aristotle does not tell us much more than this. The primary goal of Chapter Two is to try to shed light on what sort of whole a universal might be by contrasting universals with integral wholes. To do this, I present in some detail the most widely accepted contemporary theory of parts and wholes, known as *classical extensional mereology* (CEM). I present the axiomatiziation of this theory given in Simons (1987), and then I examine which axioms Aristotle does and does not accept.

Perhaps the chief difference that emerges between universal and integral wholes is that the latter, but not the former, are governed by the Weak Supplementation Principle. According to the Weak Supplementation Principle, no object can have just one proper part (Simons 1987: 26).[15] I argue, however, that Aristotle's definition of the universal in *De Interpretatione* 7 is best interpreted as rejecting this principle. For Aristotle leaves open the possibility that a universal might have just a single instance, in which case that universal would be a whole containing one proper part. I then try to argue that this does not entail that Aristotle's claim that universals are wholes is conceptually confused.

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[15] More formally, if x is a proper part of y, then there exists a z such that (i) z is a proper part of y and (ii) z is disjoint from x (ibid.: 28). Many philosophers take this principle to be constitutive of any genuine parthood relation. For instance, Peter Simons says "How could an individual have a *single* proper part? That goes against what we mean by 'part' (Simons 1987: 26). Phil Corkum, likewise, writes: "it is a weakly supplementary partial order if it is a genuine mereological relation at all" (Corkum 2015: 803). And Kathrin Koslicki holds that "the following explanation of their numerical distinctness is actually *dictated* to us by our endorsement of the Weak Supplementation Principle, which was earlier taken to be partially constitutive of the meaning of 'is a proper part of'" (Koslicki 2008: 180). Nevertheless, it does not follow that the parthood relation I am describing fails to be a genuine parthood relation, or that Aristotle's mereology here is confused. Maureen Donnelly, for example, has suggested that "once we allow that a whole can have a proper part which is spatially co-extensive with it, then I think that (WSP) loses its appeal" (Donnelly 2010: 230). Another suggestion worth exploring is to understand Aristotle's talk of universals and their instances along the lines of the *constitution* relation rather than the *composition* relation. Since the constitution relation is typically understood as a one-one relation (Lowe 2006: 50), there would no longer be any concerns about wholes having just one proper part and therefore violating WSP. This suggestion is somewhat speculative; it would require sometimes allowing the constitution relation to be many-one, namely, in those cases where a universal has multiple instances. Perhaps this would stretch the notion of constitution past its breaking point. But the difference between composition and constitution is not one that commentators on Aristotle who are otherwise sympathetic with my suggestion that universals are mereological sums have paid attention to. Corkum, for example, moves freely between saying that a universal is *composed* of its instances and saying that a universal is *constituted* by its instances, which masks the fact that composition and constitution are different relations and that respecting that difference may help us better understand Aristotle here.

The remainder of this chapter is concerned to defend the view that universals are wholes from objections both historical and contemporary. It has been suggested that the view in question is so philosophically implausible that considerations of charity forbid us from attributing it to Aristotle.[16] For example, D.M. Armstrong claims that the view gets things precisely backwards: "it is not the case that a white thing derives its whiteness from being a part of the great white aggregate" (Armstrong 1978: 35). On the contrary, he suggests, "it belongs to the aggregate of white things *because it is white*" (ibid.). W.V. Quine claims that the theory works in a restricted class of cases, but fails as a general theory of universals because it ends up identifying distinct universals (Quine 1950: 73). And Peter Abelard subjected the theory to a barrage of criticisms in his *Logica Ingredientibus*. I examine each of these objections in turn with the aim of showing that the view that universals are wholes is defensible. I do not claim to show that the theory is true, but instead defend the more minimal claim that the theory is rationally held.

CHAPTER THREE

Having presented and defended my general account of what Aristotle takes universals to be, I turn in Chapter Three to applying that account to specific textual puzzles in the *Categories*. The first puzzle is the most directly related to the nature of universals, as it concerns Aristotle's claim that "[t]he species in which the things primarily called substances are, are called *secondary substances*, as also are the genera of these species" (2a13-15).

Aristotle appears to have changed his mind on this issue. In *Metaphysics* Z, Aristotle appears to argue not only against the specific claim that the species and genera of primary substances are substances, but against the more general claim that any universal could be a

16 Thanks to Walter Ott for raising this objection.

substance. Thus, he says in *Z*.10 that "man and horse and terms which are thus applied to individuals, but universally, are not substance (οὐκ ἔστιν οὐσία) but something composed (σύνολόν) of this particular formula and this particular matter treated as universal" (*Met.* Z.10, 1035b27-30).[17] Here Aristotle denies that the species Man is a substance, contrary to the view defended in the *Categories*. Three chapters later, Aristotle generalizes his claim: "it seems impossible (ἀδύνατον) that any universal term should be the name of a substance…since that is called universal which naturally belongs (ὑπάρχειν πέφυκεν) to more than one thing" (*Met.* Z.13, 1038b9-11).

Given Aristotle's change of heart, we are faced with the question *why* Aristotle takes the species and genera of primary substances to be substances. Some commentators are *criterial monists*. These commentators believe that Aristotle is committed to only one criterion of substance-hood in the *Categories*, where this criterion explains why both concrete living organisms and their species and genera count as substances (Perin 2007: 137; Kohl 2008: 164). Other commentators are *criterial dualists*, for they hold that Aristotle has distinct criteria for substance-hood, one of which applies to primary substances, the other of which applies to secondary substances (Wedin 2000: 94; Matthews and Cohen 1968: 632).

I argue against both views and instead defend what I call *criterial pluralism*. This is the view that Aristotle endorses multiple criteria for substance-hood, but at least one of these applies to *both* primary and secondary substances.[18] On my view, primary substances qualify as substances because they are underlying subjects of predication, while secondary

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17 All references to *Metaphysics* Z will be to David Bostock's translation in his (1994).

18 Compare Devereux: "[i]n the *Categories*, substance-making features are sufficient rather than necessary conditions for being a substance" (Devereux 2003: 162). According to Devereux, Aristotle identifies two distinct criteria for substance-hood, each of which is merely a sufficient condition on being a substance, and "holds that some things are substances (concrete particulars) even though they possess only one of these features" (ibid.)

substances qualify as substances *both* because they too are underlying subjects of predication, but also because "only they, of things predicated, reveal (δηλοῖ) the primary substance".

Criterial pluralism allows us to make the best sense of two important desiderata on a theory of substance: substances must be both *ontologically* and *epistemologically* fundamental. Aristotle clearly holds this view in *Metaphysics* Z: "there are several senses in which a thing is said to be primary (πρῶτον); but substance is primary in every sense – in formula (λόγῳ), in order of knowledge (γνώσει), in time (χρόνῳ)" (*Met.* Z.1, 1028a31). I argue that Aristotle likely held this view about desiderata on a theory of substance in the *Categories*, which is why he was motivated to have both primary and secondary substances, the former satisfying the first desideratum, the latter satisfying the second desideratum. Because primary substances are underlying subjects of predication, they are ontologically fundamental. Because they reveal what primary substances are, secondary substances are epistemologically fundamental. But secondary substances are also, I argue, ontologically fundamental in some sense: they are more fundamental than everything *except* primary substances. This is why Aristotle insists that they too are underlying subjects of predication in some way. Secondary substances therefore also satisfy the first desideratum on a theory of substance, and this is a chief advantage that pluralism has over dualism.

CHAPTER FOUR

Having discussed the status of secondary substance, I turn to perhaps the most vexed issue in scholarship on the *Categories*, namely, the status of non-substantial individuals. The traditional view as expressed by Ackrill holds that non-substantial individuals are *particulars* whose existence depends on the particular primary substances they are PRESENT IN. But this view faces a number of textual difficulties. As mentioned earlier, at 2a39-2b3, Aristotle

claims that there are universals that are PRESENT IN primary substances. At 3a4-6, meanwhile, Aristotle holds that particulars can be PRESENT IN secondary substances. Both passages call into question Ackrill's claim that non-substantial individuals are particulars.

In this chapter, I show how the theory of universals developed in Chapters One and Two can go some way towards defending Ackrill. More specifically, I argue that 3a4-6 raises no difficulty at all for Ackrill's account. I claim that non-substantial individuals are PRESENT IN secondary substances in a *derivative* way (cf., Devereux 1992: 126; Erginel 2004: 198), in the sense that they are PRESENT IN primary substances *non-derivatively*, and are PRESENT IN secondary substances only in virtue of the fact that the primary substances they are PRESENT IN are *parts* of secondary substances. This view allows non-substantial individuals to be particulars despite the fact that they are predicated of multiple underlying subjects, and despite the fact that Aristotle believes anything PRESENT IN a subject must be inseparable from that subject (1a24-25).

I also argue that 2a39-2b3 poses a difficulty for Ackrill *only if* the following assumption is true: universals do not have their instances essentially. For if universals have their instances essentially, then non-substantial universals that are PRESENT IN primary substances can be inseparable from those primary substances in virtue of two facts: (a) non-substantial universals are wholes composed of non-substantial individuals, and (b) non-substantial individuals are inseparable from the primary substances they are PRESENT IN. Putting (a) and (b) together allows us to claim that non-substantial universals are inseparable from the primary substances they are PRESENT IN as long as wholes – that is, universals – have their parts essentially. For then non-substantial universals would be inseparable from their parts which are in turn inseparable from the primary substances they are PRESENT IN. By transitivity, we get inseparability.

Most commentators believe that the assumption in question is indeed true, and I am inclined to agree. But given the view that universals are wholes – that is, a kind of *collection of parts* – it is easy to see why someone might suppose that universals *do* have their instances essentially: if you change the parts, you change the collection. This means that the tension between Ackrill's view and 2a39-2b3 is not a simple mistake on Aristotle's part, but is more likely to be the result of conflicting commitments concerning the existence and identity of universals.

After offering this partial defense of Ackrill, I consider additional textual evidence in favor of the view that non-substantial individuals are particulars. Aristotle's claim that such entities are one in number (ἀριθμῷ ἓν) (*Met* B.4, 999b33-1000a1),[19] I argue, implies that these entities must be particulars. Then I consider alternative readings of 1a24-25 offered by Owen (1965), Frede (1978/1987), Erginel (2004), and Devereux (1992). Finding each of these wanting, I conclude that Ackrill's reading of the passage, despite the aforementioned difficulties, is most likely to be accurate, especially in view of the independent evidence in support of the view that non-substantial individuals are particulars.

CHAPTER FIVE

The last chapter of my dissertation concerns the ontological priority of primary substances. I explain in some detail why most scholars agree that ontological priority cannot be understood as existential independence, and then criticize Wedin's recent attempt to rescue this view of ontological priority (Wedin 2000: 92).

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[19] All references to *Metaphysics* B will be to W.D. Ross in his (1924).

I then turn to a recently popular account of ontological priority according to which it is the worldly correlate of definitional priority. On this view, roughly, *x* is ontologically prior to *y* just in case *x* is definitionally prior to *y*. For example, Michail Peramatzis holds:

> **(PIB)** *A* is ontologically prior to *B* if and only if *A* can be what it essentially is independently of *B* being what it is, while the converse is not the case (Peramatzis 2011: 13).

If we think that a definition states what a thing essentially is, **(PIB)** turns out to be the ontological correlate of definitional priority: *A* will be ontologically prior to *B* if and only if *A* is definitionally prior to *B*.

I argue that Peramatzis's view suffers from a number of difficulties, chief among them its inability to explain the ontological priority of primary substances over secondary substances. For **(PIB)** implies that primary substances are not ontologically prior to secondary substances, since a given primary substance like Socrates cannot be what it essentially is independently of its species and genera being what they are essentially.

After criticizing Peramatzis, I turn to another recent account of ontological priority due to Phil Corkum. Corkum suggests that we "weaken the relevant notion of ontological independence from a capacity for independent existence to the independent possession of a certain ontological status" (ibid.) in the following way:

> **(OI)** *A* is *ontologically independent* from *B* just in case *A* admits of the ontological status of a being independently of standing in some tie to any *B* whatsoever (ibid.: 78).[20]

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[20] This is not actually how Corkum formulates what he calls '(OI)'. His formulation is as follows: "A is *ontologically independent* from B just in case A admits of the ontological status of a being independently of standing in some tie to B" (Corkum 2008: 77). But Corkum acknowledges that this is ambiguous as between the following:

> (OI_1): For any given B, A admits of the ontological status of a being independently of standing in some tie to *that* B; and
> (OI_2): A admits of the ontological status of a being independently of standing in some tie to any B whatsoever.

Unfortunately, Corkum does not tell us what it means to admit of the ontological status of a being. Corkum admits that **(OI)** "is not an *account* of ontological independence at all", in part because it "does not *explicate* the notions of having an ontological status or of independence" (ibid.: 81). Instead, **(OI)** is intended to be "a *formulation* of ontological independence – the weakest formulation of ontological independence which meets our condition of adequacy for any account of ontological independence" (ibid.).

But I argue that if this is the case, then Corkum has not actually given us an account of ontological priority at all. At best, he has simply restated the problem in new terms. Instead of having to understand what it means to say that a primary substance is ontologically prior to all other entities, we have to understand what it means to say that a primary substance admits of the ontological status of a being independently of all other entities. No increase in our understanding of Aristotle has been achieved.

Finally, I turn to my own view, which is based on some ideas that Aristotle develops in *Categories* 12. In particular, I focus on his idea that we can speak of priority in nature even between entities that are mutually existentially dependent, so long as one of those entities is the *cause of being* of the other:

> There would seem, however, to be another manner of priority besides those mentioned. For of things which reciprocate as to implication of existence (τῶν ἀντιστρεφόντων κατὰ τὴν τοῦ εἶναι), that which is in some way the cause of the other's existence (τὸ αἴτιον τοῦ εἶναι) might reasonably be called prior by nature (φύσει) (14b9-12).

Thus, Corkum's more general (OI) is ambiguous between two ways of reading the phrase "independently of standing in some tie to B". Corkum argues that (OI_2) is preferable to (OI_1) as an account of ontological priority, so I have formulated (OI) as Corkum's (OI_2).

A contemporary example of this kind of priority is the priority enjoyed by Socrates over his singleton set {Socrates}. Socrates exists if and only if {Socrates} exists, but intuitively Socrates is ontologically prior to {Socrates}. Socrates is in some intuitive sense the cause of being of {Socrates}.

I flesh out this idea by suggesting that primary substances are something like the *material causes* of the existence of other entities. Although Aristotle's doctrine of four causes is introduced only in *Physics* II.3, it provides a useful model for thinking about the sense in which primary substances might be the cause of being of other entities. I argue that it makes a great deal of sense of the ontological priority of primary substances over secondary substances, which is the most difficult case of priority to make sense of, because secondary substances are wholes composed of primary substances as parts. Given Aristotle's claim that a material cause is "that out of which a thing comes to be (τὸ ἐξ οὗ γίνεταί) and which persists" (194b24-26)[21], and the naturalness of claiming that wholes comes to be from their parts, it makes sense to employ material causation as a model for thinking about the priority of primary substances to secondary substances.

The model does not apply precisely to the ontological priority of primary substances over non-substantial entities, but can be made to apply with a little bit of help. Primary substances *are* existentially independent of non-substantial individuals understood as particulars, so their ontological priority to those entities is a straightforward matter of existential independence. Meanwhile, by analogy with the above argument for taking primary substances to be something like the material causes of secondary substances, non-substantial individuals are something like the material causes of non-substantial universals because the latter are wholes composed of the former as parts. This makes non-substantial individuals

[21] All references to *Physics* II will be to William Charlton's translation in his 1984.

ontologically prior to non-substantial universals. Since we already have an account of the ontological priority of primary substances over non-substantial individuals, by transitivity we have an account of the ontological priority of primary substances over non-substantial universals as well.

CONCLUSION

Together, these five chapters offer a unified interpretation of the *Categories* that, as mentioned, has not often been attempted. That is not to say that my dissertation addresses every issue relevant to an interpretation of the *Categories*. I do not, for example, have anything to say about Aristotle's treatment of relatives (πρός τι) in *Categories* 7. Nor do I have anything to say about the issue of reference failure as it comes up in *Categories* 10. But my dissertation focuses on what seems clearly to be the heart of the *Categories*, and it is able to offer a systematic account of what is happening in those key chapters by starting with Aristotle's account of what universals are. This constitutes a significant advance in our understanding of the *Categories*, as well as revealing points of connection not only with the later works of Plato like the *Philebus* and the *Parmenides*, but with subsequent work in late antiquity and the medieval period on universals and individuation. With this in mind, let us turn to my account of what universals are in Aristotle.

CHAPTER ONE

Aristotle was not a nominalist: "Of things there are (τῶν πραγμάτων), some are universals (τὰ μὲν καθόλου) and others particular (τὰ δὲ καθ᾽ἕκαστον)" (*De Int.* 7, 17a38-39).[22] Here Aristotle divides reality into two mutually exclusive and exhaustive classes, universals and particulars, without suggesting that either sort of entity is in some way less real than the other.[23] Both are included among τῶν πραγμάτων, or things there are. Universals are *things*, not merely *words* or *concepts*.[24]

Aristotle goes on to define the universal as follows: "I call universal that which is by its nature (πέφυκε) predicated (κατηγορεῖσθαι) of a number of things (πλειόνων)" (17a39-40). Unfortunately, this definition is not particularly informative. One obvious question it leaves unanswered is this: *what sort of entity satisfies it*? This definition tells us how universals *behave*, but it doesn't tell us what universals *are*.

The primary goal of this chapter is to explore potential answers to this question. Aristotle's definition of the universal is lacking in other ways as well. Another question one might ask about it is what Aristotle means when he says that a universal is *by its nature* predicated of a number of things. Does this mean that every universal is *in fact* predicated of a number of things? Or does it mean that most universals are *typically* predicated of a number of things, but that in certain rare cases, there can be a universal that is predicated of just one thing? After developing an account of what universals are in Chapter One, in Chapter Two I attempt to answer this second question about Aristotle's definition of the universal.

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22 Ackrill translates this as "Of actual things some are universal, others particular" (Ackrill 1963: 47).

23 This is consistent with Aristotle's claim that everything is in some way ontologically dependent on primary substances, so long as we do not read 'ontologically dependent on' as 'less real than'. I see no indication in the *Categories* that we should read the former as the latter.

24 Traditionally, the *Categories* was indeed read as a treatise about the predication relations holding between words, and thus as a treatise primarily about *linguistic* predication (Cook 1938; Sachs 1948; Ryle 1961). See Introduction for more.

Chapters One and Two, then, are an attempt to flesh out Aristotle's definition of the universal in *De Interpretatione* 7. I start in this chapter by examining and criticizing some accounts of the nature of universals put forward in the secondary literature on Aristotle, including the views that Aristotle took universals to be *sets*, that Aristotle took universals to be *sortals*, and that Aristotle took universals to be *properties distinct from kinds*. After rejecting these different accounts of what universals are, I present my own view: that Aristotle took universals to be *wholes*.[25, 26]

This view of universals is both exegetically and philosophically plausible: it fits with Aristotle's discussions of universals, parts, and wholes, and there are good philosophical motivations for the view that Aristotle would have been aware of. My goal in Chapter One is to demonstrate the exegetical and philosophical plausibility of the view. Chapter Two will then be concerned with explaining the theory in more detail and defending it from the most serious objections that might be raised to it.

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[25] I have chosen the word 'whole' because it brings with it less baggage than other terms that I take, in this context, to be synonymous with it. For instance, I have occasionally described my interpretation of Aristotle as maintaining that universals are *collections*. This term has its historical pedigree in debates about species and genera dated as early as the twelfth century. Likewise, I have occasionally described my interpretation of Aristotle as maintaining that universals are *mereological sums*. This term earns its keep by its use in twentieth century discussions, most notably involving D.M. Armstrong, about the nature of universals. But both 'collection' and 'mereological sum' bring with them certain preconceived notions about how universals behave. Some assume, for example, that collections and mereological sums must be *extensional entities*, and that I am therefore attributing an extensional view of universals to Aristotle. I do not believe that collections or mereological sums must be extensional entities, but this connotation has proven to be hard to shake. The term 'whole' is, it seems to me, neutral in a way that 'collection' and 'mereological sum' are apparently not. So I shall use 'whole' to describe Aristotle's universals.

[26] Compare Mario Mignucci: "From this point of view, a universal can be conceived of as a whole whose parts are its instances" (Mignucci 2000: 6). Likewise, Phil Corkum says: "I conjecture that all universals correlate to sums of which individuals are parts" (Corkum 2015: 800). But neither Corkum nor Mignucci go as far as I do. Thus, Corkum later says: "I hesitate to identify the sum and the universal" (ibid.: 809), whereas Mignucci says that his claim is merely that "according to Aristotle, predication can always be expressed in terms of the part-whole relation" (Mignucci 2000: 4).

1.

Perhaps the most common account of Aristotelian universals is that they are *sets* or *classes*. M.J. Cresswell, for example, says that "if we are to say what the species is we can say that it is the *class* of things specifically identical with some member of the species" (Cresswell 1975: 243; emphasis mine).[27] Martin Tweedale claims that "[o]ne suggestion is to think of universals as classes" (Tweedale 1987: 425).[28] Christopher Kirwan holds that "*humanity* has parts only because the word is taken to denote the human race, which is a quantitative set or class" (Kirwan 1993: 174).[29] Alan Code suggests that a "modern reader" might be most comfortable interpreting Aristotle as holding that "in some sense natural kind terms are names, but what they name are sets" (Code 1986: 418).[30] And while J.L. Ackrill never *says* that Aristotle took universals to be sets, that view clearly underwrites his criticism of Aristotle's claim that the SAID OF relation is transitive: "He does not distinguish between the relation of an individual to its species and that of a species to its genus. It does not occur to him that 'man' functions differently in 'Socrates is a man' and 'a man is an animal'" (Ackrill 1963: 76).

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[27] It is not obvious that Cresswell's proposal is meant to be an interpretation of Aristotle or an independent view about the nature of universals inspired by Aristotle. Thus, Cresswell begins his discussion by asking "on the basis of what Aristotle has written, [we can] formulate a theory in which, given a small number of logical primitives, we can produce a theory of universals which is not ontologically committed to the existence of anything other than particulars" (Cresswell 1975: 241). Here I shall assume that he is at least in part proposing an interpretation of Aristotle, although his primary goal may be to develop his own view about universals.

[28] Tweedale is quick to point out that we "must be careful to mean by a class something which can survive changes in its membership roll, and not the sets of modern set theory" (Tweedale 1987: 425). In this way, Tweedale hopes to avoid the most common objection to the view that Aristotelian universals are sets, which is that while sets cannot undergo changes in their membership, Aristotelian universals can undergo changes in their instances. Since my argument against this view of universals does not depend on whether universals can or cannot undergo such changes, I will ignore Tweedale's caveat for ease of exposition.

[29] Kirwan accuses Aristotle of being 'vague' about the status of universals. But his claim itself seems vague or confused. Sets or classes do not have *parts*, but *members*. To the extent that sets might have parts, their parts are not their members, but their *subsets* (D. Lewis 1991: 4). So it seems to me a mistake on Kirwan's part to say that the human race is a "set or class" but also that it has *parts*. If the human race is a set or class, it has *members*. We shall see later that Aristotle consistently uses mereological terminology to discuss universals. That tells against the view that universals are sets, for the reasons just discussed.

[30] Code himself rejects the view that Aristotelian universals are sets (Code 1986: 418).

This is an elegant view of the nature of universals. But it is not Aristotle's. There are two main reasons to reject it. First, it is anachronistic. Nowhere does Aristotle speak of sets. In fact, when Aristotle speaks about universals, the language he uses is *mereological* language. For example, the word we typically translate as 'universal' is "καθόλου". Literally, this means "according to the whole", which suggests that universals are a *kind* of whole. Likewise, the phrase we typically translate as 'particular' is "καθ᾽ἕκαστον".[31] Roughly, this means "according to each". This suggests that a particular is fundamentally related to something else. Thus, we say *each of these* – pointing to some subset of a group – is a dog, for example. Picking something out in this way suggests that it belongs to something else. Given the contrast between particularity and universality, and the fact that Aristotle's preferred term for the universal is καθόλου, this strongly suggests that particulars are *parts* of universals. Furthermore, Aristotle refers to individuals as "τὰ ἀτομά". Literally, this means that individuals are *atoms* or *indivisible entities*. It is natural to think that what individuals cannot be divided into are *parts*.[32] The contrast between 'καθόλου' and 'τὰ ἀτομά' then suggests that the latter should be understood mereologically. Taken together, these terms show that when Aristotle is talking about particulars and universals, he uses mereological language.[33] *A*

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31 It seems that when Aristotle is talking about *things* his preferred phrase for particulars is καθ᾽ἕκαστοω. But when he is discussing *propositions*, he prefers κατα μὲρος. See, e.g., *A Po.* A.24, 85b18. Interestingly, he uses καθόλου for 'universal' regardless of whether he is discussing things or propositions.

32 We shall see later that this picture is considerably more complicated. In particular, to say that something is ἀτομόν is to say that it cannot be divided by genus and differentia into further sub-kinds. But something that is ἀτομόν may well be divisible into *parts*, so long as those parts are not sub-kinds. So the phrase 'τὰ ἀτομά' does not always neatly contrast with the phrase 'καθόλου', since something can be both ἀτομόν and universal. Still, because Aristotle thinks of division into sub-kinds as a kind of division into parts, the language here is still clearly mereological (and, *a fortiori*, not set-theoretic). And the lack of a clear and consistent contrast here actually fits nicely into my overall picture of Aristotle as a mereological pluralist. In short, we shouldn't be surprised that he has a variety of mereological terms to pick out that which is universal, individual, and particular, since these all play different roles in different places in his theory, and he is a pluralist about mereology.

33 For more on the mereological language that Aristotle uses when discussing universals, see Mignucci (2000).

fortiori, Aristotle does not speak of sets when discussing universals. This is not surprising: Aristotle was completely innocent of set theory.

Second, the claim that Aristotle took universals to be sets implies that Aristotle is fundamentally confused about the relations holding between primary substances, species, and genera. According to Aristotle, "Whenever one thing is predicated of another as of a subject, all things said of what is predicated (κατὰ τοῦ κατηγορουμένου λέγεται) will be said of the subject also (κατὰ τοῦ ὑποκειμένου ῥηθήσεται)" (*Cat.* 1b10-11). This means that the SAID OF relation is *transitive*: if *x* is SAID OF *y*, and *y* is SAID OF *z*, then *x* is SAID OF *z*. For example, if Animal is SAID OF Man, and Man is SAID OF Socrates, then Animal is SAID OF Socrates. But suppose now that Aristotle took universals to be sets. Then the species Man and the genus Animal would be sets. But while

(1) Socrates is a man

states that Socrates is a *member* of the species Man,

(2) Man is an animal

states that the species Man is a *subset* of the genus Animal. Thus, Ackrill complains that Aristotle "does not distinguish between the relation of an individual to its species and that of a species to its genus" (Ackrill 1963: 76). Ackrill goes on: "It does not occur to him that 'man' functions differently in 'Socrates is a man' and 'a man is an animal'" (ibid.). The objection, then, is that the term 'man' functions differently in (1) and (2), but Aristotle's claim that the SAID OF relation is transitive requires it to function the same way in both (1) and (2). It is supposed to follow that Aristotle is confused about the difference between *set-membership* and *set-inclusion*.

But we are only forced to accept the claim that Aristotle is confused if we *already* accept the claim that universals are sets. The word 'man' functions differently in (1) and (2)

only if it refers to the *set of men*. We need not accept that view. We can acquit Aristotle of this alleged confusion by finding some other account of what universals are that respects the transitivity of the SAID OF relation.[34] The view that I put forward later does exactly this.[35] For now, the point I wish to make is purely negative: the view that Aristotelian universals are sets implies a basic confusion on Aristotle's part. That is a reason to reject the view, especially since the confusion in question is an anachronistic confusion.

2.

Hugh Benson has put forward a unique view about the nature of universals according to which "something is a universal just in case it is a sortal" (Benson 1988: 284). Unfortunately, it is not clear what sort of thing a sortal *is*, so it is not obvious how this account of universals helps us understand what *universals* are. What Benson tells us about sortals is pretty minimal: a sortal is "an entity which can be signified by an appropriate answer to a 'What is x?' question as opposed to a 'What is x like?' question for a plurality of x's" (ibid.). Thus, specifying the sortals under which a given entity falls tells us *what that thing is* as opposed to *what that thing is like*. Put another way, specifying the sortals under which a given entity falls tells us the *essential* properties of a thing rather than its *accidental* properties.

Even this does not yet tell us what a sortal *is*, though. We are still operating at the level of behavior: we know how a sortal *behaves* but we do not know what a sortal *is*, which

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[34] Compare Verity Harte discussing the *Philebus*: "Plato has sometimes been accused in this connection of being confused about the difference between class-inclusion and class-membership, for making a single process continue across the boundary between relations between class-like entities (the species and genus) and the relation between a class-like entity (the species) and the individuals that fall under it. But it seems to me that this criticism can be turned on its head. To just the extent that Plato is focused on the process of differentiating as a *uniform* process that terminates in the unlimited, we ought to be asking ourselves what he sees *in common* across boundaries that we ourselves might be inclined to impose. And to the extent that a similar criticism might be raised against Aristotle's said-of-as-subject relation, the same response can be applied" (Harte 2010: 121-122).

means we still do not know what a *universal* is. To see this, notice that as stated, Benson's view is entirely consistent with the view that Aristotelian universals are sets. For we might simply hold that when someone asks, e.g., "What is Socrates", and we answer "Socrates is a man", the word 'man' refers to the set of which Socrates is a member. Such an answer simply implies that Socrates belongs essentially to that set. Telling us that sortals are entities that can be *signified* by appropriate answers to a "What is *x*?" question does not by itself tell us *what kinds* of entities can be signified. Benson has said nothing to rule out the possibility that what is signified is a set, which makes his view compatible with the view that universals are sets.

Insofar as Benson's account is meant to provide a *metaphysics* of universals, its lack of specificity makes it difficult to assess. We have seen that it is compatible with one theory about Aristotelian universals that we have rejected, but it may also be compatible with the view to be defended later according to which universals are wholes. So we cannot simply reject it due to its compatibility with a view we reject. For all that has been said so far, universals might indeed be sortals, *whatever sortals turn out to be*.

Are universals sortals, whatever sortals turn out to be? Benson takes his claim to conflict with the definition of the universal we find in *De Interpretatione* 7, according to which a universal is that which by its nature is predicated of many subjects. The source of the alleged conflict is Aristotle's treatment in the *Categories* of non-substantial individuals, that is, those entities that are PRESENT IN but not SAID OF a subject. We shall see in Chapter Four that there is strong evidence that such entities should be understood as *particulars* rather than *universals*. Benson agrees with this (ibid.: 290), but he argues that these items satisfy the definition of the universal in *De Interpretatione* 7. Since being a particular is incompatible with

being a universal, it follows that we ought to reject the definition of the universal found in *De Interpretatione* 7.[36]

According to *De Interpretatione* 7, a universal is something that by its nature is predicated of many subjects. Notice that this definition does not employ the specific predication relations Aristotle uses throughout the *Categories*, namely, the SAID OF and PRESENT IN relations. Translated into the terminology of the *Categories*, the definition of the universal in *De Interpretatione* 7 looks like this: a universal is that which by its nature is either (a) SAID OF many subjects or (b) PRESENT IN many subjects. But Benson argues that non-substantial individuals, even if they are – as I argue in Chapter Four – particulars that are unique to their bearers, satisfy clause (b) of this definition. For Aristotle tells us at 3a4-6 that "if you will call the individual man grammatical it follows that you will call both man and animal grammatical". Here there is a non-substantial individual, the individual knowledge-of-grammar, that is PRESENT IN a given primary substance, say, Socrates. Aristotle wants to argue that it follows from this that this same individual knowledge-of-grammar is *also* PRESENT IN the species Man and the genus Animal. Benson concludes that the individual knowledge-of-grammar is therefore PRESENT IN many subjects, satisfying clause (b) of the definition of the universal from *De Interpretatione* 7. So much the worse, then, for that

[36] Benson's actual discussion is considerably more complicated, and I suspect he is confused on the matter. He argues that non-substantial individuals are particulars (Benson 1988: 290), but claims that "this conclusion is independent of one's stand vis-à-vis the thesis that Aristotle is committed to the existence of properties unique to a particular primary substance" (ibid.). Thus, Benson interprets the view of G.E.L. Owen and Michael Frede as a view according to which non-substantial individuals are "something like scattered particulars", and so not unique to their bearers, whereas he interprets the view of Ackrill as one according to which non-substantial individuals are particulars that *are* unique to their bearers. Given this, Benson then wants to argue that whether particulars are unique to their bearers or not, they satisfy the definition of the universal found in *De Interpretatione* 7, which gives us reason to reject that definition. This strikes me as a bad way to divide up the terrain. Owen and Frede are better understood as holding that non-substantial individuals are *maximally determinate universals*. This, indeed, is how they are typically read in the literature. Moreover, Benson himself seems in this argument to rely on the notion that a particular cannot be predicated of many subjects, i.e., that it is unique to its bearer. Benson's idiosyncratic terminology serves only to increase the confusion surrounding an already vexed issue.

definition of the universal, for Benson thinks (and I agree) that there is strong evidence for thinking that the individual knowledge-of-grammar is a *particular* rather than a *universal*.

Benson's proposal that a universal is a sortal is supposed to replace the definition of the universal found in *De Interpretatione* 7 at this point. For recall that according to Benson a sortal is an entity that can be signified by an appropriate answer to a "What is *x*?" question. A sortal tells us *what a thing is*, or its *essential* properties. Translated into the language of the *Categories*, then, Benson's definition of a universal looks like this: a universal is that which by its nature is SAID OF many subjects. For it is only the SAID OF relation that tells us what a thing is or gives its essential properties, for "if something is said of a subject both its name and its definition are necessarily predicated of the subject" (2a19). Because Benson's definition of the universal drops clause (b) of the definition given in *De Interpretatione* 7, his definition does not imply that the individual knowledge-of-grammar PRESENT IN Socrates and his species and genera is a universal. Benson takes this to be decisive evidence in support of his view that universals are sortals; only his view, he thinks, is consistent with Aristotle's treatment of non-substantial individuals in the *Categories*.

I do not find this argument convincing. It is true that given Aristotle's view at 3a4-6, non-substantial individuals are PRESENT IN many subjects. But I do not think this implies that they are universals, even according to the definition of the universal given at *De Interpretatione* 7. For the sense in which the individual knowledge-of-grammar is PRESENT IN the species Man and the genus Animal is *derivative*. It is *because* the individual knowledge-of-grammar is PRESENT IN Socrates that it is also PRESENT IN the species Man and the genus Animal.

I will have more to say in Chapter Four about how to understand this notion of derivative predication. Not until then will we fully be able to address Benson's concern. For

now, I simply want to insist that if non-substantial individuals are PRESENT IN species and genera only in this derivative way, then they do not in fact satisfy the definition of the universal found in *De Interpretatione* 7. All the evidence in support of taking non-substantial individuals to be particulars is consistent, then, with that definition of the universal. Benson has given us no reason to reject that definition, and so no reason to endorse his claim that universals are sortals.

Even so, it is worth pointing out that even if Benson turns out to be right that we must reject the definition of the universal found in *De Interpretatione* 7, and endorse instead the view that universals are sortals, we would still have a great deal of work to do. For we still have no account of what sortals *are*, and many of the deeply puzzling ontological issues that arise for Aristotle's treatment of universals do not go away simply by accepting the idea that universals are sortals. The proposal does not do much for us philosophically, and even if we cannot fully respond to Benson on this point, we still have much work to do.

3.

Before going on to present my own view about the nature of universals, I want to consider one last view that I take to be important. Lynne Spellman begins her account of universals by telling us that "a species – and, more generally, a kind – would seem to have members and to be some sort of collection of those members" (Spellman 1995: 41). She then goes on to discuss the crucial passage at 3b10-21, which should be quoted in full:

> Every substance seems to signify a certain 'this' (τόδε τι). As regards the primary substances, it is indisputably true that each of them signifies (σημαίνει) a certain 'this'; for the thing revealed (τὸ δηλούμενόν) is individual (ἄτομον) and numerically one (ἓν ἀριθμῷ). But as regards the

> secondary substances, though it appears (φαίνεται) from the form of the name – when one speaks of man or animal – that a secondary substance likewise signifies a certain 'this', this is not really true; rather, it signifies a certain qualification (ποιόν τι), for the subject is not, as the primary substance is, one, but man and animal are said of many things (κατὰ πολλῶν λέγεται). However, it does not signify simply (ἁπλως) a certain qualification, as white does. White signifies nothing but a qualification, whereas the species and genus mark off the qualification of substance (περὶ οὐσίαν τὸ ποιὸν) – they signify substance of a certain qualification (*Cat.* 3b10-21).

Spellman rightly observes that we find Aristotle here grappling with the similarities and differences between secondary substances and qualities. As she puts it, "since its name is applicable to many things, a species is not a particular, yet because of the relation between species and their members, species are nevertheless not properties" (ibid.: 43).

But Spellman draws the wrong conclusion from these observations. Observing that secondary substances are kinds but not properties – or, in Aristotle's terminology, that they are substances rather than qualities – Spellman concludes that "'man' ('human being') is the name for a kind, and a kind is not a predicable universal but a collection" (ibid.: 43). From the fact that secondary substances are not qualities, however, it simply does not follow that they are not predicable universals. What follows is simply that they are predicable in a way that is different from the way in which mere qualities are predicated. And, of course, precisely this difference in mode of predication is marked by Aristotle's distinction between

being SAID OF and being PRESENT IN a subject: secondary substances are SAID OF but not PRESENT IN a subject, while qualities are PRESENT IN but not SAID OF those same subjects.[37]

Further, Aristotle repeatedly uses species as his examples of universals. In *De Interpretatione* 7, for example, the species Man is presented as an example of what Aristotle means by a universal. Likewise, we shall see below that in *Metaphysics* Δ.26, Aristotle's examples of universals are all species of the genus Animal. Passages like these cast doubt on Spellman's claim that a species is a kind, where a kind is supposed to be something distinct from a universal.

Anticipating this objection, Spellman claims that in *De Interpretatione* 7 "the distinction between properties and kinds is not made (or needed) in that context" (ibid.: 43). Spellman may be right about this, but I would again insist that it does not follow that kinds are not predicable universals. There *is* a distinction between properties and kinds, but it is not the distinction Spellman draws. The distinction rests in how these universals are predicated of their instances, a difference marked in the *Categories* by the distinction between being SAID OF and being PRESENT IN a subject, and marked in later works by the difference between *per se* and *per accidens* predication.

Spellman's distinction between predicable universals, on the one hand, and kinds or collections on the other is otiose. Kinds are indeed predicable universals, but this is compatible with their being collections. Absent some metaphysics of universals or collections, there is no way to deny this compatibility, and the view of universals I shall defend below vindicates this compatibility. For to say that a universal is a whole is to say it is

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[37] Higher kinds in non-substantial categories are both SAID OF and PRESENT IN a subject. But the contrast between secondary substances and qualities is a contrast between the ways in which they are predicated of the *same* subjects, and these higher non-substantial kinds are never SAID OF the same subjects that secondary substances are SAID OF. They are PRESENT IN those subjects, but SAID OF lower-level non-substantial items.

a certain kind of collection: it is a collection of its parts. When in Chapter Two I present the formal features of these wholes, we shall see that I am in agreement with Spellman about what those formal features are. The view that I shall defend is compatible with her claim that species are kinds or collections, a fact obscured by a needless distinction between universals and kinds.

4.

We have examined a variety of accounts of what Aristotelian universals are supposed to be: that they are sets, that they are sortals, and that they are properties distinct from kinds. Each of these proposals faces difficulties that justify us in looking for an alternative. My goal in the remainder of this chapter is to present and argue for a new view about Aristotelian universals: they are *wholes*.

We have already seen that Aristotle typically uses mereological language when discussing universals and particulars. That language is suggestive, to be sure, but it is also inconclusive. More direct evidence is required.

Stronger evidence for the view that universals are wholes can be found by examining what Aristotle has to say about parts and wholes in *Metaphysics* Δ. In Δ.25, for example, he discusses different kinds of parts. Aristotle says that "the results of any non-quantitative (ἄνευ τοῦ ποσοῦ) division (διαιρεθεὶη) of a species (τὸ εἶδος) are also called its parts (μόρια); that is why people assert that species are parts of their genus" (1023b18-19).[38] The structure of the passage is somewhat unclear, but I take it that Aristotle is arguing as follows: a non-quantitative division of a species divides that species into parts, *therefore* species are parts of

[38] Kirwan translates 'εἶδος' and 'εἴδη' as 'form', but I think it is clear from context that Aristotle means 'species'. Likewise, he translates 'μόρια' as 'portions', but I think it is clear from context that Aristotle means 'parts'.

their genera. The inference is valid once we keep in mind that one and the same entity can be both genus and species; that is, that 'species' and 'genus' are relative terms. If we divide the genus Animal in the appropriate way, what we get are its parts. Aristotle tells us that this is *why* we may say that species are parts of their genera. The genus Animal, here, is playing the role both of species and genus: it is a genus of which there are many species, where these are its parts. But it is also itself a species of a higher genus, which is why the claim that we may divide a species into parts applies to it. Thus, the fact that one and the same entity is both species and genus – that 'species' and 'genus' are relative terms – ensures the validity of Aristotle's inference.

This understanding is reinforced by Aristotle's discussion of different kinds of wholes in Δ.26. It is worth quoting the relevant portion of his discussion in full:

> We call a whole (ὅλον) both that of which no part is absent out of those of which we call it a whole naturally; and what contains its contents (τὸ περιέχον τὰ περιεχόμενα) in such a manner that they are one thing (ἕν τι εἶναι), and this in two ways, either as each being one thing (ὡς ἕκαστον ἕν) or as making up one thing (ὡς ἐκ τούτων τὸ ἕν). *For what is universal* (καθόλου) *and what is said to be as a whole* (τὸ ὅλως)*, implying that it is a certain whole (*ὡς ὅλον τι ὄν)*, is universal as containing several things, by being predicated of each of them* (πολλὰ περιέχον τῷ κατηγορεῖσθαι καθ᾽ἑκάστου) *and by their all – each one – being one thing; as for instance man, horse, god, because they are all animals.* But what is continuous (συνεχὲς) and limited (πεπερασμένον) [is a whole] when it is some one thing made up of more than one thing, especially when

> these are potential constituents of it but, if not, when they are actual (1023b26-35; emphasis mine).

This passage is essential to any understanding of Aristotle's mereology. He clearly commits himself in the first sentence to a kind of *pluralism* in mereology according to which there are multiple *kinds* of wholes (a position not altogether surprising for a philosopher who often believes that crucial metaphysical terms are said in many ways). The first kind of whole – the kind of whole from which no part is missing – does not concern us here.[39] The second kind of whole can be further subdivided into two sub-kinds. One sub-kind of whole is "continuous and limited" and composed of many parts that "make up one thing". To borrow some medieval terminology, let us call this an *integral* whole.[40]

A good example of an integral whole is a tree. A tree is continuous in the sense that the spatial region it occupies is not scattered. It occupies three dimensions in such a way that there are no spatial gaps in its being, and it fully excludes other entities from that region. Similarly, a tree is limited both spatially and temporally: there is some first moment at which it began to exist, some final moment at which it will cease to exist, and the spatial region it occupies has borders in the sense that the tree is surrounded by regions of space it does *not* occupy. And a tree is "some one thing made up of more than one thing" in that a tree has a variety of heterogeneous parts – roots, trunk, branches, and leaves – that together are unified in some way to make up *one thing* (as opposed to a mere heap, which is in some sense not one thing at all, but many things juxtaposed).

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[39] It seems that what Aristotle has in mind here is not a particular *kind* of whole, but a way in which we speak of something as *being* whole: something is whole just in case none of its parts are missing. It is not whole if some of its parts are missing, even if that thing is in some other sense a whole (i.e., it is a composite object). Thus, imagine a car that is missing a tire. Although a car is certainly a whole – indeed, it is an integral whole – we may not call it a whole in this instance, since it is missing a part. See Kirwan 1994: 175.

[40] See, e.g., Frede (1978/1987: 52).

The second kind of sub-whole is not like this. Whereas an integral whole contains its contents in such a way that those contents *make up* one thing, this second kind of whole contains its contents in such a way that each of those contents is itself already one thing. He elaborates on this view by making the claim crucial to my interpretation: "For what is universal and what is said to be as a whole… is universal as containing several things, by being predicated of each of them and by their all – each one – being one thing". Aristotle tells us that a universal is "said to be as a whole", adds that this implies that it *is* a certain whole, and then tells us the sense in which a universal is a whole. That sense is not like the sense in which a tree is a whole. The tree is continuous, limited, and made up of heterogeneous parts that come together to be unified in a way that they are not unified on their own. A universal, by contrast, contains its contents by being *predicated* of those contents. A tree is not *predicated* of its parts. The contents of a universal, moreover, are each "one thing", whereas the contents of a tree are *not* one thing, but only *compose* one thing when put together in the appropriate way to serve the appropriate function. As an example of the contents of a universal whole, Aristotle gives us Man, Horse, and God, which are the contents of the genus Animal.

We have pretty convincing evidence, then, that universals are a kind of whole. Both Δ.25 and Δ.26 present pluralistic views in mereology, and universals are among the sorts of things that count as wholes having parts. But Kirwan has resisted this interpretation of these passages. He argues that nothing in Δ.25 corresponds to Aristotle's discussion in Δ.26 of a universal being a kind of whole (Kirwan 1993: 175). Kirwan insists that while Δ.25 discusses the relation of *class inclusion*, this does not correspond to the discussion in Δ.26 because in Δ.26, Aristotle "avoids the word 'part' in favour of the vaguer 'contents'" (ibid.). The passage in Δ.25 discusses the way in which a species is a *subset* of its genus, and this has

nothing to do, on Kirwan's view, with Δ.26's discussion of the way in which a universal is a whole.

I disagree. Aristotle clearly takes both species and genera to be universals.[41] This seems clear from the examples Aristotle gives of universals in both Δ.26 and *De Interpretatione* 7. In Δ.26, Aristotle presents the species Man and Horse as examples of items falling under the universal Animal. Thus, the genus Animal counts as a universal by Δ.26's definition: it contains many things by being predicated of each. It likewise satisfies the definition of the universal in *De Interpretatione* 7: it is of such a nature as to be predicated of many things. The same can be said of the species Man and Horse themselves, for they each contain many things by being predicated of those things: they are each SAID OF all the individual men and horses, respectively. This is why it is not surprising that Aristotle gives the species Man as an example of a universal in *De Interpretatione* 7 (17a40): it is of such a nature as to be predicated of many things.

Moreover, Kirwan's claim that Δ.25 discusses the subset relation as distinct from the proper parthood relation *presupposes* the view that Aristotle took universals to be sets. Without any reason to think that, there is no reason to think that Δ.25 is discussing the subset relation. Indeed, which relation Δ.25 is discussing depends on what we take species and genera – that is, universals – to *be*. So if we take seriously the idea in Δ.26 that universals are a kind of whole, and we remember that species and genera are universals, then we can

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41 *Pace* Corkum and Spellman. Corkum writes: "it is not obvious that Aristotle identifies universals and species" (Corkum 2015: 802). While Aristotle does not *identify* universals with species, this is because there are universals that are not species: the highest genera themselves, that is, the categories of being. Spellman, as we have seen, claims that "'man' ('human being') is the name for a kind, and a kind is not a predicable universal but a collection" (Spellman 1995: 43). We have seen good reason to reject this view, and so I ignore it in what follows.

plausibly take Δ.25 to be concerned with a mereological relation: it is saying that species are *parts* of their genera.[42]

One difficult issue must be addressed at this point, however. Notice that neither Δ.25 nor Δ.26 discusses the relationship between a species and its individual members. Both chapters, that is, are concerned about the relationship between a species and its higher genera. These chapters discuss, in other words, relationships between different *universals*, but not the relationships between universals and the particulars these universals are SAID OF. Thus, someone might object that while a species is indeed a proper part of its higher genera, the particulars falling under that species are not proper parts of the species.[43] Indeed, some might point out that infimae species are sometimes described as ἀτομόν – that is, indivisible – which implies that they cannot be divided, as genera are, into parts.[44]

By way of reply, notice that in the *Categories* Aristotle does not refer to infimae species as ἀτομόν. Infimae species are most determinate kinds. Thus, in the category of substance, the species Man is an infimae species. But the species Man is not described as ἀτομόν in the *Categories*. Aristotle in fact explicitly claims that it is *not* ἀτομόν at 3b10-19, where he tells us that anything that is SAID OF many subjects is neither ἀτομόν nor one: "for the subject [i.e., secondary substance] is not, as the primary substance is, one (ἕν), but man and animal are said of (λέγεται) many things" (3b18-19).

Non-substance categories present more difficulty, if only because it is a matter of dispute which items are the most determinate kinds. Consider those entities that Aristotle

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42 It has been objected that the passage in question attributes this view to others: "that is why people assert that species are parts of their genus". It is true that the view was held by others, but it doesn't follow that Aristotle himself doesn't hold it. The evidence from Δ.26, I think, suggests that Aristotle did hold the view, and that Aristotle is simply pointing out in Δ.25 that others agree with him on this claim.

43 We find something like this view in Porphyry: "For the genus is a kind of whole and the individual a part, while the species is both a whole and a part, although a part of one thing and the whole not *of* another thing but rather *in* other things. For the whole is in the parts" (*Isagoge*, trans. P.V. Spade, **37**, p. 7).

44 Thanks to Justin Vlasits for raising this objection.

says are PRESENT IN but not SAID OF a subject. Aristotle tells us that these items are ἀτομόν. But whether these are most determinate kinds is a notorious point of controversy. On one influential view, the view defended by G.E.L. Owen and Michael Frede, these entities are indeed most determinate kinds. But on a more traditional view, they are not most determinate kinds, but rather *particular instances* of most determinate kinds. On this second view, the most determinate kinds are those entities that are both SAID OF and PRESENT IN a subject. And we have already seen that Aristotle denies that anything SAID OF many subjects can be ἀτομόν.

In Chapter Four I shall defend the second view according to which those entities that are PRESENT IN but not SAID OF a subject are particular instances of most determinate kinds. So I believe that in the *Categories*, at any rate, Aristotle does not take most determinate kinds to be ἀτομόν.

Still, it might be insisted that in other texts, Aristotle does indeed take most determinate kinds to be ἀτομόν, and these texts tell against my interpretation of Δ.25 and Δ.26. But to determine how these passages affect my interpretation , we must say more about what it means to be ἀτομόν. Given that throughout his career Aristotle believed that universals could not exist uninstantiated – that universals, of whatever kind, are not "separate" (χωρὶς) – it cannot mean that most determinate kinds do not have instances. In this sense, even a most determinate kind can be divided, for it can be divided across its instances. To say that an infimae species is ἀτομόν, then, must mean something else. I suggest that it means that this species is indivisible *by genus and differentia* into further sub-kinds. This makes sense of the contrast between a most determinate kind being ἀτομόν and its higher kinds being divisible, for the contrast presumably requires that the notions of divisibility and indivisibility at play be the same. Since a higher kind is divisible in the sense

of being divisible by genus and differentia, the sense in which a most determinate kind is indivisible must be that it is not so divisible. Higher kinds can be divided into sub-kinds; infimae species cannot. That is why Aristotle refers to the latter as ἀτομόν. But this sense of indivisibility is entirely compatible with the claim that a species can be divided into its instances, and so is entirely compatible with the idea that it might be a whole having those instances as its parts. Those instances are not sub-kinds, but rather instances of a most determinate kind.

What then should we say about the fact that neither Δ.25 nor Δ.26 discusses the relationship between a species and its individual members? Two things are important to keep in mind here. First, the claims made in Δ.26 about the relationship between a species and its genera apply straightforwardly to the relationship between a species and its individual members. Thus, just as the genus Animal contains its sub-species by being predicated of each of them – where each sub-species is itself one thing – so too does the species Man contain its members by being predicated of each of them – where each member is itself one thing. That gives us some reason to think that Δ.26 is meant to apply equally to the relationship between a species and its members.

The claim made in Δ.25, that a genus can be non-quantitatively divided into its sub-species, and that the latter can be called its parts, is a little more difficult. How we interpret this depends on exactly what Aristotle means by a non-quantitative division. But the clear affinities between this chapter and Δ.26 suggest that it too is meant to apply to the relationship between a species and its members.

Second, we must keep in mind Aristotle's clear and unwavering commitment to the transitivity of the SAID OF relation. If we are willing to grant that a genus is a whole having its sub-species as parts, and that a genus is SAID OF its sub-species, then given the transitivity of

that relation, it *follows* that a species must be a whole having its members as parts. There is no way to avoid that conclusion without once again accusing Aristotle of an equivocation. This is strong evidence, I think, in favor of taking a species to be a whole composed of parts just as much as a genus is.

The evidence from *Metaphysics* Δ.25 and Δ.26, I conclude, gives us considerable evidence in support of taking universals to be wholes. What exactly this claim comes to has yet to be discussed. In particular, we need to know more about what kinds of wholes universals are supposed to be, and what features these wholes have. Those questions will be addressed in the next chapter. What I would like to do in the remainder of this chapter is offer some further arguments in support of this conclusion about the metaphysics of universals, which I hope will also shed light on how metaphysically seriously we should take it.

5.

I take it as established, therefore, that Aristotle employs mereological language when discussing universals. But some may doubt whether that language should be taken metaphysically seriously. One might doubt, for example, whether the distinction between universal wholes and integral wholes is really a distinction between two genuine kinds of *wholes* as opposed to just two ways in which we might employ mereological language, only one of which – our language about integral wholes – should be taken metaphysically seriously.

In the remainder of this chapter, I present two arguments for taking this language metaphysically seriously. That is, I present two arguments for the claim that the textual

evidence adduced in the previous section really commits – or, at least, *could* and perhaps *should* commit – Aristotle to the view that universals *really are* wholes composed of parts.

The first argument begins with a puzzle concerning the nature of secondary substances: they seem able to take contraries simultaneously. To see this, remember that Aristotle holds that "if you will call the individual man grammatical it follows that you will call both man and animal grammatical" (3a4-6). Non-substantial individuals that are PRESENT IN a given primary substance are thus also PRESENT IN the species and genera of that primary substance. Suppose now that I have one individual who is, say, generous, and another individual who is miserly. Aristotle is thus committed to the following: the species Man – and the genus Animal – is *both* generous *and* miserly *at the same time*. Thus, Michael Wedin argues that Aristotle's notion of a secondary substance is "incoherent": "it is highly undesirable to take secondary substances as the sort of thing that can remain one and the same while taking contraries" because this would leave us "with an incoherent notion of an object, namely, the notion of something that can be both F and the contrary of F at one and the same time" (Wedin 2000: 100). Likewise, Casey Perin worries that "the species or genus of a primary substance, unlike a primary substance itself, is a subject for inherence in which contraries can inhere at one and the same time" (Perin 2007: 142). He claims that this view "obviously invites a question", viz., *what sort of entity could take contraries at one and the same time*?

Now, it is true that Aristotle believes that it is distinctive of substances that they be capable of taking contraries. But his precise formulation of this view is: it is "most distinctive of substance that what is numerically one and the same is able to receive contraries" (4a10-11). This is most plausibly understood as (a) speaking about *primary substances* rather than *secondary substances*, since the latter are not numerically one (3b18) and (b) speaking about taking contraries *at different times*, since Aristotle's example is an individual man who

"becomes pale at one time and dark at another" (4a20). So we cannot respond to the worry raised by Wedin and Perin by saying that it is distinctive of substances that they be able to take contraries, since that view has nothing to do with secondary substances or taking contraries simultaneously.

Wedin has raised a further difficulty related to the ability of secondary substance to take contraries, in addition to the alleged incoherence involved in this ability. Against the natural reading of 4a10-11 discussed above, Wedin has taken the phrase 'what is numerically one and the same' to have wide scope, giving us the following principle:

(3) (x)(F)(F*) (Fx at *t* & F*x at *t** & F and F* are contraries → x is a primary substance).

The worry is that secondary substances, in virtue of their ability to take contraries, will satisfy the antecedent of this principle, thereby qualifying them as primary substances and collapsing the distinction between primary and secondary substances (Wedin 2000: 100). To block this result, we have to specify the relation between times *t* and *t**. The obvious way to do this is to stipulate that *t* and *t** are not identical and to add this as a conjunct to the antecedent of (3). By specifying that *t* and *t** not be identical, secondary substances – which seem to take contraries *simultaneously* – no longer satisfy the antecedent. But Wedin claims that specifying that *t* and *t** are not identical is "is the right thing to do but in the wrong place" (ibid.). He claims instead that the stipulation ought to go in the consequent, giving us

(4) (x)(F)(F*)(*t*)(*t**) (Fx at *t* & F*x at *t** & F and F* are contraries → *t*≠*t**).

He then argues, correctly, that secondary substances do not satisfy (4) because it is possible for them to take contraries at one and the same time (ibid.). But then secondary substances "cannot be the subjects of accidents in anything like the way primary substances are" (ibid.).

Thus, Wedin argues that the only way to keep secondary substances from collapsing into primary substances is to deny that anything can be PRESENT IN them as underlying subjects. But this seems to contradict Aristotle's explicit commitment to the claim that secondary substances are underlying subjects, as presented at 3a4-6.

Not only, then, does the apparent ability of secondary substances to take contraries seem to render incoherent Aristotle's conception of secondary substance, it also threatens to force Aristotle into contradicting his claim that secondary substances are underlying subjects, on pain of being unable to distinguish primary and secondary substances in the first place.

Wedin's way of reading 4a10-11 seems to me to take insufficient account of the passage at 3b18-19, wherein Aristotle claims that secondary substances are not numerically one. Wedin provides no reason to prefer (4) over a version of (3) that specifies in the *antecedent,* rather than the *consequent*, that *t* and *t** are distinct times, viz.:

> (3*) (x)(F)(F*) (Fx at *t* & F*x at *t** & $t \neq t^*$ & F and F* are contraries → x is a primary substance).

Nor does Wedin provide any reason to think that the phrase 'what is numerically one and the same' must take wide scope. It is better, I think, to suppose that Aristotle is referring only to individuals here, and that species and genera can avoid being mistakenly classified as primary substances by adding '$t \neq t^*$' as a conjunct to the antecedent of (3), giving us (3*).

If we therefore adopt the most natural reading of 4a10-11, we end up with the view that it is distinctive of *primary* substances that they be able to take contraries *at different times*.

Secondary substances are not mentioned. Nor is the ability to take contraries *simultaneously*. We need not worry, then, that Aristotle will be unable to distinguish primary and secondary substances without contradicting his claim that the latter are underlying subjects of predication. But this still leaves us with the threat of incoherence: Aristotle seems committed to the view that secondary substances *can* take contraries simultaneously. Wedin and Perin claim that *nothing* can take contraries simultaneously, in which case Aristotle's views about secondary substances and their status as underlying subjects would be incoherent.

This worry strikes me as seriously overblown. We have a perfectly coherent notion of how an object might take contraries simultaneously: an object can take contraries simultaneously if it is composed of *parts* such that one part takes one contrary and another part takes another contrary. A single object may take the contrary colors blue and red by being *partly* blue and *partly* red; that is, by having *parts* some of which are *wholly* blue and others of which are *wholly* red.[45]

Aristotle would surely have been aware of this kind of view, for such a view underlies Plato's argument for the tripartite division of the soul in *Republic* IV. Beginning with the principle that "the same thing will not be willing to do or undergo opposites in the same part of itself, in relation to the same thing, at the same time" (436b), Socrates says: "if we ever find this happening in the soul, we'll know that we aren't dealing with one thing but many" (436b).[46] On the basis of these principles, Socrates is able to argue that the soul must be divided into parts. For suppose that a man is thirsty but is nevertheless unwilling to drink. Socrates asks: "What, then, should one say about them? Isn't it that there is something in

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[45] Exactly this sort of move motivates the perdurantist response to the problem of temporary intrinsics. If an object *O* is *F* at time *t* and *F** at time *t**, where *F* and *F** are incompatible intrinsic properties, many philosophers hold that *O* is divided into two *temporal parts*: its *t*-part and its *t**-part (Lewis 1986; Sider 2001). This blocks the inference that *O* is both *F* and *F**. Instead, it has *parts* that are *F* and *parts* that are *F**, and – we might say – is therefore *partly F* and *partly F**. But there is no contradiction in that.

[46] All references to Plato's *Republic* will be to C.D.C. Reeve's translation in his (1992).

their soul, bidding them to drink, and something different, forbidding them to do so, that overrules the thing that bids?" (439c). He concludes from this that the soul has at least two parts: the appetitive part that desires drink and the rational part that is unwilling to drink.

On this view, there is a single object – the soul – that is able to take contraries simultaneously. How? In virtue of having one part take one contrary and another part take the other contrary. There remains a sense in which the soul takes those contraries simultaneously, but it is not in violation of the principle that the same thing cannot act in two opposite ways or be in two opposite states at the same time, with respect to the same part of itself, and in relation to the same object, because by dividing the soul into parts, we avoid violating the condition that it cannot take contraries "with respect to the same part of itself".

With this in mind, we can easily explain how it is that secondary substances can take contraries simultaneously. We need only suppose that they – like the soul in *Republic* IV – are composed of parts. If a secondary substance is a whole composed of primary substances, then it can take contraries simultaneously in the same way the tripartite soul does: each part takes one of the contraries, but no part takes both. Thus, if we return to our example of two men, one of whom is generous, the other of whom is miserly, we can say that Aristotle is committed only to the following: the species Man is *partly* generous because it has as a part a man who is generous, and *partly* miserly because it has as a part a man who is miserly. There is no contradiction in this, and it gives us a perfectly coherent notion of how one object can take contraries simultaneously.

The foregoing discussion presents us with a positive argument in support of the view that Aristotle takes universals to be wholes. That argument goes like this. Secondary substances are universals that are capable of taking contraries simultaneously. Nothing can

take contraries simultaneously *unless it is a whole* compose of some other objects. So, secondary substances must be wholes composed of some other objects, viz., primary substances.

Notice that this argument works *only if* the claim that secondary substances are wholes is taken metaphysically seriously. Plato's argument for the tripartite division of the soul would fail if he did not literally mean that the soul really had parts, that is, if his talk of dividing the soul was merely a manner of speaking. Likewise, Aristotle's commitments vis-à-vis the status of secondary substances as underlying subjects can avoid violating the principle that the same thing cannot act in two opposite ways or be in two opposite states at the same time, with respect to the same part of itself, and in relation to the same object *only if* secondary substances *really are* composed of parts. That mereological language cannot be just a manner of speaking, on pain of convicting Aristotle of an incoherent view of the nature of secondary substances.

6.

I turn now to a second and final argument for taking Aristotle's mereological language when discussing universals seriously. This argument relies on a comparison between Aristotle's *Categories* and Plato's *Philebus*, in particular, the process of division described at 16d1-16e3. The relevant passage is worth quoting in full:

> [W]hatever is said to be consists of one and many, having in its nature limit and unlimitedness. Since this is the structure of things, we have to assume that there is in each case always one form for every one of them, and we must search for it, as we will indeed find it there. And once we have grasped it, we must look for two, as the case would have it, or if not, for three or

> some other number. And we must treat every one of those further unities in the same way, until it is not only established of the original unit that it is one, many and unlimited, also how many kinds it is. For we must not grant the form of the unlimited to the plurality before we know the exact number of every plurality that lies between the unlimited and the one. Only then is it permitted to release each kind of unity into the unlimited and let it go (*Philebus*, 16d1-16e3).[47]

Socrates is presenting a solution to the problem of the one and the many (16a5-d1), which concerns not entities in the sensible world but the Forms (15a1-6). It is "through discourse" that one and the same thing becomes both one and many (15d5). To see this, we must look at the ontology of the Forms presented in the passage above. We begin with the highest genus, the Form beneath which everything falls, for "the structure of things" is such that "there is in each case always one form for every one of them". So, within the realm of the Forms, there is some highest genus which is the Form for everything. Having grasped this, we look for all the sub-species of this Form: "once we have grasped it, we must look for two…or some other number". Having then grasped these, we treat each as if it were a highest genus and begin looking for the sub-species beneath each: "we must treat every one of those further unities in the same way". This process continues until we have reached those items that cannot be further sub-divided into lower species: we must continue "until it is not only established of the original unit that it is one, many and unlimited, also how many kinds it is".

The ontology underlying this process of division seems to mirror the ontology we find in the *Categories*. More precisely, it mirrors the structure we find within any category of

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[47] All references to Plato's *Philebus* will be to Dorothea Frede's translation in her (1993).

being. Plato begins with the one, or the highest genus, and divides it into the many, or the various species of that genus. Then he treats each of these many as if they were the one, and divides each of them further into subspecies, and continues doing so until he reaches the unlimited, or the various individuals falling under the infimae species. Just as Plato assumes that the relationship between the one and the many is the same as the relationship obtaining between the many and the unlimited, Aristotle tells us that the SAID OF relation is transitive. It is for this reason that Michael Frede says that "with one exception, the view in the *Categories* hardly differs from the Platonic theory of forms in the *Philebus*" (Frede 1978/1987: 56). He writes:

> In the *Philebus*, Plato asks how forms can be both one and many. The answer is that they are at once one, many, and unlimitedly many; one, insofar as they are genus; many, insofar as the genus consists of many species; and unlimitedly many, insofar as unlimitedly many things are subsumed under the various species. Here we have not only the division into genera, species, and individuals, but also the notion that species and individuals are parts of the genus or form; the relation between genus and species, and between species and individual, seems to correspond exactly to the relation of being said of something as a subject; the individuals are again viewed negatively as what remains after one has divided the genus as far as it can be divided into species…The only difference is that Aristotle reverses the priority relation between forms and particulars (ibid.: 56-57).

The ontology in the *Categories* is the same as the ontology in the *Philebus*.[48] The only difference between the two is the relations of ontological dependence holding between the entities populating those ontologies: in the *Philebus*, the one is prior to the many and the many are prior to the unlimited, whereas in the *Categories*, the individuals are prior to the species and the species are prior to the genera.

This difference in the direction of ontological dependence marks one of the chief differences between Plato and Aristotle, and its importance for our purposes will become clear below. Before saying more about this, however, I want to consider a different aspect of Frede's discussion. He tells us that "the individuals…are viewed negatively as what remains after one has divided the genus as far as it can be divided into species". The suggestion is that there is no *positive* characterization of individuals, no *positive* account of what it is to be an individual. Individuals are the residue left over from a process of division. Individuals are what are left when you can no longer divide things into further sub-kinds.[49]

Frede seems to have in mind what Verity Harte calls a "peculiarly weak" notion of an individual. According to Harte, "we should resist the idea that the step that is taken from the universal to particular is one that marks some boundary that is fundamental for the Aristotelian relation in view" (Harte 2010: 122). The SAID OF relation is transitive. The

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48 One caveat needs to be mentioned here. According to Frede, the "unlimited many" Plato refers to are infimae species, whereas on my view, Plato is referring to the *particulars* that fall under the infimae species. Frede would agree with me that the ontology in the *Philebus* is the same as the ontology of the *Categories*, then, but for different reasons: he holds that both treatises regard individuals – Plato's "unlimited many", Aristotle's non-substantial individuals – as infimae species, whereas I hold that both treatises regard these individuals as particulars falling under infimae species.

49 It may be objected that on this view, species in the category of substance turn out to be individuals, since they too cannot be further divided into sub-kinds. But Aristotle never says that species in the category of substance are not individuals. At 3b18-19, he argues rather that they are not *one* in the way that a primary substance is. I think it is telling that he does not say they are not individuals. But even if Aristotle were to hold that species in the category of substance were not individual, this would primarily be a problem for Frede's characterization of individuality, not mine. The goal of this section is not to defend a particular notion of individuality, but rather to take a widely accepted one and attempt to reconcile it with the ontological priority of primary substance. If it should turn out that this is the wrong conception of individuality, there would still be the foregoing arguments in support of the view that Aristotle took universals to be wholes.

relation between an individual and its species is the same as the relation between that species and its higher genera. Taking that seriously means giving a negative characterization of individuality: to be an individual is nothing more than to be indivisible into sub-kinds.[50]

By contrast, the things above the individuals in the Porphyrian tree of being *are* divisible into sub-kinds. That is the only difference between individuals and everything else. Harte's suggestion is that this distinction does not mark anything of fundamental importance. I take it that her suggestion amounts to this claim: the distinction between individuals and everything else is not *ontologically* important. It is simply a difference in divisibility, not in kind of thing. Just as composite material objects and atomic material objects are both *material objects*, differing only insofar as they can or cannot be divided into parts that are themselves material objects, so too universals and individuals are both somehow *the same kind of thing*, differing only insofar as they can or cannot be divided into sub-kinds.

One way to think about this view is to think about the determinable-determinate distinction. Highest genera are determinables that are not themselves determinates of anything. Lower-level species are determinates of these higher genera, but they are also determinables, as their sub-species are determinates of them. Likewise, individuals are determinates of lowest-level kinds or infimae species, and they are not themselves determinables for anything.

Thought of in this way, a species is nothing more than a *way* of being a genus, and an individual is nothing more than a *way* of being a species. This conception of an individual is,

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[50] This is simply another way of putting Frede's point that an individual is that which is a subjective part of something else, but itself has no subjective parts (Frede 1978/1987: 54). On this characterization, both infimae species and the individuals falling under them qualify as individuals, as neither sort of entity can be divided into sub-kinds. This fact should not affect the argument that follows.

as Harte suggests, "peculiarly weak". It is a purely negative characterization of an individual: an individual is that which is *not* divisible (and so *not* a determinable).

Consider an example. Socrates and Callias are both individuals. To say this is to say no more than that neither Socrates nor Callias can be divided into kinds. They are different, of course. Socrates and Callias are *distinct* individuals. But those differences are irrelevant from the point of view of division, for the differences between them are not differences *in kind*. Socrates and Callias are, in some sense, just two *ways* of being a man. But it makes no sense to further divide either Socrates and Callias into, say, two *ways of being Socrates* or two *ways of being Callias*. Thus, as Harte puts it, "the particulars of Aristotle's *Categories* emerge at precisely the point at which the differences between things are no longer salient for the purpose at hand" (Harte 2010: 122).

This conception of an individual is "peculiarly weak". Not only does Aristotle show no interest in questions about individuation – what is the *principle of individuation* that makes Socrates the very man that he is and distinguishes him from all other men, including Callias? – but he gives us no account of *what it is to be an individual as such*. The language that he most often uses to describe individuals – that they are ἀτομόν – is also used to describe universals (Harte 2010: 115-116). In *De Interpretatione* 7, particulars – which are individuals – are defined *by contrast* to universals. Individuals, then, are simply the residue of a process of division.

We are now in a position to develop a second argument in support of my claim that universals are wholes. That argument begins with the idea just now developed, that in Aristotle's *Categories* we find a "peculiarly weak" conception of an individual. This conception of an individual seems at odds with the one key difference we have seen between the *Philebus* and the *Categories*, which is that although they share the same ontology, the directions of ontological dependence run in opposite ways. For Aristotle, unlike for Plato, it is the

individuals that are ontologically fundamental. Primary substances are the fundamental beings, and even in non-substance categories, it is clear that the individuals in those categories are supposed to be ontologically prior to their species and genera. How can individuals be ontologically fundamental, however, if Aristotle's conception of individuals is "peculiarly weak"? If individuals are in some sense nothing more than the residue of a process of division, if individuals are simply those things that are indivisible into kinds, if individuals are simply determinates of higher determinables, then how can they be *ontologically prior* to those higher kinds? There is a tension, it seems to me, between these two features of Aristotle's view. The ontological priority of individuals is at odds with his refusal to offer a positive characterization of individuality in a way that marks a sharp contrast between individuals and other items in the ontology.

The view of universals I have been defending in this chapter neatly resolves this tension. Plato begins with the one, divides it into the many, and proceeds with this process of division until he reaches the unlimited many. Both Frede and Harte seem to follow Plato here even in their interpretations of Aristotle, as they continue to speak of a process of *division* having individuals as a *result*. Aristotle's commitment to the ontological priority of individuals invites us to invert this image and refuse to think of our progress along a Porphyrian tree as a process of division ending with individuals. Instead, we should think of our progress along a Porphyrian tree as a process of *composition* having individuals as a *starting point*. It is not that Aristotle has a "peculiarly weak" notion of an individual, but rather that he has a "peculiarly weak" notion of *universals*. I agree with Harte that the boundary between individual and universal is not one of fundamental ontological importance, but I draw a rather different conclusion. It is the individuals that form the foundation of Aristotle's ontology. Individuals are not the residue of dividing higher kinds; higher kinds are the result

of putting individuals together. We should not think of individuals as nothing more than instances of kinds or determinates of determinables. We should instead think of universals as nothing more than composites of individuals. That is, we should think of universals as *wholes* composed of individual parts.

Thinking of universals in this way allows us to appreciate both the remarkable similarities and crucial differences between the *Philebus* and the *Categories*. That is some reason to accept the view.

7.

In this chapter I have defended the view that, for Aristotle, universals are wholes. Not only is such a view a natural way to read crucial texts like *Metaphysics* Δ.25 and Δ.26, but it is also useful in helping us to understand the otherwise puzzling fact that secondary substances can take contraries simultaneously and to appreciate the similarities and differences between the *Philebus* and the *Categories*.

Still, the view in question stands in need of further explanation. In the next chapter I take up this challenge. There I will present the formal features governing this aspect of Aristotle's mereology, with the aim of clarifying exactly what is meant by the claim that universals are wholes. Then I will respond to a number of objections to my proposal, both philosophical and historical.

CHAPTER TWO

In Chapter One, I argued that Aristotle takes universals to be wholes composed of parts. Secondary substances, for example, are wholes composed of the primary substances they are SAID OF. Universals in each of the non-substance categories, too, are wholes composed of the individuals within each of those categories that they are SAID OF.

What does it mean to say that a universal is a whole composed of parts? This question is especially pressing because the kind of whole in question is relatively unfamiliar. We tend to limit our talk of parts and wholes to what are called *integral wholes*, which are those entities that Aristotle refers to as "continuous and limited", and whose parts "make up one thing". Thus, we are happy to call a tree a whole composed of parts: its roots, trunk, branches, and leaves make up one thing, and the tree is continuous – it has no spatiotemporal gaps – and limited – it has a beginning and ending in time, and it has well-defined spatial boundaries. But a *universal whole* is different. It contains its parts by being predicated of them, and it is neither continuous nor limited in Aristotle's sense. To see how different these two kinds of wholes are, notice that we would not say of an integral whole that it is predicated of its parts. A tree is not predicated of its roots. Conversely, the thought goes, because we say that a universal is predicated of its instances, we should not refer to it as a whole having those instances as parts.

One goal of this chapter, then, is to say more about exactly what it means to call a universal a whole. My strategy will be to contrast what Aristotle has to say about universal wholes with the most widely accepted theory of parts and wholes on offer today, known as *classical extensional mereology*. By seeing the similarities and differences between Aristotle's notion of a universal whole and the classical extensional mereologist's conception of parts and wholes, I hope that the former will be illuminated.

Even if we have a good understanding of what it means to say that a universal is a whole, some may nevertheless believe that the view should be rejected. Despite the textual evidence adduced in the previous chapter, and despite the fact that the view helps us make sense not only of how secondary substances can take contraries simultaneously, but also the relationship between the *Categories* and the *Philebus*, some will insist that the view in question is too philosophically problematic to attribute to Aristotle. Objections to the view that universals are a kind of whole are legion, and the second aim of this chapter is to respond to those objections. While I will not claim that my responses constitute a complete defense of the view in question, I do claim that my responses will show that the view is not so implausible that we should avoid attributing it to Aristotle.

1.

Classical extensional mereology is widely accepted as the default metaphysics of material objects today. Not all metaphysicians accept it as a theory about parts and wholes, but dissenters almost invariably take it as a foil against which to develop their preferred alternatives.[51]

Because classical extensional mereology enjoys such nearly hegemonic status in contemporary metaphysics, it will be useful to compare Aristotle's claims about universals to what classical extensional mereology says about parts and wholes. The hope is that the familiarity of classical extensional mereology will help illuminate what Aristotle means when he speaks of universal wholes.

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[51] The most prominent defender of classical extensional mereology is probably David Lewis (1986). See also his (1991). Other defenders include James van Cleve (1986), Theodore Sider (2001). For examples of philosophers who reject classical extensional mereology, but who use it as a foil against which to develop their alternative views, see Peter Simons (1987), Peter van Inwagen (1990), Trenton Merricks (2001) and (2005), and, especially, Kathrin Koslicki (2008).

To compare Aristotle to classical extensional mereology, we need to present the latter theory. Classical extensional mereology is in the first instance a *formal* theory of parts and wholes, beginning with some axioms governing the parthood relation, and then deriving various theorems from those axioms. There are therefore different ways of formalizing the theory depending on one's philosophical interests. The simplest formalization is given by David Lewis, who showed that the theory requires only three axioms (Lewis 1991: 74).[52] But we are not in the first instance interested in simplicity. What we need is a formalization of the part-whole relation that brings to light as clearly as possible both the similarities and differences between contemporary thinking about parts and wholes and Aristotle's discussion of universal wholes. For that purpose, the formalization of classical extensional mereology given by Peter Simons (1987) is more useful.

We start with the notion of a proper part. Some examples will suffice to give us a grip on the concept. My foot is a proper part of my leg. The knob is a proper part of the door. The tire is a proper part of the car. Using proper parthood, we can define other mereological concepts such as overlap or summation. Two objects *overlap* just in case they share a common part. An object is a *mereological sum* of some other objects just in case it has those other objects as parts and has no other parts. (Alternatively, an object is a mereological sum of some other objects just in case it has those other objects as parts and something overlaps it just in case it overlaps one of those parts.)

Having selected this as our primitive, we now lay down two axioms governing its behavior:

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[52] Lewis gives these three axioms: (1) *Transitivity*: If *x* is part of some part of *y*, then *x* is part of *y*; (2) *Unrestricted Composition*: Whenever there are some things, then there exists a fusion of those things; (3) *Uniqueness of Composition*: It never happens that the same things have two different fusions (Lewis 1991: 74). As we shall see, the system Simons offers has both Transitivity and Unrestricted Composition as axioms. But in his system, Uniqueness of Composition follows as a theorem rather than serving as an axiom.

A1. *Asymmetry*: If *x* is a proper part of *y*, then *y* is not a proper part of *x*.

A2. *Transitivity*: If *x* is a proper part of *y*, and *y* is a proper part of *z*, then *x* is a proper part of *z*.

These axioms are straightforward. My foot is a proper part of my leg, but my leg is not a proper part of my foot. Proper parthood is asymmetric. Likewise, my foot is a proper part of my leg, and my leg is a proper part of my body, from which it follows that my foot is a proper part of my body. Proper parthood is transitive.[53] It follows from these claims that nothing is a proper part of itself: my foot is not a proper part of my foot. Thus, the *irreflexivity* of proper parthood is a theorem of classical extensional mereology. To see this, suppose for reductio that proper parthood were not irreflexive, so that there does exist an *x* such that *x* is a proper part of itself. This allows us to substitute '*x*' for '*y*' in A1. Let '*x*' denote my foot. Then A1 tells us that if my foot is a proper part of my foot, then my foot is *not* a proper part of my foot. Contradiction. Denying irreflexivity therefore requires denying asymmetry. Irreflexivity, therefore, follows from asymmetry.[54]

Any relation that is both asymmetric and transitive – any relation, that is, that is governed by A1 and A2 – is a strict partial ordering. But not every strict partial ordering is a *parthood* relation. Consider for example the *less-than* relation holding between numbers. That too is asymmetric and transitive. The number three is less than the number four, but the

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[53] Some philosophers have worried about the transitivity of proper parthood. For a classic statement of those worries, see Rescher (1955). It seems to me, however, that these worries are mistaken. They seem to rest on confusing the general notion of proper parthood with various *restrictions* on the parthood relation that we might have in mind that are not transitive. For example, the relation of *largest proper part* is not transitive. Many of Rescher's objections conflate relations of this kind with the relation of proper parthood itself. But failures of transitivity for these restricted relations do not show that proper parthood itself not transitive. This kind of reply to Rescher has been developed in the most detail by Varzi (2006).

[54] It follows from these claims that nothing is a proper part of itself: my foot is not a proper part of my foot. Thus, the *irreflexivity* of proper parthood is a theorem of classical extensional mereology. To see this, suppose for reductio that proper parthood were not irreflexive, so that there does exist an *x* such that *x* is a proper part of itself. This allows us to substitute '*x*' for '*y*' in A1. Let '*x*' denote my foot. Then A1 tells us that if my foot is a proper part of my foot, then my foot is *not* a proper part of my foot. Contradiction. Denying irreflexivity therefore requires denying asymmetry.

number four is not less than the number three. And the number three is less than the number four, which in turn is less than the number five, from which it follows that the number three is less than the number five. So the *less-than* relation is also irreflexive: no number is less than itself. But this is not a parthood relation. The number three is not *part* of the number four, or indeed any other number.[55] Other axioms are needed to distinguish a genuine parthood relation from other strict partial orderings.[56]

One strict partial ordering that seems not to capture our intuitive notion of parthood is one in which an object has a single proper part, as seen below:

Many metaphysicians think it is impossible for an object to have just one proper part. As Simons puts it, to suppose that an object could have just one proper part "goes against what we mean by 'part'" (Simons 1987: 26). Other metaphysicians have likewise claimed that it is constitutive of our notion of 'part' that an object have at least *two* proper parts. The following has therefore been put forward as an axiom of classical extensional mereology:

> A3. *Weak Supplementation Principle*: If x is a proper part of y, then there exists a z such that (i) z is a proper part of y and (ii) z is disjoint from x.

As stated, the Weak Supplementation Principle is stronger than what is needed to rule out the possibility of an object having just one proper part. To rule out such a possibility, condition (ii) need only state that z be *not identical* to x, rather than *disjoint* from x. But that would permit a metaphysics of objects according to which an object could have an infinitely

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55 Although compare Aristotle's remark in *Metaphysics* Δ.25 that "two is said to be in one way (πως) a part (μέρος) of three" (*Met.* Δ.25, 1023b15; my translation).

56 Although see Oliver (1994) for doubts about whether even all of the axioms of classical extensional mereology can succeed in capturing what is distinctive of part-whole relations in purely *formal* terms.

descending chain of proper parts, none of which is disjoint from any of the other proper parts, as seen below:

Intuitively, that is not a model of the proper parthood relation (ibid.: 27).

We could rule out that model by having condition (ii) state only that z not be a *part* of x. But that too would permit a metaphysics of objects that seems not to model the proper parthood relation, for it permits a universe all of whose parts overlap each other, as seen below:

This seems not to model our notion of proper parthood either: "surely if a universe is complex (i.e. has proper parts at all), then at least two of these parts will be disjoint" (ibid.).

To rule out both of these unsatisfactory models, we need the Weak Supplementation Principle as stated above, where condition (ii) guarantees that z is *disjoint* from x. The resulting axiom system – consisting of the asymmetry and transitivity of proper parthood, plus the Weak Supplementation Principle – is widely considered to be the weakest axiom system that models a genuine proper parthood relation. Mereologies that violate these axioms are typically taken not to model a genuine parthood relation at all, but rather some other strict partial ordering (such as the less-than relation).

Many metaphysicians want an even stronger axiom system, however. Notice that the system we have so far would permit two distinct objects to have all and only the same proper parts. For example, we might consider the classic example of a statue and the lump of clay from which it is constituted.[57] Plausibly these are each composed of all and only the same proper parts at some level of decomposition. Yet they would seem, by the Indiscernibility of Identicals, to be distinct objects, since they differ in their temporal and modal properties. Nevertheless, nothing in our axiom system so far rules out this possibility. Both the statue and the lump obey the axioms of asymmetry, transitivity, irreflexivity, and weak supplementation: if something is part of the statue, the statue is not part of that something; if something is part of the statue, and the statue is part of some further thing, the first thing is part of that further thing, no part of the statue (or the statue itself) is a part of itself, and the statue has multiple, disjoint, proper parts. Likewise for the lump.[58]

Stronger mereologies can be developed to rule out the possibility of objects composed of all and only the same proper parts. We can, for example, add the following principle to our system as an axiom:

> A4. *Strong Supplementation Principle:* If it is not the case that x is part of y, then there exists a z such that z is part of x and z is disjoint from y.[59]

This principle tells us that distinct objects must have distinct parts. To see this, consider again the case of the statue and the lump. These are distinct entities that are supposed to

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57 The *locus classicus* here is Allan Gibbard (1976).

58 Not all metaphysicians approach the case in this way. Judith Jarvis Thomson, for example, holds that the lump of clay *constitutes* the statue, but then defines constitution as follows: "x constitutes y at t only if x and y occupy the same place at t – thus only if x is part of y at t and y is part of x at t" (Thomson 1998: 155). Thus, Thomson is forced to deny irreflexivity, from which it follows that she must deny asymmetry. Likewise, Kathrin Koslicki believes that "it is possible…in cases of constitution, to create a new mereologically complex object out of just a single material component" (Koslicki 2008: 183), which implies that she takes the lump to be a *proper part* of the statue. On the face of it, this violates the Weak Supplementation Principle, but Koslicki uses this fact to motivate including a *formal component* as a proper part of the statue in addition to the lump. For more on how these issues interact with formal issues in mereology, see, e.g., Aaron Cotnoir (2010).

59 This is equivalent to Lewis's Uniqueness of Composition axiom.

have all and only the same proper parts. So, it is not the case that there exists any object that is part of the lump and disjoint from the statue. Any such object would either have to be a *proper* part of the lump, and so – *ex hypothesi* – would also be a proper part of the statue, or an *improper* part of the lump, and so identical to the lump. In neither case would this object be *disjoint* from the statue. It follows from all of this, however, that contrary to our supposition, the lump *is* part of the statue. No two distinct objects can share the same proper parts.

We need not add the Strong Supplementation Principle to our axiom system, however. For it follows as a theorem from the four axioms Simons presents. We have already seen three of these: the asymmetry and transitivity of proper parthood and the Weak Supplementation Principle. Instead of working my way through stronger and stronger mereologies and the metaphysical intuitions motivating them, let me now present the fourth and final axiom of classical extensional mereology. For it is only these four axioms, plus the Strong Supplementation Principle, that will be needed to make sense of Aristotle's views about universal wholes, as these are the most well-known principles of classical extensional mereology. They are what most metaphysicians have in mind as those principles that chiefly govern the part-whole relation, so they should suffice as a foil against which to contrast Aristotle. Here then is the fourth and final axiom of classical extensional mereology:

> A5. *Unrestricted Composition*: If there exists an x such that Fx, then there exists an x such that for all y, y overlaps x if and only if there exists a z such that Fz and y overlaps z.[60]

With this added to the other three axioms, classical extensional mereology achieves its full strength. We are now in a position to examine what Aristotle has to say about universals.

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[60] Simons calls this axiom the 'General Sum Principle', but it is much more common in contemporary metaphysics to refer to it as the principle of unrestricted composition. Lewis's formalization of classical extensional mereology includes unrestricted composition as an axiom, although he formulates it differently.

2.

Aristotle accepts the first two axioms of classical extensional mereology. He says that "the species (τὸ εἶδος) is a subject (ὑπόκειται) for the genus (for the genera are predicated (κατηγορεῖται) of the species but the species are not predicated reciprocally (ἀντιστρέφει) of the genera)" (2b19-21). Recall that in *Metaphysics* Δ.25 Aristotle claimed that species are *parts* of their higher genera, while in Δ.26 he claimed that a universal contains its parts by being predicated of them. Putting these ideas together with 2b19-21, we get the asymmetry of proper parthood: species are parts of their genera, but genera are not parts of their species.[61]

Likewise, Aristotle commits himself to the transitivity of proper parthood when he says "[w]henever one thing is predicated of another as a subject, all things said of what is predicated will be said of the subject also" (1b10-12). The SAID OF relation, which unites universals to their instances, is transitive (Ackrill 1963: 76).[62]

It follows from this that Aristotle takes the proper parthood relation to be irreflexive: nothing is a proper part of itself. But this poses something of a puzzle, since the SAID OF

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[61] It is true that Aristotle sometimes says that the genus is part of the species (e.g., in *Metaphysics* Δ.25 at 1023b22-25), but the notion of 'part' being employed here is different from the notion of 'part' at issue here. When Aristotle says that the genus is part of the species, he means that the genus is part of the *definition* of the species: "whatever is in the formula indicating each thing is also a portion of the whole" (*Met.* Δ.25, 1023b22-25). Thus, to define the species Man, we must make reference to the genus Animal. The genus is therefore part of the definition of the species. But the notion of parthood that interests me is not the way in which one thing is part of the definition of another. It is, rather, a metaphysical relation.

[62] Someone might object that it is not just the SAID OF relation that unites universals with their instances. Some universals, the objection goes, are PRESENT IN their instances. There are two things to say by way of reply. First, insofar as this objection is motivated by the idea that non-substantial individuals are universals that are PRESENT IN their instances, it fails because I take non-substantial individuals to be *particulars* rather than universals. Being particulars, they are not wholes composed of their instances, and so do not have their instances as parts. They cannot therefore pose problems for transitivity. Second, insofar as the objection picks up on the fact that non-substantial universals are PRESENT IN subjects, it still fails. It is true that non-substantial universals are PRESENT IN subjects. But they do not have these subjects as proper parts. Non-substantial universals are composed of non-substantial individuals, and they are SAID OF these. Non-substantial individuals, in turn, are PRESENT IN underlying subjects, namely, primary and secondary substances: "if you will call the individual man grammatical it follows that you will call both Man and Animal grammatical" (3a4-6). Non-substantial universals are PRESENT IN primary and secondary substances only in a *derivative* way, namely, by virtue of being SAID OF non-substantial individuals that are PRESENT IN those substances. For this reason, there is no case in which a universal is PRESENT IN a subject that poses a threat to transitivity. Thus, the transitivity of the SAID OF relation is sufficient to guarantee Aristotle's commitment to transitivity.

relation is supposed to be a mereological relation. To say that Man is SAID OF Socrates, on my view, is to say that Man is a whole containing Socrates as a proper part. The puzzle emerges when we realize that in *Topics* 5.5, Aristotle claims that "a thing itself always indicates (δηλοῖ) its own essence (αὐτου τὸ εἶναι), and what indicates the essence is not a property (ἴδιον) but a definition (ὁρος)" (*Top*. 5.5, 135a9-12).[63] The suggestion is that a thing always has its own definition predicated of it. This is what Marko Malink calls *essential self-predication*: "everything is predicated essentially of itself" (Malink 2013: 139). For each thing indicates its own essence, and only definitions indicate essences. Thus, for a thing to indicate its own essence, it must have its definition predicated of it.

This is a puzzle because Aristotle says in the *Categories* that "if something is said of a subject both its name (τοϋνομα) and its definition (τὸν λόγον) are necessarily (ἀναγκαῖον) predicated of the subject" (2a19). Taken together with *Topics* 5.5, this may suggestion that essential self-predication appears in the *Categories* as well. Consider the species Man. According to *Topics* 5.5, the definition of Man is predicated of Man. Presumably also the name of the species can be predicated of Man as well. Now, 2a19 says that if *x* is SAID OF *y*, then the name and definition of *x* are SAID OF *y*. It does not tell us the converse, namely, that if the name and definition of *x* are SAID OF *y*, then *x* itself is SAID OF *y*. If Aristotle is not committed to the converse, then our puzzle is easily solved: despite accepting essential self-predication, the SAID OF relation will not be reflexive. But the converse is plausible enough (see, e.g., Crivelli 2015: 4; Frede 1987: 53; and Code 1985: 103; 130). If Aristotle accepts the converse, however, then it follows that *x* is SAID OF itself. The species Man will be SAID OF itself, for example, because both its name and its definition are SAID OF it. And the reflexivity

63 All references to the *Topics* are to the translation of W.A. Pickard-Cambridge in Barnes (1984).

of the SAID OF relation is problematic, for the irreflexivity of that relation follows from the asymmetry and transitivity of that relation, both of which Aristotle clearly accepts.

The easiest solution to this puzzle is to use our concept of proper part to define the notion of *improper part* as follows: x is an improper part of $y =_{df}$ (i) x is a proper part of y or (ii) $x = y$. It is pretty easy to see that the improper parthood relation, unlike the proper parthood relation, is reflexive. Like the proper parthood relation, it is transitive. We then just need to say that the SAID OF relation in fact expresses the improper parthood relation. Doing so might incline us to prefer Lewis's axiomatization of classical extensional mereology, since he takes the notion of improper part to be primitive. But it would not change the substance of our views about Aristotle's relation to classical extensional mereology, since everything we have said about the proper parthood relation and Aristotle's views about it remains true.[64]

Differences between Aristotle's views about universal wholes and classical extensional mereology finally begin to emerge when we look at the Weak Supplementation Principle. According to the Weak Supplementation Principle, every object must have at least two disjoint proper parts. If universals are wholes, then the Weak Supplementation Principle requires that every universal has at least two disjoint instances. Yet Aristotle seems to reject this principle.

A key passage in *De Caelo* A.9 gives us some reason to doubt that Aristotle accepts the Weak Supplementation Principle. In this chapter, Aristotle is concerned with demonstrating "not only that the universe (οὐρανός) is one (μόνον), but also that more than one universe is impossible (ἀδύνατον)" (277b27).[65] He then distinguishes "between this

[64] Thus, Corkum writes: "If the quantitative part relation is transitive, then the tie between individuals and universals is a part relation; and, if irreflexive, then the tie between individuals and universals is a *proper* part relation…[T]he question of the reflexivity of the relation is not germane to the issue whether Aristotle's part-whole talk is genuinely mereological" (Corkum 2015: 805).

[65] All references to *De Caelo* are to the translation of J.L. Stocks in Barnes (1984).

universe (τῷ οὐρανῷ) and a universe without qualification (οὐρανῷ ἁπλῶς)", where "the second is form (μορφή) and shape (εἶδος), the first form in combination with matter (τῇ ὕλῃ μεμιγμένον)" (278a13-15). The hylomorphic language makes the suitability of the passage controversial, but it might well be interpreted as allowing that heaven without qualification is a kind of species having *this* universe as its lone member. This too would violate the Weak Supplementation Principle.

This passage is suggestive, but we can more persuasively demonstrate Aristotle's rejection of the Weak Supplementation Principle by carefully examining his definition of the universal in *De Interpretatione* 7. Recall that Aristotle there defined the universal as "that which is by its nature predicated of a number of things" (17a38-40). What does Aristotle mean when he says that a universal is something *by its nature* is predicated of a number of things? When Aristotle speaks of nature and something naturally occurring, he means that the thing in question occurs either (a) *always* (ἀεὶ) or (b) *for the most part* (ἐπὶ τὸ πολύ). Thus, in *Physics* II.8, he says "teeth and all other natural things (πάντα τὰ φύσει) either invariably or for the most part come about (γίνεται) in a given way" (198b35-36).[66] So when Aristotle tells us that a universal is such that by its nature it is predicated of a number of things, he can mean one of two things. Either a universal is always predicated of a number of things, or a universal is for the most part predicated of a number of things. If the latter is the case, the contrast in *Physics* II.8 suggests, a universal might occasionally be predicated of just one thing, even though it is mostly predicated of a number of things.

Now, *De Caelo* A.9 would seem to favor the second reading, according to which universals are *for the most part* predicated of a number of subjects, since it seems to present an

[66] See also *GC* 2.6, 333b4-6; *MM* 2.8, 1206b38-39; *EE* 7.14, 1247a31-32; *Rh.* 1.10, 1369a35-1269b2. All references to these works are to the translations in Barnes (1984).

exceptional case in which a universal is predicated of only one subject. This seems to be Phil Corkum's considered view of the matter despite his insistence that "Aristotle is committed to Weak Supplementation", as he writes that there may be "exceptional cases of universals with just one instance", in which case "a weakly supplementary partial order models the norm" (Corkum 2015: 802). But it must be admitted that there are some passages that seem to tell against this reading and in favor of taking universals to always and necessarily be predicated of many subjects.

Consider *Parts of Animals* A.4, in which Aristotle tells us that "universals are common (κοινά); for that which holds (ὑπάρχοντα) of many things (πλείοσιν) we call a universal" (644a27-28).[67] As Paoli Crivelli points out, this passage "does not contain the verb-phrase 'is of such a nature as to'", or anything to the effect of 'by its nature' (Crivelli 2004: 80). It therefore "commits Aristotle to the view that every universal is predicated of many things" (ibid.).

A longer passage from the *Prior Analytics* also seems to favor this view, and is especially interesting because of its use of the word 'nature':

> Now, of all the things that are (ἁπάντων τῶν ὄντων)some are such that they cannot be predicated (κατηγορεῖσθαι) of anything else truly (ἀληθῶς) and universally (καθόλου), e.g. Cleon and Callias, i.e. the individual (καθ'ἕκαστον) and sensible (αἰσθητόν), but other things may be predicated of them (for each of these is both man and animal); and some things are themselves predicated of others, but nothing prior (πρότερον) is predicated of them; and some are predicated of others, and yet others of them, e.g. man of Callias and animal of man. It is clear (δῆλον) then that some things are

[67] All references to *Parts of Animals* are to the translation of W. Ogle in Barnes (1984).

> naturally (πέφυκε) not said of anything: for as a rule each sensible thing is such that it cannot be predicated of anything, save accidentally – for we sometimes say that that white thing is Socrates, or that that which approaches is Callias (*APr.* A.27, 43a25-35).[68]

This passage draws a three-fold division of reality: entities that are ultimate subjects of predication (i.e., primary substances), entities that are never subjects but are always predicated (i.e., highest genera), and the entities that are both subjects and predicates (i.e., species and intermediate genera). When speaking of the third sort of entity, Aristotle speaks categorically: these entities are predicated of others. He does not say they are of such a *nature* as to be predicated of others. When Aristotle *does* use the term 'nature' or its cognates, it is to refer to entities that are ultimate subjects of predication like Cleon or Callias. Of these entities, Aristotle says they are "naturally not said of anything". It is clear from context, however, that his use of 'naturally' here must mean 'always and necessarily' rather than 'for the most part and habitually'. Taken together with the passage from *Parts of Animals* A.4, this would seem to favor the view that universals are always and necessarily predicated of many subjects.

Other passages are less clear. In *Metaphysics* B.4, for example, Aristotle says that "this is just what we mean by the individual (τὸ καθ᾽ἕκαστον) – the numerically one (τὸ ἀριθμῷ ἓν) – and by the universal (καθόλου) that which is predicable of the individuals (τὸ ἐπὶ τούτων)" (*Met.* B.4, 999b34-1000a1).[69] The Greek here is "καθόλου δὲ τὸ ἐπὶ τούτων", which means literally "and the universal is that which is over these". There is no indication whether Aristotle believes that the universal must be over a multitude of subjects or not.

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68 All references to the *Prior Analytics* are to Robin Smith's translation in his (1989).

69 All references to *Metaphysics* B are to the translation of W.D. Ross in his (1924).

Meanwhile, in *Metaphysics* Z.13, Aristotle says that "the universal is common (κοινόν), since that is called universal which naturally (πέφυκεν) belongs to more than one thing" (*Met.* Z.13, 1038b11-12). Aristotle is once again employing the language of what is natural, but there is no indication here of how we ought to interpret it: should we interpret Z.13 as claiming that the universal always belongs to more than one thing, or just for the most part?

The textual evidence seems to me indecisive. Philosophical considerations must be brought to bear to determine what Aristotle has in mind. Imagine a universal *U* with exactly three subjects: *a*, *b*, and *c*. What should we say about *U* in the event that both *a* and *b* pass out of existence? If we hold that a universal must always be predicated of many subjects, then it seems we must hold that *U* has gone out of existence, since it now has only one subject: *b*.[70] But this is strange. Certainly *U* would have gone out of existence had each of *a*, *b*, and *c* gone out of existence. That is just to say that Aristotle rejects the possibility of uninstantiated universals. But *U* remains instantiated by *c*. How then could it have gone out of existence?

Crivelli has replied to this sort of worry by arguing that Aristotle "does not require that a universal should exist at a certain time only if it is predicated *then* of many things" (Crivelli 2004: 79). Instead, according to Crivelli, Aristotle holds that "a universal exists at a certain time only if it is predicated *then* of at least one thing and *at some time or other* of at least one other thing" (ibid.). This view might seem to be supported by a passage in *De Interpretatione* 11 in which Aristotle says that the universal *poet* is predicated of Homer at time *t* even if Homer does not exist at *t* (*De Int.* 11, 21a26-29). Thus, even at a time when *U* has

[70] An alternative view would hold that *U* has gone from being a universal to being a particular (Irwin 1988: 83). But this seems to me a strange view, and it conflicts with Aristotle's considered views on the nature of the SAID OF relation. At 1b5-6, Aristotle says that "[t]hings that are individual and numerically one are, without exception, not said of any subject". No species, therefore, could go from being a universal to being an individual, since the species is clearly SAID OF its lone instance, and no individual can be SAID OF an underlying subject. It follows from the fact that no species could become an individual that no species could become a particular, since all particulars are individuals, even if it is controversial whether all individuals are particulars.

only one underlying subject, we may still say that it is has many subjects so long as at some other time it had another underlying subject.[71]

How might we understand this reply? The most plausible model takes predication to hold at times.[72] We cannot simply say that *U* is predicated of *c*. Rather, we must say that *U* is predicated of *c* at *t2*. Likewise, we can say that *U* is predicated of *a* and *b* at *t1*. Because predication is time-indexed in this way, we can insist – even at *t2* – that *U* has multiple underlying subjects, for it is true at *t2* that *U* is predicated of *a* and *b* at *t1*. For it is *always* the case that *U* is predicated of *a* and *b* at *t1*. The fact that *U* is predicated of just one underlying subject at *t2* therefore does not imply that *U* has only one underlying subject. For *U* has underlying subjects at other times, and it is true *at t2* that *U* is predicated of those underlying subjects at other times. So *U* always has multiple underlying subjects.

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[71] The passage just cited from *De Int.* 11 is apparently in conflict with a passage from *Categories* 10 in which Aristotle seems to commit himself to the idea that reference failure entails the falsity of a statement (*Cat.* 10 13b12-35). There, Aristotle claims that if Socrates does not exist, then both the statement "Socrates is sick" and "Socrates is well" will be false. How to reconcile these two passages – and, indeed, how to reconcile the second passage with Aristotle's claim that "with an affirmation or negation one will always be false and the other true whether he exists or not" (*Cat.* 10 13b20ish)- is controversial. But I suspect that the passage in *De Int.* 11 does not commit Aristotle to the view that a universal could be predicated (at a time) of a subject that does not exist (at that time), because I suspect that Aristotle's view is that Homer can be a poet only if Homer exists, but that the latter does not *follow* from the former because of underlying features of his theory of predication. For a view according to which these passages are not discussing reference failure at all, see William Jacobs 1979. For a view that attempts to reconcile *De Int.* 11 with *Cat.* 10, and with which I am in some ways sympathetic, see Wedin 1978.

[72] Crivelli himself considers two models, one according to which "predication is treated as an atemporal relation", and another according to which "predication is time-dependent" (Crivelli 2015: 24). His discussion of the first model – according to which predication does not hold at times – relies on a distinction between predication and instantiation that, I think, is entirely absent from the text. The distinction also strikes me as philosophically dubious. So I set that model aside and consider only the model according to which predication is time-dependent. I take it that calling predication 'time-dependent' is ambiguous. It could mean that predication is *tensed*, or it could mean that predication holds *tenselessly* at times. But if predication is tensed in the way Aristotle seems to take truth to be tensed – so that one and the same statement can be true now and false later – then I do not see how to make sense of Crivelli's suggestion that a universal *U* can be said to have multiple instances at a time when it has just one on the grounds that *U* was, at some earlier time, predicated of something else. The tensed view of predication seems to involve "real change" so that the fact that *U* was once predicated of many subjects has nothing to do with whether it is *now* predicated of many subjects, just as the fact that a given statement was once true has nothing to do with whether it is *now* true. So the only time-dependent model of predication that could possibly work is one that treats predication as holding tenselessly at times. As we can see, that model does not work.

The main problem with this model of predication is that it seems to have no basis in any text, as evidenced by Aristotle's own views about the truth values of sentences in *Categories* 5. There Aristotle tells us that "the same statement (ὁ αὐτὸς λόγος) seems (δοκεῖ) to be both true and false" (4a23-24) on the grounds that "the statement that somebody is sitting is true (ἀληθὴς)" but "after he has got up this same statement will be false (ψευδὴς ἔσται)" (4a22-25ish). Aristotle is here rejecting the idea that statements are time-indexed such that it is always true that *at t1*, someone was sitting and always true that *at t2*, someone was standing. That view would take there to be two distinct statements – the statement that someone is sitting at *t1* and the statement that someone is standing at *t2* – that have their truth values eternally. Aristotle's rather different suggestion is that there is one statement – the statement that someone is sitting – whose truth value changes as the world changes. If we assume that the truth value of that statement changes as different things come to instantiate different universals, we should think that universals behave in the same way. That tells against the model according to which predication holds at times.

Return to our example universal *U*. It was once predicated of *a*, *b*, and *c*. Then *a* and *b* passed out of existence, leaving *U* to be predicated only of *c*. I have argued that the most plausible way to understand this scenario is to say that *U* is a universal that now has exactly one instance. It is implausible to suppose that *U* has gone out of existence while it still has instances, and Crivelli's suggestion that *U* still has multiple instances because it *was* predicated of *a* and *b* at some earlier time does not fit well with Aristotle's text. The only remaining alternative is to suppose that *U* is a universal having exactly one instance. Therefore, *U* shows in general terms that when Aristotle says in *De Interpretatione* 7 that a universal is such that, by its nature, it is predicated of many items, he must mean that a universal is *for the most part* predicated of many items rather than *always* so predicated.

Exceptions are possible, although in the usual course of events, universals will have multiple underlying subjects.[73]

For these reasons, I suggest that Aristotle in fact rejects the Weak Supplementation Principle, at least if this principle is taken to be an axiom that holds always and of necessity. Aristotle holds that, for the most part, this axiom will be satisfied, but that there are or can be scenarios in which it fails.[74]

Let me turn now to the Strong Supplementation Principle. We saw earlier that although one may include this as an axiom in classical extensional mereology, one need not do so, as it follows as a theorem from the four axioms we have been using. This principle forbids two distinct objects from having the same proper parts. Applied to universals, it forbids two universals from having all and only the same instances.

The first thing to say about the Strong Supplementation Principle is that it entails the Weak Supplementation Principle (Simons 1987: 29), so that anyone who rejects the latter must reject the former. To see this, suppose that the Weak Supplementation Principle is false. If so, then it is possible for an object to have just one proper part. Let *a* be an object with just one proper part, *b*. According to the Strong Supplementation Principle, for all *x*

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[73] Crivelli objects that this interpretation of Aristotle "leaves the possibility open that some universal could be predicated of nothing", since if a universal is that which *by its nature* is predicated of many things, nothing requires it to be predicated of anything (Crivelli 2004: 79) See also (Crivelli 2015: 29). But this problem can be remedied simply by supplementing this definition of the universal with Aristotle's claim in *Categories* 5 that everything is ontologically dependent on primary substance. A universal *must* be predicated of at least one thing, but it *need not* be predicated of many things, although it is of such a nature as to be predicated of many things, and thus typically *is* so predicated. Crivelli himself seems to change his mind about the viability of this response. In his (2004), he argues that universals *must be* predicated of many subjects (Crivelli 2004: 79), but in his (2015) he agrees that "'to be of such a nature as to' means something like 'to be able to by nature'" and that "the claim that every universal is predicated of at least one individual is a logically independent logical law governing universals and individuals" (Crivelli 2015: 33).

[74] One question that arises here is whether Aristotle would call a universal having just one instance a whole. In *Metaphysics* Δ.26, we have already seen Aristotle say that we call a whole only that from which no part is missing, and one might suppose that a universal having just one instance is missing some parts that it naturally ought to have. Thus, Aristotle might well be reluctant to call such entities wholes. But it is not clear what else such a universal could be. It could not be an individual (see n. 70). And such a universal still fits Aristotle's other definition of a whole in that chapter, for it contains its contents by being predicated of them. So I am inclined to think that such a universal is a whole of some kind.

and *y*, if *x* is not a part of *y*, then there must be a *z* such that *z* is part of *x* and *z* is disjoint from *y*. By hypothesis, *a* is not part of *b*, since *b* is a proper part of *a*. So, by the Strong Supplementation Principle, there must be some *z* that is part of *a* and disjoint from *b*. But there is no such *z*. If z is going to be a part of *a*, it must either be a *proper* part of *a* or an *improper* part of *a*. By hypothesis, *z* is not a proper part of *a*. So *z* must be an improper part of *a*. By definition of 'improper part', it follows that *z*=*a*. But then *z* is not disjoint from *b*, since it has *b* as a proper part. Therefore, if the Weak Supplementation Principle is false, it follows that the Strong Supplementation Principle is false. Therefore, the latter entails the former.

Since we have seen reason to think that Aristotle rejects the Weak Supplementation Principle, we must conclude that he rejects the Strong Supplementation Principle. For Aristotle, two universals can have all and only the same instances while nevertheless remaining distinct.

This is not surprising. It is unlikely that Aristotle would have an extensional account of universals. First, simply consider the language Aristotle uses in *Metaphysics* Δ.26. Aristotle tells us that a universal *contains* (περιέχον) the items of which it is predicated. The language immediately suggests a difference between a *container* and its *contents*. A container cannot be *reduced to* or *eliminated in favor of* its contents. Contents come and go while the container remains the same. This language is telling, and suggests strongly that Aristotle would not have held an extensional account of universals.

To further support this, suppose that two non-substantial universals were to be PRESENT IN all and only the same primary substances. Despite this equivalence in underlying subjects, it is impossible to identify these two universals. For either these two universals belong to the same category or they do not. If they do not belong to the same category, then

there exists two distinct higher-order non-substantial universals such that one of these is SAID OF one of the lower-order non-substantial universals, and the other is SAID OF the other lower-order non-substantial universal. This difference in which entities are SAID OF them indicates a difference in definition, and so a difference in being, between these two non-substantial universals. Therefore, if they do not belong to the same category, they cannot be identical.

If these two non-substantial universals belong to the same category, then it must be that one of these universals is SAID OF – either directly or indirectly – the other. They cannot belong to the same level of a Porphyrian tree while also belonging to the same category, for to have subdivided any higher genus into these two universals would've required the application of a differentia. That differentia, in turn, would require those two universals *not* to be PRESENT IN exactly the same underlying subjects. Since *ex hypothesi* these two universals *are* PRESENT IN exactly the same underlying subjects, it follows that there has been no differentia applied. But that in turn means that one of them is higher up the Porphyrian tree than the other, meaning that one of them is SAID OF the other.

Even when we suppose that two universals are PRESENT IN the same entities, we cannot conclude that these universals are identical. And again, this is not surprising. For Aristotle believes that species and genera can be defined. The species Man, for example, is defined as follows: Man is a rational animal. Definitions of a species proceed by genus and differentia, and definitions of a genus proceed by a *higher* genus and differentia. The point for our purposes is simply that definitions specify *what a thing is*. What a given species or genus is, therefore, is not given by its extension, but rather by its definition. That definition is

intensional, and it helps determine the extension of that species or genus. This is why two coextensive universals can be distinguished: they will have different definitions.[75]

We have good textual reasons for supposing that Aristotle rejects the Strong Supplementation Principle.[76] That leaves only the last axiom of classical extensional mereology to be dealt with, the principle of Unrestricted Composition.

It is clear that Aristotle would reject such a principle when it is applied to universals: "Of things predicated separately some can be predicated in combination, the whole predicate as one, others cannot" (*De Int.* 11, 20b31). In this passage, Aristotle is considering whether certain inferences are valid. He claims that the following inference is valid (20b31ff):

(1) Man is two-footed.

(2) Man is an animal.

(3) Therefore, man is a two-footed animal.

The idea is that the predicates 'two-footed' and 'animal' can be combined into a single predicate 'two-footed animal'. Switching from the formal to the material mode, we may say

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[75] At this point, someone may raise what is known as the grounding problem for coinciding objects. Granted that two coinciding objects differ in certain properties – typically their temporal and modal properties – we can ask *in virtue of what* do those objects so differ given that there is no *mereological* difference to account for the difference in properties. So, in this case, we can ask *in virtue of what* do two universals having all and only the same instances differ? What *grounds* this difference in identity without a difference in parts? The answer for Aristotle, I suspect, is that the difference is based on their essences: the universals in question have different essences and so cannot be identical. If someone were then to ask what it is that grounds this difference in essence, I believe that Aristotle would say that this difference is primitive. Aristotle gives no indication, as far as I can see, of being aware of the grounding problem, and neither Corkum nor Malink discuss it in their discussions of the extensionality of universals.

[76] Marko Malink gives us another reason to hold that Aristotle rejects the Strong Supplementation Principle. In *Prior Analytics* B.22, Aristotle discusses what Malink calls 'asymmetric conversion' (*A Pr.* B.22, 68a16-21). Here is Aristotle's description: "When A belongs to the whole of B and of C and is predicated of nothing else, and B belongs to all C, then it is necessary for A and B to convert. For since A is said only of B and C, and B is predicated both of itself and of C, it is evident that B will be said of everything of which A is said except of A itself". Malink points out that asymmetric conversion so described violates the Strong Supplementation Principle (Malink 2013: 82-85). Phil Corkum agrees with Malink that "the quantitative part relation is not extensional and so fails Strong Supplementation", but because this entails the rejection of the Weak Supplementation Principle, he insists that the passage concerning asymmetric conversion in the *Prior Analytics* "remains problematic" (Corkum 2015: 804).

that the universal *two-footedness* and the universal Animal can combine into a single universal *two-footed Animal*. But Aristotle insists that the following inference is invalid:

(4) Callias is good.

(5) Callias is a cobbler.

(6) Therefore, Callias is a good cobbler.

From the fact that someone is good, and the fact that that same someone is a cobbler, it does not follow that the person in question is a good cobbler. The predicates 'good' and 'cobbler' cannot always be combined. In the material mode, the universal *goodness* and the universal *being a cobbler* cannot always combine into a single universal. Thus, Aristotle appears to reject the principle of Unrestricted Composition.

These examples show that Aristotle rejects the idea that universals can always come together to compose further universals. That is, they show that not any old number of universals can come together to compose a further universal. But it is reasonable to extend this idea and insist that neither can any old number of *individuals* can come together to compose a universal. In *Topics* 1.7, Aristotle discusses different ways in which we speak of sameness: numerically, specifically, or generically. Numerical sameness applies to particulars, whereas specific and generic sameness apply to species and genera respectively. What Aristotle tells us is that we speak of specific sameness when "there is more than one thing, but they present no differences in respect of their species" (*Top.* 1.7, 103a10). Likewise, we speak of generic sameness when there is more than one thing, but they present no differences in respect of their genus. The implication here is that species and genera are *natural kinds*. The particulars they are SAID OF form a certain kind of unity, for – whatever their differences – they have no differences *in respect of their species or genus*. While Aristotle never comes out and says so, the idea is that species and genera enjoy a certain degree of

unity because the things they are SAID OF are *genuinely similar*. It follows that a gerrymandered group of individuals not sharing any genuine or natural similarities cannot compose a universal, for that universal would not really be one in any but the weakest sense. That universal would not enjoy any but the weakest kind of unity, and Aristotle clearly believes that there is some sort of connection between unity and existence (*Met.* Δ.6; Z.17).

We have now seen how Aristotle's views about universal wholes differ from how classical extensional mereology conceives of the part-whole relation. Classical extensional mereology, of course, is typically thought of as a theory having to do with what I called earlier *integral wholes*, so these differences should not be surprising.[77] But that means that the differences between universal and integral wholes should now be clear. The chief difference is how those wholes are put together from their parts, as well as the status of those parts prior to their coming together to compose that whole. The parts of an integral whole come together to compose one thing, whereas the parts of a universal are themselves already one thing. The parts of an integral whole come together to compose something *one in number*, whereas the parts of a universal compose something that is at best *specifically* or *generically* one. And whereas an integral whole is not plausibly said to be predicated of its parts, a universal whole is.

3.

It is uncontroversial that Aristotle uses mereological language while discussing universals. What is controversial is whether that language ought to be taken metaphysically seriously. In

[77] Strictly speaking, there are no restrictions on the domain of quantification in classical extensional mereology. As a formal system, classical extensional mereology might be taken to govern entities of any kind. Indeed, one might think that there are mereologically complex objects composed of entities of very different kinds. For example, one might suppose there is an object having just me and the number seven as proper parts. Despite this, most metaphysicians treat classical extensional mereology as a system primarily to be applied to material objects. See Varzi 2016.

Chapter One, I gave some reasons to think it ought to be, for only by taking that language metaphysically seriously can we make sense of how secondary substances can take contraries simultaneously, or how Aristotle's "peculiarly weak" conception of individuals squares with the ontological priority that primary substances enjoy.

Still, some philosophers will resist taking Aristotle's language metaphysically seriously. One source of resistance is the fact that, as we have seen, Aristotle rejects the Weak Supplementation Principle. Many metaphysicians hold that the Weak Supplementation Principle is somehow *constitutive* of what is meant by 'part' (Simons 1987: 26; Koslicki 2008: 180; Varzi 2008: 110-111; Corkum 2015: 803). If, as I have argued, Aristotle rejects the Weak Supplementation Principle, then this is good reason – so these philosophers would suggest – not to take Aristotle's mereological language seriously. When he says that universals are a kind of whole, this is just a manner of speaking, not a genuine account of what universals are.

But it is unlikely that the Weak Supplementation Principle is an analytic truth, and so it is unlikely that it is constitutive of what is meant by 'part'. One can perfectly well *understand* the idea that an object has exactly one proper part (or an infinitely descending chain of proper parts), even if one thinks that idea is *false* (Smith 2009: 507). Compare the idea of a singleton set, i.e., a set that has exactly one member. Typically, a set is thought of as a collection of *many* things (Cantor 1932: 204; Kleene 1967: 135), yet we admit the existence of singleton sets. This despite the fact that, as David Lewis has argued, we have no plausible account of how it is that a singleton differs from its lone member (Lewis 1991: 59). We have no satisfying story to tell about the difference between a thing and its singleton. Yet, Lewis insists, "somehow, I know not how, we do understand what it means to speak of singletons" (ibid.). Belief in singletons does not betray a failure to understand the meaning of 'set'. The

lack of a philosophical account of how singletons differ from their members does not compel us to reject the idea that there are singletons.

Likewise, I want to suggest, our present lack of a philosophical account of how a whole having just one proper part would differ from that proper part should not compel us to reject the possibility of the existence of such a whole. The parallel with singletons and their members suggests that even if the Weak Supplementation Principle is *true*, it is not *analytic*. Belief in wholes having exactly one proper part (or an infinitely descending chain of proper parts) does not betray a failure to understand 'part' any more than belief in singletons betrays a failure to understand 'set'.[78] Rejecting the Weak Supplementation Principle involves no *conceptual* incoherence. What is more likely is that Aristotle's rejection of this principle is indicative not of confusion but of pluralism about parthood. Keep in mind that I have said nothing about Aristotle's views on *integral* wholes vis-à-vis the Weak Supplementation Principle. Perhaps if there were reason to think he rejected that principle when applied to integral wholes, there would be reason to convict Aristotle of some confusion about 'part'. But we have already seen that Aristotle is a pluralist about parthood, and that universal wholes are crucially different from integral wholes. His rejection of the Weak Supplementation Principle about the former therefore implies nothing about the latter. We have no reason, then, to think that Aristotle is confused about 'part'. Only such an obvious confusion, however, could require us to take Aristotle at less than his word when he tells us that universals are a kind of whole. Innocent of such confusion, then, we should take him at his word.

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[78] There may even be more hope for optimism here than in the case of singletons, as a number of metaphysicians have recently been exploring non-classical mereologies that replace the Weak Supplementation Principle with weaker principles. See, e.g., Maureen Donnelly (2011), Aaron Cotnoir (2013), Donald Smith (2009), and Cody Gilmore (2009). This work suggests that there are at least some working models for thinking about wholes that seem to have just one proper part.

It is worth noting that this issue of a whole having just one part emerged once again in twelfth century discussions of views about species and genera. Consider the following passage:

> Still, they ask whether 'being predicated *in quid*' is suitable to every species. If this were granted, then they object that it is suitable to phoenix, which is not collected out of many essences but out of only one essence, yet it is neither apt to inhere in many nor to be principally signified, there being many subjects whose matter it is, since it cannot be in many at the same time because it is one indivisible essence (*Treatise on Genera and Species* [*TGS*]; trans. King, p. 175 [127]).

This passage is attributed to Pseudo-Joscelin, who was "likely to be the otherwise unknown student" of Joscelin the Bishop of Soissons (King 2014: 105). The objection being considered is straightforward, and resembles our concern over Aristotle's rejection of the Weak Supplementation Principle. Pseudo-Joscelin defends the view that a species "is the whole collection produced from them [the essence of man in each individual man] as its material" (*TGS*; trans. King, p. 159 [87]). That is, Pseudo-Joscelin defends the view that a species is a certain kind of collection: a collection of "the individualized forms of humanity possessed by every human being" (King 2014: 159; fn. 25). The species is a whole with those individualized forms as its parts.

In the passage quoted above, the species Phoenix is being put forward as a counterexample to this view about the nature of species. The objection is that this view about species is incompatible with the idea that a species, on any view about the metaphysics of species, must be predicated *in quid* – that is, essentially – of *many* underlying subjects (*TGS*; trans. King, p. 171 [117]). But the species Phoenix can only ever have one member,

because there can exist only one phoenix at any given time (King 2014: 175; fn. 30). So a species cannot be a collection of many essences. It cannot be a whole having those essences as parts.

By way of reply, Pseudo-Joscelin cites Boethius who, he says, resolves the difficulty by saying that "the definition isn't suitable to every species but is given for the most part" (*TGS*; trans. King, p. 175 [128]). Pseudo-Joscelin adds a second solution: "Many things are said according to nature that don't hold in actuality; thus 'phoenix', although it is not actually predicated of many, is nevertheless apt to be so predicated" (*TGS*; trans. King, p. 175 [129]). And he goes on to suggest a better definition of what a species is: a species is "a nature that is apt to be predicated of many numerically different individuals *in quid*, whether at the same time or at a different time" (*TGS*; trans. King, p. 177 [129]).

We see in this discussion that early medieval authors were worried about cases in which a species had a lone member. We see further that at least some of these medieval authors responded to this concern not by denying the view that a species is a collection of some kind, but by insisting that the definition of a species according to which it must have *many* members is "given for the most part" and does not always hold "in actuality". This response suggests that these medieval authors were not worried about violations of the Weak Supplementation Principle. Extraordinary cases like that of the phoenix show that at least sometimes, a collection can have just one member; a whole can have just one part. To object to Aristotle that his account of universal wholes violates the Weak Supplementation Principle, and therefore cannot constitute a genuine mereology, is anachronistic.

4.

The other chief source of resistance to taking Aristotle's mereological language in discussing universals metaphysically seriously comes from the thought that the view itself is so philosophically implausible that we should not attribute it to Aristotle. In the twelfth century, Peter Abelard launched a series of attacks on the view that left it with few adherents. In the twentieth century, D.M. Armstrong called it a "heroic doctrine" before summarily dismissing it in the space of a few paragraphs.

The remainder of this chapter will be concerned with defending the philosophical viability of the view that universals are wholes. Let me be clear about my intentions. I do not mean to defend this theory as the *correct* view about the nature of universals. I shall not defend it against every conceivable objection, nor do I suppose that my responses to the objections I do consider will be entirely persuasive. My goal is much more limited. It is to suggest that the view is, contrary to what Armstrong seems to have thought, a live contender in the metaphysics of universals. At a minimum, the view is not so moribund that we should refuse to attribute it to Aristotle.

Let me also be clear about my methodology. I shall consider objections to the view in question and possible replies to those objections, and only sometimes will I discuss how Aristotle might respond to those objections. This strikes me as a reasonable way to proceed because as I interpret the objection, it is that the view itself is so philosophically problematic that we should not attribute it to Aristotle. The objection is not that Aristotle had no resources to respond to objections to this view, but rather that the view could not possibly be correct as a matter of metaphysics, and so considerations of charity require that we not attribute it to Aristotle. Where possible, I will hazard some guesses as to how Aristotle might address these objections, but my aim here is to discuss the view in the abstract.

4.1

Let us start with Armstrong's objections to the view. According to Armstrong, the view maintains that an object is *F because* it is part of the universal *F*-ness. But, Armstrong claims, this gets things precisely backwards: "it is not the case that a white thing derives its whiteness from being a part of the great white aggregate" (Armstrong 1978: 35). On the contrary, he suggests, "it belongs to the aggregate of white things *because it is white*" (ibid.).

A defender of the view in question has resources available to her. She might insist that the proper way to describe the situation is that *what it is* to be *F* is to be part of the universal *F*-ness. Rather than supposing there is an order of explanation that might go one way or another, the defender of this view of universals can insist that what we actually have is a kind of metaphysical analysis. To be *F just is* to be part of the universal *F*-ness. Compare: water *just is* H_2O. That too is a metaphysical analysis. We would not say in this case that an object is water *because* it is H_2O. Nor, conversely, would we say that an object is H_2O *because* it is water. That there might be some order of explanation between being water and being H_2O is simply confused, for water *just is* H_2O. They are identical, and so being one no more explains being the other than being Cicero explains being Tully.[79]

In similar fashion, someone who maintains that a universal is a whole may simply insist that Armstrong's objection is confused. There are not two states – being *F* and being part of the universal *F*-ness – such that one could explain the other. Instead, there is a kind

[79] Compare Paul Audi's discussion of grounding: "The correctness or incorrectness of an explanation, I assume, is at least in part a matter of its matching up with the structure of the world, structure that is conferred by the determination relations that hold among the world's inhabitants. But [this] might be doubted for a different reason, namely, that *determination* is not the only relation suited to underwrite the correctness of an explanation. In particular, one might think that *identity* can do so. For example, suppose one thinks that the kind water just is the kind H_2O. One might think that, for this very reason, the fact that there is water in the glass is explained by the fact that there is H_2O in it. I believe this is mistaken. Either this is not a genuine explanation, or the claim of identity is false. For if there is truly identity here, we have neither the asymmetry nor the irreflexivity that explanations require" (Audi 2012: 105).

of metaphysical analysis or identity here, and the demand for an order of explanation is misplaced.

This line of reply may have been available to Aristotle as well. In the *Categories*, for something to be a human being is for that something to have the species Man SAID OF it. That's why Aristotle tells us that the species reveals the primary substance. When asked "What is it?" of a particular human being, we may reply that it is a man. To be a human being, then, is to stand in the appropriate relation to the species Man.

The response to Armstrong suggested above simply insists that the SAID OF relation be *analyzed* as a part-whole relation. On this view, for *x* to be SAID OF *y* reduces to *x* having *y* as a (proper) part. We have already argued that species and genera are wholes and that their parts are those things they are SAID OF. Now we make the slightly stronger claim that the SAID OF relation *just is* a parthood relation, and this enables us to respond to Armstrong on Aristotle's behalf.

But Armstrong has a reply to this strategy. He adds that "while it is a necessary condition of *a*'s being F that *a* is a part of the aggregate of Fs, it is not, in general, sufficient" (ibid.). To illustrate, Armstrong says that being a part of the aggregate of things having a mass of one kilogram is not sufficient for having a mass of one kilogram. Indeed, he argues that most parts of that aggregate will not have a mass of one kilogram.

To assess whether this objection undermines Aristotle's view, we must be careful about the details of that view. Remember that the view holds that species and genera are wholes composed of parts, where the parts in question are those things that the species and genera are SAID OF. Thus, the species Man is a whole composed of all and only the individual human beings, while the genus Animal is a whole composed of all and only the various animal species (and so, by the transitivity of parthood, the various individual animals). In

non-substance categories, the quality *redness* is a species having the particular instances of red as its parts, while the quality *color* is a genus having *redness* and the other colors (as well as the particular instances of these colors) as its parts.

With this in mind, consider a cardinal. This is a part of the species Cardinal (and so, in turn, a part of the genus Animal). The particular redness that is PRESENT IN this cardinal is part of the species *redness* (and so, in turn, a part of the genus *color*). But the cardinal is not a part of the species *redness* (and so neither is it a part of the genus *color*)

Turn now to Armstrong's claims about things having a mass of one kilogram. On Aristotle's view, for a thing to have a mass of one kilogram is for a primary substance to have a certain quantity PRESENT IN it. That primary substance will be a part of various species and genera. But it will not be, in Armstrong's phrase, a part of any aggregate of things having a mass of one kilogram. More precisely, if it is, that aggregate will be an *integral* whole, and so not germane to our discussion here. Meanwhile, the quantity that is PRESENT IN this substance *will* be a part of such an aggregate, for it is a non-substantial particular that has a most determinate species SAID OF it. But here it is clearly correct to say that having a mass of one kilogram is both necessary and sufficient for being a part of that species.

Armstrong's objection gets off the ground by crossing the Aristotelian categories and taking primary substances to be parts of species in non-substance categories. It derives further strength by eliding the distinction between integral and universal wholes, for it treats the species that is SAID OF the quantity we call one kilogram of mass as if it were an integral whole whose mass should be determined by summing the masses of the various non-substantial particulars it is SAID OF. But it is not an integral whole, and its parts are not *things* having a mass of one kilogram, but however many *quantities* – each of which is known as

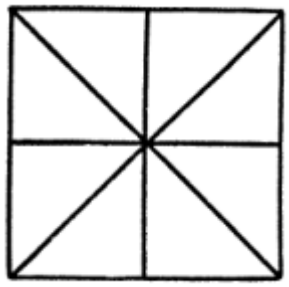
having one kilogram of mass – are PRESENT IN primary substances. In this case, again, it is both necessary and sufficient for being part of that species to be a mass of one kilogram.

It may be that Armstrong's objection succeeds outside the particular context of Aristotle's preferred ontology in the *Categories*. I suspect, however, that his objection works for certain kinds of universals and not others. Whatever the case may be in that regard, we have seen that there are resources available to Aristotle for responding to Armstrong here. That is enough to show that the view in question is no mere "heroic doctrine", but a serious metaphysical thesis.

4.2

W.V. Quine's classic paper "Identity, Ostension, and Hypostasis" examines and criticizes the view that universals are wholes. As he describes the view, we should consider the word 'red' to denote "a single concrete object extended in space and time" (Quine 1950: 69). He then offers the following analysis of predication: "to say that a certain drop is red is to affirm a simple spatio-temporal relation between two concrete objects; the one object, the drop, is a spatio-temporal part of the other, red" (ibid.).

Not long after presenting the view, Quine claims that although the view "happened to work for red", it "breaks down in general" (ibid.: 73). Like Armstrong, Quine thinks the view is promising for simple properties like colors, but less promising as a general theory of universals. His objection is straightforward. Consider the following image:



As Quine notes, there are five different kinds of shape in this image: squares, isosceles right triangles, two-to-one rectangles, and two kinds of trapezoid. Suppose we treat each kind of shape as a universal. Thus, in Quine's terms, "we construe the shape square as the total region made up by pooling all the five square regions" (ibid.), and likewise for each of the other kinds of shape. Each shape, considered as a universal, is to be identified with the total spatiotemporal region occupied by its instances. But as Quine notes, in the example at hand, each shape thus identified occupies the same region as every other shape. The total region occupied by all the squares is the entire image. So too is the total occupied by all the isosceles right triangles, the two-to-one rectangles, and the two kinds of trapezoid. Quine argues that in this scenario we end up "concluding identity among the five shapes" (ibid.).

This last inference does not follow, however, unless we endorse the principle of the identity of indiscernibles. Quine himself apparently commits himself to the principle, or at least some restricted version of it: "In general we might propound this maxim of the *identification of indiscernibles*: Objects indistinguishable from one another within the terms of a given discourse should be construed as identical for that discourse" (ibid.: 71). But we have no reason to accept the principle, and we have already seen that Aristotle does not hold an extensional view of universals. Aristotle, then, is not in a position to accept the principle either. So from the fact that in the example at hand, all five shapes understood as universals occupy exactly the same spatiotemporal region, it does not follow that they are identical. We

do not end up concluding intolerably that the universal *square* is identical to the universal *isosceles right triangle*. To the extent that this was Quine's reason for stating that the view in question "breaks down in general", then, we have no reason to agree with him.

4.3

The view that universals are wholes is not a popular view in contemporary metaphysics. But the passages from Armstrong and Quine just discussed constitute the bulk of the discussion, and we have seen that the view is not so easily dismissed. The view in question has a much older pedigree, however, dating back to the fourth century B.C., where it appears to have been defended by Xenocrates (Pines 1961). In light of this, I would like to spend the remainder of the chapter examining some historically important objections to the view in question, especially those forcefully raised in the twelfth century by Peter Abelard. Here again the goal is not to show that the view is entirely without difficulty, but rather to show that it was – and was taken to be – a serious contender in the metaphysics of universals.

Abelard introduces the view by pointing out that some "take the universal *thing* as consisting only in a *collection* of several things" (*LI*; trans. P.V. Spade, p. 34 [45]). These philosophers "call all men collected together the 'species' *man*, and all animals taken together the 'genus' *animal*, and so on for other cases" (ibid.). Shortly afterwards, he presents a long series of objections. Not all of those objections are equally important, so here I will focus on just three.[80]

[80] For more detailed discussions, see Martin Tweedale (1976) and Desmond Henry (1972). As Alfred Freddoso points out, most commentators take the objections that I leave aside to be "inconclusive at best" (Freddoso 1976: 527).

4.3.1

I'll begin with the simplest of the three objections, which is known as *the problem of sub-collections*:

> Further, *any* plurality of men taken together would rightly be called a 'universal', since the definition of a universal would fit them likewise. Or any such random collection would even be called a *species*, so that the whole collection of men would already include many species (*LI*; trans. P.V. Spade, p. 35 [50]).

Consider again the definition of a universal we find in *De Interpretatione* 7: a universal is that among things which, by its nature, is predicated of many subjects. Abelard points out that this definition of a universal applies to *any* plurality of men, not just the collection of *all* men in the world. Consider Cato, Virgil, and Cicero. These three men taken together form a plurality or collection. So it would seem that there is a universal having them and only them as its parts. Worse, unlike some gerrymandered collection of entities, this universal would seem to have as much right to be called the species Man as the universal having *all* the men as its parts. If so, then the species Man "would already include many species", for it would include a species for every sub-collection of human beings.

Pseudo-Joscelin presents this very objection in his *Tractatus de Generibus et Speciebus* and offers a response to it. First, his way of stating the objection:

> What's more, the species is that which is predicated of many numerically different things *in quid*, that is, what materially inheres in many. But if it's true to say, conversely, that anything predicated in this way is a species, there will not only be one species of humanity but many. Let's suppose that there are ten essences of humanity that make up the species. I say that five of them

> will be one species and five another. For that which is made up out of five essences is predicated (*i.e.*, materially inheres) in many – that is, in those five individuals materially constituted by them. The same for that which is produced out of the other five (*TGS*; trans. King, p. 171 [117]).

Once again the worry is that the species Man will have within it sub-species for every sub-collection of men.

In response to this concern, Martin Tweedale suggests that the underlying issue is that there is a problem "in letting any collection whatsoever constitute a universal" (Tweedale 1976: 114). Tweedale rightly points out that "nothing in the theory as described thus far entails that every collection is a universal", and that the theory in question requires only that "every universal is a collection" (ibid.). Put another way, we have already seen that Aristotle rejects the principle of Unrestricted Composition. One way to respond to Abelard, then, is to insist that although Cato, Virgil, and Cicero are a *collection*, they are not a *universal*. This in turn implies that they do not form a species contained within the species Man.

But this response is bound to be unsatisfying because we seem to have no principled grounds for denying that Cato, Virgil, and Cicero taken together compose a universal. Taken together, they seem to satisfy Aristotle's definition of a universal just as well as the collection of all human beings does. Whence the philosophical difference?

A better response to Abelard can be found in Pseudo-Joscelin. Responding to a related objection, he begins by arguing that nothing other than "the whole multiplicity" is signified by the term 'man' (*TGS*; trans. King, p. 173 [119]). The idea is that the term 'man' can be used to pick out only one collection, namely, the *maximal* collection of men consisting of *all* men. It cannot be used to pick out any sub-collection.

Pseudo-Joscelin is aware that some may find this reply unsatisfying, and suggests that we answer skeptics like these as follows:

> This doesn't matter, for the subcollection isn't a *nature*, and only natures are in question here. If you ask what a nature is, listen: I call 'nature' whatever is of dissimilar creation from all those that are not either it or belonging to it, whether it be one essence or several. For example, Socrates is of dissimilar creation from all those who are not Socrates. Likewise, the species man is of dissimilar creation from all things that are not that species or some essence belonging to that species. And this is not suitable for any given subcollection of essences of humanity, since it is not of dissimilar creation from the other essences that are in the species (*TGS*; trans. King, p. 175 [126]).

The idea here is to give a philosophical justification for supposing that the term 'man' can pick out only the maximal collection of men rather than sub-collections of men. That reason is that only the maximal collection forms a *nature*, where a nature is defined as in the passage above: a collection of items of similar creation. Sub-collections do not qualify as natures since the members of a sub-collection will have a similar creation to items outside the sub-collection.

Similar ideas may be found in the *Topics*. Recall that in *Topics* A.7, Aristotle speaks of specific and generic sameness, the idea being that members of the same species (or genus) *present no differences with respect to their species* (or genus). We might take a kind of maximality to be implied here: members of the same species present no differences from one another with respect to their species, *and nothing else is such that it presents no differences from these substances with respect to their species*. Sub-collections of men such as Cato, Virgil, and Cicero fail to satisfy this

maximality condition, for although they present no differences from one another with respect to their species, there exist substances that also present no such differences.

That maximality is implied in the *Topics* may be suggested by Aristotle's remarks about wholes in *Metaphysics* Δ.26. There Aristotle tells us that a whole is that from which nothing is missing. Sub-collections of human beings might thus not qualify as genuine wholes, for they *are* missing something: the other human beings that, together with the sub-collection in question, form the entire species.

In essence, the response here concedes that Cato, Virgil, and Cicero might compose a universal. But it denies that they form a species, because a species is a kind of *maximal universal* or *whole*. Sub-collections are not wholes in the appropriate sense. The solution to the problem of sub-collections, then, is not to deny that sub-collections form universals, but rather to deny that all universals are species. Pseudo-Joscelin shows no inclination to think that treating sub-collections as universals is problematic. What was supposed to be problematic was that they appeared to have equal claim to being species. Having eliminated this worry, Pseudo-Joscelin moves on. I suggest that we follow.

4.3.2

Having dealt with the problem of sub-collections, let us turn now to a second of Abelard's objections:

> Let us ask how the whole collection of men taken together, which is said to be one species, is able to be *predicated* of several so that it is a universal, and yet the whole collection is not *said of* single things. If it is granted that the collection is predicated of diverse things through its *parts* – that is, insofar as its single parts are fitted to themselves – that has nothing to do with the kind

> of community a universal has. The universal, as Boethius bears witness, is supposed to be in each of its singulars *as a whole*. In this respect a universal is distinguished from the kind of common thing that is common by parts, like a field, the different parts of which belong to different people (*LI*; trans. P.V. Spade, p. 35 [48]).

As before, we find Pseudo-Joscelin presenting the same objection: "The species is that which is predicated *in quid* of many. Now to be predicated is to inhere. Yet the multiplicity doesn't inhere in Socrates, for only one essence belonging to the multiplicity touches upon Socrates" (*TGS*; trans. King, p. 163 [95]). And as before, Pseudo-Joscelin responds to that objection:

> They say that to be predicated is to inhere. Common usage holds this, but I haven't found it in an authority. Nevertheless, I concede the point. But I say that humanity does inhere in Socrates: not that the whole is used up in Socrates; rather, only one part of it is informed with Socrateity. This is how I am said to touch a wall. It isn't that each of my parts is in contact with the wall. Maybe only the tip of my finger is. But by this contact I am said to be touching it. In the same way, too, some army is said to occupy a city wall or some place: not that each person in the army stays there, but that someone in the army does. Likewise for the species, though an essence from the collection has a greater identity to the whole collection than does any one soldier to the army; the former is the same as its whole, whereas the latter is different (*TGS*; trans. King, p. 163 [96]).

Pseudo-Joscelin's reply here is to insist, against Abelard, on the legitimacy of saying that the species is predicated of many underlying subjects by having them as *parts* rather than the

species being in each of its underlying subjects *as a whole*.[81] That is, Pseudo-Joscelin is insisting on the legitimacy of analyzing

(7) Socrates is a man

in terms of

(8) Socrates is a proper part of the species Man,

rather than

(9) The species Man as a whole is in Socrates.

The analysis of (7) in terms of (8) is, of course, precisely what was suggested earlier in responding to Armstrong. For to analyze (7) in terms of (8) is just to hold that Aristotle's SAID OF relation is to be analyzed as a parthood relation.

Abelard had originally objected to (8) as an analysis of (7) because it conflicts with Boethius's definition of a universal, according to which a genus "is supposed to be common in such a way that…the whole of it is in all its singulars" (*Second Commentary on Porphyry's* Isagoge; trans. P.V. Spade, p. 22 [18]). This definition denies that a genus or species can be "common by parts", because when something is common by parts "*the whole* is not common" but rather "its *parts* belong to single things" (*SC*; trans. Spade, p. 22 [15]).

Pseudo-Joscelin's response essentially just denies that this is an objection. Or, as Peter King puts it, Pseudo-Joscelin insists that the objection is question-begging: "Pseudo-

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[81] The issue is somewhat complicated by the fact that the view defended by Pseudo-Joscelin is not precisely the same as the view that Abelard criticizes. As we saw earlier, the view Abelard has in his sights is that some "take the universal *thing* as consisting only in a *collection* of several things" (*LI*; trans. P.V. Spade, p. 34 [45]). These philosophers "call all men collected together the 'species' *man*, and all animals taken together the 'genus' *animal*, and so on for other cases" (ibid.). Thus, the universal is a collection, if you like, of primary substances. Pseudo-Joscelin's view is somewhat more sophisticated: "the species is one thing – a 'flock' as it were – conjoined from the essence man that Socrates sustains, along with each of the other essences of this nature" (*TGS*; trans. King, p. 159 [87]). Thus, the species is a collection, but not of primary substances. Rather, the species is on Pseudo-Joscelin's view a collection of individualized essences contained entirely in each individual. Peter King points out that developments like this suggest that Pseudo-Joscelin's version of the theory "was designed to meet Abelard's criticisms of an earlier version of Collective Realism" (King 2014: 114; fn. 25). This difference with respect to *which entities* are the parts of the universal should not affect the details of our discussion, so I ignore it in what follows.

Joscelin is well aware that his project amounts to replacing the traditional universal-particular relation with the whole-part relation…[and he] explicitly rejects Boethius's criteria for the universal" (King 2014: 115).

It is worth noting in this context that Aristotle's definition of the universal in *De Interpretatione* 7 is not the same definition that Boethius gives nearly a millennium later. Aristotle, unlike Boethius, does not specify the *way* in which a universal must be predicated of many subjects. That is, whereas Boethius is at pains to distinguish the different ways in which something might be common in order to isolate the precise sense in which a universal is said to be common, Aristotle in *De Interpretatione* 7 appears to leave this open. Nothing in Aristotle's definition of the universal, then, prevents us from analyzing (7) in terms of (8).[82]

Alfred Freddoso has argued, however, that there is more to Abelard's objection here than what I have considered so far. In particular, he argues that the defender of the view that universals are wholes cannot avail herself of (8) as an analysis of (7) (Freddoso 1978: 533). The problem, Freddoso argues, is that "an integral whole may be divided in any number of nonequivalent ways", which means that "the integral whole *man* may be divided in such a way as to yield, say, Jimmy Carter's left ear as a dividing part" (ibid.: 534). According to

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[82] Some might claim that the view in question is similar in important respects to a view discussed in Plato's *Parmenides*. From 130e-131e, Parmenides asks Socrates how it is that sensible particulars partake in the Forms: is it by having the Form *as a whole* in them, or is it by having a *part* of the Form in them? Both options are supposed to raise difficulties for understanding how sensible particulars relate to the Forms. The second option is in some respects similar to the view that a universal is a whole composed of parts, although the differences between the latter view and the view discussed in the *Parmenides* are important. The view I am attributing to Aristotle holds that a universal is composed of its instances, where these instances are items that the universal is SAID OF. The view discussed in the *Parmenides* also takes a universal to be a kind of whole, but not of its instances. Instead, the universal *F*-ness is supposed to have parts that are themselves *F* whose presence in sensible particulars makes those things *F*. Thus, the view in the *Parmenides* has an additional layer of ontological complexity. Nevertheless, Parmenides's objection to this view might be thought to apply to the view I attribute to Aristotle, and Aristotle would certainly have been aware of the objection. The objection is this: if a universal is divided into parts, it is *many* and therefore cannot be *one*. This is indeed a puzzle for Plato's theory of Forms, for Forms are the fundamental entities in Plato's ontology and so must enjoy the greatest degree of unity. But Aristotle need not be worried, for on his view, species and genera are indeed one, but not one in number (*Cat.* 3b10-19). They enjoy a certain kind of unity, but certainly not the kind of unity enjoyed by Plato's Forms. Thus, Parmenides's objection does not apply in its fullest force to the view I am attributing to Aristotle. Aristotle's awareness of this objection, then, cannot be taken as motivation to think that his definition of a universal must, like Boethius's, rule out a universal being "common by parts".

Freddoso, this has disastrous consequences. For if the species Man can indeed be divided in these nonequivalent ways, including one way in which Jimmy Carter's left ear is a proper part of that species, then – taking (8) as a scheme for understanding predication – we get the absurd result that Jimmy Carter's left ear is a man. That is, if we think of (8) as providing an analysis of (7), and if we accept the idea that a species can be arbitrarily subdivided, then in principle we can take *any* arbitrary proper part of the species Man, substitute it for 'Socrates' in (8), and yield a true proposition resembling (7).

This objection to taking (8) as an analysis of (7) is surprisingly common, but it rests on an equivocation.[83] We have seen already that Aristotle is a pluralist about mereology. The sense in which Jimmy Carter's left ear is a proper part of him, then, is not the same sense in which Jimmy Carter is a proper part of the species Man. Jimmy Carter's left ear, along with his other material parts, come together to compose Jimmy Carter by "making up one thing" that is "continuous and limited". The species Man is composed of Jimmy Carter and other human beings in a different way, namely, by being predicated of each of those substances, each of which is already some one thing. The species Man is SAID OF Jimmy Carter, but Jimmy Carter is not SAID OF his material parts. His parts are themselves substances (*Cat.* 3a29), and so fall under their own species and genera. *These* are SAID OF each of his material parts, and those material parts are therefore proper parts of these species and genera, albeit in a sense quite different from the way in which they are a proper part of Jimmy Carter. Since the species Man is not SAID OF Jimmy Carter's left ear, there is no reason to suppose

[83] Interestingly, Berit Brogaard – who discusses this same objection in another context – does not object to the argument: "I do not believe this is a problem. It might seem odd to treat your elbow as belonging to the species of human beings. But I believe the oddness of this view stems from our habit of treating species as classes with members. Since your elbow is part of you, and you are part of the species of human beings, why not say that your elbow too is part of the human species?" (Brogaard 2004: 226). Clearly, Brogaard does not think it follows from this last claim that your elbow is a human being. But that seems to sever the link between *x* being a *part of* a species and *x* being an instance of that species; in Aristotle's terms, the link between the species being SAID OF *x* and *x* being part of the species. Better to reject the entire argument as resting on an equivocation.

that we are forced to hold that it is a man on pain of denying the transitivity of proper parthood.[84] Transitivity holds *within* a given kind of parthood, not *across* parthood relations.[85]

Freddoso may reply, however, that we are not entitled to assume this kind of pluralism about parthood. As he characterizes Abelard's objection, it is that "the collective realist conflates universals with integral wholes" (Freddoso 1978: 527). Because of this conflation, and because integral wholes can be arbitrarily subdivided, we end up having to think that Jimmy Carter's ear is a man.

Why does Abelard, and Freddoso following him, think that the view I am attributing to Aristotle conflates universals and integral wholes? When Freddoso initially considers Abelard's objection, he seems amenable to the reply we find in Pseudo-Joscelin: simply insist that a universal *can* be "common by parts". But Freddoso characterizes this response in this way: "the collective realist can simply reply that, *pace* Boethius and the others, universal wholes are in fact a species of integral wholes" (ibid.: 532). Thus, Freddoso seems to assume that adopting Pseudo-Joscelin's reply to Abelard requires assimilating universal wholes to integral wholes. But I see no reason to accept Freddoso's assumption. One can think that a universal can be "common by parts" and still think that the *way* in which it is so common differs from the way in which an integral whole is so common. This, I have been insisting, is exactly what Aristotle says in *Metaphysics* Δ.26.

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[84] Compare Mignucci: "By means of the distinction between predicative and constituent parts the problem of Hali's camel is solved. The tail of Hali's camel is a constituent and not a predicative part of the animal, and there is no reason to believe that transitivity of the part-whole relation extends from predicative to constituent parts" (Mignucci 2000: 8).

[85] Achille Varzi seems to reject this claim, holding that "if x is a Φ-part of y, and y is a Φ-part of z, x need not be a Φ-part of z: the predicate modifier 'Φ' may not distribute over parthood", but that this shows only that the relation of Φ-parthood is not transitive, not that *parthood* is not transitive (Varzi 2006: 142). Thus, Varzi believes that parthood in general is transitive, even if certain restricted parthood relations are not transitive. I am not sure exactly how to think about the relationship between various restricted parthood relations and a parthood *simpliciter* relation. I suspect that Aristotle would not have accepted that there is any relation of parthood *simpliciter*, so I think that it is enough for Aristotle to hold that his various different parthood relations are each of them transitive.

There is only one other line of thought I can find in Freddoso that might justify his claim that the defender of universals as wholes must be conflating universals with integral wholes. Suppose we say, as Pseudo-Joscelin does, that a species is not in its instances as a whole, but that a species is composed of its parts. Freddoso takes this as tantamount to saying that the species in question is divided into parts in such a way that its *definition* cannot be truly predicated of each of those parts, since the species *itself* is not in each of its instances as a whole. But if the species is divided into parts in such a way that its definition cannot be truly predicated of those parts, then *by definition* the species is an integral whole. For the chief difference between universal and integral wholes is whether the definition of the whole can be predicated of each of its parts: in the case of universal wholes, it can, but in the case of integral wholes, it cannot. Freddoso's claim, then, is that this difference cannot be maintained, for the very fact that a universal whole is divided into parts entails that its definition cannot be truly predicated of each of its parts. Therefore, universal wholes must be conflated with integral wholes.

It seems illegitimate, however, to infer that the definition of the species cannot be predicated of its parts from the fact that the species is not in each of its parts as a whole. To insist on this seems question-begging. Pseudo-Joscelin can and should insist that although the species is "common by parts", nevertheless the definition of the species is truly predicable of every member of the species. Certainly Pseudo-Joscelin holds on to this idea when he defines a species as "a nature that is apt to be predicated of many numerically different individuals *in quid*" (*TGS*; trans. King, p. 177 [129]). For to say that a species is predicated '*in quid*' is to say that it is predicated *essentially*: its definition is predicated of those individuals. Pseudo-Joscelin sees no obstacle to insisting that the definition of a species can

be predicated of its underlying subjects even if we take (8) as an analysis of (7). I see no obstacle either. Freddoso's reasoning seems unpersuasive.

There is no objection, then, to understanding the SAID OF relation as a parthood relation.

4.3.3

Turn now to the last of Abelard's objections that I will consider here. As mentioned, Abelard raises other objections to the view in question, but this is the last of the ones that we need to take seriously:

> Further, every universal is naturally prior to its own individuals. But a collection of any things whatever is an integral whole with respect to the singulars of which it is constituted, and is naturally posterior to the things out of which it is put together (*LI*; trans. P.V. Spade, p. 36 [54]).

The objection itself is straightforward: universals are prior to their instances, but collections or wholes are posterior to their instances; therefore universals are not collections or wholes of their instances.

Aristotle will, I think, flatly reject Abelard's claim that every universal is naturally prior to its own individuals. Although he says in *Categories* 13 that "[g]enera…are always prior to species since they do not reciprocate as to implication of existence" (14b35), Aristotle's considered view is that universals are ontologically dependent on individuals: "if the primary substances did not exist it would be impossible for any of the other things to exist" (2b4-6). Take away the primary substances – the individual instances of universals – and you would seem to take away everything else. It follows that universals are not, on Aristotle's view,

naturally prior to their individual instances. Abelard must be discussing some neo-Platonic theory of universals, not Aristotle's.[86]

But Aristotle's views on the nature of ontological priority are complicated, and the passage from *Categories* 13 is worrisome. Chapter Five of this dissertation is devoted entirely to discussing Aristotle's views about ontological priority. Here, then, I would like to consider other potential avenues of reply to Abelard.

To see our way around the objection, it may be helpful to consider how Abelard's objection might be fleshed out. For this I turn once again to Pseudo-Joscelin, who develops the objection in interesting and important ways:

> If the species is nothing but what is made up out of many essences, then as often as the latter is changed so too the species will be changed. But the collection is changed every hour! For example, suppose that humanity consists in only ten essences, and in a moment some man will be born; then another humanity will be made up. It is not the same group that consists in eleven essences and in ten essences. Let me say more: each of the essences of humanity that made up that species a thousand years ago have now perished, and new ones have grown up as replacements that make up the humanity that is the species today. Therefore, unless the signification of the term 'man' were to be changed at every moment, 'Socrates is a man' cannot be said truly twice. For once you say 'Socrates is a man' for the second time, were you to mean that he is of the humanity of which you previously spoke, this is false, because it no longer exists (*TGS*; trans. King, p. 171 [115]).

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[86] Thus, Porphyry for example says that it is "common" to species and genera "to be prior to what they are predicated of" (*Isagoge*; trans. P.V. Spade, p. 13 [71]). See also Richard Cross (2002) on neo-Platonism as a source for the view that universals are collections or wholes.

What this passage makes clear is that Abelard's objection is not in the first instance about ontological priority or dependence, but rather about the identity conditions for universals and wholes. Pseudo-Joscelin's presentation of the objection makes clear that collections are typically thought of as *extensional entities*: a collection is in some sense *nothing over and above* the things it collects. From this it follows that a collection has its members essentially.[87] The problem, of course, is that it seems quite obvious that species and genera undergo changes in their membership all the time without thereby becoming a new species or genus. So it would seem that they cannot be collections of their instances; they cannot be wholes.[88]

Pseudo-Joscelin's response to this problem is interesting. One line of response invokes his notion of being "the selfsame object":

> It's true that the humanity that existed a thousand years ago, or yesterday, isn't what exists today. But it is nevertheless the same as the latter, that is, not of dissimilar creation. For it isn't the case that whatever is the same as another is the selfsame object. A man and an ass are the same in genus, yet the one isn't the other (*TGS*; trans. King, p. 171 [116]).

Here Pseudo-Joscelin begins by conceding that there is some truth to the objection: when a species undergoes a change in membership, it ceases to be "the selfsame object". But, he argues, this does not imply that the species that exists today and the species that existed a

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87 See, e.g., Merricks (1999).

88 Armstrong raises the same objection to class nominalism: "Suppose, for instance, that there were other white things besides the ones which actually exist. The class is then a different class. For, as logicians insist, the condition of identity of a class is identity of membership. If the class has a different membership, then it is a different class. (Remember, again, that in the Class Nominalist analysis the phrase 'the class of white things' must be "taken in extension".) Hence, under the new conditions, what it is for something to be white would have to change. But it is clear that it would not in fact change" (Armstrong 1978: 37-38). Although he raises the objection only for class nominalism, it seems clear – especially given the presence of the objection in Abelard and Pseudo-Joscelin – that the objection applies to the view in question as well. And there is no reason to think Armstrong would not have realized this, since his presentation of mereological nominalism, although brief, is contained in the chapter on class nominalism. This objection thus gives us another reason to reject the view, rejected in Chapter One, that universals are sets or classes. But it also gives us an objection to the view I am defending that must be dealt with.

millennium ago are not the same, for there are kinds of sameness weaker than *self*-sameness. Put another way, there are kinds of sameness weaker than numerical sameness.

Aristotle, of course, believes there are kinds of sameness weaker than numerical sameness. We have seen already that Aristotle's distinctions between being one in number, one in species, and one in genus are central to his thought. Being one in species and one in genus are ways of being the same weaker than being one in number. Using Pseudo-Joscelin's example of a man and an ass, Aristotle would say that these are neither one in number nor one in species, but one in genus: they are of the same genus, for they are both animals (*Topics* I.7; 103a10-15). Considered only as examples of the genus Animal, and abstracting from the fact that they are different species and have countless other individual differences, a man and an ass are the same. Put another way, the man-*qua*-Animal and the ass-*qua*-Animal are the same.

Pseudo-Joscelin's response to the objection at hand builds on this notion of sameness that is weaker than numerical sameness. Just as a man and an ass are the same without being the selfsame object, so too are the species Man today and the species Man a millennium ago the same without being the selfsame object. It is tempting to read Pseudo-Joscelin here as extrapolating from Aristotle's notion of being one in species. Aristotle would say that two individual men, such as Socrates and Callias, are the same in species despite not being one in number, for although they are two different men, they "present no differences in respect of their species" (*Top.* I.7; 103a10). Pseudo-Joscelin's innovation seems to be realizing that Aristotle's definition of sameness in species applies just as much to two distinct *collections* of individual men. The species Man today and the species Man a millennium ago, like Socrates and Callias, are two distinct objects – they are not "the selfsame object" – but they present no differences in respect of their species. This enables Pseudo-Joscelin to insist

that the species Man today and the species Man a millennium ago are *the same* despite not being *the selfsame object*.

Whatever the merits of this line of reply, it cannot be attributed to Aristotle. It is, as I suggested above, an innovation on Pseudo-Joscelin's part. Aristotle's commitment to the eternality of species is clear,[89] so Aristotle would not want to admit, with Pseudo-Joscelin, that the species Man today and the species Man a millennium ago are not the selfsame object. They *are* the selfsame object on Aristotle's view, and so once again we must face the apparent inconsistency between this view and the fact that species undergo changes in membership over time.

Pseudo-Joscelin does present a second response to this objection, reminding us that "Socrates too consists in many more atoms as a man than he did as a boy, and yet he is the same" (*TGS*; trans. King, p. 171 [116]). The response draws on an analogy between the species Man and its members. These members can undergo changes in their parts while remaining the selfsame object, so – by analogy – why can we not say that the species too undergoes a change in *its* parts while remaining the selfsame object? Just this kind of reply is found in Tweedale:

> [T]here is surely a sense in which individual bodies, like Socrates, are wholes composed of parts, even though they do not lose their identity when they lose a few parts. Socrates will still be Socrates after he has cut his toenails. What happens is that Socrates is one whole before the operation and another afterwards. Consequently the logic of 'Socrates is this whole' is not exactly like the logic of 'The library is this building', because in the latter a change in the referent of the second term entails a change in the referent of the first

[89] See, e.g., *APo.* A.24, 85b15-18 and *GA* 2.1, 731b35-732a1. All references to the *Generation of Animals* are to the translation in Barnes (1984).

> term if the sentence is to remain true; but this is not so in the former. This opens up the possibility that when the collection theory says that universals are collections they mean that they are collections in the way that Socrates is a whole, i.e. at any given time a single universal is a single collection, but at different times it may be different collections. Thus this objection, too, in the end only forces the collection theory to further explain itself by providing some criterion for the identity of the universal over and above the mere parts that make it up (Tweedale 1976: 115).

The idea here is simple. Ordinary material objects like Socrates are not extensional entities. They are in some sense "something over and above their parts", and this allows them to undergo mereological change while retaining their identity. So why not take these as our example for thinking about universals? If ordinary material objects can do this, then so too can universals.[90]

We have already found independent reasons to think that Aristotle would have rejected an extensional account of universals. For any given universal, *what that universal is* is given not by its extension, but by its definition in terms of its higher genera plus a differentia. This is why Aristotle is in a position to deny that two universals having all and only the same parts are identical. But precisely that same fact about his view enables him to insist that universals can undergo change in their membership while retaining their identities.

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[90] Abelard himself would not be satisfied with this response, for he endorses a version of *mereological essentialism*: "no thing possesses more parts at one time than at another" (*LI Cat.* 300.21-22; *Dial.* 423.29-30). For Abelard, then, concrete physical objects *would be* a kind of extensional entity, and would therefore be incapable of mereological change. The analogy between such objects and universals therefore would not help the defender of the view that universals are mereological sums. But the fact that Abelard was a mereological essentialist should not necessarily dissuade us from pursuing the analogy. For helpful discussion of Abelard's mereological essentialism, see Andrew Arlig 2007 and 2013.

Because of this, we need not rely on any analogy between universals and ordinary material objects, as both Pseudo-Joscelin and Tweedale do. For Aristotle already has resources built into his theory of universals to handle the objection we are facing.

More needs to be said, of course, about the precise way in which the definition of a universal determines the identity conditions of that universal in such a way that the universal is an *intensional* rather than *extensional* entity. Compare the following set: {2, 4, 6, 8, 10,…..}. Sets are typically understood to be extensional entities,[91] which implies that the identity of this set is given by its members. But we might offer a definition of this set as follows: this set is the set of *even numbers* or the set of numbers *divisible by 2*. The availability of these definitions does not imply that the set is not extensional.

At a first approximation, neither definition implies the intensionality of the set because neither definition is a good definition. Defining the set as the set of even numbers is just to define it extensionally: it is the set having these and only these members. Defining the set as the set of numbers divisible by 2 is better, but the number two is itself a member of the set, which makes the definition of the set dangerously close to circular. Aristotle's definitions of species and genera, given as they are by citing a genus and a differentia, face neither of these concerns. This goes some way towards explaining why their availability implies that species and genera are not extensional entities. But this does not mean that our work is done. More work is needed to understand how Aristotle's definitions work. That, however, is work for another time.

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[91] See, for instance, the objections Armstrong raises to class nominalism (fn. 88). Cf., van Cleve 1985.

5.

The goal of this chapter was to elaborate and defend the view developed in Chapter One, according to which universals are wholes. To achieve this goal, I presented classical extensional mereology as a foil against which we could contrast Aristotle's thinking about universals. Then I presented a series of objections both contemporary and medieval to show that, while not without difficulty, the view in question is philosophically plausible enough to warrant attributing it to Aristotle. Certainly it is not such a non-starter as to justify refusing to attribute it to him.

Nothing that I have said in these first two chapters is conclusive. That is, nothing I have said *requires* us to read Aristotle as I do. But I do think that I have shown that it is a *plausible* reading of Aristotle. And in subsequent chapters, I will move on to consider some specific textual puzzles in the *Categories*, including the status of secondary substances, the ontology of non-substantial individual, and the nature of ontological priority. There is a sense in which those chapters stand alone, independent of the results of these two chapters, since much of what I say will be focused on specific difficulties with the received text. But there is also a sense in which those chapters will provide further, albeit indirect, support for the results of these first two chapters. For the view that universals are wholes will emerge in various places as providing an attractive solution to various interpretive issues facing readers of the *Categories*. That it can provide such solutions is some defeasible reason to accept it.

The literature on the three puzzles I shall examine in the remainder of this dissertation is disjointed in the following sense: the literature on secondary substance takes little account of the literature on non-substantial individuals (and vice versa), and both literatures take little account of the literature on ontological priority (and vice versa). Debates about all of these issues take place in isolation from one another. What I want to suggest is

that there is a way to unify those debates, and thus our reading of the *Categories* itself, by seeing the view developed in Chapters One and Two as providing a common solution to a diversity of problems. With this in mind, I turn in the next chapter to a discussion of the status of secondary substances.

CHAPTER THREE

In the last two chapters, I have developed a systematic account of how Aristotle thinks about universals in his early work. It's time to put that account to work. Consider the following passage:

> A *substance* – that which is called a substance most strictly (κυριώτατά), primarily (πρώτς), and most of all (μάλιστα) – is that which is neither said of a subject nor in a subject, e.g. the individual man or the individual horse. The species in which the things primarily called substances are, are called *secondary substances* (δεύτεραι οὐσίαι), as also are the genera of these species (εἰδῶν τούτων γένη). For example, the individual man (ὁ τὶς ἄνθρωπος) belongs in a species, man, and animal is a genus of the species; so these – both man and animal – are called secondary substances (2a11-18).

This passage makes clear Aristotle's commitment to the idea that within the category of substance, there are both particulars and universals. Particulars in the category of substance are things like the individual man and the individual horse. These are primary substances. Universals in the category of substance are things like the species Man or the genus Animal. These are secondary substances.

So much should be familiar from our discussions in the preceding chapters. But we are now in a position to ask a question about Aristotle's thinking about universals that we have been postponing until we had an account of what sorts of things universals were supposed to be. And that question is this: why should Aristotle think that *the species and genera* of particular living organisms, as well as those particular living organisms themselves, all qualify as *substances*? Why should we think that *any* universals could qualify as substances?

Aristotle himself appears to have changed his mind on this issue. In *Metaphysics* Z, Aristotle appears to argue not only against the specific claim that the species and genera of primary substances are substances, but against the more general claim that any universal could be a substance. Thus, he says in *Z*.10 that "man and horse and terms which are thus applied to particulars, but universally (καθόλου δέ), are not substance (οὐκ ἔστιν οὐσία) but something composed (σύνολον) of this particular formula (τουδὶ τοῦ λόγου) and this particular matter (τησδὶ τῆς ὕλης) treated as universal (ὡς καθόλου)" (*Met.* Z.10, 1035b27-30). Here Aristotle denies that the species Man is a substance, contrary to the view defended in the *Categories*. Three chapters later, Aristotle generalizes his claim: "it seems impossible (ἀδύνατον) that any universal term should be the name of a substance…since that is called universal (καθόλου) which naturally (πέφυκεν) belongs (ὑπάρχειν) to more than one thing (πλείοσιν)" (*Met.* Z.13, 1038b9-11).

It is not terribly surprising that Aristotle should have changed his mind. Substances are typically supposed to be in some way *ontologically fundamental*. Universals, on the other hand, are typically supposed to be in some way *ontologically dependent*. Yet the position that Aristotle wants to carve out in the *Categories* attempts to reconcile these two apparently competing positions. Despite the fact that secondary substances are SAID OF primary substances, and so are in some sense ontologically dependent on them, Aristotle nevertheless wants to insist that they too qualify as substances, albeit in a secondary way.

The goal of this chapter is to try to come to a fuller understanding of Aristotle's position. An initially attractive suggestion is that there is some single criterion for substance-hood that Aristotle employs throughout the *Categories*, in virtue of which both particular living organisms and their species and genera qualify as substances. Indeed, it has recently been suggested that denying this view leaves Aristotle "vulnerable to the objection that [he]

assigns a label of fundamental ontological importance to two radically different types of entity for no apparent reason" (Kohl 2008: 155). But I shall argue that this objection is mistaken, and that Aristotle does not have a single criterion for substance-hood in the *Categories* that applies both to primary and secondary substances. He in fact has different reasons for classifying particular living organisms as substances than he does for classifying their species and genera as substances.

1.

The entirety of *Categories* 5 is devoted to a discussion of substance and its characteristics. For our purposes, however, the following is the key passage:

> It is reasonable (εἰκότως) that, after the primary substances (τὰς πρώτας οὐσίας), their species (τὰ εἴδη) and genera (τὰ γένη) should be the only other things called (secondary) substances (δεύτεραι οὐσίαι). For only they, of things predicated, reveal (δηλοῖ) the primary substance. For if one is to say of the individual man what he is (τις τί ἐστιν), it will be in place to give the species or the genus (though more informative to give man than animal); but to give any of the other things would be out of place – for example, to say 'white' or 'runs' or anything like that. So it is reasonable that these should be the only (μόνα) other things called substances. Further (ἔτι), it is because the primary substances are subjects (ὑποκεῖσθαι) for everything else (τοῖς ἄλλοις ἅπασιν) that they are called substances most strictly (κυριώτατα). But as the primary substances stand to everything else, so the species and genera of the primary substances stand to all the rest: all the rest are predicated of these. For if you will call (ἐρεῖς) the individual man (τινὰ ἄνθρωπον) grammatical

> (γραμματικόν) it follows (οὐκοῦν) that you will call both man and animal grammatical; and similarly in other cases (2b29-3a6).[92]

The most natural way to read this passage takes it to introduce two reasons for holding that the species and genera of primary substances are themselves substances. The first reason is that they alone, of all other entities in the *Categories* ontology, reveal what primary substances are. They alone serve as appropriate answers to the "What is it?" question asked of primary substances. Because they reveal the primary substance in this way – because they tell us what primary substances *are*, rather than what primary substances are *like* – Aristotle concludes that it is "reasonable" that the species and genera of primary substances also qualify as substances. Call this *the revealing condition* on substance-hood.

The second reason is that the species and genera of primary substances, like primary substances themselves, are underlying subjects of some kind. Just as everything else in the ontology is either SAID OF or PRESENT IN primary substances, so too is everything else (with the exception of primary substances) PRESENT IN secondary substance. Since it is their status as underlying subjects for predication that qualifies primary substances *as* substances, then insofar as secondary substances are also underlying subjects for predication, they too should qualify as substances.[93] Call this *the subject condition* on substance-hood.

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92 I have slightly modified Ackrill's translation. In the last sentence, Ackrill has "if you will call the individual man grammatical it follows that you will call both *a* man and *an* animal grammatical". This obscures the intent of the passage. Aristotle has just claimed that the species and genera of primary substances stand "to all the rest" as "everything else" stands to primary substances. As evidence for this, he offers the sentence Ackrill translates with indefinite articles. Adding the indefinite articles, however, makes the sentence say nothing whatsoever about the species and genera of primary substances, thereby obscuring the intent of the passage. Compare Wedin (2000: 96).

93 Someone might object that other entities are underlying subjects for predication too without thereby qualifying as substances. For instance, non-substantial individuals in the category of *quality* have their higher genera SAID OF them, but are not substances. There are two ways to avoid this objection. The first is to insist that a substance must be an underlying subject for predication without also being a predicable item. That would rule out non-substantial individuals counting as substances, but it would also rule out secondary substances as substances. Being a substance cannot be a matter, in the *Categories*, of being an underlying subject that is not itself predicated of anything else. Nevertheless, Markus Kohl develops a sophisticated version of this view based on what he calls "non-reciprocal subjecthood", which is a relative, rather than absolute, notion (Kohl

Not everyone reads the passage in this way. Many commentators, in fact, argue that Aristotle believes there is just *one* reason why the species and genera of primary substances deserve to be called substances. These commentators, however, tend to fall into two very different camps. Some, like Michael Wedin, argue that "the *reason* Aristotle gives for calling species and genera substance…[is] that of what is predicated only they *reveal* what the primary substance is" (Wedin 2000: 94).[94] Likewise, G.B. Matthews and S.M. Cohen write: "[e]very individual is an individual such-and-such…[and] the such-and-such of an individual is also the being or substance of the individual: it is what the individual is" (Matthews and Cohen 1968: 632).[95] These commentators are what I shall call *criterial dualists* about substance in the *Categories*. For they hold that Aristotle has distinct criteria for substance-hood, one of which applies to primary substances, the other of which applies to secondary substances. According to dualists, the fact that secondary substances are underlying subjects of predication is in no way related to their status as substances.

Other commentators, however, are what I call *criterial monists* about substance in the *Categories*. These commentators believe that Aristotle is committed to only one criterion of substance-hood in the *Categories*, where this criterion explains why both concrete living organisms and their species and genera count as substances. Thus, Casey Perin argues that"[b]eing a substance of any sort in the *Categories* is a matter of being a subject of inherence" (Perin 2007: 137). And Markus Kohl adds that "*all* substances – concrete objects,

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2008: 159-165). This may avoid the foregoing objection, but as we shall see later, there are other reasons to reject Kohl's view. The second, and better, response to this objection is to insist that strictly speaking it is not being an underlying subject of *predication* that qualifies something as a substance, but being an underlying subject of *inherence* (where 'inherence' refers to the relation that obtains between an entity *x* and the underlying subject *y* that *x* is PRESENT IN). On this view, something qualifies as a substance only if there are entities that are PRESENT IN it. This view has been defended by Perin (2007). We shall see later that there are reasons to reject Perin's view.

94 Wedin also makes the stronger claim that Aristotle does not think species and genera are substances in virtue of being underlying subjects of inherence. I address this claim in Chapter Five.

95 Admittedly, this passage is unclear. Matthews and Cohen do not explicitly say that the such-and-such of an individual is a substance *because* it reveals what the individual is. But their claim that the such-and-such is "the being or substance *of*" (emphasis mine) the individual strongly suggests this explanatory notion.

substance species, substance genera – non-reciprocally underlie properties" (Kohl 2008: 164). According to monists, the fact that secondary substances reveal what primary substances are is in no way related to their status as substances.

Both pluralists and monists agree, however, that 2b29-3a6 identify just one consideration in favor of taking secondary substances to be substances. They simply disagree over which consideration that is, which entails a disagreement over whether there is one or more than one criterion for substance-hood in the *Categories* as a whole.

In the next section, I shall argue quite generally against criterial monism about substance. This will cast doubt on the idea that the revealing condition is irrelevant to the substance-hood of secondary substance. Afterwards, I shall return to 2b29-3a6 and criticize those dualists who, like Wedin, insist that the subject condition is irrelevant to the substance-hood of secondary substance. I shall then defend what I call *criterial pluralism*, which holds that both conditions are relevant to the substance-hood of secondary substance. Pluralists agree with dualists that in the *Categories*, there are multiple criteria for substance-hood. Against dualism, however, pluralists insist that these criteria need not be mutually exclusive, such that one criterion applies to all and only primary substances and the other applies to all and only secondary substances. According to pluralism, the revealing condition applies to all and only secondary substances, but the subject condition applies to *both* primary and secondary substances.

2.

Monism about substance is motivated by the idea that there must be some single unified criterion for substance-hood in the *Categories* on pain of assigning "a label of fundamental ontological importance to two radically different types of entity for no apparent reason"

(Kohl 2008: 155). The intuition here is straightforward: if both primary substances and secondary substances are to qualify as substances, then surely there must be something these entities have in *common*. Otherwise, to call each of them 'substance' is like calling both the edges of a river and a financial institution 'banks'.

This intuition seems to be supported by some passages in the *Categories*. Aristotle claims that substance "does not admit (ἐπιδέχεθαι) of a more (μᾶλλον) or a less (ἧττον)" (3b33). But he clarifies this remark by saying that "I do not mean that one substance is not more a substance than another" because "we have said (εἴηται) that it is" (3b34-35). For example, at 2b7 Aristotle claims that "the species is more a substance (μᾶλλον οὐσία) than the genus" because it is "nearer (ἐγγιον) to the primary substance". But "of the species themselves (αὐτῶν δὲ τῶν εἰδῶν)…one is no more a substance than another" (2b22-23). Likewise "of the primary substances one is no more a substance than another". But primary substances are substances "most strictly, primarily, and most of all" (2a11-12). Presumably, then, they are substances *more than* either their species or their genera.[96]

Thus, Aristotle is committed to a hierarchy of substance that licenses certain comparative claims about which of two entities is more of a substance than another. But in the *Categories*, Aristotle appears to believe that comparisons of this sort can be made only if certain conditions obtain. In *Categories* 8, for example, Aristotle is discussing the view that "[q]ualifications (τὰ ποιά) admit of a more and a less" (10b26). Although some philosophers "utterly deny that one justice is called more or less a justice than another", Aristotle insists that "things spoken of in virtue of these unquestionably admit of a more and a less" (10a33-34; 11a2-3). For example, Socrates is *more just* than Callicles, even though no one justice is

[96] Thus, Terence Irwin says that "'second" substances are substances to a lesser degree than first substances' (Irwin, 1988: 56)". Wedin argues that this is "misleading", on the grounds that it suggests that we can compare the degree to which a primary substance is a substance to the degree to which a secondary substance is a substance. For a convincing reply to Wedin, see Perin (2007: 132-133).

more of a justice than another. That is, although no *instance* of justice is more an instance of justice than any other instance of justice, one *individual* can be more just than another individual. Thus, no justice is called more or less of a justice than any other, but *things spoken of in virtue of these* – that is, *just individuals* – can be more or less just than others.

This last claim must be qualified. Aristotle insists that "unless both admit the definition of what is under discussion (τὸν τοῦ προκειμένου λόγον) neither will be called more that than the other" (11a12-13). Thus, Socrates can be more just than Callicles *only if* the definition of *what it is to be just* is the same for each of them: the definition of the justice that is PRESENT IN them is the same.[97]

These passages – the one from *Categories* 8 concerning how it is that *x* can be more *F* than *y*, the others from *Categories* 5 concerning comparative claims about substance – have a surprising implication. Together they seem to imply that *the definition of substance must be the same when applied both to Socrates and his species and genera*. Socrates, the species Man, and the genus Animal are all substances. Indeed, substance – the category itself – is SAID OF Socrates, the species Man, and the genus Animal.[98] Now, Aristotle holds that Socrates is a substance *more than* the species Man, which in turn is a substance *more than* the genus Animal. Just as Socrates is more just than Callicles *only if* the definition of the justice that is PRESENT IN each of them is the same, so too it seems that Socrates is *more substantial* than the species Man, and

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97 Cf., Owen (1986: 195).

98 Wedin rejects this claim in the course of his discussion of a puzzle he calls "the Substance Said-of Problem" (Wedin 2000: 29). That problem is the puzzle generated by the claim I am making here, namely, that if an entity *x* is a substance, then 'substance' is SAID OF *x*. But Aristotle believes that if *F* is SAID OF *x*, then both the name and the definition of *F* can be predicated of *x*. This implies that *F* has a definition. If *F* stands for 'substance', it follows that 'substance' has a definition, despite the fact that there is no definition by genus and differentia of substance. Wedin's solution to the puzzle is to abandon the claim that if something is a substance, then 'substance' is SAID OF that thing (ibid.: 35-36). An alternative solution, however, would simply be to deny that everything that is SAID OF something has a definition. Although Aristotle clearly holds that "if something is said of a subject both its name and its definition are necessarily predicated of the subject" (2a19-21), nothing in this passage requires everything that is SAID OF a subject to *have* a definition. If it *does* have a definition, then it is necessarily predicated of the underlying subject. But if it doesn't have a definition, then it is not there to be predicated. So I think that substance is SAID OF Socrates and his species and genera even though substance cannot be defined.

the latter is *more substantial* than the genus Animal, *only if* the definition of substance that is SAID OF each of them is the same.

The foregoing kind of argument plays a central role in Perin's recent defense of monism about substance in the *Categories*. He argues that:

> [i]f Socrates is a substance more than his species or genus, however, then the term 'substance' has the same meaning when it is applied to Socrates as it has when it is applied to his species or genus. And if that is so, then the account of what it is for Socrates to be a substance is the same as the account of what it is for his species or genus to be a substance (Perin 2007: 133).

And while Kohl does not develop his worry that the denial of monism is "vulnerable to the objection that [he] assigns a label of fundamental ontological importance to two radically different types of entity for no apparent reason", it seems clear that something like this argument underwrites the intuition behind that objection. That intuition was that if both primary and secondary substances are to count as substances, they must share something in common. Perin's argument provides an illustration of what they must have in common: a *definition*.

Monism, however, cannot withstand scrutiny. Consider first the intuition motivating Kohl's objection. Aristotle himself does not seem to have shared that worry. Thus, in *Metaphysics* Δ.8, Aristotle says that

> [s]ubstance has two senses (δύο τρόπους), (a) the ultimate substratum (ὑποκείμενον), which is no longer predicated of anything else, and (b) that which is a 'this' (τόδε τι) and separable (χωριστὸν) – and of this nature is the shape (μορφὴ) or form (εἶδος) of each thing (1017b25).

Here Aristotle clearly and unequivocally commits himself to the idea that substance "has two senses". This suggests that Aristotle is not worried about assigning "a label of fundamental ontological importance to two radically different types of entity". On the contrary, Aristotle appears happy to assign the label 'substance' to two radically different sorts of things. Of course, there must be some good reason for doing so; Kohl's objection was that Aristotle must avoid assigning the label 'substance' to radically different kinds of things "for no apparent reason". But we shall see later that Aristotle does indeed have good reason for doing so. Kohl's worries here are misplaced.

Nor does Perin's more detailed argument fare better. Perin's view implies that we can make comparisons of substantiality only if the *definition* of substance that applies to the substances being compared is the same. Perin, for example, uses the language of "what it is for Socrates to be a substance". But the phrase "what-it-is-to-be-*x*" is standard Aristotelian language for the *essence* of *x*, where the essence of *x* is given by a *definition* of *x*. Thus, to speak of what it is for Socrates to be a substance is to imply that substance can be defined. It is to imply that the category substance itself can be defined. Only if the substance that is SAID OF two different substances can be defined can we meaningfully compare those two substances with respect to their substantiality. The case is exactly parallel to the case of justice in *Categories* 8.

But the category of substance cannot be defined. Any such definition would have to be a definition by genus and differentia, and the only genus available to define one of the categories is *being*.[99] But Aristotle is adamant that being is not a genus (*Met.* H.6, 1045a33-b7;

[99] Discussing the Substance Said-Of Problem (see fn. 98), Wedin says that "where *substance* is the target of definition, the sole suitable candidate for the genus…would be *being* itself" and "Aristotle routinely insists and twice argues that *being* is not a genus" (ibid.: 34-35). Thus, Wedin assumes – as I do – that any plausible definition here must be a definition by genus and differentia, and that since *being* is not a genus, substance cannot be defined.

Met. B.3, 998b22-27; *Met.* K.1, 1059b24-34).[100] If being is not a genus, then the category of substance cannot be defined. *A fortiori*, the substance that is SAID OF both Socrates and the species Man cannot be defined, since that is just the category of substance itself. Without such a definition, it would seem that we cannot compare the substantiality of Socrates and his species and genera.

Monism about substance, therefore, can underwrite comparisons of substantiality *only if* the category substance can be defined. Since the category of substance cannot be defined, monism cannot underwrite those comparisons.

Something has gone wrong, then, because Aristotle is certainly committed to the idea that we can make comparisons of substantiality. What has gone wrong is monism and, more precisely, Perin's account of what underwrites those comparisons. Comparisons of substantiality are not relevantly like comparisons of justice, in which case we cannot extrapolate from Aristotle's remarks about the latter in *Categories* 8 to develop an account of how to compare different substances with respect to their substantiality. Something else underwrites those comparisons.

I want to develop an account of what underwrites comparisons of substantiality that relies on the idea that all substances are underlying subjects. This account will be decidedly anti-monist. But it will also be anti-dualist, for the account requires that the subject condition on substance-hood be relevant to the fact that secondary substances are substances. Thus, the account I shall develop will rely on criterial pluralism. That means I must wait to present that account until after I have defended pluralism.

We have seen that criterial monism cannot account for comparisons of substantiality. Nor is monism supported by Kohl's worry that Aristotle might be assigning "a label of

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100 References to *Metaphysics* B, H, and K are to the translation of W.D. Ross in his (1924).

fundamental ontological importance to two radically different types of entity for no apparent reason". Criterial monism, the view that Aristotle has just a single criterion for substance-hood in the *Categories*, is false.

That leaves us with two options: criterial dualism and criterial pluralism. In the next section, I will examine dualism and show that it too is an unsatisfactory account of Aristotle's thinking about substance in the *Categories*.

3.

It might be helpful to once again have the key passage from 2b29-3a6 in front of us. This time, I shall divide the passage into two parts, following the division proposed by Wedin:

> (a) It is reasonable that, after the primary substances, their species and genera should be the only other things called (secondary) substances. For only they, of things predicated, reveal the primary substance. For if one is to say of the individual man what he is, it will be in place to give the species or the genus (though more informative to give man than animal); but to give any of the other things would be out of place – for example, to say 'white' or 'runs' or anything like that. So it is reasonable that these should be the only other things called substances. (b) Further, it is because the primary substances are subjects for everything else that they are called substances most strictly. But as the primary substances stand to everything else, so the species and genera of the primary substances stand to all the rest: all the rest are predicated of these. For if you will call the individual man grammatical it follows that you will call both man and animal grammatical; and similarly in other cases (2b29-3a6).

Like monists, dualists believe that this passage identifies just one reason for taking secondary substances to be substances. Unlike monists, dualists believe that it is the revealing condition, rather than the subject condition, that is relevant here. According to criterial dualism, there is one reason alone why secondary substances count as substances in the *Categories*: it is because the reveal what primary substances are. Thus, according to dualists, there are two criteria for substance-hood in the *Categories*: the subject-hood criterion, which applies to primary substances, and the revealing condition, which applies to secondary substances.

How might this view be defended? Wedin divides 2b29-3a6 into two parts, marked by '(a)' and '(b)' in the above quotation (Wedin 2000: 94). According to Wedin,

> nothing is said here [in part (a)] about their being subjects of anything at all, let alone in a sufficiently robust sense to count as substance…Not until [part (b)] are species and genera mentioned as subjects…Notice, first, that [part (b)] says neither that species and genera are called *substances* nor that they are substances *secondarily* because of qualifying as subjects, albeit to a lesser degree than primary substances. It says simply that, as primary substances are subjects, so also, in a certain way, are species and genera subjects. So while [part (b)] offers some kind of contrast between primary substances and their species and genera, it does not contrast the *bases* on which they are *called substances*. This has already been given in [part (a)]. [Part (b)] simply records the fact that they are subjects to different kinds of items (ibid.: 94-95).

Wedin makes two different claims in this passage. First, he says that Aristotle does not take secondary substances to be underlying subjects at all. This seems to me mistaken, but I will not address that issue until Chapter Five, when it becomes relevant for our discussion of the

ontological priority of primary substance. Second, he says that even if secondary substances *were* underlying subjects, Aristotle does not claim that this is *why* secondary substances should qualify as substances. On Wedin's view, then, the passage in question does not in fact offer two distinct reasons for taking the species and genera of primary substances to be substances. It offers just one: "the *reason* Aristotle gives for calling species and genera substances…[is that] only they *reveal* what the primary substance is" (ibid.: 94). Only the revealing condition is relevant to the substance-hood of secondary substances.

Wedin observes, rightly, that the second part of 2b29-3a6 begins with the word 'ἔτι', which Aristotle typically uses to mark a fresh start (e.g., at *Met.* Z.17, as well as *NE* VII.1). But he takes this to imply that Aristotle has already determined that and why secondary substances are substances, and is now moving on to discuss something altogether different. But as Perin has pointed out, this does not follow. On the contrary, if Aristotle intends to mark a fresh start with 'ἔτι', "that fresh start consists in offering a new argument for the claim made at 2b29-30, viz. that the species and genera of primary substances, and only these, are secondary substances" (Perin 2007: 136, fn. 25).

Wedin also observes, again rightly, that Aristotle never *says* in part (b) of 2b29-3a6 that secondary substances are substances *because* they are underlying subjects. But Aristotle *does* say that it is *because* primary substances are underlying subjects that these qualify as substance "most strictly". It would be surprising if primary substances qualified as substances most strictly in virtue of their status as underlying subjects, but that the status of secondary substances as underlying subjects were irrelevant to their status as substances. What could justify this seemingly unprincipled distinction? Being an underlying subject of inherence would, on this view, be enough for Socrates and Bucephalus to be substances, but not enough for the species Man or the genus Animal to be substances. It seems more

plausible to suppose that their status as underlying subjects is indeed relevant for taking secondary substances to be substances.

This thought is further supported by looking at a nearly identical passage from earlier in *Categories* 5:

> Further (ἔτι), it is because (διὰ) the primary substances are subjects (ὑποκεῖσθαι) for all the other things (τὸ τοῖς ἄλλοις ἅπασιν) and all the other things are predicated of (κατηγορεῖσθαι) them or are in (ἐν) them, that they are called substances most of all (μάλιστα). But as the primary substances stand (ἔχουσιν) to the other things (πρὸς τὰ ἄλλα), so the species (τὸ εἶδος) stands (ἔχει) to the genus (πρὸς τὸ γένος): the species is a subject (ὑπόκειται) for the genus (for the genera are predicated (κατηγορεῖται) of the species but the species are not predicated reciprocally (ἀντιστρέφει) of the genera). Hence for this reason too the species is more a substance than the genus (2b15-21).

Here Aristotle wants to argue that the species is *more of a substance* than the genus. To establish this comparative claim, he points out that primary substances are substances "most of all" in virtue of the fact that all other things are predicated of them. But the relationship between a species and a genus is analogous, in some way, to the relationship between a primary substance and everything else: the genus is predicated of the species, but not vice versa. Aristotle concludes that if the relationship between a primary substance and everything else makes it the case that the primary substance is substance "most of all", then this analogous relationship between a species and a genus should make it the case that the species is a substance *more than* the genus.

Later, I will return to this passage to say in more detail how Aristotle thinks about comparisons of substantiality. We shall find that this passage offers the resources for making sense of his comparisons of substantiality in a way that is friendly to criterial pluralism. What is important about this passage for our purposes right now is that in it Aristotle claims not only that secondary substances are underlying subjects in some way, but that their status as an underlying subject is relevant to their status as substance. Otherwise, the fact that the species is an underlying subject for the genus would not license the inference to the claim that the species is more of a substance than the genus.[101]

Aristotle's goal in 3a1-6 is, of course, quite different than his goal in this passage. But this passage shows that questions about the subject-hood of secondary substances are relevant to their status as substances. *Pace* Wedin, then, I think we should conclude that Aristotle really is offering their status as underlying subjects as a reason for taking the species and genera of primary substances to be substances.

Dualism about the criteria for substance-hood in the *Categories* is therefore false. The most natural reading of the passage from 2b29-3a6 is the correct one: Aristotle is offering two different reasons for taking secondary substances to be substances. Both the revealing condition and the subject condition are relevant to their status in this regard. This implies that criterial pluralism is true, for whereas dualists maintain that the two criteria for substance-hood in the *Categories* are mutually exclusive, pluralists deny this. According to

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[101] It is true that what is relevant for substance-hood is not simply being an underlying subject for predication, but being an underlying subject for the PRESENT IN relation (see fn. 93). Thus, someone may object that the passage from 2b15-21 cannot support my claim here, since the kind of subject-hood in question is being an underlying subject for the SAID OF relation. But the comparison of substantiality in 2b15-21 takes place already against the background of the assumption that secondary substances *are* substances, although Aristotle's defense of that assumption comes later. So Aristotle is not arguing here that secondary substances *are* substances, but that issues pertaining to their subject-hood are relevant to *comparisons* of substantiality. He is entitled, then, to focus on the SAID OF relation at this point, even though this is not the relation relevant to determining which subjects are substances. Still, it remains true that if issues pertaining to subject-hood are relevant to *comparisons* of substantiality, it would be surprising if those issues were not relevant to the prior issue of *qualifying* as a substance.

pluralism, being an underlying subject qualifies *both* primary and secondary substances as substances, while revealing what a primary substance is qualifies only secondary substances as substances.

Our defense of pluralism is incomplete, however. For one might object that pluralists are guilty of a kind of *criterial overdetermination*: if there are two reasons for thinking that secondary substances qualify as substances, isn't their status as such overdetermined in an objectionable way? Answering this objection requires us to say how the subject condition and the revealing condition are related. In the next section, I will examine two different accounts of how these conditions are related. In the subsequent section, I will propose my own account.

4.

Despite the fact that they are monists, both Kohl and Perin believe that "there is an important connection here between the fact that secondary substances give the essence of primary substances and Aristotle's assignment of subjecthood to substance universals" (Kohl 2008: 169). The idea is that it is *because* secondary substances reveal what primary substances are that they qualify as underlying subjects. Even though it is the subject condition that qualifies secondary substances as substances, the thought is that secondary substances satisfy the subject condition only because they satisfy the revealing condition. Thus, Perin writes:

> It is Aristotle's view in the *Categories* that a primary substance is a subject for inherence, and that the species and genera of a primary substance are themselves subjects for inherence *because* they are what the primary substance is essentially. But this is just the view that the species and genera of primary substances are subjects of inherence *in virtue of* satisfying what I have called

> the disclosure condition for secondary substance: mention of its species or genus constitutes a correct answer to the question 'What is it?' asked about a primary substance (Perin 2007: 140; emphasis mine).[102]

Despite their similarities, the views that Perin and Kohl defend are quite different. Let me raise a worry about each individual proposal before raising a criticism that I take to apply to both.

Perin argues that secondary substances "being what primary substances are essentially…are subjects for inherence" (Perin 2007: 140). We might formulate this argument as follows:

(1) Primary substances are underlying subjects for inherence.

(2) Secondary substances are what primary substances are essentially.

(3) Therefore, secondary substances are underlying subjects for inherence.

Kohl points out, however, that this argument is invalid (Kohl 2008: 165, fn. 23). Simply replace 'underlying subjects for inherence' in (1) and (3) with 'individual and numerically one'. Although (1) will still be true, (3) becomes false. Secondary substances are neither individual nor numerically one (3b18-19).

Where does Perin's argument go wrong? It seems to me that there is an equivocation on 'are'. In (1), 'are' is used as the plural form of the 'is' of predication in the modern sense; (1) tells us a feature of primary substances. But in (2), 'are' is not used in this way. To see this, consider a singular form of (2):

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102 Kohl's own version of this view differs in important respects from Perin's. In particular, Kohl relies on a distinction between what he calls the *typical subject-hood* of a thing and the *actual subject-hood* of a thing (see, e.g., Kohl 2008: 175). The introduction of such a distinction is problematic, because Aristotle never mentions more than one kind of subject-hood (corresponding to Kohl's notion of actual subject-hood). While the view that Kohl wants to get across by this distinction – namely, the idea that "[w]hat attributes something may bear, what kinds of changes it may undergo, and in what states it may find itself…is closely connected to what that thing is" (ibid.: 170) – is a view we find in Aristotle, especially in the *Topics*, the view is not well-expressed by introducing a second notion of subject-hood. Nor does the fact that secondary substances determine the typical subject-hood of primary substances give us any reason to think that they themselves are subjects of any kind.

(2*) The species Man is what individual human beings are essentially.

Now consider Socrates. Socrates is essentially a man. How is the word 'is' being used in (2*)? It is not the 'is' of predication. The only plausible candidate here is that it is the 'is' of identity: the species Man is *identical to* what Socrates is essentially. Thus, whereas (1) employs the 'is' of predication, (2) employs the 'is' of identity. Perin's argument therefore rests on an equivocation. The invalidity of (1)-(3) would be obvious had Perin phrased (2) as follows:

(2**) Secondary substances reveal what primary substances are essentially.

Had Perin used (2**) instead of (2), he would have seen that (3) doesn't follow. More generally, from the fact that secondary substances reveal what primary substances are, nothing follows about what secondary substances themselves are like. In particular, we cannot suppose that features of primary substances will be transferred to secondary substances simply because secondary substances reveal what primary substances are. This casts doubt on the idea that it is *because* they reveal what primary substances are that secondary substances are underlying subjects for predication.

Perin is certainly right, of course, that the fact that secondary substances are underlying subjects for predication is parasitic on the fact that primary substances are underlying subjects for predication. Aristotle tells us that "if you will call the individual man grammatical it follows that you will call both man and animal grammatical" (3a4-6). But Perin tries to explain this by routing the parasitism through the revealing condition, and that is where his strategy goes awry. The passage from 3a4-6 comes at the end of a passage that began with the word 'ἔτι'. Aristotle certainly intended to mark a fresh start by his use of that word. This suggests that the discussion there should be independent of the immediately preceding discussion of the idea that secondary substances reveal what primary substances are. This in turn suggests that the fact that secondary substances reveal what primary

substances are is not that in virtue of which they are underlying subjects. Although the status of secondary substances as underlying subjects is indeed parasitic on the fact that primary substances are underlying subjects, the revealing condition is not involved.

Let us now turn to Kohl who, like Perin, invites us to "consider the possibility that there is an important connection here between the fact that secondary substances give the essence of primary substances and Aristotle's assignment of subjecthood to substance universals" (Kohl 2008: 169). Kohl's version of this view is markedly different from Perin's, however. Kohl distinguishes between two *kinds* of subject-hood: *typical* subject-hood and *actual* subject-hood. The typical subject-hood of a thing is "determined by the substance universals that are said of [it]" (ibid.: 171). The actual subject-hood of a thing, on the other hand, is simply the range of predicable items that a thing in fact underlies. For example, *musicality* – the capacity for knowing how to play music – is part of the typical subject-hood of any given human being, because human beings are (uniquely) capable of learning how to play a musical instrument. But now take two human beings, one of whom knows how to play the trumpet, the other of whom is ignorant of how to play any kind of instrument. Musicality, on Kohl's view, belongs to the actual subject-hood of the first human being but not the second, even though it belongs to the typical subject-hood of both.

According to Kohl, "[t]he crucial hypothesis on which my argument rests is that the essentialist claim that substance universals identify what concrete objects are can partly be explicated by arguing that these universals specify a certain kind of subjecthood to which they commit everything they are said" (ibid.). To say that a secondary substance reveals a primary substance, on Kohl's view, is to say that it determines the *typical* subject-hood of that primary substance. This in turn is supposed to help us understand the sense in which a secondary substance is also an underlying subject.

Kohl's account is meant to raise a challenge to deflationary accounts of the subject-hood of secondary substances. Such accounts, he tells us, are committed to the following two claims:

> (4) Whenever some item A is predicated of a secondary substance S, the subjecthood of S for A is conditional upon the fact that there is a primary substance P which functions as a subject for both A and S; and
>
> (5) Whenever some item A is predicated of a secondary substance S, this can be explained exhaustively (that is, without any need to bring in the subjecthood of S for A as an explanatory factor) by appeal to the fact that A is predicated of a primary substance P of which S is also predicated (ibid.: 166-167).

According to Kohl, (4) is true and (5) is false. While the fact that secondary substances are underlying subjects is in some sense dependent on the fact that primary substances are underlying subjects, their status as such cannot be *reduced to* or *eliminated by* the latter fact. Their status as subjects is irreducible.

I agree with Kohl that (4) is true, (5) is false, and that the subject-hood of secondary substances is in some sense irreducible. But I think Kohl's way of making sense of this is a mistake. He replaces (5) with:

> (6) Whenever some item A is predicated of a primary substance P, the subjecthood of P for A is conditional upon the fact that A lies within the range of items that belong to the typical subjecthood of the secondary substances which specify what P is (ibid.: 175).

Kohl tells us that (6) is "nothing less than the assertion that the subjecthood of primary substances is ontologically dependent on that of secondary substances", and that given (4)

and (6) there is a "mutual dependency" between primary and secondary substances. He goes on:

> As far as the dependency of primary substances *qua* subjects on secondary substances *qua* subjects is concerned, we can say the following: both the typical and actual subjecthood of individual objects are dependent on the typical subjecthood of the substance universals that are said of them. The typical subjecthood of an individual substance is always fully determined by the typical subjecthood of the universals that are said of it. The actual subjecthood of an individual object is dependent on its typical subjecthood in every case: the typical subjecthood an individual object is committed to, in virtue of being what it is, is always at least a necessary condition for its actual subjecthood (ibid.: 175).

According to Kohl, then, the actual subject-hood of a primary substance is dependent on its typical subject-hood, which in turn is dependent on the typical subject-hood of the secondary substances that are SAID OF that primary substance. This raises the question: what determines the typical subject-hood of those secondary substances?

Kohl does not answer this question. Instead, he addresses a rather different question, concerning what determines the *actual* subject-hood of secondary substances:

> As far as the dependency of secondary substances *qua* subjects on primary substances *qua* subjects is concerned, we can say that the actual subjecthood of substance universals is dependent on, and always fully determined by, the actual states of the individual substances they are said of (ibid.: 176).

We have just asked what determines the *typical* subject-hood of secondary substances. In this passage, Kohl tells us what determines the *actual* subject-hood of secondary substances: the

actual subject-hood of those primary substances the secondary substance is SAID OF. But we have already seen that the actual subject-hood of those primary substances is dependent on their typical subject-hood, which in turn is dependent on the typical subject-hood of the secondary substances SAID OF them. By a principle of transitivity, then, the *actual* subject-hood of a secondary substance is determined by the *typical* subject-hood of that secondary substance. Here again we face the question: what determines the typical subject-hood of a secondary substance?

The answer to this question cannot be that the typical subject-hood of a secondary substance is determined by the actual subject-hood of the primary substances it is SAID OF. That answer is manifestly circular, for the latter is, of course, determined by the former.

The only plausible answer here is that the typical subject-hood of a given secondary substance *S* is determined by the typical subject-hood of a different secondary substance, *S**, such that *S** is SAID OF *S*. Just as the typical subject-hood of a primary substance is given by the typical subject-hood of the secondary substance SAID OF it, so too is the latter given the typical subject-hood of another secondary substance SAID OF the first one. The typical subject-hood of Socrates, for example, is given by the typical subject-hood of the species Man, and this is given by the typical subject-hood of the genus Animal. And so on up the Porphyrian tree. Thus, Kohl says: "the notion of typical subjecthood applies in every case where a substance universal is said of another (general or individual) substance" (ibid.: 172).

The problem with this answer is that while it is not circular, it is nevertheless uninformative. Each entity within a given category has its typical subject-hood given by the species immediately above it that is SAID OF it until we finally reach the highest genus within that category, which is the category itself. Thus, in the case of Socrates, we keep climbing the Porphyrian tree until we reach the category of Substance itself. But what gives *this* its typical

subject-hood? There is no higher genus whose own typical subject-hood can determine the typical subject-hood of Substance.

Perhaps the category Substance has its typical subject-hood in and of itself, rather than having it given by some higher genus. But this is *ad hoc*. If the highest genus within a category of being can simply have its typical subject-hood in this way, why cannot anything else within that category do the same? Why does Socrates need the species Man to determine his typical subject-hood? Why does the species Man need the genus Animal to determine its typical subject-hood?

Without answers to these questions, Kohl's view is uninformative. His view aimed to show how the actual subject-hood of a primary substance depended in some way on the typical subject-hood of the secondary substances SAID OF it, but Kohl cannot make good on this promise without telling us what determines the latter. If we lack an account of what determines the typical subject-hood of secondary substances, we do not actually have any account of the actual subject-hood of primary substances. Worse, we do not have an account of the *actual* subject-hood of *secondary* substances either. Kohl also wanted to show how it was that secondary substances qualified as underlying subjects, and that their status as such was intimately related to the fact that they reveal what primary substances are. On his view, this amounted to the fact that the actual subject-hood of a secondary substance was determined, ultimately, by the typical subject-hood of that secondary substance. Without an account of the latter, then, Kohl cannot tell us anything about the actual subject-hood of secondary substances. His view fails to achieve its stated aim.

Neither Kohl nor Perin have given us a satisfactory account of the relationship between the revealing condition and the subject condition. Both maintain that there is an intimate connection between these, and that in some sense secondary substances satisfy the

latter *because* they satisfy the former. But the details of both of their views show that this cannot be right; it cannot be *because* secondary substances reveal what primary substances are that they count as underlying subjects. The connection between these two conditions must be something else entirely. Before offering my own account of that connection, it is worth pausing here to raise one final, general, objection to the view offered by Kohl and Perin.

Put their view as follows: the substance-hood of secondary substances is grounded in the fact that they are underlying subjects for inherence, but their status as underlying subjects for inherence is grounded in the fact that they reveal what primary substances are. It is plausible to suppose that this kind of grounding or explanatory relation is transitive, so that – by transitivity – what explains why secondary substances are substances *really* is the fact that they reveal what primary substances are. That is the fundamental explanation of their status as substances. But this makes Kohl and Perin, both committed monists about criteria for substance-hood, into either dualists or pluralists. Thus, the way in which Kohl and Perin try to connect the revealing and subject conditions is inconsistent with their commitment to criterial monism.

5.

The revealing and subject conditions identified in 2b29-3a6 are not related in the way that Perin and Kohl suppose. It is not *because* secondary substances reveal what primary substances are that they qualify as underlying subjects. We are therefore still looking for an account of how these two conditions are related.

The view I want to defend is essentially the view defended by Daniel Devereux. He claims that "[i]n the *Categories*, substance-making features are sufficient rather than necessary conditions for being a substance" (Devereux 2003: 162). According to Devereux, Aristotle

identifies two distinct criteria for substance-hood, each of which is merely a sufficient condition on being a substance, and "holds that some things are substances (concrete particulars) even though they possess only one of these features" (ibid.).[103]

These two criteria are just the revealing and subject conditions identified in 2b29-3a6. Devereux's claim is that each of those is a sufficient condition on being a substance, and that primary substances satisfy only the subject condition, while secondary substances satisfy both.

Devereux is thus a criterial pluralist, and therefore an ally. But there is an immediate and obvious objection to his view. A natural assumption is that there is a correlation between the number of criteria for substance-hood that a thing satisfies and the degree to which that thing is a substance. That is, a natural view has it that *x* is more of a substance than *y* if *x* satisfies more criteria for substance-hood than *y*.[104] This would entail, however, that the species and genera of primary substances are more substantial than primary substances themselves, since the former satisfy *two* criteria for substance-hood while the latter satisfy only *one*. Yet Aristotle is, as we have seen, quite clear that primary substances are substances "most strictly, primarily, and most of all" (2a11-12).

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[103] This is a surprising view for Devereux to hold. As he himself points out, the discussion in *Metaphysics* Z.3 seems designed to criticize the view of substance that Aristotle himself held in the *Categories*.[103] But Devereux argues persuasively that what Aristotle argues against in Z.3 is the claim that being an underlying subject is a *necessary*, as well as a *sufficient*, condition on being a substance. Elsewhere in Z and H, Aristotle defends the claim that being an underlying subject is *sufficient* for being a substance (e.g., Z.10, 1035a1-2; Z.13, 1038b2-6; H.2, 1042b9-10). Thus, Z.3 must be criticizing the idea that being an underlying subject is *necessary*. If Aristotle does mean to criticize his own earlier view from the *Categories* in Z.3, then it follows that the view in the *Categories* is that being an underlying subject is *both* necessary and sufficient for being a substance. Since I too reject the latter claim, I must insist that either (a) Z.3 does not argue against the claim that being an underlying subject is a necessary condition on being a substance or (b) that Aristotle does not in fact think in Z or H that being an underlying subject is sufficient for being a substance. Now is not the place to enter into a discussion of this issue, but I am inclined to pursue option (a).

[104] One difficulty here is that this view would not, by itself, be able to account for Aristotle's claim that the species is more of a substance than the genus, since a species and its higher genera satisfy the *same* number of criteria for substance-hood. An advocate of this objection would therefore need some other account to explain the comparison of substantiality between a species and a genus.

The way around this objection is to insist that secondary substances satisfy the subject condition on substance-hood only in a *derivative* way, so that the natural assumption conjoined with Devereux's view does not entail that secondary substances are more substantial than primary substances.

How can this be achieved? We have already seen Kohl and Perin fail to explain how secondary substances could be underlying subjects in a derivative way. But their derivation ran through the revealing condition. Both Kohl and Perin tried to argue that secondary substances were underlying subjects *because* they revealed what primary substances are. That version of the view cannot withstand scrutiny. There is a different way, however, to show that secondary substances are underlying subjects in a derivative way. It builds on the view of universals defended in Chapters One and Two.

Recall that universals are wholes composed of parts. Secondary substances, being substantial universals, are therefore wholes composed of parts. More precisely, any given secondary substance is a whole ultimately composed of the primary substances it is SAID OF. This allows us to give a straightforward and novel account of why secondary substances are underlying subjects of predication: secondary substances are underlying subjects of predication because they are *composed* of entities that are underlying subjects of predication.

A very natural view to take about the relation between wholes and their parts is that, in some way, the properties of wholes are derived from the properties of their parts. Exactly how this goes is not always clear. Imagine a ship. Each plank of this ship is made of wood. It follows, obviously, that the entire ship is made of wood. Other cases are slightly more complicated. Imagine the same ship, and suppose that each plank of this ship is four feet long. Obviously the ship itself is not four feet long, but the length of the ship is nevertheless derived from the properties of its parts: the length of the ship is a function of the length,

number, and arrangement of its planks. In both cases, then, the properties of the whole ship are grounded in the properties of the parts of the ship.

Other cases are even more complicated. A given water molecule is composed of two hydrogen atoms and one oxygen atom. There is some clear and intuitive sense in which the properties of this water molecule are grounded in the properties of the hydrogen and oxygen atoms composing it. After all, if the ratio of atoms were different, or the kinds of atoms were different, you would not have a water molecule, but a molecule of hydrogen peroxide or carbon monoxide. The process of chemical bonding makes a straightforward derivation of the properties of the molecule from the properties of its constituent atoms difficult, if not impossible. But it hardly follows that the properties of the molecule are not grounded in the properties of its parts.[105]

If we think about the relation between wholes and parts in this way, it becomes very natural to suppose that if primary substances are underlying subjects, and secondary substances are composed of primary substances, then secondary substances too are underlying subjects. They inherit, as it were, the properties that inhere in their primary substances. This seems to me the most plausible way of understanding Aristotle's claim that "if you will call the individual man grammatical it follows that you will call both man and animal grammatical" (3a4-6). It is *because* the individual man is a proper part of the species Man that calling the individual man grammatical entails that the species Man will also be grammatical. In fact, we might insist that it is *only* because the individual man is a proper part of the species Man that calling the individual man grammatical entails that the species Man will also be grammatical. The mereological relationship between the individual man and its species is the only thing that can underwrite Aristotle's claim at 3a4-6. If the individual man

105 I leave out *emergent properties*, since the properties at issue here are not emergent.

weren't a proper part of the species Man, it is not clear why Aristotle would be entitled to 3a4-6. Thus, if and only if the individual man is a proper part of the species Man can we say that the latter is an underlying subject for inherence.

This is a novel explanation of why it is that secondary substances are underlying subjects for inherence. Like Kohl and Perin, it treats the status of secondary substances as underlying subjects as *derivative*. Unlike Kohl and Perin, however, it does not attempt to explain this fact by citing the revealing condition that secondary substances satisfy. Secondary substances are underlying subjects *because* primary substances are underlying subjects, and secondary substances are *composed* of primary substances.

Thus, we can avoid the objection that Devereux's view entails that secondary substances are more substantial than primary substances if we agree that secondary substances are underlying subjects in a derivative way.[106] So we are free to accept his view that the revealing and subject conditions identify sufficient but not necessary conditions on being a substance in the *Categories*.

To say that each condition is sufficient but not necessary for being a substance is not yet to say how these are related. For to say *only* that they are two sufficient but not necessary conditions on substance-hood is consistent with their being completely unrelated, which would return us to Kohl's original worry that Aristotle is "vulnerable to the objection that [he] assigns a label of fundamental ontological importance to two radically different types of entity for no apparent reason" (Kohl 2008: 155). We saw earlier that Aristotle is comfortable with assigning a label of fundamental ontological importance to two radically different types of entity. He does precisely this in *Metaphysics* Δ.8. But he must do so for some good reason.

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[106] In other work, Devereux does defend this view: "this whiteness is in *Man* only insofar as it is *in* Socrates" (Devereux 1992: 126). As I argue in Chapter Four, however, he does not explain the sense in which secondary substances are underlying subjects only derivatively. My proposal can therefore be understood as an extension of and improvement upon his view.

Moreover, he must do so while also avoiding the concern mentioned earlier that Aristotle's account is guilty of a kind of criterial overdetermination: if both the subject and revealing conditions are sufficient conditions for being a substance, then the status of secondary substance as substance is overdetermined.[107]

Kohl's objection, however, can finally be put to rest. Aristotle has a very good reason for calling both primary and secondary substances substances: both sorts of entities are underlying subjects. While it is true that the latter are such in only a derivative way, there is nevertheless something both sorts of entities have in common, in virtue of which it is reasonable to say that both are substances. Indeed, the *way* in which secondary substances qualify as underlying subjects, by being composed of primary substances that are themselves underlying subjects, shows that there is an intimate connection between both kinds of entity. It is reasonable, then, to say that both are substances. Between Aristotle's remarks in *Metaphysics* Δ.8 and the similarities primary and secondary substances share, Kohl's objection can be dismissed.

There remains the worry about overdetermination. To address this concern, we must examine why Aristotle would have thought it necessary to include the revealing condition at all. I submit that it is because Aristotle, like Plato, thought that substances need to be not only *ontologically* fundamental, but also *epistemologically* fundamental.[108] Consider Plato's

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[107] It might be suggested that the fact that secondary substances are underlying subjects in only a derivative way can help alleviate the worry about overdetermination. Their status as substances, the thought might go, is not overdetermined because they are underlying subjects *only* because they are composed of underlying subjects. Not being underlying subjects *in their own right*, what really makes them qualify as substances is the fact that they reveal what primary substances are. But I do not believe that this is correct. Being underlying subjects, even if only derivatively, is essential to their status as substances. The suggestion in question is a less natural reading of 2b29-3a6, and so should be rejected unless no preferable alternative comes into view. I will suggest a preferable alternative below.

[108] Compare Lynne Spellman: "for Aristotle, as for Plato, there is something which is first in knowledge, definition, and time" (Spellman 1995: 1). In some sense, then, the view I am defending is similar in spirit, if not in letter, to the view defended by Lynne Spellman: "What I intend to argue, however, is that despite all his criticisms Aristotle's own account of substance is nevertheless very like Plato's Theory of Forms" (Spellman 1995: 1). Spellman, however, has her eye mainly on the central books of Aristotle's *Metaphysics*, and the chief

discussion of the Form of the Good in *Republic* VI. Socrates begins by explaining the role of the sun in the visible realm: it is the source of light that allows objects to be seen. A well-functioning eye and a medium-sized material object may be appropriately related spatially, yet the eye never see the object unless there is "a third kind of thing…present", namely, light. As Socrates puts it, the sun is "the cause of sight itself" in addition to being an object of sight (508b). Without the sun, nothing could be seen.

Furthermore, Socrates tells us, the sun is that without which nothing in the visible realm could exist: "the sun not only provides visible things with the power to be seen but also with coming to be, growth, and nourishment" (509b). The sun is not just the cause of *sight* of visible things, but the cause of *being* of visible things.

We are to understand the Form of the Good by analogy to the sun: "[w]hat the good itself is in the intelligible realm, in relation to understanding and intelligible things, the sun is in the visible realm" (508c). Thus, the Form of the Good is "the cause of knowledge and truth" in addition to being an object of knowledge (508e). And "not only do the objects of knowledge owe their being known to the good, but their being is also due to it" (509b).

The sun, then, is the cause of sight and being in the visible realm. By analogy, the Form of the Good is the cause of knowledge and being in the intelligible realm. The view being defended, then, is that the Form of the Good is both *epistemologically* and *ontologically* fundamental: without it, nothing knowable would be known, and without it, nothing knowable would exist.

Certainly Aristotle had adopted this view by the time he wrote *Metaphysics* Z. For in *Z*.1 we find Aristotle saying "there are several (πολλαχῶς) senses in which a thing is said to

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difference she sees between Plato and Aristotle has to do with the *separation* of substance. By contrast I am interested in the *Categories*, and the chief difference I see between Plato and Aristotle is quite different, at least at this point in Aristotle's career.

be primary (πρῶον); but substance is primary in every (πάντως) sense – in formula (λόγῳ), in order of knowledge (γνώσει), in time (χρόνῳ)" (*Met.* Z.1, 1028a31). Substance, Aristotle says here, is both ontologically and epistemologically fundamental. But it would be surprising, given the presence of this view in the *Republic*, if Aristotle did not already accept it by the time he wrote the *Categories*. We should not suppose that Aristotle came to believe in Z.1 something he did not believe in the *Categories*, namely, that substance must be both epistemologically and ontologically fundamental. A more plausible story is that this is a view he borrowed from Plato and maintained throughout his career.

It is true, of course, that *Metaphysics* Z is different from the *Categories* in many ways. But the belief that substance must be both epistemologically and ontologically fundamental is not one of those differences. What changed was instead Aristotle's beliefs about which sorts of entities were fundamental in this way. One attractive feature of Plato's view is that one and the same entity – the Form of the Good – is both epistemologically and ontologically fundamental. But in the *Categories*, Aristotle's candidates for the ontologically fundamental entities – primary substances – are concrete particulars rather than, as in Z, substantial forms. Concrete particulars, however, are poor candidates for being the *epistemologically* fundamental entities. The highest epistemic achievement in Aristotle's view is a kind of *scientific understanding*, which involves knowledge of the first principles of a science, and which allows the scientist to deduce various truths within that science from those first principles (*A Po.* A.2, 71b10-72a5; *NE* VI.3, 1139b20-35; *NE* VI.6, 1140b30-1141a9).[109] Scientific understanding proceeds from something epistemologically prior, the first principles, to something epistemologically posterior, those items deduced from the first principles. But Aristotle tells us that "[s]cientific knowledge (ἡ ἐπιστήμη) is supposition

[109] References to the *Posterior Analytics* are to the translation of Jonathan Barnes in his (1994). References to the *Nicomachean Ethics* are to the translation of Terence Irwin in his (1999).

(ὑπόληψις) about universals (καθόλου)" (*NE* VI.6, 1140b30). Moreover, Aristotle contrasts those items that are "prior (πρότερον) and more familiar (γνωριμώτερον) in relation to us (πρὸς ἡμᾶς)" with those items that are "prior and more familiar *simpliciter* (ἁπλῶς)" (*APo.* A.2, 72a1). The former items are "nearer to perception (ἐγγύτερον τῆς αἰσιήσεως)" whereas the latter are "[w]hat is most universal (τὰ καθόλου μάλιστα)" (*APo.* A.2, 72a3-5). And it is the latter that are epistemologically fundamental in the sense at issue.

Concrete particulars, then, are poor candidates for epistemological fundamentality. But in the *Categories*, at least, Aristotle is committed to the idea that concrete particulars are *ontologically* fundamental. And, I have suggested, he is committed to the idea that substance must be both. By the time he writes *Metaphysics* Z, Aristotle will, like Plato, think that one and the same entity can satisfy both desiderata vis-à-vis fundamentality. Whereas Plato posits the Form of the Good as the epistemologically and ontologically fundamental item, Aristotle will maintain that it is *substantial form* that is prior in both knowledge and being. In the *Categories*, however, Aristotle is stuck with a candidate for ontological fundamentality that cannot serve as the epistemologically fundamental entity.

Enter secondary substances. Like primary substances, these are underlying subjects for inherence, and so ontologically fundamental. But again, this is only in a derivative sense, for their status as underlying subjects depends on the fact that they are composed of primary substances, which are underlying subjects in their own right. Secondary substances are ontologically fundamental, then, in an attenuated sense: they are less ontologically fundamental than primary substance, but more ontologically fundamental than anything else. Their real purpose in the *Categories* ontology is to reveal what primary substances are; to serve as appropriate answers to the "What is it?" question asked of a primary substance. This, I suggest, makes them *epistemologically fundamental*. To come to know *what a given primary substance*

is, one must cite the species and genera that are SAID OF it. Knowing what a primary substance is involves knowing a certain universal, and universals are the proper objects of scientific understanding. Scientific understanding, in turn, is concerned with what is "prior by nature (τῇ φύσει)" (*APo.* A.2, 72a1). Thus, the species and genera of primary substances are epistemologically prior to primary substances, for the latter are known scientifically *through* the former.

The revealing condition, then, plays a crucial role in the *Categories*. Like Plato, Aristotle believes that substances must be both ontologically and epistemologically fundamental. But in the *Categories*, before the introduction of hylomorphism in *Physics* I.7, Aristotle cannot see his way to the economy of Plato's view in which a single (type of) entity is both ontologically and epistemologically fundamental. So in the *Categories*, Aristotle must identify distinct kinds of entity to fill these roles. Primary substances are ontologically fundamental but not epistemologically fundamental, while secondary substances are epistemologically fundamental but not ontologically fundamental. Far from being epiphenomenal, the revealing condition is necessary for Aristotle's complete theory of substance.

Now that we know why Aristotle introduces the revealing condition in 2b29-3a6, we now need to ask about the problem of overdetermination. Indeed, given what has been said, one might now raise the opposite worry: why is Aristotle so keen to insist that secondary substances are ontologically fundamental, albeit in a derivative sense, if they earn their keep as substances by being epistemologically fundamental?

Let us respond to the second worry first. Aristotle needs to guarantee that secondary substances are ontologically fundamental, albeit in a derivative sense, because he believes that ontological fundamentality is a more important desideratum on substance-hood than

epistemological fundamentality. While it is acceptable that primary substances are not in any way epistemologically fundamental, it would be unacceptable for secondary substances not to be in any way ontologically fundamental. To explain exactly why ontological fundamentality is the more important desideratum on a theory of substance would take us far afield. But the idea is implicit in Plato's discussion of the Form of the Good in *Republic* VI. After Socrates has argued that the Form of the Good "gives truth (τὴν ἀλήθειαν) to the things known (τοῖς γιγνωσκομένοις) and the power (τὴν δύναμιν) to know to the knower (τῷ γιγνώσκοντι)", Glaucon remarks that the Form of the Good is "inconceivably beautiful (ἀμήχανον κάλλος)" (508e-509a). Then Socrates goes on to add that the Form of the Good is the cause of being of other things "although the good is not being (οὐκ οὐσίας ὄντος τοῦ ἀγαθοῦ), but superior (ἐπέκεινα) to it in rank and power", to which Glaucon responds "By Apollo, what a daimonic superiority (δαιμονίας ὑπερβολῆς)!" (509bc). The progression of this passage, as well as Glaucon's increasingly hysterical replies, suggests that the most important feature of the Form of the Good is its *ontological* fundamentality. Its epistemological fundamentality is important. But it is not as important as its ontological fundamentality. Aristotle, then, believes that substance must be both epistemologically and ontologically fundamental, but holds that the latter is in some sense more important than the former. This is why his choice for the epistemologically fundamental items must be ontologically fundamental in some sense too, even though his choice for the ontologically fundamental items need not be epistemologically fundamental.

Is the status of secondary substances as substances overdetermined? While I have claimed, with Devereux, that both the revealing and subject conditions identified in 2b29-3a6 are sufficient conditions on substance-hood, we have seen that Aristotle's picture is considerably more complicated than that initial assessment might suggest. This more

complicated picture allows us to respond to the worry about overdetermination as follows: the status of secondary substances as substances *is* overdetermined, but not *objectionably* so. One might think of it this way: secondary substances are guaranteed to be *substances* in virtue of satisfying both the revealing and subject conditions, and so their status as such is overdetermined; but in a more precise sense, secondary substances are guaranteed to be *ontologically fundamental* in virtue of satisfying the subject condition, and they are guaranteed to be *epistemologically fundamental* in virtue of satisfying the revealing condition. Because these two conditions identify different roles that substance must play in Aristotle's theory, satisfying both of them does not amount to a kind of objectionable overdetermination. Satisfying each condition guarantees that secondary substances play two distinct roles in Aristotle's theory of substance, so while satisfying just one of those conditions would suffice for being a substance, satisfying both is still necessary for secondary substances to play every role they must play in the *Categories*.

6.

We have now seen how best to flesh out criterial pluralism, the view that there are multiple, overlapping, criteria for substance-hood in the *Categories*. Criterial pluralism runs counter to the two main strands of interpretation, criterial monism and criterial dualism. It is therefore a novel view about Aristotle's theory of substance. Before concluding our discussion, however, one promissory note remains to be paid.

Recall that our discussion of criterial monism included the claim that monism of this kind can underwrite comparisons of substantiality only if the category of substance could be defined. Since the latter cannot be defined, criterial monism is unable to make sense of Aristotle's claim, e.g., that primary substance is substance "most strictly, primarily, and most

of all" (2a11-12)". I promised during that discussion to offer a different account of how to make comparisons of substantiality that relied on criterial pluralism, and I intend now to make good on that promise.

A natural suggestion is that we can make comparisons of substantiality by appealing to something purely quantitative. We saw earlier, for example, that one might naturally suppose that *x* is more of a substance than *y* just in case *x* satisfies more criteria for substance-hood than *y*. But this view delivers the result that secondary substances are more substantial than primary substances, contrary to Aristotle's claim at 2a11-12. It also fails to deliver the result that species are more substantial than their higher genera. Aristotle tells us that "the species is more a substance than the genus" because it is "nearer to the primary substance", but that "of the species themselves…one is no more a substance than another" (2b22-23). We cannot make sense of these claims on the supposition that *x* is more substantial than *y* just in case *x* satisfies more criteria for substance-hood than *y*, for species and genera satisfy the *same* number of criteria for substance-hood and so, on this view, ought to be equally substantial.

A more promising suggestion has been made by Montgomery Furth, who proposes that comparisons of substantiality be made by examining the number of *ontological types* of entity a substance underlies (Furth 1988: 29). Here the relevant ontological types are given by Aristotle's fourfold division of being in *Categories* 2: (a) primary substances; (b) secondary substances; (c) non-substantial individuals; and (d) non-substantial universals. Furth's suggestion is that *x* is more of a substance than *y* just in case *x* underlies more ontological types than *y*. In a slogan, the more of a *subject* something is, the more of a *substance* something is.

But this view cannot be quite right either, for primary substances would turn out not to be more substantial than some secondary substances. Primary substances have three ontological types predicated of them: secondary substances, non-substantial individuals, and non-substantial universals. The same is true, however, of certain secondary substances, for "the species is a subject for the genus (for the genera are predicated of the species but the species are not predicated reciprocally of the genera)" (2b19-20). Both primary and secondary substances, then, have an equal number of ontological types predicated of them, which entails, on Furth's view, that they be equally substantial.[110]

Furth's view can be amended, however. The class of secondary substances can, of course, be further sub-divided into *infimae species* and higher genera. Dividing secondary substances into two sub-classes allows Furth to avoid the foregoing objection in the following way. Primary substances are substances most of all because they underlie *four* ontological types: *infimae species*, higher genera, non-substantial individuals, and non-substantial universals. *Infimae species* are less substantial than primary substances because they underlie only *three* ontological types: higher genera, non-substantial individuals, and non-substantial universals.

But now the problem has shifted. Higher genera are *also* underlying subjects for three ontological types: even higher genera, non-substantial individuals, and non-substantial universals. The only genus that underlies only two ontological types will be the highest genus within each category of being, namely, the category itself. Furth's view once again delivers the wrong result: it entails that species and genera are equally substantial, contrary to Aristotle's claim that the species is more a substance than the genus.

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110 For more extensive criticism of Furth on this point, see Kohl (2008: 158-159).

Nothing purely quantitative is going to allow us to make the appropriate comparisons of substantiality. This should not surprise us, for in the passages wherein Aristotle makes comparisons of substantiality, nothing quantitative is mentioned. At 2b7, for example, Aristotle argues that "the species is more a substance than the genus" because it is "nearer to the primary substance". What makes the species Man more substantial than the genus Animal is that it is "more informative and apt" as an answer to the "What is it?" question asked of a human being. The species *more fully reveals* what a primary substance is, and so counts as more substantial than the genus. Within the realm of secondary substance, then, what accounts for comparisons of substantiality is the *degree* to which a secondary substance satisfies the revealing condition.

But this will not allow us to explain why primary substances are more substantial than secondary substances. It would be natural to suggest at this point that primary substances are more substantial than secondary substances because although both are underlying subjects, the status of the latter as underlying subjects is *derivative*. Primary substances are more substantial because they are *non-derivatively* underlying subjects.

There is nothing wrong with this account of why primary substances are more substantial than secondary substances. But it is not Aristotle's. Consider again the following passage:

> Further, it is because the primary substances are subjects for all the other things and all the other things are predicated of them or are in them, that they are called substances most of all. But as the primary substances stand to the other things, so the species stands to the genus: the species is a subject for the genus (for the genera are predicated of the species but the species are not predicated reciprocally of the genera) (2b15-21).

What makes primary substances *most* substantial is that they are underlying subjects for every type of entity in the *Categories*. Aristotle then argues by analogy: *as* the primary substances stand to other things, *so* the species stand to the genus. Thus, Aristotle takes it that primary substances are *most* substantial because they underlie every type of entity (and not vice versa), and that what makes a species *more* substantial than its genera is that it underlies them (and not vice versa). The clear implication is that a primary substance is more substantial than its *infimae species* because the primary substance underlies the *infimae species* (and not vice versa).

Comparisons of substantiality are not made on a purely quantitative basis in terms of the number of types of ontological entity that a given subject underlies. Rather, comparisons of substantiality are made in terms of a *qualitative* notion of non-reciprocity: *x* is more substantial than *y* just in case (a) *x* and *y* are both substances, (b) *y* is predicated of *x*, and (c) *x* is not predicated of *y*.

Kohl defends this view about comparisons of substantiality: "[t]his non-reciprocal conception of subjecthood…gives rise to a number of differentiations within the class of substances *one* outcome of which is the assignment of substantial primacy to concrete objects" (Kohl 2008: 164). I think the view is the most faithful to Aristotle's text, and it can be divorced from Kohl's criterial monism. To see this, simply recall that Aristotle cites two reasons why the species is more of a substance than the genus, just as he cites two reasons why secondary substances should qualify as substances at all. The debate over why a species is more substantial than a genus therefore simply recapitulates the debate over why secondary substances are substances at all. We can insist on the importance of Kohl's non-reciprocal notion of subject-hood because it provides a unified underpinning for comparisons of substantiality, while simultaneously ascribing importance to the fact that species satisfy the revealing condition to a greater degree than genera.

7.

Aristotle's views about secondary substance have troubled commentators for some time. We have seen how to make sense of their status as substances in the *Categories* despite Aristotle's rejection of this view in *Metaphysics* Z. It is worth noting, however, that despite Aristotle's demotion of species and genera from their substantial status, something of their spirit remains. Aristotle's idea that secondary substances reveal what primary substances are develops into his idea that substantial form – the *what-it-is-to-be* of a thing – is that thing's substance. Species and genera are demoted, but their role as the epistemologically fundamental entities gets taken up by a different sort of entity absent from the *Categories* but central to the mature metaphysics of Z. Indeed, perhaps the best way to think about the advance represented by *Metaphysics* Z is one already mentioned: it is only there, with the introduction of hylomorphism, that Aristotle achieves a kind of Platonism according to which one and the same entity – substantial form – is both ontologically and epistemologically fundamental. That, however, is a story for another time. The story we must tell next is the story of non-substantial individuals.

CHAPTER FOUR

We saw in the previous chapter why it is that Aristotle takes the species and genera of primary substances themselves to be substances. One of his reasons is that the species and genera of primary substances are underlying subjects of a certain kind: "if you will call the individual man grammatical it follows that you will call both a man and an animal grammatical" (3a4-6). This is that in virtue of which secondary substances lay claim to some kind of ontological, as opposed to epistemological, fundamentality, and is therefore central to their status as substances.

But Aristotle's claim at 3a4-6 also brings into view the most discussed topic in the literature on the *Categories*, namely, the status of non-substantial individuals. What are we saying when we call the individual man grammatical? In *Categories* 8, Aristotle discusses qualities, and tells us that "honey (τὸ μέλι) because it possesses sweetness (γλυκύτητα) is called sweet (γλυκύ)" (9a33-34).[111] The sweetness possessed by honey is a non-substantial individual that is PRESENT IN the honey (1a23-29). Likewise, when we call the individual man grammatical, we are saying that there is a certain non-substantial individual – the individual knowledge-of-grammar – that is PRESENT IN that man.

What sorts of entities are non-substantial individuals? Traditionally, they have been understood to be non-repeatable entities, or *particulars*.[112] A rival interpretation, however, has it that these are repeatable entities, or *maximally determinate universals*.[113]

The goal of this chapter is to defend the traditional view that non-substantial individuals are particulars. We shall see that the most familiar defense of this view, based on

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111 Aristotle makes this remark not of qualities in general, but of what he calls "affective qualities" or "affections". The difference between these sorts of qualities and others will not be relevant for our purposes.

112 Defenders of the view that non-substantial individuals are *particulars* include J.L. Ackrill 1963, Robert Heinaman 1981, Daniel Devereux 1992, Michael Wedin 1993 and 2000, and Verity Harte 2010.

113 Defenders of the view that non-substantial individuals are *universals* include G.E.L. Owen 1965, Michael Frede 1987, Michael Loux 1991, Frank Lewis 1991, Russell Dancy 1975, Mehmet Erginel 2004, and Phil Corkum 2009.

J.L. Ackrill's reading of a crucial passage at 1a24-25, faces insuperable difficulties. I will then turn to some independent linguistic evidence in support of the view before returning to consider how best to read 1a24-25.

1.

In *Categories* 2, Aristotle presents a fourfold division of being: (a) entities that are neither SAID OF nor PRESENT IN a subject; (b) entities that are SAID OF but not PRESENT IN a subject; (c) entities that are PRESENT IN but not SAID OF a subject; and (d) entities that are both SAID OF and PRESENT IN a subject (1a20-1b10).[114] These are primary substances, secondary substances, non-substantial individuals, and non-substantial universals respectively.

After introducing those entities that are IN a subject but not SAID OF a subject, Aristotle offers a cryptic parenthetical explaining what he means by 'in a subject': "By in a subject (ἐν ὑποκειμένῳ) I mean what is in something (ἔν τινι), not as a part (μὴ ὡς μέρος), and cannot (ἀδύνατον) exist separately (χωρὶς) from what it is in" (1a24-25). Following J.L. Ackrill, we might formulate this as follows:

(ACK) *x* is IN a subject *y* if and only if:

a. *x* is in *y*;[115]

b. *x* is not part of *y*; and

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[114] These entities are not PRESENT IN and SAID OF the *same* entity. They are SAID OF entities beneath them within a single branch of the Porphyrian tree, but they are PRESENT IN substances. Thus, the non-substantial universal *color* is SAID OF the non-substantial individual *redness*, but is not PRESENT IN it. Both it and *redness* are PRESENT IN primary and secondary substances.

[115] Commentators have been puzzled by the use of the word 'in' in clause (a), since Aristotle is attempting to define what it means to be PRESENT IN a subject by appealing to some notion of one thing being in another. Some commentators have therefore seen a vicious circularity in Aristotle's definition. Thus, Ackrill proposes that the 'in' in clause (a) "must be a non-technical 'in' which one who is not yet familiar with the technical sense can be expected to understand" (Ackrill 1963: 74; compare Devereux 1992: 118)). But Mehmet Erginel points out that if Aristotle is invoking a familiar sense of the word 'in' to elucidate a technical notion of being PRESENT IN a subject, then nothing can be PRESENT IN a subject without also being *in* that subject in the familiar, non-technical sense (Erginel 2004: 187; fn. 7). The problem is that non-substantial individuals cannot plausibly be said to be *in*, in the familiar and non-technical sense, the subjects they are PRESENT IN. I do not intend to settle this dispute here. For helpful discussion, see Erginel (2004: 187; fn. 7).

c. *x* cannot exist separately from *y*.

This, it seems to me, is the most natural way to read this passage. But as Ackrill notes, it implies that non-substantial individuals must be particulars: "only *individuals* in non-substance categories can be 'in' individual substances" (Ackrill 1963: 74).[116]

To see this, consider the individual whiteness that is PRESENT IN Socrates. Suppose for *reductio* that this individual whiteness is a universal, so that it could be PRESENT IN Callias as well as Socrates. If that were the case, then it would be false to say that this individual whiteness could not exist separately from Socrates. For it *could* exist separately from Socrates: it could exist simply by being PRESENT IN Callias alone. But then clause (c) of (ACK) would be false, in which case this individual whiteness would not be PRESENT IN Socrates after all. Yet this contradicts our supposition for *reductio*. Therefore, this individual whiteness must be a particular that cannot exist separately from the single underlying subject it is PRESENT IN. Likewise for any other non-substantial individual: it is a particular that is PRESENT IN exactly *one* underlying subject.

The most natural reading of 1a24-25 therefore implies that non-substantial individuals are particulars rather than universals. But this reading is not without difficulty. Consider 2a39-2b3. There Aristotle claims that "color (τὸ χρῶμα) is in body (ἐν σώματι) and therefore (οὐκοῦν) also in an individual body (ἐν τινὶ σώματι); for were it not in some individual body it would not be in body at all (ὅλως)". The idea here is that a certain non-substantial *universal* – namely, the non-substantial universal *color* – is PRESENT IN a primary substance. Otherwise, according to Aristotle, it could not be PRESENT IN body in general

116 It is clear from context that Ackrill means to say that (ACK) allows only *particulars* in non-substance to be IN primary substances. In other words, Ackrill's view is that (ACK) entails that non-substantial individuals are *particulars*

(i.e., the non-substantial universal *body*). This seems to flatly contradict Ackrill's claim that only *particulars* can be PRESENT IN primary substances.

Ackrill's reply is that Aristotle is employing "a relaxed sense" of the PRESENT IN relation (ibid.: 83), and that strictly speaking "it is not color, but this individual instance of color, that is in this individual body" (ibid.). In a similar spirit, Robert Heinaman has argued that 1a24-25 does not apply to the relation that might obtain between a non-substantial universal and a primary substance, because it was intended to apply only to the relation between a non-substantial individual and a primary substance (Heinaman 1981: 300-302). But as Daniel Devereux has observed, 1a24-25 is completely general (Devereux 1992: 122). There is no indication that its scope is limited to entities of certain kinds. Indeed, if its scope were limited, it would be difficult to understand how Aristotle conceives of those entities that are both SAID OF and PRESENT IN underlying subjects, because if 1a24-25 does not apply in a completely general way to every instance of the PRESENT IN relation, then Aristotle will have failed entirely to specify the relation between such entities and the subjects they are PRESENT IN. Finally, there is no indication in the text that Aristotle has relaxed the way in which he is invoking the IN relation. It should therefore be taken to apply strictly to any instance of that relation.

Another difficulty for Ackrill's reply is that, as Michael Frede has pointed out, if Aristotle had intended to say what Ackrill takes him to say, he had available to him many complex pronominal expressions that he uses elsewhere (Frede 1978: 60). For example, when Aristotle means to speak of the non-substantial individual whiteness, he uses the phrase 'τὸ τὶ λευκὸν' (as at 1a27) instead of the simpler 'τὸ λευκὸν'. Likewise, when he means to speak of a primary substance who is a man rather than the species Man, Aristotle uses the phrase 'ὁ τὶς ἄνθρωπος' (as at 1b4) rather than the simpler 'ὁ ἄνθρωπος'. In

general, when Aristotle means to speak about individual instances of a kind, he employs an indefinite pronoun. The absence of an indefinite pronoun at 2a39-2b3 shows that Aristotle could not have meant what Ackrill takes him to have meant.

This latter criticism applies equally to Michael Wedin's alternative suggestion that we read 2a39-2b3 as claiming that "color, whatever it is, is always in body, whatever it is, and that this is the reason that individual color is in individual body" (Wedin 2000: 46). Once again, if Aristotle had meant to refer to individual instances of a kind, he had available to him familiar pronominal expressions that he does not in fact use here. Worse, there is nothing in Aristotle's Greek that corresponds to Wedin's locution "whatever it is".[117]

It would seem therefore that 2a39-2b3 causes serious difficulties for (ACK) because it allows that non-substantial universals can be PRESENT IN primary substances, seemingly in violation of (ACK). For presumably, for any given primary substance that a non-substantial universal is PRESENT IN, that universal *could* exist separately from that primary substance simply by being PRESENT IN a distinct primary substance instead.

Another passage that appears to cause difficulties for (ACK) is our old friend 3a4-6, where Aristotle says that "if you will call the individual man grammatical it follows that you will call both a man and an animal grammatical". This has been difficult to reconcile with (ACK) because, as we saw earlier, clause (c) of (ACK) seems to entail that non-substantial individuals must be *particulars*. Particulars, however, cannot be PRESENT IN multiple subjects. *De Interpretatione* 7 defined the universal as that which is of such a nature as to be predicated of many things, which we have taken to mean that a universal is *for the most part* predicated of many things, although in rare cases it is predicated of just one. *De Interpretatione* 7 also offers a definition of the particular, but that definition is purely negative, contrasting particulars with

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117 For further criticism of Wedin on this point, see Erginel (2004: 202, n. 55).

universals rather than giving a positive account of particulars: "I call universal that which is by its nature predicated of a number of things, *and particular that which is not*" (17a39-40; emphasis mine). The particular is that which is *not* universal. More precisely, the particular is that which is *not* predicated of a number of things. Thus, the particular can at most be predicated of one thing.[118]

If particulars can at most be predicated of one underlying subject, then 3a4-6 seems to imply that non-substantial individuals cannot be particulars, for it says that a given non-substantial individual that is PRESENT IN a primary substance is *also* PRESENT IN the species and genera of that primary substance. That would suggest that non-substantial individuals are PRESENT IN multiple underlying subjects, and so – by the definitions in *De Interpretatione* 7 – must be *universals* rather than *particulars*.

The traditional, and most natural, reading of 1a24-25 offered by (ACK) therefore faces grave textual difficulties. In the next section, I explore some avenues of reply made available to the defender of (ACK) by the view of universals defended in Chapters One and Two of this dissertation.

2.

Let us return first to 2a39-2b3. As we have seen, this passage has attracted much attention by defenders of the traditional view of non-substantial individuals, but none of the attempts

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118 For helpful discussion on the scope of the negative particle in *De Interpretatione* 7, see Crivelli (2015: 25-26; 29). Some commentators have claimed that a particular cannot be *predicated* at all (Wedin 2000: 58; Code 1986: 421). Wedin writes: "[t]he truth of 'Socrates is pink'…cannot involve predication of a nonsubstantial particular whose presence in Socrates makes the sentence true. Rather, what is predicated of Socrates is the general property *pink*. There is, thus, a gap between predication and MO's ontological relations" (Wedin 2000: 71). I find this view untenable. Although it must be admitted that in some passages, Aristotle seems to claim that particulars cannot be predicated at all (see, e.g, *A Po.* A.1), these passages do not have the import that someone like Wedin needs. Aristotle is most naturally understood as endorsing a disjunctive account of metaphysical predication according to which *x* is predicated of *y* if and only if either (a) *x* is SAID OF *y* or (b) *x* is PRESENT IN *y* (Lewis 1991: 76; Moravcsik 1967: 85).

at reconciling it with (ACK) have been successful. But the view of universals defended in Chapters One and Two can shed some light on exactly what the tension between 2a39-2b3 and (ACK) really is, showing that the two are not *logically* inconsistent.

Consider a non-substantial universal *U*. For ease of presentation, suppose that *U* is composed of just three non-substantial individuals – *a*, *b*, and *c* – each of which is a particular that is PRESENT IN a unique primary substance. On this view, *U* is PRESENT IN each of the primary substances that *a*, *b*, and *c* are PRESENT IN. That is what 2a39-2b3 tells us: were *U* not PRESENT IN these primary substances, it could not be PRESENT IN any of the non-substantial universals it is supposed to be PRESENT IN (i.e., if *U* were color, it could not be PRESENT IN the universal *body* without being PRESENT IN the primary substances that *a*, *b*, and *c* are PRESENT IN). According to (ACK), nothing can be PRESENT IN something unless it is inseparable from what it is PRESENT IN. So, *U* must be inseparable from each of the primary substances it is PRESENT IN. It cannot exist without being PRESENT IN all and only those three primary substances.

How could this be? How could *U* be inseparable from those three primary substances? On the one hand, it seems that if *a* were to pass out of existence, so that it was no longer PRESENT IN one of those primary substances, *U* would no longer be PRESENT IN that primary substance. Yet *U* would still exist, in violation of (ACK). On the other hand, we can imagine that another non-substantial individual, *d*, comes into existence and is PRESENT IN its own unique primary substance. If *d* is – like *a*, *b*, and *c* – a proper part of *U*, it seems to follow that *U* would be PRESENT IN *d*'s primary substance as well. Yet this would be the same *U* that previously was PRESENT IN only three primary substances, again in violation of (ACK).

The reasoning in the above paragraph, however, relies on a crucial assumption. That assumption is that universals can undergo changes in their parts while remaining the same over time. That is, the above paragraph assumes that universals are not extensional entities. Suppose this assumption is false and that universals *are* extensional. Suppose, that is, that *U* had its parts *a*, *b*, and *c* essentially. Then if one of them – say, *a* – were to pass out of existence, so too would *U*. If *U* has its parts essentially, it cannot *lose* any one of its parts without going out of existence. Likewise, if some new non-substantial individual *d* comes into existence that composes some further entity with *a*, *b*, and *c*, that entity is not *U*, but some other universal *U**. If *U* has its parts essentially, it cannot *gain* any parts either. On this view, (ACK) is compatible with 2a39-2b3, because *U* – understood as an extensional entity – really would be inseparable from the primary substances that it is PRESENT IN. It cannot exist separately from *those entities* (taken collectively).

Notice how different this way of reconciling 2a39-2b3 is from Ackrill's suggestion that Aristotle is using "a relaxed sense" of what it is to be IN a subject at 2a39-2b3. Ackrill's suggestion is motivated by the idea that entities like *U* are not, strictly speaking, inseparable from the primary substances they are PRESENT IN. So they must be PRESENT IN those primary substances only in "a relaxed sense", say, *in virtue of* their being SAID OF a non-substantial individual that is PRESENT IN those primary substances in the strict sense. By contrast, the suggestion now being considered does not invoke any weakening of the PRESENT IN relation. It holds that non-substantial universals like *U* are PRESENT IN primary substances just as strictly as non-substantial individuals are PRESENT IN primary substances.[119]

[119] To secure this result, we need only read 1a24-25 slightly differently than Ackrill does. Recall that 1a24-25 says that "By in a subject I mean what is in something, not as a part, and cannot exist separately from what it is in" (1a24-25)." If 'something' is allowed to refer *either* singly to just one primary substance *or* collectively to

We have already seen in Chapter Two, however, that Aristotle does not think that universals are extensional entities. Aristotle rejects the idea that *U* has its parts essentially, so this way of reconciling 2a39-2b3 with (ACK) is not available to Aristotle. But the above strategy illustrates something important that I think has been overlooked by commentators: 2a39-2b3 is not *logically inconsistent* with (ACK). The inconsistency between the two arises only because Aristotle holds certain controversial views about the metaphysics of universals, namely, that they are non-extensional wholes. The difficulty that 2a39-2b3 causes for (ACK) is not as straightforward as it has seemed to most commentators, but instead turns on controversial issues in the metaphysics of universals: what are the existence and identity conditions of universals over time? If (ACK) does indeed represent the correct way to read 1a24-25, then we should not suppose that 2a39-2b3 is simply a blunder on Aristotle's part. Instead, the tension would seem to reflect a deeper underlying tension in Aristotle's thought about universals. On the one hand, he regards these as wholes. On the other hand, it is tempting, as our discussion of Abelard in Chapter Two illustrates, to treat wholes as extensional. Ultimately, Aristotle does not want to treat wholes as extensional, but the temptation to do so might help explain why Aristotle should have been committed both to his account of the PRESENT IN relation as given by (ACK) and his claim that non-substantial universals can be PRESENT IN primary substances.

Let us now turn to 3a4-6, which tells us that non-substantial individuals are PRESENT IN not only primary substances, but the species and genera of these primary substances. This causes two closely related difficulties for (ACK). First, it seems to imply that non-substantial

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a group of primary substances, and the relative clause 'what it is in' refers back to 'something' thus understood, then we can say that non-substantial universals cannot exist separately from *the things they are in*, understood collectively. Take the primary substances that a non-substantial universal is in, and let 'something' refer collectively to all of them. A non-substantial universal cannot exist separately from what it is in, understood as *that collection*. Aristotle's Greek can support this extension, I think.

individuals must be universals rather than particulars, since the definition of the universal at *De Interpretatione* 7 tells us that a universal is that which by its nature is predicated of many subjects. Second, it appears to violate clause (c) of (ACK), which requires that anything PRESENT IN a subject be inseparable from that subject, because it is not clear how a non-substantial individual could be inseparable from multiple subjects.

Devereux addresses the difficulties raised by 3a4-6 by claiming that non-substantial individuals are PRESENT IN secondary substances only in a derivative way: "this whiteness is in *Man* only insofar as it is *in* Socrates" (Devereux 1992: 126). Unfortunately, this is at most a sketch of a solution to the problem. It does not tell us *in what way* non-substantial individuals are derivatively predicated of secondary substances. Thus, it cannot explain why non-substantial individuals still qualify as particulars rather than universals, or how non-substantial individuals can be inseparable from multiple subjects.

Mehmet Erginel has recently proposed a more detailed version of Devereux's strategy for reconciling 3a4-6 with (ACK).[120] He compares the PRESENT IN relation to the more familiar *location* relation:

> I cannot be in the Empire State Building and in Central Park at the same time, yet I can be in the Empire State Building, in New York, and in the United States all at the same time. This is because the Empire State Building, New York, and the United States constitute a sequence of increasingly larger locations, the larger containing the smaller, and because I am in New York and in the United States only in so far as I am in the Empire State Building

[120] Of course, Erginel himself does not believe that non-substantial individuals are particulars. He thinks the passage from 2a39-2b3 is devastating for that view, but that scholars are mistaken to think that 3a4-6 is likewise devastating. Thus, Erginel defends the view that non-substantial individuals are universals. I will show later that even if 2a39-2b3 is devastating for (ACK), it is not devastating for the view that non-substantial individuals are particulars.

> (when I am there). There is no inconsistency in the claim that I cannot be in any place other than the Empire State Building *and* that I cannot be in any place other than New York, and so forth. And claiming that I cannot be in any place other than New York does not allow me to be in the Empire State Building and Central Park at the same time *because* I am in New York only by virtue of being in the Empire State Building, at a given time (Erginel 2004: 198).

Erginel's analogy is supposed to show that the individual whiteness that is PRESENT IN Socrates can also be PRESENT IN the species Man and the genus Animal without violating clause (c) of (ACK), which requires that this individual whiteness be inseparable from any subject that it is PRESENT IN. The idea is simple: the individual whiteness that is PRESENT IN the species Man and the genus Animal is so *only insofar as* it is PRESENT IN Socrates. Just as I can be located in three places at once so long as those locations are related to each other in the appropriate way, so too can the individual whiteness be PRESENT IN three different entities at once, so long as those entities are related in the appropriate way.

Erginel's account improves on Devereux's insofar as it fleshes out, to some degree, what might be meant by derivative predication. Furthermore, it comes closer to solving the second difficulty 3a4-6 causes for (ACK) by showing how clause (c) is not in fact violated by this passage. But Erginel's account does not go far enough. His analogy relies on the idea that one thing can located in three places at once so long as these three places are appropriately related, which means that one thing can be PRESENT IN three different entities at once so long as these entities are appropriately related. But whereas it is clear in the case of location what the appropriate relation is, Erginel does not tell us what the appropriate relation is in the latter case. Nor does Erginel's account address the first difficulty raised by

3a4-6: he does not tell us how a non-substantial individual that is PRESENT IN three different entities at once nevertheless qualifies as a particular rather than a universal.

The view of universals developed in Chapters One and Two improves on Erginel's account in both these ways. It specifies the relation that must obtain between Socrates and his species and genera such that the individual whiteness that is PRESENT IN him could be inseparable from him and his species and genera: Socrates must be a *proper part* of his species and genera. Indeed, Socrates is – and must be – *essentially* a proper part of his species and genera. To say that secondary substances reveal what primary substances are is to say that primary substances essentially belong to their secondary substances. Thus, a given primary substance cannot exist separately from its species and genera.

Meanwhile, (ACK) tells us that a non-substantial individual cannot exist separately from what it is PRESENT IN. To put these together, we need only employ a principle of transitivity: a non-substantial individual is inseparable from the primary substance it is PRESENT IN, and this primary substance is inseparable from its species and genera, *therefore* this non-substantial individual is also inseparable from the species and genera of the primary substance it is PRESENT IN. The non-substantial individual is inseparable from an inseparable part of the whole. In this way, it too is inseparable from the whole. The individual whiteness that is PRESENT IN Socrates cannot exist separately from Socrates. Socrates, in turn, cannot exist separately from the species Man or the genus Animal. Thus, the individual whiteness that is PRESENT IN Socrates cannot exist separately from the species Man or the genus Animal either.[121]

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[121] It is important to see that the non-substantial individual could *not* exist separately from its primary substance simply by being IN the species and genera of that primary substance. Everything in Aristotle's ontology must be predicated of a primary substance (2a34), so the non-substantial individual in question could not simply be IN secondary substances without also being IN primary substances. Nor could it be in those secondary substances by virtue of being IN some *other* primary substance. Dialectically, we are entitled to assume at this point that (ACK) shows that a non-substantial individual can be IN at most one primary

Our account therefore provides a neat explanation of how it is that a non-substantial individual can be inseparable from everything that it is PRESENT IN. In this way, it improves on the suggestion for reconciling 3a4-6 with (ACK) offered by Devereux and Erginel that relies on the notion of derivative predication, for it gives a fully worked out metaphysics of how this kind of predication works.

Our account goes further, however, in that unlike Devereux or Erginel, it explains why non-substantial individuals so understood qualify as particulars rather than universals by the definitions of these in *De Interpretatione* 7. In Chapter One we saw Hugh Benson argue against the definition of the universal given in *De Interpretatione* 7 on the grounds that it was incompatible with 3a4-6, which features particulars being predicated of multiple underlying subjects (Benson 1988: 284). We are now in a position to respond to this objection.

The definition of the universal at *De Interpretatione* 7 says that a universal is that which by its nature is predicated of a number of subjects. This is most naturally understood as meaning that for each underlying subject of predication, there is a distinct instance of the predication relation. Suppose that *U* is a universal with three underlying subjects *a*, *b*, and *c*. We should suppose in this case that there are three distinct predication relations: that holding between *U* and *a*, that holding between *U* and *b*, and that holding between *U* and *c*. Multiple underlying subjects is most naturally taken to imply multiple instances of the predication relation.

Cases of derivative predication, however, break this mold. 3a4-6 tells us that non-substantial individuals are PRESENT IN not only primary substances, but the species and

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substance, and try to reconcile this with the fact that this seems to imply that non-substantial individuals are *particulars* that are somehow predicated of secondary substances as well. In this case, there is no way for a non-substantial individual to be IN a secondary substance without also being IN the primary substance that it is IN. We are thus entitled to claim that its inseparability from the former is derivative upon its inseparability from the latter.

genera of these primary substances. Non-substantial individuals are indeed PRESENT IN multiple subjects, but they are *non-derivatively* PRESENT IN exactly one subject and *derivatively* PRESENT IN the species and genera of that one subject. It is only insofar, and because, a non-substantial individual is PRESENT IN a primary substance that it is also PRESENT IN the species and genera of that primary substance.

This account of derivative predication relies on the mereological relation obtaining between a primary substance and its species and genera. I want to suggest that this means that we have here multiple underlying subjects but just a *single* instance of the PRESENT IN relation. To count the non-substantial individual being PRESENT IN a primary substance and being PRESENT IN a secondary substance as *two* instances of the PRESENT IN relation is double counting. There is just one instance of the PRESENT IN relation here: the instance of the non-substantial individual being PRESENT IN a primary substance. But because that primary substance is a proper part of its species and genera, that one instance of the PRESENT IN relation carries over to the species and genera of that primary substance. The non-substantial individual is PRESENT IN all of these because it is PRESENT IN a part of them.

Cases of derivative predication, therefore, break the mold that we find in *De Interpretatione* 7. Ordinarily, multiple subjects implies multiple instances of the predication relation. When the predication is derivative, however, there can be multiple subjects but just one instance of the predication relation. Non-substantial individuals are *non-derivatively* predicated of one and only one subject, and only one instance of the predication relation is needed to account for the subjects of which it is derivatively predicated. I submit that this allows non-substantial individuals to be PRESENT IN primary substances and their species and genera without qualifying as universals by *De Interpretatione* 7's definition of the universal.

It is important to see that this suggestion is not the same as Paolo Crivelli's suggestion that "talk of 'being predicated of many things' is naturally taken to imply that the many things with respect to which predication obtains are on the same ontological level" (Crivelli 2015: 25). On this view, non-substantial individuals can be PRESENT IN both primary substances and their species and genera without thereby being universals because the definitions of the particular and the universal found in *De Interpretatione* 7 have implicit restrictions to ontological levels. A universal would, on this view, be an entity such that by its nature it is predicated of many subjects, where these subjects are all on the same ontological level. Primary and secondary substances are not on the same ontological level because the latter are SAID OF the former. So, a non-substantial individual can be PRESENT IN both primary substances and their species and genera without satisfying the definition of the universal found in *De Interpretatione* 7, because it is not predicated of many things at the same ontological level.

Benson is aware of this line of reply, saying that "one might claim that something is a universal just in case it is predicated of a plurality of entities on the same ontological level" (ibid.: 293). But he claims that such a reply "appears *ad hoc*" (ibid.: 304, n. 34), and that the definition of the universal in *De Interpretatione* 7 contains "no indication of a restriction on the many things of which the universal is predicated" (ibid.: 294). To this extent, Benson is right. There is no indication of such a restriction. But the view I have developed is not the same as Crivelli's. My account of derivative predication in no way invokes any restrictions to ontological levels. Instead, I have relied on the idea that in derivative predication we have just one instance of the predication relation, and that this one instance of that relation, coupled with the mereological relation that obtains between primary substances and their species and genera, can account for the truth of Aristotle's claim at 3a4-6. Because there is

just one instance of the PRESENT IN relation, it would be a mistake to say that non-substantial individuals satisfy the definition of the universal found in *De Interpretatione* 7. Part of satisfying that definition, I am suggesting, requires having multiple instances of the predication relation. Cases of derivative predication therefore do not satisfy it.

I conclude that 3a4-6 does not pose a serious difficulty for (ACK) given the account of universals I have defended in Chapters One and Two. This is a significant result, as most commentators take 3a4-6 to pose a fatal objection to (ACK). But it is at best a partial result, for we have seen that 2a39-2b3 does indeed pose a serious problem for (ACK). Unless I am mistaken in my view that Aristotelian universals are not extensional, 2a39-2b3 is incompatible with (ACK). That means (ACK) cannot be the basis for our view that non-substantial individuals are particulars. We need other evidence. It is to this evidence that I turn in the next section.

3.

Let us begin by noting some of the ways that Aristotle describes non-substantial individuals. At 1b6-9, for example, Aristotle says that

> [t]hings that are individual (τὰ ἄτομα) and numerically one (ἓν ἀριθμῷ) are, without exception, not said of any subject (οὐδενὸς ὑποκειμένου λέγεται), but there is nothing to prevent (κωλύει) some of them from being in a subject (ἐν ὑποκειμένῳ) – the individual knowledge of grammar (ἡ τὶς γραμματικὴ) is one of the things in a subject.

Non-substantial individuals are here described as *individual* (ἄτομον) and *one in number* (ἐν ἀριθμῳ). Aristotle uses the same language to describe primary substances. Immediately prior to the passage from 1b6-9 just quoted, Aristotle is discussing primary substances. The

context suggests that primary substances are among those items that are individual and numerically one. Aristotle more clearly commits himself to this view at 3b13: "[a]s regards the primary substances, it is indisputably (ἀναμφισβήτητον) true that each of them signifies (σημαίνει) a certain 'this' (τόδε τι); for the thing revealed is individual (ἄτομοω) and numerically one (ἐν ἀριθμῳ)".

Primary substances and non-substantial individuals are each called ἄτομον in *Topics* IV.2, wherein Aristotle claims that "everything that partakes (μετέχον) of the genus (τοῦ γένους) is a species (εἶδος) or an indivisible (ἄτομόν)" (*Top*. IV.2, 122b20-21). As Devereux points out, it is clear that Aristotle is speaking about both substances and non-substances (Devereux 1998: 347). Thus, both primary substances and non-substantial individuals are ἄτομον.

This common terminology used to describe both primary substances and non-substantial individuals might be taken to imply that the latter must be particular. Primary substances are certainly particulars; they are *paradigmatically* particulars. One might suppose that this fact, when conjoined with the fact that both primary substances and non-substantial individuals are described as individual and numerically one, implies that non-substantial individuals are particulars as well. Thus, Verity Harte writes:

> One might think that…the common agreement that the indivisibles in the category of substance are metaphysically particular items, combined with the comparability of the terminology that is used to characterize indivisibles of both sorts, is reason to suppose that indivisibles in the non-substantial categories must be metaphysically particular also (Harte 2010: 104).

Harte adds, however, that while "an argument with roughly this strategy would be successful…[t]his is not to say that, in the dialectical context of the dispute at issue, one could simply produce such an argument and expect to command assent" (ibid.: 105; fn. 15).

Reticence may be called for in light of the fact that when Aristotle uses the terms 'ἄτομον' and 'ἑν', he typically adds a dative of respect indicating a particular *way* in which the thing in question is indivisible or one. Thus, in *Posterior Analytics* B.13:

> When you are dealing with some whole, you should first divide the kind into what is atomic in form [or perhaps, species] (τὰ ἄτομα τῷ εἴδει) (e.g. number into triplet and pair) (*A Po.* B.13, 96b15-17; trans. Barnes).

Here we find Aristotle happy to use the term 'ἄτομον' to things that are indivisible *in a certain respect*, namely, indivisible *in form*. It seems clear that the items he has in mind are universals; namely, maximally determinate universals. Likewise, in *Metaphysics* Z.8, Aristotle says that in cases of natural generation the generator and the generated are "of the same sort, but not the same thing; not one in number (ἐν ἀριθμῳ), but one in [species or form] (τῷ εἶδει)" (*Met.* Z.8, 1033b30-32). Here again, Aristotle is willing to use the term 'ἑν' accompanied by a dative of respect indicating a *way* in which something is one. And once again, 'ἑν'is applied to an entity that is a universal.[122]

While Aristotle is willing to apply both 'ἄτομον' and 'ἑν' to universals, so long as these terms are accompanied with the appropriate datives, I am more optimistic than Harte is that Aristotle's language gives us decisive evidence in favor of the view that non-substantial individuals are particulars. This is because Aristotle does not just say that non-substantial individuals are individual and one. He says, more precisely, that they are

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122 The literature on whether substantial forms in *Metaphysics* Z are particular or universal is voluminous. The passage quoted from Z.8 is typically regarded as one of the chief witnesses in favor of the view that substantial forms are universal, so I am happy here simply to assume that Aristotle is applying 'ἓν' to a universal. For a sample of the literature on the nature of substantial forms, see, e.g., Loux 1991 (Ch. 6).

individual and one *in number*. Aristotle's use of the phrase 'ἓν', like his use of 'ἄτομον', is usually accompanied by a dative of respect, indicating the *way* in which something is one. When applied to non-substantial individuals, the dative is 'ἀριθμῷ'. To determine whether non-substantial individuals are particulars or universals, we must look at how Aristotle uses not just the term 'ἓν', but how he uses 'ἓν ἀριθμῷ'.

This phrase is not simply another way of speaking about our contemporary notion of numerical identity.[123] For we know that Aristotle believes that secondary substances differ from primary substances precisely in this respect: unlike primary substances, secondary substances are *not* one in number (3b18-19). But Aristotle does not of course mean that secondary substances, like the species Man and the genus Animal, are not numerically identical to themselves. He is not at all suggesting that secondary substances are not self-identical. He has something else in mind when speaking of that which is one in number.

In *Metaphysics* B.4, Aristotle writes: "[t]o say 'one in number' (ἀριθμῷ ἓν) differs not at all (διαφέρει οὐθέν) from 'particular' (τὸ καθ᾽ἕκαστον), because by 'particular' we mean 'one in number'" (*Met* B.4, 999b33-1000a1).[124] Here Aristotle makes clear that, at least in some situations, to say that something is one in number *just is* to say that it is a particular (Harte 2010: 117). Primary substances, which are one in number, are therefore particulars.

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123 Harte claims that in *Metaphysics* Z.8, Aristotle "seems to reserve ἓν ἀριθμῷ, 'one in number', for the numerical identity of a thing with itself" (Harte 2010: 116). But she points out that that the relationship between being ἓν ἀριθμῷ and being self-identical is complicated, and adds that "being numerically identical need not be the preserve of things metaphysically particular" (ibid.: 117). For helpful discussion of how Aristotle's language of being one in number relates to the issue of identity, see Spellman (1995: 23-24). The *locus classicus* on this issue is Nicholas P. White (1971).

124 Sharma maintains that this view is unique to the *Metaphysics*: "Later, in the *Metaphysics* – where Aristotle is no longer working with the two-fold relational scheme of the *Categories* and thus is not concerned to isolate the notion of an entity that is not *said of* anything else – *hen arithmoi* comes to be used exclusively of *thises*, particulars" (Sharma 1997: 311, fn. 8). Sharma's view is that in the *Categories*, by contrast, the phrase 'one in number' is "simply a gloss on 'individual'", and being *individual* does not imply being a particular (ibid.). What is individual and one in number is simply that which is at the lowest level of a categorial tree, that which cannot be SAID OF a subject. This need not be a particular, on Sharma's view. As we shall see below, I think there are good reasons to resist Sharma's reading.

Likewise, given Aristotle's uncontroversial commitment to the claim that non-substantial individuals are one in number, it seems to follow that non-substantial individuals are particulars.

Consider also Aristotle's claim that "it is indisputably true" that each primary substance is a *this* (τόδε τι) because each primary substance is individual and numerically one. This seems to mean that being individual and numerically one is a *sufficient condition* for being a *this* (Devereux 1992: 117). If we then suppose that being a *this* is, in turn, a sufficient condition for being a particular, it follows that anything that is individual and numerically one is a particular. Non-substantial individuals, on this view, must be particulars.

Ravi Sharma has argued that being individual and numerically one is *not* a sufficient condition for being a *this* (Sharma 1997: 310). At best, Sharma argues, being individual and numerically one is a *necessary* condition for being a *this* (ibid.: 311). According to Sharma, a *this* is "an ultimate subject of predication", whereas what is individual and numerically one is what is most determinate within its kind (ibid.: 310-311). These need not be the same, for while primary substances alone are ultimate subjects for predication, an *infimae species* is most determinate within its kind without being an ultimate subject of predication (since it is PRESENT IN a subject).

Sharma's view cannot withstand scrutiny, however. Sharma translates 3b10-13 as follows: "Every substance seems to signify a *this*. In the case of primary substances, it is indisputably true that each signifies a *this*: [in each case, the substance] indicated is individual and one in number" (ibid.: 309-310). As Devereux points out, however, this translation "leaves out the crucial word 'for' (γὰρ) in line 12", which obscures the inferential structure of the argument (Devereux 1998: 343). Aristotle is *inferring* from the fact that a primary substance is individual and numerically one that it is a *this*, and Sharma's deletion of the word

'*gar*' obscures this fact. The presence of the word '*gar*' strongly suggests that being individual and numerically one is a sufficient condition for being a *this*. Non-substantial individuals, then, must be *this*es.[125]

In addition, it seems to me unlikely that in the *Categories* the phrase 'ἓν ἀριθμῷ' is simply a gloss on 'ἄτομον'. If that were so, Aristotle would not have to use *both* phrases repeatedly when describing non-substantial individuals and primary substances. But Aristotle is careful to do so. Thus, at the end of *Categories* 2, Aristotle is careful to use both when claiming that such entities are not SAID OF a subject. And at 3b10-13, Aristotle again uses both when indicating why it is that a primary substance is a *this*.

The exception proves the rule. At 3b18-19, Aristotle tells us that a secondary substance "signifies a certain qualification" for a secondary substance "is not, as the primary substance is, one" (3b18-19). Here Aristotle uses 'ἓν' but not 'ἄτομον', and I think that is crucial. A secondary substance is not *one* in the appropriate sense, for reasons we shall explore below, but a secondary substance *may* be *individual*. The species Man, for example, may be ἄτομον, for it is indivisible in the relevant sense: it cannot be further divided into sub-kinds by finding a differentia. But it is not ἓν because, as Aristotle says, it is "said of many things" (3b19).

These facts about Aristotle's use of the terms 'ἄτομον' and 'ἓν' suggest that these terms are not in fact interchangeable. Entities that are both individual and numerically one, however, are – by the lights of 3b10-13 – *this*es. And *this*es are particulars. So, entities that are both individual and numerically one are particulars. Non-substantial individuals, then, are particulars.

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125 Devereux points out as well that "there is no direct support in the *Categories*" for Sharma's view that a *this* must be an ultimate subject of predication (Devereux 1998: 343).

Aristotle's claim that non-substantial individuals are individual and numerically one, conjoined with Aristotle's views about what being individual and numerically one entails, implies that non-substantial individuals must be particulars. This argument is, I think, the best evidence available for the view that non-substantial individuals are particulars, for it relies not on a controversial reading of a cryptic passage, but simply on the way in which Aristotle uses terms like 'ἄτομον' and 'ἓν ἀριθμῷ'. But before concluding the case for the view that non-substantial individuals are particulars, I want to examine one final philosophical argument that might be offered in support of that view, an argument that like much of the above relies on the passage from 3b10-19.

Consider more carefully the passage at 3b18-19. There Aristotle is justifying his claim that secondary substances, unlike primary substances, are not one in number. He says: "the subject is not, as the primary substance is, one, but man and animal are said of (λέγεται) many (πολλῶν) things". Secondary substances are not ἓν ἀριθμῷ because they are said of many things. Primary substances, however, are ἓν ἀριθμῷ because they are not said of many things.

Devereux has taken this passage to provide further support for the view that non-substantial individuals are particulars: "secondary substances are not *this*es because they are not one in number; and as an indication that they are not one in number, Aristotle cites the fact that they are said of, or predicated of, many things" (Devereux 1992: 115). According to Devereux, being predicated of many things is incompatible with being one in number. Since Aristotle clearly characterizes non-substantial individuals as being one in number, it follows that they cannot be predicated of many things. By the definitions of universal and particular in *De Interpretatione* 7, then, non-substantial individuals cannot be universals. They must be particulars.

Several commentators have objected to Devereux's reading on the grounds that in the passage quote above, he substitutes the more general 'predicated of' for Aristotle's more technical 'said of' at 3b19 (Sharma 1997: 312; Erginel 2004: 208). Thus, whereas Aristotle says that a secondary substance is not one in number because it is "said of many things", Devereux would have us read that a secondary substance is not one in number because it is "predicated of many things". This latter phrase is supposed to cover both of Aristotle's predication relations, being SAID OF and being PRESENT IN, in which case something can fail to be one in number in two ways: by being SAID OF many things *or* by being PRESENT IN many things. Being individual and numerically one would therefore imply being a particular, by the lights of the definitions in *De Interpretatione* 7. But if Aristotle did not have this more general notion in mind, and was in fact using 'said of' in the technical sense of being SAID OF many things, then there is only one way something can fail to be one in number: by being SAID OF many things. Being PRESENT IN many things would not preclude being one in number, in which case being individual and numerically one would *not* imply being a particular. For something could be one in number while being PRESENT IN many things, meaning that it would satisfy *De Interpretatione* 7's definition of the universal as that which is predicated of many things.

The crux of the issue turns on whether at 3b18-19 Aristotle meant 'said of' in the technical sense of being SAID OF a subject, or whether Aristotle meant 'said of' in the non-technical sense in which it simply means 'predicated of'. That is, when Aristotle said that the species Man and the genus Animal were λέγεται πολλῶν, was 'λέγεται' being used as it typically is elsewhere in the *Categories*? Or was it being used more broadly in the way Aristotle usually uses the term 'κατηγορεῖσθαι'? Sharma says that the latter construal is possible but

"wholly unparalleled in the *Categories*" (Sharma 1997: 312), but Devereux points out that there seems to be another passage in which Aristotle appears to use 'said of' loosely:

> It is a characteristic of substances (οὐσίαις) and differentiae (διαφοραῖς) that all things called (λέγεσθαι) from them are so called synonymously (συνωνύμως). For all the predicates (κατηγορίαι) from them are predicated either of the individuals (τῶν ἀτόμων) or of the species (τῶν εἰδῶν). (For from (ἀπὸ) a primary substance there is no predicate, since it is said of (λέγεται) no subject; and as for secondary substances, the species is predicated of (κατηγορεῖται) the individual, the genus both of the species and of the individual. Similarly, differentiae too are predicated (κατηγοροῦνται) both of the species and of the individuals) (*Cat*. 5, 3a33-3b1).

Here Aristotle is describing one thing that substances and differentiae have in common: they are predicated synonymously (in Aristotle's technical sense) of their subjects. To establish this, Aristotle must show that whatever each of these is predicated of is an individual or species falling under it. Aristotle argues by cases. First, there is no predicate from a primary substance, so – vacuously – it is predicated synonymously of whatever it is predicated of. Second, the species is predicated of the individuals falling under it. Third, the genus is predicated both of the species falling under it and the individuals falling under those species. Finally, differentia are also predicated, like the genus, of the species falling under it and the individuals falling under that species.

The key issue here is Aristotle's claim that there is no predicate from a primary substance "since it is said of no subject". Devereux says that "it seems clear that 'said of' is here used in the broad sense, covering both 'present in' and 'said of' in the technical sense;

for if not, the possibility is left open that a primary substance is predicable of a subject by being 'present in' it" (Devereux 1998: 348).

But it is doubtful that 'said of' is being used loosely here. At this point, Aristotle is entitled to assume a point he has already made several times, namely, that primary substances are neither SAID OF nor PRESENT IN a subject. The possibility Devereux imagines being left open at 3a33 has already been closed, e.g., at 2a11. Aristotle need not be worried about there being a predicate from a primary substance in virtue of that primary substance being PRESENT IN a subject.

Why then does Aristotle find it necessary to point out that a primary substance is not SAID OF a subject either? That point too has been made several times already, including at 2a11. Parity of reasoning with the above paragraph would suggest that he need not mention primary substances at all.

The difference, I think, is that 3a33 is concerned with synonymous predication. As Aristotle tells us in *Categories* 1, synonymous predication occurs "[w]hen things have the name in common (ὄνομα κοινὸν) and the definition of being (ὁ λόγος τῆς οὐσίας) which corresponds to the name is the same (ὁ αὐτός)" (1a6). Later, 2a19 makes clear that synonymous predication is expressed by the SAID OF relation: "[i]t is clear (φανερὸν) from what has been said that if something is said of (λεγομένων) a subject both its name and its definition are necessarily predicated of (κατηγορεῖσθαι) the subject" (2a19). The fact that 3a33 is concerned with synonymous predication means that for Aristotle to establish his desired conclusion – namely, that when substances and differentiae are predicated of subjects, they are predicated synonymously – he need only discuss the SAID OF relation. The PRESENT IN is properly ignored in this context. That is why Aristotle needs to mention that primary substances are not SAID OF a subject even though he has made this point before, but

does not need to mention the fact that primary substances are not PRESENT IN a subject; the latter relation is irrelevant to synonymous predication. This is also why 'said of' is being used in its technical sense rather than, as Devereux suggests, a loose sense.

I agree with Sharma, then, that nowhere else in the *Categories* does Aristotle use 'said of' loosely to mean simply 'predicated of'.[126] But Devereux might insist that 3b18-19 is a unique case. Aristotle's point, again, is that secondary substances are not ἓν ἀριθμῷ because they are said of many things. Devereux insists that "[i]f the point he is making is not that 'man' and 'animal' are universals, but rather that they are 'said of' a subject, it is irrelevant and misleading to say that they are said of 'many things': it would be clearer to say they are 'said of a subject' or 'said of subjects'" (ibid.: 347). Adding the phrase "many things" suggests that "it is the 'manyness' of the things that 'man' and 'animal' are said of that prevents them from being one in the way that primary substances are" (ibid.). The kind of predication involved is irrelevant.

But it is neither irrelevant nor misleading for Aristotle to say that secondary substances are said of many things. Devereux is right that it is the fact that secondary substances have many subjects that prevents them from being one in the way that primary substances are, but it hardly follows that the type of predication involved is irrelevant, or that 'said of' can simply be replaced with 'predicated of'. Recall how Aristotle uses the word '*hen*'. As we saw earlier, 'ἓν' is typically accompanied by a dative of respect. Thus, in *Topics* I.7, Aristotle distinguishes between being ἓν ἀριθμῷ, being ἓν τῷ εἴδει, and being ἓν τῷ γένει. With this in mind, we can ask exactly what point Aristotle is trying to make at 3b18-19. He is

126 Aristotle does, however, use 'predicated of' in a number of places to mean 'said of'. Both 2a19ff. and 3a33ff. are examples of this tendency. But this fact in no way implies that 'said of' can be used to mean 'predicated of', for in each of these cases, it is clear from context that 'predicated of' means 'said of', because Aristotle has already used 'said of' in its technical sense in the relevant context. Nothing about the context of 3b10-19, however, could possibly suggest that 'said of' is being used loosely to mean 'predicated of'.

claiming that secondary substances, unlike primary substances, are not one. It is clear that he means that secondary substances are not one *in the way* that primary substances are. Secondary substances are not ἓν ἀριθμῷ. But they are one in some other way. A species is ἓν τῷ εἴδει; a genus is ἓν τῷ γένει. The intended contrast between these different ways of being one is captured only by the SAID OF relation. Species and genera are divisible into individuals and sub-species, respectively. So they are neither ἄτομον nor ἓν in the relevant sense. But the *way* in which they are divisible is into entities they are SAID OF, namely, their *parts*. So although it is, as Devereux says, the 'manyness' of their subjects that precludes secondary substances from being ἓν ἀριθμῷ, this does not imply that 'said of' is meant loosely.

If Aristotle's claim at 3b18-19 is that secondary substances fail to be one because they are SAID OF many subjects, then this passage provides no further support for the view that non-substantial individuals are particulars. For if Aristotle is using 'said of' in the technical sense, then there is only one way to fail to be one in number: by being SAID OF many subjects. Thus, an entity can be one in number despite being PRESENT IN many subjects.[127]

It is therefore unlikely that 3b18-19 provides evidence in favor of the view that non-substantial individuals are particulars. Fortunately, we have already seen ample evidence in support of that view: non-substantial individuals are ἓν ἀριθμῷ, and entities that are ἓν ἀριθμῷ are particulars.

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127 And indeed, this seems to be the correct view, for we have already seen that Aristotle is committed to the idea that non-substantial individuals are one in number *and* are PRESENT IN many subjects: for non-substantial individuals are PRESENT IN the species and genera of the primary substances they are PRESENT IN. Although I have argued that the predication involved there is derivative, this view is controversial. Our interpretation of 3b18-19, which allows a non-substantial individual to be one in number despite being PRESENT IN many subjects, thus has the virtue of being independent of that controversial reading of 3a4-6. It is consistent with any reading of 3a4-6, whereas Devereux's interpretation *requires* that the predication involved at 3a4-6 be derivative, on pain of inconsistency. For Devereux holds that non-substantial individuals are particulars, but that being PRESENT IN many subjects implies being a universal.

I conclude that non-substantial individuals are particulars. But our interpretive task is not finished. We began with Ackrill's reading of 1a24-25, which entails that non-substantial individuals are particulars. That interpretation of 1a24-25, however, faces insuperable difficulties. Now that we have seen independent evidence in support of the view that non-substantial individuals are particulars, we must go back and offer an alternative interpretation of 1a24-25 that avoids the aforementioned difficulties.

4.

The most natural way to read 1a24-25 is surely Ackrill's, but that reading is inconsistent with 2a29-2b3. Many commentators have taken this as confirmation for the view that non-substantial individuals must be *universals* rather than particulars, and have set out to offer readings of 1a24-25 that allow for this possibility (Owen 1965; Frede 1987; Erginel 2004). Thus, Owen offers the following reading of 1a24-25 (Owen 1965: 104):

(OWN) *x* is IN a subject *y* if and only if:

(a) *x* is in *y*;

(b) *x* is not a part of *y*; and

(c) there is a *z* such that *x* cannot exist apart from *z*.

The difference between (OWN) and (ACK) is in clause *c*. Whereas (ACK) tells us that *x* cannot exist separately from that which it is in – namely, *y* – (OWN) simply requires that there be *something* from which *x* cannot exist apart. That something need not be that which *x* is in. That is, *z* need not be identical to *y*. If *z* were identical to *y*, (OWN) would be equivalent to (ACK). Thus, Owen reads 1a24-25 in such a way that it is "matched by the familiar phrasing of Aristotle's other complains at Plato's separation of the universal" (ibid.). According to Owen, 1a24-25 simply requires that entities that are PRESENT IN a subject not

be capable of the sort of separate existence enjoyed by Platonic Forms. Entities that are PRESENT IN a subject must be ontologically dependent on something.

Erginel follows Owen here, claiming that at 1a24-25, Aristotle offers "a foretaste of the view he puts forward later in the *Categories*, that all other things – including properties – depend on primary substances for their existence" (Erginel 2004: 192).

Meanwhile, Frede claims that 1a24-25 is not intended to give a definition of PRESENT IN *relation*, but rather a definition "of the class of entities that are in something as their subject" (Frede 1978/1987: 59). What this class of entities has in common, according to Frede, is that "we can specify at least one subject of which it is true that it could not exist without that subject" (ibid.). To be PRESENT IN a subject, an entity must have a *proper subject* without which it could not exist. But this proper subject need not be precisely those things that the entity is PRESENT IN. For example, consider the non-substantial individual *whiteness*. We shall suppose that this is PRESENT IN Socrates. Then it must be the case that there is some subject for *whiteness* from which it cannot be separated, without which it could not exist. Frede suggests *body*: "[f]or color in general, for any particular color, and, hence, for a particular white, the relevant subject is body, that is, body in general or the genus body" (ibid.: 60-61). The color *whiteness* can perfectly well exist without Socrates despite the fact that it is PRESENT IN Socrates. But it cannot exist without body; if body were to fail to exist – if there were no bodies at all – then *whiteness* would not exist. Thus, Frede offers the following reading of 1a24-25 (ibid.: 62):

(FRD) x is IN a subject y if there is a subject z such that:

(a) x is IN z;

(b) x is not a part of z; and

(c) x cannot exist independently of z.

Here again, we could produce equivalence with (ACK) if *z* were identical to *y*. But Frede, like Owen, wants a reading of 1a24-25 that permits non-substantial individuals to be universals. To avoid this result, we must not identify *z* with *y*.

These readings of 1a24-25 allow non-substantial individuals to be universals, but do not *commit* Aristotle to that view. For, again, both could be made equivalent to (ACK) by identifying *z* with *y*. But because they allow non-substantial individuals to be universals, they avoid conflict with 3a4-6 and, more importantly, 2a39-2b3. For neither (OWN) nor (FRD) requires that something PRESENT IN a subject be inseparable from *the very thing that it is PRESENT IN*. So the fact the universal *color* is PRESENT IN Socrates while being capable of existing even if Socrates were to fail to exist in no way violates 1a24-25 on these readings. That is an advantage.

But we should not accept either reading of 1a24-25. Against Owen and Erginel, I would suggest that there is a kind of conflation between something's being PRESENT IN a subject and something's being *ontologically dependent*. Something can be ontologically dependent on another by being SAID OF, rather than PRESENT IN, that something. It seems to me unlikely that 1a24-25 is simply a statement of the fact that entities that are PRESENT IN a subject are ontologically dependent on primary substances. Not only will Aristotle go on to explicitly argue for this point at 2a19-2b3, but the point fails to distinguish those entities that are PRESENT IN a subject from those entities that are SAID OF a subject. That Aristotle found it necessary to specify what he means by being PRESENT IN a subject suggests that he must be trying to tell us something about this relation that *distinguishes* it from the SAID OF relation.

Telling us that entities that are PRESENT IN a subject are, among other things, ontologically dependent on primary substances doesn't do that.[128] (OWN) must be rejected.

As for (FRD), consider the difficult case of differentiae. Frede has told us that that which is PRESENT IN a subject is such that there is a subject it cannot exist separately from, whereas this is not true of that which is SAID OF a subject. Aristotle, however, tells us that differentiae are not PRESENT IN a subject but rather SAID OF a subject: "the differentia also is not in a subject…footed and two-footed are said of man as subject but are not in a subject" (3a21). The problem is that differentia seem to fit Frede's account of what it is to be PRESENT IN a subject, for in the case of a given differentia – say, two-footed – there *is* a specifiable subject that differentia cannot exist separately from: Man. In general, the differentia of a species cannot exist separately from the genus SAID OF that species: "[t]he differentiae of genera which are different and not subordinate one to the other are themselves different in kind" (1b16). This implies that the differentia cannot exist separately from the species either. Thus, differentiae seem to satisfy (FRD) despite Aristotle's clear commitment to the view that differentiae are not PRESENT IN a subject.

Frede is well aware of the difficulty: "differentiae, however, at least differentiae on the schema of the *Categories*, form the exception" (Frede 1978/1987: 61). He claims, however, that Aristotle is able to handle this by clause (b) of (FRD): "Aristotle wishes to rule out precisely this case by requiring, in 1a24-25…that this thing must not be part of its subject" (ibid.). Differentiae, however, are, according to Frede, part of their species (see, e.g., *Met.* Δ.25). Because differentiae are parts of their species, (FRD) does not apply to them

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128 One might object that the other conditions on being PRESENT IN a subject *do* succeed in doing this. But just as what is PRESENT IN a subject is not in that thing as a part, neither is that which is SAID OF a subject in that thing as a part. Nothing about 1a24-25, then, would succeed in distinguishing these relations if all Aristotle had in mind was that entities PRESENT IN a subject are ontologically dependent on primary substances.

after all, despite the fact that for each of them there is a specifiable subject they cannot exist separately from.

Against Frede, Devereux argues that the way in which a differentia is part of its species is irrelevant to 1a24-25 (Devereux 1992: 120). For the differentia is, as Frede says, a *conceptual* part of its species (Frede 1978/1987: 61); it is part of the *essence* of the species that is stated by the *definition* of that species. But, Devereux claims, 1a24-25 is not concerned with such parts. To see this, consider the following passage:

> We need not be disturbed by any fear that we may be forced to say that the parts of a substance (τὰ μέρη τῶν οὐσιῶν), being in a subject (ἓν ὑποκειμένοις) (the whole substance), are not substances. For when we spoke of things *in a subject* we did not mean things belonging (ὑπάρχοντα) in something (ἔν τινι) as *parts* (ὡς μέρη) (3a29-3a32).

This passage comes after an argument to show that no substance is PRESENT IN a subject. Aristotle points out, however, that this is not unique to substances, for differentiae are not PRESENT IN a subject either. Neither substances nor differentiae are PRESENT IN a subject.

But now someone might worry that some substances *are* PRESENT IN a subject, namely, *the parts of substances*. In response, Aristotle reminds the reader that his definition of being PRESENT IN a subject ruled this out: to say that *x* is PRESENT IN *y* requires that *x* not be part of *y*. The parts of a substance, therefore, are not PRESENT IN that substance in the technical sense.

What is important for our purposes the clear implication of 3a29-3a32, which is that *the parts of substances are themselves substances*. Aristotle is responding to an objection at 3a29-3a32. That objection is that on Aristotle's view, the parts of substances will fail to be substances. Aristotle then reminds the reader of the difference between his technical sense

of being PRESENT IN a subject given at 1a24-25 and the ordinary sense in which we may say that the parts of a substance are *in* that substance. This distinction allows Aristotle to avoid what would apparently be an undesirable result, namely, that the parts of substances would fail to be substances because they are PRESENT IN a subject.

The main takeaway from 3a29-3a32, then, is that Aristotle takes the parts of substances themselves to be substances.[129] We also know that differentiae are *not* substances, since at 3a21, Aristotle tells us that not being PRESENT IN a subject is not unique to substances. Differentiae too are not PRESENT IN a subject. The clear implication is that differentiae are not substances.

Thus, we know from 3a21 that differentiae are not substances, and we know from 3a29-3a32 that the parts of substances are themselves substances. Devereux puts these points together: "hence the parts of substance referred to in 3a29-32 cannot include the differentiae of substance" (Devereux 1992: 120). 3a29-3a32 cannot be discussing differentiae because it is discussing the parts of substances as if they were substances, and differentiae are not substances. It follows that 3a29-3a32 is not discussing what Frede calls *conceptual* parts, but is instead concerned with *physical* parts. If we then recall that 3a29-3a32 refers back to 1a24-25, that connection implies that 1a24-25 is concerned with physical rather than conceptual parts, and that it is therefore not designed to exclude differentiae from being PRESENT IN a subject.

Frede insists that because the context surrounding 3a29-3a32 is concerned with genera, species, and differentiae, it must be discussing conceptual parts. To suppose otherwise "would make little sense…either of what comes before or of what follows" (Frede

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[129] Aristotle seems to have abandoned this view in *Metaphysics* Z: "[e]vidently (φανερὸν) even of the things that are thought to be substances, most (πλεῖσταιι) are only potentialities (δυνάμεις) – e.g. the parts of animals (τά τε μόρια τῶν ζῴων)" (*Met.* 1040b5-6). For a helpful discussion of the relationship between the *Categories* and the *Metaphysics* vis-à-vis the substancehood of parts of substances, see Devereux (1992: 123-124).

1978/1987: 62). But from the fact that Aristotle is concerned, both before and after the passage in question, with genera, species, and differentiae, it does not follow that he must be discussing conceptual parts at 3a29-3a32. For the objection addressed in that passage is a natural one: there appears to be a counterexample to Aristotle's claim that no substance is PRESENT IN a subject, and that counterexample must be dealt with. That is the aim of 3a29-3a32 (Devereux 1992: 121, fn. 12).

Admittedly, it is a bit awkward that this passage comes after 3a21-3a28's point about differentiae. As I am interpreting 3a29-3a32, it fits more naturally after 3a7-3a20, where Aristotle presents his argument for the claim that no substance is PRESENT IN a subject. But we can imagine the structure of the argument going as follows. First, Aristotle argues directly for the claim that no substance is PRESENT IN a subject. Then, Aristotle concedes that this is not *distinctive* of substance, since differentiae too are not PRESENT IN a subject. Third, Aristotle responds to an objection to his claim that no substance is PRESENT IN a subject. While the objection might more naturally go before Aristotle's point about differentiae, it is certainly not out of place where it is.

If 3a29-3a32 is intended to defend the view that the parts of a substance can themselves be substances because they do not after all satisfy Aristotle's definition of what it is to be PRESENT IN a subject, then this passage is not concerned with differentiae. For differentiae are not substances. To take the passage to be concerned with differentiae simply on the basis of the surrounding context is to misread the passage itself. I agree with Devereux, then, that 3a29-3a32 lends no support to Frede's view that 1a24-25 rules out differentiae from satisfying Aristotle's definition of what it is to be PRESENT IN a subject (as Frede understands that definition).

But now I want to suggest that this debate over the purpose of 3a29-3a32 may be something of a red herring. Both Devereux and Frede assume that the interpretation of this passage determines how we must interpret 1a24-25 because 3a29-3a32 includes a back reference to 1a24-25. But it is not obvious why 1a24-25 must be restricted by the dialectical purposes of a later passage. Perhaps at 1a24-25, Aristotle simply means to rule out *in general* the worry that the parts of a subject will qualify as being PRESENT IN that subject, regardless of the *kind* of parthood in question. The back reference at 3a29-3a32 makes clear that Aristotle has physical parts in mind at 1a24-25, but it need not imply that this is *all* he has in mind. If so, then (FRD) may be defensible, for then Frede can continue to insist that Aristotle wants to rule out the possibility that differentiae are PRESENT IN a subject by insisting that that which is PRESENT IN a subject not be a part of that subject.

While such a catholic reading of 1a24-25 cannot be ruled out by reference to 3a29-3a32, it remains a strained reading of the text. When Aristotle gives examples of entities that are PRESENT IN a subject to illustrate that relation, each of them is the sort of thing that might have been mistaken for being *part* of the subject they are PRESENT IN. For example, one might suppose that what Aristotle calls the individual knowledge-of-grammar is somehow a *part* of the soul of someone who knows grammar. This supposition may strike us as odd today, but it is of a piece with the early Greek tendency to think of qualities as *ingredients* of things. Aristotle's point at 1a24-25 is to make clear that he is breaking away from that tendency. He is telling his reader that the items that are PRESENT IN a subject are not ingredients of that subject. They are not *parts* of that subject. There is not the same tendency, however, to think of a thing's differentia as part of it. Against this background, it makes most sense to read 1a24-25 as focused on physical rather than conceptual parts. It is

unlikely that 1a24-25 was intended to exclude differentiae from the class of entities that are PRESENT IN a subject.[130]

We have seen that the two most prominent attempts to read 1a24-25 in a way that is friendly to the view that non-substantial individuals are universals must be rejected. The motivation for reading 1a24-25 this way, of course, was the realization that Ackrill's reading of 1a24-25 was inconsistent with 2a39-2b3, as well as the assumption that Ackrill's reading was the only way to secure the result that non-substantial individuals are particulars. In the next section, I will examine a reading of 1a24-25 that, like Ackrill's, is friendly to the view that non-substantial individuals are particulars, but, unlike Ackrill's, is consistent with 2a39-2b3.

5.

Several commentators friendly to the view that non-substantial individuals are particulars have proposed readings of 1a24-25 that differ from Ackrill's in that they are consistent with 2a39-2b3. But I shall focus on what I take to be the most promising of these readings, which is due to Devereux.[131]

The key to Devereux's interpretation is in fact the passage we have been discussing at 3a29-3a32. It is this passage that confirms that Aristotle believes that the parts of substances are themselves substances despite being *in* other substances. They are not, again, PRESENT IN those substances in the technical sense defined at 1a24-25. But they are in substances despite themselves being substances.

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130 For further, more philological, criticisms of Frede, see Devereux (1992: 122).

131 Michael Wedin is the other prominent defender of the view that non-substantial individuals are particulars who has attempted to read 1a24-25 in a way consistent with 2b3. See Wedin 1993 and 2000. For what I take to be decisive criticism of Wedin's reading, see Keith McPartland 2013.

With this in mind, let us look back at 1a24-25: "By in a subject I mean what is in something, not as a part, and cannot exist separately from what it is in" (1a24-25). Comparing this with 3a29-3a32, Devereux writes:

> Something *in* a subject in the technical sense is not in it in the way that a thing's parts are in it. The parts of a whole substance, which are said to be 'in' it, can exist apart from the whole. This does not mean that once they are separated they will exist in some *other* whole; they can exist independently, on their own, apart from the substance they are 'in'. It is not in *this* way that things are *in* a subject in the technical sense: things *in* a subject are not *separable* in the way that parts are – they are incapable of existing on their own, apart from what they are in (Devereux 1992: 124).

Devereux's proposal is that we understand 1a24-25 in light of 3a29-3a32. When Aristotle says in 1a24-25 that what is PRESENT IN a subject is not a part of that subject, Devereux suggests that Aristotle means that what is PRESENT IN a subject is not in that subject *in the same way* that a part is said to be in a subject. Thus, to understand the way in which something is PRESENT IN a subject we must understand the way in which a part is in a substance. Whatever else may be the case, a part is in a substance in this way: although it is in that substance, it could be removed from that substance and nevertheless exist. A part of a substance is in that substance, but can exist separately from that substance. That is the way in which it is in that substance: it is in that substance *in a separable way*.

To say that something PRESENT IN a subject is not a part of that subject is to say that what is PRESENT IN a subject is not in that subject in the way that parts of a substance are in that substance. Parts of a substance are in that substance in a separable way. What is PRESENT IN a subject, then, is in that subject in an *inseparable* way. Thus, Devereux suggests

that "the two parts of the explanation – (i) that what is *in* a subject is not 'in' in the way a part is, and (ii) that it cannot exist apart from what it is in – do not specify two distinct conditions for a thing being *in*-a-subject; rather, the second part is simply a gloss on the first" (ibid.). We might therefore represent Devereux's reading of 1a24-25 as follows:

(DEV) *x* is IN a subject *y* if and only if:

(a) *x* is IN *y*; and

(b) *x* is not IN *y* as a *part* would be in *y*: *x* is not separable from *y*.

In effect, (DEV) collapses conditions (b) and (c) from (ACK) into a single condition. To say that *x* is not a part of what it is PRESENT IN is just to say that *x* is not separable from what it is PRESENT IN.

Assessing (DEV) is trickier than it looks. To assess it properly, we must understand what is meant by the claim that *x* is not separable from *y*.

Consider Devereux's claim that (DEV) is compatible with 2a29-2b3. He says that "[t]he explanation as we have interpreted it does not imply that if whiteness is *in* Socrates it cannot also be *in* Plato; it only implies that this whiteness cannot exist on its own, apart from what it is in" (ibid.: 125). Thus, despite the fact that (DEV) seems to be arrived at by collapsing conditions (b) and (c) from (ACK), Devereux claims that (DEV) is not equivalent to (ACK). According to Devereux, nothing about (DEV) implies that if *x* is PRESENT IN *y*, then *x* must be a particular found in no other subject. Thus, on Devereux's view, to say that *x* is inseparable from *y* means nothing other than that *x* cannot exist on its own: "[i]t follows from Socrates' particular whiteness being *in* him that it cannot exist on its own, separated from him" (ibid.: 126). A non-substantial individual cannot exist on its own in the way that a part of a substance can exist on its own.

If this is the way to understand the relevant notion of inseparability, then I think that Devereux's view faces the same problem faced by Owen and Erginel.[132] Earlier I objected to (OWN) by saying that it does no more than suggest that those entities that are PRESENT IN a subject are ontologically dependent on that subject, and that this point will not only be made clear later (at 2a34ff.), but also fails to distinguish the PRESENT IN relation from the SAID OF relation. Devereux faces exactly the same problem: if *x*'s being inseparable from *y* means nothing more than that *x* cannot exist on its own, then the inseparability condition at 1a24-25 does nothing more than state that entities PRESENT IN a subject are ontologically dependent, and that point will be made more carefully at 2a34 and fails to distinguish the PRESENT IN relation from the SAID OF relation. Our reasons for rejecting (OWN) should lead us to reject (DEV) as well.

Devereux is aware of part of this objection, namely, that his reading of 1a24-25 will not successfully distinguish the PRESENT IN from the SAID OF relation. He claims that this objection "is based on a questionable assumption, viz., that the aim of the explanation is to differentiate between being *in* a subject and being *said of* a subject – in effect, to provide a *definition* of the relation 'being *in* a subject'" (ibid.: 125). He claims that this assumption is questionable because Aristotle successfully distinguishes between these relations later in *Categories* 5. But this response generates a dilemma. The fact that Aristotle successfully distinguishes the PRESENT IN and SAID OF relations later in *Categories* 5 either implies that 1a24-25 does not need to distinguish these relations or it does not imply that 1a24-25 does

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132 Devereux is certainly aware of the similarities between his view and Owen's: "My account of what is meant by the 'inseparability condition' is clearly similar to Owen's" (Devereux 1992: 126; fn. 20). The chief difference between Devereux and Owen, according to Devereux, is linguistic rather than philosophical, as it concerns the referent of the phrase 'what it is in' in 1a24-25. On Devereux's view, this phrase refers to the same entity referred to earlier by 'something'. When Aristotle says if an entity is in something it cannot exist separately from what it is in, 'what it is in' and 'something' refer to the same entity according to Devereux, whereas for Owen these phrases do not refer to the same entity. But Devereux claims that Owen's is "a very unnatural way of taking the Greek" (ibid.). This linguistic difference will not have an impact on my criticism of Devereux.

not need to distinguish these relations. Obviously, on the second horn, Devereux's response is a non-starter. But the first horn is more interesting, for if Devereux is right that Aristotle's drawing the distinction later makes it the case that 1a24-25 need not distinguish these relations, then Devereux is susceptible to my initial objection to (OWN): all that 1a24-25 is doing is stating that entities PRESENT IN a subject are ontologically dependent on other entities, which is a point Aristotle will argue for later at 2a34ff. So even if Devereux is right that 1a24-25 need not distinguish the PRESENT IN and SAID OF relations because Aristotle does so later, it follows that 1a24-25 *cannot* simply state the ontological dependence of entities that are PRESENT IN a subject, since this too is established later.

The subtlety of Devereux's view is that his reading of 1a24-25 implies only that non-substantial individuals cannot exist on their own. Other evidence that shows that such items must be particulars. Thus, Devereux sums up his view as follows:

> It follows from Socrates' particular whiteness being *in* him that it cannot exist on its own, separated from him; it follows from its being a non-substantial particular that it cannot exist apart from him – e.g., in some other individual (ibid.: 126).

On Devereux's view, it is a consequence of non-substantial individuals being PRESENT IN subjects that they cannot exist on their own, whereas it is a consequence of the fact that non-substantial individuals are ἓν ἀριθμῷ that they are particulars incapable of inhering in multiple primary substances. My objection has been to the first of these claims. Devereux's view, like Owen's and Erginel's, is too weak. Aristotle's statement of what it is to be PRESENT IN a subject must say more than that entities PRESENT IN a subject are ontologically dependent.

We find ourselves trapped between the Scylla of too weak a reading and the Charybdis of too strong a reading of 1a24-25. The reading offered by Devereux, Owen, and Erginel is too weak, treating inseparability as no more than ontological dependence, while the reading offered by Ackrill is too strong, taking inseparability to imply particularity.

Unfortunately, I know of no intermediate reading of this crucial passage. Forced, therefore, to choose between these two readings, I choose Ackrill's. This for two reasons. First, given the independent evidence we have in support of the view that non-substantial individuals are particulars, I prefer to read 1a24-25 as implying this same conclusion. Some might object that it would be preferable to have a reading of 1a24-25 that is consistent with either view about the nature of non-substantial individuals, on the grounds that Aristotle should not *define* the PRESENT IN relation in such a way that non-substantial individuals must be particulars. Aristotle should not simply declare by fiat that non-substantial individuals are particulars rather than universals, so 1a24-25 should not straightforwardly imply this conclusion. But this argument is not persuasive precisely *because* there is independent evidence in support of that conclusion. Aristotle is therefore entitled to define the PRESENT IN relation as he pleases.

Second, the inconsistency between (ACK) and 2a39-2b3 is subtle. It depends, as we saw, on complicated and controversial issues about the nature of universals. Focusing on the idea that universals can undergo changes in their instances, we are led to believe that 2a39-2b3 is obviously incompatible with (ACK). Focusing instead on the idea that universals are wholes or collections, it is natural to think that a universal cannot undergo such changes, since a change in what is collected constitutes a change in the collection. That would render 2a39-2b3 compatible with (ACK). There is no simple and obvious confusion here, but rather competing commitments about universals. That means that even if there is ultimately an

inconsistency between (ACK) and 2a39-2b3 – and I believe that there is – it does not follow that Aristotle is simply confused or careless. He is instead grappling with difficult metaphysical issues.

6.

The conclusion of this chapter is admittedly disappointing. For I have concluded that Aristotle's position in the *Categories* concerning non-substantial individuals is ultimately inconsistent. The most plausible reading of 1a24-25 is inconsistent with what Aristotle has to say at 2a39-2b3. But we have seen that 1a24-25 is *not*, as many commentators believe, inconsistent with 3a4-6. And we have seen that the inconsistency in Aristotle's view is not a simple confusion, but the unsurprising result of grappling with some of the most difficult issues in metaphysics.

Our discussion has also raised the issue of ontological dependence a number of times. It is no longer possible to put off a sustained discussion of that issue, as its importance has emerged not only in this chapter, but throughout this dissertation. Therefore, in the final chapter, I shall examine what Aristotle has to say about the ontological priority of primary substances.

CHAPTER FIVE

Throughout this dissertation, I have claimed that Aristotle takes primary substances to be *ontologically prior* to all other entities. Put another way, I have claimed that Aristotle takes all other entities to be *ontologically dependent* on primary substances. These claims have been intended to capture Aristotle's claim in *Categories* 5 that "if the primary substances did not exist it would be impossible (ἀδύνατον) for any of the other things to exist (εἶναι)" (2b5-6). I want to stipulate, then, what I mean by 'ontological priority' and 'ontological dependence' by reference to 2b5-6. To say that primary substances are ontologically prior to all other entities, or that all other entities are ontologically dependent on primary substances, *just is* to say what Aristotle says in 2b5-6: if primary substances did not exist, it would be impossible for any of these other entities to exist. This is just what it *means* to say that primary substances are ontologically prior to all other entities, or that all other entities are ontologically dependent on primary substances.

To understand Aristotle here we must understand what ontological priority is. Recent work in metaphysics distinguishes two ways of understanding ontological priority. According to the first, ontological priority is a matter of *asymmetric existential independence*. Define existential dependence as follows:

> (1) *x* depends for its existence upon *y* $=_{df}$ Necessarily, *x* exist only if *y* exists (Lowe 1999: 137; Fine 1995: 270).[133]

This definition of existential dependence allows us to say that an entity *x* is ontologically dependent on another entity *y* if and only if *x* depends for its existence on *y*. If *y* does not likewise depend for its existence on *x*, then *y* is not ontologically dependent on *x*.

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[133] For other accounts of ontological priority as existential dependence, see, e.g., Peter Simons (1998: 236) and Joshua Hoffman and Gary Rosenkrantz (2007: 35). Hoffman and Rosenkrantz claim that this notion of ontological dependence "seems to be pertinent to Aristotle's analysis of primary substance" (ibid.). See also their (1997). Neither Lowe nor Fine accept the existential independence account of ontological priority.

Ontological priority is an asymmetric relation, specifically, on this view, a relation of asymmetric existential independence. In this case, then, we can say that *y* is ontologically prior to *x*, because it is existentially independent of *x*, but *x* is not existentially independent of *y*. Primary substances, on this view, are ontologically prior to all other entities because all other entities are existentially dependent on them, but primary substances are not existentially dependent on any other entities.

Many metaphysicians prefer a different account of ontological priority however. This second way of understanding ontological priority is defended by Kit Fine, who holds that "[t]he notion of one object depending upon another is…the real counterpart to the nominal notion of one term being definable in terms of another" (Fine 1995: 275). E.J. Lowe's preferred account of ontological priority is in terms of what he calls "*identity-dependence*", which he defines as follows:

> (2) *x* depends for its existence upon *y* $=_{df}$ Necessarily, the identity of *x* depends on the identity of *y* (Lowe 1999: 149).[134]

Following Fine, let us say that identity dependence is the worldly correlate of *definitional* dependence, which we may define as follows:

> (3) *x* is definitionally dependent on *y* $=_{df}$ Necessarily, *x* can be defined only by reference to *y*.

For example, a triangle is definitionally dependent on the number three. One cannot define a triangle without making reference to the number three, for presumably the definition of a triangle is something like this: a triangle is a plane figure having three sides whose angles sum

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[134] Although the *definiendum* of (2) is stated in terms of existential dependence, Lowe's account is intended to be an account of ontological priority. Thus, he appears to take *x*'s depending for its existence on *y* as the neutral datum standing in need of explanation, and treats (1) and (2) as competing ways of understanding how *x* might depend for its existence on *y*. I prefer to say that the neutral datum standing in need of explanation is the claim that *x* is ontologically dependent on *y*, and then regard (1) and (2) as competing ways of cashing this out, the first in terms of *existential* independence, the second in terms of *identity* independence. But these differences in approach are relatively minor, and should not affect what follows.

to 180 degrees. One can, of course, define the number three without making reference to any triangles. Thus, the number three is definitionally independent of triangle, but not vice versa. Ontological priority, again, is an asymmetric relation. Specifically, on this view, it is a relation of asymmetric identity independence. In this case, then, we can say that the number three is ontologically prior to triangle, because its identity doesn't depend on the identity of a triangle, but the identity of a triangle depends on the identity of the number three. Primary substances, then, are ontologically prior to all other entities because all other entities depend for their identity on primary substances, but not vice versa.[135]

Two accounts of ontological priority are available to us, one in terms of asymmetric existential independence, the other in terms of asymmetric identity or definitional independence. Which of these might Aristotle have in mind at 2b5-6? Both accounts of ontological priority have had their defenders.[136] This is not surprising, for the translation of 2b5-6 must be controversial due to the presence of the Greek verb 'εἶναι'. In Greek, Aristotle's claim is: "ὥστε μὴ οὐσῶν τῶν πρώτων οὐσιῶν ἀδύνατον τῶν ἄλλων τι εἶναι". Ackrill's translation is standard, rendering 'εἶναι' as 'to exist'. But Michail Peramatzis claims that 'εἶναι' "may be taken either existentially or as meaning 'to be what something is'" (Peramatzis 2011: 204). He writes:

> In the first instance, 'to be' (*einai*) is open between its existential and its *predicative* uses. In its predicative use 'to be' signifies 'being thus-and-so' but not straightforwardly 'being what something (essentially) is'. However, the

135 For the remainder of this chapter, I will move back and forth between speaking of an entity being dependent *for its identity* on another entity, and an entity being *definitionally dependent* on another entity. Given that identity-dependence is simply supposed to pick out the worldly relation expressed by definitional dependence, I take this to be nothing more than a matter of moving back and forth between the formal and material mode.

136 In fact, very few defend the view that Aristotle took ontological priority to be a matter of existential independence, although nearly every commentator takes this as a natural foil against which to defend their own interpretation of ontological priority. As we shall see, however, Michael Wedin (2000: 82) defends ontological priority as existential independence. The alternative account in terms of identity or definitional independence has been defended most recently by Michail Peramatzis (2011) and Phil Corkum (2008).

> merely predicative use would yield philosophically uninteresting results if applied to the notion of ontological priority (ibid.: 205).

Thus, 2b5-6 might be translated as Ackrill translates it: "if the primary substances did not exist it would be impossible for any of the other things to exist". Or, following Peramatzis, 2b5-6 might be translated as follows: "if the primary substances were not, it would be impossible for any of the other things to be". This alternative translation is not to be read existentially. To say that it would be impossible for any of the other things to be is to say that if primary substances were not *what they are*, nothing else *could be what it is*. This account of ontological priority is "something distinct from or more liberal than existential priority" (ibid.). It holds that if primary substances were not the kinds of things they are, then nothing else could be the kind of thing it is. To put the point in Lowe's terms, the claim is that the *identities* of other things depend on the identity of primary substances.[137]

Thus, both contemporary accounts of ontological priority have some basis in Aristotle. The goal of this chapter, then, is to examine what Aristotle means when he tells us that primary substances are ontologically prior to all other entities. I will examine both of the accounts of ontological priority mentioned already and suggest some criticisms. Then I will present a novel that I take to avoid these criticisms and provide the best way to understand Aristotle's claim at 2b5-6.[138]

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137 Compare Charles Kahn's claim that "the most fundamental value of *einai* when used alone (without predicates) is not 'to exist' but 'to be so', 'to be the case', or 'to be true'" (Kahn 1966/2009: 23). Rather than distinguishing between existential and predicative uses of '*einai*', we must recognize that '*einai*' reflects a more general concern with *what is the case* in reality: "both the existential and predicative uses of the verb are special cases of the generalized use for truth and falsity, for affirmation and denial" (ibid.: 24). In a later paper, Kahn claims that "every absolute or existential use of *einai* can be seen as an abridged form of some predication", and insists that "X *is* is short for *X is Y*for some *Y*" (Kahn 2004/2009: 112).

138 Thus, I do not share Michael Loux's pessimism when he writes that "given the essentialism at work [in the *Categories*], it is difficult to see how that case [e.g. the case for the ontological priority of primary substances] could ever be made out" (Loux 1991: 48). Loux's pessimism is grounded in his belief that "[t]he required asymmetry just does not obtain" (ibid.). I will argue that we can indeed find the requisite asymmetry.

1.

There are several passages in Aristotle's corpus in which he seems to claim that ontological priority is a kind of existential independence. In *Metaphysics* Δ.11, for example, Aristotle tells us that

> Some things then are called prior (πρότερα) and posterior (ὕστερα) in this sense, others in respect of nature (κατὰ φύσιν) and substance (οὐσίαν), i.e. those which can be (ἐνδέχεται εἶναι) without (ἄνευ) other things, while the others cannot be without *them* – a distinction which Plato used (1019a1-5).

Shortly thereafter, Aristotle says that "[i]n a sense…all things (τινα πάντα) that are called prior and posterior are so called according to this fourth sense" (1019a10). The idea is simple: *x* is prior in nature and substance to *y* just in case *x* can be without *y*, whereas *y* cannot be without *x*.[139] This notion of priority, Aristotle suggests, is the fundamental notion. And his reference to Plato suggests that it ought to be understood as a statement of *existential* independence, for presumably Aristotle has in mind the way in which Plato takes Forms to be prior in nature and substance to the sensibles that participate in them. Plato, in turn, had in mind that Forms can exist even if no sensibles were to exist, but not vice versa (Fine

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[139] Lowe (1999) rejects an account of existential dependence that seems similar to the one we find in Δ.11. That account looks like this:

> (1*) *x* depends for its existence upon *y* $=_{df}$ (i) necessarily, *x* exists only if *y* exists and (ii) it is not the case that, necessarily, *y* exists only if *x* exists (Lowe 1999: 146).

Lowe rejects this account because it "will prevent us from saying that *either* Socrates *or* his life is existentially dependent on the other, since in neither case is clause (ii) of the proposed definition satisfied" (ibid.: 147). Intuitively, we want to say (at least) that Socrates's life is existentially dependent on Socrates, but we cannot because clause (ii) is not satisfied: it is also true to say that Socrates is existentially dependent on his life. So accounts of existential dependence that build the asymmetry of that dependence into their definitions seem to preclude the possibility of *mutual* existential dependence, or what Aristotle calls in the *Categories* "reciprocation with respect to implication of existence" (τῶν ἀντιστρεφόντων κατὰ τὴν τοῦ εἶναι) (14b11-12). This is why my formulations of existential and identity dependence in (1) and (2) respectively did not add a clause building asymmetry into them. This is not to say that ontological priority is not an asymmetric relation. It is simply to say that it should be defined in terms of a relation that *can* be symmetric. This is why I claimed, with regard to (1), that it generates the result that *x* is ontologically prior to *y* just in case *y* existentially depends on *x* but not vice versa. Existential dependence might be symmetric, so ontological priority requires that the symmetry fail to hold in a particular case, not as a matter of definition.

1984/2003: 254). Thus, Aristotle's claim in Δ.11 is the claim that *x* is prior in nature to *y* just in case *y* depends for its existence on *x* but not vice versa.

Ontological priority also seems to be understood as a matter of existential independence in Aristotle's discussion of priority in nature in *Categories* 12:

> one is prior (πρότερον) to two because if there are two it follows at once (ἀκολουθεῖ εὐθὺς) that there is one (τὸ ἓν εἶναι) whereas if there is one there are not necessarily two, so that the implication (ἡ ἀκολούθησις) of the other's existence does not hold reciprocally (οὐκ ἀντιστρέφει) from one; and that from which the implication of existence does not hold reciprocally is thought to be prior (14a30-35).

The claim here is that *x* is prior in nature to *y* just in case *x* and *y* do not reciprocate with respect to implication of existence. Surrounding context makes clear that we ought to interpret this existentially. In *Categories* 13, for example, Aristotle's discussion of simultaneity by nature clearly must be understood as the claim that two things are simultaneous by nature just in case they are *mutually existentially dependent*. More generally, the distinctly Platonic flavor of this chapter – consider, for instance, Aristotle's claim that "[g]enera (τὰ γένη)…are always (ἀεὶ) prior (πρότερα) to species" (15a4-5) – suggests again that priority in nature be understood as Plato understood it: one thing is prior in nature to the other just in case the first can exist without the second but not vice versa.[140]

These passages make plausible the view that Aristotle takes ontological priority to be a matter of existential independence. Primary substances are ontologically prior to other entities, on this view, because those entities depend for their existence on primary substances, but primary substances do not depend for their existence on those other entities.

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[140] I shall have more to say later about the Platonic flavor of this chapter.

Most commentators, however, believe that this view cannot be right. According to these commentators, the relation of existential dependence between primary substances and everything else in the *Categories* ontology is mutual (Loux 1991: 48; Corkum 2008: 72-76; Peramatzis 2011: 240). If that is right, then ontological priority cannot be a matter of existential independence, because primary substances are *not* existentially independent of everything else in that ontology.

To see why most commentators take the relation of existential dependence to be mutual, we should examine the argument Aristotle gives for his claim at 2b5-6 that if the primary substances did not exist, nothing else could exist either:

> All the other things (τὰ δ᾽ἄλλα πάντα) are either (ἤτοι) said of (λέγεται) the primary substances as subjects or in them (ἐν ὑποκειμέναις) as subjects. This is clear (φανερὸν) from an examination of cases. For example, animal is predicated (κατηγορεῖται) of man and therefore (οὐκοῦν) also of the individual man (κατὰ τοῦ τινὸς ἀνθρώπου); for were it predicated of none of the individual men it would not be predicated of man at all (ὅλως). Again (πάλιν), colour is in body and therefore also in an individual body (ἐν τινὶ σώματι); for were it not in some individual body it would not be in body at all. Thus all the other things are either said of the primary substances as subjects or in them as subjects. So if the primary substances did not exist (μὴ οὐσῶν οὖν τῶν πρώτων οὐσιῶν) it would be impossible (ἀδύνατον) for any of the other things to exist (εἶναι) (2a34-2b6).

Aristotle's argument has two parts. First, he argues by cases that everything in the *Categories* ontology is either SAID OF or PRESENT IN primary substances. Then, he infers that nothing in that ontology could exist without primary substances; being predicated implies being

existentially dependent. If we are to understand why most commentators take the existential dependence between primary substances and everything else to be mutual, therefore, we must examine all of the cases presented in the first part of Aristotle's argument, and then examine more carefully the inference involved in the second part.

In the quoted passage, Aristotle gives two examples: the genus Animal and the non-substantial universal *color*. Clearly, then, Aristotle takes primary substances to be ontologically prior to secondary substances and non-substantial universals. But it should be equally clear that he would take them to be prior to non-substantial individuals as well, since his example of the non-substantial universal *color* is meant to illustrate that primary substances are ontologically prior to anything that is PRESENT IN them. Non-substantial individuals are precisely those items that are PRESENT IN (but not SAID OF) primary substances. This passage, then, makes clear that Aristotle takes primary substances to be prior to non-substantial entities whether individual or universal as well as secondary substances. We must therefore examine three cases: (a) the priority of primary substances over non-substantial individuals; (b) the priority of primary substances over non-substantial universals; and (c) the priority of primary substances over secondary substances.

Let us consider the priority of primary substances to non-substantial individuals. Consider a given primary substance, such as Socrates, and a certain non-substantial individual, such as the individual whiteness that is PRESENT IN him. Is Socrates ontologically prior to this individual whiteness? To answer this question, we must answer two different questions. First, is Socrates existentially dependent upon this individual whiteness? Second, is this individual whiteness existentially dependent on Socrates? If the answers to these questions are *no* and *yes*, respectively, then Socrates is ontologically prior to this individual whiteness.

The answer to the first question is indeed *no*. Socrates is not existentially dependent upon this individual whiteness because Socrates could have been some other color. Socrates could have existed even if this individual whiteness did not, so long as Socrates were some other color.

The answer to the second question is more complicated. It depends on whether we think the individual whiteness that is PRESENT IN Socrates is a *particular* or a *maximally determinate universal*. If, as I argued in Chapter Four it is a particular, then the answer to this second question is *yes*: the individual whiteness that is PRESENT IN Socrates *is* existentially dependent on him because it cannot be separated from – it cannot exist without – Socrates. But if I was wrong in Chapter Four, and the individual whiteness that is PRESENT IN Socrates is a maximally determinate universal, then the answer to this second question is *no*: the individual whiteness that is PRESENT IN Socrates is *not* existentially dependent on him. Being a universal, that very same individual whiteness could exist even if Socrates did not, so long as some other primary substance – such as Callias – existed and it was PRESENT IN Callias.

What we find in this first case, then, is that primary substances are ontologically prior to non-substantial individuals *only if* non-substantial individuals are particulars.[141] If non-substantial individuals are maximally determinate universals, however, then there is no existential dependence in either direction, and primary substances fail to be ontologically prior to non-substantial individuals.

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141 Michail Peramatzis makes a similar observation: "There is a simple way, however, in which one could attempt to render a particular substance ontologically prior to its non-substance attributes…[O]ne could invoke non-substance, particularized properties or tropes, understood as non-recurrent individual attributes" (Peramatzis 2011: 236). But Peramatzis goes on to object that "the concept of tropes whose existence conditions or identity are fixed on the basis of a specific particular substance seems to beg the question" because "it does not offer any substantive grounds for the thesis that a concrete particular substance is ontologically prior to its non-substance tropes" (ibid.: 237). Peramatzis's objection seems to misfire, for the substantive ground on which a concrete particular substance is ontologically prior to its non-substance tropes is precisely the fact that the latter have their existence and identity conditions fixed by the primary substance to which they belong but not vice versa. That is just a fact about the kinds of things that non-substance tropes *are*. Compare Wedin (2000: 82).

Let us turn to our second case, namely, the ontological priority of primary substances to non-substantial universals (i.e. those entities that are SAID OF non-substantial individuals and are PRESENT IN primary substances). Consider a given primary substance, such as Socrates, and a given non-substantial universal, such as *color*. Is Socrates ontologically prior to this universal? To answer this question, we must again answer two different questions. First, is Socrates existentially dependent on this universal? Second, is this universal existentially dependent on Socrates? If the answers to these questions are *no* and *yes* respectively, then Socrates is ontologically prior to this non-substantial universal.

The answer to the first question, however, seems to be *yes*. Socrates is existentially dependent on the non-substantial universal *color*, for although there is no color that Socrates must have (which is why Socrates is not existentially dependent on any non-substantial individual), Socrates must have *some* color or other. There must be some color that is PRESENT IN Socrates.

Conversely, the answer to the second question seems to be *no*. The non-substantial universal *color* is not existentially dependent on Socrates. For presumably the very same universal could exist even if Socrates did not, so long as there were some other primary substance, such as Callias, it could be PRESENT IN.

What we find in this second case, then, is worse than what we found in the first case. For here we find that if ontological priority is understood in terms of existential independence, the priority relations we want are *inverted*. Aristotle says that primary substances are ontologically prior to non-substantial universals, but if ontological priority is a matter of existential independence, it is non-substantial universals that are ontologically prior to primary substances.

Turn now to our third case, that of the ontological priority of primary substances over secondary substances. Consider a given primary substance, such as Socrates, and a given secondary substance, such as the species Man. Is Socrates ontologically prior to the species Man? To answer this question we must once again answer two different questions. First, is Socrates existentially dependent on Man? Second, is Man existentially dependent on Socrates? If the answers to these questions are *no* and *yes* respectively, then Socrates is ontologically prior to Man.

But the answer to the first question is *yes*. Socrates *is* existentially dependent on the species Man, for Socrates is *essentially* a man – a man is *what Socrates is* – and so Socrates cannot exist without being a man. If Socrates cannot exist without being a man, then he cannot exist without the species Man, for his being a man consists, in some way, in having the species Man SAID OF him.[142]

The answer to the second question appears to be *no*. The species Man is not existentially dependent on Socrates. Although the species Man could not exist without *some* individual human being existing, it does not require Socrates to exist. So long as there were other individual humans for the species to be SAID OF, the species could exist without Socrates.

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142 We must make this point carefully, for it involves difficult metaphysical questions about how to understand the SAID OF relation. Although I have argued in Chapters One and Two of this dissertation that this relation expresses a kind of parthood relation, that is not the only metaphysical issue raised by this relation. In particular, it does not address how exactly this relation is to be contrasted with the PRESENT IN relation. In *Categories* 8, Aristotle makes clear that that the proposition "Honey is sweet" is true *because* the quality sweetness is IN honey. There is a kind of metaphysical relation here that underwrites the linguistic predication. Honey's being sweet is a *relational fact*. But nowhere does Aristotle make a similar claim about the SAID OF relation, such that Socrates is a man *because* the species Man is SAID OF him. This raises the question of whether Socrates's being a man obtains in virtue of what D.M. Armstrong calls a *non-relational tie*, and so, in turn, raises the question of whether Socrates – and other primary substances – are what might be called *relational entities*. For helpful discussion of this issue, see Armstrong (1978: Chs. 10-11), Fine (1983/2003), and Matthews and Cohen (1968). Whatever we say about this issue, however, it is clear that if Socrates cannot exist without being a man, the species Man must exist. Otherwise, it is difficult to see how Socrates could be a man.

Just as in the first two cases, we find that if ontological priority is a matter of existential independence, then primary substances are not ontologically prior to secondary substances. For primary substances are existentially dependent on secondary substances, while secondary substances are not existentially dependent on primary substances. Once again, the priority relations we expected to find have been inverted.

We have examined three cases, the priority of primary substances to non-substantial individuals, to non-substantial universals, and to secondary substances. In the first case, the relation of existential dependence is the right one: non-substantial individuals, if they are particulars, depend for their existence on primary substances but not vice versa. But in the latter two cases, the relation of existential dependence is inverted: non-substantial universals and secondary substances do not depend for their existence on any particular primary substance, but primary substances do depend for their existence on non-substantial universals and secondary substances. Existential independence, therefore, seems ill-equipped to serve as an account of ontological priority in the *Categories*, for in just one case does it deliver the desired direction of ontological priority.

Defenders of existential independence as an account of ontological priority may object at this point. The argument developed so far has relied on examples of dependence between *particular* primary substances and *particular* entities of other kinds. That is, the examples adduced focus on *single instances* of primary substances, non-substantial individuals, non-substantial universals, and secondary substances. But defenders of existential independence will point out that there is a weaker, more generic, relation of existential dependence that may be defined as follows:

> (4) x depends for its existence upon objects of type T $=_{df}$ Necessarily, x exists only if something y exists such that y is of type T (Lowe 1999: 141).[143]

The idea here is that instead of focusing on cases of dependence between two entities, we focus instead on the dependence that might obtain between one entity and an entire *class* or *type* of entity. It is possible to read 2a34-2b6 as relying on this kind of thought, for Aristotle says that "were [animal] predicated of none of the individual men it would not be predicated of man at all". We might imagine that here Aristotle is saying that the genus Animal is existentially dependent not on some particular man, but on the *class* of men taken as a *type* of entity. If *none* of the individual men were there for the genus to be SAID OF, then the genus could not be predicated of the species Man either.

But this more generic way of thinking about existential independence fares no better in accounting for the ontological priority of primary substances. To see this, let us briefly examine our three cases again. First, primary substances turn out not to be ontologically prior to non-substantial individuals. For a given primary substance *does* depend for its existence on non-substantial individuals as a class. Although it is not existentially dependent on any *given* non-substantial individual, a primary substance could not exist unless *some* non-substantial individual or other were PRESENT IN it. Indeed, this appears to follow from the fact that primary substances are existentially dependent on non-substantial universals like

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143 Although Lowe does not do so, we might define an even more generic notion of existential dependence. Kit Fine observes that just as "we may talk of singleton Socrates depending upon Socrates", so too "we may say that a set depends upon its members" (Fine 1995: 287). Some claims of the latter sort can be analyzed in the following way: "to say that a set depends upon its members is to say that, for each set x and member y, x depends upon y" (ibid.). But not all such claims can be so analyzed. Thus, as we will see, primary substances – as a class of entities – depend upon non-substantial individuals – as a class of entities. But this cannot be analyzed by saying that, for each primary substance *S* and non-substantial individual *I*, *S* existentially depends on *I*. Thus, we might prefer to define a very generic notion of existential dependence as follows:

> (4*) Objects of type T depend for their existence on objects of type U $=_{df}$ Necessarily, there exists an x such that x is of type T only if there exists a y such that y is of type U.

It will turn out that primary substances exhibit the kind of existential dependence defined in (4*) on all other entities in the *Categories* ontology just as much as those entities exhibit that same kind of dependence on primary substances. Thus, here we find symmetry where asymmetry is required.

color. If a primary substance cannot exist without non-substantial universals, then it cannot exist without the non-substantial individuals that those universals are SAID OF. Each non-substantial individual is existentially dependent on a given primary substance, and so, *a fortiori*, on primary substances as a class. Each primary substance is, I have argued, existentially dependent on non-substantial individuals as a class. If existential dependence is defined by (4), then the existential dependence between primary substances and non-substantial individuals is mutual. Primary substances do not enjoy the ontological priority ascribed to them in 2b5-6.

Much the same argument can be given in our second case, that of the priority of primary substances over non-substantial universals. Each non-substantial universal depends for its existence, not on some particular primary substance, but primary substances as a class. That is clear from Aristotle's argument for 2b5-6. Each primary substance, however, depends for its existence on non-substantial universals as a class. Socrates could not exist without being some color or other, although there is no color Socrates must be. Thus, if existential dependence is defined by (4), we once again find that the relation between primary substances and non-substantial universals is mutual.

The very same argument applies in our third and final case, that of the priority of primary substances over secondary substances. Each primary substance existentially depends on a particular secondary substance for its existence. *A fortiori*, each primary substance depends for its existence on secondary substances as a class. But the relation is mutual, for each secondary substance, although it does not depend for its existence on any particular primary substance, depends for its existence on primary substances as a class. Aristotle makes this clear too in his argument for 2b5-6. Once again, we have mutual existential dependence. Primary substances do not enjoy the ontological priority ascribed to them by

2b5-6 if ontological priority is understood as the sort of existential dependence defined in (4).

Arguments such as these have persuaded commentators that the existential dependence between primary substances and other entities in the *Categories* ontology is mutual or, as we have seen in some cases, inverted. Primary substances are *not* existentially independent of anything else in the *Categories* ontology. If ontological priority were a matter of existential independence, then, primary substances would fail to be ontologically prior to anything else in that ontology. We saw that Aristotle takes being predicated to imply being existentially dependent. What we have discovered is that being a *subject* of predication similarly implies being existentially dependent. Ontological priority, it seems, cannot be a matter of existential independence.

One commentator, however, has tried to rescue the view that ontological priority is a matter of existential independence. Wedin has insisted that we must formulate our account of ontological priority "in terms of differences in the existence conditions for primary substances and for other items" (Wedin 2000: 82), despite the fact that "we cannot simply say that everything else depends for its existence on the existence of primary substances but primary substances depend on nothing else for their existence" (ibid.: 81). His response to this predicament is to employ a twofold strategy. First, he uses his understanding of ontological priority as existential independence to argue that non-substantial individuals *must* be particulars: "nonsubstantial individuals cannot be recurrent items of any sort" (ibid.: 82). Then, Wedin tries to explain away the cases that caused problems for taking ontological priority to be existential independence by showing that Aristotle's commitment to these entities is "ontologically soft" (ibid.: 91), in which case "ontological parsimony provides a way out" of trouble:

> Suppose, however, that Aristotle withholds ontological status from *all* nonsubstantial universals. The asymmetry thesis is automatically preserved, for we may now restrict it to the domain of nonsubstantial individuals. As particulars, one would expect these items to have a relation to substance that is formally different from that exhibited by nonsubstantial universals. And they do. As nonrecurrent, they are asymmetrically dependent on primary substances. Thus, the thesis of asymmetry is preserved at the rock-bottom level of individuals. And because no other nonsubstantial items are accorded ontological status, the thesis has no exceptions and in this sense enjoys global reach (ibid.: 92).

Although this passage is expressed in terms of non-substantial universals, it is clear that Wedin's strategy for dealing with the ontological priority of primary substances to secondary substances is essentially the same: Aristotle "is content to provide a minimalist account of the conditions that make it the case that a given species exists – an account that invokes individuals only" (ibid.: 119-120). On Wedin's view, "Aristotle takes species to exist, at best, in some reduced manner" because "[e]verything done by secondary substances is, in effect, done by appeal to primary substances alone" (ibid.: 120).

Ultimately, then, Wedin's strategy for defending existential independence as an account of ontological priority is to claim that Aristotle is not really ontologically committed to the entities that caused trouble for that account in the first place.

Let us examine Wedin's arguments more carefully. According to him, the passage from 2a39-2b6 gives us reason to think that universals, substantial or otherwise, need not be included in Aristotle's ontology. In that passage, Aristotle claims that "animal is predicated of man and therefore also of the individual man". To support this claim, Aristotle says "for

were it predicated of none of the individual men it would not be predicated of man at all". This subjunctive conditional is important in Wedin's view because it "could be read to assert that, ultimately, predicating *animal* of *man* just amounts to predicating it of individual men" (ibid.: 91).[144] If so, then the species Man would not be a genuine subject for predication, which in turn would allow us to demote its ontological status. Strictly speaking, the argument goes, the species Man does not exist because it is not needed as an underlying subject for predication.

But Wedin has given us no reason to read the subjunctive conditional in question as asserting the *reducibility* of one kind of predication to another. Frank Lewis appears to read the passage much as Wedin does, and suggests that "Aristotle means that the one kind of predication is *grounded in* the other" (Lewis 1991: 65). According to Lewis, the fact that Animal is SAID OF Man is *grounded in* the fact that Animal is SAID OF individual men. Likewise, the fact that color is IN body is *grounded in* the fact that color is IN individual bodies. Not only are primary substances underlying subjects for everything else in Aristotle's ontology, according to Lewis, but it seems as well that their status as such subjects *explains* why other underlying subjects in the ontology *are* underlying subjects.

Notice how much weaker these claims are than Wedin's. On Wedin's view, one kind of predication *reduces* to another. Strictly speaking, then, Animal is not *really* SAID OF Man at all. Because its being SAID OF Man reduces to its being SAID OF individual men, the former predication drops out. It is eliminated. That is why the species Man is not needed as an underlying subject. On Lewis's view, by contrast, one kind of predication is merely *grounded*

144 Frank Lewis offers a similar reading of this passage, arguing that Aristotle "is offering a *reductive* account of certain kinds of (metaphysical) predication, such that the various (metaphysical) predications his scheme allows that do not obviously have an individual substance as subject are to be analysed in terms of metaphysical predications that do" (Lewis 1991: 65-66). I shall have more to say about Lewis below.

in another. The genus Animal really is SAID OF Man on Lewis's view, although the fact that it is so predicated is *explained by* the fact that Animal is SAID OF individual men.[145]

Saying that one kind of predication is grounded in another does not entail that the former reduces to or is eliminable in favor of the latter. And Lewis's weaker claim is a far more plausible reading of the passage than Wedin's. So I submit that Wedin has given us no reason to suppose that the subjunctive conditionals in 2a34-2b6 are meant to indicate the reducibility of one sort of predication to another. If that is correct, then Aristotle's commitment to the subject-hood of universals like the species Man is secure, in which case Wedin has no grounds for claiming that Aristotle's commitment to them is "ontologically soft".

Exactly the same arguments apply in the case of non-substantial universals like *color*. The reasoning Aristotle employs in 2a34-2b6 is analogous, so presumably Wedin's interpretation of that reasoning would be analogous. As a result, my criticism of Wedin's interpretation will be the same: he has given us no reason to suppose that predicating *color* of *body* reduces to predicating *color* of individual bodies. The former predication may well be *grounded in* the latter predications, but it does not thereby reduce to it, in which case Aristotle's ontological commitment to the subject-hood of non-substantial universals like *color* is equally secure.

There is another passage, of course, in which Aristotle argues that secondary substances like the species Man are underlying subjects for predication:

> It is reasonable (εἰκότως) that, after (μετὰ) the primary substances, their species and genera should be the only (μόνα) other things called (secondary) substances (οὐσίαι). For only they, of things predicated, reveal (δηλοῖ) the

[145] It is true that Lewis claims that Aristotle is offering a *reductive* account (Lewis 1991: 65-66), but his support for that claim cannot justify such a strong claim. See fn. 144.

> primary substance. For if one is to say of the individual man what he is (τισ τὶ ἐστιν), it will be in place to give the species or the genus (though more informative to give man than animal); but to give any of the other things would be out of place – for example, to say 'white' or 'runs' or anything like that. So it is reasonable that these should be the only other things called substances. Further (ἔτι), it is because (διὰ) the primary substances are subjects (ὑποκεῖσθαι) for everything else (τοῖς ἄλλοις ἅπασιν) that they are called substances most strictly (κυριώτατα). But as the primary substances stand (ἔχουσιν) to everything else, so the species and genera of the primary substances stand (ἔχει) to all the rest (τὰ λοιπὰ πάντα): all the rest are predicated (κατηγορεῖται) of these. For if you will call (ἐρεῖς) the individual man (τὸν τινὰ ἄνθρωπον) grammatical it follows (οὐκοῦν) that you will call both man and animal grammatical; and similarly in other cases (2b29-3a6).[146]

We have seen this passage earlier, in Chapter Three, in the context of a discussion of why secondary substances qualified as substances on Aristotle's view. There I observed that Wedin rejects the view that secondary substances are underlying subjects of predication, but focused on his weaker claim that even if they *were* such subjects, that is not relevant to their status as substances. We are finally in a position to examine Wedin's claim that secondary substances are not underlying subjects of predication.

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146 I have slightly modified Ackrill's translation. In the last sentence, Ackrill has "if you will call the individual man grammatical it follows that you will call both *a* man and *an* animal grammatical". This obscures the intent of the passage. Aristotle has just claimed that the species and genera of primary substances stand "to all the rest" as "everything else" stands to primary substances. As evidence for this, he offers the sentence Ackrill translates with indefinite articles. Adding the indefinite articles, however, makes the sentence say nothing whatsoever about the species and genera of primary substances, thereby obscuring the intent of the passage. Compare Wedin (2000: 96).

Aristotle certainly *seems* to say that secondary substances are underlying subjects of predication. The relation obtaining between "all the rest" and secondary substances is analogous to the relation that the former entities stand in to primary substances. That relation is a predication relation; primary substances are underlying subjects for these entities. By analogy, it would seem that secondary substances too would have to be underlying subjects.

Likewise, when Aristotle says that "if you will call the individual man grammatical it follows that you will call both man and animal grammatical", it seems that we should understand these claims analogously. Calling the individual man grammatical involves predicating grammaticality of the individual man: the man is grammatical because the individual knowledge-of-grammar is PRESENT IN him. By analogy, then, to call both Man and Animal grammatical would seem to involve predicating grammaticality of them: Man and Animal are grammatical because the individual knowledge-of-grammar is PRESENT IN them.

As we might expect, however, Wedin has an alternative interpretation of this passage according to which it does not really show that secondary substances are underlying subjects for predication. According to Wedin, Aristotle's argument licenses only the existential generalization from

(5) Socrates is grammatical

to

(6) A man is grammatical (ibid.: 96)

But this seems mistaken. The absence of an indefinite article in Greek makes it difficult to distinguish (6) from

(7) Man is grammatical.

We can determine which of these Aristotle must have intended, however, by realizing that the claim at 3a4-6 is a *premise* in an argument designed to establish the following conclusion: "as the primary substances stand to everything else, so the species and genera of the primary substances stand to all the rest: all the rest are predicated of these" (3a1-3). If Aristotle had in mind only the existential generalization from (5) to (6), this conclusion would not follow.

Wedin is aware of this objection. By way of reply, he proposes a reductive account of predication according to which (7) turns out to be equivalent to, but less fundamental than, (6). He writes: "a formula mentioning, or appearing to mention, a species can be equivalent to a formula quantifying over individuals of the species only and yet not be as fundamental as the second" (ibid.). Thus, Wedin proposes the following equivalence:

(8) *x* is an individual man & *x* is grammatical *if and only if* Man is grammatical.

If we take the left-hand side of (8) to be fundamental, then it follows that the species Man is grammatical if and only if, *and because*, there is some individual man who is grammatical. Wedin infers from this that "the possibility remains that Aristotle here promotes a deflationary account of the subjecthood of species and genera" (ibid.).

This does not follow. That grammaticality is PRESENT IN Man is surely *grounded in* the fact that some individual man is grammatical. But as we have already seen, this does not imply that one sort of predication *reduces* to another. *A fortiori*, it does not imply that species and genera are not genuinely underlying subjects of predication. It implies at best that their subject-hood is explained by the subject-hood of primary substances. If they remain bona fide, albeit derivative, subjects of predication, then secondary substances should be counted fully fledged members of the *Categories* ontology.

My objections to Wedin have focused on establishing the claim that universals, substantial and otherwise, are indeed underlying subjects of predication. For Wedin takes

this to be the crux of the issue. We are now in a position to see how this reveals a hidden assumption in Wedin's argument, namely, that if something is *not* an underlying subject of predication then Aristotle's commitment to it is "ontologically soft". Wedin therefore seems to assume that Aristotle has what we might call a *criterion of ontological commitment*, in Quine's sense, according to which *to be is to be an underlying subject of predication*.[147] But Aristotle could not possibly be committed to such a criterion. For one thing, it is hard to see how any criterion of ontological commitment in Quine's sense can be squared with Aristotle's claim that being is said in many ways. Ignoring that issue, however, it is also clear that Aristotle is in some sense ontologically committed to certain entities that are not, and could not be, underlying subjects of predication: the highest genera themselves. In *Prior Analytics* A.27, Aristotle says:

> [O]f things that are (ἁπάντων τῶν ὄντων), some are such as to be predicated (κατηγορεῖσθαι) of nothing else truly (ἀληθῶς) and universally (καθόλου) (for example, Cleon and Callias and what is individual (καθ᾽ἕκαστον) and perceptible (αἰσθητόν)) but to have other things predicated of them (for each of these is both a man and an animal); *some are predicated of others but do not have any prior* (πρότερον) *things predicated of them*; and some are both predicated of others and have others predicated of them (for example, man is predicated of Callias and animal of man) (*APr.* A.27, 43a25-31; emphasis mine).

In this passage, Aristotle identifies three different kinds of things: entities that are underlying subjects but not predicates, entities that are predicates but not underlying subjects, and entities that are both. Aristotle's clear commitment to the existence of entities that are

147 Quine says: "a theory is committed to those and only those entities to which the bound variables of the theory must be capable of referring in order that the affirmations made in the theory be true" (Quine 1948: 13-14). In a slogan, Quine's view is that *to be is to be the value of a bound variable*: "[t]o be assumed as an entity is, purely and simply, to be reckoned as the value of a variable" (ibid.: 13).

predicates but not underlying subjects shows that Wedin's assumption about ontological commitment in Aristotle is false. The fact that the entities in question are clearly intended to be the highest genera shows that entities that are predicates but not underlying subjects are central to Aristotle's ontology, not an obscure exception to a general rule.

What all of this shows is that even if my earlier objections to Wedin's reading of 2b29-3a6 were mistaken, his claim that Aristotle's commitment to secondary substances is "ontologically soft" would still not follow. For, from the fact that secondary substances are not genuinely underlying subjects of predication, it would not follow that secondary substances do not belong in the *Categories* ontology. Thus, Wedin would still have failed to explain away the cases that pose difficulties for the view that ontological priority is a matter of existential independence. That view must be rejected.

2.

Let us turn now to the second account of ontological priority according to which it is a matter of definitional or identity independence. To repeat some of what was said earlier, we might say that an entity *x* is definitionally dependent on another entity *y* just in case *x* cannot be defined without reference to *y*. For example, triangle is definitionally dependent on the number three because one cannot define triangle without mentioning the number three. But the converse does not hold. One can define the number three without mentioning triangle. Thus, triangle is definitionally dependent on the number three but not vice versa. On the view that ontological priority is a matter of definitional independence, we should say that the number three is therefore ontologically prior to triangle.

The idea behind this view is that ontological priority is simply the worldly correlate of definitional priority. Thus, Lynne Spellman writes that when Aristotle says that substances

are *separate* from all other things, he "in fact has in mind the ontological correlate of definitional separation" (Spellman 1995: 86).[148] Likewise, Peramatzis suggests that we understand ontological priority as follows:

> **(PIB)** *A* is ontologically prior to *B* if and only if *A* can be what it essentially is independently of *B* being what it is, while the converse is not the case (Peramatzis 2011: 13).

If we think that a definition states what a thing essentially is, **(PIB)** turns out to identify ontological priority as the worldly correlate of definitional priority: *A* will be ontologically prior to *B* if and only if *A* is definitionally prior to *B*.

I shall focus in what follows on Peramatzis's version of this view, for Spellman does not put forward her view as an interpretation of the *Categories*. Although she does discuss 2b5-6, it is clear that her view is intended in the first instance as an interpretation of the central books of the *Metaphysics*. Peramatzis, however, aspires to an interpretation of both the *Categories* and the central books of the *Metaphysics*, so I shall focus on his account.[149]

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[148] According to Spellman, when Aristotle discusses natural priority in *Metaphysics* Δ.11, "natural priority is defined in terms of independent existence" but "there is no mention at all of separation" (Spellman 1995: 8). Her view is that although Plato did hold that Forms were separate from sensible particulars, and that although Plato did intend for Forms to be capable of existing independently of sensible particulars, the link between these is more complex. Natural priority is a matter of independent existence, but separation is not, because "if a capacity for independent existence is what is meant by 'separation', then it would seem that Aristotle must attribute to Plato an argument for the existence of Forms which is flagrantly invalid" (ibid.: 9). Spellman's claims are controversial, but I do not think we need to settle them at this juncture to examine the notion of ontological priority that interests me. Whether that notion is what Aristotle means when he says that substance is separate is, in my view, a separate question.

[149] It is important to see why Spellman's view cannot be transferred over as an interpretation of the *Categories*. She claims that some entities, the *xx*s, are ontologically prior to some other entities, the *yy*s, just in case the essential properties of the *xx*s *determine* the essential properties of the *yy*s (Spellman 1995: 105). She writes: "[i]f Aristotle could claim that some properties, more precisely, the essential properties, of sensible objects are determined by the properties of specimens of certain kinds, he could reasonably maintain that specimens of those kinds are ontologically prior to the sensible objects with which they are numerically the same and also to specimens of other kinds, in other words, to accidental unities" (ibid.). Thus, ontological priority is the worldly correlate of definitional priority, for if the essential properties of one entity determine the essential properties of another, then presumably reference to the former entity appears in the definition of the latter entity, but not vice versa. Unfortunately, it is not clear how Spellman would explain the ontological priority of primary substances over secondary substances. For Spellman says that "any given horse is not separate from a specimen of the kind *horse*", because "to say what Secretariat is, one must say that he is a horse"

According to Peramatzis, primary substances can be what they essentially are independently of non-substantial entities and accidental compounds being what they essentially are, whereas the converse is not true. It is important not to misunderstand this point. As Peramatzis says, "just as Socrates is what he is independently of being white, so too being white is what it is independently of Socrates being what he is" (Peramatzis 2011: 236). So it is not at the level of *particular* primary substances and *particular* non-substantial entities that **(PIB)** applies. Rather, it is at a more general level. Primary substances are what they essentially are *in general* – namely, underlying subjects of predication – independently of non-substantial entities being what they essentially are *in general* – namely, predicable items. But the converse is not true. Therefore, Peramatzis concludes, primary substances are ontologically prior to all other entities.

One obvious objection to this account is that it fails to generate the requisite asymmetry between primary substances and other entities. Peramatzis is surely right that non-substantial entities cannot be what they essentially are without primary substances being what they essentially are. But, against Peramatzis, the converse seems to hold as well: primary substances cannot be what they essentially are without non-substantial entities being what they essentially are. How could primary substances be essentially underlying subjects of predication without non-substantial entities being essentially predicable items? Without

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(ibid.: 88). But if ontological priority is the worldly correlate of definitional priority, then this implies that the species Horse is ontologically prior to Secretariat. This is in conflict with 2b5-6. Spellman may reply that she does not believe that individual horses like Secretariat are primary substances in the first place, since on her view primary substances are specimens of kinds that are numerically the same as, but not identical to, sensible objects like Secretariat (ibid.: 40). But in addition to relying on a controversial distinction between numerical sameness and identity, Spellman's view still delivers the wrong result. For one cannot say what a specimen of a given kind is without making reference to the kind itself, in which cases primary substances still prove to be ontologically posterior to kinds. These objections, it must be emphasized, are intended to show why Spellman's account cannot be offered as an interpretation of the *Categories*. Despite mentioning 2b5-6, Spellman says that her theory is supposed to be a way of understanding the idea that "substance is form", and so her theory is primarily concerned with the central books of the *Metaphysics*. What I have tried to argue, then, is that her theory must stay within its proper domain, and not be offered as a way of understanding the *Categories* as well. Compare Corkum (2008: 83).

predicable items, how could something be an underlying subject of predication? Being an underlying subject and being predicable are correlative terms, so it is hard to see where the asymmetry between primary substances and non-substantial entities comes in on Peramatzis's view. Since ontological priority is an asymmetric relation, that is a problem.[150]

Leaving this objection aside, a key feature of Peramatzis's view is that ontological priority includes a determining relation, or what Peramatzis calls "a causal-explanatory aspect" (ibid.: 240). He claims that "particular substances are ontologically prior in that they determine the nature of non-substance attributes and accidental compounds *as beings quite generally*" (ibid.). Going beyond the claim that primary substances can be what they essentially are independently of non-substantial entities but not vice versa, Peramatzis claims that primary substances *make* non-substantial entities what they essentially are, but not vice versa: "[b]ecause of some particular substance or other, its being the general type of being that it is, non-substance attributes and accidental compounds are the general kinds of being that they are (but not vice versa)" (ibid.: 242).[151]

The causal-explanatory aspect of Peramatzis's view is promising. We shall see later that my own preferred account of ontological priority is explicitly causal. But Peramatzis's version of the view is unsatisfactory. He is well aware of the fact that his notion of ontological priority is "undeniably attenuated" (ibid.: 246) because the causal-explanatory aspect of it works in what he calls a "generic" way: "the view is that particular substance, in general, or any particular substance whatsoever makes non-substance attributes the general

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150 It is true that a primary substance could still essentially be an entity that is not itself predicated of anything else – an entity that is essentially such that it is neither SAID OF nor PRESENT IN another entity. But Peramatzis cannot simply reorient his view around this idea, for as we shall see, it does not fit with what he calls the "causal-explanatory aspect" of his view (Peramatzis 2011: 240).

151 Here again I am not sure that Peramatzis is right about the relevant asymmetry. Primary substances are supposed to make non-substantial entities *be* predicable items, but predicable items are not supposed to make primary substances *be* underlying subjects of predication? Given that these are correlative states, it is hard to see any justification for the asymmetry here.

kinds of beings that they are". I confess that I find it difficult to understand how such a generic notion of causation works. Even were I able to understand it, however, it seems to me that there are decisive reasons to reject it.

First, it seems unlikely that the causal-explanatory aspect of his view could operate in the way he suggests. Consider Aristotle's definition of the universal in *De Interpretatione* 7: a universal is a thing such that, by its nature, it is predicable of many things. We might then ask ourselves the following question: do the things of which a universal is predicated *make* that universal be the kind of thing it is, namely, a universal? That is, do these underlying subjects make the universal be the sort of thing that can, by its nature, be predicated of many subjects? The answer to this question seems to be *no*. In fact, the order of explanation suggested by the question seems precisely backwards. A universal is not predicable of many things because those things make it such as to be predicable of them. For those things to make it predicable, the universal would already have to be *predicated* of them. Otherwise, no relation at all would obtain between these entities in virtue of which those subjects might make the universal be anything. But nothing can be made predic*able* by being predic*ated*. A thing can be predicated only if it is *already* predicable.

Second, ontological priority ought to hold at both the level of *types* and the level of *tokens*. A particular primary substance like Socrates should be ontologically prior to the non-substantial attributes that are PRESENT IN him as well as the secondary substances that are SAID OF him, and primary substances *in general* (or *as a class*) should be ontologically prior to non-substantial attributes *in general* (or *as a class*) and secondary substances *in general* (or *as a class*). Peramatzis makes precisely this point while criticizing Charlotte Witt's interpretation of the priority of actuality over potentiality in *Metaphysics* Δ.8, insisting that "[t]he ontological priority of actuality over potentiality holds both at the token and type levels *for the same*

reason" (ibid.: 281). From a strictly dialectical point of view, then, the fact that Peramatzis's own view fails to deliver this result, because it works in a "generic" way and so only at the level of types, is a problem.

But the difficulty is not merely dialectical, for Peramatzis is *right* that ontological priority ought to work at both the level of types and the level of tokens. If anything, the examples Aristotle uses in *Categories* 5 makes clear that it is the *token* primary substances that are ontologically prior to the *token* non-substantial individuals and so forth that are predicated of them. It is *the individual man* that is prior to the token non-substantial universal *color*. That Peramatzis's account does not give us a sense in which it is token primary substances that are prior to token non-substances or token secondary substances shows that his account cannot be correct as an interpretation of *Categories* 5.

The causal-explanatory aspect of Peramatzis's view, then, is seriously problematic as it stands. But there is a more serious problem for his view that has nothing to do with this feature of it. For Peramatzis is unable to explain the ontological priority of primary substances over secondary substances. Most of Peramatzis's discussion is concerned with the way in which primary substances are ontologically prior to *non-substantial entities* (and, to a lesser extent, *accidental compounds*). Thus, near the very beginning of the chapter in which he discusses the ontological priority of primary substances, he writes: "In the present chapter I shall seek to overcome this difficulty by arguing that particular substances are ontologically prior to derivative entities such as non-substance attributes and accidental compound" (ibid.: 229). The stated aim of Peramatzis's discussion, then, is to ensure that substances are

ontologically prior to non-substantial entities. Attempting to explain the priority of primary substances over secondary substances is no part of his project.[152]

By way of reply, Peramatzis simply *denies* that primary substances are ontologically prior to secondary substances. After reiterating that primary substances are ontologically prior to non-substantial entities, he writes:

> But they are not thus independent of their own essences, their what-it-is…The passages from the *Categories* just mentioned, however, seem to argue for an ontological sort of dependence of particular substances on their species or, perhaps, more correctly, on the what-it-is of their species (ibid.: fn. 15).

Here Peramatzis seems to insist that the account of ontological priority he has developed can indeed apply equally well to both the *Categories* and *Metaphysics Z*. From a broader methodological perspective, this seems questionable given the enormous doctrinal differences between the two works.[153] But his account is exegetically problematic as well. We saw earlier that Aristotle takes primary substances to be ontologically prior to both non-substantial entities and secondary substances, and for exactly the same reason: all of these

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152 One might defend Peramatzis on this score by proposing to amend and extend his account. Thus, one might say that just as primary substances are what they essentially are *in general* – namely, *underlying subjects of predication* – independently of non-substantial entities being what they essentially are *in general* – namely, *predicable items*, the same holds of the relation between primary and secondary substances. On this view, primary substances can be what they essentially are in general – underlying subjects of predication – independently of secondary substances being what they essentially are in general – predicable items. But this strategy will not work for reasons we have already seen. In particular, it will work only at the level of types rather than at the level of tokens.

153 Compare Peramatzis: "*Metaphysics* Z.1 has strong links to the doctrine of the *Categories* and so could provide a way in which to reconcile (what is usually taken as conflicting) earlier and later Aristotelian views" (Peramatzis 2011: 233). There is of course no doubt that various doctrines from the *Categories* remain important throughout Aristotle's career, and that Z.1 is a key text for supporting that claim. But it seems unlikely to me that Z.1 can support the weight Peramatzis needs it to bear. It seems more likely that Z.1 invokes those doctrines of the *Categories* that Aristotle means to hold onto while simultaneously beginning a new inquiry that will diverge sharply and fundamentally from what we find in that earlier treatise. This compatibilist approach to the *Categories* and *Z* is also problematic for Spellman, as we have seen. See n. 149.

other entities are predicated of primary substances as underlying subjects. It is therefore simply *false* that in the *Categories* Aristotle argues for the ontological dependence of primary substances on their species and genera.

Because of this, I am skeptical that we can build an interpretation of the *Categories* based on taking ontological priority to be the worldly correlate of definitional priority. Switching to this account of ontological priority has not improved our interpretive situation, for both this view and the view that ontological priority is a matter of existential independence struggle to explain the ontological priority of primary substances over secondary substances. Before moving on to my preferred solution to this difficulty, however, I want to examine one last attempt to explain ontological priority that is in some ways similar to Peramatzis's.

3.

Like Peramatzis, Phil Corkum has developed a view about ontological priority that rejects the idea that it can be understood in terms of existential independence (Corkum 2008: 66). Like Peramatzis, Corkum proposes an alternative that treats ontological priority as some other kind of independence. In particular, Corkum suggests that we "weaken the relevant notion of ontological independence from a capacity for independent existence to the independent possession of a certain ontological status" (ibid.) in the following way:

> **(OI)** *A* is *ontologically independent* from *B* just in case *A* admits of the ontological status of a being independently of standing in some tie to any *B* whatsoever (ibid.: 78).[154]

[154] This is not actually how Corkum formulates what he calls '(OI)'. His formulation is as follows: "A is *ontologically independent* from B just in case A admits of the ontological status of a being independently of standing in some tie to B" (Corkum 2008: 77). But Corkum acknowledges that this is ambiguous as between the following:

> (OI_1): For any given B, A admits of the ontological status of a being independently of standing in some tie to *that* B; and

Compare **(OI)** to the generic notion of existential independence defined in (4) above:

> (4) *x* is existentially independent $=_{df}$ Necessarily, there does not exist a *T* such that *x* exists only if something *y* exists, where *y* is of type *T*.

According to (4), *x* is existentially independent if there is no class of objects on which it depends for its existence. Likewise, **(OI)** tells us that an entity is ontologically independent just in case there is no class of objects on which it depends for its having the ontological status of a being. Thus, **(OI)** is generic in the same way that (4) is. The chief difference between them is that (4) is cashed out in terms of *existential* independence, whereas **(OI)** is not. The ontological independence in **(OI)** is supposed to be understood in some other, yet to be determined, way.

Corkum's idea is that primary substances admit of the ontological status of a being independently of their relations to other entities in the ontology, whereas everything else admits of the ontological status of a being only in virtue of being either SAID OF or PRESENT IN some primary substance or other. For example, a given secondary substance such as Man admits of the ontological status of a being only in virtue of being SAID OF some primary substance such as Socrates, while Socrates admits of the ontological status of a being simply in his own right, and not in virtue of some predicative tie he might stand in. (Primary substances, of course, are neither SAID OF nor PRESENT IN any other entities.) Similar remarks can be made about non-substantial individuals and non-substantial universals.[155]

> (OI_2): A admits of the ontological status of a being independently of standing in some tie to any B whatsoever.

Thus, Corkum's more general (OI) is ambiguous between two ways of reading the phrase "independently of standing in some tie to B". Corkum argues that (OI_2) is preferable to (OI_1) as an account of ontological priority, so I have formulated (OI) as Corkum's (OI_2).

[155] It seems to me that Corkum is mistaken here. In particular, while it is true that primary substances are neither SAID OF nor PRESENT IN any other entities, it does not seem to follow that they enjoy their ontological status independently of any other items. They enjoy their ontological status, it seems to me, in virtue of being *underlying subjects* for other entities. And, as I argued earlier, being an underlying subject is inherently relational: to be an underlying subject for predication requires there to be predicable items. A primary substance can

The main problem with Corkum's proposal, however, is that he never explains what he means when he says that certain entities "admit of the ontological status of a being". Indeed, Corkum admits that **(OI)** "is not an *account* of ontological independence at all", in part because it "does not *explicate* the notions of having an ontological status or of independence" (ibid.: 81). Instead, **(OI)** is intended to be "a *formulation* of ontological independence – the weakest formulation of ontological independence which meets our condition of adequacy for any account of ontological independence" (ibid.).

It seems to me that if Corkum does not or cannot explain what it means to say that an entity admits of the ontological status of a being, or what it is to admit of such a status independently, then he has not actually told us in what way primary substances are ontologically prior to everything else in the *Categories* ontology. On the contrary, he has relabeled, without solving, the interpretive puzzle. That puzzle was to explain how it could be that primary substances are ontologically prior to all other entities given the apparently fact that there seems to be a mutual existential dependence between primary substances and those other entities. Corkum's putative solution is to say that primary substances enjoy the ontological status of a being independently from those other items, while those other items depend for their ontological status on their being predicated of primary substances. That's not a solution by anything other than fiat. It is, in fact, simply a way of rephrasing the problem.

Suppose we try to say, on Corkum's behalf, what it is to admit of the ontological status of a being. To do this, we have to say what the ontological status of a being is. One possibility, of course, is that the ontological status of a being is *existence*. To admit the ontological status of a being is simply to be included among the things that exist. To admit

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therefore enjoy this ontological status only if other entities are, or at least could be, predicated of it. So I think Corkum's central idea is mistaken.

that status independently of all other entities, then, is to exist without doing so in virtue of standing in any relations to anything else.

But as we have already seen, this cannot be what the ontological status of a being is. If it were, then Corkum's account of ontological priority would reduce to the view that ontological priority consists in existential independence. We have already seen that Corkum intends **(OI)** to be an alternative to that view. So we must look for a different account of ontological status.

Another possibility is that the ontological status of a being is *the kind of thing that it is*. To admit the ontological status of a being, on this view, is to be the kind of thing that you are. To do so independently is to be the kind of thing that you are independently of standing in any relations to anything else.

This way of understanding Corkum brings his view much closer to the view Peramatzis holds. Whether Corkum's view ultimately reduces to the idea that ontological priority is the worldly correlate of definitional priority depends on what it means to say that something is the kind of thing that it is. When we speak of the kind of thing that Socrates is, for example, two different answers emerge. The first is that Socrates is both a man and an animal. Aristotle claims that the species and genera of a primary substance reveal what that primary substance is (2b29-30): "only they, of things predicated, reveal the primary substance". This means that they "say of the individual man what he is". The kind of thing Socrates is, then, is given by his species and genera: he is a man and an animal.

But if this is what is meant by speaking of the kind of thing Socrates is, then it is simply *false* that Socrates is the kind of thing that he is independently of standing in any ties or relations to other entities. For Socrates is the kind of thing he is in virtue of the fact that the species Man and the genus Animal are SAID OF him. Were those secondary substances

not SAID OF him, Socrates would not be a Man or an Animal. It is false, then, that Socrates is the kind of thing that he is independently of standing in any ties to other entities, at least if by 'the kind of thing that he is' we mean what Aristotle himself seems to mean throughout the *Categories*.[156]

Corkum may, however, have something more general in mind. Like Peramatzis, Corkum may think that what Socrates is *in general* is not a man nor an animal, but an *underlying subject of predication*. That's the kind of thing Socrates is: an underlying subject. And, so the thought goes, Socrates is an underlying subject independently of any ties Socrates might stand in to other entities.

Earlier, however, I raised doubts about this idea in Peramatzis. It seems false to say that something can be an underlying subject independently of standing in any ties to other entities, for to be an underlying subject for predication presumably requires there to be *predicable items*. Just as predicable items cannot be the kinds of things that they are independently of there being underlying subjects for them to be predicated of, so too it seems that underlying subjects cannot be the kinds of things that they are independently of there being predicable items to be predicated of them.

No third alternative for what Corkum might mean by the phrase "admits the ontological status of a being" comes to mind. Absent some further explanation of this

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156 Corkum may respond as follows: it is not true that Socrates is a man and animal *because* or *in virtue of* the fact that the species Man and the genus Animal are SAID OF him. For as Aristotle puts it, the species and genus *reveal* what Socrates is, which suggests that their role is epistemic rather than ontological. Socrates *already is* a man and an animal, in some sense *prior to* having the species Man and the genus Animal SAID OF him. It is just that these secondary substances *reveal* what is, so to speak, already the case. In response, I would suggest that however we precisely specify the role secondary substances play in revealing what primary substances are, the following is true: if the species Man and the genus Animal did not exist, then Socrates would be neither a man nor an animal. And if this counterfactual is true, I submit that Socrates is not the kind of thing that he is independently of standing in any ties to other items, even if the ties in question are something other than the SAID OF relation.

phrase, I conclude that Corkum has done nothing more than relabel the interpretive difficulty without solving it. A new account of ontological priority is required.

4.

So far we have been assuming that talk of ontological priority can be understood in one of two ways. On the one hand, we might understand ontological priority in terms of *existential* independence. An entity *x* is ontologically prior to another entity *y*, in this sense, if and only if *x* is existentially independent of *y*. That is, *x* is ontologically prior to *y* just in case *y* exists *only if x* exists, but not vice versa. As an interpretation of Aristotle, this view has been defended by Wedin.

On the other hand, we might understand ontological priority as the worldly correlate of definitional independence. An entity *x* is ontologically prior to another entity *y*, in this sense, if and only if *x* can be the kind of thing that it is without *y*, but not vice versa. That is, *x* is ontologically prior to *y* just in case the essence of *x* does not include *y*, but the essence of *y* includes *x*. As an interpretation of Aristotle, this view has been defended by Peramatzis and, on the most charitable reading of him, Corkum.

What I want to suggest is that Aristotle recognized a third way of thinking about ontological priority that can account for the ontological priority of primary substances. In *Categories* 12, Aristotle sets out to discuss four ways in which "[o]ne thing is called prior to another" (14a26). These are priority in time, priority in respect of some order, priority by nature, and – as we saw earlier – that which does not reciprocate with respect to implication of existence. But he immediately adds a fifth notion of priority:

> There would seem, however, to be another (ἕτερος) manner of priority (προτέρου) besides those mentioned. For of things which reciprocate as to

> implication of existence (τῶν ἀντιστρεφόντων κατὰ τὴν τοῦ εἶναι), that which is in some way the cause of the other's existence (τὸ αἴτιον τοῦ εἶναι) might reasonably be called prior by nature (πρότερον φύσει). And that there are some such cases is clear. For there being a man reciprocates as to implication of existence with the true statement about it (τὸν ἀληθῆ περὶ αὐτοῦ λόγον): if there is a man, the statement whereby we say that there is a man is true, and reciprocally (ἀντιστρέφει) – since if statement whereby we say that there is a man is true, there is a man. And whereas the true statement is in no way the cause of the actual thing's existence (οὐδαμῶς αἴτιος τοῦ εἶναι τὸ πρᾶγμα), the actual thing does seem (φαίνεταί) in some way the cause of the statement's being true; it is because the actual thing exists or does not that the statement is called true or false (14b10-23).

Aristotle's example is relatively clear. Although a given state of affairs exists if and only if the true proposition describing that state of affairs exists, the former is *prior in nature* to the latter because it is in some sense the *cause of being* of the latter. It is *because* there is a man sitting that the proposition "A man is sitting" is true, and not vice versa.

Examples of this kind of priority are easy to come by. Consider Socrates and his singleton {Socrates}. Socrates exists if and only if {Socrates} exists, but intuitively Socrates is ontologically prior to {Socrates}. To take a more Aristotelian example, Socrates exists if and only if the accidental compound <Socrates+whiteness> exists, but intuitively Socrates is ontologically prior to that compound.[157]

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[157] It is not clear whether in the *Categories* Aristotle admits the existence of accidental compounds. I am inclined to think that he does not, and that such entities are introduced in the *Metaphysics*. For an alternative view, see, e.g., Lewis (1991).

Now, it is possible to understand these examples in terms friendly to Peramatzis. We might, for example, say that Socrates is ontologically prior to his singleton because the definition of Socrates is prior to the definition of his singleton: we can define Socrates without making mention of {Socrates} but not vice versa. Likewise for the example of Socrates and the accidental compound <Socrates+whiteness>. As Fine puts it:

> Can we not recognize a sense of nature, or of "what an object is", according to which it lies in the nature of the singleton to have Socrates as a member even though it does not lie in the nature of Socrates to belong to the singleton? (Fine 1994: 256).

It would be possible to suppose, then, that the fact that Socrates is ontologically prior to his singleton is simply a matter of essences: it belongs to the essence of {Socrates} to have Socrates as a member, but it does not belong to the essence of Socrates to be a member of {Socrates}.

But we are not forced to understand the example in this way. We could instead suppose that Socrates is in some way the cause of being of {Socrates}, where being the cause of being of something is not to be cashed out in terms of essences or definitions. We could suppose, for example, that the existence of {Socrates} is *grounded in* the existence of Socrates, where grounding is taken to be a primitive, non-efficient-causal, explanatory relation.[158] It would still be true, of course, that the essence of Socrates is independent of the essence of {Socrates}. But that would not be what the ontological priority of Socrates consists in.

Think again about Aristotle's own example. There we have a state of affairs, that of a man sitting, being prior in nature to the true proposition about that state of affairs. We might treat the case in the way Fine treats the case of Socrates and his singleton, insisting

[158] For examples, see, e.g., Schaffer (2009) and Audi (2012). For criticisms, see Hofweber (2009) and Daly (2012).

that while it is part of the essence of that true proposition to be about that state of affairs, it is no part of the essence of that state of affairs to have there be a true proposition about it. Such a view might even be attractive if we were to accept a structured view of propositions according to which propositions have the things they are about as constituents.[159] For then we might say that while it is no part of the essence of that state of affairs to be a constituent of that proposition, it is part of the essence of that proposition to have those constituents.

But this is not how Aristotle develops the example. Aristotle says that while the true proposition does not cause the state of affairs to exist, the state of affairs causes the proposition to be true. We cannot understand the state of affairs causing the proposition to be true in terms of the state of affairs necessarily belonging to the essence of the proposition, since that very same proposition could be *false*, yet that state of affairs would still necessarily belong to that proposition. Making true the proposition "That man sits" therefore cannot be a matter of essences. It cannot be a matter of the state of affairs of a man sitting belonging to the essence of the proposition.[160]

This should not be a surprise. Consider Aristotle's discussion of *per se* predication (καθ᾽αὐτὰ predication) in *Posterior Analytics* A.4. Aristotle distinguishes between two kinds of *per se* predication: (a) *x* is predicated *per se* of *y* if and only if *x* belongs to the essence of *y*; and (b) *x* is predicated *per se* of *y* if and only if *y* belongs to the essence of *x*. For example, the species Man is predicated *per se* of Socrates in the first sense, since Socrates is essentially a man. The essence of Socrates includes the species Man, so the latter is predicated *per se* of Socrates. By contrast, snubness is predicated *per se* of nose in the second sense, because

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159 For an example of this sort of view, see, e.g., Russell (1903), Soames (1987), and King (2007). Trenton Merricks also defends the view that it is part of the essence of a proposition that it represent the state of affairs it in fact represents, but Merricks rejects the idea that propositions are structured propositions (Merricks 2015).

160 In *Categories* 5, Aristotle makes clear that he thinks that one and the same proposition can be both true and false: "For the same statement seems to be both true and false. Suppose, for example, that the statement that somebody is sitting is true; after he has got up this same statement will be false" (4a23-26).

snubness *just is* concavity in a nose. The essence of snubness is that it be concavity in a nose, so the essence of snubness *includes* a particular kind of subject, namely, noses. Snubness, then, is predicated *per se* in the second sense of noses.

Notice, however, that no matter which type of *per se* predication we are concerned with, the predicable item is *always* ontologically posterior to the underlying subject. Socrates is ontologically prior to the species Man, and a nose is ontologically prior to snubness. This is because the species Man and snubness are each *predicated* of Socrates, and predicable items are always ontologically posterior to the items they are predicated of (see, e.g., *Met.* Δ.11, 1019a5). Although Socrates must be defined in terms of the species Man, the latter is ontologically posterior to Socrates. Snubness, in turn, is ontologically posterior to noses. But the example of Socrates and the species Man shows that this is not to be *understood* in terms of the fact that snubness must be *defined* in terms of noses. Definitional priority does not track ontological priority in the former case, so ontological priority cannot be *understood* as definitional priority in the latter case.

The very idea, therefore, that ontological priority could be understood as the worldly correlate of definitional priority is a mistake. That view seems to me to ignore Aristotle's discussion in *Posterior Analytics* A.4, which teaches us that relations of definition and relations of ontological dependence cut across one another.

More importantly for present purposes, what *Posterior Analytics* A.4 teaches us is that Aristotle's discussion of priority in nature in *Categories* 12 is a new view of the nature of ontological priority. It cannot be understood as the view that a given state of affairs is ontologically prior to the proposition about that state of affairs because the essence of the latter includes the former, but the essence of the former does not include the latter. The view offered in *Categories* 12 can be formulated as follows:

(CB): *x* is ontologically prior to *y* $=_{df}$ Necessarily, (i) *x* exists if and only if *y* exists; and (ii) *x* is the cause of being of *y*.

Again, I must emphasize that to say that *x* is the cause of being of *y* is not to say, as Peramatzis or Corkum might have us say, that *x* makes *y* the kind of thing that it is. Aristotle's own example does not support such a reading, since while the state of affairs of a man sitting makes the proposition "That man sits" *true*, it does not make it *the kind of thing that it is*. The so-called "causal-explanatory aspect" of Peramatzis's view was promising, but it misunderstood the way Aristotle would think of one thing's being the cause of being of another.

I have argued that **(CB)** is a new view of what ontological priority is, distinct from views that take ontological priority to be a matter of existential independence or the worldly correlate of definitional independence. It seems to me, moreover, that **(CB)** can account for the ontological priority of primary substances in a way that none of the views so far considered can.[161] For **(CB)** begins by admitting precisely the fact that caused trouble for

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161 Daniel Devereux has offered an alternative account that attempts to solve this puzzle. He argues that while there is a kind of mutual existential dependence between primary substances and other entities in the *Categories*, there is a crucial difference: while all other entities depend on *an underlying subject* for their existence, primary substances do not (Devereux 1994/1999: 207; fn. 38). While they depend *for their existence* on the existence of other entities, they do not depend on those other entities *as underlying subjects*. This is true as far as it goes, but I am not sure that it solves the interpretive difficulty. Devereux thinks the solution works, I take it, because there are multiple ways in which something can fail to exist on its own. One way is to depend on some other entity as an underlying subject, but another way is the way in which matter cannot exist on its own from the hylomorphic compound of which it is the matter. But the matter, of course, is not predicated of that compound as an underlying subject. So, Devereux proposes, an entity might fail to exist on its own in multiple ways. Thus, we might think that neither primary substances nor anything else can exist *on their own*, but that for everything else in the *Categories* ontology, this means they cannot exist without primary substances as their underlying subjects, whereas for primary substances this means something else.

I am not sure that this solves the puzzle. First, Devereux adduces only two ways in which something might fail to exist on its own, and neither of them applies to primary substances. Second, one of the two ways adduced by Devereux relies crucially on hylomorphism, which is absent from the *Categories*. These two points suggest that in the *Categories*, there is only one way in which something can fail to exist on its own: it needs an underlying subject for it to exist. If this is right, then we cannot say that primary substances fail to exist on their own, but in some way *other* than the way in which other entities fail to exist on their own. Aristotle recognizes no such other way in the *Categories*.

It also seems to me as if Devereux has drawn a distinction without a difference. For the puzzle *just is* that primary substances seem to depend for their existence on other entities despite the fact that they are not

accounts of ontological priority that took it to be a matter of existential independence, namely, that primary substances and all other entities stand in a relation of *mutual* existence dependence. This is not a problem for **(CB)** since existential independence is not necessary for ontological priority.

Likewise, **(CB)** does not say that primary substances can be the kinds of things that they are without standing in any relations to other items, thereby avoiding the main difficulty faced by accounts of ontological priority that treat it as the worldly correlate of definitional priority. Like those accounts, **(CB)** takes primary substances to play a certain causal role with other entities, but we have already seen that that causal role cannot be understood as Peramatzis and Corkum would have us understand it, namely, in terms of primary substances making other entities be the kinds of things that they are.

Thus, **(CB)** avoids the problems that undermined the two main accounts of ontological priority we have considered. That is a considerable mark in its favor. Still, we need to examine exactly what it means to say that one thing is the cause of being of another. Without an account of this, we will not have a fully fleshed out account of ontological priority.

Unfortunately, Aristotle himself is quiet on this topic. He does not tell us in *Categories* 12 how it is that a state of affairs is the cause of being of a true proposition. He says only that the state of affairs makes the proposition true. His discussion of how propositions change their truth values in *Categories* 5 is no more informative: "it is because the *actual thing* (τοῦ πράγματος) changes (γίγνεται) that the contrary [e.g. truth or falsity] comes to belong

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predicated of anything else. Other entities depend on primary substances *as underlying subjects*, while primary substances depend on those entities but *not* as underlying subjects. True, but why should this show that primary substances are ontologically prior to those other entities? Why does the kind of dependence that requires a subject get subordinated to the kind of dependence that doesn't? I am not sure that I see how the solution works.

to them (κινηθέντος) [e.g. statements and beliefs]" (4a35-36). There is no systematically worked out account of how it is that a thing's changing should make a statement or belief change its truth value.

It is tempting here to import Aristotle's doctrine of four causes from *Physics* II.3 and attempt to work out, by process of elimination, which sort of cause is at play in *Categories* 12. There is some risk of anachronism here since that doctrine presupposes the distinction between matter and form that Aristotle introduces in *Physics* I.7, and which is absent entirely from the *Categories*. But it may help point us in the right direction.

We can rule out immediately the idea that the notion of a cause of being in *Categories* 12 is to be understood as either a formal or a final cause. Aristotle says that "the definition of the essence (ὁ λόγος ὁ τοῦ τί ἦν εἶναι)" is called a cause (194b27-28), but this kind of cause cannot be what is at issue because if it were, the account would reduce to that offered by Peramatzis. Remember that Peramatzis wants to understand ontological priority as the worldly correlate of definitional priority. He claims that primary substances make other things what they are. And if primary substances do this by being included in the essences of other things without including those other things in their essences, as would be the case if formal causation were at issue, then his account of ontological priority would be correct. But we have seen several reasons to reject it. So, we should reject the idea that *Categories* 12 is discussing formal causation, a conclusion supported by the aforementioned fact that hylomorphism has not been introduced in the *Categories*.

Final causation cannot be what is at issue either. Final causation invokes some notion of a *purpose* or *goal*, and this seems not to fit with Aristotle's example in *Categories* 12. Compare Aristotle's example in *Physics* II.3, in which he claims that health is the cause of walking (194b33-35). Aristotle's idea is that people walk *for the sake of* health, so health is in

some sense the cause of walking. But this model does not apply to the example in *Categories* 12. The state of affairs of a man sitting is the cause of being of the true proposition "That man sits". That state of affairs *makes* that proposition true. But it seems nonsensical to say that the proposition "That man sits" is true *for the sake of* that obtaining state of affairs. So we should reject the idea that *Categories* 12 is concerned with final causation.

Efficient causation may seem to provide a more reasonable model. An efficient cause is "the primary source (ἡ ἀρχὴ πρώτη) of the change or rest", as when we say that "the father is the cause of the child" (194b30-31). And it initially seems plausible to say that there is an efficient causal relation between a state of affairs and the proposition it makes true. But efficient causation is surely not the relation that obtains between a primary and secondary substance. Given that our ultimate goal here is not an interpretation of *Categories* 12 but Aristotle's views about ontological priority, we should move on to the last of Aristotle's four causes, namely, *material causation.*

A material cause is "that out of which a thing comes to be (τὸ ἐξ οὗ γίνεταί) and which persists" (194b24-26). For example, the bronze of a statue is its material cause. It is at least as plausible to apply this to *Categories* 12 as the model of efficient causation, for we might suppose that a proposition in some sense *comes to be* from the state of affairs of which it is about. Contemporary accounts of structured propositions fit nicely into this model. Aristotle's own views can also be explained in this way, although in more complicated fashion. For Aristotle believes that the spoken words in a statement like "That man is sitting" are in the first instance "symbols (σύμβολα) of affections in the soul (ἐν τῇ ψυχῇ παθημάτων), while these in turn are "likenesses (ὁμοιώματα) of actual things (πράγματα)" (16a3-8). With the proper account of where likenesses or symbols come from, we might

make a plausible case for the view that things in the world are the material causes of the truth-values of statements or beliefs.

However that may be, the plausibility of this model, and its preferability to a model based on efficient causation, emerges when we apply it to the ontological priority of primary substances. It is implausible to suppose that primary substances are in some sense the efficient cause of the other entities in the *Categories* ontology. It would be surprising that Aristotle did not mention such a fact, which inclines me to think his failure to mention it suggests that it is false. Primary substances *are not* the efficient causes of other entities in the *Categories* ontology. But the account of universals developed in Chapters One and Two shows how we might understand them as something like the material causes of other entities.

Recall that I claim that universals are wholes composed of parts, and that the parts of a universal are its instances. Consider, therefore, the priority of primary substances over secondary substances. Secondary substances are wholes composed of primary substances. A natural way to understand this is to say that primary substances are the *material causes* of secondary substances. They are those items out of which secondary substances are made. So despite the mutual existential dependence that obtains between primary and secondary substances, we can with some plausibility insist that primary substances are the cause of being of secondary substances in the sense that they are the material causes of secondary substances.

Something like this point will illustrate the priority of primary substances over non-substantial universals. Non-substantial universals are, like secondary substances, wholes. But their parts are not primary substances. Rather, their parts are non-substantial particulars. By analogy with the argument just given, then, we can say that non-substantial particulars are

the material causes of non-substantial universals and so ontologically prior to them. Given this, we can explicate the ontological priority of primary substances over non-substantial universals by appeal to two claims: first, the ontological priority of primary substances over non-substantial particulars, and second, the transitivity of ontological priority. The idea is this: if we can explain the ontological priority of primary substances over non-substantial particulars, then we can explain the ontological priority of primary substances over non-substantial universals by simply appending the fact that non-substantial particulars are the material causes of, and so ontologically prior to, non-substantial universals. The transitivity of ontological priority is eminently plausible. All that remains is to explain the ontological priority of primary substances over non-substantial particulars.

Here, unfortunately, the model of material causation is not helpful. Non-substantial particulars are not in some way made up out of primary substances in the way that a statue is made up out of bronze.[162] But we can still explain the ontological priority of primary substances to non-substantial particulars in another way. Indeed, given that non-substantial particulars *are* particulars, and so depend for their very existence on the particular primary substances they are PRESENT IN, we can explain their ontological dependence on primary substances as a straightforward case of existential dependence. We saw earlier that this is the one case in which understanding ontological priority in terms of existential independence succeeds. I submit that we make use of that here and insist that primary substances are ontologically prior to non-substantial particulars in the sense that they are existentially independent of them.

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[162] The closest claim in the vicinity is that *accidental compounds* like <Socrates+whiteness> have primary substances as material causes. But, as mentioned earlier, it is unlikely that Aristotle accepted the existence of accidental compounds in the *Categories*. See fn. 157.

It is unfortunate that our account of ontological priority is bifurcated in this way, but it seems to me that this is the best we can do given the circumstances.[163] The account on offer, then, holds that primary substances are ontologically prior to all other entities in the *Categories* ontology by (a) being existentially independent of non-substantial particulars and (b) being the material cause of secondary substances. Their priority over non-substantial universals is to be explained by (a) in conjunction with the fact that (c) non-substantial particulars are the material causes of non-substantial universals. Despite the bifurcated nature of this account, it is able to successfully explain the ontological priority of primary substances over all other entities. That is a significant mark in its favor, as we have seen that other accounts founder on their inability to explain the ontological priority of primary substances over secondary substances. That case poses no problem for my view.

Wedin has considered a view of the sort I defend and rejects it on the grounds that it is "too easy". According to Wedin, the view in questions amounts "to little more than granting mutual dependence and, then, proceeding to declare that, nonetheless, substance individuals are ontologically prior and, hence, that they are the things that *really* exist" (Wedin 2000: 82).

Two responses are available here. First, given this criticism, it is unclear what Wedin would make of Aristotle's discussion of priority in nature in *Categories* 12. Does he think that saying a state of affairs is prior in nature to a true proposition about that state of affairs

163 An alternative strategy would be to treat the case of non-substantial particulars depending on primary substances in terms of formal causation. Because non-substantial particulars depend on particular primary substances for their existence, their existence and identity conditions must make reference to the primary substances they are PRESENT IN. The essence of a given non-substantial particular, then, must make reference to the primary substance it is PRESENT IN. We can therefore understand this on the model of formal causation: since "the definition of the essence" is a cause, and a primary substance is part of the essence of the non-substantial particulars PRESENT IN it, we can say that a primary substance is the cause of being of non-substantial particulars. In this one case, then, our view would align with that of Peramatzis in treating ontological priority as the worldly correlate of definitional priority. While this would go some way towards unifying my account of ontological priority in treating every instance of it as an instance of one entity being the cause of being of another, there is the undeniable fact that forms simply are not mentioned in the *Categories*. Formal causation is not a good model for understanding ontological priority in the *Categories*.

amounts to nothing more than granting their mutual dependence and simply insisting that, nevertheless, the state of affairs is prior to the proposition? If Wedin is willing to accept Aristotle's own case, what makes the case of primary substances different? It seems to me that if it is permissible to say that a state of affairs is prior in nature to a proposition despite their mutual dependence, then it is equally permissible to say that primary substances are ontologically prior to everything else despite their mutual existential dependence.

Second, Wedin makes it seem as if the view I am proposing simply declares by fiat that despite the mutual dependence between primary substances and other things, primary substances remain ontologically prior to those things. But it is not simply a declaration of priority by fiat. Following Aristotle, I have claimed that what makes a given entity prior to another entity on which it depends is the fact that it is the cause of being of that entity. That is, I have not simply insisted on asymmetry where there is only symmetry. I have instead located an asymmetric relation that is something other than existential dependence, and claimed that it is *this* relation that is relevant for ontological priority rather than existential dependence. Indeed, I have tried to explain, by appeal to views about the nature of universals and non-substantial individuals, exactly how this asymmetric relation works.

Others, like Charlotte Witt, might object to my account of ontological priority on the more general grounds that "there is no mention of any causal relationship" in the *Categories* (Witt 1994: 217). As stated, however, this objection is too strong. There *is* a mention of causation in the *Categories*: the discussion of priority in nature in *Categories* 12. Still, Witt might insist that there is no mention of any causal relation between *primary substances and other entities*. Even if we allow that Aristotle talks about causation in *Categories* 12, it would not follow that

we could apply that model of priority in nature to the ontological priority of primary substances.[164]

This objection can be further developed by considering an important passage in *Categories* 13 that is clearly an extension of the discussion in *Categories* 12:

> [T]hose things are called *simultaneous by nature* (κατὰ τὸν χρόνον ταῦτα) which reciprocate as to implication of existence (ἀντιστρέφει κατὰ τὴν τοῦ εἶναι), provided that neither is in any way the cause (αἴτιον) of the other's existence (εἶναι), e.g. the double and the half. These reciprocate, since if there is a double there is a half and if there is a half there is a double, but neither is the cause of the other's existence…Genera, however, are always (ἀεὶ) prior (πρότερα) to species since they do not reciprocate (οὐ ἀντιστρέφει) as to implication of existence; e.g. if there is a fish there is an animal, but if there is an animal there is not necessarily a fish (14b24-33; 15a12).

Here Aristotle continues to speak of entities that reciprocate (or not) with respect to implication of existence. This passage is therefore a continuation of the discussion found in *Categories* 12. For our purposes, the key passage is Aristotle's claim that genera are always prior to species since they do not reciprocate with respect to implication of existence: the existence of the species implies the existence of the genus, but not vice versa.

That claim is true only if we focus on the specific kind of existential dependence defined in (1). A given species existentially depends, in the sense of (1), on a given genus,

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164 Witt herself is troubled by the passage in *Categories* 12, but that is because she claims – rightly – that we cannot use this "to explain priority in being of actuality [over potentiality]" (Witt 1994: 217). She also claims that Aristotle's example of a state of affairs and a true proposition about it is "peculiar" (ibid.), but never says what is peculiar about it other than to say that it "has no plausible relationship to the exampes discussed in our text" (ibid.). But the text in quetsion is *Metaphysics* Θ.8, which suggests that we should not find this terribly surprising. Moreover, I do not see what is peculiar about Aristotle's example. So I think it is entirely legitimate to use *Categories* 12 here.

while that genus does not existentially depend, in the sense of (1), on that species. But at a more general level, there *is* reciprocation with respect to implication of existence. A given species continues to existentially depend, in the sense of (1), on a given genus, while that genus existentially depends in a more generic way, as defined in (4), on species as a class. That is, while the existence of a particular species *S* always guarantees the existence of a particular genus *G*, the existence of *G* does not always guarantee the existence of *S*.[165] The existence of *G does*, however, guarantee the existence of *some* species or other, be it *S* or *S** or what have you. The genus, then, existentially depends on a *class* of entities, namely, lower-level species.

Aristotle never mentions this more generic notion of existential dependence in *Categories* 13 or elsewhere. Moreover, the upshot of *Categories* 13 seems to be that when Aristotle himself applies his notions of priority and simultaneity by nature to the entities of the *Categories* ontology, he concludes that *the genus is prior to the species*. This, of course, precisely inverts what we would expect him to say given his insistence in *Categories* 5 that "[o]f the secondary substances the species is more a substance than the genus" (2b7). We would expect, that is, that if for two entities *x* and *y*, these are both substances but *x* is more of a substance than *y*, then *x* is prior in nature to *y*. A greater degree of substantiality would seem to go hand in hand with priority in nature. This expectation is not satisfied if we look at *Categories* 13, since there we find the *less* substantial entity, the genus, is prior in nature to the *more* substantial entity, the species.

In the *Topics*, however, Aristotle indicates that this was a Platonic view. That presents us with a dilemma. Either *Categories* 13 was written at a time when Aristotle accepted this

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165 Aristotle, of course, holds that species are eternal (*GA* 2.1, 731b35-732a1). But the eternality, and so continued existence, of a given species is not something guaranteed by the existence of its genus or higher genera. The point being made here is independent of Aristotle's views about the eternality of species.

Platonic view or it wasn't. If the former, then given the affinities between *Categories* 12 and 13, we should think that the views developed in *Categories* 12 are Platonic as well. But given the conflict between these chapters and *Categories* 5, we should conclude that these chapters were written *earlier* than *Categories* 5, and so should not be used as a guide to understanding the ontological priority of primary substances argued for there. If, on the other hand, *Categories* 12 and 13 were written at a time when Aristotle rejected these Platonic views, then these chapters would seem to be reports of positions Aristotle rejects. Here too we should conclude that these chapters should not be used as a guide to understanding the ontological priority of primary substances defended in *Categories* 5.

The most plausible thing to say here, it seems to me, is to claim that this is a false dilemma. It is possible that while *Categories* 12 and 13 report various Platonic views that Aristotle himself rejects, there are aspects of those views he accepts. Thus, we might suppose that he continues to believe in a kind of priority in nature based on one of two mutually dependent entities being the cause of being of the other while he comes to reject the idea that the genus is prior to the species.

Some reason to think so comes from Aristotle's discussion of priority in *Metaphysics* Δ.11. He considers a variety of examples in which there appears to be a kind of mutual existential dependence, but in which one thing is nevertheless prior to another. For example, Aristotle says "in capacity the half line is prior to the whole line" while "in actuality" the whole line is prior to the half line (*Met.* Δ.11, 1019a7-8). There is a kind of mutual existential dependence between a half line and a whole line, yet Aristotle recognizes various senses in which the half might be prior to the whole or vice versa. The details are admittedly much different from the sorts of details that we find in *Categories* 12, but the general features suggest that Aristotle holds on to the idea that two things can be mutually existentially

dependent and nevertheless stand in priority and posteriority relations to one another. That in turn suggests that the kind of priority in nature defended in *Categories* 12 based on one thing's being the cause of being of another despite their mutual existential dependence is genuinely Aristotelian, and can be maintained even after abandoning the idea that the genus is prior to the species.

If this is correct, then although there is no mention of a causal relation obtaining between primary substances and other entities in *Categories* 5, nothing prevents us from importing the discussion of priority in nature found in *Categories* 12 to help us interpret *Categories* 5. As we have seen, doing precisely this has serious benefits, not least of which is helping us understand how it is that primary substances can be ontologically prior to secondary substances.

We have now seen how it is that primary substances are ontologically prior to all other entities. The view I have developed is a novel one, and it improves on the two most prominent interpretations of 2b4-6 in the literature. A complete defense of it, however, must wait until another time.

5.

With the foregoing account of the ontological priority of primary substances, I conclude my interpretation of the *Categories*. As I said in the Introduction to this dissertation, my interpretation is limited in certain ways: I do not discuss every important issue raised by Aristotle's treatise. But my project was never to write a commentary on the *Categories*, so these limits seem to me unproblematic. Instead, I have set out to discuss some of the most central issues raised by the *Categories*, taking as my guide the wealth of literature on these topics. My goal has been to fill a gap in that literature by presenting a systematic (albeit,

again, limited) interpretation of the *Categories* that attempts to understand certain crucial and cryptic passages in a unified fashion. The accounts I have given of the status of secondary substances, the ontology of non-substantial individuals, and the ontological priority of primary substances, have all relied at critical junctures on my view that Aristotle takes universals to be wholes. That is what unifies my interpretation of the *Categories*. But much of what I've had to say about these topics can be taken on board without endorsing my views about universals, just as my views about universals can be taken on board without endorsing any of my views on these other topics. Although unified, my dissertation's parts are able to stand on their own.

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