A STUDY IN EARLY MEDIEVAL MEREOLOGY:
BOETHIUS, ABELARD, AND PSEUDO-JOSCELIN

DISSERTATION

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ABSTRACT

The study of parts and wholes, or mereology, occupies two of the best philosophical minds of twelfth-century Europe, Abelard and Pseudo-Joscelin. But the contributions of Abelard and Pseudo-Joscelin cannot be adequately assessed until we come to terms with the mereological doctrines of the sixth century philosopher Boethius. Apart from providing the general mereological background for the period, Boethius influences Abelard and Pseudo-Joscelin in two crucial respects. First, Boethius all but omits mention of the classical Aristotelian concept of form. Second, Boethius repeatedly highlights a rule which says that if a part is removed, the whole is removed as well.

Abelard makes many improvements upon Boethius. His theory of static identity accounts for the relations of sameness and difference that hold between a thing and its part. His theory of identity also provides a solution to the problem of material constitution. With respect to the problem of persistence, Abelard assimilates Boethius’ rule and proposes that the loss of any part entails the annihilation of the whole. More precisely, Abelard thinks that the matter of things suffers annihilation upon the gain or loss of even one part. He also holds that many structured wholes, namely artifacts, are strictly dependent upon their parts. Yet Abelard insists that human beings survive a
variety of mereological changes. Abelard is silent about objects which are neither artifacts nor persons. I argue that Abelard has the theoretical resources to provide an account of the persistence of these types of object, so long as some forms are ontologically robust.

Pseudo-Joscelin rejects the thesis that the removal of any part entails the destruction of the whole. The annihilation of a whole follows only from the removal of essential parts. Pseudo-Joscelin employs two basic principles in his theory of persistence. First, forms and the functions encoded in them play a primary role in identity and persistence. He also makes use of a genetic criterion. Pseudo-Joscelin expands both principles and employs them when he vigorously defends the thesis that a universal is a concrete whole composed of particulars from Abelard’s criticisms.
To Tri
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CHAPTER 1

INTRODUCTION

The twelfth-century philosopher Peter Abelard makes the bold claim that no thing can ever gain or lose a part. This has the remarkable consequence that should, for example, the broom that is in my closet lose a hair, that very broom would no longer exist. This remarkable consequence has prompted many commentators, both medieval and contemporary, to suggest that Abelard has made a serious mistake. One such critic is the mysterious twelfth-century philosopher dubbed Pseudo-Joscelin. Pseudo-Joscelin argues that a whole can gain and lose parts yet survive as that very whole. Only the removal of certain parts, the so-called “principal” parts, or essential parts, will bring about the destruction of the whole. Pseudo-Joscelin argues for a position that agrees with many of our commonsense notions about objects. But, as I will argue, Pseudo-Joscelin’s philosophical position ultimately relies upon a controversial commitment to the reality and independence of structures, or using the Aristotelian idiom, forms. When viewed in this light, Abelard’s position is far from a foolish mistake. Rather, Abelard’s views about the mereological constancy of wholes are ultimately derived from his reluctance to hypostasize certain types of forms.
The ubiquity of the terms ‘part’ and ‘whole’ in both our everyday speech and in our philosophical discourse illustrates just how fundamental these concepts are to the way that we think about and describe the world. Yet despite the pervasive use of ‘part’ and ‘whole’ in our practice, these concepts are far from clear and self-evident. We assume that there are individuals. Many of these individuals are related to each other as parts to a whole. Some individuals are parts of another individual in virtue of the fact that they constitute, compose, or otherwise make up the latter individual. On the other hand, some individuals are parts in virtue of the fact that the latter individual, the whole, can be divided into these individuals. It is not obvious that all products of division are equivalent to the individuals that compose the whole. Moreover, there seem to be different relations of existential dependence which might hold between a whole and its parts. In some cases, the parts may depend upon the whole for their individuality as parts, and for their existence. But in other cases, the whole may depend upon its parts for its existence. If it does not depend upon all of its parts, then it seems that it must depend upon at least some parts. These questions belong to the metaphysics of part and whole. The study of part and whole is given the name mereology. Hence, these questions belong to what I will call the metaphysics of mereology.

In chapter 2 I present what I take to be some of the primary concerns of metaphysical mereology. In the contemporary literature mereology is often associated with the logic of the relation of part-to-whole, and accordingly, mereology is often treated as an extension of formal logical systems. I argue that the logic of parts and wholes must be explanatorily posterior to the metaphysics. In other words, the
formalization of the part-to-whole relation cannot occur until we have settled the
metaphysical issues. In particular, I identify four broad issues that must be settled in
metaphysical mereology. First, we must determine when some things constitute a whole.
Second, we must determine the conditions under which some thing is a part of another
thing. Third, we must determine whether parts are dependent upon their whole, or
whether the whole is dependent upon its parts. Finally, using our discoveries concerning
the dependence of parts on wholes and wholes upon parts, we must determine the
conditions under which a whole is the same whole both synchronically and
diachronically.

By focusing upon the metaphysical dimension of mereology, I intend to put aside
some of the details of early medieval logic. A full appreciation of the early medieval
time of part and whole would indeed have to take into account the often complex
discussions of logical inferences including ‘part’ and ‘whole’. I will assume, however,
that the logic of part and whole must ultimately follow metaphysics. For example,
Abelard like most of his contemporaries spends a good deal of time discussing that part
of the logical curriculum that analyses the so-called “topics”. One of the topics is the
“topic from the part”, which is the rule that “if a whole is, then the part is”. A natural
question to ponder is whether this rule is universally true, or whether there are
exceptions. The determination whether the rule is universal or possesses exceptions will
ultimately depend upon how one answers the metaphysical questions. In particular, the
validity of the rule depends upon one’s views about the ontological dependence of the
whole to the part.
The metaphysics of part and whole has roots deep within the history of philosophy. These puzzles vexed philosophers at least as far back as Plato.¹ Mereological questions were treated with varying degrees of rigor from then up to the present day. One notable chapter in this history is the treatment of metaphysical mereology in twelfth-century European philosophy. The history of twelfth-century mereology, let alone of early medieval mereology, is yet to be written. Unfortunately, given the state of our knowledge of the period, no such history is likely to be forthcoming. For one thing, scholars are just beginning to discover the riches buried in manuscripts throughout the libraries of Europe and beyond. Until a significant portion of these texts are discovered, edited, and made readily available for scholarly appraisal, any attempt to assess the history of this period will be in principle incomplete. While a full history of the early medieval period is not immediately forthcoming,² I think that when

¹ On Plato’s mereology, see the excellent new study by Verity Harte (2002). To my knowledge there is no thorough study of Aristotle’s mereology.

² Some readers may not be familiar with what I mean by the early medieval tradition. I have labeled the period in which Boethius, Abelard, and Pseudo-Joscelin work the early medieval period. The period is initiated, for our purposes, by Boethius in the sixth century AD, and it ends with the discovery and assimilation of the full Aristotelian corpus in the middle-to-end of the twelfth century. Abelard (born 1079, died 1142) and Pseudo-Joscelin are situated in the most intellectually fertile portion of this period. The period of early medieval philosophy is marked off from late ancient philosophy, which is epitomized by the Greek neoplatonists and the neoplatonically influenced thought of the Church Fathers, including most notably Augustine. On the other end, the early medieval period is marked off from the so-called “high scholasticism” epitomized by St. Thomas Aquinas, Duns Scotus, and William of Ockham. (For the mereology of the later medieval Aristotelians consult Henry’s major study (1991).) The principle for marking off both ends of the period is in effect the same, for the early medieval period is marked by a notable paucity of Aristotle’s work. The neoplatonists of the Late Roman Empire had a good deal of Aristotle’s works available to them, as is born out by their numerous and lengthy commentaries on such works as the Categories, the De Anima, the Physics, and the Metaphysics. High scholasticism is characterized by the rediscovery, assimilation, and ultimately revision of the full Aristotelian corpus. In contrast, the early medieval period, for reasons still unclear, lacks all but Latin translations of Aristotle’s Categories and De Interpretatione. In addition, the early medieval philosophers had the extensive commentaries of Boethius as well as Boethius’ independent writings. No neoplatonic treatises survive except for a brief introduction to logic by Porphyry (the Isagoge), in combination with Boethius’ two commentaries, which preserve a good deal of the neoplatonic school’s interpretations of the treatise.
such a history appears it will not fail to include three philosophers: the Roman
commentator and translator Boethius, Peter Abelard, and an anonymous author here
identified as the Pseudo-Joscelin. In this study, as a contribution to the future, complete
history of medieval mereology, I will offer an analysis of the contributions of these three
figures.

No one will gain a thorough understanding of the metaphysical mereology of the
twelfth century without first examining what the sixth-century thinker Boethius has to say
about these issues. Boethius is the primary source and translator of ancient Greek
philosophical terminology, concepts, and principles to the early Middle Ages. Mereology
is no exception.

In the third chapter I survey the body of mereological knowledge that Boethius
bequeaths to the early Middle Ages. In particular, I will look at the way that Boethius
consolidates ancient mereological knowledge, which is usually framed around the science
of division. The ancient philosophers applied mereological terms to a wide variety of
objects, including both abstract objects, such as universals, and concrete objects, or so-
called “integral wholes”. Because mereological terminology is used to describe the
relations between universals and individuals, some interpreters, both medieval and
contemporary, have confused universals with integral wholes. I will attempt to
definitively show that the application of mereological terminology to the science of
universals does not commit Boethius to the view that universals are a kind of integral

Sometime in the twelfth century translations of some other portions of Aristotle’s logical work, including
the Topics, begin to surface (Iwakuma 1992, 49-50). There is some evidence that Abelard was aware of
some of these other logical treatises. However, for our purposes, the Categories and Porphyry’s Isagoge
will be the crucial Aristotelian sources.
whole. This result both extends our understanding of Boethius, and it also sets the stage for the discussion of a theory developed in the twelfth century that does in fact identify universals as a type of integral whole.

With universals out of the way, I will concentrate upon Boethius’ discussion of the metaphysics of integral wholes. As I work through this material I will emphasize two features of Boethius’ mereology. First, Boethius fails to stress the importance of the classical Aristotelian concept of form, and accordingly he passes over the mereologically pregnant notion of mutilation. Second, Boethius presents and repeatedly highlights a rule commonly presented in ancient textbooks which says that if a part is removed, the whole is removed as well. It is precisely for these reasons that Abelard and Joscelin emphasize the role that the material parts of things play in the identity and persistence conditions of these things. Boethius’ emphasis of the Greek scholastic rule also encourages the development of a brand of mereological essentialism, which is embraced to some degree by Abelard.

I have already stressed that I will not attempt to present a full history of mereology in the early middle ages. However, I think it is important to give a brief sketch of the trajectory of medieval mereology from its founder Boethius to the twelfth-century renaissance epitomized by Abelard and Pseudo-Joscelin. Many details are still obscure, but much happens in the many centuries between Boethius and Abelard, and not all of it is good.

The early medieval philosophers discovered and assimilated Aristotle’s, Porphyry’s, and Boethius’ writings in fits and starts. This comes as no surprise given the
turbulent beginnings of the early medieval period. Boethius and his contemporaries sometimes act as if they are working in earnest against the onset of the loss of ancient learning. With the death of Boethius, as he feared, the medieval West does indeed sink into darkness. Boethius’ translation project of Aristotle was interrupted by his untimely death, and the works that did not get rendered into Latin by his hand were, by and large, lost to the West until the end of the twelfth century.

The fragmentary materials that do resurface are not actively studied until the ninth century, most notably under the aegis of Alcuin while he was tenured at the court of Charlemagne (starting in 781 AD). In contrast to the barren seventh and eighth centuries, Alcuin’s work is a watershed, and in so far as Alcuin directed the collection and preservation of logical texts and inspired a new generation of students to tackle the logical texts of the Ancients, Alcuin is rightfully deserving of admiration. But considered per se Alcuin’s work is highly derivative and elementary. “It may be conceded that Alcuin’s educational treatises are not, judged by any standards, remarkable; indeed, they are mediocre.” (Laistner 1957, 201) Alcuin’s disciples, while displaying momentary flashes of insight, also produce works that are introductory in scope and derivative in content. Accordingly, the serious student of metaphysics and mereology will find little of interest in the period.

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3 On this point see Chadwick’s study of Boethius (1981, 69), and consult Boethius’ remarks in his introduction to his commentary on Aristotle’s Categories (In Cat. 230c).

4 Marenbon remarks that the seventh and eighth centuries were “barren years for intellectual life in most of continental Europe” (1988, 45). What he means is that they were barren years for philosophy. Laistner notes that while the continent “was withered by a blight of intellectual sterility” a “fresh and vigorous growth of culture was maturing in Ireland and Britain” (1957, 136). Nonetheless this maturation was restricted to mostly Biblical exegesis and ecclesiastical treatises (Laistner 1957, 136-66). On intellectual life on the continent during this period, consult Laistner (1957, 167-85).
Even in the tenth century there are only rare instances of mereological sophistication. There is a notable change in this pattern as we approach the end of the eleventh century. The later part of the eleventh century and the earliest years of the twelfth are characterized by a new confidence in the use of dialectical and metaphysical principles. School masters are no longer content to comment upon Porphyry and Aristotle, using Boethius as a crutch. They begin to assume the principles found in these treatises, and they attempt to apply them to theological and philosophical problems. Not surprisingly, mereology comes into its own sometime in the late eleventh century, and it continues to hold a significant place in the philosophical curriculum in the twelfth century. Abelard and Pseudo-Joscelin are products of this twelfth-century renaissance, and while I cannot definitively prove this claim without doing a proper history of the period, I think that these two men are among the finest philosophers of their age.

Of these two philosophers Abelard is the least in need of introduction. He has long been recognized as possessing one of the outstanding intellects in the history of medieval philosophy. Commentators and interpreters of Abelard’s philosophical work have mostly focused on his discussion of the so-called problem of universals. Recently

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5 An example where philosophers begin to apply philosophical tools to theological problems is the controversy over transubstantiation that raged between Lanfranc of Bec and Berengar of Tours. For a helpful introduction to that controversy consult Holopainen (1996).

6 As many contemporary philosophers have argued, the problem of universals is in fact a nettle of related problems concerning metaphysical composition and linguistic predication. See Moreland (2001), Oliver (1996), and Mellor and Oliver (1997). On Abelard’s discussion of the problem of universals see Tweedale (1976), King (1982 and 2004), Spade (1994), and Gracia (1984). Paul Spade’s extremely helpful course notes to Indiana University course P515 (Fall 1989), entitled History of the Problem of Universals in the Middle Ages, are available from his webpage (http://pvspade.com/Logic/).
a considerable amount of attention has also been given to his ethics. But aside from the pioneering work of Desmond Paul Henry, little attention has been paid to Abelard’s discussions of the relation between a whole and its parts. This is truly a shame, as I think Abelard’s mereology is some of his most outstanding philosophical work.

In chapter 4 I show how Abelard takes Boethius’ scholastic mereological rule to heart and proposes that the loss of any part entails the annihilation of that very whole. Yet Abelard also insists that human beings survive a variety of mereological changes. Abelard thinks that the material essences of things suffer annihilation upon the gain or loss of even one part. He even holds that many structured wholes, such as houses and brooms, are dependent upon their parts in this strict sense, because the forms of these sorts of object weakly supervene upon the arrangements of the material parts. But I argue that persons have a different, looser criterion for persistence. From the strict metaphysician’s point of view, the sum of matter that makes up the person does not increase or decrease, it comes into being or ceases to be if mereological change occurs. In contrast, the person needs to retain only one part, her soul, in order to persist. Abelard is silent about objects which are neither artifacts nor persons, such as stones, flowers, and dogs. I offer the tentative suggestion that substances differ from artifacts in virtue of the type of form that informs them. In particular, there is some evidence that the substantial differentiae are not dependent upon the material parts; they are somehow more real. I

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7 This includes a new edition and translation of his Collationes (2001). The new Cambridge Companion to Abelard (Brower and Guilfoy 2004) will hopefully prompt investigations of various other aspects of Abelard’s thought.
argue that if this is indeed Abelard’s view, then he has the resources to draw the sort of definitive distinction between artifacts and substances that he so desires.

It appears that a number of twelfth-century philosophers were not convinced by Abelard’s strict analysis of artifacts or of substances, for we can detect a strong tendency toward what, in chapter 5, I will call the Moderate position on mereological change and persistence. I focus upon the Moderate position developed by another outstanding representative of the twelfth century renaissance, the Pseudo-Joscelin. I will argue that Pseudo-Joscelin offers an exciting alternative to Abelard’s theory of persistence.

The remarkable anonymous treatise *On Genera and Species* has been known for some time, and even wrongly attributed to Abelard by his nineteenth century editor Victor Cousin. In Peter King’s influential study of Abelard’s theory of universals the author is dubbed Pseudo-Joscelin (1982). King recognizes that *On Genera* presents a rival theory of universals that is equal to Abelard’s. Among Abelard’s famous criticisms of realist theories of universals is a brief, but powerful critique of what I shall call the collection theory of universals. The collection theory identifies universals, such as Human Being, with a mereological sum of individual humans. Abelard thinks this theory deeply flawed. Pseudo-Joscelin responds by developing a revised version of the theory. Both Abelard’s criticisms and Pseudo-Joscelin’s revisions of the theory rely heavily upon their different views about the relation of parts to their wholes. Indeed, Pseudo-Joscelin’s treatise opens with a meditation on the general mereology of material objects. In this study I will focus upon Pseudo-Joscelin’s general mereology and show how his theory of universals is a specific application of these general principles.
Even in the case of artifacts, Pseudo-Joscelin rejects Abelard’s thesis that the removal of any part entails the destruction of the whole. The annihilation of a whole follows only from the removal of parts principle in essence. Thus, a chip in the doorframe does not annihilate this house, whereas removing a keystone in the foundation, or blowing a large hole in the roof, will do just that.

Pseudo-Joscelin requires that forms, and the functions encoded in them, play a primary role in identity and persistence. Consequently his system bears a degree of similarity to classical Aristotelianism. The emphasis upon the role that forms must play in identity and persistence is the most controversial element in Pseudo-Joscelin’s system. This observation tempers my inclination to describe Pseudo-Joscelin’s treatment of metaphysical mereology as a corrective to that of Abelard. In the concluding chapter I will suggest that a final verdict on the debate between Abelard and Pseudo-Joscelin must be determined in part by one’s other metaphysical principles. In particular, in order to choose between Abelard and Pseudo-Joscelin one must determine the ontological status of forms.
Before turning to our medieval authors, I must offer a few remarks about mereology and what I am calling the metaphysics of mereology. Mereology is sometimes understood as a formal, or logical, analysis of the part-to-whole relation (2.1). But I will claim that the formal analysis of part-to-whole must be complemented by a metaphysical analysis of parts and wholes. My support for this claim is derived from the realization that we must resort to metaphysics in order to determine what objects count as wholes (2.2), and correspondingly what objects count as parts (2.3). Both puzzles are not as trivial as they might first appear. Mereology also must take into account metaphysical analyses of dependence (2.4). When the metaphysician understands the relations of dependence that obtain between wholes and parts, this will inform her understanding of static identity and individuation, as well as identity through time and change, or persistence (2.5).

In this chapter I will not pretend to offer definitive solutions to the puzzles presented. Rather my aim is to isolate some of the key problems that the metaphysician must tackle when considering the relationship between wholes and their parts. I will lay out a map of the conceptual terrain, and I will indicate where on this map we can locate
our protagonists Boethius, Abelard, and Pseudo-Joscelin. Once this is accomplished, we can then begin a more detailed study of the specifically medieval approach to mereology and the metaphysics of mereology.

2.1: Formal mereology and the metaphysics of mereology

Contemporary philosophers sometimes use ‘mereology’ to designate the formal theory of part and whole, which was developed consecutively by Lesniewski, and by Leonard and Goodman (as the “calculus of individuals”). By and large, contemporary theorists working on formal mereology have nominalist and extensionalist biases. In particular, formal mereologists have generally eschewed using tense and modal operators when constructing their formal systems (Simons 1987, 255 and passim). The fact that formal mereology has ignored tense and modality has, as Peter Simons argues, limited the mereologist’s capacity to come up with a formal system that accords with many of our common-sense intuitions concerning the nature of objects and their relations to their parts.

We need not ignore tense and modality when constructing a formal mereology, as Simons himself attempts to show (ibid.). As the reader will see, medieval philosophers embrace to varying degrees many of the extensionalist and nominalist proclivities of contemporary mereology. In particular, Abelard and his disciples, the so-called

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8 For a helpful survey of the development of contemporary formal mereology, consult Simons (1987, chapter 2). In the case of Lesniewski, Mereology is an extension of his formal system Ontology.

9 Simons, however, insists that mereology is neutral with respect to the nominalist/realist debate (1987, 362). For further remarks about nominalism and realism, see chapter 4 (4.1.1).
Nominales, have a great deal of sympathy for nominalist principles. But even Abelard will need to bring in what Simons calls “extra mereological considerations”—that is, principles and notions not developed in purely extensional theories of part and whole—in order to account for the persistence and identity of objects. These extra mereological considerations also fall under the philosophical inquiry into wholes, their parts, and the relations that bind the two. The exploration of what extra considerations should be accounted for in a theory of part and whole leads us away from the logical enterprise of constructing purely formal systems and into the domain of metaphysical inquiry.10

In my view, a theory of part and whole should be about real particulars and their parts. Formal systems developed in abstraction from physical and metaphysical considerations will not suffice. This is a bold claim on my part and a definitive defense of it cannot be made here. Nonetheless, I will offer an indirect argument for this claim by problematizing the basic concepts of mereology, namely that of ‘whole’ and of ‘part’. I will show that determining the extension of both concepts is far from a simple matter. Determining what counts as a whole, and what counts as a part of some whole requires that we have a more general fight over ontology. Metaphysicians must determine what

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10 I concede that metaphysics cannot be cleanly parsed from logic. This fact is especially true for the early medieval philosophers treated in this study. Nor do I think one should attempt to completely divorce logical matters from metaphysics. Nonetheless, as best as possible I will attempt to focus upon the metaphysics of parts and wholes, and not upon purely formal matters. Sometimes it is all too easy to slip into manipulating the formal system according to internal constraints, while at the same time losing track of the concrete datum that is to be accounted for with this formal system. Simons acknowledges this suspicion: “It is tempting to be led by the attraction of internal properties of the formalism either into taking the world to be tamer than it is, or into a relativistic, pragmatic attitude to ontology…” (1987, 364). He also puts his finger on one possible reason why mereologists have been attracted to formal theories: “The untidiness of natural language… is perhaps one of the chief reasons why mereologists have preferred to investigate formal systems with nice algebraic properties rather than get out and mix it with reality in all its messiness.” (1987, 236)
things exist, what things are wholes, and what things are parts before the formal mereologist can help herself to these objects and determine their formal relations.

In light of these considerations, in this study I will follow the etymology of the word and use the term ‘mereology’ in its broader sense as the theory of part and whole, where this theory need not consist of a formal algebra. When I need to refer to the contemporary formal systems labeled as mereologies, I will refer to these as either formal mereologies or, if they conform to the principles outlined by Lesniewski or the calculus of individuals, as classical extensional mereologies.

2.2: Mereological sums, and the problem of what things are wholes

The problem of how to determine what things are wholes can be brought into relief by considering the ontological status of an item dear to classical extensional mereologists, the mereological sum. Formal mereologists often use the symbol ‘+’ for the operation of mereological summation and ‘x + y’ (where x and y are variables) for the corresponding notion of a mereological sum. The formal mereologist need not have adopted the summation sign to designate this operation. Yet the suggested connection between mereological summation and addition is useful, but only up to a point. Mathematical summation is an operation applied to abstract objects, specifically numbers. While I will not rule out the possibility that there are mereological sums of abstract objects, the sums that I will focus upon in this study are without exception sums of concrete objects.
Even when we turn to concrete objects, we must proceed with caution. One might think that a closer analogue to the concept of mereological summation is the looser sense of ‘addition’ as gathering. For example, I can take these three apples on this table and add them to those oranges in the basket by tossing the apples into the basket as well. But mereological summation should not be thought of as a process of gathering, nor should mereological sums be understood as products of this process. As the formal mereologist conceives of a mereological sum, the parts need not be spatially co-located, let alone attached. The mereological sum of the three apples and the three oranges would exist even if the apples were on the other side of the world from the oranges. Mereological summation says nothing about the spatial or structural relations that obtain between its elements.

A mereological sum is better thought of merely as an enumeration, or list, of the parts composing some whole. This provisional characterization could be re-stated as the assertion that a mereological sum merely reveals the parts that constitute some whole. It is a re-description of the whole in terms of its parts. In so far as we attend to the whole this object is a house. In so far as we attend to the parts of that whole it is the sum of the roof, the walls, and the foundation.

By describing mereological sums in this manner I have blurred the distinction between constitution and identity, or rather I have tacitly assumed that constitution is equivalent to identity. This is far from obvious. Consider the house again. It is constituted by the roof, walls, and foundation. For the sake of argument these are its parts. But, one could dismantle these parts and leave them in a pile on the lot. This pile
is also constituted by the roof, the walls, and the foundation. If constitution is identity—that is, if the house is identical to the mereological sum of the roof + walls + foundation—then one is forced to admit that the house is identical to the pile. This does not accord with our common sense judgment of the matter. Piles of house parts are not houses. “Something more” seems to be required.

A purely extensional theory of part and whole does not appear capable of distinguishing between piles and houses. In purely extensional formal theories mereological sums are identical to their wholes. A philosopher could take this as a serious metaphysical claim, but the cost would be tremendous, for most objects that we normally think to exist, such as houses, would accordingly behave in ways radically different from the ways we assume they do. It turns out that houses can sometimes keep rain off of us and provide shade from the sun, and sometimes they cannot. If we insist that a house must be able to shelter human beings—that this is a property that a house must have at every time it exists—then it looks like mereological sums of walls + floor + foundation are not houses. Indeed, only a sum of walls + floor + foundation that cannot come undone and be a pile is a house. In effect, most things that we take to be houses are not houses. Common sense tells us that not all wholes are identical to their mereological sums. Thus, on the face of it, at least some wholes are not mereological sums.

Now consider the complementary question: Is it true that mereological sums are wholes? This question raises the problem of when something is a whole. The answer will depend upon whether one thinks that mere pluralities count as wholes.
As I will show, Abelard allows mereological sums to be wholes, while he acknowledges the intuition that not all wholes are mereological sums (4.1.3). Abelard develops a hierarchy of wholes, with mereological sums at the bottom and organic substances at the top. As one moves up the hierarchy the “something else” that must be added is characterized by ever increasing degrees of structural complexity. Pseudo-Joscelin and Boethius do not explicitly proclaim that mereological sums are not wholes, nor do they explicitly admit that sums are wholes. It is quite likely that Boethius’ treatment of division inspires Abelard to embrace a variety of wholes, including mereological sums (see 3.1.1), and one of Boethius’ examples of a discrete integral whole is the whole composed out of all men (3.1.2). Likewise, some of Pseudo-Joscelin’s examples suggest that he is willing to countenance the wholeness of at least aggregates, and possibly also sums.11

Many philosophers have resisted Abelard’s proposal, insisting that mereological sums are something distinct from wholes. Consider for instance Verity Harte’s critique of David Lewis. Lewis defends the claim that a “fusion” exists whenever many things exist (1991, 74). This claim is presented as an axiom in Lewis’ system, which he calls the axiom of Unrestricted Composition.12 Lewis further suggests that such fusions as my right hand and this apple are “ontologically innocent”. These strange fusions exist in no lesser manner than my body exists, and they force no further ontological commitments

11 See his remarks about flocks of crows in De gen. et spec. § 17 (see chapter 5, section 5.1.2).

12 Simons calls this the “general sum principle”. He and others find this principle suspicious. Even some extensionalist theories reject the general sum principle (1987, 81-92). Abelard embraces the general sum principle, although he will admit some modifications to the view that sums—or collections, as he will call them—are on a par with more ordinary particulars.
over and above our commitments to the things that compose the fusion (1991, 80-1). Our inattention to these weird fusions is merely a matter of preference. Weird fusions are not interesting to us. As Lewis points out, fusions such as my hand and this apple are “inhomogeneous, disconnected, and not in contrast with its surroundings”. Moreover, the fusion is not cohesive, not causally integrated, and not a causal unit in its impact on the rest of the world. These remarks imply that Lewis intends for his fusions to be not merely mereological sums, but also wholes. That is, x is a fusion if and only if x is a whole. But philosophers, such as Harte, have challenged Lewis’s claim that something is a fusion if and only if it is a whole.

We must be clear about what is at issue. I think Unrestricted Composition is unarguably true if fusions are mereological sums. If there are some things a, b, and c, then there is a mereological sum a + b + c. I also think that Unrestricted Composition makes a claim about wholes, since I think that fusions are a type of whole. This second claim is near the heart of the dispute between Harte and Lewis. For the most part I side with Lewis. Harte’s argument boils down to this: wholes are individuals, and fusions are not individuals. Therefore, fusions are not wholes. There is a definitive difference between pluralities and individuals. Lewis’ Unrestricted Composition principle forces us to erase this difference, or rather to assert that wherever there is a plurality, there is in addition an individual. If one thinks that my hand and this apple are a whole, then one has admitted something more to one’s ontology. There are now three things, a hand, an apple and a fusion. If a fusion exists wherever some things exist, then an individual, which is not any of the things singularly, exists wherever some things exist.
My answer is that mereological sums are individuals, but of a very weak and uninteresting sort. I may be interested in the history of each apple, or I may want to focus my attention on the three apples as a sum. Mereological summation allows me to treat a plurality of objects as an individual. Granted, the sum does not have many of the properties that common sense examples of individuals possess. It need not be spatially co-located. It need not have an identifiable structure or form. The only criterion of individuation, it turns out, is its membership. The sum of the three apples and the three oranges exists, no matter where each apple and orange is. The sum cannot exist if I eat one of the apples. After ingestion and digestion there is now a new mereological sum of apples and oranges. Therefore, if mereological sums are conceived as pluralities bracketed off for special attention, and thus made into individuals, I see nothing offensive to reason in Lewis’ principle of Unrestricted Composition.

Harte is not satisfied because she thinks that to be an individual something more must obtain. But here is the challenge to Harte and others of her persuasion: provide an account of the conditions under which something is no longer a plurality but rather an individual.

By siding with Lewis, I do not mean to suggest that I am unsympathetic to the intuitions that motivate Harte and others. I acknowledge, and I think Abelard when he is careful acknowledges, that some things seem to be more unified than other things. Pseudo-Joscelin definitely believes this. (Boethius is harder to interpret, but I suspect that he too believes this.) In other words, some things appear to move through space and time as a unit, and they appear to causally act as one unity. In short, they are paradigms
of the Aristotelian sense of ‘individual’. This, however, is not the only sense of
‘individual’, even in the Aristotelian school. My preference is to claim that mereological
sums are wholes; and if wholes must be individuals, then sums are individuals. Instead
of insisting that mereological sums cannot be wholes, or on the opposite extreme, that
there is no difference between mereological sums and wholes, let us admit a hierarchy of
wholes. At the bottom, we will have pure pluralities. Above that, there are aggregates,
pluralities whose members are spatially close to one another.¹³ Above aggregates there
are more complex wholes, such as artifacts and what Aristotelians call “substances”,
which include everything from rocks and trees to lions and humans.

Many philosophers look upon this pluralism of wholes and individuals with
suspicion, for it seems to commit the pluralist to the claim that more than one individual
can occupy the same place at the same time. Consider a house. The house is composed
out of a roof, four walls, and a foundation. Thus, not only is a house present, there is also
a mereological sum roof + walls + foundation. Since, these parts are spatially close
together, there is also an aggregate of the roof, walls, and foundation. Now the house is
not the aggregate, since I could tear down the house and yet keep the parts in a pile on the
lot. It also is true that the aggregate is not the same as the mereological sum. For the
sum roof + walls + foundation would exist even if the roof and walls are transported to
different locations. It seems, therefore, that there are three wholes present, instead of just
one. Doesn’t this violate both commonsense, the principle of parsimony, and perhaps

¹³ I am using ‘aggregate’ in a sense that may be unfamiliar to those who work with the contemporary
literature. There is no orthodox set of mereological terminology, especially in contemporary discussions of
even a necessary truth about material objects? If the Abelardian pluralism that I am currently proposing is correct, then there are three wholes in the same place at the same time.

I concede that this pluralism strains commonsense. But I think that it does not multiply entities unnecessarily, nor does it violate a necessary truth about material objects. I will begin with the latter concern. Some metaphysicians argue that it impossible for two physical objects to occupy the same place at the same time. Others, most notably David Wiggins (1968), insist that this is not only possible, but it is a common phenomenon. Consider a statue and the bronze out of which it is made. The statue is an object, and the bronze also appears to be an object. But it is sometimes argued that the bronze is not the same thing as the statue. Melt the statue down. The bronze is still there, but the statue now is not. The two items do not share the same properties and therefore are two objects. When the statue exists, Wiggins and others argue, the bronze also is present. Thus, when the statue exists, two objects occupy the same place at the same time.

Not every philosopher agrees with this analysis. Some argue that only one object actually exists at any specific time.¹⁴ When the statue exists, the bronze does not exist. On their view, the bronze is there potentially, and when we melt down the statue, it “turns into” bronze. This solution has an ancient pedigree, for some have claimed to find this

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¹⁴ See Doepke’s discussion of this view (1982, 52-4). Doepke himself rejects this and other “reductionist” solutions, favoring instead the view that some objects are substrata for change. See also Simons (1987, 210 ff.).
view in Aristotle. But as Doepke rightly points out, claiming that the bronze comes into existence upon destruction of the statue “calls for explanation” (1982, 53). The statue has certain properties, such as place, weight, and color, which remain after the statue is melted down. If the bronze did not exist when the statue existed, we have the right to wonder why it is that the bronze just happens to now possess the weight, place and color that the statue previously possessed. On the other hand, this “gratuitous mystery” is erased if we suppose that the bronze was there all along and is the substratum of the change imposed by melting the statue.

I do not pretend to claim that Doepke has the final word on this traditional metaphysical puzzle. But these considerations should be enough to demonstrate that we do not violate a necessary law of physics if we assert that two objects can be present in the same place at the same time.

Let us now turn to the second complaint against Abelardian pluralism, namely that it appears to multiply entities unnecessarily. In my view, Abelard and other pluralists multiply entities for good reason. To aid my discussion of these matters, let me introduce a mereological convention of my own. Here and throughout this study I will often use brackets (\{\ldots\}) to differentiate between an aggregate and a mereological sum. Accordingly, ‘roof + walls + foundation’ denotes a mereological sum, whereas ‘{roof +

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15 Doepke cites Barrington Jones’ (1974) interpretation of Aristotle (Doepke 1982, 53 note 10). In his *Opuscula* John Philoponus claims that some parts are potentially in the whole, others are present in act. Philoponus singles out the four elements as things that exist only in potentiality (*Opuscula* IV § 4, p. 130). This is Philoponus’ way of negotiating between two puzzles. The first is an explicit statement of the many and the one: the whole is one, the parts are many. If both are present in act, then the same thing is both one and many. But, so the second puzzle states, if one claims that the whole is in act, one cannot claim (as Philoponus thinks Aristotle does) that the parts exist only in potentiality. The whole and its parts are relative to one another. Hence, if the whole exists in act, then the part must exist in act (*Opuscula Monophysitica* IV § 1, p. 126).
walls + foundation\}$ denotes an aggregate. Below I will claim that sums and aggregates share a lot of the same properties (2.5). These similarities between aggregates and sums are suggested by retaining the summation sign in the symbolic representation of aggregation.

Now reconsider the pluralist’s claim that there is not only a house, but also an aggregate of bricks and boards, and a mereological sum of bricks and boards. The enemy of the pluralist complains that this analysis yields three wholes, where there is only need for one. But if the enemy of the pluralist is correct, which single whole exists, and which two are unnecessary ontological additions?

Let is consider the possibilities in turn. One could deny that mereological sums and aggregates exist, insisting that only wholes such as houses, dogs and humans exist. This claim should be distinguished from the reductivist claim made above that the matter of an object does not exist while that object exists. The enemy of pluralism is not denying that the bricks and boards exist while the house exists, rather she is merely resisting Lewis’ axiom of Unrestricted Composition, which states that since the bricks and boards exist, a sum of these bricks and boards exists, as well as a complementary claim that, while these bricks and boards are in close spatial proximity, an aggregate of these things exists.

I find the denial of the existence of aggregates and sums problematic, especially if we side with Doepke and insist that the bricks and the boards exist at the same time that the house exists. Consider the simple fact that a pile of house parts is not a house. A pile of house parts looks like a perfectly serviceable paradigm of an aggregate. One might
resist by asserting that the pile is not an aggregate. It is a pile. There are things like houses, and there are things like piles, but not things like aggregates. But piles sure look like aggregates, especially if an aggregate is defined as a collection of co-located things. This definition makes no mention of structure, or the lack of structure. Accordingly, the aggregate \{\text{roof + walls + foundation}\} exists when arranged pile-wise, and when arranged house-wise. Thus, if it is impossible for a house and an aggregate to exist at the same time and in the same place, it looks like the aggregate has just as good a claim as the house to be the one thing present. Maybe, then, there are wholes and aggregates, but no mereological sums. This won’t work either. In the analysis of the house, the mereological sum under dispute is roof + walls + foundation. But if I deny that this sum exists, it seems I must assert that at least one of the parts does not exist. But if at least one part of the house does not exist, the house cannot exist. One might reply that she does not dispute that the parts exist, she only objects that the mereological sum of these parts also exists. I argued, however, that the mereological sum just is the parts considered together as a unit. Thus, if the roof, walls, and foundation exist, the sum exists.

So far we have only considered enemies of pluralism who deny Unrestricted Composition. But there are other reductivists who will want to resist Abelardian pluralism. These reductivist philosophers will insist that mereological sums are the only things that really exist, and that all these putative complex wholes are not real. This is certainly a coherent strategy, but it strikes me as extreme. It fails to account for our experience that things like houses and especially organisms are unified. They are
individuals in a much stronger sense than mereological sums are. Mereological sums may be individuals since they can be identified and re-identified. But an organism is not only individual in this basic sense; it is cohesive and connected, and it contrasts with its surroundings, and is causally integrated (Lewis 1991, 80-1).

Therefore, in order to reject Abelardian pluralism one must either eliminate sums and aggregates, or one must eliminate artifacts and organisms. Neither option strikes me as very enticing. Abelard’s pluralism might at first seem strange, but on further examination, it seems to capture common-sense much better than either reductivist strategy. As for the complaint that Abelard multiplies entities without necessity, it now seems clear that the multiplication is not superfluous. More importantly, as I will show, Abelard’s brand of pluralism does not amount to a straightforward multiplication of numerically distinct entities. The apparent violation of parsimony is generated by assuming that the fact that \{roof + walls + foundation\} is not the same as the house (which, when understood correctly, is true) entails that the house and \{roof + walls + foundation\} are entirely distinct, or as he puts it “numerically different”. Abelard denies that difference entails distinctness (4.2.1).

As the discussion of mereological sums should have made clear, when developing a formal system of parts and wholes, one must eventually attend to the way the world is. Our metaphysics, or perhaps physics, must determine what putative objects exist.16 If we determine that what really exists are simple substances that are constantly rearranged,

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16 Early medieval philosophers do not distinguish between physics and metaphysics. The two sciences fall under the rubric of “natural philosophy”. Abelard’s defense of the view that parts and wholes are things as opposed to merely utterances can be taken as tacit approval of my claim that mereology begins with the study of the nature of things, and not with an analysis of language and logic (see Dial. 554.37-555.9).
then a purely extensional formal system just might suffice. But if our metaphysical speculations determine that no such elimination is viable or desirable, and if we admit items such as houses and organisms into our ontology, then a purely extensional system will not suffice.

2.3: When is something a part?

My inquiry into the relation between mereological sums, aggregates, and more complex individuals raised the issue of what things are wholes. A corollary to that problem is this: What things qualify as parts? Classical extensional mereology by and large assumes that in complex things—that is, things consisting of simpler things—*any* thing that is present in the complex is also a part of that complex. The engine, the pistons, the metal constituting the piston, and the atoms of the piston are all equally parts of my car. But as we will see there are reasons for challenging this assumption.

Intuitively we all have a sense of what ‘part’ means. Everyday examples of parts abound. Here is a sample of objects and their parts:

<table>
<thead>
<tr>
<th>Whole</th>
<th>Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td>Head, Hands, Feet</td>
</tr>
<tr>
<td>House</td>
<td>Roof, Walls, Founder</td>
</tr>
<tr>
<td>Sentence</td>
<td>Words</td>
</tr>
<tr>
<td>Baseball Game</td>
<td>Inning</td>
</tr>
</tbody>
</table>
Once we attempt to make the concept of a part more precise, the matter becomes much more difficult. For starters, the examples provided above constitute what contemporary mereologists describe as “proper parts”. Hence, Socrates’ hand is a proper part of Socrates (Socrates’ hand << Socrates). But many mereologists also think that Socrates can be a part of himself. They designate this by saying that Socrates is an improper part of himself (Socrates < Socrates). The two concepts are inter-definable, and different formal systems take one or the other notion as primitive and in turn define the other in terms of the former (Simons 1987, 9-11 and 53-56). For example, we might define being a part of something in terms of the proper part relation, so that x < y =def x << y or x = y.

17 Some philosophers go so far as to claim that there is no single root sense of ‘part’. I will call this the equivocal theory of parthood. Peter Van Inwagen flirts with this view. “There is one relation called ‘parthood’ whose field comprises material objects and those things like elementary particles which are not clear cases of material objects but which share many of their salient features… There is another relation called ‘parthood’ defined on events, another still defined on stories, yet another defined on curves, and so on, through an indefinitely large class of cases. And yet it is no accident—as it is with the pitch of a roof and the pitch of a whistle—that we apply the same word in each case, for these applications are bound together by a ‘unity of analogy’.” (1990, 19) While he acknowledges the variety of senses of ‘part’ employed in everyday language, Van Inwagen still insists that when the domain is restricted to material objects the term ‘part’ is univocal. And indeed, Van Inwagen’s remarks suggest something less extreme than an equivocal theory of parthood—namely, an analogical theory of parthood. An analogical theory proposes that there is one set of simpler items that are contained in the complex thing that are true parts, and that there are other things that are “parts” only in a looser, adapted sense. While the equivocal theory of parthood strikes me as extreme, the analogical theory seems promising.

18 I am glossing over another interpretation of the relational predicate ‘<’. Some interpret the predicate as ‘is part of’, others as ‘is a part of’ (Sharvy 1983, passim; Simons 1987, 232-37). What they have in mind is something like the following: ‘x is part of y’ often means that x is some of y. In other words, ‘is part of’ is often used when describing the composition of masses and mixtures. In contrast, ‘x is a part of y’ claims something more. Coffee is part of a latte, but coffee is not a part of a latte.

19 Simons notes that some formal mereologies take the concept of overlap as primitive, and define ‘part’ and ‘proper part’ in terms of this concept (1987, 48). Still others take the concept of being disjoint as primitive (idem. 53, and Rescher 1955, 9). I omit the option of using overlap as a primitive, since I think that the concept of overlap is conceptually posterior to our concept of a part. Disjointedness has more intuitive pull, since at first pass it seems that we cannot discern two things as being proper parts of some third thing unless we perceive the two as distinct (i.e. disjoint) from one another. I find disjointedness to be less desirable however, since it makes the phenomenon of overlap more difficult to define.
At this point I should highlight a difference in terminology between contemporary mereology and ancient mereology. Contemporary mereology deals with the relation of being a part of something. Ancient authors recognize that the terms ‘part’ and ‘whole’ signify relatives (*ta pros ti*).²⁰ Wholes necessarily have parts, and parts are necessarily parts of something, namely a whole. The relation that holds between part and whole is “containment” (see 3.1.1). The whole contains its parts. The parts are contained in the whole. Contemporary philosophy in general accords much more status to relations as properties, often thinking of properties signified by n-place (where n > 1) predicates as on a par with properties signified by one-place predicates. In contrast, ancient and medieval philosophers tend to focus almost exclusively on those properties denoted by one-place predicates. In the Aristotelian tradition *ta pros ti* are accidents, and like all accidents, they ultimately depend upon the substances to which they belong. But relations are especially troubling for ancient and medieval thinkers because they are properties shared by more than one subject. I will not go into details here, but without exception the relations identified as *ta pros ti*—including the relative terms ‘part’ and ‘whole’—are reduced to the properties of their *relata*.²¹

²⁰ Ammonius *In Isag.* 91, 9-17; Ps-El. 38, 28-31; Arethas Sch. 65, 23-66, 15. Barnes identifies the source of this principle as Plato’s *Parmenides* (137c). On the Platonic heritage see Barnes’ summary (1988, 230-231).

²¹ Ancient and medieval authors emphasize that the things which are wholes and parts are not in and of themselves relatives. In the *Categories* Aristotle raises the puzzle of the status of a thing’s parts. If a head is a part, and hence a relative, it cannot be a substance. The relative is one of the accidental categories, and no accident is a substance. Once this problem is broached, Aristotle attempts to re-define *ta pros ti* in such a way that the parts of a substance are themselves substances (*Cat.* 8b15-21). The commentary tradition discusses this Aristotelian puzzle, and Aristotle’s proposed resolution. A typical interpretation of the Aristotelian solution is that a head *qua* head is not a relative, but a head *qua* part is a relative (see Amm. *In Cat.* 77.24-26). There is nothing strange about the claim that the same thing, when considered with respect to different aspects, can fall under more than one Aristotelian category. See, for example, Aristotle’s remarks about things which are “accidental” quantities (*Cat.* 5a38-5b10).
I mention this difference only to eliminate possible confusion, yet I think nothing crucial follows from it. I will move freely between talk of parts and wholes and the part-whole relations with the understanding that the terms ‘part’ and ‘whole’ ultimately signify things in so far as they stand in relation to one another. Thus, speaking more loosely, our medieval authors tend to think of parts strictly in terms of proper parts. There are no clear cases where an ancient or medieval author discusses the properties of improper parts.

Proper parts, it is generally argued, have the following basic properties. These properties are often made axioms in formal mereological systems:

**Asymmetry**: if \( x << y \), then it is not the case that \( y << x \).

**Transitivity**: if \( x << y \) and \( y << z \), then \( x << z \).

**Supplementation**: if \( x << y \), then there is some other thing, \( z \), such that \( x \) is not \( z \), \( x \) does not share any parts with \( z \), and \( z << y \). That is, \( y \) has more than one proper part.\(^{22}\)

**Falsehood**: if \( x << y \), then \( x \) and \( y \) both actually exist.

Simons argues that this is the “formal skeleton” of the meaning of ‘part’ (1987, 362).\(^{23}\) And indeed, initial examination of the examples above goes some ways toward warranting the assumption that these properties generally hold for an object’s proper parts.

\(^{22}\) This is a somewhat simplified characterization of Simons’ treatment of the principle (1987, 362).

\(^{23}\) In a later paper co-authored with Charles Dement, Simons argues that the formal skeleton of the notion of part is built around the concept of improper parthood (\(<\) ). A proper part is then defined as a part of \( x \) such that \( x \) is not a part of it. Asymmetry is replaced by Reflexivity: if \( x \) exists, then \( x < x \) (Simons and Dement 1996, 262-3). Compare the axioms presented by Simons and Dement with Fine’s axioms (1995, 469) and the axioms elucidated by Rescher (1955, 9).
While this list of properties appears to capture the basic features of what we think of as parts, it must be stressed that these axioms do not completely characterize the properties of all those items that we ordinarily call parts (Simons 1987, 235). It might even be the case that there are exceptions to these rules, especially when we consider the variety of parts possessed by organisms. For example, consider this puzzle: a heart << a man’s body. A man’s body is composed of matter. Does it follow that a heart << the man’s matter? 24 If it does not, then Transitivity is not universal.

In a co-authored paper, Simons and Dement argue that in the case of artifacts there are numerous senses of ‘part’ that come into play, many of which are much stronger—i.e. much more restricted—concepts than the “skeletal” concept of ‘part’ (1996, 263-66). For example, some things are parts of an artifact in the sense that they are “assembly components” of the artifact. Other parts are “disassembly components” of the same artifact. The two sets of components are not necessarily the same, since it is often the case that due to bonding methods applied in assembly, objects cannot be taken apart in the same manner that they were put together. A third type of part that occurs in artifacts (and organisms) is a “functional component”. Some functional components are also assembly components, some are not. A carburetor is an example of the former, the braking system of the latter. Still other parts—for example, the front and back half of a car—seem to not be components at all; and indeed some philosophers argue against the existence or ontological significance of these “arbitrary undetached parts” (Van Inwagen 1981).

24 The puzzle is mentioned and resolved by Peter Simons (1987, 244-47).
One way to draw a distinction between true parts and Pseudo-parts would be to claim that any thing that is a simpler item contained in a complex item is a constituent of that complex, but that there is a difference between being a constituent and being a part. Parts would be a sub-set of an object’s constituents. Of course, it is now incumbent upon this theorist to show how we are to mark off this important sub-set.

One proposal is that the parts must themselves be individuals, or at least sufficiently like individuals. This is a plausible way to discount spatial parts as true parts, since the top half of my body is not an individual in the same sense that my hand is an individual. My hand has its own distinguishing characteristics that distinguish it from my head and my feet. The top half of my hand, in contrast, is derivative upon readily individuated parts of me. I could not pick out the top half of my hand without first individuating my hand. But there are several worries with this proposed criterion. First, it is not uncontroversial to claim that items like hands and heads are individuals. Some philosophers in the Aristotelian tradition reject the view that the parts of individual substances are themselves full-blooded individual substances. This is not an insurmountable objection, if the Aristotelian is willing to humor the weaker claim that parts must be sufficiently like individuals. The trouble is, however, that this criterion still leaves us with a variety of items claiming the status of parts. The atoms constituting my car are individual. The assembly parts of my car are individual, but perhaps distinct from the disassembly parts of my car. Are these individuals all parts in the same sense?

The biggest worry with the first proposed criterion for parthood is that the more individual the parts are allowed to become, the greater the puzzle of composition.
becomes. The puzzle of composition is a version of the problem of the one and the many, and can be roughly stated as follows: how do we get one individual, and not just a collection, out of many individuals?\textsuperscript{25} Cars and human bodies are unified entities, and not just piles of simpler individuals. A car is different from a pile of pistons, spark plugs, belts, gears, tires, etc. Perhaps most significantly, the car can \textit{act} in ways that the pile cannot—such as travel at 65mph down the freeway. More controversially, as we will see below, some philosophers think that my car can lose and gain parts and remain my car, whereas a pile of car ‘parts’ cannot.

These considerations indicate that mere individuality might not provide a criterion for when something is a part of another thing. As we will see in due time, Abelard suggests that the parts of some thing must be such that they continue to exist after the creation of the composite (4.1.3). Thus, for example, the eggs and flour are not parts of the cake, since the eggs and flour are not still present after they are combined and the mixture is baked.

I mention but one more possible criterion, as it will introduce a puzzle that I will pick up again shortly. We might propose that if \( x \) is a constituent of \( y \), it is possible that \( x \) is not present in \( y \) at some time during \( y \)’s existence. On the other hand, if \( x \) is a part of \( y \), necessarily \( x \) exists at every time that \( y \) exists. This criterion is suggested by the common Aristotelian dictum that the whole is that of which no part is lacking (see 3.3.4).

\textsuperscript{25} In her study of Plato’s mereology, Verity Harte identifies the problem of composition—i.e. how can many things compose one thing?—as an aspect of the many-faceted problem of the one and the many (2002, 26). Harte’s problem of composition is the same as Van Inwagen’s “Special Composition Question”: under what conditions do some things (“the \( x \)'s”) compose \( y \)? (1990, 21-31; cf. Van Inwagen 1987). As Harte notes, this is not just a worry about counting, and hence it is not the confusion that Frege eliminates in his \textit{Foundations of Arithmetic} § 46.
The problem is that I pre-reflectively think both that my hand is a part of me and that I can survive as a whole even if I lose my hand. Either my hand is not a part of me, or I do not exist as a whole after losing my hand.

The upshot of these considerations is that drawing a distinction between constituents and parts is far from a simple matter. Determining whether something is a part of another thing will depend upon such matters as one’s metaphysical theory of individuals, and one’s treatment of the problem of the one and the many.

As with the problem of determining what things can be wholes, our three medieval authors tackle the problem of determining what items are parts to varying degrees. Aside from the previous remark about the distinction between ingredients and parts, Abelard does not worry extensively about what items belonging to wholes count as true parts. This is probably due, again, to his reading of Boethius. Boethius’ definitions of parts are not as consistent and precise as we would like (3.3.2). However, Abelard raises some worries about what items count as parts when he critiques the collection theory of universals (5.2.2). Accordingly, Pseudo-Joscelin must address Abelard’s concerns about parthood when he defends his version of the collection theory (5.2.3).

While examining when something is a whole and when something is a part, we have already stumbled across three central and related metaphysical questions concerning parts and wholes. First, in what ways do the parts depend upon their whole, and conversely, in what ways do wholes depend upon their parts? Second, what must be the case mereologically speaking in order for the whole to be identical, both to itself and to its parts, at a single moment in time? And finally, what must be true mereologically
speaking for a whole to be the same whole over time and through change? Our medieval
authors will not always frame these questions this way, or for that matter, always take
care to tease these issues apart. But it will help our understanding of medieval
metaphysical mereology if we attempt to separate these issues and outline the approaches
that one might take to answer these three metaphysical questions.

2.4: Dependence

Metaphysicians have asserted that parts and wholes share various relations of
dependence to one another. Some assert that parts depend upon their wholes. Others
assert that wholes depend upon their parts. There are a variety of ways in which one item
depends upon another. In metaphysical mereology, the type of dependence that we are
interested in is ontological dependence. Our description of ontological dependence will
have ramifications for how we will develop an account of the identity of wholes.²⁶

2.4.1: Varieties of ontological dependence

To say that some thing is ontologically dependent upon another thing has several
senses. The first sense of ‘x ontologically depends upon y’ is that y is a necessary
condition for x’s existence simpliciter. That is, if x exists, then y must exist. We will
reserve the label ‘existential dependence’ for this variety of ontological dependence.

Another way in which something may depend upon another thing for its existence
is that y is the origin of x. That is, if x exists, then y once existed. But just because y

once existed, it need not still exist in order for \( x \) to continue existing. The previous mode of ontological dependence is hence much stronger than this *genetic* dependence. A child is ontologically dependent upon her parents in the sense that she is genetically dependent upon her parents.

A third way in which something can be ontologically dependent upon another thing is when \( x \) depends upon \( y \) in order to exist *as this sort of thing*. If \( x \) is an \( F \), then \( y \) exists. This last type of ontological dependence seems to be at least part of what Aristotle means when he famously claims that a severed hand is only a hand “in name”, not in definition. In other words, Socrates’ hand is only a hand so long as Socrates exists. Should we kill Socrates, this hunk of fleshy stuff changes in respect to the kind of thing it is. It is no longer a hand. Aristotle also suggests that Socrates’ hand ceases to be a hand if it is severed and Socrates nevertheless continues existing (see below 2.4.3). Thus, a stronger version of this mode of ontological dependence is something like the following: if \( x \) is an \( F \), \( y \) exists and \( x \ll y \). I will call these weaker and stronger versions of this type of dependence *sortal* dependence.

Having identified several senses of ontological dependence, I now want to briefly meditate upon the two claims that wholes ontologically depend upon their parts (2.4.2), and that parts ontologically depend upon their wholes (2.4.3).

2.4.2: Dependence of the whole upon its parts

My suspicion is that the modern reader will find the notion that the whole is ontologically dependent upon its parts more readily intelligible. Wholes appear to be at
least weakly dependent upon a set of parts for their origins. My house required a set of boards, nails and bricks to exist in order for it to exist. However, depending upon what things can be parts, the weak genetic claim may not be universalizable. Consider Abelard’s distinction between ingredients and parts, which can be illustrated by considering a cake. The cake depends upon the eggs and flour for its origin. But if Abelard is correct, the eggs and flour are not parts of the cake. Even when these examples are put aside, it is crucial to note that the thesis that wholes weakly depend upon parts for their origin does not entail specific commitments about whether these parts still make up this whole. Moreover, it is possible to weaken the genetic dependency thesis even further and deny that it must be this particular set of parts that bring about the existence of this individual. That is to say, according to this weakest version of the genetic dependence thesis, Socrates could have been made out of this material rather than that material. The only requirement might be that any material that brings about the existence of Socrates must be of the right sort. (Socrates could not have been made out of silicon or chocolate.)

A stronger thesis than the genetic dependence thesis is that the whole depends upon its parts in order to continue to exist. Aside from cases like Abelard’s cake, the thesis can naturally be understood to claim that the whole depends upon its parts both in order to come into being and in order to exist. The existential dependence thesis is stronger since it covers the conditions of existence per se, whereas the genetic thesis
focuses upon the conditions at the moment when existence begins. The thesis of existential dependency can, thus, cover cases where the object in question is eternal, and hence, has no origin.

This thesis of existential dependence admits degrees. At its weakest, the claim amounts to the claim that the whole depends upon the right type of parts for its existence. Stronger versions claim that at least an essential sub-set of the parts must exist in order for the whole to exist. To use a crude example, Socrates’ heart and brain must exist in order for Socrates to exist, but it is possible for Socrates to exist even if his hand does not exist. As we will see, Pseudo-Joscelin proposes a version of the thesis that the whole existentially depends upon a specific sub-set of the individual’s parts.

The strongest version of the existential dependence thesis states that this particular set of parts (and no other) must exist in order for this whole to exist. The strongest existential dependence thesis is sometimes labeled “mereological essentialism”. Mereological essentialism can be understood without reference to time or with reference to time. The atemporal version states that, if a whole is \( a + b + c \) then it is not possible for this whole to be anything but \( a + b + c \). For example, it is impossible that this whole is \( a + b + d \). The temporal version of mereological essentialism makes specific reference to time, claiming that whenever this whole exists, this particular set of parts must exist. Consequently, using the example of the whole that is \( a + b + c \), if at some time one of the parts, say \( c \), were annihilated, the whole would cease to exist. The latter version is, hence, a thesis not only about existential dependence but about persistence, or identity through time.
Even in its strongest form, the essentialist’s claim may only amount to laying down a necessary condition, and not a sufficient condition. The parts may exist yet be scattered in such a way that the whole does not exist. This is especially true if one thinks that structure plays a significant role in the being of a whole. This is crucial to remember, since I will show that while Abelard is attracted to strong versions of mereological essentialism, he also admits the importance of structure for determining the conditions under which certain, more complex types of whole exist (4.3).

2.4.3: Dependence of the part on the whole

Not all philosophers think that the primary relation of dependence is that of a whole on its parts. Aristotle can be interpreted as claiming that at least some parts ontologically depend upon their wholes. Should an eye lose its power to see, it would be an eye “only in name” (*De Anima* II.1, 412b20-22). I will refer to this claim as Aristotle’s principle of homonomy. One way that an eye could lose its power to see is by removing it from someone’s skull—that is, removing it from the whole. Thus, it would seem that such parts as eyes and hands are ontologically dependent upon their wholes. But precisely which mode of ontological dependence is being singled out by this principle of homonomy?

At the very least, the Aristotelian means that the part is genetically dependent upon its whole. But the Aristotelian dictum is also making a claim about sortal dependence. We can give this a modern biological twist to make the claim somewhat more intelligible. Let us consider one part of a human being, a hand. A human hand is
defined in terms of the fact that it is always part of a human being, and that under normal
conditions it plays a specific role in the normal functions of human beings. Spun another
way, the human hand is defined by human genes, and human beings as they develop will
normally develop hands. Indeed, human hands are only grown by human beings. They
do not grow on trees, or even on chimpanzees. The hands that grow on chimpanzees,
while very similar to human hands, are chimpanzee hands, not human hands.

It is instructive to remember that, for the Aristotelian, the sortal dependence of
parts upon their whole is characterized by functionality, and not just structure. For some
amount of time after separation, this severed thing still has the shape of a hand, but for
the Aristotelian the shape is generally not enough to qualify as falling under a sort. For
the Aristotelian, human hands are functionally defined. They are hands in so far as they
can perform the activities that human hands and eyes perform. Once severed, that which
was a hand can no longer grasp things, draw, make gestures, pick up blueberries, and so
forth. For this reason the Aristotelian thinks they are not hands.

In an age when severed hands remained severed, the Aristotelian’s view is
perhaps not unreasonable. I think that some of our current distrust of the Aristotelian
position comes from the fact that we now live in an age when severed hands are
sometimes reattached (and even regain some degree of functionality) and organ
transplants are commonplace. Aristotle’s doctrine, when espoused in our world, seems to
commit him to the mysterious view that a hand (or an eye, or a heart) can go in and out of
eexistence.
Perhaps this oddity is tempered when the claim is interpreted as a claim about genetic and sortal dependence. But the mystery creeps back in when one considers other functionally defined parts. Unlike the heterogeneous parts of organisms, which appear to depend upon their wholes for their origin, many complex, heterogeneous parts of artifacts do not appear to depend upon their wholes even in this way. Consider a spark plug. It is manufactured by the thousands independently of any particular car (indeed, of any particular type of car). This sparkplug does not depend upon my car for its origin, let alone (it seems) for its sortal existence. The Aristotelian move that it is not actually a spark plug when sitting upon a warehouse shelf runs into a crucial disanalogy. If, for the sake of argument, we bracket contemporary advances in surgery and instead assume that we inhabit Aristotle’s age, Socrates’ hand when severed is no longer even potentially able to perform hand functions. But a sparkplug, so long as it is not used up, is potentially able to ignite gasoline and air even when it is sitting on the shelf. If it did not have this potential, I would refuse to purchase it.

One might object that while my spark plug does not require the existence of my car for its origin or existence as a spark plug, it still requires that some car exist, or at least that the blueprints for cars exist. The spark plug, hence, depends in some sense upon the existence of cars (or the universal, Car) for its origin and existence. This thing might depend upon the blueprint for a car for its existence as a spark plug. Its falling under a sort depends upon it fulfilling, or being capable of fulfilling a function that is
defined by the blueprint for the whole. But note that this is a different, and I claim much weaker, assertion than the Aristotelian assertion that Socrates’ hand depends upon Socrates.

These are some of the ways that we might try to understand the Aristotelian claim that many parts are dependent upon their whole. I will sometimes refer to this Aristotelian dictum in the coming chapters, but usually I will do so in order to contrast classical Aristotelianism with the early medieval understanding of Aristotle. For Abelard and Pseudo-Joscelin in particular, the parts will always enjoy a degree of ontological independence from their wholes.

This last claim comes into conflict with a view defended by an important contemporary scholar of early medieval mereology. In his studies of medieval mereology, Desmond Paul Henry draws a distinction that corresponds to some of the characteristics of parts and wholes that the Aristotelian has mapped out, and he claims that at least Abelard sometimes subscribes to this distinction.27 In order to deny Henry’s interpretation, I first need to outline the distinction that Henry employs.

Henry’s distinction between X-parts and parts-of-X is designed to describe the change that occurs when the spark plug, which was lying on the shelf at the warehouse, becomes incorporated in my car. The spark plug on the shelf is a car-part. That is to say, the plug qua car-part is a part designed to be a part of some car or other, but it is not currently incorporated into any particular car. The spark plug in my car is now a part-of-

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27 Henry identifies, to list only a few, the following places in Abelard’s writings: In de Div. 163.20-31; Dial. 431.23-432.5, 344.18-345.6; Log. Ingr. 2, 171.4-22. See Henry’s discussion of these passages (1991, 51 and 81-89; cf. 1985, 75-80). Henry makes much of the fact that Abelard picks up the linguistic point that predication of an integral whole can only occur in the genitive case.
a-car. The spark plug has been incorporated into a whole with not only the right parts, but also the right structure (Henry 1991, 82). It is not a constitutive feature of being an instance of a car-part that the plug is designed to be a part of a car. If I were to cut my car in half with a blow torch, the front and back halves of my car would also be car-parts (Henry 1991, 48). In general, the X-parts may be parts that pre-exist the X. They may also be parts that, first pre-existed the X, then were incorporated into an X, and finally post-date the X. And, as my example of my halved car, X-parts may be the sorts of things that did not pre-exist the X, but are created along with the X and can remain after the dissolution of that X.

Henry sometimes talks as if X-parts and parts-of-X are exclusive classes of part—i.e. a is an X-part if and only if a is not a part-of-(an)-X. For example, he says that “parts-of-X may become X-parts without ever having been components in the sense of ready-made incorporable parts” (1991, 48). Taken at face value, Henry is suggesting that the carburetor on the shelf is a car-part only. When installed in my car, the carburetor then becomes only a part-of-a-car, and not also a car-part. And finally, when the carburetor is salvaged, it once more becomes a car-part, and only a car-part. This change in status from X-part to part-of-X will turn out to be important later.

Henry thinks that the distinction between X-parts and parts-of-X is useful because it will help disentangle several metaphysical knots. For example, as I will show in chapter 4 (4.3.2), the early medieval philosophers were puzzled by the fact that while the existence of a part generally does not entail the existence of its whole, in the case of “temporal wholes”—for example, a day—the existence of any part does entail the
existence of the whole. If the first hour of the day exists, then the day exists. Henry suggests that the puzzle can be dissolved by noting the distinction between X-parts and parts-of-X. It is true that if a part-of-an-X exists, then necessarily that X exists. But if an X-part exists, it is not necessary that an X exists (Henry 1984, 255; 1991, 140-42).

I want to argue that Abelard and Pseudo-Joscelin do not avail themselves of this distinction, or anything like Aristotle’s principle of homonomy. Henry complains that, for instance, Abelard does not utilize the distinction between X-parts and parts-of-X when he should. I take these omissions to be evidence that Abelard does not have the distinction in his conceptual repertoire.

I also fail to find evidence of the distinction between parts-of-X and X-parts in places where Henry claims to find it. I will offer one example. At the end of one of his extended treatments of part and whole, Abelard reports this curious argument given by one of his teachers Roscelin28 (Dial. 554.37-555.9):

There was, I recall, the view of our master Roscelin which was so unsound as to allow that no thing is composed of parts; rather just as [he does for] species, he determines parts to be only utterances.29 If someone claimed that this thing,  

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28 Only one extant treatise has been unanimously attributed to Roscelin, a letter from Roscelin to Abelard, which is often remembered more for its colorful insults than for its theological or philosophical material. In recent years historians have discovered and attempted to attribute further theological and dialectical treatises to Roscelin. Picavet, following Hauréau, attributed the Sententia de universalibus secundum magistrum R. to Roscelin and listed in his appendix of fragments and testimonia (1911, 139-41). Iwakuma tentatively attributes a treatise on Porphyry’s Isagoge (given the title Disputata Porphyrii based on its incipit) to Roscelin (Iwakuma 1992a, 74-100). For the most part these have been tentative or questionable. By his own admission the evidence for attributing the Disputata Porphyrii to Roscelin is inconclusive (1992, 60). The attribution of the Sententia to Roscelin has been challenged by Dijs (1990, 89-91). At the end of the day, whether these treatises were from Roscelin’s hand is of no concern to us. When considering Roscelin’s views on mereology, the evidence remains only testimony, often polemical, by other authors.

29 It is no small matter to figure out what Abelard is imputing to Roscelin. Roscelin may hold the extreme view that parts, like universals, are “puffs of air”, and that all talk about parts and wholes is empty of content. All that exists is individual, and individuals are radically simple. This is the view offered by Victor Cousin (see Mews 1998, 48), and it seems to be Abelard’s interpretation of his old master’s doctrine. In a letter to the Seat of Paris, Abelard accuses his master of holding his vocalist doctrine to the
which is a house, is composed out of other things (e.g. a wall, foundation, [etc.]),
he contested this [claim] with the following argument: suppose this thing, the
wall, is a part of that thing, the house. Since the house is nothing other than this
wall and roof and foundation, it follows that the wall will be a part of both itself
and all the others. But how can the same thing be a part of itself? In addition,
every <part> is naturally prior to its whole. How then can it be said that the wall
is prior to both itself and to the others, since nothing is ever prior to itself?

Roscelin’s argument, as Abelard reproduces it, is extremely difficult to parse, but these
two features are clear. First, Roscelin’s claim that parts are merely utterances, not things,
is a consequence of a reductio ad absurdum. Second, Roscelin thinks that he can
somehow move from the indisputable premise that the wall is a part of \{the wall + the
roof + the floor\} to the controversial premise that the wall is a part of the wall. Once he
has secured the latter premise, Roscelin easily leads the realist into absurdity. A part
cannot be a part of itself, for a part is naturally prior to its whole. If, for example, the
wall is part of the wall, then the wall would be prior to itself. But that is absurd.

Roscelin thus rejects the initial assumption that parts are things. We certainly use words
that we presume to refer to parts. Therefore, parts exist at least in so far as they play a
role in a system of utterances. But if parts are not things, then parts are only found in the
domain of utterances.

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point of absurdity: “He is a pseudo-dialectician, and likewise a pseudo-Christian, since in his Dialectica he
concludes that no thing has parts. Thus, he shamelessly corrupts the holy text: for example, when our Lord
is said to have eaten a part of a roast fish, [Roscelin] is forced to understand not a part of the thing, but a
part of the utterance ‘roast fish’.” (Picavet 1911, 129) However, Abelard is probably distorting his master’s
thesis for rhetorical effect. It is possible that by insisting parts are merely utterances Roscelin does not
deny the existence of substances and even the divisibility of these substances into portions. Rather,
Roscelin might be suggesting merely that differentiation and division are determined by the human mind,
and perhaps even by human convention (Kluge 1976, 410).
So much for the obvious: the difficulty is determining why Roscelin thinks he is licensed to move from,

(A) The wall is a part of \{the wall + the roof + the floor\}

to

(B) The wall is part of the wall.

Henry suggests that Roscelin has failed to keep straight the distinction between X-parts and parts-of-X (1991, 89). I do not see how Henry’s distinction explains Roscelin’s implicit reasoning. In particular, I fail to see how Roscelin’s move from the claim that the wall is a part of \{the wall + the rest\} to the assertion that the wall is part of a wall is any more justified if it is assumed that the wall is taken as a house-part than it is if the wall is a part-of-a-house.

Henry is also wrong to suggest that Abelard’s response corrects Roscelin’s putative equivocation between house-parts and parts-of-houses (Dial. 555.10-19):

This argument is defused in the following manner: while it is said that the wall is a part of itself and of the others, this is conceded [when the parts] are conjoined and taken together. For example, when one says that these three [parts] are the house, he does not concede that each of the parts is [the house], only that the parts taken together and conjoined [are the house]. Thus it is not true that the wall is [the house], nor that any other part [is the house]. Only the three [taken together] at once [is the house]. So the wall is a part of itself and the others conjoined together at once—that is, [the wall is a part] of the whole house, not per se of itself. Likewise [the wall] is said to be prior to itself and the others when they are conjoined together at once, it is not [prior to] itself per se. The wall exists prior to when it was joined [to the other parts], and it is necessary that each part exist naturally prior to when it makes the collection into which it is gathered.

Abelard’s critique suggests that Roscelin infers from (A) the further claim:

(A2) The wall is a part of the wall and the wall is a part of \{the foundation + the roof\}. 

And from this premise it is a simple step to the key premise:

(B) Therefore the wall is a part of the wall.

If this reconstruction is correct, then the Roscelin’s argument rests on an obvious fallacy.

The wall is a part of the wall and the others, but only in the sense that the wall is a part of the wall conjoined together with the foundation and the roof. Abelard is absolutely correct. It does not follow from \( x \ll \{x + y + z\} \) that \( x \ll x \) and \( x \ll \{y + z\} \). The proper part relation is not distributive. Roscelin’s argument is nothing more than a clever sophism. But more importantly for our present purposes, Abelard’s critique of Roscelin never mentions, nor presupposes the distinction between X-parts and parts-of-X.

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30 It will not help to suggest that Roscelin is interpreting the claim that the wall is a part of the wall as the wall \( < \) the wall (which is true by definition). The proposed defense is anachronistic. It is possible that Roscelin anticipated the improper part relation. But the details of Roscelin’s argument suggest that he is working within the tradition, not rebelling from it. Roscelin thinks that if the wall is a part of the wall, then the wall is prior to the wall. But this rule would only hold if he were implicitly translating (B) as the wall \( \ll \) the wall. In the case of improper parts, the principle is contingent, not necessary. If \( x < y \), then either \( x \ll y \) or \( x = y \). If \( x \ll y \), then the priority principle can hold. But if \( x < y \) because \( x = y \), then the priority principle does not hold. Suppose that the sense of Roscelin’s premises (A) and (B) are, (A*) the wall \( < \) \{the wall + the roof + the floor\}, and (B*) the wall \( < \) the wall. It would follow that both premises are true, but for different reasons. (A*) is true because the wall \( \ll \) \{the wall + the rest\}, but (B*) is true because the wall = the wall. But more importantly, in order to generate the reductio ad absurdum Roscelin requires that (B*) entail (B**): the wall \( \ll \) the wall. For it is (possibly) true that, necessarily, if \( x \ll y \), then \( x \) is naturally prior to \( y \). But it is false that, necessarily, if \( x < y \), then \( x \) is naturally prior to \( y \). I fail to see, however, why the realist is obligated to assert that (B*) entails (B**).

31 As things stand, the argument reproduced by Abelard is not sound. Yet, it is possible that Abelard has distorted his master’s doctrine. In particular, if Mews is correct, Roscelin’s main obsession is with the Trinity, and so it might be the case that the original Roscelinian argument is meant to apply to the Trinity, not to parts and wholes in general. To test this hypothesis let us replace Abelard’s example of the house and its parts with God and the Trinity The argument still takes the form of a reductio ad absurdum: (1) Suppose that the persons of the Trinity are things. (2) God is composed out of, and is nothing other than the Father, the Son and the Holy Spirit. (3) The Father is a part of God. At this point, Roscelin can help himself to some Trinitarian doctrine. According to the orthodox position, each person of the Trinity is God, and more importantly, entirely God. The Father is entirely God, and the Son is entirely God, and the Holy Spirit is entirely God. Thus, Roscelin can help himself to the following identity: (4) The Father is God. By substitution, Roscelin is licensed to infer: (5) The Father is part of the Father. The Father is, therefore, part of Himself, which is absurd. Roscelin’s reductio is successful. If one considers the persons to be three discrete things, Trinitarian doctrine entails absurd consequences. The persons of the Trinity must be utterances only. I thank Peter King for suggesting that I reconstruct Roscelin’s argument as an argument about the Trinity.
Apart from failing to find places where Abelard (or anyone) utilizes the distinction between X-parts and parts-of-X, I want to also present a general critique of Henry’s distinction. I argue that Henry’s distinction fails to do the work that he wants it to do. This is especially true if something is an X-part if and only if it is not a part-of-X. Consider a car and its carburetor. When the carburetor is sitting on the warehouse shelf it is a car-part, but not a part-of-a-car. When it is placed in my car, it becomes a part-of-a-car. And when the car is scrapped, the carburetor ceases to be a part-of-a-car, but is perhaps still a car-part. First, we may ask, when the carburetor is in the car, is it not a car-part? If the carburetor in the car is not a car-part, Henry has added something mysterious to an otherwise innocuous observation about how we describe the ‘lives’ of carburetors and spark plugs. What is it about the addition of structure that changes the status of the carburetor from being a car-part to a part-of-a-car other than the fact that it is now in a car? To claim that a carburetor that is actually incorporated in a car is not also a car-part is to suggest that there is not one thing, a carburetor, but rather two things, a carburetor-as-car-part and a carburetor-as-part-of-a-car, the former going out of existence and the latter coming into existence upon installation.

Even if Henry thinks that the carburetor that is in the car is both a car-part and a part-of-a-car, I fail to see how the distinction is metaphysically illuminating. Henry’s distinction puts a name to a linguistic phenomenon, and perhaps also to a real phenomenon. But it does nothing more. The distinction does not explain why an X-part can exist without its whole, whereas a part-of-X cannot. If Henry thinks that he is pointing to some important, underlying metaphysical phenomenon, his distinction adds
no degree of clarity over and above giving us names to track the change. If the carburetor changes its metaphysical status when incorporated into a car, Henry’s theory only gives us a name to give to its different statuses. If the names refer to two different things, the change becomes all the more mysterious, not less so.

Time and time again, Henry believes he has found someone making use of the distinction in medieval treatments of mereology. But if my general complaint is valid, the reader should be extremely skeptical when Henry attributes this distinction to a medieval philosopher. In the next chapter I will explain why the distinction between X-parts and parts-of-X is not a distinction that twelfth century philosophers will embrace, for I will claim that Boethius fails to bequeath the Aristotelian principle of homonomy to his early medieval students (3.3.4). Accordingly, Abelard and Pseudo-Joscelin will not avail themselves of a distinction between X-parts and parts-of-X, and in general they will tend to concentrate on the ways that a whole depends upon its parts, and not on the ways that parts might depend upon their wholes.

2.5: Synchronic and diachronic identity

The stance someone takes with respect to the existential dependence of a whole upon its parts will determine to a great degree how she develops a criterion of identity for wholes. Developing the identity conditions for wholes requires that we examine wholes

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32 The recognition that mereology and identity are intimately related is not new. We know that there was a debate in the Hellenistic schools over whether (i) a whole is different from the part (Epicureans), or (ii) the whole is neither different nor the same as the part (Stoics), or (iii) the whole is both different and the same as its part (Aenesidemus). This dispute is recorded in Sextus (*Ad. Math.* IX.335-337). For a discussion of this passage and the proposed solutions to the dispute see Barnes (1988, 259-268). Proclus notes that the relation *being a part of* and the relation *being a whole for* constitute two of four possible relations that obtain between beings. For all things x and y, either (a) x is contained by y (i.e. x is a part of y), or (b) y is
both statically and dynamically, from both the perspective of a single moment in time (or atemporally) and from the perspective of two or more moments of time. I will alternate between discussions of the synchronic and diachronic identity of wholes. But before proceeding in this fashion, I must develop some background for the study of diachronic identity.

Everyday experience presents us with evidence that things, both simple and complex, exist at more than one time. We even talk as if they “move through” time. Adding the dimension of time invites a host of metaphysical problems concerning the nature of time. In contemporary metaphysics, there are broadly two schools, often labeled “presentism” and “eternalism”.

Presentism is the thesis that only the present exists. The past did exist but no longer does, and the future will exist but does not exist yet. Eternalism holds that each moment of time exists. There is no ontological privilege that the moment currently labeled as ‘now’ or the ‘present’ possesses. Connected to these two theses are two other broad divisions: “perdurantism” and “endurantism”.

Perdurantism claims that the objects of common sense do not pass though time. Rather my car, for example, is actually a sum of “temporal parts”, or “time-slices”. My car is the sum of, crudely speaking, the-car-at-t₁ and the-car-at-t₂ and so forth.

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33 For a useful overview consult Loux (1998, 207 ff). Sometimes the division is drawn between “tensed” and “tenseless” theories of time. Lowe has argued that a tensed theory need not be a version of presentism. Lowe argues for a tensed theory of time that does not privilege the present (1999, 95).

34 This is only a crude way of putting the point, since many defenders of perdurantism, or “four-dimensionalism”, are wary of the names of temporal parts that look like ‘car-at-tₙ’. They worry because one of the objections to four-dimensionalism is that, as the names of temporal parts bear out, we can only...
claims to capture commonsense. My car, the endurantist insists, exists “as a whole” at every time that it exists. When I get in my car at t₁, I am getting into my car, not a time-slice of my car.

The careful reader will observe that perdurantism assumes a modern view of space-time, where time is a dimension on a par with the traditional three spatial dimensions. Perdurantism aligns naturally with eternalism (Loux 1998, 209-210).³⁵ One point in space does not exist any more than any other point in space. Likewise, one point along the temporal axis will not exist any more than any other. Often philosophers reject perdurantism because they think that there is a crucial disanalogy between the three spatial dimensions and the temporal dimension.³⁶

The ancient and medieval philosophers, and in particular Abelard and his contemporaries, assume a version of presentism. The modern four-dimensionalist understanding of time is alien to Aristotelians. Instead of conceiving of time as either a grid on which things are plotted or as a kind of container, Aristotle and his followers famously think of time as a measure of change. Time is something that supervenes upon understand temporal parts in terms of three-dimensional objects. In other words, there couldn’t be a car-at-t₁ unless there were a car simpliciter (Lowe 1999, 114-18).

³⁵ They naturally match up, but they need not do so. Some contemporary metaphysicians have argued for tenseless versions of endurantism, and others for tensed versions of perdurantism (Lowe 1999, 85 footnote 1).

³⁶ Roderick Chisholm’s criticism is a particularly succinct version of this mode of attack, “The disanalogy may be suggested by saying simply: ‘One and the same thing cannot be in two different places at one and the same time. But one and the same thing can be at two different times in one and the same place.’” (1971, 16) Chisholm acknowledges that this statement of the disanalogy must be made more precise, and he attempts to do so. He also acknowledges that one may appeal to the doctrine of temporal parts to defend the view that there is no disanalogy. But if one does that, then one may not defend the doctrine of temporal parts by appealing to the claim that there is no disanalogy between space and time.
substances as they change substantially (e.g. when this matter becomes an animal) or accidentally (e.g. when this animal goes from being pale to tanned).

Presentism historically is tied to endurantism, and in the ancient and early medieval periods I can find no exception to this association. Aristotle’s early interpreters betray their endurantist prejudices when they conclude that, while the three spatial dimensions are accidents of a substance, they are the closest to substance of all the accidents. If one were to strip all other accidents from a substance, one would still have the three dimensional quantity of the substance (see, for example, Porphyry In Cat. 100.23-28). In their discussion of the *Categories* time is not accorded the same special status. Perhaps this was due to the fact that a substance could exist and yet not even have the potential to change.37 And if there is no change, time does not exist (for that substance).38 The problem of persistence for medieval authors must be framed in terms of an underlying assumption that substances can only endure, and that only the present moment of time is real.

With this understanding in place, let us now turn to the synchronic and diachronic identity of wholes in relation to their parts. It turns out that I have already considered the puzzle of synchronic identity in several ways. In section 2.2 we puzzled over whether a

37 A substance need not even have the potential to change, since Aristotle claims that all things that are moving or at rest are in time (*Physics* 221b7-23; 202a4-5). A thing can only be at rest if it can potentially move (Callahan 1968, 69). While this is a metaphysical possibility, in reality spatially defined (i.e. corporeal) substances are always in time. Time is continuous and uniform because of the unending motion of the heavens, and time is one everywhere because all motions are ultimately contained in the one perfect motion of the celestial spheres (*De Caelo* 283b26-284a6; 279a28-30; cf. Callahan 1968, 86-87).

38 One of the weird consequences of Aristotle’s theory of time is that each substance appears to have its own time, a “personal time”. The reader should consult Peter King’s study for a helpful discussion of Abelard’s interpretation of the Aristotelian theory of time as well as Abelard’s attempt to align personal times with one overarching time (2004, 100-103).
mereological sum is identical to a more complex whole. For example, is a house identical to the roof + the walls + the foundation? At first glance, this might sound like nothing more than the problem of the many and the one. But I think that this new question embodies a subtly different problem. It is not strictly a question whether one thing is identical to many things, but rather whether two types of whole are identical. Thus, another instance of the second puzzle is whether the house is identical to its “matter”, whereby I mean, is the house identical to the aggregate \{the roof + the walls + the foundation\}? In other words, we considered whether the parts that compose a whole are identical to that whole. If the parts are not identical to the whole, then something more is required in order for the parts to become the whole. A common way for the medieval authors to fill in this something more is to claim that form plays an important role. Form also helps to determine the identity of wholes in another manner, since the problem of identity meshes with the problem of individuation.

I have already suggested that mereological sums are strictly identical to and individuated by their parts. The sum \(a + b + c\) is identical to \(c + a + b\). Since spatial relations play no role, \(a\) and \(b\) and \(c\) can be arranged in any pattern with respect to one another. They can be close to one another, or in three opposite corners of the universe. For this reason determining synchronic identity is easily determined. Two sums are identical if and only if they have the same parts. \(a + b + c\) is identical to \(b + c + a\), but \(a + b\) is not identical to \(b + c\).

When we turn to the diachronic identity of mereological sums, we have overwhelming reasons to think that a strong form of mereological essentialism holds true.
Given that a mereological sum is individuated solely by the membership of its parts, if any part is gained or lost, that sum is destroyed. Thus, if today I annihilate b, then the sum a + b + c no longer exists. It is just as false that what is now a + c is identical with what was a + b + c, as it is false to claim (without reference to any time) that a + c is identical to a + b + c.

Aggregates require more for their individuation and identity. In particular, for aggregates, such as crowds and flocks, spatial proximity is the additional feature that must obtain. When men are sufficiently dispersed, they cease to be a crowd, even if no man ceases to exist (and hence, the corresponding mereological sum loses no members). This is a compelling reason to think that the mereological sum a + b + c is not identical to the aggregate {a + b + c}. Notice, however, that spatial proximity is all that needs to obtain. If the men in the crowd mill around and talk to one another, it is still the same crowd. Thus, {a + b + c} is identical to {b + c + a}.

What about the identity of aggregates over time? Intuitively, we might think that crowds can gain and lose members, whereas mereological sums cannot. So long as there are enough men still in the town square, the crowd is still present. Compelling as this intuition may be, if taken as a metaphysical thesis, it seems to entail the existence of vague objects. Just as one might think that there are no precise boundaries to the Australian Outback, one might think that there is no set group of men that constitutes the crowd.

Some philosophers are comfortable with vague objects. But there is another option. Roderick Chisholm is fond of recalling a distinction he finds in Bishop Butler
between a loose and popular sense of identity and a strict philosophical sense of identity (1976, 92-104). In the case of the crowd, loosely speaking the same crowd is present in the town square despite the constant flux of its members. But in the stricter sense crowds, like mereological sums, are governed by mereological essentialism. This crowd persists so long as this strictly defined set of members is present in sufficiently close proximity. If Socrates leaves to take dinner with his wife, then this crowd ceases to be, even though a crowd is still in the town square. The common man may well find this distinction to be pointless nitpicking. But what this view sacrifices in naturalness it readily gains in metaphysical precision. Gone are those mysterious vague objects, with their equally slippery identity conditions. The consequence of this elimination of vague aggregates is that aggregates are subject to a strong form of mereological essentialism in addition to the criterion that the parts remain in sufficient spatial proximity to one another.

A purely extensional mereology is perfectly comfortable with the synchronic and diachronic identity conditions of mereological sums. It can perhaps also account for the added spatial criterion for aggregates. But one of the reasons that many philosophers are suspicious of extensional mereologies is that they are incapable of capturing the identity conditions of more complex objects. For these more complex wholes spatial proximity is not enough. In some cases, the parts need to be attached to one another. In the case of the most complex wholes (which are, incidentally, the most interesting wholes),

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39 Defining this heap of stones in terms of its members will not halt the standard Sorites paradox (i.e. the paradox of the heap), for the standard Sorites focuses upon our application of the predicate ‘heap’. While I may claim that this collection of stones less one stone is not the same heap, I still up to some vague boundary call the collection a heap.
proximity and attachment must also be accompanied by structure, or form. A house is more than just the roof, walls and foundation touching one another. The parts must be arranged in the appropriate way, with the foundation on the bottom, the walls standing upright, and the roof attached above. For some complex wholes, such as human beings, structure may not be enough. A corpse has the right structure, but it lacks the crucial feature of being alive. More abstractly, the corpse does not function (and is not capable of functioning) as a human being.

These additional properties of higher order wholes are appealed to in order to claim that a whole is not synchronically identical with its parts. But now that structures and functions have entered the picture, we must examine the relations of dependence that obtain between the form and the whole, and we must see how this affects the analysis of synchronic and diachronic identity.

If the form is what individuates a complex whole, then it is possible that this whole could have been made from different parts. For example, one might believe that Michelangelo’s David could have been made from a piece of marble other than the one that it is actually made from. But the fact that the form helps individuate the complex whole does not entail this claim. It is *prima facie* coherent to claim that the individual must have this form and this matter to be this very individual. Indeed, it may even be true that a form, while individuating a thing and making it more than the sum of its parts, is ontologically dependent upon its parts in such a way that it will pass out of existence if the parts are changed or rearranged. This last view is purportedly held by Abelard’s students, the Nominales (4.3.4).
Notice that if the Nominales are correct, then the addition of form will not radically alter our account of synchronic identity. In other words, a whole’s identity will still be determined by the parts that it has. But if form plays a more robust role in the complex, so that the whole is something over and above its parts, then the parts may begin to play less of a role in determining the synchronic identity of the whole. The precise relation between the form and its material parts, and the role that each plays in the static identity and individuation of wholes, will be of primary importance in the following chapters.

The ontological dependence and robustness of a whole’s form will also determine how it will function when determining diachronic identity, or persistence. At one end of the spectrum the mereological essentialist claims that in order for a whole to persist, the mereological sum that constitutes it at the first time must be identical to the mereological sum that constitutes it at the second time. At the other end of the spectrum, one may insist that the persistence of form through a change will suffice for persistence of the whole through change. We will see both Abelard and Pseudo-Joscelin attempting to situate themselves somewhere along the continuum between mereological essentialism and the view that form guarantees persistence.

But for the present return to the mereological essentialist’s claim. This is a startling thesis about persistence, for it requires what I will call mereological constancy in order for a whole to persist. This is contrary to many of our ordinary notions about complex, structured wholes. Cars can get a new pair of spark-plugs and remain the same car. Human beings change their matter continuously through various metabolic
processes, and yet they (we think) are the same despite these mereological changes. Why on earth, then, would anyone require that wholes must be mereologically constant?

One reason that some philosophers take the stronger reading is that it nips certain problems in the bud. Despite our intuition that wholes need not be mereologically constant, many of us assume that a whole must be mereologically continuous. If I were to replace every part in my car all at once, I would have good reason to think that there was a new car present, not my old car. This raises several obvious questions: What number of parts may I replace at some specific time and yet have the same car? Are some parts more essential to the persistence of my car than others, such that none of these parts (or a fewer number of them) can be replaced while preserving the car? Some philosophers, most notably Peter Unger (1979), have attempted to show that there is no precise boundary at which parts replaced wholesale cause the destruction of the whole. Unger has concluded that this vagueness, when coupled with a version of the sorites argument, entails the conclusion that there are no wholes (or at least there are no wholes for objects whose constitution is vague). Unger tries to short circuit the sorites by denying that there are any objects susceptible to the sort of vagueness of composition that drives the argument. Alternatively, one might dismiss Unger’s extreme claim about the

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40 As he puts it, only things that are susceptible to decomposition or not precisely defined fall prey to the “sorites of decomposition” (1979, 241-2): “Such things as are not susceptible to decomposition withstand this form of argument: certain sub-atomic particles may provide an example. More importantly, decomposable things which are in a relevant way ‘defined with precision’ escape the present reasonings. Accordingly, I shall not now deny the existence of most molecules, even some ‘quite large’ ones, nor, perhaps, even certain crystal structures. However, something such as a blue 1968 Chevrolet four-door sedan, while according to most accounts not something vaguely described, will fall prey to our sorites.”

41 Unger introduces three propositions that he holds are mutually incompatible. (The table stands in for any artifacts which is susceptible to the sorites of decomposition.): (a) There exists at least one table. (b) For anything there may be, if it is a table, then it consists of many atoms, but only a [preciscely specified] finite
non-existence of such objects as tables and organisms and still conclude that there are no *enduring* wholes (or least that there are no interesting enduring wholes). I could eliminate the vagueness of composition by stipulating that this spatially co-located collection of parts is Socrates. But given that normal biological processes almost immediately destroy this collection and bring about a new collection, it appears that Socrates only exists for one moment. He does not endure.

One could challenge the Ungerians in at least two ways. One could object to the argument because it uses sorites reasoning. Sorites reasoning is used to generate numerous obviously false conclusions from equally obvious premises. Hence, there must be something wrong with the logic of sorites reasoning.

But in my view, the more promising way to challenge Unger and friends is to insist on a greater role for form when developing the identity and persistence conditions of common sense objects like cars and human beings. This response amounts to a switch from what we might call a “bottom-up” analysis to a “top-down” analysis. Unger attempts to determine the identity, and derivatively persistence conditions of a thing by enumerating the constituents. The top-down approach insists that this method is

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42 Ayer’s curt reply to Unger incorporates both modes of attack (1979, 324). Ayer’s criticism of the logic of the sorites is that it makes use of “the false assumption that the relation of ‘being the same X with one less element than on the previous count’ is transitive”.

43 Unger insists that the functionality of artifacts which, medieval authors will assert, constitutes part of that object’s form, has nothing to do with the matter at hand (1979, 241). But I think Unger errs here by considering only a watered down notion of functionality.
misguided. The form and function of the individual will predominantly determine the identity and persistence of the thing, thus allowing for changes of parts, and perhaps even a measure of vagueness in composition.

Abelard has much sympathy for the bottom-uppers, but as I will show in chapter 4 he must accommodate the need for some top-down analysis when it comes to more structurally complex individuals (4.3.3-4). Pseudo-Joscelin will embrace the top-down, form-driven analysis of identity and persistence even more enthusiastically (5.1.2).

The attractiveness of the top-down approach over the bottom-up approach will depend to a large degree on one’s tolerance of forms. And indeed, forms are in many ways mysterious. They are by definition not material, which already makes some metaphysicians uneasy. There are also worries whether forms count as parts of the composite, and if so, are they subject to the same mereological rules that govern material parts. I will consider this question in the next chapter (see especially 3.1.1 and 3.2.3). I will also suggest that forms may either supervene or be independently existing things (see 4.1.2). The reader’s queasiness about forms may turn upon whether forms are more the former than the latter.

2.6: Conclusion to chapter 2

I have argued that mereology must ultimately appeal to metaphysics. Accordingly, mereology informs, and is informed by, theories of individuality and individuation, ontological dependence, and identity. The meditations above are intentionally schematic and open-ended. I want to give the reader a sense of the terrain,
not an argument for a complete theory of part and whole. While making use of Aristotelian positions, the terrain is by-and-large defined in contemporary terms. I now turn to Boethius and his interpretation of the ancient tradition, and I consider these metaphysical problems as he frames them.
CHAPTER 3

BOETHIUS AND THE EARLY MEREOLOGICAL TRADITION

No study of twelfth-century mereology is complete without an account of the intellectual tradition that these philosophers draw upon. Specifically, such a study must examine the influence of the sixth century scholar and philosopher Boethius. I will argue in this chapter that Boethius’ understanding of mereology determined the way that twelfth century philosophers approached metaphysics in general and metaphysical mereology in particular.

Boethius has been described as the “last of the Roman philosophers and the first of the scholastic theologians” (Stewart and Rand 1973, xii). Boethius looks backward to the ancients, and in particular to Aristotle and the neoplatonist Porphyry. But he also looks forward, for Boethius appears to foresee the coming of the Western Dark Ages. His works, and the works of his contemporary Cassiodorus, appear to be earnest attempts to consolidate and preserve ancient learning before it is lost. Along with several independent, introductory treatises, his theological tractates, and his magnum opus The Consolation of Philosophy, Boethius aimed to translate all of Plato and Aristotle into Latin. Following the lead of the neoplatonist Porphyry, who famously defended the value
of studying Aristotle in the platonic schools, Boethius further aimed to show how Plato and Aristotle could be reconciled. This project was interrupted by his cruel and untimely death. Boethius only managed to complete translations and commentaries on Porphyry’s *Isagoge*, and Aristotle’s *Categories* and *De Interpretatione*. The works that did not get rendered into Latin by his hand were, by and large, lost to the West until the end of the twelfth century. In the absence of Plato, Aristotle was the key source of early medieval metaphysics. In the absence of his *Metaphysics*, Aristotle’s *Categories* came to embody both a theory of logic and of basic metaphysics. Porphyry’s *Isagoge*, translated and commented upon by Boethius, was widely understood as an introduction to Aristotelian logic, and since logic was preparatory for philosophy in general, to Aristotle’s philosophy. The metaphysics one could construct from Aristotle’s *Categories* was supplemented by Porphyry’s treatise as well as by Boethius’ commentaries on the *Isagoge* and the *Categories*. Some of Boethius’ material on part

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44 Tradition credits Porphyry as the chief platonic apologist of Aristotle against the criticisms of his master Plotinus. Thanks to Porphyry, we are told, the study of Aristotle’s opera was once again sanctioned (Evangeliou 1985). In general, Porphyry and his followers spent a great deal of energy reconciling Aristotle’s philosophy with the fundamental precepts of Platonism. Porphyry’s *Isagoge* is so successful that it traditionally is preserved as the first work in the Aristotelian corpus.

45 There are two notable exceptions. The early medieval West did possess part of Plato’s *Timaeus* in Latin along with a commentary by Calcidius. This work, however, was assumed to be a work on physics and cosmology. And while Abelard discusses doctrines found in Calcidius, in particular on the World Soul, the Latin Plato does not appear to inform his mereology. The other main exception is an anonymous paraphrase of Aristotle’s *Categories* known as the Themistian paraphrase or the *Categoriae Decem*. Evidence from manuscripts indicates that the *Categoriae Decem* was studied and glossed far more frequently in the nineth and tenth centuries than Boethius’ translations (see Marenbon 1981).

46 Determining whether the *Isagoge* is intended to be an introduction specifically to the *Categories* need not detain us here. For an overview of the debate, consult Evangeliou (1985).
and whole is presented as commentary upon Aristotle extant works.\textsuperscript{47} But the majority of Boethius’ mereological thought is preserved in his introductory treatments of logic, and in particular in his treatise \textit{De Divisione} (“On Division”).\textsuperscript{48}

In what follows I will examine the mereological tradition founded by Aristotle and presented to the early medieval West by Boethius. Given the paucity of what was available from Aristotle’s extensive \textit{opera}, it is no surprise that some important concepts are not carried over to the early medieval period, or if they do appear, they often do so in a distorted form. Sometimes this omission and distortion is attributable to Boethius. Boethius’ logical works are almost without exception introductory treatises. As one would expect from introductory textbooks, Boethius’ treatment of mereology often glides over complexities, which a more advanced work would stop to address. Hence, Boethius’ remarks about parts and wholes are often general and devoid of nuance.

It is by no means clear that Boethius actually has a theory of parts and wholes. He might, as some of his contemporary interpreters have urged, be merely parroting remarks he finds in elementary, (probably) neoplatonic textbooks without worrying

\textsuperscript{47}Boethius’ commentaries on Aristotle belong to the neoplatonic tradition of Aristotelian scholarship founded by Porphyry. Indeed there are signs that Boethius is nothing more than an editor and translator of Greek commentaries into Latin. To name one remarkable example, Boethius’ commentary on the \textit{Categories} greatly resembles the extant commentary of Porphyry on the same work. Indeed, Steven Strange uses Boethius’ commentary to elucidate the corrupt and fragmentary text of Porphyry. For a guide to the comparisons consult Strange’s footnotes to his translation of Porphyry (1992, passim.). Some scholars have inferred from this evidence that Boethius’ commentaries are merely cobbled together from Greek neoplatonic scholia that were present in his manuscript copies of Aristotle (see Shiel 1958). Lloyd substantially agrees with Shiel’s thesis, and it is because of this thesis that Lloyd feels justified to use Boethius as a source for reconstructing Porphyry’s doctrines (1990, 2, footnote 2). For a more moderate and charitable appraisal of Boethius see Barnes (1981, 80). On the specific problem whether and to what extent Boethius’ \textit{De Divisione} borrows from Porphyry, consult Magee (1998, xxxiv-lvii). For a more general discussion of Boethius’ Platonism consult Gersh (1986, II, chapter 9) and Chenu (1997, 72-79).

\textsuperscript{48}Boethius insists that his treatise on division should be read as part of an Aristotelian curriculum, as outlined in his (now lost) \textit{De ordine Peripateticae disciplinae} (877b; Magee 1998, 6.14-16).
whether these remarks are consistent.\(^{49}\) I will not assume that this is the case from the start. Rather, I will attempt as best as I can to re-construct Boethius’ metaphysics of mereology. This reconstruction will require that I piece together stray remarks, think through the specific examples that he gives, and generally extrapolate from an admittedly sparse collection of rules, examples and hints. My method carries the risk of yielding not Boethius’ theory of parts and wholes, but rather a Boeth\textit{i}an theory. But this is the same risk that Abelard, Pseudo-Joscelin, and all the thinkers of the early medieval period took when attempting to piece Boethius’ remarks into a coherent metaphysics of mereology.

3.1: Parts, wholes, and division

In chapter 2 I noted that the terms ‘part’ and ‘whole’ are applied to a wide variety of objects. The neoplatonists and Aristotelians are well aware of this phenomenon.\(^{50}\)

The relation of being a part of something and its corollary, the relation of “containment”

\(^{49}\) Some have argued that Boethius’ \textit{De divisione} is derived from Porphyry’s lost commentary on the \textit{Sophist}. Andrew Smith reprints the entire \textit{De Div.} as 169F in his edition of Porphyry’s fragments. On his reasons for inclusion consult his introduction (\textit{Frag. x-xii}). Others suggest that Boethius had two sources, one being Porphyry’s commentary and the second being a treatise on division by Andronicus of Rhodes. Magee concludes that Porphyry’s prolegomena to his \textit{Sophist} commentary is the direct source of Boethius’ \textit{De divisione}. However, he does not discount the possibility that Andronicus is an indirect source, nor does he discount the possibility that some of the material in \textit{De divisione} is original to Boethius (1998, lv-lvii). One of the reasons that scholars suspect that Boethius borrows from more than one source is that there are problems with Boethius’ presentation of the modes of division (Zachhuber 2000, 88-89).

\(^{50}\) According to the tradition, Aristotle’s \textit{Metaphysics} \(\Delta\) is a treatise on things with several senses (Alexander in \textit{Metaph.} 344; Kirwan 1993, 122). \textit{Metaphysics} \(\Delta.25\) and \(\Delta.26\) are on ‘part’ and ‘whole’ respectively. (One glaring exception to the rule is \textit{Metaphysics} \(\Delta.27\) on ‘mutilated’, which based on Aristotle’s discussion is not a term with several senses. For a useful discussion of \(\Delta.27\) and its place in \textit{Metaphysics} \(\Delta\), see Sprague 1990.) The broader neoplatonic tradition also recognizes this principle insight. For example, Plotinus warns his audience that “perhaps it is necessary to grasp more clearly how ‘part’ is said” when discussing the parts of the soul, and he immediately points out that the parts of the soul are not to be confused with parts of bodies (\textit{Enneads IV}.iii.2, 11-12). On the same point, Porphyry recognizes the potential for confusion, and for this reason proposes the distinction between ‘part’ and ‘power’ (\textit{Frag.} 253F, 29 ff.).
are applied to a variety of items. In particular, ancient authors use the part-to-whole relation and the relation of containment to characterize the relations between not only concrete, material objects, but also abstract objects. The relations of being a part and containment do not stand for the same properties when applied to these different types of objects. This fact becomes most evident when one considers their treatments of the science of division.

3.1.1: The science of division

For the later neoplatonists and Aristotelians mereology is usually presented in their treatments of the science of division (diairésis). Treatises on division and its correlative process “collection” are traditionally considered logical works. But metaphysics and logic as they are understood by contemporary philosophers are rarely, if

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51 “To contain”: periechein (Gr.)/continere (Lat.). The Greek word also means ‘to embrace’ or ‘to envelope’ (LSJ s.v. periechô). Both these meanings are suggestive, since wholes are often described as things constructed by gathering together, or collecting other things. The technical application of the verb “to contain” can be traced back to Plato (cf. Parmenides 150a, 151a; and Lloyd 1965, 228). It seems that the following is a truism for the ancients and medievals: x is part of y if and only if y contains x.

52 Porphyry presents the Tree as part of Aristotelian logic, although there is reason to be skeptical that Aristotle himself would embrace the Tree. The Tree privileges one set of differentia over all others. Aristotle, however, seems to acknowledge that one can divide up the same item in different ways by applying different sets of differentia, and that there is not necessarily a privileged way of dividing an item. It should be clear however, that one need not accept Porphyry’s Tree in order to accept the basics of collection and division.

53 Porphyry and his students use several verbs and their cognates for this process, e.g. sunairein and sunagein (Isag. 6, 18-21). The Greek term analutiké (“analysis”) is found in many of the Greek Church Fathers, and also in the ninth century philosopher Eriugena, who is deeply influenced by the Greek patristic sources.
ever, cleanly demarcated at this point in the history of philosophy. For the neoplatonists especially, collection and division provides a way to cut nature at its joints.\(^{54}\)

The operation of division itself is divided by the neoplatonists into numerous modes. The catalogues of these modes differ in some respects, from author to author.\(^{55}\)

What follows is Boethius’ division of division (De Div. 877c-d; Magee 1998, 6.19-26; cf. Bo. In Isag. II, 154.11 ff.):

The Substantial divisions (secundum substantiam):

1. Genus into species.
2. Whole into parts.
3. *Vox* that signifies many things (*homônunos phonê*) into its significations.

The Accidental divisions (secundum accidens):

4. Subject into accidents.
5. Accidents into subjects.
6. Accidents into accidents.\(^{56}\)

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\(^{54}\) This is a notion that goes back to Plato (cf. Phaedrus 265e-266b), and is carried through to the ninth century neoplatonism of John Scottus Eriugena. Dialectic, Eriugena tells us, is concerned with the divisions of the most general genera down to the most specific species, and the collections of these species into their genera (Periphyseon I. 463b). Eriugena equates division with neoplatonic procession, and collection with return (II. 526b-c). Division and collection are not merely logical, the process of division “constitutes a universe that is quite real, and the return is equally and in the same way more correctly ontological” (Trouillard 1977, 350; cf. Moran 1989, 253).

\(^{55}\) For a comprehensive catalogue see Magee (1998, xlv-xlvi).

\(^{56}\) If we compare Boethius’ list of the divisions to several other neoplatonic commentators, we come across some interesting differences. To take only a few examples, David the Armenian lists six modes (154.22-32): The first three are (1) Genus into species, (2) Species into individuals, and (3) Whole into parts. (Whole into parts is subdivided into, (a) wholes divided into homogeneous parts, and (b) wholes into heterogeneous parts.) The last three modes are (4) *Homônunos phonê* into its significations, (5) Substance into accidents, and (6) Accident into substance. Elias lists the same six modes (In Isag. 67.26-68.18), and adds a further mode: (7) The division of Being into things from the One and in relation to the One (*ta aph’ henos kai pros hen*) (70.20-21). This last division is added by Elias to account for the neoplatonic claim that everything emanates—and hence comes forth by some mode of division—from the One, or Being (*to on*).
I will put aside the accidental divisions (4-6) and the division of the word into its meanings (3), as Boethius’ discussion of these divisions has little to add to our understanding of early medieval mereology. I will also attend to the division of the genus into its species (1) only in so far as this division illuminates the crucial mode of substantial divisions, that of the whole into its parts (2).

In his commentary on Cicero’s *Topics*, Boethius reminds the reader that while ‘part’ sometimes refers to a species (in relation to its genus), integral parts are never called ‘species’ (*In Cic. Top.* 331.8-9, and 320.42 ff.). In the same treatise, Boethius insists that genera are never called ‘wholes’. The term ‘whole’ is restricted to singular things (*In Cic. Top.* 331.15-19). But Boethius, as well as other neoplatonists and Aristotelians, sometimes use the term ‘whole’ more liberally to describe anything that is a thing-to-be-divided. The most concise example of this phenomenon is to be found in this passage of Porphyry’s *Isagoge* (*Isag.* 7.27-8.3):

The individual is contained (*periechetai*) under the species, the species under the genus. For the genus is some sort of whole (*holon ti*), and the individual is a part. But the species is both a whole and a part. It is a part of one [viz. the genus], but a whole not of the other, but rather in others (*en allois*). For [the species] is a whole in its parts.\(^57\)

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\(^57\) Boethius omits the ‘in’ from his translation (*In Isag. II.*, 236.10-11): *totum autem non alterius, sed alis; partibus enim totum est.* (“However [the species] is a whole not of another, but for others. For it is a whole [in relation] to its parts.”) According to Busse’s *apparatus ericitus*, most of the manuscripts retain the ‘en’ (*Isag. 8 loc. cit.*). However, Pseudo-Elias omits the ‘en’ as well. So there seems to be a textual tradition which supports Boethius’ reading. This may account for aspects of the interpretation that Boethius and Ammonius offer. (See next note.)
Boethius takes *Isag.* 7.27 ff. to be summarizing Porphyry’s description of divisions of genera and species, which this passage from the *Isagoge* nicely encapsulates (*Isag.* 6.16-21):

Therefore, when descending to the most specific species, it is necessary to go [there] by dividing the multitude. When ascending to the most general genus, it is necessary to collect together (*sunairein*) the multitude into a one. The species is a collection (*sunagógon*) of many into one nature, and a still larger [collection] is the genus. But particulars and singulars, to the contrary, always divide the one into a multitude.

The language of collection and division naturally suggests the mereological terminology of ‘part’, ‘whole’, and ‘containment’. In his extensive commentaries on the *Isagoge*, Boethius is more than happy to follow Porphyry’s lead and use the term ‘whole’ in the more generous sense (*In Isag.* II, passim). This tendency to call universals wholes and the participants of universals parts is ubiquitous in the early medieval period.

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58 The Alexandrian neoplatonic commentators take Porphyry to be making a terminological point (Ammonius *In Isag.* 91.9-17; Ps-Elias 38.28-31; and Arethas *Sch.* 65.23-66.15). Boethius echoes Ammonius’ interpretation (*In Isag.* II, 237.1-11): “The species is both a whole and a part: a part of the genus, a whole in relation to individuals. And when it is a part, it is made in reference to a singularity, when a whole, to a plurality. For since a genus exists above many species as a one, each part of the genus is some one species. Yet, since the species stands over many individuals, it is not a whole in relation to one individual, but in relation to many. Therefore, [the species] is called a whole, because it comprehends and conjoins (*cohercet*) many things. For when something is a part, it can be itself a one and part of a one. But when it is a whole, it cannot be itself a one and a whole of a one. Therefore, the species is a part of one thing [viz. the genus], but a whole in relation to others.” The switch from the genitive to ‘in’ plus the dative (or just the dative) is due to the fact that when a species is considered to be a whole collected out of individuals, it is a whole in relation to many and not merely one. The dative is the appropriate case to express a relation of one to many. The genitive is used for relations between a unit and another unit. But if Porphyry’s remark were merely about the grammar of relations, it is unclear why Porphyry appears to emphasize the distinction. The last sentence (*Isag.* 8.3) is introduced by the particle ‘*gar*’, which is regularly used to introduce an explanation. See LSJ s.v. *γάρ*. This suggests that Porphyry means: we say that the species is a whole in others because it is a whole in the parts. If the point were merely grammatical, this explanatory sentence is rather unenlightening. One possible answer, which on occasion I find more or less attractive, is that Porphyry’s concluding remark is signaling a transfer from the relation of universal-to-universal to the relation of universal-to-singualrs.

59 The other source books for basic logical principles repeat this use of the terms ‘whole’ and ‘part’. For example, when discussing the different senses of ‘definition’, Cassiodorus mentions that the genus is “that which embraces many parts”, and that a part is “what lies under a genus” (*Institutiones* II.3.14). Isidore
Thus, in one sense, anything that is to be divided is a whole, and any product of a division is a part. In the correlative process of collection anything gathered together (i.e. contained) is a part, and the product of this collecting together is a whole. The process of collection is accomplished by locating some common characteristic that binds the parts together. The process of division is carried out by locating a differentiating feature or principle, a differentia. The different types of division take place according to different principles of division. These different principles of division are derived from and dependent upon the different types of item that are to be divided. Consider a few of the examples that Boethius offers (De Div. 877c-878a, 888a).

(a) Of substance, some are corporeal, some are incorporeal.
(b) Of animal, one is man, another is horse, another is dog, etc.
(c) Of man, some are dark skinned, some are light skinned, some are intermediate.
(d) Of a house, one thing is a roof, another thing the walls, a third the floor.
(e) Of this crowd, one is Cicero, another is Plato, and a third is Cato.

In cases (a) through (c), division is a process of categorization or classification. They are logical divisions that are ultimately derived by attending to some property or properties of the members of a universal. In contrast, consider the division of a material whole into its parts, an example of which is case (d). Here there must be another differentia at

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60 Divisions (a) and (b) are cases where the ordering is a classification of substances. Case (c) is a classificatory ordering of a substance (or subject) into accidents. In the case of accidental divisions, the more fine-grained terms do not combine with the more general term to form a definition. Light-skinned man does not pick out a substance—that is, it does not pick out a natural kind. For the Aristotelian, only natural kinds have definitions. Nonetheless, light-skinned man and dark-skinned man stand in a relation of subordination to a less fined-grained term, man. Likewise, the general term stands over the more fine-grained terms (as a genus would to its species), and this general term is a ‘part’ of a verbal description that answers the question, “What is a light-skinned man?”
work. The differentiae used to divide integral wholes may not be the same for each integral whole. For example, the principle used to divide the crowd in example (e) might not be the same differentia that one employs to divide the house into its heterogeneous parts. Moreover, if the stone and wood that make up the parts of the house are themselves parts of the house (as Transitivity would require), then the differentia used to divide the house into its homogeneous parts—stone and wood—might be distinct from the differentia used to produce the parts in example (d).

The general schema of division, and especially the necessity of locating a differentia, is a common trope in ancient and medieval mereological discussions. Boethius, in particular, presents mereological principles almost exclusively in his treatments of division and the related subject of “topical differences”. This fact dramatically shapes the way that Boethius categorizes the variety of parts and wholes.

Even under the heading of the division of the whole, the so-called true wholes, there is a bewildering variety of objects. And it is not often clear why they are all wholes (De Div. 887d-888a; Magee 1998, 38.18-27):

We signify in many ways when we say ‘whole’. That which is continuous—for example, a body or a line or anything of this sort—is a whole. We say that non-continuous things are wholes. For example, a crowd is a whole, and a people is a whole, and an army is a whole. We say that what is universal is a whole—for example, Man or Horse—since these are wholes of their parts—i.e. of men and horses. And hence, we call each and every man particular.61 And finally, that which is composed out of certain powers (quibusdam virtutibus) is called a whole.

The mode of whole-into-parts contains the following four sub-modes:

2a. the division of a continuous whole into parts

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61 Here I adopt Magee’s emphasis (1998, loc. cit.). Boethius is highlighting the etymological relationship between particular and pars, which mirrors the same relationship between the Greek merikos and meros.
2b. the division of a non-continuous whole into parts
2c. the division of the universal into parts
2d. the division of something into its powers

The division of the continuous whole into parts is further sub-divided (*De Div.* 888a):

2a1. The integral whole into its heterogeneous parts.
2a2. The integral whole into its homogeneous parts.

And to this sub-division, we may add Boethius’ example of a man divided into his soul and body (*De Div.* 877c-d).

2a3. An organism into its soul and body.

Boethius later mentions the example of a thing being divided into its form and matter under the division of a continuous whole. This suggests that form and matter are also parts of individuals.\(^6^2\) I will often refer to form and matter as *hylomorphic* parts.

This last observation is already an important feature of Boethius’ treatment of division and its implications for mereology. Some interpreters of Aristotle are uneasy with calling matter and form ‘parts’, or ‘constituents’.\(^6^3\) Their reasoning in part draws upon Aristotle’s insistence that one hylomorphic part, the form, does not behave like an integral part. For the Aristotelian, composite wholes are made out of “elements” (*stoicheia*). For example, the letters are the elements of the syllable, and the traditional four elements ultimately make up organic beings. The elements comprise the matter of

\(^{62}\) Boethius’ favorite example of a composite substance is a human being, who is composed out of a soul and a body. But he also adds that the substantial form of Humanity is a part of the composite (*De Trin.* 2.106-110). An added complication: Boethius’ remarks about the absolute unity of God—i.e. that He has neither parts nor accidents—suggest that only substantial forms are parts, not accidental forms (see *De Trin.* 2.93-106, and *Tractatus II*, §1.11-13).

\(^{63}\) For example, Ackrill argues, “‘Constituent’ is no doubt an unhappy word: it is because matter and form are not, in the ordinary sense, constituents that no question arises as to how they combine into a unity” (1997: 168-9).
the composite. The composite is also constituted by the form. But, the form cannot be just another element. The form is what imposes order and arrangement upon the elements. Ultimately, it explains why this matter is such-and-so. If, form itself were merely another element, one would need to look further for the explanation for why this matter and this form are a such-and-so. In other words, one would be forced to look for a further form which explains the unification of this form and this matter. The same question can be posed regarding this further form. Is it an element or something else? If one again insists that this form is an element, then one must search for a further item which explains the composition of the elements. A regress seems to ensue. Hence, the form cannot be an element (Aristotle *Metaph.* Z.17, 1041b11 ff.).

It is still possible to think of both form and matter as parts of the composite (Haslanger 1994, 132). To assert that form is not an element is merely to say that form is not a *material* part of the composite. Boethius in particular is happy to call matter and form both ‘parts’ (*De Div.* 877c and 888b; cf. Boethius *In Cat.* 184a-b, and 192c-193a). Indeed, in Boethius’ theological treatises, the main “parts” of composite substances that he discusses are soul and body, followed by form and matter.

The divisions that fall under 2a and 2b are divisions of what I will call *integral* wholes. My use of the this term of art diverges from Boethius in an important respect, for Boethius sometimes uses the word Latin word for integral, *integrum*, to describe other types of wholes. In particular, he sometimes gives examples of *integrum* wholes which are clearly wholes consisting of powers, or what I will call *virtual* wholes. In his *De topics differentiiis* Boethius explains that the “topic from the whole” should be understood
to cover two sorts of ‘whole’, the genus and the “complete thing (integrum)\textsuperscript{64} made up of more than one part” (32.9-10). Boethius includes abstract items under the class of things subject to the topic from the integral whole. For instance, one of the examples that he employs is that of “medicine” (medicina), which has such parts as that which preserves health, that which prevents illness, and that which is useful for treating mortal wounds (De top. diff. 33.19-20).\textsuperscript{65} These abstract integral wholes are similar to the virtual whole that Boethius spends most time discussing, the soul. The similarity between the soul and medicine will become clear during the course of my discussion of the four differences between the division of the genus and the division of the whole (see 3.2.5).

The fact that the universal is also a whole has caused some confusion for both medieval and contemporary interpreters of Boethius. Some commentators have interpreted Boethius’ placement of the division of the universal into individuals under the division of a whole, along with his apparent use of extensionalist language when describing collection and division, as reason to conclude that Boethius thinks the universal is really a mereological sum of individuals. This confusion needs to be eliminated before we turn to examine the four differences between the division of the genus and the division of the whole.

\textsuperscript{64} Here I follow Stump’s translation for integrum (1978). On the ramifications of completeness for a metaphysical mereology of material objects, see section 3.3.4 below.

\textsuperscript{65} Boethius also uses the example of “being free” (liber). See De top. diff. 32.21 ff.
3.1.2: Universal wholes are not integral wholes

Boethius makes it clear that the part-whole relation that applies to a species and its genus is very different from the part-whole relation that applies to an individual and its species or genus. But this principle is in tension with another way of characterizing universal wholes, one which suggests that universals are much more like integral wholes than first assumed. At least two contemporary scholars, Richard Cross and Johannes Zachhuber, have been misled by the traditional description of a universal as a type of whole into thinking that neoplatonists—and in particular, Porphyry and Boethius—hold the position that the universal is a special sort of integral whole. As we will see, these scholars propose this interpretation of neoplatonic doctrine despite explicit instructions from Porphyry and his students that there are crucial differences between universals and integral wholes. Zachhuber mentions that “it was taken for granted in the Academy that the relation of the universal and particular was that of a whole and its parts” (2000, 86). I agree. But Zachhuber immediately proceeds to assert that the universal whole must be “an aggregate of individuals”—i.e. that the universal is an integral whole composed of individuals.

66 Both authors assume that Boethius borrows heavily from Porphyry, and hence that he is a source for Porphyry’s theory of the universal.

67 In all fairness, Cross and Zachhuber are only interested in Porphyry as an intellectual antecedent to their main subject of concern: whether Gregory of Nyssa accepts a collection theory of the universal. On this issue, and whether any of the Greek Church Fathers held a collection theory, I remain agnostic.

68 I don’t contest Zachhuber’s claim that in all probability some interpreters of Porphyry inferred that the species must be a collective whole. Cross believes that Gregory of Nyssa interprets Porphyry’s theory as a collection theory and that “Gregory’s theory is directed, probably consciously, against Porphyry’s account” (2002, 374).
Zachhuber and Cross are tempted to identify the universal with an integral whole—in particular a mereological sum of individuals—because of the extensionalist language used by Porphyry and Boethius in their discussions of universals. Consider again this passage from Porphyry’s *Isagoge* (6.16-21):

> Therefore, when descending to the most specific species, it is necessary to go [there] by dividing the multitude. When ascending to the most general genus, it is necessary to collect together the multitude into a one. The species is a collection of many into one nature, and a still larger [collection] is the genus. But particulars and singulars, to the contrary, always divide the one into a multitude.

Porphyry’s language of collection suggests that one creates a species by literally collecting together individuals into a whole, and that one creates a genus by collecting together individuals and species into a whole. Porphyry adds that a genus and species are both sorts of whole, but the genus is “larger” than the species (*Isag.* 15.13-16). By this he means that the genus “contains” more than the species. This way of describing the difference between a genus and a species has suggested to some interpreters that Porphyry is developing an extensionalist understanding of universals, or a primitive calculus of classes (Barnes 2003, 148).\(^69\) This impression is only reinforced by *Isag.* 7.29-8.3 (quoted above in section 3.1.1). When Porphyry claims that a genus is only a whole and an individual is only a part, this implies that the most general genera are only wholes, and the individuals are only parts. Of course, individuals are wholes in another sense, but here Porphyry appears to mean that an individual cannot be a class, it can only be an element of a class.

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\(^{69}\) Barnes concludes that on the balance Porphyry is not an extensionalist, though he alludes to the fact that neoplatonists after Porphyry developed an extensionalist theory of genera and species (ibid.). In my view, more research will have to be done to prove Barnes’ thesis about later neoplatonism correct.
It is also easy to find extensionalist language in Boethius. For instance, Zachhuber cites this passage from Boethius’ second commentary on *De Interpretatione* (137.13-18).\(^70\)

Hence, it happens that since Platonity applies to one thing, Plato, the hearer’s mind relates the word ‘Plato’ to one person and one particular substance. However, then one hears ‘man’, [his mind] relates the understanding to the many items that it knows to be contained by humanity.\(^71\)

Zachhuber takes this remark to be a suggestion that the reference of ‘man’ is the mereological sum of individual human beings. Boethius encourages commentators like Zachhuber and Cross further by drawing analogies between the universal and discrete integral wholes. Boethius thinks the universal is differentiated into individuals by means of the presence of quantity. This fact is boiled down into his assertion that a whole is divided in accord with quantity, whereas a genus is divided in accord with quality (*De Div.* 879b). This already suggests that the division of the species is made by dividing a sum into its parts, a suggestion that is furthered by Boethius’ comparison of the way one divides a species to the way that one divides a mereological sum of men (*De Div.* 888b-c; Magee 1998, 40.18-20):

Likewise those wholes which are not continuous should be divided in the same manner as those which are universals. For example, “of men, some are in Europe, some are in Asia, and some are in Africa”.

\(^70\) Zachhuber also cites as textual evidence Porphyry’s *Isagoge* (7.27-8.4), his *Commentary on the ‘Categories’* (72.25-27), and Boethius’ *On Division* (877d). Zachhuber even ventures, albeit hesitantly, to propose that at the time he composed the *Categories* Aristotle thought that “second substances are wholes composed of first substances as their parts” (2000, 85).

\(^71\) Additionally, Zachhuber cites the following selection from Boethius’ second commentary on *De Interpretatione*: “[‘A man is just’ is a particular proposition.] It takes a part from man, which is universal either in word or in nature.” (*partem namque tollit ex homine quod est universale vel vocabulo vel natura*) (*In de Int.* II, 140.9-10)
It is only a small step from this comparison to the stronger claim that a species just is a mereological sum of individuals, and Cross and Zachhuber are sorely tempted to do just that.

But while this textual evidence is on the face of it impressive, I think that it is hardly conclusive. First, concluding that the universal is an integral whole ignores the fact that ancient and medieval authors use ‘part’, ‘whole’, ‘contain’, and ‘collect’ equivocally. It is one thing to claim that the universal “collects” together individuals and is “divided” into individuals, and that genera and species are “wholes” and individuals are “parts”; it is a still stronger claim to assert that these wholes and parts are integral wholes and integral parts. One need only be reminded that the division of the soul into its powers is also located under the same mode. Yet as I show below (3.2.5), while Boethius’ placement of the division of the soul under the division of the whole is not without its problems, it is nonetheless clear that Boethius does not consider the soul an integral whole composed of its powers. It does not follow that a universal is an integral whole just because its division into individuals is included under the mode of whole into part. It is not enough for Porphyry and Boethius to use mereological terminology to describe universals and individuals. There must be evidence that they thought of universals as integral wholes that are composed out of individuals. This sort of textual evidence, I submit, is not forthcoming.

Both Cross and Zachhuber ignore a crucial complexity in Boethius’ and Porphyry’s metaphysics of universals. Specifically, their metaphysics suggests a three-fold distinction. First, there is a difference between the logical species Human Being and
Socrates’ Humanity. Second, Boethius draws a distinction between the Idea and Socrates’ Humanity. In his *On the Trinity*, Boethius claims that there are the Forms, and there are the forms that combine with matter to constitute composite substances.\(^72\) The Forms are the true forms. The forms that combine with matter are rather “images” of the true Forms (*De Trin*. 2.110-117).\(^73\) These two distinctions entail a third distinction: that there is a difference between the logical species Human Being, which is derived from the mind’s examination of enmattered images, and the Platonic Idea Human Being, which is a real entity and not a construction of the mind.\(^74\)

\(^72\) Both separate and immanent forms were acceptable to Porphyry and his followers. When Porphyry presents his infamous three questions concerning universals in the *Isagoge*, the true contrast, several influential scholars argues, is between the Platonists/Aristotelians and the Stoics (De Libera 1999, 15-17; and Barnes 2003, 38-47).

\(^73\) Compare this with Boethius’ analysis of universals as “likenesses” (*simultudines*) in his famous discussion of the problem of universals (*In Isag.* II, 166.8 ff.).

\(^74\) Scholastic neoplatonism, as it was developed in Alexandria, formalized this implicit trichotomy into the doctrine of the three-fold universal, or “common item” (*to koinon*). The *locus classicus* for the mature form of the theory is Simplicius (*In Cat.* 82.35-83.20). De Libera hypothesizes that the mature form of the multiplication of the universal is the creation of the neoplatonic commentators on Porphyry’s *Isagoge* (1998, LXXIX). Ammonius provides a clear portrayal of the three-fold universal. When describing the three-fold universal Ammonius begins with an analogy. “Consider some signet ring which possesses a relief of, perhaps, Achilles and many pieces of wax. Now let this signet ring mark all the wax. Later on, someone comes along, considers these wax pieces and thinks that all of them are from one relief. He will have with him the general pattern (*tupon*), which is the relief in his thought. The mark that is in the signet ring is said to be before the many, the mark in the wax tablets is in the many, and the mark in the thought of the one who has taken on an impression (*tou apomaxamenou*) is after the many and posterior in generation.” (*In Isag.* 41.13-30) Ammonius then draws the analogy to the universal (*In Isag.* 42.6-19). The term ‘universal’ can refer to three items: (1) The universal before the many (*pro tòn pollôn*), (2) the universal in the many (*in tois pollois*), and (3) the universal after the many (*epi tois pollois*). The universal before the many is the divine archetype, the patterns which the Craftsman uses to construct the rest of reality. They are identified with Plato’s separate forms. The universal in the many is an immanent, enmattered form. This immanent form may be either Plato’s immanent form, Aristotle’s form, or perhaps it is meant to capture both (de Libera 1998, LXXX). Finally, there is the “mental copy” (*apomaxeis*) formed from the mind’s examination of the enmattered forms (*Arethas Sch.* 10.19-20). This is the universal after the many. The universal after the many, the neoplatonists argue, is the only true universal, since it is the only one of the three that is predicable of many (Elias 29-30; David 117.10-11). The neoplatonists read Porphyry’s *Isagoge* as a treatise on the third sort of universal, the concept (*Ammonius In Isag.* 69.2-5). Some neoplatonic authors also develop a three-fold distinction of the whole. The source for this three-fold distinction is Proclus (*Elements of Theology* §§ 67-69). Alain de Libera contends, pace Lloyd, that Proclus never lines up his three-fold analysis of the whole with the three-fold universal, but the similarity between
does not think that the enmattered Humanity in Socrates is a part of the logical species in the same sense that a door is part of a house. The part-to-whole relation between an individual and its universal is altogether distinct. It indicates a hierarchical relation, which in turn is a relation of metaphysical dependence. Individuals only exist because the Platonic Idea exists and in turn forms images of itself in matter.

Both Cross’ and Zachhuber’s interpretations require that we understand the *Isagoge* and the appropriate sections of the *De Divisione* to be about extramental universals. But the Neoplatonists generally argue that the *Isagoge*—and the *Categories*—are about concepts (Ammonius In *Isag*. 69.2-5; and Ps-El. 29.37).75 Boethius and Porphyry are no exception. This fact is brought out by Boethius’ and Porphyry’s reply to a standard worry generated by Aristotle’s assertion that “primary substances”—i.e. individuals—are prior to genera and species (*Cat*. 2a11-16). The objection assumes that the priority of primary substances to secondary substances is a claim about ontological dependence. But this would violate the commonly shared


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75 Arethas notes that dialectical science concerns itself with the genus in addition to the many (*Sch*. 10, 19-20). David comments that Porphyry asks dialectical questions, not “theological” (i.e. metaphysical) questions (Dav. 120.20-121.2). Elias says that Porphyry does not concern himself with the deep problems concerning the status of universals. Rather, in the *Isagoge*, Porphyry addresses the phenomena of (i) x being a subject for y and (ii) x being predicated of y (Elias 48.31-49.11). Two contemporary interpreters, Lloyd and Ebbesen, also interpret the *Isagoge* to be about semantics—i.e. about concepts—and not metaphysics (Lloyd 1990, 37 and 44-5; Ebbesen 1990a, passim).
principle that individuals are corruptible, whereas the universal is eternal (Boethius In Cat. 183bc).\textsuperscript{76}

But someone might say: How can individual substances be primary? For everything that is primary removes that which is posterior, when it is taken away. Yet when posterior things are removed, the things that are prior do not perish. For example, if \textit{Man} perishes, then Socrates accordingly will also perish. But if Socrates is killed, \textit{Man} does not thereby perish.

If Boethius and Porphyry held that the species is a collection of individuals, they would be committed to asserting that individuals are indeed prior in nature to secondary substances. The whole which we call ‘Human Being’ at the time when Socrates is alive is non-identical to the whole labeled ‘Human Being’ which exists after Socrates’ death. Thus, if ‘Plato is a human being’ is analyzable as \textit{Plato is a part of the whole that is labeled ‘Human Being’}, the analysis has different truth conditions at different times. It is true that Plato is part of the whole that also contains Socrates, when Socrates is alive. But it is false that Plato is part of the whole that also contains Socrates, when Socrates ceases to exist.

Porphyry and Boethius argue that the Platonic objection misses the mark, because the objector does not “correctly grasp the nature of individuals” (Boethius In Cat. 183c):

For, indeed, the total substance of the individuals (\textit{cuncta individuorum substantia}) is not in one [individual], e.g. Socrates, or in any other particular man. Genera and species are not understood from one singular thing, rather they are conceived from all singular individuals \textit{by means of an operation of the mind (mentis ratione)}.

Porphyry makes the point even clearer (\textit{In Cat. 90.30-34}).\textsuperscript{77}

\textsuperscript{76} Compare Porphyry \textit{In Cat. 90.16-22}, and Simplicius \textit{In Cat. 82.26-35}.

\textsuperscript{77} Compare Simplicius \textit{In Cat. 84.12-32}.
It is necessary to not make the statement (*ton logon*) about one [individual]. Rather [it is necessary] to know well that the individual substance is not just one of the particulars, but all singular men, *out of which the man* that is predicated commonly is conceived, and [the individual substance is not just one particular animal but all] singular animals, through which we conceive the *animal* which is predicated commonly.

Porphyry and Boethius are identifying Aristotle’s secondary substances with concepts that have been derived from the perceptions of many individuals. No one individual, primary substance constitutes the essence (or secondary substance) Human Being. The secondary substance is derived from all the individuals. But this does not mean that Human Being just is the collective whole composed out of all the individual human beings in the world. Human Being is derived by an operation of the mind (*In Isag.* II, 166.16-18):

> The species should be thought of as nothing other than an act of cognition (*cogitatio*) that is collected from the substantial likeness of individuals who are numerically distinct. And the genus is an act of cognition collected from a likeness of species.

Individuals are “prior” to secondary substances, because individuals are the “cause of the being” of the secondary substances (*Porphyry In Cat.* 90.34-91.1). If no individual horses existed, we would not be able to examine the common “likeness” (*similitudo*) or pattern (*logos*) in all these individuals, abstract that likeness, and produce that which is predicable of many—e.g. Human Being. The species is only causally posterior (*husterogenê*) to the collection of individuals. The species is not identical to the integral collection of human beings.

Finally, there is one more piece of evidence against the hypothesis that Boethius in particular holds a collection theory of the universal. In his famous series of arguments
against the extra-mental reality of universals, Boethius considers the proposal that “the genus and species exist, yet they are multiplex and not numerically one” (In Isag. II, 162.4-5). Boethius argues that this hypothesis leads to absurdity, for then “there will be no last genus”. The details of the argument are highly obscure, and admittedly in exactly what sense the universal is “multiplex” is open to interpretation (Tweedale 1976, 75-77). One plausible interpretation is that Boethius is considering a theory of universals that identifies the genus with a collection of individuals.\textsuperscript{78} If this interpretation is correct, then it seems that Porphyry and Boethius cannot hold a collection theory on pain of self-refutation.

On balance, then, I think that neither Porphyry, nor Boethius holds a collection theory of the universal. Zachhuber and Cross fail to appreciate the equivocity of mereological terminology that is employed in ancient discussions of universals. The textual evidence that they provide is inconclusive at best, and there are strong philosophical and interpretive reasons to reject their interpretation. The collection theory of universals, however, does develop in the early middle ages, as I will show in chapter 5 (5.2.1). Perhaps these early students of Boethius fall prey to the same misunderstandings that motivate Zachhuber and Cross.

\textsuperscript{78} Peter Abelard interprets Boethius’ remark in this manner. For more details on Abelard’s attack upon the collection theory, see chapter 5 (5.2.2).
3.2: The four-fold distinction between the genus and the whole

In my view, Boethius does not reduce universals to integral wholes. This broad distinction, however, is not the one which Boethius fixes his attentions upon in the *De Divisione*. Rather, Boethius is keen to distinguish between the division of the genus into its species and the division of the whole into its parts. Boethius offers four differences that mark the division of the genus off from the division of the whole. First, the genus is divided with respect to “quality” whereas the whole is divided with respect to “quantity”. Second, the genus is “naturally prior” to its species, while the whole is naturally posterior to its parts. Third, the genus is the matter of its species, yet the parts are the matter of the whole. And fourth, the genus is the “same thing as” its species, while the part is not the same thing as the whole. Each of these differences provides clues for re-constructing Boethius’ metaphysics of mereology. In this section I will briefly touch upon each difference. In section 3.3 I will then try to reconstruct Boethius’ metaphysics of part and whole, with an emphasis on the metaphysics of material objects.

In section 3.1.1 I drew a distinction between integral wholes, virtual wholes and universal wholes. One thing that will become apparent in the proceeding exercise is that Boethius’ four rules for distinguishing between the division of the genus and the division of the whole work best as a way to distinguish the genus from the integral whole. They are less successful at distinguishing the division of the genus into its species from the division of the universal into individuals.\(^79\) And they are even more unsuccessful at

\(^79\) It is important to recall that the terms ‘genus’ and ‘species’ are relative terms. The same item can be both a genus and a species, depending upon what it is being related to (*Isag.* 4.14-20 and 5.6-7). Animal is both a species (of Corporeal Substance) and a genus (of Human Being, Horse, etc.). Only *generalissima* are genera and not species, and only *specialissima* are species and not genera. Hence, the true contrast is
distinguishing the division of the genus from the virtual whole. We will be left to wonder why Boethius does not place the division of the universal into individuals under its own mode, as some Alexandrian neoplatonists do. And we will also wonder why Boethius does not think (at least some) virtual wholes are not in fact genera, or sufficiently like genera to merit their inclusion under that division.

3.2.1: The genus is divided with respect to quality

The first distinction between the division of the genus and the division of the whole is that the generic division is made with respect to quality, whereas the division of the whole is made with respect to quantity (De Div. 879b; Magee 1998,12.17-24):

The cutting-up of a genus is marked off from the dispersion of a whole [first] because the division of a whole is brought about with respect to quantity. The parts that constitute the whole substance are separated either in act or by the mind’s power of reason and thought. But the dispersion of a genus is completed by a quality. When you place man under animal the division was made by a quality. Man is a sort of animal (quale animal) because it is formed by some quality. Accordingly when asked what sort of animal (quale animal) man [is] one will respond that [man is] rational or mortal.

between two different relations that a universal may enter into: (1) the relation of a universal to another universal, and (2) the relation of a universal to its individual instances. For convenience, I will sometimes refer to the relation of the universal to another universal as the relation between a genus and a species, and the relation between a universal and its individuals will be referred to as the relation between a species and its individuals.

Elias argues that the lowest species (specialissima) are the “indivisibles” (In Isag. 72.26-73.24; cf. Lloyd 1965, 220). The lowest species are still finite parts into which the genus is divisible. Particulars are infinite and indeterminate. They are infinite because particulars pass in and out of existence. Particulars are also indeterminate in that they are constantly subject to change. One cannot have a science of the infinite and the indeterminate. The Tree, however, is intended to derive definitions, and thus knowledge (epistêmê), of the items on the Tree. Therefore, Elias and others argue, the Tree must stop at the specialissima. The division of the species into individuals is not a “true” division (Ps-El. 20.15-16). The lowest species are the indivisibles. Perhaps Boethius took these criticisms to heart and felt that he had to eliminate the mode of species-into-individual. Nevertheless, since the Isagoge and De Divisione are logical treatises (and moreover treatises on Aristotelian logic), there is clearly pressure to locate individuals somewhere.
One should not mistake the “quality” used here with Aristotle’s accidental category of quality. To be sure, neoplatonic commentators on Aristotle’s *Categories* often ask after the status of the substantial differentia. Aristotle famously states that the substantial differentiae are “said of a subject”, and not “present in a subject”, which is a property shared by substances (*Cat.* 3a21-28).\(^{81}\) Accidents, on the other hand, are present in a subject. Are differentiae then substances? The neoplatonists thought not, since the differentia does not say what (*quid*) a thing is, but what sort (*quale*) of thing it is.\(^{82}\) The Porphyrian compromise, which Boethius reproduces, is that the substantial differentia is a *poiotès ousiódès*, or “substantial quality” (Porphyry *In Cat.* 95.17-33, and Boethius *In Isag.* II, 194.14-15).\(^{83}\) It is not a substance, but unlike an accidental quality, the loss or absence of a differentia entails the dissolution or absence of the substance of which it is a part (Boethius *In Cat.* 192b-c). This compromise is probably at work in Boethius’ description of the first difference.

Whether the compromise solution is a coherent option need not detain us. What is important is the emphasis on distinction between how one divides a genus as opposed to how one divides a whole. The division of the genus is carried out by determining the varieties of things belonging to a genus. From a logical perspective this is carried out by

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\(^{81}\) For helpful discussions of the problem, including treatments of Porphyry’s solution to the puzzle, see Morrison (1993) and De Haas (1997, 188 ff.).

\(^{82}\) The differentia answers the question ‘What sort of thing is Human Being?’ (*qualis est homo?*) , rather than ‘What is Human Being?’ (*quid est homo?*). Nonetheless, the differentia demonstrates the substance, or essence, of the species. It does not merely pick out an accidental feature of Human Being (*In Isag.* II, 193.16-194.19).

\(^{83}\) See Morrison, who calls this solution the “bi-categorial interpretation” (1993, 154-5).
attending to the answers to the question “What sort of animal is it?” An answer of either “rational animal” or “irrational animal” tells us what sort of substance it is.

Boethius’ language suggests that logical division is grounded in ontological composition. Boethius reminds us that in one sense the genus is a whole, and in another sense it is a part (De Div. 887c-d). It is a whole when logically divided into its species, but it is a part of the species in the sense that it is a part of the species’ definition. For some philosophers the definition is an actual enumeration of parts that make up the species. Boethius’ third difference between the division of the genus and the division of the whole, that the genus is the “matter” of its species, suggests such a strongly realist understanding of the definition. I will return to consider this point further when we turn to the third difference (3.2.3).

While a strongly realist understanding of the definition of a species is fascinating, and entails its own problems, the more troubling aspect of the first difference between the division of the genus and the division of the whole is the suggestion that the whole is always divided with respect to quantity. This generalization is troubling for several reasons. First, not every whole is a quantity, let alone divisible into quantities. The universal, for example, is not obviously something with quantity. A more clear-cut case of a whole not divided with respect to quantity is the virtual whole. In particular, Boethius explicitly asserts that the soul is a virtual whole because it is not a whole composed of quantitative parts (De Div. 888c-d; Magee 1998, 40.24-27):84

84 Aristotle, Plotinus and Porphyry all argue that the soul does not have parts in the same sense that integral wholes have parts. Consult Aristotle De Anima 411b7-14, Plotinus Enneads IV.iii.2-3, and Porphyry Frag. 253F respectively. When Plotinus is worrying about ta meré tês psuchês, this should often be translated as a worry about the “parts of Soul”. In other words, Plotinus worries about how the hypostasis Soul is related
However, it is not the case that soul is a genus of these [sc. the vegetative, the animative, and the rational faculties], rather [it is] a whole. For they are parts of soul, not in virtue of quantity, but in virtue of some kind of potency and power (ut in aliqua potestate et virtute). For the substance of soul is composed out of these potencies.

The parts of an integral whole form something with a measurable quantity, but the powers of the soul, while they “compose the substance” of soul, do not form a measurable quantity. The soul is not a quantity, let alone something divisible with respect to quantity. This first difference, then, does not appear to be a generic difference between true wholes and genera.

Even were we to restrict Boethius’ rule to those wholes that are material, and hence can be divided quantitatively, this pronouncement has some odd ramifications. Specifically, the rule suggests a striking, and problematic principle for determining when something is a part of something else. If the principle for division is according to quantity alone, then it seems that parts are determined solely by a quantitative measure, and never by what sort of thing they are. This would be an embarrassing position to hold, for it would seem to exclude things like hands, feet, and heads from being parts, and only include things like the top half of the body, or these three inches of the body. In other words, the only parts of wholes are what we called elsewhere “arbitrary undetached parts” (2.3). The vast majority of integral wholes, however, have more than just parts to individual souls. He immediately rejects any sense of ‘part’ as it relates to bodies and proceeds to consider senses of ‘part’ which pertain to things that are not bodies, and he turns to consider other senses of ‘part’ that might apply. Ultimately, Plotinus draws an analogy between Soul and the light of the Sun. Sunlight is undivided at its origin, but as it reaches the earth, it dissipates and “divides itself among houses” (IV.iii.4, 20-21). I confess that this final solution is perplexing. Plotinus himself seems to be aware of the fact that he has reached the limits of his power to describe the relation between World Soul and souls.
that have been defined by a quantitative measure. And indeed, parts that are defined by quantity are rarely the things considered when Boethius talks about the parts of things.

A milder reading of the rule might be that wholes—that is wholes other than souls, and maybe universals—are divided into things that have some quantity or other. This milder reading would alleviate much of the embarrassment. Hands, since they are material, will have a quantity, even though they are not individuated by the quantity that they have. Sadly, the milder reading of the rule does not naturally conform to the way the difference is articulated, which stresses that the determination of the parts of a whole is made with respect to quantity, and without consideration of what sort of items the products of the division are. Perhaps Boethius is being sloppy, or overly simplistic for the sake of maintaining the introductory character of the De Divisione. Nevertheless, as presented, the rule is unsatisfactory.

3.2.2: The genus is naturally prior

The second general difference between the division of the genus and the division of the whole is that the genus is “naturally prior” to its species, whereas the whole is posterior to its parts. This difference has ramifications for Boethius’ theory concerning the dependence of a whole upon its parts.

The first order of business is developing an understanding of what natural priority consists in. Boethius defines three types of priority in the De Divisione (De Div. 879bc; Magee 1998, 12.24-28):

Again, every genus is naturally prior to its own species, whereas a whole is posterior to its parts. Parts are those things which compose a whole. Some only
precede the completion of their composite in nature, others also precede in account and in time. Thus, it happens that we separate a genus into posterior items, but a whole into prior items.

Boethius distinguishes between three modes of priority: (1) natural priority, (2) priority in account (*ratione*), and (3) priority in time. I will return to define natural priority in a moment. We can characterize the latter two types of priority as follows:

An x is prior in account to y if and only if the account of x need not make mention of y, but the account of y must make mention of x.

An x is prior in time to y if and only if x precedes y in time.

Temporal priority is fairly straightforward. Priority in account is best illustrated using definitions, for definitions are a primary type of account. Animal is prior in account to Human Being, since the definition of Human Being must make mention of the definition of Animal (i.e. Living Substance), whereas Animal need not make reference to the full definition of Human Being. Whatever Boethius thinks natural priority consists in, he suggests that it takes precedence over priority in account and temporal priority, and perhaps that these two modes of priority are even derivative of natural priority.

Boethius notes that a *genus* is always naturally prior to the things into which it is divided. In contrast, a *whole* is always divided into things that are naturally prior it. The neoplatonic discussions of natural priority sometimes suggest that this relation is a logical or conceptual relation. But at other times, they suggest that the relation is an ontological relation, such that if x is naturally prior to y, then y ontologically depends upon x. If indeed natural priority is Boethius’ way of talking about ontological dependence, then this is a potentially striking thesis about the dependence of a whole on its parts.
Both ways of construing natural priority are suggested by a passage in Porphyry’s commentary on the *Categories*. I will quote the first part here (*In Cat.* 118.24-29):

There are different kinds of priority and posteriority, as these are said in many ways as well. The mode we are now looking for is this one: we call that prior which co-removes (*sunanairei*) but is not co-removed. For example, the unit is prior to the dyad, for when the unit is removed it removes the dyad, whereas when the dyad is removed it does not remove the unit. Thus, since the unit co-removes but is not co-removed, the unit is prior to the dyad.

Porphyry consistently uses the verb “co-remove” (*sunanairein*) to define natural priority. Even though he does not call the priority described in this passage natural priority, he uses the same principle in other passages where he does call it natural priority (for example, *Isag.* 15.18). We can provisionally analyze natural priority as follows:

An x is naturally prior to y if and only if when x is removed necessarily y is also removed, but when y is removed it is possible for x to remain.

Natural priority is also sometimes characterized by “co-introduction” (*suneisagein*):

An x is naturally prior to y if and only if when y is introduced, necessarily x is introduced, but when x is introduced, y is not necessarily introduced.

These two characterizations of natural priority are generally treated as interchangeable. An illustration will perhaps show why they were deemed logically equivalent. Porphyry and Boethius both tell us that the genus is prior to its species, so Animal is naturally prior to Human Being. If Human Being is present Animal is also present, since Animal is part of Human Being. But if Animal is present, it does not follow that Human Being is present. This is usually justified by turning to particulars. If I tell you that an animal is in the room next door, you cannot immediately tell me that a human being is next door.

85 Here I adopt Barnes’ translation of this key term (2003). Other possible translations suggest too strongly a physical removal, though Strange’s choice of “eliminate along with” is also acceptable (1992).
But if I tell you that a man is in the other room, you also know that there is an animal next door. In other words, if I “introduce” an animal, it does not follow that I have introduced a human being. But if I introduce a human being, I have also introduced an animal.

Co-removal can be characterized in terms of essence, or in terms of classes. Animal is part of the definition and essence of Human Being. If I thereby remove Animal, Human Being cannot remain, since I have removed part of its essence. Or, considered as classes, since Animal includes Human Being in its extension, if I remove Animal I also remove Human Being. The characterization in terms of classes works better at showing the opposite direction of dependence. If I remove the class consisting of all human beings, I have not thereby removed the class of all animals, for that class is composed of horses, elephants, tortoises, and so forth. Put another way, if we were to wipe out all Bengal tigers on the Earth, we would not thereby wipe out all animals. All these ways of illustrating co-removal and co-introduction are implied in the neoplatonic descriptions of natural priority. This is not surprising, as natural classes are classes gathering together things with like essences, and the relation between classes of human beings and animals is also grounded in the metaphysical fact that all animals share a common essential feature.

Characterizing removal in terms of extensional objects such as classes suggests that introduction and removal is a physical process. And since classes are like mereological sums in that their parts and members need not be spatially co-located, “removal” suggests annihilation. This suggestion of annihilation is further cemented by
Boethius’ choice of a variety of verbs whose primary sense is “to perish” or “to destroy”.  The language of annihilation in turn suggests that natural priority encodes a thesis about ontological dependence. Returning to our passage in Porphyry’s commentary on the *Categories*, we indeed see the suggestion of ontological dependence (*In Cat. 118.30-34*):

> On the one hand, with respect to removal, the remover is prior to what is not co-removed. On the other hand, with respect to existence, when [that] whose existence necessitates the existence of something else is in contrast to [that] for which it is not necessary that something else exist when it does, that whose being necessitates the existence of something else is posterior.  

For example, when the dyad exists the unit must exist, but it is not necessary that the dyad exist when the unit exists. Therefore, the dyad is posterior to the unit.

Porphyry then seals the connection between existential posteriority and natural posteriority with these concluding remarks (*In Cat. 119.1-3*):

> Thus, removal is the contrary of existence. That which co-removes and is not co-removed is prior. That which co-introduces and is not co-introduced is necessarily posterior.

The rule for introduction is equated with ontological dependence: $x$ co-introduces $y$ and is not co-introduced by $y$ if and only if, whenever $y$ exists necessarily $x$ exists, but if $x$ exists, it is possible that $y$ does not exist.

In his treatment of division, which is most influential on later treatments of dependence, Boethius follows this Porphyrian practice of giving natural priority an

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86 The following are only some of the more common Latin verbs used by Boethius and his followers: *deperire, deperdere, perire, interire*.

87 As all commentators note, this passage is probably corrupt, even though the sense is clear enough. For my translation I adopt Busse’s suggestion of *empalin tou hou ontos* for *empalin hou ontos*. Strange’s translation attempts as best as possible to track the text as it presented (1992, 124). Barnes’ translation is either a paraphrase or based upon an unrevealed emendation (2003, 250).
ontological character. But there is one passage where Boethius suggests another type of
dependence is at work in natural priority, namely logical or conceptual dependence.
Boethius explains the fact that a genus is always prior to its species, with the standard
remark that it is possible that an animal is, but a human being is not. Immediately,
however, Boethius adds the following intriguing remark (In Cat. 289a, my emphases):

Even if an animal is present because a man is placed there (posito homine), when
‘animal’ is uttered it is not necessary that there is a man. Animal is prior to Man.
The characterization of prior items is this: for those items that are prior, if they are
removed (sublata) they remove, but if they are introduced (illata) they do not
introduce. Thus, if animal is removed it takes away man with it. But if it is
introduced—so that it is said that there is an animal—it does not immediately [sc.
necessarily] introduce man with it.

Co-removal and co-introduction are explicitly tied together. Boethius’ initial remark
about the truth-maker of the proposition that an animal is present suggests that natural
priority is a form of conceptual dependence, not ontological dependence. Man co-
introduces the concept of Animal, but Animal does not co-introduce the concept of Man.

Despite this glimpse at a logical interpretation of natural priority, the majority of
Boethius’ remarks about the natural priority of parts to wholes most naturally support the
ontological interpretation. For example, return to Boethius’ discussion of the difference
between the genus and the whole (De Div. 879c; Magee 1998, 12.27-14.5):

Thus, it happens that we separate a genus into posterior items, but a whole into
prior items. And so it is also true to say that if a genus is eliminated the species
immediately perishes, whereas if a species is eliminated the genus remains intact
in its nature and is not destroyed. The opposite holds for the whole. If a part of
the whole perishes the whole, whose one part has been destroyed, will not exist.
But if the whole perishes, the parts remain, though scattered. For example, if
someone removes the roof from a whole house, the whole that was there is gone,
even though the walls and supports remain put after the whole perishes.
Boethius’ ontological understanding of natural priority as it applies to wholes and parts is not necessarily inconsistent with the conceptual interpretation. First, in some sense, the concept of Human Being is conceptually dependent upon the concept of Animal because there is a metaphysical relationship between the genus Animal and the species Human Being. Second, as I will stress at several points, Boethius’ mereology of universals may be developed analogously upon the mereology of physical objects. The root concept behind natural priority could be based upon the paradigm of physical objects, and only applied analogously to universals.

Like the first difference between the genus and the whole, the second difference does not appear to be a fully general difference, for the rule that the parts are naturally prior to the whole holds for neither the universal whole, nor for the virtual whole. This should be no surprise in the case of the universal whole. For the species (or genus) co-removes the individual, while the individual does not co-remove the universal. If there is no human being there is no Socrates. But it does not follow that if there is no Socrates, there is no human being.

The same thing holds for virtual wholes. In the De topicis differentiis Boethius notes that in the case of such “integral” wholes as medicine the existence of only one part suffices for the existence of the whole (33.19-20). If something cures wounds, medicine exists. But if a thing that cures wounds does not exist, it does not follow that medicine does not exist. In other words, the part does not co-remove the whole, as it should if the part is prior to the whole. One type of virtual whole, the soul, adds a further wrinkle. Assuming that Boethius subscribes to Aristotle’s analysis that human souls have all three
faculties, and that animal souls have the vegetative and animative faculties, this much follows: the vegetative part co-removes the soul, and it is co-removed by the soul. But the rational and animal parts, while co-removed by soul, are not themselves able to co-remove soul. For even if the animal or rational faculty is absent, the vegetative capacity may be present: the soul present may be a plant’s soul, or possibly it is the case that Socrates has suffered a massive trauma which reduces him functionally to a vegetable. Therefore, in the case of virtual wholes either the parts are naturally posterior to the whole (e.g. that which heals wounds, and the rational capacity), or they are neither prior nor posterior to the whole (e.g. the vegetative capacity).

As I will show in section 3.3 many Aristotelians will assert as well that some parts of integral wholes are also not naturally prior to their wholes. A simple example will suffice here. Socrates’ heart would appear to both co-remove and be co-removed by Socrates. If the heart is removed, Socrates dies. But if Socrates dies, the heart ceases to possess its individuating function, and therefore it ceases to be a heart. Thus, even if Boethius thinks that the second difference is really only a difference between genera and integral wholes, the thesis is still striking. In section 3.3 I will examine the extent to which Boethius thinks that the parts of an integral whole are naturally prior to their whole. But at first glance, his espousal of the rule suggests a version of mereological essentialism.
3.2.3: The genus is matter

The third difference is that genus is the matter of its species, whereas the parts are the matter of their whole (De Div. 879c-d; Magee 1998, 14.5-12):

Again, the genus is the matter for its species, for just as bronze takes on a form and transforms into a statue the genus takes on a differentia and transforms into a species. But the plurality of parts is the matter of a whole, while the arrangement (compositio) of these parts is the form. And just as the species is composed out of a genus and a differentia, the whole is composed out of its parts. For this reason the whole differs from each and every part because of the arrangement of these parts, whereas the species differs from the genus on account of its conjunction to the differentia.

Boethius’ assertion that the genus is the matter of its species is often interpreted to mean that the relation between a genus and its species is analogous to that between matter and form (Magee 1998, 84). But strictly speaking there is no matter in the species. The analogy is taken from Porphyry, who states that the genus is analogous to matter at several points in his Isagoge (11.12-17 and 15.6). The likeness of genus to matter is ultimately derived from Aristotle, who claims that one of the senses of ‘genus’ is as matter, “for that to which a differentia or quality belongs, that is the subject, which we call matter” (Metaph. Δ.28, 1024b8-9).

I have already ruled out the possibility that the universal is an integral whole, and hence I think the species is not material in the same way that a statue or Socrates is material. But the analogy to matter suggests that species are actually composed out of

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88 On this passage in the Metaphysics consult Grene (1974, 55-56), and Rorty (1974). Compare Asclepius: “The species is said [to be] from the matter of the species (ek tês tou eidos hulês)—e.g. Human Being is from Biped.” (In Metaph. 349.15-16)
parts. It just happens that these parts are immaterial, as opposed to material. I will often call the genus and differentia of a species *definitional* parts. In his commentary on Cicero Boethius calls definitional parts “substantial parts”, since these parts “describe a property and an account (*ratio*) of a substance” (*In Cic. Top.* 286.8-9). Substantial parts play a crucial role in Boethius’ treatment of the Ciceronian topics, since the topic from the whole (*ex toto*) and the topic from the parts (*ex partibus*) focus by and large upon substantial parts, not upon those parts “that embrace a magnitude”—i.e. integral parts (ibid.).

While Boethius suggests that species are actually composed out of a genus and differentiae, he need not subscribe to this view. The view that the genus and differentiae

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89 Cf. Aristotle *Metaph.* Z.10, 1034b20-22. Ammonius offers a similar distinction. Some parts of substance are sensible parts; other parts are “noetic” parts. Noetic parts include the *differentia* (and presumably the genus) of the substance’s definition (they are “from which Man [is]”). (Ammonius *In Cat.* 47.2-13) At least for the Platonist, the definitional parts are forms (*Asclepius In Metaph.* 349.16-17).

90 Compare *De Div.* 887b-c. The form (*eidos/species*), according to Aristotelian tradition, also has parts *secundum rem*. Unlike definitional parts, these parts do not enter into the definition of the form, but nonetheless they do in some sense enter into a complete account of the form (cf. *Asclepius In Metaph.* 345.27-29). According to Aristotle, when giving an account of a composite sensible substance, one must (at some point) make mention of the matter. (This, I take it, is the moral of Z.11, where Aristotle argues that purifying form of matter can go too far: 1036b21ff.) For example, if I were to give a full account of human beings, I would mention the fact that they are made up of this sort of matter (i.e. this sort of flesh and this sort of bone). Flesh and Bone then, while not definitional parts of the species Man, are nonetheless parts of Man *secundum rem*. I cannot detect the existence of parts *secundum rem* in anywhere in Boethius’ treatment of mereology.


92 Boethius adds the qualification because sometimes the integral parts can play the role of substantial parts in a topical inference, especially when the complete enumeration of a thing’s parts can substitute for a definition (*In Cic. Top.* 286.8-15, and 323.46-324.5). Boethius’ choice example of a case where the enumeration of a thing’s parts can play the role of a definition is a house when it is partitioned into its walls, door, roof and floor. Since the enumeration is putatively exhaustive, this enumeration can be used in topical inferences from the whole and from the parts. But see *In Cic. Top.* 324.26-39, where Boethius claims that not every partition of a whole can serve as the basis for a topical inference, even though the enumeration of integral parts can at times be used to make an argument.
are components of a species is what I shall call a strongly realist theory of definitional parts. On this realist view, the species is literally a compound form, composed out of other forms. But one need not think of the definition as an enumeration of a thing’s actual components.\textsuperscript{93} One might draw a distinction between parts and aspects, such that something can be “mereologically atomic”—that is, indivisible into parts—yet full of internal structural complexity. Scaltsas and others find this view in Plato and Aristotle.\textsuperscript{94} One can also find something like this distinction in Epicurean atomism.\textsuperscript{95} Epicurean atoms are indivisible into smaller things, yet since they have magnitude, they have “minimal parts”, such as a right and a left half. One could call these minimal magnitudes arbitrary undetached parts and argue that they are not truly parts (see 2.3 above).

I will not pursue the problem whether Boethius holds a strongly realist theory of definitional parts. I can find no definitive evidence indicating that he is or is not a realist about definitional parts, and pursuing this project any further would easily take us beyond the scope of the current project. I suspect, however, that Boethius does not hold a strongly realist theory. My reasons for suspecting that he does not come from what he

\textsuperscript{93} There are plenty of philosophers who will find talking about the parts of a species to be inoffensive, even though it is clear to them that the definitional parts cannot literally compose the species. Aristotle himself seems to be in this camp. See his discussion of the unity of the definition in \textit{Metaph.} Z.10-12, and H.6. For this interpretation of Aristotle, consult Harte (1996).

\textsuperscript{94} Scaltsas tries to draw the distinction this way: some wholes are “mereologically atomic” but nevertheless not “simple” (1990, 585). If a thing is mereologically atomic, it cannot be divided into parts. Nonetheless, this mereologically atomic item may have complexity. Matter and form add complexity to the substantial unity, and they are what they are because of the \textit{role} that they play in the whole. But, one cannot cut up Socrates into form and matter in the same way that one can cut him up into a head, hands, feet etc. (idem, 588-89). Compare Scaltsas’ distinction to Odo of Cambrai’s remarks that universals have “quasi-composition” (\textit{De Pecc. Orig.} 1092c-d). According to Odo universals are simple, incomposite natures because they lack material parts. The human soul is also simple and incomposite, and therefore not an integral whole (1100b).

\textsuperscript{95} Epicurus \textit{Epistle to Herodotus} 56-59; Lucretius \textit{De rerum natura} I. 600 ff.
and Porphyry say about another “whole” with non-material parts, namely the soul. As I have already mentioned, the soul is a whole divided into its powers. These powers are not material, and so the sense in which the soul is constituted by them is difficult to determine. But as I will examine more closely below, Boethius holds the principle that objects without parts are indestructible, and therefore immortal. A soul, or least a human soul, is immortal, which suggests that it is mereologically atomic. Powers are, hence, very different from material parts. They are structural, or better yet, functional features of a part-less soul. If souls have parts only in the sense of powers, it is possible that other non-material things have ‘parts’ in the sense that they have powers or features, not in the sense that they are literally composed out of them. Like souls, universals are permanent and indestructible members of Boethius’ platonic worldview. And like souls, I suspect that universals are mereologically atomic.

The compositional implications of the matter-form model are strained in other ways by the universal whole and the virtual whole. Clearly, in neither sense is it literally true that the parts are the matter of the whole. In a looser sense, however, there is a way in which the individuals are the matter for their universals. As I mentioned in section 3.1.2, Boethius thinks that the universal concept of Human Being is formed by the mind’s collection and abstraction of likenesses from individuals. Thus, in the sense that matter is that out of which something is made, the likenesses in individuals are the matter for the universal concept. (Note, nevertheless, that individuals are not matter for the true species, the Platonic Idea Human Being.) Likewise, there is perhaps a sense in which the whole soul is said to arise out of its powers. This is especially true of the vegetative
power, for as I demonstrated just above (3.2.2) this power is a precondition for the existence of soul. Both of these senses of ‘matter’ are even more tendentious and metaphorical than the sense in which the genus is the matter of its species.

Let us turn now to the case of integral wholes. For integral wholes, Boethius’ claim that the parts are the matter of the whole is straightforward enough. However, these two features of Boethius’ discussion are worth noting: First, Boethius introduces the equation of form with *compositio*, which I have translated as “arrangement”. The notion of arrangement will play a critical role in Abelard’s metaphysics of mereology (4.3). Second, Boethius ends his discussion of the third difference with the intriguing remark that the whole is different from each and every one of its parts in virtue of this arrangement. His subsequent analogy to the species suggests that this is true because the arrangement is another part of the whole. But Boethius need not, and probably does not mean this. But if the form is not a part, then the suggestion is rather that the whole supervenes upon, or perhaps even emerges from, the parts. Depending upon how strong this supervenience is, Boethius may be claiming that the whole is not identical to the sum of its parts.

3.2.4: The species is the same thing as its genus

Finally, Boethius asserts that one difference between genera and wholes is that the species is “the same thing as” the genus, but the part is not the same as its whole (*De Div.* 879d; Magee 1998, 14.12-15):

Again, the species is always the same thing as the genus (*idem quod genus est*)—
e.g. *man* is the same thing as *animal* and *virtue* is the same thing as a
disposition—but the parts are not always the same thing as the whole. The hand is not the same thing as the man, and the wall is not the same thing as the house.

It is not obvious what mode of sameness Boethius is employing when he draws this difference between the division of the genus and the division of the whole. John Magee proposes that we understand the x is the same thing as y to mean that x and y share both a name and a definition (1998, 85). In the commentary on Cicero’s *Topics*, Boethius asserts that the species takes the *integrum nomen* of the genus. In contrast, the parts make up the integral whole and, when conjoined, they take the name of the whole, but taken singularly they do not (*In Cic. Top.* 289.11-16 and 331.10-15). Human Being is called an ‘animal’ and it is Animal—i.e. Corporeal Substance. However, a hand is neither called a ‘human being’, nor is a hand defined as a rational mortal animal. In short, according to Magee, the species “being the same thing as” its genus is to be glossed as follows: if x is a universal and y << x, then x is F only if y is F. But if x is an integral whole and y << x, x is F but y is not F.

As suggestive as Magee’s interpretation is, I think that it cannot be what Boethius means for two reasons. First, if Magee is correct, then it is unclear why the division of the universal into its individuals and the division of the virtual whole into powers fall under the broader division of the whole. Just as the species Human Being accepts the name and definition of its genus, so too Socrates accepts the name and definition of his species. Socrates is a human being and he is a rational mortal animal. Boethius also admits that the virtual whole behaves like a genus with respect to the predicability of the name (*De Div.* 888c-d; Magee 1998, 40.27-30):
Thus, it is true that this kind of division has a certain likeness to both the division of a genus and the division of a whole. Because the predication of soul follows each and every one of its parts, it is compared to the division of a genus, [since] whenever there is a species of [some genus], the genus itself is a consequent.

If a power is predicated of some X, then Soul is also predicatable of X. Similarly, if a species is predicable of X, the genus of that species is also predicatable of X. If something is rational, then that thing is also ensouled; just as, if something is a human being, that thing is also an animal. Yet, Boethius is equally adamant that the soul is not a genus (De Div. 888d). Boethius’ reasons for denying that the soul is a genus will be examined briefly in the next section (3.2.5).

Second, this definition of “being the same as” does not discriminate between universals in relation to other universals and homogeneous quantities in relation to portions of that quantity, for it happens to be the case that the homogeneous parts of homogeneous objects take the name and definition of the whole (De Div. 879d; Magee 1998, 14.15-19):

This fact is clear enough in the case of those [wholes] which have dissimilar parts, but not likewise in the case of those things which have similar parts. For example, in the case of a bronze rod (whose parts are continuous because they are of the same bronze) it seems that the parts are the same thing as the whole.

Just as Human Being is the same thing as Animal, so too it seems that the rod section and the rod are “the same thing”, for the rod section is said to be ‘bronze’ and the definition of the bronze applies equally well to the rod section.

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96 Reading quod quaelibet eius pars fuerit animae praedicatio eam sequitur with Magee (1998). Smith prints quod quaelibet pars, cuius fuerit eius animae praedicatio, eam sequitur, which makes Boethius’ argument incoherent (Frag. 169F, 646-48).
To be fair, Boethius says explicitly that the part is not *always* the same thing as its whole. In other words, the apparent counterexamples of Socrates and the rod portion are not true counterexamples, since the difference is that a species is necessarily the same thing as its genus, whereas the part is possibly not the same thing as its whole. But if this is Boethius’ meaning, why does he mention the case of the bronze rod as if it were a true counterexample?

I propose, then, that Boethius cannot only mean by the claim that “the genus is the same thing as its species” that the species takes the name and the definition of the genus. This phenomenon is certainly true of species in relation to their genera, but taking the name and definition cannot by itself distinguish the genus in relation to its species from the universal in relation to its individuals or the homogeneous stuff from its portions.

Boethius thinks he can resolve the puzzle by pointing out that the rod-parts are not the same in quantity as the rod (*De Div.* 880a; Magee 1998, 14.17-20):

For example, if you divide a bronze rod with respect to that which is called the bronze, it is understood that the parts and the whole are the same. But this is not so. While perhaps the parts of this sort of object are the same thing with respect to substance, they are not the same thing with respect to quantity.

Rod section, which has $n$ quantity of bronze, is not the same as the rod, which has $n + m$ quantity of bronze. Hence, the rod is not the same thing (i.e. quantity of bronze) as the rod section. Boethius thinks this secures the difference between genera and homogeneous wholes despite the fact that with respect to *what type of stuff* each section is, each rod section is made of bronze. Again, the very fact that Boethius feels compelled to show why the rod-part is not the same thing as the rod strongly suggests that Magee’s interpretation is not correct. Moreover, Magee’s proposal makes it such that Boethius’
reply to the counterexample of the rod trades on an equivocation in the sense of ‘same thing’. The rod part is the same thing in the sense that it takes the name and definition of the rod, for both things are bronze. But the rod part is not the same thing as the rod, because they differ in quantity. Boethius fails to face down the challenge to the proposed definition of “same things as”. Rather, he implicitly acknowledges that the definition is not sufficient.

Boethius’ appeal to quantity suggests another interpretation. To be sure, Boethius cannot mean that x is the same thing as y if and only if x is not the same in quantity as y, for his examples of virtue and disposition and Man and Animal do not possess quantities in any straightforward sense of the term. Nonetheless, perhaps it is a significant fact that Man and Animal both do not possess quantity. But again we must proceed cautiously. Lacking quantity, by itself, will not determine that x and y are the same thing. Plato’s soul and Aristotle’s soul, for example, are both lacking in quantity, since no soul is material and possessing matter is a precondition for possessing quantity, or any accident for that matter.97 But no Christian, including Boethius, will concede that Plato’s soul is the same thing as Aristotle’s soul.98 Quantity may a component feature of the definition of being the same thing as something else, but it cannot by itself explain it.

97 In his treatise On the Trinity Boethius notes that Humanity in and of itself is not a subject for accidents (2.106-110). It is only when Humanity inheres in matter that it can become the substrate for other forms (i.e. accidents). In the same treatise, Boethius states that God’s substance admits no diversity, since it neither has parts nor accidents (2.93-102, and 104-106). This is consistent with Porphyry’s remarks in the Isagoge which suggest that individuation is due to accidents (Isag. 7.21-27; cf. Boethius In Isag. II, 214.6-19 and 235.5-236.6). Accidents can only accrue to individuals in virtue of the fact that they are enmattered. It is inconsistent, perhaps, with the bundle theory of individuals, which is sometimes attributed to Porphyry, and by association, to Boethius. See Gracia (1984, 67-81), and compare Barnes (2003, 342-45).

98 As Chenu notes, it is a commonplace of medieval Latin Platonism that the soul is one, substantial, and individual (1997, 62).
Perhaps we can combine the definitional requirement and the quantitative requirement into one characterization of being the same thing. In order for x to be the same thing as y, these two requirements must hold:

(1) x takes the name and definition of y, and

(2) x does not differ in quantity from y.

This characterization would clearly capture the case of the rod and its part. But condition (2) must be clarified to capture the genus and the species. Neither the genus nor the species possesses a quantity, since neither one is a subject for accidents. Moreover, the manner in which (2) is characterized will not clearly explain why Socrates is not the same thing as his species Human Being. A better formulation, happily, is forthcoming. The most promising characterization of being the same thing is this:

(1) x takes the name and definition of y, and

(2) x does not possess a material part, which y does possess, or y does not possess a material part, which x possesses.

Since matter is the ground for quantity, any difference in quantity will supervene upon a failure to mereologically coincide with respect to material parts. The bronze rod and its part both have the name and definition, but the rod-part fails to possess at least one

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99 Boethius’ treatment of individuals elsewhere identifies the capacity to possess accidental forms as the principle that distinguishes those things which only subsist from those things that are substances (Contr. Eut. III.206-220): “What the Greeks call ousiōsin and ousiousthai we call subsistence and subsisting. And what they call hupostasin and huphistasthai we translate as substance and substanding (substare). That which does not require accidents in order to exist subsists. But that which provides some sort of substrate for other accidents in order that they [sc. the accidents] may exist substands (substat), for it stands under these accidents (sub illis stat), in so far as it is a subject for them. For this reason, genera and species only subsist, for accidents do not accrue to them. But individuals not only subsist, they substand. They do not require accidents to exist. When they are subjects, they are informed by both proper and specific differentiae and they sustain accidents in order that they can exist.” The species Human Being is not a substrate for accidental forms, including quantitative accidents. Individuals, on the other hand, are substrates for accidents, and this is because they are enmattered. Socrates’ Humanity is enmattered, Socrates is capable of being a subject for accidents.
material part that the whole rod possesses. This new characterization also can deal with the alleged problem of Socrates and Human Being. According to Boethius, the species Human Being is *per se* not a subject for accidents. It is only when the species inheres in matter that the species can be a subject for accidents. This suggests that Human Being as such does not possess any material parts. Only its “images” in matter, such as Socrates and Plato, possess matter as such. Socrates is a composite of matter and form, and so he has a material part. The species and the individual instance of that species are identical with respect to name and definition, but they differ because the instance has a material part that the species does not. The difference between Socrates and his species is similar to the difference between the bronze and its portions. In fact, this similarity between homogeneous parts and the parts of universals is highlighted by Boethius in another treatise (*In Isag. II*, 215.8-11):

> For [the species] stands before (*praest*) some of its own as if [before] similar parts. For example, if you divide a bronze rod with respect to that which is called the bronze, it is understood that the parts and the whole are the same.¹⁰⁰

The section of the rod and Socrates are distinguished from the rod and Human Being respectively in virtue of a quantity. The disanalogy is that the rod also possesses a quantity, whereas the species does not.

It is important to stress that the second condition of my proposed characterization of being the same thing as something else does not require mereological coincidence. In his commentary on Cicero’s *Topica* Boethius stresses that while the genus put into

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¹⁰⁰ Boethius echoes Porphyry’s usage of the term ‘homogeneous’ to describe intelligible substances: “The intelligible substance (*noera ousia*) is homogeneous, with the result that these beings are in the particular mind (*en tōi merikōi nōi*) and in the absolute [Nous].” (*Sent. 22*)
relation with its species and the species with the genus (ad se invicem referuntur), the two are not the same (In Cic. Top. 295.30-32). The species is composed of not only the genus, but also the substantial differentia. As Boethius puts it, the differentia “completes” the substance of the species (320.38-42). But “it is impossible for something to be other (aliud), unless there is a difference in some part” (294.7-8). In these passages, Boethius is talking about the definitional parts of the species—that is, the internal structure of the species. As we noted above, while one of the definitional parts of the species is like matter and the others are like forms, the species does not in fact have any material parts. Nonetheless, Boethius suggests here that there is a difference between the species and the genus, because there is a difference in parts. The passages from the De Divisione and the commentary on Cicero’s Topica need not conflict, so long as we distinguish, as I have, between non-material parts and material parts. The species and the genus are the same thing with respect to their lack of material differentiation, but the species and the genus are different with respect to their definitional parts. In short, there are two distinct modes of sameness being employed in these two passages.

Distinguishing modes of sameness and difference is not alien to Boethius. In other places he distinguishes between three modes of sameness: sameness in genus, sameness in species, and sameness in number (see 3.3.3 below). While none of these three modes readily lines up with the two unlabeled, mereological modes I have presently described, this fact does not undermine my general point. In fact, following Boethius’ lead both Abelard and Pseudo-Joscelin will also readily develop distinct modes of sameness and difference.
3.2.5: Conclusion to the four differences

Boethius presents the four differences between the division of a genus and the division of a whole as if they hold generally for all wholes. But as my exercise has made more than clear, the four differences work best when contrasting a genus with an integral whole, although even here there is some strain. (Recall the observations about quantity as a principle of division in section 3.2.1, and the natural priority of a heart to Socrates in section 3.2.2.)

The four differences do not line up well with the contrast between a division of a genus into species and a division of the universal into individuals. I tried to show why the universal is not the same thing as its individual, but while I think my proposed interpretation is philosophically acceptable, and its accords with many of the texts, it in the end remains an educated guess. If Magee is right, then the contrast with the division of a genus into its species disappears. There is also a sense in which the individuals are the ‘matter’ of the universal. But there is also a sense in which the universal is that out of which the composite individual arises. An individual is a composite of matter and forms. One of those forms is the species, or an image of the species. When one focuses on the metaphysics of the individual, the universal begins to behave like a genus, which is a (definitional) part in addition to a whole. The universal is naturally prior to its individuals, just as the genus is naturally prior to its species, yet the whole is supposed to be posterior to its parts. The only case where the division of the universal whole lines up with the division of the integral whole is with respect to the first difference. There is a sense in which a universal is divided with respect to quantity when divided into its
individuals, since the individuals are all enmattered copies of the universal. But according to Boethius and Porphyry, individuals are also individuated by their accidental forms.

The virtual whole has even less success at lining up with other wholes. The soul is not divided quantitatively. Rather, it appears to be divided with respect to what sort of soul it is, or what sort of power it is displaying. The powers of the soul are not the matter for the soul except in a very tendentious, metaphorical sense. The powers of the soul fail the natural priority test as well. Indeed, in the case of some powers, the virtual whole is naturally prior to the power, just as the genus is naturally prior to the species. And, finally, based upon both my proposed reading of “being the same thing as” and Magee’s reading, the soul is more like the genus than like the whole. The soul and its power do not fail to coincide because one or the other possesses a material part. And if predicability of the name and definition determines sameness, by Boethius’ own admission, the virtual whole is like the genus, not the integral whole.

The real puzzle, then, is why Boethius thinks the virtual whole is not a genus. Or, if it is not a true genus, why is the virtual whole not enough like a genus to qualify as something which is divided in that manner, and not in the manner of a whole? With respect to three of the four differences the virtual whole resembles the genus more than it resembles an integral whole, for which the four differences fit best. But when we turn to Boethius’ favorite example of a virtual whole, we see that he is adamant that it is not a genus (De Div. 888d; Magee 1998, 40.30-32):
However, not every soul is composed out of every part, rather different [souls are composed out of] different [powers]. For this reason, it is necessary to compare the [division of the soul] to the nature of a whole.

Boethius’ reasoning is admittedly obscure. The passage strongly suggests that Boethius is not thinking of Soul, but rather an individual soul. He reasoning is something like the following: Each soul is a whole, and each has different powers. But it is not true that for each soul, that soul has all the powers and therefore a univocal share of the definition of Soul. Some souls only have the vegetative power. Other souls have both the vegetative power and the perceptive power. Still others possess the vegetative capacity, the perceptive capacity, and rationality. All three souls are Soul, yet they do not share a common definition.

This reasoning is not very convincing.101 In his commentary on De Divisione Abelard proposes that there are actually two definitions of soul, a “superior” one in virtue of which the soul “has an affinity with a universal whole”, and an “inferior” definition in virtue of which soul has an affinity with an integral whole (In de Div. 194.8-12). The superior definition is that “soul is a quality in virtue of which a body is vivified” (194.13-14). The inferior definition of soul is a “quality which is constituted out of rationality and out of sensitivity and out of the nutritive capacity (ex vegetabilitate)” (194.18-19).

The inferior definition of soul cannot be predicated of each of its parts, because the

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101 Many of Boethius’ first students were not convinced, and they attempted to locate soul under the division of the genus. To my knowledge, one of the first attempts to place the division of soul under the division of the genus is found in a short letter from a mysterious “Master L”, which is preserved in the manuscripts of St. Gall. The letter is transcribed by De Rijk (1963, 75-78). Because of its provenance, the letter is included in Piper’s edition of Notker’s logical works (LI, 9-LVI, 3). De Rijk’s edition, in my judgment, is the superior text. On a proposed identity of Master L, consult De Rijk (1963, 79-80). De Rijk proposes that the author is Liutbert, an author associated or at least familiar with the school of Eriugena. De Rijk’s conjecture, if correct, would date the letter to the middle of the ninth century.
capacity for thinking is not a quality which is constituted out of rationality and out of sensitivity and out of the nutritive capacity, nor is the capacity for sensing a quality which is constituted out of rationality and out of sensitivity and out of the nutritive capacity. Each of these capacities (the rational capacity, the nutritive capacity and the sensitive capacity) has its own definition, which sets it apart from the other capacities of the soul (194.20-29). However, the superior definition is predicable of all three types of soul, and that is why soul has an affinity with the genus.

Abelard’s solution is an interesting compromise, but it will not satisfy Boethius. First, Abelard’s definition of Soul suggests that it is a quality, and thus not a substance. Boethius, however, insists that a soul is a substance (In Cat. 183d-184b). Moreover, I suspect Boethius will insist that Abelard has not found a true genus. Abelard’s proposed definition is so general as to be without content. The proposed definition is that soul is whatever it is that gives life to a body. But the definition provides us with no definitional parts of Soul, no genus under which Soul falls, and no substantial differentia which separates Soul off from Not-Soul. Quick examinations of other virtual wholes suggest that this analysis is on the right track. Consider the virtual whole medicine. In these cases as well the search for a definition yields no results. If someone were to ask you what medicine is, you might answer by enumerating the various parts of medicine. Medicine is that art which either heals wounds, prevents illness and injury, wards off death, and so forth. But if one asks for the genus, it appears that one can only come up with a relatively uninformative one such as “an art practiced on the body”. For the
ancients, it seems, characterizing something by enumerating its parts does not amount to
giving a definition unless these parts can be shown to contain a genus and differentiae.

Regardless whether the reader finds this explanation compelling, I will let it stand,
and I will now set the problem of virtual wholes to one side. Virtual wholes will play a
relatively insignificant role in my assessment of Abelard’s and Pseudo-Joscelin’s
metaphysics of mereology. The bulk of what they have to say about the metaphysics of
parts and wholes is with respect to integral wholes. It is, thus, Boethius’ metaphysics of
integral wholes to which I now turn.

3.3: Boethius’ metaphysics of mereology

Boethius’ remarks in the De Divisione are often cryptic, and sometimes confused.
He says some enticing things about parts and wholes. The challenge is to discover
whether there is a theory of parts and wholes that is working behind the scenes. In this
section, drawing upon the material that I have already examined, I will explore the
possibility of reconstructing Boethius’ metaphysics of mereology. Since Abelard and
Pseudo-Joscelin concentrate upon the metaphysics of integral wholes and their parts, I
will likewise concentrate upon what metaphysical theory of integral parts and wholes one
can reconstruct out of Boethius’ remarks.

3.3.1: The problem with quantity

As my exercise in 3.2.1 should have suggested, a puzzling feature of Boethius’
treatment of integral wholes is his insistence that such wholes are characterized by their
quantity. This characterization has its roots in ancient mereological theories, especially Aristotle’s theories. But Boethius’ suggestion that integral wholes are determined solely by quantity is not only philosophically problematic it fails to account for many of the nuances in the ancient mereological tradition. First, for some thinkers it is not the case that all quantities are integral wholes. Integral wholes are a subset of quantities. Second, by focusing on the quantitative aspect of integral wholes and their parts one fails to appreciate that many parts of integral wholes are individuated according to principles other than quantitative measure.

Part of the difficulty in characterizing integral wholes is that they differ widely in degree of complexity. Some integral wholes are in fact primarily characterized in terms of quantity. Other integral wholes require more refined principles of division.

Aristotle tells us that some quantities are “discrete” (diôrismenon), others are “continuous” (suneches) (Cat. 4b19). Boethius echoes this distinction in his treatment of the division of the whole, claiming that there are continuous wholes and non-continuous wholes (De Div. 887d-888a). Immediately, we should ask whether wholes and quantities are the same.

The easier case appears to be discrete quantities and discrete integral wholes. Discrete quantities are such that there is no common limit, or border, where the parts intersect. Likewise, discrete wholes are such that their parts are spatially separate. In chapter 2 I introduced the two main varieties of discrete wholes: some are merely collections, or as I labeled them earlier mereological sums, whereas others are aggregates. Collections are such that the parts may be spatially separate and there may
be no structure imposed upon the collection. In this sense, any collection of objects can constitute an integral whole. If we gather items together so that they are spatially proximate, we get an aggregate.

From our authors’ perspective, collections and aggregates are characterized by being a number of things. Indeed, as I suggested in the previous chapter, a sum or aggregate is essentially some determinate set of objects, and therefore also some determinate number of objects. This is not quite the end of the story, as at least some aggregates are also characterized by the type of objects in the set. A crowd is a group of human beings, a flock a set of sheep or birds. But other than a specification of the type of object that can be a member, there is no other requirement set upon aggregates apart from spatial proximity and number. There is no necessary arrangement that the men must take up, there are no special roles that any of the members must perform. A crowd is just a group of men who are in relative proximity to one another.

This lack of structure and the preeminence of quantity in the characterization of discrete wholes leads some philosophers to conclude that such sets of objects are only quantities, and not wholes. Aristotle, for instance, insists that mereological sums and many aggregates can only admit the term ‘all’ (pan) or ‘all of them’ (panta) (Metaphysics 1024a1ff.). When commenting on this passage, Alexander notes that integral collections and aggregates are numbers and that number does not properly admit the predication of ‘whole’. One only can predicate ‘all’ or ‘all of them’ of such items (In Metaph. 426.19 ff.). A whole has a form, he claims, which causes the whole to become something over

102 Asclepius points out that the Pythagoreans and Plato considered numbers to be wholes—i.e. things that stand above (para) the heap of monads that constitute the number (In Metaph. 346.33-36).
and above its parts. A crowd of men, or even all men, has no such unifying whole. *All the men* just is the sum of its parts. Boethius, however, does not repeat this distinction between alls and wholes. Boethius is willing to call crowds of men ‘wholes’. For Boethius, discrete quantities of objects can be non-continuous wholes. At times, Boethius even states that non-substances can be wholes. For example, times and spaces can be wholes containing parts. Boethius gives the following example: if \( x \) *always* exists, then \( x \) exists *now*. This follows, he claims, from the topic from the whole, which states that if the whole is, then the part is.

Some quantities are continuous quantities, and some wholes are continuous wholes. Continuous quantities, Aristotle tells us, have a common “limit” (*horos*) at which the parts meet (*pros hon sunaptei ta moria*) (*Cat.* 5a1-5).\(^{103}\) Boethius never tells us as much, but we can easily translate this requirement into one that applies to continuous wholes. For continuous wholes this restriction translates into the fact that their parts are not only spatially contiguous, they are attached to one another. Adapting Porphyry’s rule for continuous quantities, we can provide this rule: if \( W \) is a continuous whole and \( x \) is a part of \( W \) and \( y \) is a part of \( W \), then if \( x \) is moved, \( y \) is also moved (cf. Porphyry *In Cat*. 102.14-20).

Aristotelians often describe time and place as continuous quantities. Time is a continuous quantity because it has a common limit, the present. Place is continuous because bodies occupy a place and the parts of bodies occupy sub-regions of that place (*Cat.* 5a6-14). Hence, one might say that place is derivatively continuous. Even though

\(^{103}\) Abelard will tweak this criterion and define a continuous whole as that whose parts are placed together without any gap. See chapter 4 (4.1).
time and place are continuous quantities, not all of our authors will be willing to call them ‘wholes’. But we will see that Abelard rejects the notion that times are wholes for other reasons, not in virtue of the fact that times are quantities and not substances (4.3.2).

Despite reservations from Aristotle and others, there is nothing too troubling about allowing discrete quantities of objects to be discrete wholes. But continuous quantities present their own difficulties. First, there is the problem of individuating parts of pure continuous quantities. Second, the vast majority of continuous wholes display a degree of complexity that begins to drive a wedge between quantity and the principles that determine when something is a part of an integral whole. In short, some continuous wholes are divided according to some other differentia aside from quantity.

Some continuous wholes have only homogeneous parts, others have both homogeneous parts and heterogeneous parts. Homogeneous materials are materials whose parts are “similar to one another and to the whole” (Ammonius In Isag. 81.21). Flesh is separated into bits of flesh, blood into more blood. It is unclear whether a quantity of, say, blood or of wax is also a whole. Aristotle, for instance, is skeptical. He insists that, strictly speaking, many homogeneous quantities are not wholes. One can only predicate ‘all’ of them, not ‘whole’. For Aristotle, this is because “position” (thesis) is an important criterion for being a whole. If, for some thing, the position of the parts can change without changing the nature of the thing, then the thing is an all, not a whole.¹⁰⁴ Water and other liquids are only ‘all’s (Metaphysics Δ.26, 1024a6-7).

¹⁰⁴ Asclepius explains the distinction between ‘all’s and ‘whole’s in an interestingly different manner: a whole must be the sort of entity that, if it were to lose a part, the whole would not remain the same thing (In Metaph. 346). The idea seems to be this: If one were to remove a bit of blood, the remaining blood would persist as the same thing. In contrast, if one were to remove a wall from the house, the house would no
Aristotle’s appeal to position also appears to underwrite his refusal to call crowds of men wholes, for position implies that some further structure has been imposed upon the objects in a set.

There is another possible reason why continuous quantities of homogeneous material are not wholes. To get homogeneous parts from a homogeneous quantity, one needs to use some method of quantification, or measurement. If one wants to divide a pool of water into parts, one must do so by measuring out quantities of water. For example, we might measure out one fluid ounce of water and call this a ‘part’ of the pool. But, this fluid ounce of water is not a well defined individual. Imagine that we now put the fluid ounce of water back into the pool. It would be terribly difficult, if not impossible task to re-identify and draw out that very same fluid ounce of water. In contrast, heterogeneous parts are easier to individuate and re-identify. One can individuate heterogeneous parts by means of something other than a quantitative measure. Heterogeneous parts have a form or shape, which helps one individuate the parts.

Both Aristotle’s appeal to position and my independent appeal to the problem of individuation rely upon the fact that continuous quantities of homogenous stuff lack the appropriate kind of form. Without a degree of complexity and structure, many Aristotelians are hesitant to claim that all quantities are wholes.\footnote{Aristotle claims that the presence of form is what distinguishes a whole from a “heap” (sôros). While it could not exist without the existence of the parts, the whole is claimed to be something over and above its parts (para ta moria) (Metaphysics H.6, 1045a9-10). Asclepius claims that there is something else which longer be the same. Of course, we need to specify the sense in which something is no longer the \textit{same thing}, and Asclepius does not offer much help in this passage.}
The most complex type of continuous integral whole is analyzable into a further set of parts, matter and form. I will sometimes refer to matter and form as hylomorphic parts. The introduction of a formal component seriously strains the quantitative analysis of integral wholes. While it is true that hands, heads, and feet have some quantity or another, it is not in virtue of their quantity that these parts are produced by some division. The form, either of the individual or the part itself, now plays the dominant role as the principle of division.

The presence of form explains why Aristotle says that there are some entities which admit both the predication of ‘whole’ and ‘all’, for example wax. The wax admits both predications because they possess both the characteristic features of ‘all’’s and of ‘whole’’s (1024a6). Wax is a paradigmatic example of homogeneous stuff. Each part of the wax is wax. Considered qua wax, a change in the position of parts does not change the nature of the wax. Hence, it is an ‘all’. But, wax also possesses a shape of some sort, even though qua wax the shape is not essential. Suppose that the wax possesses the shape of a man. One can then individuate parts of the man-shaped-wax, for example the

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“supervenes” (epiginetai) and makes the whole subsist as something over and above (para) its parts. Nevertheless, this supervening element is dependent upon the existence of the parts and the collecting together of these parts (In Metaph. 346.16-22; cf. 350.21-22).

106 Continuous integral wholes which have a form can differ also in degree of unity. Artifacts, such as chairs and desks, have parts that are attached in a relatively weak manner—for example, with nails or glue. Such constructed wholes are less unified than other continuous wholes, namely organic wholes (Aristotle Metaphysics Δ.26, 1023b34-36; cf. idem. I.1, 1052a19ff.). Of continuous wholes, organic wholes are the most unified, and hence most properly called ‘wholes’.
arm-shaped-wax, and if one were to move the arm-shaped-wax from its initial position and grafted it on to another location, the shape of the wax would change. Hence, the wax *qua* shaped wax can be called a ‘whole’.

I suggested in section 3.2.3 that Boethius acknowledges the role of form. The parts, he explains, are the matter, which with the aid of the form creates the whole. His example, recall, was a hunk of bronze, which when the form of Zeus is imposed on it becomes the statue of Zeus. We also noted above that the form may be a part, or it may be something else. Boethius’ description of the statue in the *De Divisione* is ambiguous on this point. He claims that a thing can be divided into its parts, or into matter and form. Perhaps he means that the form is not a part of the statue. On the other hand, perhaps he means that the statue can be divided into its material parts, or into its hylomorphic parts.

But if Boethius thinks both divisions are exhaustive, then where did the form go when the statue is divided into its material parts? Anticipating developments in the twelfth century, we might say that forms are either robust or supervenient. A robust form is one that, regardless of its status as a part, is something that can exist independently of the material parts that it structures. A supervenient form is one which depends upon its material parts for its existence. There are degrees of dependence and independence. A form may depend on the existence of some parts, but not all. Or it may depend upon the existence of a select set of parts. For example, the form of the house may depend upon the existence of the walls, roof, and foundation, but not upon the window panes, or doorknobs.
Boethius’ discussion of the divisions of the statue leaves room for the view that forms of at least some things are supervenient. Other forms, in particular substantial forms, are probably more robust. But Boethius does not tell us enough about forms to confirm this proposal with a great degree of certainty. In his theological treatises he tells us that, on the one hand, there are the divine, simple, and indestructible Ideas, and on the other hand, there are the “images” of these Ideas, which are created in matter. Clearly the Ideas are at the robust extreme of the spectrum just developed. The status of the images is left underdetermined. If I were to guess, I would bet that the substantial forms of things are more robust than supervenient. Boethius’ silence about these matters will hinder my attempt to isolate and develop Boethius’ theory of persistence with respect to changes in parts.

3.3.2: On when something is a part of an integral whole

As I mentioned in chapter 2, one of the tasks for the metaphysics of mereology is to determine what things count as parts of another thing or when some thing is a part of another thing (2.3). Boethius gives us a few clues about how parts are determined, but what he says is not entirely conclusive.

Boethius sometimes suggests that a part is that thing which goes into the composition of the whole (De top. diff. 50.18-19):

Parts are those things which when brought together make up the whole.

Boethius contrasts parts with another sort of ‘part’ (50.19-20):

And those things that divide the whole are called parts. These, however, are usually called species or forms.
This description suggests that integral parts are never determined by division, they are only determined by attending to composition. But this thesis is in stark contrast with Boethius’ insistence in *De Divisione* that integral parts are products of divisions, just as much as other products of division can be parts. Indeed, he claims that one can get several different sets of parts of continuous wholes by dividing them into either homogeneous parts, such as flesh and bone, or into heterogenous parts, such as hands and feet.

Boethius’ characterizations of parts need not be contradictory if they are allowed to be sufficient but not necessary conditions for parthood. The things that make up a whole are in one sense parts of the whole, whereas the products of dividing a whole are also in a sense parts.

The apparent contradiction also dissipates if one remembers that “division” is often conceived as *analysis* and not just literal separation. Boethius acknowledges that some divisions of a whole are not actual separations, since the products of the division are not items that can actually be pried away from each other (*De Div.* 888b; Magee 1998, 40.11-15):

> It is crucial that one not think that everything is divided in actuality, as some are divided in the mind and in account (*ratione*). For example, in actuality we can divide a mixture of water and wine into [smaller] mixtures of water and wine. But should we divide [the mixture] into its components, one being water and the other wine, this [is a division made only] in account. Now that they are mixed, they cannot be [actually] separated.

Boethius immediately follows the example of the wine-water mixture with the observation that a whole can be divided *both* into its “parts”—by which he probably means, into its quantitative parts—*and* into matter and form (ibid.; Magee 1998, 40.15-
In different respects, the parts and the matter and form of a thing both compose the thing. The inclusion of the example of form and matter might not be an afterthought, since in his theological works, Boethius stresses that the forms of material things are never actually separable from their matter (De Trin. 2.110-117, and 2.69-71). Both the division of the wine-water mixture and the division of a statue into matter and shape, or form, are divisions in account. Divisions of this sort are analyses of the make-up or formula (ratio) of a thing.

Thus, some parts of an integral whole are products of physical division. Examples of physically divided parts are those divided solely according to quantity, or spatial parts. Some heterogeneous parts are perhaps also physically separable, although it is less clear that they are defined by their actual separability. Indeed, their actual separation might entail the cessation of their existence (see 2.4.3). Boethius to my knowledge never repeats Aristotle’s maxim, but he might agree that a hand once separated from the body ceases to be a hand. Other parts are determined by the fact that they make the whole. The elements in the formula of a whole might be actually separable, as the door, walls, and roof are separable from the house. But sometimes the parts will not be separable in act.

However, this liberality concerning what counts as a part is tempered by Boethius’ suggestion that there are privileged divisions. This in turn implies that some parts are the privileged parts.

In his treatment of Cicero’s Topics, Boethius introduces the term “membrum”—literally ‘limb’—to denote an integral part (In Cic. Top. 289.14-16 and 286.14-15). The
use of this term suggests that the integral parts that topical inferences fix upon are the heterogeneous integral parts of a thing. And again, Boethius’ examples seem to bear this out. One substitutes an enumeration of members for a proper definition by enumerating the distinguishable parts of a thing—e.g. its walls and roof, or its head and hands. Thus, it is possible that not all integral parts are *membra*; only those parts that have a degree of structure can qualify as *membra*. This last suggestion, however, is only a conjecture. Boethius does not explicitly define *membra* in such terms.

Suppose Boethius is referring to heterogenous parts alone with his term ‘membra’. This fixation on heterogeneous parts would be a natural consequence of his principle that the partition of a whole should begin with the greatest parts and then move to the parts of these parts (*In Cic. Top.* 334.21-26). The implicit reasoning in the commentary on Cicero is that the greater parts are easier to understand.\(^\text{107}\) Since one wants to build logically sound arguments from the definitions and divisions of items, it is best to start on as firm a footing as one can when analyzing an items parts.

Boethius does not mean that we should necessarily start with the parts largest in size. For the initial division of a house is not into two halves, but rather into discrete, function-specific parts (*De Div.* 888a; Magee 1998, 38.29-40.3):

> If [a whole] is continuous, [the division should be made] into those parts out of which this whole is perceived to consist. Otherwise, it is not a division. For you should divide a human body into its parts, into a head, hands, chest, and feet, or *in

\(^{107}\) Boethius notes that some wholes have parts that are few in number and readily intelligible; others have many parts or ones that are difficult to understand (*In Cic. Top.* 334.15-17). For this reason, it is excusable if one makes an error enumerating the parts of a complex object, whereas there is no excuse for failing to properly divide a simpler object. Apparently bodies are subject to more error, since they have an indefinite (*infinita*) number of parts (334.30). Yet genera and species are finitely divisible. This means that they are more intelligible, and that it is far less excusable to fail to properly divide them.
This passage from the *De Divisione* claims that divisions with respect to heterogeneous, function-specific parts are easier, but as the last sentence makes clear, the division of a whole into function specific parts is one of potentially several privileged divisions. This thought is immediately confirmed (*De Div.* 888a-b; Magee 1998, 40.3-7):

Of those things whose composition is many-fold (*multiplex*), division is many-fold. For example, an animal is separated into those parts which have parts similar to itself [i.e. homogeneous parts]—i.e. into flesh and bones—and, again, [an animal] is separable into those [parts] which do not have parts similar to itself—i.e. into hands, feet, [etc.]. In a similar manner [one can divide up] a ship or a house.

Whatever mode of division we choose, we nonetheless start with the function-specific parts. Up to this point, Boethius does not seem to countenance a division that begins by dividing up organs and which then divides the organs into homogeneous parts. But in the remarks that immediately follow, Boethius suggests that there are parts of the whole, and there are parts of the parts (*De Div.* 888b; Magee 1998, 40.7-11):

We resolve a book into verses, and these [verses] into words, [the words] into syllables, and syllables into letters. Thus, it is the case that it appears that the letters, syllables, names and verses are in some sense (*quaedam*) parts of the whole book. Nevertheless, when taken in another manner, they are not parts of the whole, rather they are parts of parts.108

Boethius may intend for us to draw a general moral from the verse to syllable example, as some later commentators did (Magee 1998, 149). It may be that we are to divide a body first into heterogenous parts, then these heterogeneous parts into their homogeneous

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108 This idea is found in several late ancient handbooks on logic. Compare, for instance, Isidore of Seville: “You divide a statement into the word, and the word into syllables, and the syllable into letters. The letter, the smallest part, is an atom, and it cannot be divided.” (*Etymologiae* XIII, ii, 4)
elements. If so, it may appear that Boethius’ distinction between parts of the whole and parts of the parts is intended as a challenge to classical extensional mereology’s principle of Transitivity (2.3).

However, I think it would be too strong to conclude from this passage that Boethius rejects Transitivity outright. Indeed, he says that in some sense the letters and syllables are parts of the book. What this passage suggests is that dividing the book immediately into letters would be an illegitimate division of the book. The letters may ultimately be elements of the book, but one only arrives at the letters by first dividing into verses, then _verses_ into syllables, and finally _syllables_ into letters. Boethius does not reject Transitivity. He is merely indicating that classical extensional mereology’s unrestricted notion of ‘proper part’ will not give us an adequate principle for making divisions. Based on the unrestricted notion of a proper part, an immediate division of the book into letters would be legitimate, for letters are proper parts of the book. But Boethius is suggesting that a legitimate division must not only result in proper parts, it should result in principal parts.¹⁰⁹

¹⁰⁹ In my view, Boethius’ privileging of divisions is at least one impetus for the development of the twelfth-century notion of “principal parts”. We know from Abelard that there was a debate in the schools for how one determines the principle parts of a whole (Dial. 548.29 ff.). Some argue that it is the parts that the principal parts are the ones that are parts of the whole, but not parts of a proper part of the whole—that is, x and y are principle parts x << the whole and y << the whole, and there is no other item, z, such that z << the whole, and x << z and y << z. Others suggested that the requirement that the parts must not themselves be parts of a proper part of the whole be dropped: the principal parts are those that immediately make up the whole when collected together in the right way. Still others argued that the principal parts are those that, once removed destroy the whole. Each proposal attempts to find principles for determining whether a division is appropriate.
3.3.3: On static identity

As I mentioned in the previous chapter, one can divide the issues pertaining to identity into two broad classes (2.5). The first class of concerns has to do with static identity. The second class of concerns revolves around identity through time, or persistence. Boethius lays the ground for the early medieval study of the relation between mereology and static identity. Once more Boethius’ remarks are generally suggestive, but they are not developed into a satisfactory theory.

In section 3.2.4 I suggested a theory of sameness implied by Boethius’ thoughts about the difference between a part and its whole. Unfortunately, this account of sameness is not present in his explicit treatments of static identity. Where Boethius does go into detail about his theory of sameness and difference he presents these three modes: sameness/difference in genus, sameness/difference in species, and sameness/difference in number (*In Isag.* II, 192, 10-19; cf. *De Trin.* 1.48 ff.). Boethius lays down several rules governing the relations between the three modes of sameness and difference. Rule one: even if x and y are the same in species (or genus), it is possible that x and y differ numerically. Rule two: if x and y are numerically the same, then necessarily x and y are the same in species and in genus. Rule three: if x and y are different in species, then x and y must be different numerically.

If we restrict ourselves to Boethius’ three explicit modes of static identity, he cannot explain the difference between the hand and the body. Clearly, Socrates’ hand is not Socrates’ body. But we may ask: *In which of the three respects* is the hand not the same as Socrates? We can immediately rule out the option that the hand and Socrates’
body are different in genus. Socrates’ body is a corporeal being, and his hand is also a
body a corporeal entity. Hence, Socrates’ body and his hand are the same in genus.
Perhaps Socrates’ hand and his body differ in species. This seems plausible initially.
After all, Socrates’ body and Socrates’ hand are two types of thing—one is a human
body, the other is a hand. But, there are immediate difficulties. First, it will be hard for
many Aristotelians to stomach the notion that there is a species (Human) Hand. Species
and genera correspond to what are now called natural kinds. Parts of natural kinds are
not natural kinds (Syrianus In Metaph. 107.5-18). Yet, even if we loosen our notion of
species in order to accommodate ‘species’ such as Hand, there is still a problem. By
Boethius’ third rule, if x and y differ in species, then they must differ numerically. Since,
by hypothesis, Socrates’ body and Socrates’ hand are different in species, Socrates’ body
and Socrates’ hand also differ numerically. Therefore, if Socrates and his hand differ in
the second respect, they also differ in the third possible respect. But it doesn’t seem right
to claim that the hand is numerically distinct from its body. After all, the body contains
the hand. The hand is numerically different from the body-less-the-hand, but how can the
hand be numerically distinct from something that contains the hand. What Boethius
sorely needs is the notion of mereological overlap, as my proposed characterization of
“being the same thing as” made implicit use of (3.2.4).

Some remarks buried in Boethius’ treatments of part and whole suggest a more
nuanced understanding of the relationship between mereology and identity. For example,
Boethius claims that while the genus is “related to” its species, and the species to its
genus the two are not the same (In Cic. Top. 295.30-32). The species is composed of the
substantial differentia in addition to the genus.\textsuperscript{110} And, “it is impossible for something to be other (\textit{aliud}), unless there is a difference in some part” (294.7-8). At first blush, what Boethius says in his commentary on Cicero clashes with his pronouncement in the \textit{De Divisione} that the genus is the same thing as the species. But, in fact, Boethius does not contradict himself. The \textit{De Divisione} passage is best construed as a claim about the lack of matter in the genus and the species, and hence the lack of true composition. In his commentary on Cicero, Boethius is talking about the definitional parts of the species—that is, the internal structure of the species. And clearly, the species differs from its genus because the genus is only one feature of the species’ structure. There is also the form-like aspect in the species’ structure.

Boethius might not be aware of it, but if generalized as a basic rule about identity, Boethius’ claim about the difference between genera and species is strikingly prophetic. The generalized principle reads: x is not different from y unless x and y fail to mereologically coincide. This principle will become the foundation of Abelard’s original theory of numerical sameness and difference (4.2.1). But Boethius himself does not explicitly make the connection between mereological coincidence and numerical sameness. Rather, he focuses upon the numerical difference of discrete objects, and he attributes numerical difference to differences in accidental forms (\textit{In Cic. Top.} 332.29-30; \textit{De Trin.} 1.56-63).\textsuperscript{111} But with respect to the question whether a part is numerically the

\textsuperscript{110} The differentia “completes” the substance of the species (\textit{In Cic. Top.} 320.38-42).

\textsuperscript{111} Boethius’ explicit treatment of numerical sameness and difference is consistent with his insistence in the \textit{De Trinitate} that everything is what it is because of its forms, not its matter (II.83-89).
same, or numerically different from its whole, Boethius’ explicit account of numerical sameness is incapable of doing the job, as I will show in the next chapter (4.2.1).

Boethius also has trouble articulating an adequate account of the relation between the sum of a thing’s parts and the whole. In his commentary on Cicero’s Topics Boethius states that a concrete thing is the same as the whole, and the whole is its parts conjoined together (In Cic. Top. 285.24-28):

Every single thing (res) is the same as the whole (idem quod totum). For example, Rome is the same as that which is the whole citizenry (tota civitas). Each and every thing is also the same as each of its parts when they are brought together into one [thing]. For example, a man is the same as the head, throat, belly, feet, and the rest of the parts brought together and conjoined into one [thing].

But since a part in this tradition is always a proper part, no single part by itself is identical to its whole. This is contrasted with the claim that the genus is the same as each of its parts taken singularly.

The contrast between integral wholes and their parts is highlighted by the difference in predication, and it sometimes appears that the predicative difference is intended to explain the difference in the identity relations. The name of a thing—i.e. an integral whole—is predicated of its parts only when these parts are combined together “into one thing” (In Cic. Top. 289.14-16 and 331.10-15). House, for example, is not predicated of the wall alone. It is only predicated of the wall in conjunction with the other walls, the roof and the floor. In contrast, the species Man by itself takes the predication of Animal.

Boethius could be more precise in his formulation of the static identity that holds between a whole and its parts. For is a whole nothing other than its parts taken together?
It seems not, since a house is not the walls, floor, and roof laid in a pile without the appropriate structure. Boethius just might recognize this fact, as he often requires that the parts be combined together into “one” item. For example consider the sentence highlighted in the following passage (In Cic. Top. 286.8-15):

I mean by ‘substantial parts’ those which do not embrace a magnitude, but rather those which [embrace] the property and account of a substance. Yet, what is said in the case of a definition with respect to those parts that embrace a substance, should [also] be understood in the case of the parts which create a magnitude of, say, a house—which is composed out of a floor, walls, and a roof. For while these [parts]\textsuperscript{112} are nothing other than that which is composed by the parts, this [house] is something one and conjoined. And the partition of [the house] is a distribution through certain members.

The species is not a sum of definitional components, it is a unity composed out of these components. Likewise, the house is some one thing composed out of these parts. But a pile, we might claim, does not form a solid unity. Piles are weaker sorts of unities, since their parts are easier to dislodge. On the other end of the spectrum, as Boethius reminds us in De Trinitate, things that altogether lack matter have a greater degree of both unity and being (2.102-106). Perhaps the requirement that the parts be unified is intended to eliminate the case of the pile of house parts.

But if this is what Boethius intends, he could certainly be more careful when spelling out the conditions under which a collection of parts is the same as the whole. It will take until the twelfth century for philosophers to unambiguously acknowledge that the whole requires more than merely the parts; it requires that the parts possess the appropriate arrangement.

\textsuperscript{112} I take \textit{ea} to be the neuter, plural nominative, referring back to the floor, walls and roof in line 12 (rather than the feminine, singular, referring to \textit{domus} as well). The feminine pronoun \textit{ipsa} clearly refers back to the noun \textit{domus}. 
3.3.4: The ontological dependence of wholes upon their parts

Boethius’ treatment of natural priority in the *De Divisione* implies that wholes are ontologically dependent upon their parts (3.2.2). Taken in its strongest form, this claim entails a version of mereological essentialism. But it is not obvious that Boethius really takes such a strong view. The passage itself, along with other textual evidence, provides some clues that Boethius is not a mereological essentialist.

The reader will recall from my examination of the differences between the genus and the whole that the rule that parts are naturally prior to their wholes, at best, applies to integral wholes and their parts. But even if this thesis were to apply only to integral wholes, it would amount to a striking divergence from the Aristotelian mereological tradition.

In his *Metaphysics* Aristotle asserts that some parts of substances are prior, some are posterior, and some seem to exist simultaneously with their wholes (Z.10, 1035b3 ff.). The parts of the definition (*logos*) are prior in account (and probably in nature) to the whole definition or essence. And since the essence is prior in account and nature to the composite, the definitional parts are prior in nature and account to the whole composite (1035b14-20).

More importantly, other parts—for example, the parts of the composite—are posterior in account and nature to the whole composite. Consider the famous Aristotelian example of the finger: If the finger is severed, or the human being dies, the finger is no longer a finger except “in name” (1035b24-25, cf. *De Anima* 412b20-22). Fingers, and
other organs, are defined in terms of their functions. If the finger is severed, the bit of matter that was the finger ceases to be a finger. For a while, this bit of matter retains the shape of a finger, but it does not retain the function of a finger. In order for a bit of matter to be a finger, it must be incorporated in the right way within a larger bit of matter (the body) which is itself combined with the appropriate form. The necessary presence of form also explains why the finger is posterior in account. When giving a characterization of the finger, one must make mention of its role within the larger whole. The finger’s role within the larger whole is determined by the form of the whole.

Still other parts seem to be “simultaneous” (hama)—for example, perhaps the head and the heart of the composite animal. For if the heart or head is destroyed, then the composite substance is destroyed; and if the composite is destroyed, then the heart and head cease to be organs (Metaph. Z.10, 1035b25-27; cf. Asclepius In Metaph. 415.22-26). They are heart and head only in name.

If we take Boethius’ statement in the De Divisione as the final word about the ontological dependence of integral wholes to their parts, all this Aristotelian nuance is lost. Hence, there are two pressing questions. Is this statement in the De Divisione the final word on the matter? And if it is, why does Boethius forsake the Aristotelian tradition? I will suggest that the answer to the first question is a tentative ‘probably not’.

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Form, actuality and function are strongly correlated by Aristotle. For example, in Metaphysics H.2, he states that the enumeration of the material parts of a house yields the “potential house” (tên dunamei oikian). Giving the function of the house yields the actuality of the house. The composite house is constituted out of the function (i.e. form) and matter (1043a15-20).
But given the way that Boethius presents the mereology of integral wholes, unfortunately much of the subtlety of Aristotelian mereology ends up being distorted or lost to the early medieval thinkers.

Boethius’ claim about the ontological dependence of the whole upon its parts at first seems to commit him to a form of mereological essentialism. But a second reading of the passage at *De Divisione* 879c shows that Boethius need not be committed to an extreme form of mereological essentialism. First, consider Boethius’ concrete example. We have a house whose roof is removed. Not just any part has been removed. The roof is a part that removes the functionality of the house along with it. Boethius does not tell us whether the removal of a sliver from the door frame would also necessarily entail the destruction of the house. One might insist that Boethius stick to his guns: He explicitly states that, universally, parts are naturally prior to their wholes. Thus, if something is a part of the house, its removal entails the destruction of the house. But Boethius could deny that the sliver is a part of the house. Recalling his discussion of privileged divisions, he might say that the sliver is strictly speaking a part of a part of the house, and that the rule about natural priority does not cover parts of parts. If this is what Boethius would say, then he anticipates a move that twelfth-century Moderates will make with respect what I call the Mereological Sorites (see 5.1.2).

Denying that the sliver from the door frame is a part of the house is one possible way out, but not a very good one, and I think it is not what Boethius actually thinks. We must take Boethius at his word when he says that if a part is removed—that is if any part is removed—the whole perishes. There is still another clue that there is more to the story
in *De Divisione* 879c. Note that Boethius says, if a part of a whole perishes “the whole, whose one part has been destroyed” will not exist. This remark hints at a principle that will be a central part of Abelard’s theory of persistence: namely distinguishing between this house—the one that contains the sliver—and a house (see section 4.3.1). As Abelard will argue, if I remove the sliver, that house which possessed the sliver will no longer exist, but this does not entail that no house will exist upon removal of the sliver. As suggestive as this hint is, it remains only a hint. Boethius seems unconcerned about the potential onset of mereological essentialism, and so an explicit distinction along these lines is not made until we reach the twelfth century.

In fact, Boethius is usually content to assert the natural priority of any part to its whole. For example, in his commentary on Cicero’s *Topics* Boethius applies this notion to topical inferences (*In Cic. Top.* 289.35-39):

If you want to destroy [an argument based upon the whole] it will suffice for you to dislodge one part. If you want to add [a premise concerning the whole to an argument], you must by necessity show that all of [the whole] is present. If you want to demonstrate that there is no house, it suffices for you to show that there is either no foundation, or no wall, or no roof, since if any one of them is lacking, one cannot use the name ‘house’. But if you want to demonstrate that there is a house, you will not be able to defend what you propose unless you can join all into one.

While in this context, Boethius is focused on how to support or refute arguments, at other points in the same treatise he sounds like he is making a metaphysical point (*In Cic. Top.* 331.23-29):

The genus is always prior to its species, whereas a whole is posterior to its parts. Unless the parts exist, the whole is not made. Thus, it happens that if the genus perishes, the species also perish. If a species disappears, the genus remains. But the opposite holds in the case of the parts and the whole: if any one part perishes,
the whole necessarily disappears. If the whole, which the parts compose, is dispersed, the parts remain albeit scattered.

If one of the parts of the house is removed and placed on the ground beside it, the house no longer exists—since the “conjunction” has been destroyed—but the parts still exist in a scattered state. The same point is reiterated in his treatment of the Trinity. In his theological work, Boethius claims that simple objects self-sufficiently exist—each one is an “id quod est”. But composite beings depend upon their parts for their existence (De Trin. 2.92-102; cf. De Heb. props. vii-viii).

In general, Boethius and his neoplatonic forebears appear to be thinking of another sense of ‘whole’ when they state this rule about the dependence of the whole upon its parts. This second sense of ‘whole’ is based upon one of Aristotle’s broad definitions of ‘whole’ in his Metaphysics: “The whole is that which lacks none of the things which are its parts.” (A.26, 1023b26-8) Here the sense of ‘whole’ is roughly equivalent to ‘complete’ or ‘all there’.114 According to this second definition, the house is “whole” only if all its parts are present and intact.

The whole defined by the Aristotelian definition is contrasted with an entity that is “mutilated” (kolobon). One of the conditions which must apply to a thing for it to be mutilated is that “the substance must remain” even though it is lacking some part (Aristotle Metaph. A.27, 1024a16). A cup is the example Aristotle considers. A cup is not mutilated if it is unable to retain its function, as would be the case if we were to cut a hole into its bottom. On the other hand, should we chip a piece off the handle, the cup is

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114 For example, see Asclepius’ example of the teleios anthrôpos, or “complete man” (In Metaph. 346.11-12).

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not complete, but it is still a cup. Hence, it is a mutilated cup. This second broad
definition of ‘whole’ and its corresponding notion of mutilation are not applied to non-
concrete items such as universals. To my knowledge, no ancient or medieval philosopher
thinks about mutilated genera. Indeed, if a specific theory of genera and species allowed
for mutilation, these philosophers would take this as evidence that the theory is incorrect.

This sense of ‘whole’ as complete, and its corresponding notion of being
mutilated, is worth considering because (like several of Aristotle’s distinctions) it does
not make it to the early medieval period intact.\textsuperscript{115} Considered with respect to Aristotle’s
sense of whole as being all there, Boethius’ claim that if any part is removed the whole
perishes is true but trivial. If I remove a part from the house it is not whole. But it does

\textsuperscript{115}Eriugena is the only philosopher of the period who even hints that he has heard of the notion of being
mutilated. The hint appears in an argument against those theologians who claim that only human souls
survive death. The souls of irrational animals, they claim, perish along with their bodies. Eriugena insists
that this cannot be so, since it would entail that the genus of Rational and Irrational Animal, i.e. Life, will
be “ruined”. The key portion of the argument is found in the following text (\textit{Periphyseon} III. 737b-c):
“Therefore if one species perishes after the dissolution of the body, whereas the other remains, how does
the genus of these [species] conserve its whole? Reason dictates that their genus dies when the species are
destroyed, just as it is necessary that every species perishes when their genus perishes. The genus is
preserved in its species, and the species in their genus. If however some of the species that are constituted
under a genus can die and do die, and others cannot die and do not die, what shall we say about their
genus? Does it perish in some [of its species] and not perish in others? An integral [whole] (\textit{integrum})
cannot persist when some of its parts happen to perish. For this reason there will not be a genus, but the
ruins of a genus (\textit{generis ruina}).” Eriugena also hints at the notion of being \textit{kolobon} in his commentary on
Martianus Capella (\textit{Annotationes} 99.15-19 my emphasis): “For example, we cannot call the hand of Cicero
a relative, and likewise we cannot call a hand of Human Being a relative. [This is] because they do not
allow the [process of conversion] whereby ‘a hand of Cicero’ and ‘Cicero of a hand’, and ‘a hand of
Human Being’ and ‘Human Being of a hand’, can be convertible. \textit{For when one part is destroyed, the
whole cannot remain as something complete}.” The genus that loses a species would be the “ruins of a
genus” and that the Cicero, who loses a hand, is not a “complete” Cicero. Does this mean that Eriugena is
the first medieval to acknowledge the intuition that we often claim that integral wholes suffer the loss of
parts without suffering the loss of identity or being? While tempting, we cannot draw conclusions too
hastily. The remark in the commentary on Martianus is not followed up. And in the argument with the
theologians, Eriugena must actually make a stronger claim to get the argument to be valid. Eriugena needs
the much stronger claim that the whole ceases to exist. The “ruins” of the genus must be like the ruins of
Museum’s dinosaur skeleton after one has taken out and destroyed the thigh bone, where the rest of the
bones are lying on the floor in a heap. If the species Irrational Soul could perish and thereby only mutilate
the genus Life, Life would still persist, and Eriugena would be unable to complete his \textit{reductio ad
absurdum}.
not follow that the house does not exist. If I remove a sliver from the doorframe the house is mutilated, not destroyed. The only way to secure the claim that the house perishes when the sliver is removed is to assert the strong thesis that a house is identical to its parts.

To show that Boethius does not subscribe to mereological essentialism, one would like to see him draw the distinction between something that is complete and something that is mutilated. But Boethius never makes an explicit appeal to these notions. Why does Boethius not consider this basic distinction between a whole as an individual and a whole that is a complete individual? Perhaps Boethius’ omission is explained if we suppose that when thinking about the persistence of wholes Boethius’ paradigms were not things like cups and houses, but rather things like piles or crowds. In chapter 2, I suggested that an aggregate’s identity is solely determined by the members that make it up (2.5). Therefore, if we remove any one stone from the pile, that pile indeed ceases to exist. A whole which is strictly defined by its parts is naturally only one thing collected out of many things if and only if all its parts are there. What appears to have occurred among the neoplatonic students of Aristotle’s logic is a subtle, but important confusion between complex continuous wholes and relatively structureless discrete wholes.

Ideally, to show that Boethius is not a mereological essentialist we would like to see Boethius explicitly appeal to Aristotle’s hylomorphic theory and to make use of the concept of mutilation. But Boethius shows no interest in these concepts, let alone in the problems for which these concepts would prove useful. Consequently, Boethius does not
transfer Aristotle’s mature hylomorphism to the early Middle Ages. While form and matter are mainstays of early medieval metaphysics, there is a general amnesia concerning the mature Aristotelian theory of hylomorphism, and its corresponding theory of homonomy. Combine these crucial omissions with the fact that Boethius does not consider the plausible notion that some parts of integral wholes are naturally prior, some are posterior, and some are neither, and it is little wonder that Boethius’ pronouncements set the stage for a version of mereological essentialism that preoccupied philosophers in the middle of the twelfth century.

3.4: Conclusion to chapter 3

Boethius says many intriguing things about the variety of wholes and parts. The introductory nature of his treatments also guaranteed that they were widely studied by students of philosophy in the middle ages. Unfortunately, this virtue has a corresponding vice. Perhaps because he sees his audience as those who are beginning philosophy, Boethius often glides quickly over subjects where the advanced student wants more precision and detail. In a higher level treatise, Boethius might have been more careful to, for example, qualify his claim that the part is naturally prior to its whole. He might have

116 In regards to hylomorphism, Cassiodorus and Isidore are not much better. Cassiodorus relates some of the main neoplatonic claims about the relation of the soul to the body, but he does not discuss the fusion of form and matter. The soul, Cassiodorus claims, is “diffused throughout the entire body” (corpore toto diffusa) (De Anima X.1; p. 553). The soul is a whole in its parts. It is neither lesser in one place and greater in another, “but rather more attentive at one point and more removed at another” (sed alicubi intentius alicubi remissius) (idem. IV. 65-71; p. 540). Cassiodorus adds that for this reason, the soul has characteristics similar to God (idem. VI.14-15; p. 547; cf. IV. 138 ff., and V.20 ff.). When discussing the difference between flesh and body, Isidore has the opportunity to present the doctrine of hylomorphic parts and the principle of homonymy, but he declines to introduce either concept (Etymologiae XI, i, 17). He merely mentions that the soul is what vivifies a body (XI, i, 13).
also elaborated on the role that form plays in the persistence of individuals. Without these qualifications, however, his early readers were left with a strict set of rules. In the next two chapters the reader should note how Abelard and Pseudo-Joscelin adapt Boethius’ principles. In particular, one should be mindful of places where Boethius’ hints are noticed and elaborated upon.
We are now in a position to study twelfth-century metaphysical mereology as it is practiced by two of the century’s best metaphysicians. I start with the better known of the two. Abelard’s theoretical work on the relationships between wholes and their parts is remarkable for its sophistication and precision as well as its breadth of application. Abelard consolidates the insights of the Boethian tradition, applies them to a nominalist ontology (4.1), and explores their applications to the larger issues of identity (4.2.1), material constitution (4.2.2) and persistence through time and change (4.3).

4.1: Abelard’s metaphysics

In order to appreciate Abelard’s mereology, as well as his theory of identity and persistence, it is necessary to summarize several aspects of his general metaphysics. The remarks will naturally segue into a general discussion of Abelard’s mereology. Once these general remarks are made, we will be in a position to analyze Abelard’s application of mereological principles and theses to the broader issues of identity, material constitution, and persistence.
4.1.1: Ontology

Abelard’s ontology is austere. The word ‘thing’ (res) designates a restricted class of items. In the mundane world only souls, bodies and some forms are real, or things. Moreover, every thing is particular. There are no universal things. Abelard’s thesis that no thing is universal and the arguments that support it also entail that no constituent of a thing is universal, which is contrary to a view common in the eleventh and twelfth centuries that mundane objects are particular, but composed out of at least some universal elements.

Abelard’s stance on the status of universals invites one to describe Abelard as a nominalist. But the terms ‘realist’ and ‘nominalist’ can be deceiving. Contemporary philosophers tend to characterize nominalism in one of two ways: (i) as the thesis that there are no abstract entities, but only concrete entities, or (ii) as the thesis that every occupant of the world is particular. Neither contemporary characterization of nominalism cleanly captures the shape of medieval nominalisms and realisms.

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117 Some commentators have worried that Abelard’s stance on universals is inconsistent. In particular, several commentators have worried about the details of Abelard’s positive solution to the problem of universals. This line of criticism is raised in Tweedale’s groundbreaking study of Abelard’s theory of universals (1976, 208); although he thinks that Abelard can answer the challenge (idem. 215-16). Most recently, Marenbon has worried whether Abelard’s theory of differentiae undermines his commitment to the irreality of universals (1997, 195-201).

118 One version of this theory is presented by Abelard as that held by his teacher William of Champeaux. Abelard presents a number of objections to the theory (Log. Ingr. 1, 11.10-13.17; LNPS 515.32-38), as well as objections to its correlative theory of individuation by accidents (Log. Ingr. 1, 64.7-19). Abelard reports that his objections to William’s first theory were decisive (Hist. Calam. 65.80-90). On material essence realism see Tweedale (1976, 95-111), King (2004, 69), and Gracia (1984, 198-215).

119 On this point see especially Jolivet (1981). As Christopher Martin points out, we moderns tend to focus upon not just genus and species predicates, but also accident predicates, whereas the medieval philosophers focused almost exclusively upon the former (1992, 111).
The first characterization, (i), with its division between the abstract and the concrete is not particularly helpful, unless we think that ‘concrete’ is synonymous with ‘being a res’. This may well be what some philosophers have in mind when they resort to this division. But a survey of contemporary metaphysical literature quickly indicates that there is no consensus on the meaning of ‘concrete’ and ‘abstract’.

Consider the case of forms. All our medieval thinkers think that there are forms, and that these forms are things. Even Abelard seems to think that some forms, namely substantial differentiae, are res (see below, 4.1.2). These forms must be particular, if they are to be res, and hence Abelard can be characterized as holding a version of “trope” theory.

But while both Abelard and many contemporary philosophers hold that tropes are things, there is disagreement among philosophers whether tropes are abstract or concrete. Keith Campbell calls tropes “abstract particulars” (1981). But one could conceivably consider tropes to be concrete (for example, see Lewis 1986, 64-65, and 82-86).

Perhaps the second contemporary characterization, (ii), fares better. But in fact, many of Abelard’s opponents also hold that everything, both composite objects and

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120 I am sympathetic to Lewis’ observation that no one has satisfactorily characterized the division between the abstract and the concrete (1986, 81 ff.). There have, nevertheless, been some admirable attempts to define the division. See, for instance, Lowe’s study (1998, 210-27).

121 Anticipating section 4.1.4, I have no settled views on whether states-of-affairs count as abstracta or concreta. On the status of states-of-affairs, or “facts”, see Lowe (1998, 231-4), and Armstrong (1997, esp. 113-127).

122 The classic contemporary expositions of trope theory are Williams (1953) and Campbell (1981). See also the useful conspectus of recent trope theory, its virtues, and problems in Cynthia MacDonald (1998). Martin characterizes Abelard as “a transferable trope anti-realist” (1992, 112). The transferability of tropes is derived from Abelard’s claims that this man could have had a different particular differentia or accident that it actually had (Log Ingr. 2, 84.14-21, 92.24-27, and 129.34-6). On this point, see Marenbon (1997, 114 and 120-22).
constituents, is particular, and yet they will still insist that some thing—a res—is the universal. In the next chapter we will see how Pseudo-Joscelin develops a realist theory which identifies the universal as a collection of things. Other philosophers of the twelfth century attempt to identify in some manner the universal with an individual instance. Abelard’s understanding of realism includes any theory which attempts to identify the universal with a res. Hence, many theories that we would identify as nominalist turn out to be realist in Abelard’s eyes.

4.1.2: Hylomorphism and the constitution of things

Abelard thinks that every object in the mundane world is a composite of matter and form, and following Boethius, he often talks of matter and form as parts. Later on—in particular, in our discussion of sameness and difference in being (4.2.1)—we will

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123 For a compact survey of the various “realisms” current in the twelfth century, consult Jean Jolivet’s important article (1981, 177-81).

124 These theories have been variously named “identity” theories, “indifference” theories and “status” theories. On the concept of a status, see below. For descriptions of the theories, and analyses of Abelard’s refutation of them, consult Tweedale (1976, 116-27) and King (2004, 71-72).

125 For this reason, Jolivet prefers to characterize Abelard’s theory of universals as “non-realist” instead of “nominalist” (1981, 176-77).

126 This follows naturally from Abelard’s modification of Boethius’ division of the whole into (1) the division of the whole “with respect to substance” (secundum substantiam), (2) “with respect to form” (secundum formam), and (3) “with respect to both” (Dial. 546.22-24). The first division is further subdivided into (1a) the division of the whole with respect to the “comprehension of a quantity”, and (1b) the division with respect to the distribution of a common essence (546.24-26). Abelard’s (1a) corresponds to Boethius’ example of the house. (1b) corresponds to the species. (Abelard’s treatment of the mode (1b) does not in any way compromise his anti-realism of species and genera.) Mode (2) corresponds to Boethius’ example of the soul, and Abelard’s treatment of the division of the soul in the Dialectica adds little to Boethius’ discussion of this mode (558.5 ff., although compare his discussion in In de Div. 194.9-35, and 197.5-198.3). Mode (3) corresponds to Boethius’ example of the second way one can divide Socrates—viz. into body and soul.
see that the term ‘part’ must take on a much more restricted sense, so that it only applies
to matter, to such immaterial res as human souls, and perhaps to some forms (namely, the
substantial differentiae).

Abelard’s hylomorphism is strikingly different from Aristotelian orthodoxy in
two important respects. First, unlike Aristotle, Abelard does not think that the soul is a
form.\textsuperscript{127} This follows from the fact that the soul can itself be a subject for its own
accidents (\textit{Log. Ingr.} 2, 213.1-5):

But if the soul were a form, by what argument could [Aristotle] claim in the
[chapter on] Quality that madness and anger are qualities of the soul? Has a form
ever gone mad or become angry? And again, above he claimed that knowledge
and literacy are present in the soul as in a subject. But how can it possess
knowledge if it is a form?

There is one major difference between on the one hand animal and plant souls, and on the
other, human souls. Animal and plant souls are material; human souls are immaterial and
their “sole source” is God (\textit{Hex.} 775b). This distinction arises from Abelard’s
interpretation of \textit{Genesis} 1-2. In the creation story God first forms man’s body out of
everth and then He breaths life (i.e. the soul) into the body. In contrast, the myth reports
that God created all other creatures out of the earth. Abelard interprets this to mean that
God created the bodies and souls of plants and animals together, and he speculates that
their souls must be constructed out of the four elements. Of course, animal and plant
souls are quite rarified and subtle things, and “on account of the subtlety of these souls
they are called ‘spirits’, just as the winds are sometimes called spirits.” (\textit{Hex.} 774d).

\textsuperscript{127} Abelard and his contemporaries did not have access to Aristotle’s \textit{De Anima}. Abelard’s source for
Aristotle’s claim that the soul is a form is probably Calcidius commentary on the \textit{Timaeus} (235.8-236.8,
Second, Abelard argues that many forms ontologically supervene upon their matter (Log. Ingr. 1, 79.5-12):\(^{128}\)

We say that matter strictly speaking is that which is prior in time and takes up as a subject the image (\textit{fictum}) of the maker [sc. the image in the artisan’s mind]. For example, the bronze was bronze before it was a statue, and [before] it was sculpted by the artisan’s hand so that it became a statue. We say that form properly speaking is that which arises out of the composition of parts. For example, [the form] is that which is found in the statue due the curve or angle of the nose, and from the smallness or largeness of the eyes, and from all the rest that are due to the arrangement [of the parts].

According to this passage, form supervenes upon the arrangement of the parts of the matter.\(^{129}\) In the same passage, Abelard insists that rationality—and by implication many substantial differentiae—are not strictly speaking forms. The inherence of the differentiae to the genus is only analogous to that of a form upon its matter (Log. Ingr. 1, 79.12-17):\

Therefore, the statue is correctly said to be composed out of matter and form. But the substance of a man, which consists of animal and rationality, is not composed out of matter and form. The animal, which is the man, was not prior in time to the man, nor can it properly be said that the animal became the man. The man was not made by the activity of human manipulation.

Rationality is not strictly speaking a form, since it does not arise in a subject because the parts have been arranged in the correct manner. Nonetheless, Abelard thinks that rationality is like a form, and that the composition of a human being out of animal and rationality is analogous to that of the composite of matter and form. As Abelard puts it, “man is informed animal”, not animal and a form. In the latter case there are two things,


\(^{129}\) Peter King highlights this feature of Abelard’s theory (2004, 76).
in the former case “there is one out of [two]” (*Log. Ingr.* 1, 81.1-5). In other words, the combination of rationality and animal yields one thing, not a mereological sum of two things.

These remarks about substantial differentiae are puzzling, as Abelard claims in other passages that the differentia *rationality* is a form, and not a quasi-form (*Dial.* 559.38-560.2):$^{130}$

There now remains that division which we make into both matter and form, for example as follows: one part of man is the substance of animal, the other is the form of rationality and mortality.

He also says that substantial differentiae like *mortality* and *rationality* are *res* (*Log. Ingr.* 1, 70.28). But if rationality is a form and a *res*, then Abelard is wrong to claim that all forms supervene upon their parts.

Some of the confusion may plausibly be because Abelard changed his view about the status of forms. John Marenbon, for example, argues that, early in his career, Abelard thought that all forms—both accidents and differentiae—are things. Later on, and especially as he confronted the problem of the Trinity, Marenbon detects a reappraisal of the status of forms (1997, 112-115 and 155-57).$^{131}$

Regardless whether Marenbon’s development hypothesis is correct, it is certainly the case that Abelard uses the word ‘form’ equivocally. Sometimes ‘form’ only

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$^{130}$ Cf. *Log. Ingr.* 70.21-38, and 298.6-11.

$^{131}$ To make his case, Marenbon relies heavily upon Constant Mews’ (1985a) dating of Abelard’s works. In conversation, Peter King has warned that we should treat all such datings with some skepticism. There is some indication that Abelard never completed many of the treatises in our possession, but rather was revising them in piecemeal fashion throughout his career. De Rijk hypothesizes that Abelard composed no less than three versions of the *Dialectica*, and that the third redaction was composed toward the end of his life (see his introduction, xii-xxiii).
designates the structures and features of man-made objects—as the last sentence in the highlighted quotation from the *Logica Ingredientibus* indicates: “The man was not made by the activity of human manipulation” (79.16-17). At other times, ‘form’ clearly refers to differentiae (Dial. 415.35 ff., and 559.38 ff.).

The *Logica* passage is, hence, not the final word on the status of all forms. In the parallel gloss found in the *Logica Nostrorum*, Abelard reiterates the claim that “the form is strictly speaking that which arises from some arrangement of parts”, and for this reason rationality is not technically a form (LNPS 564.16 and 564.24-25). But he adds this qualification later on in the discussion (567.33-38).  

And it should be noted that according to this exposition the thing that is animal (*animal res ipsa*) is called the proper matter of a man and rationality is the proper form, since they constitute the human’s concrete being (*essentiam humanam*). But the name ‘animal’ is correctly called the quasi-matter of the name ‘man’ and the name ‘rational’ the quasi-form, since they do not constitute the concrete being of the name [sc. ‘man’].

Abelard makes it clear that the man that is composed out of quasi-form, rationality, and quasi-matter, animal, is the “common and specific man”, not a particular composite man (LNPS 564.9 ff.). Abelard’s claim that rationality is not technically a form must be tempered by his added assertion that the problem whether animal is the matter and rational is the form is a problem concerning words, not things.

Abelard makes it clear in several places that some forms—especially those that are imposed upon artifacts—are not real. But there is also evidence that Abelard thinks some forms, in particular substantial differentiae, are real. In a fragment preserved along with a manuscript of Abelard’s *Treatise on Understanding* the unknown author reports

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that according to Abelard and his followers only some kinds of forms are concrete things

(_essentiae_):\(^{133}\)

Others allow that some forms are things, yet some are not. For instance, Abelard
and those of his [followers], who by looking at matters carefully and not creating
confusion illuminate the dialectical art, claim that no form is a thing except those
qualities (1) which are present in a subject in such a way that the subject is not
enough for their existence, or those (2) [for which] the arrangement of parts with
respect to each other or with another is not necessary—just as the arrangement of
parts to each other is necessary for the curvature of a finger, and the arrangement
of the parts of a subject, as well as something else where the subject sits, is
necessary for the existence of sitting—or those (3) which are present in [the
subject] on account of something extrinsic in such a way that they cannot exist
without this [extrinsic element]—e.g. some property is present in a man because
he owns a horse or a cow such that when this extrinsic thing [sc. the horse or the
cow] is destroyed this [property] does not remain—or those (4) whose departure
does not depend upon the addition of a substance to the subject—for example, the
departure of inanimateness requires the addition of a substance (namely a soul) to
the subject.\(^{134}\)

If this report accurately reflects Abelard’s views—and it is generally agreed that it
does\(^ {135}\)—then a great variety of forms are eliminated from Abelard’s ontology. Most
significantly the forms of artifacts, which arise from the arrangement of parts, and
external relational characteristics lose their status as beings. Nonetheless, according to
the report, some forms are _essentiae_; and the forms that seem to meet the criteria best are
(many of) the substantial differentiae (Marenbon 1997, 159). Consider, for example, the
differentia rationality. A corporeal body as subject is not sufficient for the existence of

\(^{133}\) See section 4.2.1 below for some remarks on the twelfth-century use of the term ‘_essentia_’.

\(^{134}\) MS Avranches fol. 69r. The text is printed in Cousin (1859, vol. II, 755), and with minor corrections by
Marenbon (1997, 159 note 45).

\(^{135}\) See Marenbon (1997, 159), and King (2004, 75-77). The summaries provided by Normore (1987) and
Martin (1992 and 1998) mention nothing about the reducibility of some forms, but nothing in their
respective reconstructions precludes this possibility.
rationality, since a corporeal body could be irrational. Rationality does not supervene on the arrangement of the matter in its subject. Rationality is not dependent upon some feature extrinsic to its subject. And rationality does not appear to depend upon the addition of a substance in order for it to depart. (Interestingly, it appears that irrationality, and other privative differentiae fail the reality test due to the fourth criterion.)

Some forms have ontological independence. Other forms, such as shape, relational properties, and so forth, only supervene. Many of the substantial differentiae are real. The forms of artifacts are not real. This is consistent with Abelard’s insistence that artifacts are not substances. This division between natural and man-made objects is reinforced when we examine Abelard’s remarks on the other half of composite objects, their matter.

When it comes to the material aspect of hylomorphic composites, Abelard is also revisionary. Abelard asserts a doctrine of double creation. In “first creation” God made “the matter of things” ex nihilo (Log. Ingr. 2, 298.2-6 and Dial. 419.1-2). Abelard identifies this matter with the four elements (Dial. 419.5-12). In “second creation” God then took these elementary constituents and constructed the full variety of natural substances by adding forms (Log. Ingr. 2, 298.6-8 and Dial. 419.15-17).\footnote{Only second creation counts as substantial generation, because in first creation there was no thing prior to the change that can act as the substrate (Dial. 419.17-20 and Log. Ingr. 2, 298.12-14).} In second creation, God seems to have followed the patterns outlined in the Tree of Porphyry. Abelard views the Tree of Porphyry as an analysis of the metaphysical construction of substances. Abelard is not alone in thinking that the Tree of Porphyry serves as a recipe
for creating substances. But Abelard differs from many of his realist contemporaries on the status of the constituents that make up the substance. Many realists assert that the formal constituents of substances are universals. Abelard insists that from the very start, everything is already particular (cf. Log. Ingr. 1, 18.9-11 and 64.20-24).

Abelard also has a different starting point for his Tree. In the mundane world, the Tree begins with body, not substance (Marenbon 1997, 124). The ultimate constituents of the matter of things, are the four elements, each of which is qualified corporeal substance. Bodies are also the ultimate constituents of things in another manner. Following his own master, William of Champeaux, Abelard asserts that all bodies are actually composed of planes, all planes of lines, and all lines of points (Log. Ingr. 2, 179.27-29). This is in opposition to the authority of Boethius, who maintains that points are “limits”, not parts of lines (In Cat. 205b). Points are the smallest units of corporeal quantity; and each point inheres in “an indivisible subject”, which Abelard

137 Pseudo-Joscelin also sees the Tree of Porphyry as a guide to the construction of substances (De generibus et speciebus §§ 145 ff., and esp. § 152).

138 On this point consult King (2004, 93-4), and Marenbon (1997, 134-35). Abelard and his teacher William may have been influenced by Isidore of Seville’s Etymologiae, which treats in two adjacent chapters the theory of Democritean atoms and the theory of prime matter. In the chapter on atomism, Isidore remarks that atoms are the minutest, indivisible parts of the corporeal world. These atoms are the building blocks for all other corporeal things, including the elements (XIII, ii, 1). In the very next chapter, Isidore describes how prime matter and corporeal forms combine to generate the elements, which in turn compose all the other bodies (XIII, iii, 1-3). Isidore gives the reader no guidance for how to decide between or to combine these two theories.

139 Cf. Porphyry In Cat. 103.4-17. Aristotle is less definitive, but he says that the parts of a line meet at a common limit, the point, which naturally suggests that the point itself is not itself one of the parts of the line (Cat. 5a1-2, cf. Boethius In Cat. 204cd).
identifies as the “singular indivisible parts of a body” (*Dial. 57.15-16*). In short, the bodies of substances are ultimately composed out of singular, atomic substances.

In contrast to Aristotelian orthodoxy, the theory of the elements has been shot-gun wed to an atomistic theory of bodies. Even more significantly, Abelard’s atomism threatens to collapse the distinction between quantity and substance. Points and solids are traditionally placed in the category of quantity, and hence they traditionally fall on the side of accidents. Admittedly, early on in commentaries on Aristotle’s *Categories*, quantity maintained an uneasy place as an accident. Porphyry, for example, suggests that the reason that Aristotle jumps immediately from substance to quantity, and not to quality, is that even were one to strip all other accidents away from a substance, it would still be bounded by some quantity or other (*In Cat. 100.21-28*). Quantity, it was recognized, has a very close relationship to the subjects that have it. Abelard’s analysis, however, makes the connection even closer, so that one mode of dividing the whole with

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140 Indeed, sometimes Abelard discussion of points appears to be shorthand for a discussion about the subjects of points. In particular, when Abelard claims that bodies are composed out of points, he really means that bodies are composed out of atoms. See *Log. Ing. 2*, 168.31-169.2 and 179.26-30.

141 Marenbon resists this conclusion, citing a passage where Abelard draws a distinction between “quantitative body” and “substantial body” (*Log. Ingr. 2*, 189.6-24). This passage, he insists, shows that the two types of body are not identical. Nevertheless, he concedes that the exact relation between quantitative body and substantial body is unclear (1997, 135).

142 Compare with Abelard: “For even if every part were stripped of quality, they could still make a division of the whole of the substance, whose being [the parts] construct, so long as [the parts] remain in [the whole’s] comprehension.” (*Dial. 574.28-30*) In fact, Porphyry says something even stronger: quantity is the precondition for the inherence of other accidents. Were one to remove quantity, “there would be no longer be any number in relation to the continuous or the discrete” (*In Cat. 100.25-27*).
respect to its substance is in fact to divide the whole in relation to the “comprehension of a quantity” (Dial. 546.24-26). The ramifications of Abelard’s atomism become apparent immediately as we turn to integral wholes.

4.1.3: Integral wholes

In chapter 2, I noted that the first order of business in metaphysical mereology is determining what objects count as wholes, and what objects count as parts of these wholes (2.2-3). As I have already indicated, Abelard thinks that there are many kinds of wholes. He also has a few things to say about the corresponding problem of determining what things are parts.

When it comes to material objects, Abelard thinks that it is important to distinguish what we might call ingredients from parts. This is because Abelard distinguishes between a loose and a strict sense of matter. In the looser sense, the grain is (some of) the matter of the bread. But in a stricter sense, the matter is what both constitutes the whole and remains in the whole as a part (Dial. 575.18-36).143 Roughly, x is a part of y if it is an ingredient of y, and x remains substantially unchanged when it begins to constitute y. Accordingly, we may say that the grain is not a part of the bread, but only the crumbs are parts.

In this chapter we will have to walk a fine line between the looser and stricter senses of ‘part’, since we want the indivisible subjects that ultimately make up Socrates’ body to count as parts of his body, even though these atoms may change substantially.

upon the addition of differentiae. In anticipation of our discussion of identity (4.2.1), we
do not want to restrict ab initio our notion of part to that of a material part, since there are
two types of potential part that are not material. First, although the human soul is
inmaterial, it is a thing, and hence potentially a part of Socrates. Second, since
substantial differentiae are real, they also may be parts. From this point forward, I will
try to reserve ‘part’ for only those things that meet our working characterization.

This working notion of a part signifies the sort of thing that can stand in the left-
hand argument of the contemporary mereologist’s relation being a proper part of.
Abelard has no concept that corresponds to the contemporary mereologist’s notion of a
being a part of, such that it is possible that something is a part of itself. “There cannot be
a part where the quantity of the whole does not exceed [the quantity of the part].” (Dial.
554.16) It is worth mentioning at this point that Abelard conveniently overlooks objects
denoted by mass nouns (Marenbon 1997, 117). Objects denoted by mass nouns are
precisely the sorts of object for which the more generous relation being a part of is
sometimes used.

The term ‘whole’ is used in a number of different ways as well. In his treatment
of division, Abelard follows the common practice of describing universals as wholes, or
as he would say, “distributive wholes”. The soul is also described as a “virtual whole”,
which is distinct from both the universals, and from the central objects of our concern,
“integral wholes”.

Like many of Abelard’s contemporaries, the paradigms of integral wholes are
artifacts (most often a house) and substances (usually poor Socrates). But in contrast to
his contemporaries, Abelard is very liberal when it comes to determining what items are integral wholes. In addition to the paradigmatic integral wholes, Abelard also asserts that some integral wholes are pure “pluralities”—or what I will label “collections”—and some are aggregates.

Collections are not sets. The only relation is part-to-whole. There is no set membership relation or sub-set relation. And whereas a set can be a member of another set, collections themselves, as opposed to the parts of these collections, cannot be parts of other collections. \(^\text{144}\) Abelard is so liberal regarding what can count as a collection that the parts of a collection need not even belong to the same category (Dial. 548.19-21). \(^\text{145}\)

For example, this whiteness and this finger belong to one whole (\textit{in uno toto conveniunt}), but one is placed under [the genus] Substance and the other is under Quantity.

As we will see in the next chapter (5.1.2), this liberality with respect to what qualifies as an integral collection is not widely embraced by Abelard’s contemporaries. In contrast, Abelard’s understanding of collections is widely embraced by modern mereologists. \(^\text{146}\) When contemporary mereologists talk about “mereological sums”, they are often talking about collections, since the operation of summation says nothing about the location or arrangement of the parts that are summed. Mereological sums are just the enumeration of

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\(^{144}\) If a collection A is a proper part of another collection B, this merely means that the proper parts of A are proper parts of B.

\(^{145}\) Cf. Dial. 548.21-22.

\(^{146}\) In this respect Abelard is more modern than some of his historical contemporaries. Classical extensional mereology is committed to the general existence of sums, such that any two things constitute a mereological sum (Simons 1987, 108-12). Chisholm rejects the existence of many, if not all of these collections. It is possible, on his view, for x and y to exist and yet there is no z, where \(z = \{x + y\}\). See his axiom 4 (1976, 151). There is no corresponding axiom in one of his other treatments of mereology (1989, 69).
the parts that constitute a thing. For this reason all collections are mereological sums, but not all mereological sums are pure collections. Aggregates as well as the matter belonging to structured material objects (such as artifacts and bodies) are also mereological sums.

Aggregates are pluralities of objects that have been brought into spatial proximity. Examples of aggregates include crowds, flocks, and heaps of stones. As these examples demonstrate, it is sometimes unclear whether a mereological sum is a collection or an aggregate. A crowd of men can be relatively packed together or dispersed, but at some point the men will cease to be a crowd. When men are scattered across the earth, it is clear that they are no longer a crowd. The process of bringing parts into sufficient proximity to constitute an aggregate is referred to as aggregation.

It should now be clear that describing a mereological sum as an aggregate or a collection, is merely a way of characterizing the proximity of the sum’s parts to one another. The parts of a mereological sum may also be related to one another in more complex ways; they may be arranged so that they constitute a structured whole. Most of our common sense paradigms of material objects possess an arrangement, or as Abelard calls it, a “composition” (compositio) (Log. Ingr. 2, 171.14-17). Mere aggregation of parts is not sufficient. I do not make a house by merely placing boards, doors, and bricks in the same location.

As we have already mentioned in chapter 2 (2.5) some philosophers think that this arrangement is what sets the object apart from its “matter”, which is the mereological sum of the object’s constituent material parts. We may call this a “form-matter” theory.
of constitution. The form-matter theory comes in both a strong version and a weak version. The strong version claims that the arrangement, or “form”, has a robust ontological role. The presence of the form in the matter is a necessary condition for the existence of the object. The form also, according to the strong form-matter theory, is the principle of individuation and persistence. The form can survive a change in the underlying mereological sum, and its survival allows the object to possess different mereological sums over the span of its existence. This stronger reading is commonly attributed to Aristotle (see 2.5 above). The weak version of the form-matter theory also claims that the arrangement of the material parts distinguishes the object from its matter and is a necessary condition for the existence of the object. However, it is not the case that the arrangement is ontologically robust enough to be the principle of persistence. Rather, the arrangement is ontologically dependent, or supervenes upon the parts. According to the weak form-matter theory, if the underlying matter were changed, the form would change as well. As I will show, in the case of artifacts, Abelard holds a weak version of the form-matter theory (4.3.1). The cases of substances (4.3.3) and persons (4.3.4) are more complicated, and for these objects I will argue that Abelard holds a stronger form-matter theory.

Perhaps surprisingly some wholes that require the appropriate arrangement are, strictly speaking, “discrete” integral wholes, which means that they are more akin to aggregates than they first appear. In order to be a “continuous” whole, there must be no space between parts. Man-made objects, such as tables and houses, are always discrete integral wholes, since their parts, while pressed up closely to one another, still have a gap
between them. Only God, it turns out, has the power to fuse parts together so that wholes are continuous. Humans can destroy continuous wholes, but try as they might, they cannot fuse parts together. Abelard adheres to this thesis even in the face of apparent counter-examples. For example, glass is a man-made object, but it seems to be fused. Abelard concedes that glass is continuous, but he therefore concludes that the fusion of the parts is not strictly brought about by human powers (Dial. 419.35-420.6)

But no secondary acts of creation of this sort lie within our powers. All creation must be ascribed to God alone and is foreign to our acts. For example, when the ash and sand are placed in the kiln in order to be transformed into glass our act works toward the particular creation of glass. But while we are ignorant of the physics, it is God who by some unseen means works upon the nature of those things which we had prepared, and it is He who makes the new substance. Whereas the glass is created by God, it is shaped in any number of containers by our work. Nothing is created, [we only] combine created things.147

Humans only have the power to place parts very close to together—as in the case of artifacts like houses—or in the case of a malleable homogeneous substance like glass, to apply different shapes to the substance.

In short, for Abelard, continuous wholes line up with substances. Artifacts fall on the side of discrete wholes, along with aggregations and collections of substances. This difference between mereological sums of substances and artifacts on the one hand, and substances on the other hand, must be at the fore of the reader’s mind—especially when we consider Abelard’s theory of material constitution (4.2.2) and persistence (4.3).

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147 Abelard also considers the case of human procreation. It may seem that the father and mother generate their son, because it is their act of copulation and the addition of the man’s sperm to the mother’s egg that initiates the generation of the boy. But, Abelard insists, the father (i.e. the putative active principle of generation) could disappear and the son would still be generated. Ultimately, “the son is a work of Nature—i.e. of God—and not of a man” (Log. Ingr. 2, 298.29-33).
Abelard’s metaphysics is austere. If we take him at his word, he allows only bodies and some forms to be things. Other forms enjoy a status of being a quasi-thing, since they supervene upon the arrangement of bodies. But Abelard’s semantics is much richer. Here Abelard is willing to countenance natures, “states” and states-of-affairs, or *dicta* (Normore 1987, 207). The role of natures would be important were we interested in the problem of universals. But for a study of mereology they are not important. States and states-of-affairs, on the other hand, will play a significant role. We must, therefore, briefly consider these two components of Abelard’s semantic theory.

The ontological standing of *status* and *dicta* is difficult to determine. For example, Martin Tweedale is tempted to treat *status* realistically, and to locate it among the items in Abelard’s ontology. Peter King, in contrast, has insisted that we take Abelard at his word, and understand that a *status* is nothing at all. Naturally metaphysicians will ultimately want to get straight about the nature of *status* and *dicta*. But to the extent that I can, I want to put aside this problem, and focus upon the role that *status* in particular plays in Abelard’s mereology. My account should work perfectly well whether one is a realist or an irrealist with respect to *status*.

Abelard argues that the logical relations between, for example, the terms in a conditional are not immediately relations between the things denoted by these terms (*Dial.* 293.6 ff.; see Martin 1992, 117-121). In other words, the signification of a sentence is not merely the things signified by the terms in the sentence. Rather, for Abelard, *dicta* are the *significata* of sentences, and they cause the truth of statements. *Dicta* are “what it
is that have logical properties and stand in logical relations; they are necessary, possible, logically opposed to one another, entail one another and so on” (Martin 1992, 114). In Christopher Martin’s view, Abelard has “hit upon the notion of propositional content”. But the reader should not conclude that Abelard will list *dicta* among the contents of his ontology. Famously, Abelard refuses to hypostasize *dicta*. *Dicta*, or states-of-affairs, are derived from *res* and the properties of *res*. Sometimes the relation between ontology and semantics is fairly straightforward: ‘Socrates is rational’ is true because the state-of-affairs, Socrates being rational, holds. And this state-of-affairs holds because this thing has this form of rationality.

But, in anticipation of our discussion of material constitution (4.2.2), it is important to note that not every state-of-affairs directly mirrors the underlying ontology. Take the example of Abelard’s distinction between an utterance (*vox*) and a word (*sermo*). The utterance is the physical puff of air; the word is that same puff of air in so far as it is a bearer of meaning. The semantic property of the word is not a form that the word possesses. Rather, it is better to say that it is a “functional” property (King 2004, 91-92).

In short, Abelard emphasizes that logical relations do not correspond one-to-one with relations between the things signified by the terms appearing in sentences. Calvin Normore nicely summarizes the relation between *dicta* and ontology (1987, 207):

I hypothesize that we can sum up the views that makes Abaelard’s theses hang together as:

(1) There are more truths than truth-makers.

(2) There are more true sentences than truths.
There are more truths than truth-makers, since things can participate in many states-of-affairs. And there are more true sentences than truths, because the same state-of-affairs may underlie more than one true sentence—as, for example, the sentences ‘Socrates is a man’ and ‘If Socrates is a man, he is not a donkey’.148

Abelard also sometimes talks about the “state” (status) that some thing participates in. Nominalists, both contemporary and medieval, claim that there is no thing common to both Plato and to Socrates that makes them both human beings. The realist’s response is to ask the nominalist how she can explain the fact that Plato and Socrates are both similar in that they are human beings. One possible nominalist reply is to claim that there is no real similarity—after all, the thought runs, real similarity would require an explanation. Rather, the predication of ‘human being’ to both Plato and to Socrates is a matter of convention.

Abelard takes no such path. Famously, or perhaps infamously, Abelard argues that there is no thing (res) in which both Plato and Socrates agree. Nonetheless, they do agree “in that they are men”, or they agree “in the status of man” (Log. Ingr. 1, 19.24-25 and 20.2-4). It might seem that Abelard is illicitly appealing to a universal when he uses

148 Abelard and his school, the Nominales, are notorious for holding the view that the same state-of-affairs underlies differently tensed statements. See the report of this view in St. Bonaventure Sent. III, d. 24, art. 1, q. 3 (= Iwakuma and Ebbesen 1992, text 64c) and Sent. I, d. 41, art. 2, q. 2 (= Iwakuma and Ebbesen 1992, text 64a). On Bonaventure’s remarks see Normore (1987, 206). Christopher Martin, however, adds a note of caution about using these reports to unravel Abelard’s theory of the relation between dicta and sentences. “Abaelard shows great care in setting out the theory of existentiae rei/rerum or dicta and, in particular, in discussing sameness of content in the face of difference in tense when dealing with divine knowledge in the Theologia ‘Scholarium’. We must thus treat with caution the reports from St. Bonaventure and St Thomas that the Nominales dealt with this problem by claiming that different enuntiabilia signify the same res.” (1992, 115)
the abstract noun ‘status’. And indeed some twelfth-century philosophers did hypostasize status. But Abelard clearly refuses to make a status into a thing. “Being man is no man, nor is it any thing.” (Log. Ingr. 1, 19.25-29) The state of being a man is supra-categorial, just as the characteristics not being in a subject and being receptive to contraries are not subjects of accidents or themselves in any of the categories of accident.

The relation between status and dictum is not entirely clear. A status appears to be the predicative part of the state-of-affairs, and that anything fitting the scheme ‘is x’ will be a status. Hence, Socrates has the status of being Socrates, being white and being a man (Normore 1987, 207-10). But some care is required, since two things can possess the same state: Socrates and Plato agree in that they are both men. They have the same state, even though there is no thing that they share in common (Theol. Chr. III §72; p. 224.931-939). This animal, P, informed with its P-rationality, shares no real thing with that animal, S, and its S-rationality. Nonetheless, S and P have the same state. They are both rational. This suggests that Abelard, deep down, is a resemblance-nominalist.

149 This impression is only worsened by Tweedale’s unfortunate translation of status as “type” (1976, 15 and passim).

150 Most notably the author of the Tractatus quoniam de generali et speciali statu rerum, identified by Haureau, and following him, Peter King as Walter of Mortagne. The text is printed in Dijs (1990, 93-113). On the attribution to Walter of Mortagne, consult Dijs (idem. 87-88); and King (1982, ch. 3).

151 Abelard suggests as much, when he says that the “indifference” theories are “closer to the truth of the matter” (Log. Ingr. 1, 13.19). Abelard diverges from the indifference realist by refusing to identify things with a universal. He does not dispute the resemblance aspect of the theories.
Tropes break down into naturally resembling classes. But the resemblance, while not a matter of human convention, does not require any more explanation than the bruteness of the particularity of things.

Often a thing’s possession of a \textit{status} is dependent upon the fact that forms inhere in the thing or supervene upon an arrangement of the thing’s parts. Thus, Socrates’ being a man is dependent upon the fact that a particular form of rationality, a particular form of mortality, and a particular form of bipedality combine with this body. Yet sometimes, as in the cases of the \textit{vox/sermo} and the Trinity identified above, the possession of a state is dependent upon things, but not because of the inherence of a form.

Both natural things and artifacts can have \textit{status}. Abelard himself at one point discusses the example of a house having a \textit{status}. But the fact that artifacts can have states does not violate the sharp divide that Abelard has drawn between artifacts and substances. At the level of ontology the reasons why artifacts and substances possess states are different. As I noted in 4.1.2, Abelard thinks that artifact production is merely the manipulation of substances, not actual substantial generation or destruction. The house is built by manipulating accidental features of the stone, the wood, and the other substances that compose it (Log. Ingr. 2, 298.34-36). A thing will possess the state of being a house due to accidental features that are imposed upon the mereological sum of things that make up the house. A substance, on the other hand, is generated or destroyed.

\footnote{Another way of putting this is to point out that things have natures: “Individuals have natures, and in virtue of their natures they belong to determinate natural kinds. But an individual’s nature is not something really shared or common to other individuals… Nor is the nature anything in addition to the substantial form and attributes of the individual.” (King 2004, 81) }

\footnote{King (1982, ch. 6).}
Abelard describes substantial change as a case where a thing—the substrate—“relinquishes’ or “gains” a “species state” (*speciale status*), or “substantial being” (*substantiale esse*) (*Log. Ingr.* 2, 297.4-5 and *Dial.* 418.8). From the vantage of Abelard’s ontology, the species state is gained when the appropriate type of differentiatrope inheres in the substrate. This difference between artifacts and substances will be important later on (see 4.3.2).

These remarks on states and states-of-affairs are admittedly sketchy, but their introduction is required in order to understand Abelard’s theory of material constitution and persistence (4.2.2).

This completes our summary of Abelard’s general metaphysics and mereology. We can summarize the findings of section 4.1 with the following statements:

(I) Every thing is particular.
(II) Every constituent of a thing is particular.
(III) Everything in the mundane world is a composite of matter and form.
(IV) However, some forms are not real.
(V) Bodies are the ultimate building blocks of things.
(VI) There are states-of-affairs, but states-of-affairs are not things (*res*).\(^{154}\)

These claims are crucial if one is to understand the details of Abelard’ theory of identity, material constitution, and persistence. The digression into Abelard’s general mereology begins to highlight his sophisticated understanding of mereology. His catalogue of wholes shows that he is aware of the vast spectrum of items that are subject to mereological relations. At the same time, he is aware that wholes have differing degrees of complexity and structure. In particular, let me re-emphasize the distinction between

\(^{154}\) Just because *status* and *dicta* are not things does not mean that they cannot be causes. *Dicta* are the cause of a statement being true. Things possessing a *status* cause the “imposition”, or baptism, of a word to a thing. (*Log. Ingr.* 1, 19.21-20.14).
man-made wholes and natural wholes. Substances are continuous wholes, created by God, and characterized by substantial differentiae, whose reality suggests a strong version of the form-matter theory of constitution. Artifacts, in contrast, are discrete wholes, which are produced by human manipulation of natural substances. Their forms are accidents, and they supervene upon the arrangement of parts, which means that in their case, Abelard subscribes to a weak form-matter theory. The distinction between artifacts and substances will lead to different theories of material constitution and persistence.

4.2: Identity

Abelard’s restrictive ontology and mereological sophistication yield an original and subtle theory of identity. In the first part of this section, we will see how Abelard’s sensitivity to the relationship between a whole and its parts leads to a startling revision of numerical sameness and difference. This revision is motivated in part by a puzzle common to the twelfth century, the Problem of the Many Socrateses. In the second part, we will turn to examine two more modes of sameness and difference, and consider how they may help to resolve the perennial problem of material constitution.

4.2.1.: Abelard on numerical sameness

Consider Socrates. Socrates is a composite of a soul, which is immaterial, and a body, which is material. The soul is indivisible, but the body is divisible into parts. Divisibility does not entail actual separation. Even if Socrates’ body is intact, it can still
be divided into parts. Likewise, even if the parts are not actually separated from one another, they are still numerically distinct from one another. Presumably this is because were one to actually sever, say, the hand from the rest of the body, the two parts—the hand and the body-less-the-hand—would be two things.

One might also think that the body-less-the-hand and the whole body are numerically distinct. Boethius holds this view, since “a part is not the same thing as that which is the whole” (De Div. 879c). And he seems, on the face of it, correct. The body-less-the-hand is certainly not numerically the same as the whole body, since the whole body possesses a part that the body-less-the-hand does not possess—namely the hand. And if something is not numerically the same as another thing, then the two must be numerically distinct.

Yet, as Abelard points out, something puzzling happens if one grants that the body-less-the-hand and the whole body are numerically different (Theol. Chr. III, § 153; p. 252.1868-73):

If it were said that the part is numerically different from its whole, then it would have to be conceded that ‘Socrates’ is predicable of many who differ numerically. This whole, which is composed out of a hand and the rest of the body, is Socrates. But the rest of the body, [considered] apart from the hand, must also be called Socrates—that is, is vivified by this soul.

The soul occupies the entirety of the body, and thus the body is a man and is Socrates.

But the soul also occupies the body-less-the-hand, and were we to actually annihilate the

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155 One may insist that there are not two numerically distinct objects present when Socrates’ hand is attached to Socrates. Only when one slices off Socrates’ hand, is it now the case that there are two numerically distinct objects. But there is something strange about this: it appears that we have created an object merely through the act of severing the part from the whole. Yet the hand was there before we sliced it off, we did not suddenly create it. (And stranger still: if we are followers of Aristotle’s mature hylomorphic doctrine, we have to say that Socrates’ hand actually ceases to exist when we cut it off.)
hand, the body-less-the-hand would certainly be a man. Why then isn’t the body-less-the-hand a man prior to annihilation of the hand? Furthermore, since it is Socrates’ soul that occupies the body-less-the-hand, it seems that the body-less-the-hand is also Socrates. Yet, the body-less-the-hand and the body are numerically distinct. So there are two Socrateses, not one. More problematic still is the fact that there is nothing special about the example of the body-less-the-hand. We could have just as easily begun with a fingernail, a finger, a foot, or a toe. Indeed, we could have divided Socrates’ body in any number of ways. If we run the same sort of argument in each case, it seems that we have many Socrateses, all present contemporaneously in Socrates. I will call this problem the Problem of the Many Socrateses. The Problem of the Many Socrateses has parallels to Geach’s famous puzzle of Tib-Tibbles, or the 1001 cats on the mat (1980, 215-16). 156

Abelard offers a novel solution to this puzzle. Abelard rejects both the relatively uncontroversial claim that the part is numerically the same as its whole, and the more interesting claim that a part is numerically different from its whole. The solution requires a revised understanding of numerical sameness and numerical difference—one which can account for the relations that hold between things and their parts.

It is crucial to note that Boethius and the tradition he fosters does not talk about “identity” (see 3.2.4 and 3.3.3). That word is a rarity in both Boethius’ and Abelard’s treatises. 157 Rather, Boethius and Abelard use the more flexible notions of sameness and

156 An elegant account of the argument and a plausible solution to the puzzle is provided by David Lewis (1999, 164-82). A related puzzle is raised by Pseudo-Joscelin (De generibus et speciebus §§ 21-31). See chapter 5 (5.1.2).

157 Nonetheless, we will need to appeal to extensional identity to fully develop Abelard’s system.
difference. According to Boethius things are numerically the same, the same in species, or the same in genus. And there are three corresponding modes of difference: numerical difference, difference in species and difference in genus. The closest thing in Boethius’ repertoire to our notion of extensional identity is numerical sameness and difference, but as Abelard will show, numerical sameness and difference is more complex than extensional identity.

Abelard eliminates the modes of sameness and difference in species and genus.\textsuperscript{158} He keeps numerical sameness and difference and relates this mode to a new mode, that of sameness \textit{secundum essentiam} (or sameness \textit{essentialiter}), which I will translate as “sameness in being” (not—for reasons I go into shortly—as “sameness in essence”). Sameness in being and numerical sameness are so closely related that, in his mature account, Abelard lists the two types under the same mode.\textsuperscript{159} Nevertheless, there is a subtle distinction not only between numerical sameness and sameness in being, but also between numerical sameness and numerical difference. These subtleties manifest themselves when we consider objects with more than one part.

\textsuperscript{158} Abelard offers six modes of sameness and difference, in contrast to Boethius’ three. The full list from the \textit{Theologia Christiana} is: (1) sameness and difference in number/being, (2) sameness and difference in definition, (3) sameness and difference in property, (4) sameness and difference in likeness (\textit{similitudine}), and (6) sameness and difference with respect to change (\textit{Theol. Chr.} III, §138).

\textsuperscript{159} Unlike the relation between, say, the \textit{Logica Ingredientibus} and the \textit{Dialectica}, the chronological relation between the \textit{Theologiae} is fairly clear. Both internal evidence and historical data indicates that the \textit{Theologia Summi Boni} is the earliest. The \textit{Theologia Christiana} and redactions of the \textit{Theologia Scholarium} overlap with respect to their dates of composition; yet the final version of the \textit{Theologia Scholarium} is deemed to be the last completed. Abelard develops his theory of the relation between numerical sameness and sameness in being through this series of treatises. The account in the \textit{Theologia Christiana} is the most developed account, and will accordingly be given the greatest amount of attention. The account in the \textit{Theologia Scholarium} has a much more cursory treatment of the topic. A nice summary of the difficulties dating the three \textit{Theologiae}, and especially determining the relation between the \textit{Theologia Christiana} and the various versions of the \textit{Scholarium}, is provided by Constant Mews (1985b). See also Mews’ general summary of the dating of Abelard’s works (1985a) and Buytaert’s study (1974).
Abelard defines sameness in being as a case where the being of one thing is numerically the same as the being of the other (Theol. Chr. III, § 139; p. 247.1683-87):

We say that something is the same in being as another when their being (essentia) is numerically the same—i.e. this and that are numerically the same being. For example, the being of the blade is numerically the same as the sword, and a substance and a body (or an animal, or a man, or even Socrates) [is numerically the same]. And the white thing is numerically the same thing that is hard.160

I should say a few words at this point about what it means for the being of something to be numerically the same as the being of another. Abelard, like most of his contemporaries, understands essentia to mean ‘concrete thing’, not the property or properties that make something what it is.161 Thus, when he says that the sword and the blade are the same in being, he means that the concrete thing that is the sword is numerically the same concrete thing that is the blade. Likewise, Cicero is the same in being as Tully because the concrete thing that is Cicero is numerically the same as the concrete thing that is Tully.

It may appear at first pass that sameness in number is left as an unanalyzed primitive in Abelard’s system. But this is not the case. In order to account for the

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160 In the earlier account of sameness and difference, Abelard defined sameness in being as follows: x is the same in being as y if and only if the being of x is the same as the being of y (TSB II, iv; and LNPS 558.15-17). Something is different in being from another if and only if they are not the same in being. Numerical sameness is defined in terms of not being numerically different, and numerical difference is defined as a case where “this is not that” and “no part of this belongs to that” (TSB II, iv, p. 146.848-50). I hypothesize that Abelard changed his account of numerical sameness and sameness in being from the TSB to the Theol. Chr. because the earlier account utilized an unanalyzed notion of sameness in its definition of sameness in being.

161 On this point see King (2004, 86), Normore (1992, 90), and Kretzmann (1982, 497). Consider Abelard’s characterization of Material Essence Realism: “Some think the universal is a thing (res), so that within things that are discrete from one another in virtue of forms they locate a substance that is the same in being; and this [substance] is the material being (materialis essentia) of each [particular] in which it is present.” (Log. Ingr. 1, 10.17-19) In other words, this version of realism posits one concrete entity that is entirely present in and is a constituent of many different particulars.
relations between a part and its whole—the very relations that cause trouble for Boethius’ account—Abelard’s account of numerical sameness and difference must be subject to further analysis.

If Abelard were to follow the tradition, he might have been tempted to analyze numerical sameness in terms of enumerability. In fact, Boethius seems at times to be tempted by this analysis, when he glosses “things differing numerically” as “things differing in that they are enumerable”\footnote{numero differentibus, id est in numerando differentibus (In Isag. II, 191.8-9). In all fairness to Boethius, it is unclear whether he intends to define numerical sameness and difference in this manner. For more on this matter see chapter 3, sections 3.2.4 and 3.3.3.}. This gloss suggests that \(x\) and \(y\) are numerically distinct because they can be counted as two things. Abelard acknowledges that numerically distinct things are countable.\footnote{“Only those things are numerically different whose diversity admits allocation by enumeration (numerando assignari valet)—i.e. when one can say ‘one’, ‘two’, ‘three’ etc.” (TSB II, iv; p. 143.769-71; cf. LNPS 558.28-559.4)} But Abelard clearly perceives that the direction of explanation points the other way. Enumerability is founded upon the fact that things are numerically distinct or numerically the same. The phenomenon of enumerability will not help us to explain numerical sameness and numerical difference, because it is sometimes the case that it is indeterminate whether \(x\) and \(y\) are one or two things. Specifically, objects that share parts—i.e. overlapping objects—are sometimes indeterminate with respect to their number.\footnote{Numerical difference occurs only when there is no overlap of parts (Theol. Chr. III §139; p. 247.1689-98): “Everything that is the same in being is the same numerically, since if the being of both is the same, a number of things cannot be realized in them (in eis multiplicari), nor can a computation be carried out based upon the distinction between things, so that ‘one’, ‘two’ etc. is said of them. Number only occurs in distinct beings—i.e. in those things that are so thoroughly distinct that not only this is not that, but one does not belong to the other and nothing belonging to one belongs to the other. In other words, no part of one is present in the quantity of the other and the two do not share the same part.”} The case of the Many Socrateses is one
such instance. Thus, we should look for an account of numerical sameness and difference that will explain and perhaps even give us a criterion for deciding the answer to these hard cases.

The key to understanding not only numerical sameness and difference but also their relations to sameness and difference in being can be found by examining Abelard’s descriptions of difference in being and difference in number. Abelard describes difference in being as follows (Theol. Chr. III, § 148; p. 250.1807-12):

We say that things are different in being from one another when they differ from one another in such a way that this is not that. For example, Socrates is not Plato and Socrates’ hand is not Socrates. We say that differentiated things are different in being when the being of one is not the being of the other, even though the being of one might belong to the other, as a hand belongs to a man and a wall to a house.

Something is different in being from another if the beings of the two things are numerically different from one another. Plato is different in being from Socrates.

However, this is not the only case where x is different in being from y. It is possible for the being of x to belong to the being of y, and still x is different in being from y. Thus for Abelard, a hand belongs to the body as a part belongs to its whole, but the two are different in being. This is because the body has parts other than the hand, and the hand plus the head plus the foot are not the same in being as the hand by itself. But while the hand and the body are different in being, Abelard claims that the hand is not numerically different from the body (Theol. Chr. III, § 150; p. 251.1826-29):

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165 Theol. Chr. IV, § 12; p. 271.207-211: “[A]ccording to Boethius “the part is not the same thing that is the whole” [De Div. 879d] because it is not possible that one and the same being belongs to the whole and the part. For this [part] is included along with the other [parts] in the quantity of the whole; and hence [the being of the part] is smaller.”
We say that things are numerically distinct when clearly they are distinct from one another with respect to the whole quantity of their being, so that not only is this not that, but neither is a part of the other and one does not share the same part with another.

The criterion for being numerically different is, thus, more stringent than the criterion for being different in being. If x and y are numerically different, not only is it the case that the being of x is not the being of y, x and y utterly fail to overlap—that is, to share any part.

Hence, numerical sameness and difference is subtly distinguished from sameness and difference in being. But, curiously, Abelard also has a unique understanding of the relation between numerical sameness and numerical difference. Consider this cryptic summary from his *Theologia Christiana* (*Theol. Chr.* III, § 153; p. 252.1862-68 *my emphasis*):

This should be noted: in every case, if one is the same in being as another, then the one is numerically the same as the other, and *vice versa*. Nevertheless, it is not always true that, if one is different in being from another, they are numerically diverse from one another (as we had already said). *For example, a part is different in being from its whole, but it is not numerically different. But perhaps it is not the case [that the part is] numerically the same, unless someone says ‘numerically the same’ in a negative manner –i.e. ‘not numerically distinct’.*

The first and second sentences of this paragraph offer nothing controversial: x is numerically the same as y if and only if x is the same in being as y; yet it is possible that x is different in being from y and yet x is not numerically different from y. But in the last sentences, Abelard claims that a part is not numerically different from its whole and not numerically the same as its whole. In short, Abelard *denies* the following bi-conditional:

(N) Necessarily, x is numerically the same as y if and only if x is not numerically different from y.
This denial is not an afterthought on Abelard’s part. As I have already indicated, Abelard’s solution to the Problem of the Many Socrateses relies upon the rejection of the claim that the part is numerically different from the whole; but at the same time, Abelard wants to resist a commitment to the view that the part is numerically the same as its whole.

When we frame Abelard’s proposal in the form of the rejection of proposition (N), it seems that Abelard is making a mistake. Isn’t it just analytically true that if x and y are not numerically the same, then x and y are numerically different? But in the case where x is a part of y, Abelard has not made a mistake. Using Abelard’s characterization of difference in being and numerical difference, we can motivate the need to deny the biconditional (N) with this simple argument:166 Return to Socrates’ body. While his left hand is different in being from his body, the left hand is not numerically different from the body, since to be numerically different, the left hand not only cannot be the body, the hand cannot belong to the body. And for the same reasons, Socrates’ right hand is not numerically different from his body. But, by (N), if the left hand is not numerically different from the body, then the left hand is numerically the same as the body. Again for the same reason, the right hand is numerically the same as the body. If the left hand and the right hand are both numerically the same as the body, then the left hand is also numerically the same as the right hand. But this is clearly false. Hence, we have good reason to resist (N).167

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166 Thanks to Bill Roche for pointing out this argument to me.

167 I only claim that it is *prima facie* evidence for rejecting (N), because it seems that we also should reject the *transitivity* of numerical sameness. In classical extensional predicate logic with identity, identity is
Abelard’s characterization of numerical sameness and difference, and specifically his rejection of (N), demonstrates a subtle appreciation of the relations between wholes and their parts. This subtlety is best appreciated when the theory is presented more formally. For this purpose I will adapt the concept of being a proper part of something (_ <<< _). Let us start with numerical difference:

x is numerically different from y if and only if

(i) it is not the case that the being of x <<< the being of y, and
(ii) it is not the case that the being of y <<< the being of x, and
(iii) for all z, it is not the case that the being of z <<< the being of x and the being of z <<< the being of y.

In short, x and y cannot be overlapping objects. Or more strictly, the being of x cannot overlap the being of y. Note that the non-overlap condition entails the fact that x is not identical to y, since if x is y then the beings of x and of y maximally overlap.

The present characterization suffices for cases where at least one of the objects is a composite. To make the characterization fully general, we must consider the case where x and y both lack parts—that is, when x and y are atoms. Criteria (i) through (iii) will be satisfied both when the atom x is y and when x and y are different atoms.169

transitive (as well as symmetric and reflexive). So, if a = b and b = c, then a = c. But, numerical sameness cannot be transitive, as the Trinity bears out. The Father is numerically the same as God, and the Son is numerically the same as God. But it does not follow that the Father is numerically the same as the Son. Nonetheless, it is the case that that which is the Father is numerically the same as that which is the Son.

168 For more on this concept, see our previous discussion in chapter 2 (2.3).

169 It should be noted that we are using ‘atom’ in its root sense as ‘indivisible’. Anything that lacks parts is an atom according to our present analysis. Most notably, souls are atoms, since they lack parts into which they can be divided. We use atoms in this inclusive manner since Abelard insists that both substantial forms (i.e. differentia) and accidental forms can be numerically distinct from one another (TSB II, iv, p. 146.854-860; Theol. Chr. III, §150, p. 251.1833-1840). In his glosses on Porphyry Abelard notes that soul
Abelard offers us no other option than to say that atoms x and y are numerically different if and only if x is not identical to y. In the case where both x and y are atomic, numerical difference is due to the fact that x is not identical to y.

Earlier I noted that Abelard does not use the word ‘identity’ in his treatment of sameness and difference. So, one might be suspicious that I am adding something wholly alien and anachronistic to Abelard’s theory. But there is some basis for assigning an extensional notion of identity to Abelard. In his discussion of the problem of universals Abelard asserts that no thing is universal, which means, he says, that everything is “personally discrete”.\textsuperscript{170} Roughly, he seems to have something like the distinctness between Socrates and Plato, or this horse and that cow in mind. But, this notion of personal distinctness can be refined to describe the non-identity of atoms.\textsuperscript{171}

Now that the conditions of numerical difference are spelled out mereologically, we can readily compare the difference between numerical difference and difference in being. In contrast to numerical difference, x and y are different in being if there is some part that belongs to either the being of x or to the being of y which the other lacks. The hand is different in being from the body because the hand is only a part of the body, and

\begin{footnotes}
\textsuperscript{170} In the \textit{Logica Ingredientibus} “one in number” is glossed as “personally discrete” (\textit{Log. Ingr.} 2, 157.19). When discussing number in his comments on the category of quantity, Abelard says that, “‘Unity’ names a thing that is one and discrete in itself; ‘unities’ names things that with respect to their beings personally different.” (\textit{Log. Ingr.} 2, 172.7-9). When discussing the three-fold analysis of sameness and difference, Abelard notes that all things are “numerically discrete” (LNPS 531.33-39).

\textsuperscript{171} That souls are both atomic and primitively the same or distinct, is further evidenced by the fact that Abelard appeals to the non-departure of the soul as the explanation for the trans-temporal identity of a human being. For more on personal identity, see section 4.3.4.
\end{footnotes}
the whole body possesses parts that do not belong to the hand. However, because the
hand is a part of the body, it fails the first condition—(i) above—of being numerically
different. Therefore, while the hand is different in being from the body, it is nevertheless
not numerically different from the body.

The part is not numerically different from the whole. We must now show why,
for Abelard, the part is also not numerically the same as the whole. To do this we must
now formulate a mereological characterization of numerical sameness. Recall that x and
y are the same in being if and only if the being of x is numerically the same as the being
of y. Now I claim that for a large number of cases, what it means for the being of x to be
numerically the same as the being of y is that the being of x and the being of y completely
coincide—that is, any part that x has y will also have, and there is no part that either x or
y does not share with one another.172

When putting this insight formally, we must consider two cases. If (1) either x or
y is composite, the being of x is numerically the same as the being of y if and only if
there is no z such that, (z << the being of x and ¬ (z << the being of y)) or (¬ (z << the
being of x) and z << the being of y). This condition entails that for every part z, z << the
being of x if and only if z << the being of y. However, if (2) x and y are both atoms, then

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172 As Simons notes, it is “trivially true” that two individuals are identical if and only if their parts are the
same. This fact has prompted some mereologists to define the relation of identity in terms of ‘is a part of’
(\(<\)) or ‘is a proper part of’ (\(<<\)). For pragmatic reasons, Simons develops his systems of formal mereology
assuming first-order predicate logic with identity (=), but concedes that, “The question whether the part-
whole relation is in some absolute conceptual sense prior or posterior to the identity relation is perhaps not
as obvious as it may at first appear.” (1987, 11) See also Sharvy, who argues that the part relation is more
fundamental than identity. Sharvy distinguishes between ‘being part of’ and ‘being a part of’. The former
is equivalent to ‘being some of’ and is more basic than identity. Sharvy leaves ‘being a part of’ unanalyzed
the being of x is numerically the same as the being of y if and only if x is y. In accord with our discussion of personal discreteness we interpret ‘x is y’ as ‘x is personally the same as y’.

We are now in a position to analyze the conditions under which an object x is both not numerically different from y and not numerically the same as y. Recalling our new characterization of numerical sameness, an object x fails to be numerically the same as y if x and y are two distinct atoms, or there is some part that belongs to the being of one of them that the other does not possess. The second of these conditions can obtain in two different ways: (1) the beings of x and of y can fail to overlap; or (2) the beings of x and of y overlap, but they do not coincide.

Just as there are two basic ways in which x and y can fail to be numerically the same, there are also two basic ways in which x and y can not be numerically different. Mereologically formulated, x is not numerically different from y only if:

(i) (if x and y are composite, the being of x and the being of y coincide) and (if x and y are atomic, the being of x is personally the same as the being of y), or

(ii) at least one of x and y is composite, and the being of x and the being of y do not coincide, but overlap.173

In the first case, x and y are not numerically different if and only if x and y are numerically the same. In the second case the bi-conditional (N) fails. Because x and y overlap, x and y are not numerically different. But because x and y fail to coincide, x and y are not numerically the same.

173 More formally: at least one of x and y is a composite and (1) \(x << y\), or (2) \(y << x\), or (3) there is some \(a\) such that, \(a << x\) and \(a << y\), and there is some \(b\) such that, \((b << x \land \neg (b << y))\) or \((\neg (b << x) \land b << y)\). The second conjunct of (3) merely indicates that x and y overlap but do not coincide.
When we combine the conditions under which an object fails to be numerically the same and when an object is not numerically different, we arrive at the following general characterization of the cases under which the bi-conditional (N) fails:

x and y are both not numerically the same and not numerically different if and only if

(i) there is at least one part, a, such that (a << the being of x and \neg a << the being of y) or (\neg a << the being of x and a << the being of y), and

(ii) for some b, b << the being of x and b << the being of y.

Both conditions (i) and (ii) must hold for an object to be both not numerically the same and not numerically different. Satisfaction of condition (i) suffices to disqualify x and y from being numerically the same, since there is at least one part that one has that the other fails to have. The beings of x and of y fail to coincide. Satisfaction of condition (ii) suffices to disqualify x and y from being numerically different, since either the being of x is a proper part of the being of y, the being of y is a proper part of the being of x, or the beings of x and of y share at least one part. It is now clear why it is not a flat out contradiction for Abelard to claim that a part is neither numerically the same as its whole, nor numerically different from its whole.

With our mereological characterization of numerical sameness and difference we are better equipped to describe the complex set of relations that hold between a material thing and its parts, and we are finally able to satisfactorily unravel the Problem of the Many Socrateses. Abelard’s notions of numerical sameness and sameness in being help us to describe the variety of relations that hold between a whole and its parts. For example, it is true on Abelard’s account that any two non-overlapping parts of a whole
are numerically different from one another. My right hand is numerically different from my left hand. At the same time, my right hand is not numerically different from me, and my left hand is not numerically different from me. Nevertheless, it does not turn out that my left hand is numerically the same as my right hand, because being not numerically different does not entail numerical sameness. Hands, like all parts of wholes, are not numerically different from their bodies and they are not numerically the same. The observation that my hand is not numerically the same as the body—the body which, we must not forget, includes that hand as a proper part—prevents the sophistical conclusion that the right hand is numerically the same as the left hand.

The fact that my hand is not numerically different from my body provides us with the solution to the Problem of the Many Socrateses. The Problem arises if one fails to distinguish being numerically different from being different in being. The body-less-the-hand is different in being from the body containing both hands, since the latter’s being possesses a part that the former lacks. Nonetheless, the two are not numerically different, since the being of the body-less-the-hand is a part of the body’s being. The two beings overlap. Since the two beings are not numerically different, it cannot be the case that there are numerically many Socrateses in Socrates.

Abelard’s theory of numerical sameness and difference offers an elegant analysis of the Problem of the Many Socrateses. The theory accomplishes this aim because it carefully considers the relations that hold between a thing and its parts—something which the traditional Boethian theory fails to comprehend. The theory focuses on the mereological character of the beings of items, and downplays the phenomenon of
enumerability. This suggests that the question, “How many things are there?” is sometimes an ill-formed question, since a composite object and its proper part will satisfy the complex relation being both not the same as and not different from. This might sound odd, but upon due consideration the reader should see that Abelard has hit upon a deep problem for any ontology which allows for mereological overlap. Namely, how do we go about counting things in a world where there is overlap?

4.2.2: Identity and material constitution

Abelard’s theory of numerical sameness and difference, and sameness and difference in being describes the relation of objects at the level of their beings, or in so far as they are things. For composite things, numerical sameness and sameness in being are determined by the mereological sums that underlie objects. But these modes of sameness and difference are only two out of several more modes of sameness and difference. Abelard appreciates the fact that sometimes sameness and difference can be measured by considering more than just the being of the objects. Sometimes one must also consider the states (status) that things are in. The modes of sameness and difference that primarily focus upon things and their states are identified as the modes of sameness and difference in property, and sameness and difference in definition. It is only when we turn to the states of things that we can discern Abelard’s solution to a perennial problem of metaphysics, the problem of material constitution.

The problem of material constitution can be colorfully illustrated using Alan Gibbard’s famous thought experiment (1975). Consider a case where an artisan takes
some ACME Instant Clay powder, adds water, and as she stirs to form clay, she shapes this mixture into the shape of a human being. But the artist is unhappy with the product, and she immediately drops it into a solvent, thereby destroying not only the statue but the clay. The clay and the statue come into existence together and they go out of existence together. For convenience let us label the clay “Lumpl” and the statue “Goliath”. The puzzle is this: is Lumpl identical to Goliath? There are reasons to answer in the affirmative, and reasons to answer in the negative.

There is good reason to think that Lumpl and Goliath are identical. Any bit of material that is a part of Lumpl is also a part of Goliath, and vice versa. And according to a plausible principle, which we will call the principle of extensionality, if x and y share all their parts, x is identical to y. Moreover, Lumpl and Goliath share all their parts at every moment in which they exist. Since the destruction of the statue and the clay occurred almost immediately after they came into being, there was no time for the clay to chip or otherwise decrease in quantity. If x and y share all their parts at every time that each exists, then x is identical to y. Thus, Lumpl is identical to Goliath.

But there are also compelling reasons to think that Lumpl and Goliath are not identical. First, common sense tells us that they are not the same: statues and clay are different sorts of thing. The statue may be made out of clay, but it is not the same thing as the clay. Now, of course, common sense only goes so far. If our philosophical theory is compelling enough, it may trump common sense. And there are philosophical reasons to reject the claim that Lumpl and Goliath are identical. According to Leibniz’s Law, if two objects are identical then there can be no property possessed by one of the objects
that the second object fails to possess. But it seems that there is such a property in the case of Lumpl and Goliath. While Lumpl actually composes a statue, it could have been the case that Lumpl is a flower pot. Goliath on the other hand, could not have been anything other than this statue. As some philosophers like to put the matter, Lumpl and Goliath possess different “modal properties”. For this reason Lumpl and Goliath are not identical.

The puzzle of Lumpl and Goliath pits powerful philosophical principles against powerful intuitions about objects, their parts and their matter. Abelard’s solution attempts to satisfy both sets of intuitions: Lumpl and Goliath are numerically the same, but they are different in property.

Abelard first introduces the notion of sameness and difference in property in his *Theologia Christiana*. In this discussion of the theory, he distinguishes the mode sameness and difference in property from the mode sameness and difference in definition. In the *Theologia Scholarium* Abelard collapses the two modes into one. The reason that Abelard collapses the two modes will be examined later. The potential solution to the problem of material constitution, however, is derived from the earlier characterization of sameness and difference in property. We will, hence, begin with the earlier account of this mode of sameness and difference.

In the *Theologia Christiana* Abelard defines sameness in property in these terms *(Theol. Chr. III §140, p. 247.1699-1703)*:

One item is called the same as another when the property of the former participates in the latter, [and vice versa]—as the white thing [in that] of the hard thing and the hard [in that] of the white. This is because the white thing
participates in hardness, which is the property of the hard thing, and conversely the hard thing [participates in the property] of the white thing.

Difference in property is immediately characterized in contrast to this description (ibid. pp. 247.1703-248.1707):

Thus, there are some items that are the same in being, but different in properties: their properties remain thoroughly unmixed in such a way that the property of the former in no way participates in the latter, even though the substance of both items is the same in number.

These characterizations indicate that a precondition for two items being the same or different in property is that the items be the same in being. The distinction arises from the fact that the property of one item is “mixed” or “unmixed” with the property of the other item. Abelard’s example of items which are the same in being, but whose properties remain altogether unmixed is that of a waxen image and the wax that materially composes it (ibid. p. 248.1707-1710):

This wax (i.e. this matter) is the same in number as this waxen image (i.e. the materiatum). Nevertheless, this matter here and the thing-made-of-matter (materiatum) do not share their properties.

Abelard’s example makes it clear that it applies to all cases of artifacts constructed out of matter. Hence, his description of the relation between the wax and the image made in it will carry over to Gibbard’s Lumpl and Goliath.

In contrast to the wax and the image, a piece of chalk is both a hard thing (durum) and a white thing (album). According to Abelard, the white and the hard items are the same in being—they share all the same parts—and they are the same in property, since their properties are thoroughly mixed. This does not mean that the hard item and the white item are entirely indistinguishable. According to the account in the *Theologia*
Christiana, they are the same in property, but distinct in definition (III §142, pp.248.1740-249.1747):

Among those that are called the same in being and in property, some are the same in definition—just as the sword and the blade, or Marcus and Tully. The definition of these things is entirely the same, since not only is the sword a blade and the blade a sword, but from the fact that it is a sword, it is a blade, and vice versa. Thus, they are to be altogether circumscribed (terminanda) by the same definition, since that which is expressed is the same, and the being of the former is that of the latter.

The white item is not the same in definition as the hard item, because “items are different in definition if their meanings (sententiae) cannot be circumscribed by the same definition” (ibid. §154, p. 252.1875-76). The point is about the states of being white versus being hard. The definition of being hard does not also define being white, and vice versa. In contrast, Abelard thinks that being a sword is defined by what it is to be a blade, and being a blade is defined by what it is to be a sword: “Not only is the sword the same as the blade in being, being a sword (esse ensem) is altogether the same as being a blade (esse mucronem)” (ibid. §143, p. 249.1767-69).

Clearly sameness and difference in definition operates at the level of dicta or states-of-affairs. It is less clear whether sameness and difference in property is also, roughly speaking, an ‘intensional’ mode of identity. I believe that it is, but this must be demonstrated by clearing away some potential misconceptions surrounding the notions of property and participation. First, it cannot be the case that the notion of property that Abelard is using aligns with his notion of form. This is obvious from the fact that the white item is the same in property as the hard item. Abelard admits that two forms supervene upon the chalk, whiteness and hardness, and he is careful not to claim that the
form of hardness is the same as the form of whiteness. More importantly, difference or sameness in property need not even be derived from the inherence of forms. In two significant examples where two items are different in property, the difference is not derived from the inherence of forms. First, Abelard argues that the Persons of the Trinity are the same in being but different in property. But God is altogether without both parts and forms (Theol. Chr. III, § 166 and TSB II, c. i). Second, Abelard famously distinguishes between a vox, which is the word construed solely as the physical breath of air, and a sermo, which is the word construed as the bearer of semantic content. The vox and the sermo are the same in being and number, but they are different in property. But again, the difference does not seem to stem from a difference in supervening forms (see 4.1.3 above).

We must also come to terms with the notion of “participation” and the corresponding notions of being “mixed” and “unmixed”. By now it is clear that Abelard does not mean by “mixed” that two properties belonging to a thing are physically mixed together. Rather, the phenomenon of mixed properties occurs when x and y are the same in being, x and y are distinguishable in virtue of different characteristics, and yet x and y are interpredicable. In the case of the white thing (album) and the hard thing (durum), the white thing and the hard thing are both just the chalk. But the white thing is the chalk-as-white and the hard thing is the chalk-as-hard, and the white thing is interpredicable with the hard thing. That is, we truthfully assert “the white thing is the hard thing” (album est durum).

174 On mixed properties and difference in property, compare my account to that of Brower (2004, 245-48).
In contrast, the case where properties are unmixed occurs when $x$ and $y$ are the same in being, $x$ and $y$ are distinguishable from one another in virtue of different characteristics, but $x$ and $y$ are not interpredicable. This is the case of Lumpl and Goliath. ‘Lumpl is Goliath’ is ambiguous. If ‘Lumpl is Goliath’ means that Lumpl and Goliath are the same in being, the statement is true. But if the statement means that the materia (in this case the clay) is the materiatum (i.e. the statue), Abelard argues that it is false, because one cannot say ‘materia est materiatum’. The explicit argument for the distinction between being different in property and being different in definition is an argument that appeals to a semantic phenomenon. We do say ‘album est durum’, but we do not say ‘materia est materiatum’. Abelard appears to take this linguistic phenomenon as a guide to the way the world is. He does not think that the distinctions born out by these statements are merely matters of convention.\textsuperscript{175}

The three examples of items that are different in property—the vox and sermo, the Father and the Son, and the image and its matter—will in the end have different underlying analyses. Abelard claims that the difference between the vox and the sermo, and the Father and the Son are analogous to the matter and the image, but he never claims anything stronger.\textsuperscript{176} When making these analogies Abelard suggests that the case of the image and its matter is the most intelligible example of two items that are different in

\begin{footnotesize}
\textsuperscript{175} I make this distinction with confidence in the case of the matter and its materiate, and in the case of the Holy Trinity. I will show why the matter/materiate case is about the world in what follows. Abelard makes it clear in his treatment of the Trinity that the distinction between, e.g., the Father and the Son is not merely linguistic (\textit{in voce}). Those who hold that view are excoriated as heretics by Abelard. Admittedly the distinction between the world and human convention is trickier when it comes to the third case of the vox/sermo.

\end{footnotesize}
property.\textsuperscript{177} This suits our purposes well, since the problem of material constitution is what the mereologist cares about. I will, thus, set aside the problem of the Trinity and the relation between the \textit{vox} and \textit{sermo}. We must find out what it is about the world that makes it the case that the matter is different in property from the image.

Let us return to the key passage concerning the image and its matter (\textit{Theol. Chr.} III, § 140; p. 248.1707-14):

For example, this wax is numerically the same as this waxen image—\textit{that is, the matter is [numerically the same as] the thing-made-material (materiatum)}. Nevertheless, this matter and the thing-made-material do not share their properties, since the matter of the waxen image is not a thing-made-material—\textit{i.e. this wax is not made from wax}. Nor is the thing-made-material matter—\textit{i.e. the waxen image is [not] matter belonging to a waxen image—since nothing of [the waxen image] is in any manner a constitutive part or naturally prior.\textsuperscript{178}

Abelard thinks that Lumpl and Goliath are numerically the same, which means he thinks that Lumpl and Goliath mereologically coincide. Abelard, thus, appears to side with those who appeal to the principle of extensionality to show that Lumpl and Goliath are identical. This indicates that the form that arises in the statue cannot be a part of Goliath.

This does not mean that Goliath’s form has no role to play. Abelard does not fall prey to the silly “aggregative” view attacked by Kit Fine. Using an example of a ham

\textsuperscript{177} For example, in the \textit{Theologia Christiana} (IV, §106, pp. 317-18), Abelard puzzles over this problem: The Father begets the Son. The Father is God, and the Son is God. But if God begets God, He either begets God himself or some other god. Neither horn seems palatable; but Abelard claims that the puzzle is easily resolvable if one considers the analogy to the wax and the waxen image. The difference between the wax and the waxen image is merely a difference in property, not in being. The puzzle first assumes that it is problematic for something to beget another thing that is the same in being as itself; it offers as the exclusive alternative the possibility that the wax begets something that is different in being. But in truth the wax begets something that is the same in being, but different in property. The same holds true in the case of the puzzle of how the Father begets the Son. The Father and Son are different in property. In effect, Abelard assumes that once we understand that the Father and Son are analogous to the wax and the waxen image, the puzzle dissolves away.

\textsuperscript{178} The text is difficult here: \textit{cum videlicet nihil sui ipsius pars aliquo modo sit constitutiva aut naturaliter prius}. To make it intelligible I construe \textit{constitutiva} with \textit{pars}. 

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sandwich, Fine argues that according to the aggregative understanding of the sandwich, the sandwich just is the mereological sum of the ham plus the cheese plus the two slices of bread. But the aggregative account does not suffice to account for that sum’s being a *ham sandwich*. For instance, I could toss the sandwich across the room, scattering the ham and cheese and bread. On the aggregative understanding the sandwich is still there, since the sum will exist whenever any of its components exist (Fine 1999, 62). A further ingredient is required when giving an analysis of the ham sandwich. There are the spatially located parts—the ham, the cheese, the lettuce and the two slices of bread—and there is also an additional *part*, the form, or as he calls it, “a trope of betweenness” (Fine 1999, 63).

For Abelard the arrangement can not be a part of the ham sandwich, because he explicitly states that the matter and the composite are the same in being and in number. Forms such as the form of the sandwich are not parts. Rather, for Abelard, these types of form supervene upon parts when they are arranged. The sandwich is not a *composite* of ham, cheese, bread plus an additional part—the sandwich form. Yet, while he refuses to consider Goliath’s form or the ham sandwich form to be parts of their respective objects, Abelard does acknowledge the importance of form when determining their states. Abelard would agree with Fine that when I toss the sandwich across the room, the sandwich ceases to be, even though the mereological sum remains.

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179 For similar reasons, it is clear that for Abelard the soul is not a form. The human being is a composite of a form and a body, where the form is a proper part of the composite. It follows, then, that the soul is numerically distinct from the body; and the soul is neither numerically distinct from the composite nor numerically the same as the composite.
Abelard’s refusal to hypostasize forms and hence draw a distinction between Lumpl and Goliath with respect to their *essentiae*, may at first seem confused. Abelard claims that the matter is numerically the same as the thing-made-material, and yet the matter is *naturally prior* to the thing-made-material, and the thing-made-material is *naturally posterior* to the matter. Furthermore, in the *Logica Ingredientibus* Abelard insists that the matter is prior *in time* to the shaped matter (*Log. Ingr.* 1, 79.9-10). And in the *Theologia Christiana* Abelard insists that matter is sempiternal, whereas the composite is transitory (*Theol. Chr.* III, § 141; *Theol. Chr.* IV, §40; cf. *Dial.* 418.36-37 and 550.34-35). How can something that is the same thing be ontologically prior and prior in time to itself? It would seem that we must give separate ontological standing to the matter and to the composite in order to make sense of the fact that the properties of the matter and the thing-made-material remain unmixed. But Abelard’s commitment to the supervenience of many forms upon their parts does not afford us the possibility of drawing an ontological distinction between matter and composite.

The key is to remember that examples of Lumpl and Goliath, the waxen image and the wax, and the ham sandwich are examples of artifacts and their matter. Artifacts are not substances, but are made out of substances. The human act of constructing an artifact is not a case of substantial generation. No new thing, Abelard insists, is created when we shape clay or bronze into a statue. We merely rearrange the mereological sum that is the underlying thing. Artifacts are not different things from their matter. They are, nevertheless, distinguishable from their matter, because the statue is matter shaped as such-and-so. In other words, the thing has taken on a new state.
Natural priority is defined such that x is naturally prior to y if and only if when x is co-removed y, y is also co-removed; but when y is co-removed, x may remain (see 3.2.2). Suppose that we read this as an ontological claim. It is uncontroversial that the statue can be destroyed, while the clay remains. The statue is destroyed when the arrangement of the parts of the clay is changed. We must, however, gloss what is meant when we claim that the statue is destroyed. The destruction of the statue does not amount to the loss of a part, so this rearrangement of parts is not a change in being. The arrangement, rather, entails that the thing takes on a new state. Likewise, as I will argue in section 4.3, if the clay loses a part, then this statue is destroyed, since there has been a change of being. Nonetheless, it is possible that another statue, with a similar shape, may exist after the loss of any part. In other words, another mereological sum may possess the same state as the earlier statue.

There is a striking similarity between certain contemporary solutions to the problem of Lumpl and Goliath and Abelard’s characterization of the relation between the two objects. As I mentioned at the outset, one solution that is sometimes proffered in the case of Lumpl and Goliath is that they have different modal properties. Abelard is, in a sense, also claiming that Lumpl and Goliath have different modal properties—i.e. priority and posteriority. However, Abelard does not use this difference in the same way that contemporary philosophers use it. Specifically, he does not use his analysis of difference in property in tandem with Leibniz’s Law to conclude that Lumpl and Goliath are not identical.
One might be nervous about modal properties, especially if one has nominalist and naturalist leanings like Abelard.\textsuperscript{180} But for Abelard there is nothing mysterious lurking in these properties. Certainly they are not forms which inhere in either the matter or the \textit{materiatum}. Rather priority and posteriority are shorthand for Abelard’s theory of the constitution of things. The clay and the statue are the same mereological sum of atomic substances. When we talk about the clay, we are talking about this sum considered as a lump of malleable stuff. When we talk about the statue, we are not only considering the sum, we are talking about it as a sum with some particular arrangement imposed upon it, and thus we are talking about the thing in a certain state. Thus, while the sum considered as clay is rearrangable, the sum as this statue is not rearrangable. Rearrangement of the sum would destroy the statue, since what it is to be this statue is to be this material arranged in this manner. While Lumpl and Goliath are the same thing, they are distinct in another sense. They are different because Lumpl could have been shaped into a flower pot, but the composite of clay and shape that is Goliath could not possess a different shape.

Abelard’s characterization of difference in property appears to give us a nice solution to the problem of material constitution. There is one worry, however, that must be raised. Abelard’s understanding of the relation between matter and the things made from it requires that the characterization be restricted to artifacts. Yet it is also true that substances are composites of matter and forms. Does Abelard’s notion of being different

\textsuperscript{180} For a succinct summary of Abelard’s theory of modality, consult King (2004, 83-85). In contrast to contemporary anti-realist strategies, Abelard aims to reduce \textit{de dicto} modal statements to \textit{de re} modal statements (idem. 116, note 61).
in property have application as well to Socrates’ flesh in relation to Socrates, or the
elemental parts of a plant to the plant? If substantial differentiae are *essentiae*, as we
claimed in section 4.1.2, then the answer may be ‘no’. This would be especially true if
substantial differentiae are parts, since the addition of a differentia to a bundle of
elemental matter would then make something that is not the same in being as the matter
by itself. If a plant is different in being from its elemental matter, then the question
cannot even arise whether the plant and its matter are the same or different in property.
Likewise, for Abelard, the soul is a thing. The Socrates who is a composite of body and
soul is not the same in being as the body considered apart from the soul. The question
never even arises whether Socrates is the same or different in property from his matter.
We will return to consider whether differentiae are indeed parts when we study the
 persistence of substances and person.

One further puzzle bedevils Abelard’s account of sameness and difference in
property. When analyzed, difference in property seemed fairly intelligible. The real
puzzle is figuring out why something is the *same* in property as another. Whiteness and
hardness, whether they enjoy the status of being *essentiae* or whether they are
 supervenient, seem to qualify as distinct, identifiable forms. If they are *essentiae*, then
whiteness is different in being from hardness, just as the right hand is different in being
from the left hand.\(^{181}\) If, as is more likely, they are not *essentiae*, it is true that whiteness
is not hardness, even though the white thing is the same in being as the hard thing. And
indeed, this is why Abelard notes that they are different in definition. But why are they

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\(^{181}\) In both the *Theologia Summi Boni* and the *Theologia Christiana* Abelard states that forms can be
numerically distinct from other forms (TSB II, iv; p. 146.854-60, and *Theol. Chr.* III, § 150, p.251).
also not different in property? The only answer seems to be that *album* and *durum* are interpredicable. But leaving interpredicability as the ultimate explanation of sameness and difference is something we resisted above.\(^{182}\) The point can be put more strikingly if described in terms of states-of-affairs. In the world, there is one thing. Two forms supervene upon this thing, and hence there are two states-of-affairs, the thing being white and the thing being hard. Compare this to the matter and its *materiatum*: there is also one thing, and (at least) two states of affairs, the thing being clay, and the thing being a statue. But according to Abelard, the white thing and the hard thing are the same in property, while the matter and the *materiatum* are different. What is the difference, apart from interpredicability?

Unfortunately, Abelard offers us little assistance in unraveling this new puzzle about sameness of property, and there is no obvious way to construct an answer using Abelardian principles. There is a gap in Abelard’s theory, as it is presented in the *Theologia Christiana*, that he does not fill. To be fair, this lapse is understandable, as his main interest is in *difference* in property. It is the concept of difference in property that will help him resolve difficulties with the Trinity, and we must always remind ourselves that the Trinitarian dilemma is the true motivation for elaborating this new theory of identity. Nevertheless, for those of us who are interested in the metaphysics of mundane objects, the lacuna in Abelard’s account is irksome.

\(^{182}\) Wilks insists that ‘*album est durum*’ is a clear case of essential predication, whereas ‘The Father is the Son’ and ‘Lumpl is Goliath’ are ambiguous whether they are essential or adjacent predications (1998, 370-72). To the contrary, I think that even ‘*album est durum*’ is ambiguous. The ‘is’ needs to be interpreted, since ‘the white thing is the hard thing’ is true, if it means that the white thing is the same in being as the hard thing, and it is false, if it means that the white thing is the same in definition as the hard thing.
This puzzle is perhaps the reason why Abelard proceeds to collapse the modes of sameness and difference in property, and sameness and difference in definition into one mode in his *Theologia Scholarium* (ThSch. II § 95, p. 454.1419-1422):

Items are the same in property or definition when they are the same in number, and they do not differ in any of their properties or definitions—for example, the sword and the blade, the white and the bright, and other such univocal items.

Difference in property and difference in definition is likewise collapsed (ibid. § 97, p. 455.1440-1444):

Items are different in property or definition if, with respect to their *status*, the proper characteristic (*proprium*) of this is one item and the proper characteristic of that is another, and each item is bounded by definitions that are unique and distinct in their sense (even if they are predicated of one another because they are the same in being).

This collapse entails that both the white and the hard, and the statue and its matter are different in property, or (now) definition. The puzzle why the white and the hard are the same in property now disappears. It should be added that the collapse of these two modes into one does not compromise the previous analysis of the relation between Lumpl and Goliath. It will still be the case that Lumpl and Goliath are the same in being, yet different in property (and now definition). As presented in the *Theologia Christiana*, the question whether Lumpl and Goliath are different in definition would not even be raised, since it is a precondition for difference in definition that the items are the same in property.  

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183 See *Theol. Chr.* III §142 (quoted above).
4.2.3: Segue to problems of persistence and change

Abelard offers an original and subtle theory of sameness and difference. The theory allows Abelard to account for the complex relations that hold between a whole and its parts, and the relations that hold between part and part. The theory also provides a defensible solution to the problem of material constitution, at least for the cases where the problem focuses upon the material constitution of artifacts.

However, we must now understand what Abelard’s theory has not helped us to resolve. The problem of the Many Socrateses is posed as a problem for a whole and its parts at a single moment of time. In other words, it is a problem of *synchronic* sameness and difference. But what about a slightly different puzzle, one which occurs through time? Suppose Socrates is *actually* amputated at the wrist. Is the sum of the one hand plus the rest really the very same Socrates who was there before? Do the distinctions between sameness and difference in being help us untangle this puzzle? The short answer is, “No.” The modes of sameness and difference in being and number help us describe the situation, but they do not tell us the answer to what we are really after: Is the sum of the one hand plus the rest the same *person* as the previous sum?

Here I disagree with Calvin Normore, who suggests that Abelard’s theory of sameness and difference is designed in part to handle a puzzle about diachronic identity, the so-called “Growing Argument”: “Hence if Socrates loses a finger we no longer have the same *essentia*, though such a loss does not create numerical diversity and we do not have a different Socrates before and after.” (1992, 90) Suppose for a moment that Normore is correct in thinking that sameness and difference in being, and numerical
sameness and difference, can be extended to diachronic case studies. Accordingly, when Socrates loses a finger, the *essentia* is no longer the same. But Socrates’ *essentia* is not the same because the *essentia*-with-finger is not *numerically* the same as the *essentia*-sans-finger. But here is where things get difficult: In the synchronic case, where the finger is still attached, the two *essentiae* are *not numerically different* as well. But, after the finger is removed, is the *essentia*-sans-finger numerically different from the previous *essentia*, or is it not numerically different? The question is difficult, if not impossible to answer since there are no longer two *essentiae* to test for possible overlap. There is only one *essentia*—the one which is the sum of nine fingers, two legs, a head, and so forth.

Of course, what we are really after is the answer to whether *Socrates* survives or not. Is the *essentia*-with-finger yesterday the same substance and the same person as the *essentia*-sans-finger today? Abelard, we will see, does not think that being the same substance or being the same person is synonymous with being numerically the same. The concept of an object’s *essentia* will retain its usefulness, but the details of sameness in substance and sameness in person are still forthcoming.

Perhaps the mode of sameness and difference in property (or definition) will hold a key for unraveling Abelard’s theory of persistence. This thought is initially attractive, and some elements from our previous discussion of difference in property surely suggest an avenue to developing a theory of diachronic identity. But the problem of material constitution is not the problem of identity through change. The case of the statue and its matter is not an example of a case where we are forced to consider whether something persists through a change, and especially whether it persists through a change in its
The puzzle of Lumpl and Goliath is set up so that at every time that Lumpl exists, Goliath exists. There is no change such that there is a question whether either Lumpl or Goliath still exists.

I also remind the reader of the caveat presented earlier: Lumpl and Goliath is a problem that concerns an artifact and its matter. Despite many innovations, and the pressures that they put on the Aristotelian worldview, Abelard still explicitly clings to the distinction between substances and artifacts. If elements derived from the concepts of sameness and difference in property (or definition) are to help us fill out a general theory of persistence, we will have to make sure that it also applies to substances.

Thus, pace Normore, we should not presume that Abelard’s theory of synchronic identity readily translates to a theory of diachronic identity. Much more must be done to understand Abelard’s theory of change and persistence.

### 4.3: Persistence and change

Abelard is tempted by the thesis that if any part is removed from a whole, this whole no longer exists. This thesis appears to be embodied in Abelard’s commitment to the Principle of Mereological Constancy. If Abelard indeed holds this thesis, he threatens to drain the world of many objects that common sense tells us exist. It turns out that Abelard is not quite so extreme; although common sense does not escape unscathed. In 4.3.1 we will see that he does go beyond several benign interpretations of the Principle of Mereological Constancy. In 4.3.2 we will see that Abelard rejects perdurantism, which in

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184 The other key cases of items that are different in property—the Trinity and the *vox/sermo*—are also not cases of persistence through change.
turn will only exaggerate Abelard’s commitment to mereological essentialism. But in section 4.3.3 we will begin to rein Abelard in, and try to rescue some of the objects of common sense. Here I will offer a reconstruction of Abelard’s theory of substantial persistence. In section 4.3.4 I will examine Abelard’s remarks on personal identity.

4.3.1: The Growing Argument

Abelard claims, “No thing possesses more parts at one time than at another.”\(^{185}\) For convenience I will call this thesis the Principle of Mereological Constancy. This Principle is a central thesis in Abelard’s mereology, although it is initially unclear what the Principle expresses. Specifically the Principle could be asserting the relatively weak claim that no mereological sum possesses more parts at one time than at another. But mereological sums are not our paradigms of material objects. Rather, when prompted to think about material objects, we typically call to mind more common sense items, like artifacts, rocks and organic bodies. Houses and bodies are often said to have mereological sums as their matter, but the objects themselves are distinct from these mereological sums. In particular, these objects are thought to differ from their matter, because common sense tells us that material objects can and do change parts. Thus, it would be one thing to claim that no mereological sum has more parts at one time than another, it would be another, stronger, thing to claim that no material object possesses

\(^{185}\) Log. Ingr. 2, 300.21-22; cf. Dial. 423, 29-30. D. P. Henry highlights this principle in his studies of Abelard’s mereology (see esp. 1972, 120). Roderick Chisholm has picked up on Henry’s treatment of Abelard and quotes it as evidence from authority for his own thesis that parts are essential to their wholes (1976, 145). As the reader will see, Abelard’s theory has much in common with Chisholm’s theory of mereological essentialism.
more parts at one time than another. I argue that Abelard’s Principle expresses the stronger claim that many material objects are mereologically constant, not just mereological sums.

Abelard does not offer an explicit defense for the Principle that no material thing gains or loses parts. We can, however, reconstruct an argument for this position by closely examining Abelard’s treatment of change in quantity. There Abelard argues that no quantity grows or diminishes. But it quickly becomes clear that Abelard is committed to something stronger than that. Quantities are properties of mereological sums, and a change of quantity occurs only if the underlying sum is changed. Thus, Abelard is committed to the claim that mereological sums do not grow or diminish. And once some further Abelardian assumptions are made, the Principle is strengthened to include not only mereological sums, but also many of the material objects that are constituted out of these mereological sums.

Abelard presents the problem of increase in his treatment of quantitative change. It seems, he argues, that nothing grows (Log. Ingr. 2, 299.19-30):

If someone says that to grow is [for something] to be made greater than it was before by means of the addition of something, nothing appears to grow. For there is nothing that seems to have become greater than it was previously by means of addition. For example, if a fourth [stone] is added to three stones so that the pile, which was previously three stones, is said to have grown by the addition of the fourth, this appears to be not true. This is because the pile of three stones, even after the addition of a fourth stone, is no greater with respect to its quantity than it was before. It consists of three stones now, just as it did before. There are no more parts than it possessed before. For a similar reason the fourth stone, when

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186 Change in quantity is one of four types of change: (1) substantial change, (2) quantitative change, (3) change in quality, and (4) change in location. Abelard gets this four-fold distinction from Boethius, but as we will see in Abelard’s hands the distinction between substantial change and change in quantity appears to collapse.
added, has not grown in any way, nor has the composite of three stones [grown] when the fourth is added. Just as before, four stones now remain; there are not more [stones] than before.

A similar argument is given in a parallel treatment of change in another of his works (Dial. 421.34-422.3):

It does not appear that any augmentation comes to be in something by means of the addition of something, since nothing appears to increase. For when something is attached to another it is not the case that the thing attached grows, nor does that thing to which [the other] is attached [grows], since it does not possess more parts than it did before. Moreover, it does not appear that the thing that is composed out of these [two] has grown. For [the composite] only retains those parts now which it had previously, namely the [part] that was attached and the [part] to which [the other] was attached.

Abelard’s argument must be unraveled carefully. Abelard first states a plausible definition of increase: some thing grows if and only if that very thing becomes greater in quantity than it was before by the addition of another thing. The definition seems to accord with our common sense notion of growth. We typically say that the pile of refuse grows every time that I throw trash onto it, and that Socrates’ waistline grows if he eats too many hamburgers.

Abelard then tests this definition with a simple case. We are to imagine a scenario where at a time labeled ‘before’, there were three stones a, b, c piled together into an integral collection. In a different location, before, there is a fourth stone d. At the point in time designated as ‘now’, the three stones have been brought into proximity with the fourth stone.

Before:   \{a + b + c\} \quad d

Now: \{a + b + c + d\}
Abelard asks, “What grows?” In the case of the four stones, there are three candidates: 
\{a + b + c\}, d, or \{a + b + c + d\}. Abelard argues that none of the three candidates is that which grows.

First, it cannot be the case that \{a + b + c\} grows. Before, \{a + b + c\} just is the sum of a, b, and c. Now, \{a + b + c\} is still just the sum of a, b and c. So both before and now, \{a + b + c\} has the same quantity. It is a pile of three stones before and a pile of three stones now. But according to the proposed definition, if \{a + b + c\} grows this is because \{a + b + c\} now has a greater quantity than it did before. That is, according to the proposed definition, if \{a + b + c\} is what grows, then \{a + b + c\} now has the quantity of a foursome. Yet this is the quantity of \{a + b + c + d\}, not of \{a + b + c\}. To assert that \{a + b + c\} has the quantity of a foursome is to confuse \{a + b + c\} with \{a + b + c + d\}. \{a + b + c\} is a part of \{a + b + c + d\}, but the two piles are not identical.

For similar reasons, it cannot be the case that d grows. Both before and now, d has the quantity of a unit d. To claim that d now possesses the quantity of a foursome would be to conflate d with \{a + b + c + d\}. But of course, d is not identical to \{a + b + c + d\}.

The third candidate perhaps has the strongest claim for being what grows. But Abelard asserts that \{a + b + c + d\} also does not grow: “Just as before, four stones now remain; there are not more [stones] than before.” (Log. Ingr. 2, 299.30) The argument is highly compressed, but it can be reconstructed as follows. Consider the collection \{a + b + c + d\} from two perspectives. One can consider \{a + b + c + d\} in so far as it is a

\[\text{Henry complains that Abelard fails to adequately identify the thing that grows (1972, pp. 120 and 128). I think, on the contrary, that Abelard does adequately answer the question: nothing grows.}\]
collection: “For [the composite] only retains those parts now which it had previously, namely the [part] that was attached and the [part] to which [the other] was attached.”

(Dial. 422.1-3) At the time labeled ‘before’ \(\{a + b + c + d\}\) existed as a scattered integral collection. The only change that occurred from before to now is that \(\{a + b + c + d\}\) went from being a scattered integral collection to an aggregate whose parts are spatially proximate. So before \(\{a + b + c + d\}\) was, and now \(\{a + b + c + d\}\) is. Yet, the sum composed out of stones \(a, b, c,\) and \(d\) has no greater quantity now than it had before.

Consider \(\{a + b + c + d\}\) from a second perspective—that is, as an aggregate. As an aggregate \(\{a + b + c + d\}\) did not exist before. \(\{a + b + c + d\}\) became an aggregate now. But, once again, the phenomenon fails to meet the demands of the definition of growth. As an aggregate \(\{a + b + c + d\}\) cannot be greater than it was before, because before the aggregate did not exist. There is no one thing that was there prior to the addition of the extra stone and still there after the addition. Therefore, no matter which perspective one chooses to privilege, \(\{a + b + c + d\}\) does not grow.

Since none of the three candidates grows, it follows that nothing grows. It should be fairly obvious that a similar argument could be run for the phenomenon of decrease, or diminution.

Abelard takes these arguments to apply universally to quantities. And, at first glance, it may seem that Abelard’s treatment of increase only applies to quantities—which are accidents that inhere in subjects—but not to the subjects themselves. That Abelard addresses the problem under the heading of change in quantity does nothing to dispel this impression. If this is the case, Abelard’s treatment of increase is trivial. Of
course, a quantity can never be more or less than it is. A twosome can never be more or less than two things; five grams can never be more or less than five grams. But it does not follow from this fact that the things that possess quantities cannot increase or decrease.

But when one carefully reexamines the argument, the manner in which Abelard uses the example of the pile of stones makes it clear that quantities cannot increase or decrease, because the subjects that possess these quantities cannot increase or decrease. The quantities of the piles are determined by enumerating the parts. \(\{a + b + c + d\}\) is greater in quantity than \(\{a + b + c\}\) because it has more stones. This analysis of the piles of stones is consistent with Abelard’s general understanding of the category of quantity. Abelard asserts that unit quantities are accidents of unit subjects. As the reader will recall from above (4.1.2), points are the smallest units of corporeal quantity; and each point inheres in “an indivisible subject”, which Abelard identifies as the “singular indivisible parts of a body” (Dial. 57.15-16). Something will be greater in quantity than another because the former will possess more indivisible subjects than the latter. To be more exact, a quantity belongs to a mereological sum of indivisible parts, and one quantity will be larger than another because the former sum has more parts than the latter sum. Thus, the gain or loss of quantity supervenes upon the gain or loss of the indivisible parts that are the subjects for quantity. But, as the example of the stones illustrates, if a mereological sum gains or loses a part, it no longer exists. The mereological sum of \(a, b, c,\) and \(d\) may become aggregated or scattered, but it can never be anything other than the sum of \(a, b, c,\) and \(d\). The sum of \(a, b,\) and \(c\) is an altogether different mereological sum.
(More precisely, \{a + b + c\} is different in being from \{a + b + c + d\}. If d were not merely scattered, but annihilated, the sum of a, b, c, and d would be destroyed.

Therefore, the Principle of Mereological Constancy holds not only for quantities, it universally holds for the mereological sums that are the subjects of these quantities. Nonetheless, Abelard acknowledges that something appears to grow, and he attempts to explain this appearance. At first Abelard seems to settle on this analysis: growth occurs when parts that were once scattered are brought together into the same place (Dial. 423.4-10):

As we have said, no part increases in the constitution of something; rather the composite increases with respect to its components, since the whole contains that which each part comprehends, and in addition whatever any of the other parts contains. Therefore, some composite increases when it possesses more parts in some place than it previously had in the same location; and decrease [occurs when the composite] has fewer parts [in the same location] than before.

Abelard’s example illustrates this proposed analysis (Dial. 423.13-16):

For example, suppose there are two men, one inside the house and the other outside. In relation to each other these two men are one composite. Now if the man outside is drawn inside, the same composite has more parts inside the house than it did before, but there are not more parts than there were before.

According to this proposal, our heap of stones \{a + b + c + d\} increases because before \{a + b + c + d\} was scattered—i.e. \{a + b + c\} was here and d was there—but now, \{a + b + c\} and d are both here. Nevertheless, \{a + b + c + d\} had no fewer and no greater number of parts before than it does now.

Interestingly, Abelard does not appear to be entirely satisfied with this account (Dial. 423.18-28 my emphasis):

However, understanding increase as a conjunction and gathering [of parts] at a place violates not only use, but authority... Hence, when we say, ‘if something is
added to another, the whole is made greater’, it should not be understood that a composite was made greater than it was before, but rather that [the composite] was made greater than each of the parts through the addition of any one of these. *For the composite did not exist before.* And if other parts, which existed before, are taken, there will not be a decrease in the number of these. The parts were the same apart from the conjunction as they were within the conjunction. Hence, the increase is not a comparison of the composite to itself, but of the whole to each of its parts.

What Abelard seems to have done here is switch from the first way of considering the problem of increase with respect to our heap, \{a + b + c + d\}, to the second way of considering the heap. Recall that from the second perspective nothing seems to increase, since the aggregate \{a + b + c + d\}, which exists now, did not exist *before* (even though the collection of those very parts did exist before). Now Abelard proposes that the phenomenon of increase is really a comparison of the quantity of the product of aggregation compared to the quantity of the original components. There is increase because now the four stones have been brought together into the same location to form the aggregate \{a + b + c + d\}, and this aggregate has a greater number of parts than either of the original, non-aggregated components, \{a + b + c\} or \{d\}. Nonetheless, the number of stones was four *before* and still is four *now*.

This revised account has two important components. First, it is crucial that \{a + b + c\} and \{d\} are parts of \{a + b + c + d\} in order to have a “proper” instance of increase (*Dial. 422.26-29*):

But if someone understood increase in terms of a greater measure in dimension, so that some larger man is said to increase with respect to a smaller man, this person understands increase in a very improper manner.

It would be inappropriate to compare \{a + b + c\} to another heap \{e + f\} and conclude that \{a + b + c\} increased. Second, spatial proximity of the parts, or the process of
aggregation, plays a central role. Strictly speaking mereological sums do not increase or decrease. They appear to increase and decrease because the parts of a sum can be scattered and aggregated. Increase occurs when things are brought into the same location and the number of parts at that location is thereby greater than the number that was there previously. Decrease occurs when the number of parts at a location is made less by scattering one or more of the original aggregate’s parts.

The current analysis of increase is unsatisfactory, because it fails to capture a crucial element of the phenomenon of increase. The initial, common-sense definition of increase required that it is the same thing that increases or decreases. We now know that no mereological sum increases or decreases in this manner. But when we think about increase, we typically do not think of mereological sums; we think about paradigmatic material objects. Consider once more Fine’s example of a ham sandwich.\footnote{As the reader will remember from section 4.2.2, Fine uses the example to a slightly different end (1999, 62-63).} A ham sandwich only exists when the bread and ham are arranged such that the ham is placed between the two slices of bread. Suppose I toss the sandwich across the room, scattering its parts. The sum of the ham and bread is now scattered, as the present analysis of decrease requires, but we do not think that this is a case of decrease. Rather, this is a case where the sandwich no longer exists. Suppose, however, I pick off a sliver of the meat from the edge of the ham. Intuitively, it is the sandwich, and not some collection of objects at a place, that has decreased.

Abelard’s current account of increase and decrease misses the fact that we tend to identify the thing that increases and decreases by means of a form or structure, not by
counting material bits that are present at some particular location. In paradigmatic cases of increase, the underlying intuition is that one and the same thing increases. It is my ham sandwich that increases if I add some cheese, and it is my ham sandwich that decreases when I bite into it. The preliminary analysis of increase does not adequately preserve this intuition. Fortunately, Abelard offers another analysis of the phenomenon in his second treatment of the problem. Again, strictly speaking the mereological sum does not increase or decrease, but something falling under a proper sort does (Log. Ingr. 2, 299.30-40):

Perhaps [the problem] can easily be resolved if we say that some thing grows when, after the addition of something else, it carries over to the sort of composite (transit in tale compositum) that does not recede from the nature or property of [the original]. For example, if some water is added to water, the water to which there is the addition carries over to some composite that is also called ‘water’. Similarly if a fourth stone is added to three stones, the pile of three stones is said to grow in so far as [the original pole of three] carries over to a greater pile of stones by means of the addition of the fourth stone. This greater second pile, just as the previous pile, is a pile of stones. But if a piece of wood is added to the three stones, the pile of stones is not said to grow, nor do the stones, since the whole taken together [sc. {the three stones + the piece of wood}] is neither stones nor a pile of stones.

Abelard’s new characterization of increase can be characterized as follows:

X-as-an-F increases if and only if before X is an F, and after the addition of some y {X + y} now is an F.

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189 Curiously, D. P. Henry thinks that what I identify as the initial theory is Abelard’s second, more considered answer (1972, 120). I am arguing that it is the other way around.

190 Even in the first analysis of increase Abelard indicates some awareness that his first account is inadequate (Dial. 423.32-424.2). However, he does not adjust his account of increase to accommodate the worry about structured wholes until he treats the problem a second time in the Logica Ingredientibus. I should stress that by labeling the two accounts of increase as the ‘first’ and ‘second’, I do not intend to suggest that one account has an early date than the other. I have no views concerning the relative dating of the two treatises. I favor the account in the Logica for philosophical reasons. Constant Mews dates the two works as roughly contemporary to one another (1985, 130-32).
Based on this new account \(\{a + b + c\}\)-as-a-pile-of-stones increases, if another stone is added. Before \(\{a + b + c\}\) was a pile of stones. Now \(\{a + b + c\}\) “carries over” to \(\{a + b + c + d\}\) (i.e. \(\{a + b + c\}\) is a proper part of \(\{a + b + c + d\}\)), and \(\{a + b + c + d\}\) is also a pile of stones. In contrast, \(\{a + b + c\}\)-as-a-pile-of-stones does not increase if one adds a piece of wood, since even though \(\{a + b + c\}\) is a proper part of \(\{a + b + c + \text{the piece of wood}\}\), \(\{a + b + c + \text{the piece of wood}\}\) is not a pile of stones.

Abelard admits that in some sense, even if one adds a piece of wood to \(\{a + b + c\}\), \(\{a + b + c\}\)-as-something increases (Log. Ingr. 2, 299.40-300.4):

Perhaps, then, the pile grows, since what is prior and what is made from that [are both] called a pile. But if a stone is conjoined to a man, or a man to a stone, for a similar reason neither the man nor the stone is said to have grown, which indeed would have been the case, <if> the composite [of the man and stone] could be called ‘stones’ or ‘men’.\(^{191}\)

If Cicero were added to the integral collection \(\{\text{Plato} + \text{Socrates}\}\) the group of men would increase. If a horse were added to \(\{\text{Plato} + \text{Socrates}\}\), the group of men would not increase, but perhaps the group of animals would increase (Log. Ingr. 2, 300.4-8).

Abelard’s example of the integral collection formed out of a man and a stone seems to indicate that as the sortal ‘F’ becomes more general, our intuitions that something increases becomes weaker. In the limit case we are hesitant to claim that a pile of things increases.

Notice that this new account of increase applies only to aggregates and more complex material wholes; and even for aggregates the analysis is somewhat shaky. This

\(^{191}\) quod si lapis homini vel homo lapidi coniungatur, nec homo neque lapis simili ratione crevisse dicitur, quod quidem esset, <si> compositum vel lapides vel homines dici posset. Geyer correctly surmises that something must be added. His addition captures the sense of the argument.
sortal-based account of increase will not make sense in the case of mereological sums when they are considered as collections. If the scattered sum \{Peter Abelard + the Queen of France\} were brought closer together, the sum would not increase. Likewise, if Abelard and the Queen were placed on different hemispheres of the Earth, the sum would not decrease. Annihilating either Abelard or the Queen will not cause an increase or decrease of the mereological sum. Rather, the annihilation of either member of the sum entails the destruction of the sum itself.

The analysis works somewhat better in the case of aggregates. Strictly speaking, the pile of stones \{a + b + c + d\} does not decrease if d is removed, since the mereological sum of those stones still exists. We might say that, as an aggregate, \{a + b + c + d\} ceases to be, and the aggregate \{a + b + c\} comes into being. But since simple aggregates are merely collections that are brought into spatial proximity, it would be more precise to say that before the mereological sum of a, b, c, and d was aggregated, and now that same sum is scattered. The decrease of a pile of stones occurs when the sum of the stones was aggregated into a pile beforehand, but now the aggregated sum \{a + b + c\} is a proper part of the mereological sum of a, b, c and d and this aggregated sum \{a + b + c\} is also a pile of stones.

Abelard’s new account of increase works best for things that fall under either some natural kind or some artifact sortal. Consider, again, the ham sandwich, since this undermined Abelard’s previous account of increase and decrease. The ham sandwich increases when I add a slice of cheese, because the mereological sum of the parts now aggregated together possesses the previous aggregated mereological sum of sandwich
parts as a proper part, this new aggregated sum is greater than the old aggregated sum, and this new aggregated sum is also a ham sandwich. When the sandwich is tossed across the room, no decrease occurs because the sum, while scattered, has no proper part that is still a ham sandwich. And the ham sandwich decreases when I take a bite out of it, because the new aggregated sum is smaller than the old one, yet it still is a ham sandwich. When the aggregated mereological sums persist as ham sandwiches, this is due to the fact that the parts belonging to that sum are arranged in the proper way. Hence, the new account of increase and decrease is preferable for philosophical reasons.

At this point in the argument, it now seems that the new Abelardian analysis of increase is the following: The Principle of Mereological Constancy expresses the claim that a mereological sum cannot have fewer or greater parts. A thing appears to increase because it trades in a smaller mereological sum for a bigger mereological sum—that is, the thing increases because its matter increases. Hence, one can safely say that mereological sums never have more or less parts, but still insist that an artifact can often have different mereological sums over the span of its existence. But if that is all that Abelard’s analysis amounts to, he still is not claiming anything distinctive. Many philosophers admit that mereological sums are essentially dependent upon their parts, and yet they insist that a structured material object can possess different mereological sums and still be the very same object.

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192 Many of Abelard’s contemporaries express this very point—e.g. Pseudo-Joscelin (De generibus et speciebus §§22 and 26), and Introductiones Montani maiores (fols. 72ra-rb). See next chapter, section 5.1.2.

193 For instance, see Simons (1987, 245-6 and 272-80) and Van Cleve (1986, 147). Usually, but not always, these philosophers hold a strong version of the form-matter theory. Simons generally tries to avoid
Here is where Abelard’s thesis says something bold. Abelard’s Principle of Mereological Constancy applies to artifacts, and not just the matter of artifacts. While the existence of these boards and these stones is not sufficient for the existence of this house, their existence is necessary. Consider this passage concerning the relation between a house and its parts (Dial. 550.33-36):

But perhaps it can be said that, when this stone is removed and exists by itself apart from the conjunction of the house, this house (which existed previously) [still] exists –i.e. this stone and what were parts with it exists. (For it is impossible for the substance of body to be annihilated.)

Abelard’s imagined interlocutor is offering a particularly astute objection. When a stone is removed from the house, the mereological sum composed of that stone and all the other parts of this house still exists. Abelard’s liberal policy towards collections forces him to acknowledge this fact. The anonymous objector is now asking whether Abelard is thereby committed to the identification of this house with this now scattered mereological sum. The opponent’s objection would go through if Abelard were committed to the claim that material objects were identical to their mereological sums. In the same passage, immediately preceding his opponent’s remarks, Abelard seems to assert just that: “For this house is nothing other than this stone and all the other parts at once.” (Dial. 550.11-12)

The opponent correctly assumes that Abelard’s principle about the mereological constancy of wholes applies to objects other than mereological sums. But in addition, the

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sounding Aristotelian, but he nonetheless ends up appealing to form as a principle of individuation and identity over time when presenting his solution to the Ship of Theseus (1987, 199-209).
opponent assumes that the existence of the mereological sum is sufficient for the existence of the house. Abelard denies this stronger assumption (*Dial.* 550. 36-551.4):

We don’t deny this; but it is not the case that this house [now] exists. Those things cannot be called ‘this house’ when the composition of a house is removed. Nor [is it true] that in order for this house to exist it suffices that the matter exists. These boards and stones cannot yet be called this house before fabrication. The composition characteristic of a form is necessary. Therefore, it does not follow that if these stones and boards exist, this house exists. They only persist [as a house] because of the composition that is in the disposition of the parts.

The existence of the mereological sum does not entail the existence of this house. The structure of a house must be present in the parts.

In the case of artifacts, the form cannot be the principle of persistence. The existence of the mereological sum is a necessary condition for the existence of the artifact because it is also a necessary condition for the existence of the artifact’s form. Abelard denies that *this* house exists once it loses a stone. Abelard thinks this is true because of this additional premise (*Dial.* 551.4-6):

This composition, since it belongs to all the parts at once, necessarily changes if any part is removed.

The arrangement of the house supervenes upon the parts. When the parts are altered, the arrangement is also altered. The new arrangement might also be that of a house, but this new arrangement is not the very same arrangement as before. The arrangement, therefore, cannot preserve the identity of this house. In other words, Abelard subscribes to the weak version of the form-matter theory, not the traditional strong version.\(^{194}\)

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\(^{194}\) Further evidence that this is indeed Abelard’s view can be gleaned from a work by one of his Nominalist followers. When describing the thesis that “nothing grows”, this anonymous author insists that, “Every subtraction or addition of a part and every transposition of parts changes the being of the whole.” (Ebbesen 1991, 438; reproduced in Ebbesen 1992, 70)
artifact essentially changes when a part is lost, gained, and even when the sum is *rearranged*.\(^{195}\) Since the form of the artifact changes when parts are gained or lost, an artifact strictly speaking cannot persist through the change of parts. The Principle of Mereological Constancy holds for artifacts, and not just for the matter of artifacts.

Abelard’s Principle of Mereological Constancy is rightfully famous, or infamous, because of what it entails about the nature and persistence of material objects. I started with the simple claim that no quantity shrinks or grows. Because quantities are accidents of mereological sums, it quickly follows that strictly speaking no mereological sum shrinks or grows, because no mereological sum can gain or lose parts and remain the same sum. It seemed at first that the claim that mereological sums are mereologically constant is all that Abelard holds. His Principle when interpreted as such is compatible with a strong form-matter theory of material particulars. But in the case of artifacts, Abelard rejects the strong form-matter theory, and opts for the weak version instead. Once this fact is made plain, it follows that Abelard’s Principle of Mereological Constancy applies to material objects such as houses, statues and chairs, and not just to the matter of these objects. Abelard is committed to the distinctive claim that strictly speaking no artifact has more or less parts now than it did before.

Recall that Abelard draws a line between artifacts and substances (4.1.2). Artifacts are the products of human accidental manipulation of substances. Humans do not generate artifacts, since generation is reserved for the activities of Nature and

\(^{195}\) Compare Van Cleve’s three grades of mereological essentialism (1986, 141). Van Cleve thinks that it is true that the whole is destroyed if a part is lost or added (grades 1 and 2), but he denies that the whole is destroyed when the parts are merely rearranged (grade 3) (idem. 144).
ultimately God. Artifacts do not persist through the change of accidents since any change in an accidental form suggests an underlying change in the arrangement of the parts of the artifact’s being. But the substances that make up these artifacts—e.g. the clay, stone, and wood—may have a different set of persistence conditions. Abelard follows Aristotle and claims that substances are the sorts of things that can persist through the change of accidents (*Dial.* 54.35-55.9; *Log. Ingr.* 2, 160.31-33). Perhaps, then, substances are not mereologically constant.

Before turning to the identity and persistence of substances with respect to their parts, I must address a question that some contemporary readers have been impatiently thinking for quite some time. Namely, some contemporary metaphysicians might be wondering why Abelard fails to consider the possibility that objects have not only three-dimensional parts, but also temporal parts.

4.3.2: No temporal parts

One common attempt to avoid the extremism of mereological constancy is to argue that brooms, cars, and even cats are actually four-dimensional objects (see 2.5). This broom is not merely a sum of such spatial parts as this handle and these hairs. Rather it is a sum of spatio-temporal parts. Roughly speaking, the handle and hairs are parts of a “time slice”, or “temporal part”, of the broom, and the broom itself is a mereological sum of these temporal parts.

The four-dimensionalist theory attempts to resolve the puzzle of persistence, but not by directly answering Abelard’s question of what is increased or decreased. Instead
the four-dimensionalist redescribes the event. The pile does not increase or decrease. The bigger pile and the smaller pile are merely two temporal parts of one temporally stretched out object, the four-dimensional pile. In short, the addition or loss of a spatial part is no longer an event that threatens to undermine the integrity and existence of a whole. Four-dimensionalism does not ignore the problem of persistence, but it does redefine the phenomenon so that there is no longer a question of whether something persists through time and change of parts.

For Abelard, the four-dimensionalist solution is not an option. As I have already noted in chapter 2, many of the ontological presuppositions of four-dimensionalism are alien to Abelard (2.5). Abelard accepts the Aristotelian supposition that time is an accident of substances. This orientation towards substances naturally lines up with a form of endurantism. I also pointed out in chapter 2, the metaphysical assumptions behind endurantism do not easily line up with four-dimensionalism. This is especially true once we add the fact that Abelard is clearly a presentist.

I claim that presentism and endurantism do not easily square with the view that artifacts and other objects are sums of temporal parts. But the two are not necessarily incompatible. Chisholm, for instance, argues that artifacts are what he calls “entia successiva” (1976, 97). That is, strictly speaking, the broom is subject to the principle of mereological constancy, and hence any loss of a hair entails the destruction of that

196 Persons are entia per se, and hence not subject to mereological essentialism. Chisholm’s arguments for the substantiality of persons are not mereological; they rely on the unity of subjective experience (idem, 140 ff.).
broom. But in a looser and more popular sense, what we call “the broom” is really a successive string of these mereologically constant objects. In short, the *entia successiva* that we loosely call the broom has a type of temporal part, since changes in parts occurs over time, and accordingly each mereological constant member of the string that is the broom is a time-indexed part.

The reader should note the similarities between Chisholm’s account and the account of artifacts I have attributed to Abelard. Perhaps Abelard also thinks that artifacts are sums of temporal parts in this sense. But for reasons that I will now explore, Abelard will not accept that *entia successiva* composed of temporal parts are real, for Abelard rejects the reality of wholes whose parts exist in succession. At best, he insists, successive wholes are philosophers’ fictions.

Abelard’s examples of wholes whose parts exist in succession are times and speech (*oratio*). Most of his remarks occur in his discussion of the Aristotelian quantity of time, but he explicitly mentions speech in a key passage on successive wholes (*Dial. 553.8 ff.*), and it will be easy to show that Abelard’s analysis of time carries over to the analysis of speech.

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197 Chisholm holds that the existence of a material particular depends upon the existence of its parts: “For every x and y if x is ever part of y, then y is necessarily such that x is part of y at any time that y exists.” (1976, 149; cf. Chisholm 1989, 66). Van Cleve also holds that something like the Principle of Mereological Constancy applies to sums, artifacts and non-living material objects. He makes exceptions for organisms and persons (1986, 147 ff.).

198 In his earlier writings, Chisholm insists that things do not have temporal parts (1976, 139-44). But in his last treatment of metaphysics, he clarifies his position, insisting that the parts of *entia successiva are entia per se* and endure through time, whereas the things they make up have by definition something like temporal parts (1996, 93).

199 I will have more to say about this point in chapter 6, but I think Abelard clearly anticipates Chisholm. In fact, I think that Abelard’s analysis of change and persistence superior is to Chisholm’s.
Let me make some preliminary remarks about times and speech in turn. Some commentators use the term ‘temporal whole’ when discussing Abelard’s treatment of time. But the times that Abelard is specifically considering must be kept distinct from the temporal wholes that are the subjects of contemporary metaphysics. (Hence, I will use the clumsy term ‘times’ instead of ‘temporal wholes’.) Abelard is talking about the Aristotelian category of time, and in particular he is focusing upon durations such as hours, days, and weeks. He is not talking about times as dates, as these temporal items more precisely fall under the Aristotelian category of “when”. The hours and days, which are the focus of Abelard’s remarks, are the measured durations of substances (Log. Ingr. 2, 184.30-34). But for what presently follows I suggest that this fact is not very helpful. Indeed, it may prove to be a red herring if we are not careful. Abelard’s and his unnamed opponents are both considering the possibility whether the quantity of the duration itself can be an integral whole. What Abelard concludes about the status of times will have ramifications for his views about the possibility of successive wholes in the category of substance, but one must not think that Abelard is directly addressing the contemporary four-dimensionalist’s proposal that perduring substances are mereological sums of time slices.

By speech Abelard means the physical noises made by a mouth. Since speech is measured by short and long syllables, Abelard considers them to be quantities. The comparison between times and speeches (as I will call individual instances of spoken

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200 See King (2004, 101), and Henry (1990, 139). Abelard actually says that a quantity of time is the duration of existence of “anything whatsoever”. But since in the Aristotelian framework everything tends to boil down to substances and their properties, we can safely focus upon times as durations of substances.
sounds) is instructive. The underlying subjects of the short and long syllables that compose the quantity of a speech are actual puffs of air. The ephemeral quality of syllables, and hence the speech as a whole, is due to the fact that these puffs come in succession and quickly pass out of existence. In contrast, the connection between a time and its subject is not so obvious. Abelard is a presentist, so only the present exists. The past was and is now no longer, and the future will be but is not yet. But it does not immediately follow that Abelard believes in something like mereological occassionalism. By mereological occasionalism I have roughly this thesis in mind: brooms and cats don’t exist. Rather the broom-at-t1 and the cat-at-t1 exist at t1, and when t1 no longer is, these objects also cease to exist, substituted immediately with the broom-at-t2 and the cat-at-t2. I think this view is utterly alien to Abelard, who is in favor of endurantism. This was all assumed previously in the discussion of the problem of increase. The stones endured through time. The question was whether the thing composed out of these stones could survive the loss or addition of further parts (which also endure in their own right). Abelard, like his master Aristotle, thinks that time is dependent upon substances. To think that Abelard’s presentism reveals something directly about the status of the subjects of the things that are present is to reverse the direction of dependency.

I do not mean to suggest that the Aristotelian approach to temporality is safe from reproach. Nor will I propose to examine carefully Abelard’s theory of the how times are related to their subjects. But this much can be said: Abelard’s Aristotelian assumptions

201 The most notable difficulty with Abelard’s theory of time as an accident is his claim that each thing has its own duration, and hence its own time. Abelard attempts to reconcile this implication with the commonplace that there is only one time for the world as a whole. For a discussion of these issues and Abelard’s solution, consult King (2004, 101-102).
make it so that an analysis of persistence must deemphasize the temporal aspect of the puzzle in favor of the changes to the subject. I have already attempted to do just this in my study of Abelard’s problem of increase. The puzzle was over mereological change—i.e. the addition and removal of \textit{essentiae}. In general, Abelard’s approach to persistence will proceed in this manner: focusing upon the \textit{essentiae} and properties of wholes, not upon their path through time. Persistence will never be framed in terms of re-identification over time, but rather in terms of re-identification through changes in \textit{essentiae} and property.

One other fact about speeches should be noted as a preliminary matter. If I utter ‘There’ but am stopped before I can complete the speech, ‘There is a dog’ never did exist. We can only judge that the whole ‘There is a dog’ existed after the speech has come into existence and gone out of it. The same is in fact true for a day. Should God annihilate the universe during the first hour, the day never existed. A time did exist, just as a speech (namely, ‘There’) existed, but the day never existed since it never was completed. Abelard’s discussion of times often conceals this fact, but this is not fatal to his enterprise. We can charitably assume that cases of days cut short by the act of God as well as incomplete speeches have implicitly been put to one side, just as houses that were left half built are also implicitly put aside. The comparison is between completed integral wholes and completed days and speeches. In fact, Abelard is well aware of the fact that speeches and times are only judged to be whole \textit{ex post facto}. This fact is a crucial part of his explanation of the status of times and speeches, which I will address shortly.
Here ends my preliminary remarks about the special properties of times and speeches. I must emphasize these crucial points. Abelard is considering the proposal that a quantity of time as such, or a quantity of spoken sound as such, is an integral whole. But for our purposes, times and speeches are test cases for a larger claim about the nature of wholes, namely whether any integral whole can exist whose parts exist successively. Abelard’s answer to this broader question, not his view of time in particular, will explain why the theory of temporal parts is anathema to his metaphysics of mereology and persistence.

As Abelard reports it, some thinkers call times and speeches integral wholes, even though they have very different properties from other integral wholes. It is agreed by these thinkers that other integral wholes follow these rules:

(a) If the whole exists, necessarily all the parts exist.
(b) If any part does not exist, necessarily the whole does not exist.
(c) If one part exists, it is not necessary that the whole exists.

The reader can see that these rules are all derived from a strict reading of Boethius’ proclamation that the parts are naturally prior to their whole (see 3.2.2 and 3.3.4).

Abelard has already made use of these rules in his argument for mereological constancy. Now Abelard contrasts the behavior of other integral wholes, with wholes whose parts proceed in succession. His explicitly mentions times (*Dial. 553.12-15*):

For this [type of] whole in contrast to other integral [wholes] the opposite is said to hold: namely, any one of its parts entails the [existence of] the whole, and the destruction of the whole destroys each and every one of its parts. For example, if the first [part of the day] exists, the day is said to exist as well. And accordingly if the day did not exist, it would also be asserted that the first part does not exist.

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202 The same observations are also made at *Dial. 62.38-63.6* and *Log Ingr. 2, 187.3-7.*
Thus, in contrast to rules (a) to (c), Abelard notes (presumably with his opponent’s endorsement) that times behave as follows. The day never exists all at once. If the second part of the day is present, the first has necessarily already passed, and is no longer. Thus, in contrast to rule (a), a day by definition can never be such that all its parts are simultaneously in existence. Likewise, in contrast to (c), the day exists so long as one part of the day exists. And, in contrast to (b), while it is necessary that some part of the day exist in order for the day to exist, it is not necessary that the first part of the day exist in order for the day to exist. As Abelard observes in one of his discussions of these differences, times (and by implication speeches) behave like distributive wholes, for the existence of Human Being does not entail that Socrates exists, but if Socrates exists, Human Being necessarily exists (*Log Ingr.* 2, 187.15-20).

Similar observations can be made for speech. According to Abelard, when I say ‘There is a dog’, by the time ‘dog’ has left my lips the other uttered sounds have gone out of existence. Thus, the whole ‘There is a dog’ behaves like the day, and not like other integral wholes. It is not necessary that—indeed, it is impossible that—all the parts of a speech are present simultaneously. And while some part of the speech must be present in order that the speech is present, no particular part must exist for the speech to exist.

After making these observations concerning the differences between other integral wholes and wholes whose parts exist in succession, Abelard rejects the claim that times and speeches are integral wholes. In his *Logica Ingredientibus* Abelard complains that a day cannot be an integral whole because all its parts are not present at once (*Log. Ingr.* 2, 187.9-14):
Since ‘day’ is the name of these twelve hours, it must be the case that all twelve hours are pointed out at once when they make up the day. This is because a day is nothing other than these twelve hours. But how can some things be many at once unless each one exists? And how can they all persist at the same time when they do not make up one thing?

The argument is far from convincing. Days are by definition wholes whose parts exist in succession. Necessarily, the parts of a day are not present all at once. Abelard’s opponents readily acknowledge that wholes whose parts exist in succession do not behave like other integral wholes. Abelard’s argument, hence, appears to be a case of begging the question, or at best a dispute over the meaning of ‘integral whole’. Abelard has done nothing yet to show why times and speeches are not real.

Abelard does somewhat better in his treatment of successive wholes in the *Dialectica* (*Dial.* 554.14-20):

No composite is composed of only one part, nor is it the case that a part is such that the quantity of the whole fails to exceed it. If there were only one part, it would follow that [the part] is the same as its whole. But many parts at once never exist in a time, since many never exist at once. It follows that a time never consists of many parts, as neither the first nor the middle nor the final [parts] remain, but it is always the case that only one part actually exists.

Abelard reiterates the criticism that a time is always present because one part is present, whereas a whole should be present because *all* its parts are present. But now Abelard attempts to back up this claim. His opponent grants that at the first hour, the day exists, and that this is because the first part of the day is present. Abelard finds something unintelligible in this admission. The day is present. But the middle of the day is not present, and the end of the day is not present. The only part that is truly present is the first half of the day. Thus, it appears that the quantity that is the first half of the day is presently identical to the quantity that is the day. In short, the part is presently identical
to its putative whole. This will always be true. Later on, the middle of the day will be identical to the day. Still further on, the end of the day will be identical with the day. At every point at which the whole exists it is identical to the part. In other words, at any point in the whole’s existence, if I ask you to produce the whole, all you can do is produce a part of the whole.

This is a better argument, but it still strikes me as a case of begging the question. At root, Abelard is assuming something very strong: that in order for something to exist, it must exist presently and altogether. This assumption is precisely what the proponent of successive wholes rejects. But rather than throw up our hands in dismay, perhaps I can show why Abelard thinks this is a plausible assumption to make. The proponent of successive wholes is asking Abelard to admit a type of entity into his ontology which has properties very distinct from other objects already in his list of things that are real. But just as Abelard has not yet given the proponent of successive wholes a reason to reject successive wholes, Abelard has not been given any reason to assume that there are such things as wholes that exist in virtue of succeeding parts.

Consider three continuous moments in time t1, t2, and t3, and three stones a, b, and c. At t1, a exists but b and c do not. At t2, God annihilates a and replaces it with b. At t3, again God annihilates b and replaces it with c. Now consider my claim that there exists a whole that is \{a + b + c\}. When does this whole exist? Does it exist at t1? It seems that it does not. Only a exists at t1. Does it exist at t2? No, only b exists at t2. And the same can be said of t3. All three parts never existed \textit{together} at any particular time. What reason, then, do we have for thinking that the whole composed of a, b, and c
ever existed? Those who are sympathetic to the reality of successive wholes will respond that the whole \( \{a + b + c\} \) just is the succession of these three stones. Moreover, given that it is a successive whole, it would be unreasonable to insist that there must be some point in time where \( \{a + b + c\} \) exists altogether. This is indeed the proper response. But notice that the proponent of successive wholes has given Abelard no compelling reason to accept the existence of successive wholes such as \( \{a + b + c\} \). Lacking this compelling reason to admit them, and given that these successive entities behave differently from other integral wholes, Abelard opts to bar successive wholes from his catalog of the real.

The thesis that no whole that exists in virtue of successive parts is real appears to be a first principle in his ontology. But just as with the thesis of mereological constancy developed in the last section, precisely how this no-succession principle is formulated is important. Since both times and speeches are quantities, it may at first appear that the principle states that no quantity exists whose parts exist in succession. But, since quantities inhere in essentiae, I think that the principle is better formulated as the claim that there is no essentia whose parts exist in succession. Anticipating developments in the next section I will suggest that this principle is consistent with Abelard’s claim that persons (and perhaps other substances) can persist through changes in parts.

Abelard thinks that successive wholes are not real integral wholes, but this does not mean that talking about them amounts to nonsense. Abelard draws a distinction between language about the way that things are, and figurative but convenient language (Dial. 554.20-23):
Strictly speaking it cannot be said that a day ever exists, only figuratively, as if we were to say that the [whole day] exists through the part—i.e. its part exists. But this [which does exist] is not strictly speaking even a part, since it does not compose [anything]. Only it exists.

Abelard goes on to add that whole times are philosopher’s inventions (554.29-36). A day is an abstraction developed out of a consideration of the instants of time that have come and passed away. We can consider it as a whole and analyze it into its “parts”, but the composite does not exist in its own right. Each moment in time has come and passed away, and in order for it to be a real whole, all its parts must be present at any moment that the whole purportedly exists. In this manner, time is like speech, since even after the last syllable dissipates, our mind is able to hold the content of the physical speech in view and treat it as a meaningful whole.

In his studies of Abelard on times, Henry correctly surmises that Abelard’s refusal to admit objects that exist through a succession of parts will prove to be an obstacle to his attempt to secure the persistence of objects through a change of parts (1990, 139 ff., and 1984, 248 ff.). For this reason, Henry thinks that Abelard has made a mistake, failing both to see the ramifications of his pronouncements upon the status of times, and to make use of the distinction between X-parts and parts-of-X.

But as the last section should have made clear, I think that Abelard fully intends to make the extremist claims from which Henry wants to rescue him. With respect to the claim that Abelard should have availed himself of the distinction between parts-of-X and X-parts, first I am not convinced that Abelard ever assents to this distinction. Many of the passages that Henry cites as proof that Abelard notices the distinction fail to bolster Henry’s claim. Instead of lamenting Abelard’s sloppiness for failing to resort to the
distinction when discussing problems pertaining to persistence, I take the absence of
Henry’s distinction in these discussions to be more evidence that Abelard never
acknowledged the distinction in the first place. Second, as I have already made clear in
chapter 2 (2.4.3), I am far from convinced that the distinction between X-parts and parts-
of-X fulfills its promise as a solution out of difficult quandaries concerning ontological
dependence and persistence. In the case of times in particular, Henry thinks that Abelard
rejects the existence of times as wholes among other reasons because a time violates rule
(c) from above. It is true, he notes that if an X-part exists, then it is not necessary that X
exist. But if a part-of-X exists, then necessarily that of which it is part, X, must exist
(1984, 253). If only Abelard had remembered this difference, Henry muses. Then, he
would have seen that times are perfectly acceptable integral wholes. But if I am right,
Abelard’s reluctance to call times wholes has to do precisely with the successiveness of
these wholes. Abelard does not see a compelling reason why a string of succeeding
objects counts as one whole. Henry’s principle about parts-of-X is uncontroversial only
for those cases where the parts are all present—cases like a house. It is not obvious that
the rule should hold for successive entities.

In my study of Abelard’s problem of increase I suggested that brooms and houses
are not things that persist through mereological changes, they are actually a series of
things of the same sort. Here is precisely where I think Abelard’s claims about the status
of times do ramify, as he himself seems to be aware. Right after announcing that talking
about days is figurative, Abelard makes this startling pronouncement (Log. Ingr. 2,
187.40-188.1):
Accordingly, in truth one can never truly and properly say that a day exists, or that a whole exists, or that this quantity exists, or even that bronze or anything altogether exists.

It is unclear what the scope of the last “anything altogether” is. I will argue that it at least falls short of including persons. But the passage is provocative, for it suggests that just as whole times are figurative abstractions brooms, houses, and other artifacts are likewise convenient fictions.

4.3.3: Substantial persistence

I have argued that the Principle of Mereological Constancy is not merely a principle about the quantity of things, it is about things—namely the mereological sums that are the matter of objects. Stones, plants and animals are composites of matter and substantial differentiae, whereas artifacts are composites of matter arranged to produce supervening, accidental features. Artifacts and substances are similar materially. The difference between the two types of object must come from the presence of substantial differentiae. In contrast to the forms of artifacts, substantial differentiae, or at least some of them, are themselves essentiae. It is the reality of the differentiae that will allow substances to persist in ways that artifacts can not.

Several caveats are necessary. First, the claim that the differentiae are real is only as strong as the evidence. The texts in Abelard, we already remarked, are ambiguous; the key supporting text is a secondhand report (4.1.2). If the substantial differentiae are not real, then stones, plants and animals will become strings of entities of the same sort. Second, Abelard does not explicitly puzzle over the persistence of non-human substances.
to the same degree as he worries about artifacts and humans. Much of this section is
based upon circumstantial evidence—in particular, upon Abelard’s insistence in the strict
divide between artifacts and substances, and upon several remarks that Abelard makes
about human beings in so far as they are substances. What follows is an admittedly
speculative reconstruction of what Abelard could say, if pressed on the persistence of
substances.

Once substances are considered, the question whether a thing persists is
ambiguous between two more refined questions: Does this substance persist? And, does
this essentia persist? To answer these more refined questions, let us draw a distinction
between being essentially the same over time and being substantially the same over time.
This distinction is slightly artificial in that it regiments a distinction between essentia and
substantia that Abelard is not always careful to maintain. But there are places where
Abelard suggests this distinction, and the regimentation on our part will make matters
more manageable. The relation being essentially the same over time is closely related to
being the same in essentia, as it is characterized in section 4.2.1, and is another way of
describing mereological constancy. Roughly speaking if the essentia of x has all the
same parts and no more or less parts as the essentia of y, and ‘x’ names some object at t1
and ‘y’ names an object at t2, then x is essentially the same as y over the span of time t1
to t2. A simple example might make matters clearer: if ‘x’ names \{a + b + c\} at t1, and
‘y’ names \{a + b + c\} at t2, then x and y are essentially the same over the span of time t1
to t2. Now suppose that \{a + b + c\} is the matter of a stone. Furthermore, suppose I chip
away a, but the substantial differentiae that made it a stone are intact. The stone fails to
be essentially the same over the time in which the change occurred, yet we are inclined to say that the stone is the same substance. Both \{a + b + c\} and \{b + c\} possess the state *being a stone*.

The description of this simple material change is incomplete, since having the same state does not get us to the claim that *this* stone persists after losing \(a\). Many individuals can possess the same *status*, and hence be substantially the same. Abelard notes that the substantial differentia is the last item to enter into the constitution of an individual’s substance (*Dial. 546.28-547.26*). There is no further differentia that yields the individual substance. Since the genus plus differentiae constitute the definition of a substance, the individual does not have its own definition (*584.26-29*). Nevertheless, while two individuals may be substantially the same, they will differ from one another with respect to their “proper substance” (*Theol. Chr. III §72; p. 224.931-939*):

But, while Socrates is different numerically from Plato—i.e. one is different from the other because their being is distinct (*ex discretione propriae essentiae*)—it is not the case that [Socrates] is said to be altogether other than [Plato]—i.e. that [Socrates] differs substantially [from Plato]. They both belong to this nature on account of the fact that they agree in the same species. That is, they [agree] in that they are each a man. Thus, they are not distinct because of any substantial difference, so that he is not other than the other because [his] substance belongs to a different species. Rather, Socrates is other (as it has been said) in person—i.e. because of a distinctness of proper substance (*ex discretione scilicet propriae substantiae*).

Let us set aside the introduction of personhood until the next section, and instead focus upon the idea of being a proper substance.\(^{203}\) This concept lends its name to what we are after in the case of the stone. We want to know the conditions under which this stone is

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\(^{203}\) There is, nonetheless, a close relationship between the notion of being a proper substance and being the same person. See my remarks in section 4.3.4.
the same proper substance over time. Abelard does not give us an explicit criterion for
being the same proper substance over time. But, I argue, the criterion is similar to the
sortal criteria which we uncovered in Abelard’s analysis of the growing argument.

Return to the stone with matter \{a + b + c\}. Removing any of the substantial
differentia that in combination with \{a + b + c\} makes this stone a stone will entail
substantial change—destruction. The matter, \{a + b + c\}, “relinquishes a species state”
(speciale status) or “substantial being” (substantiale esse) (Log. Ingr. 2, 297.4-5, and
Dial. 418.8). On the other hand, if I chip away a, yet \{b + c\} retains its substantial
differentiae, \{b + c\} retains the state of being stone. The parts a, b and c are all
primtively particular, because as Abelard claims elsewhere the particularity of things is a
brute fact (Log. Ingr. 1, 64.20-24). Moreover, \{b + c\} shares parts with \{a + b + c\}.
Since this relation is measured over time, it would be imprecise to say that they overlap.
We could however coin a phrase and claim that \{a + b + c\} and \{b + c\} trans-temporally
overlap. Thus, in the imagined scenario where I chip away a, the stone is not essentially
the same over time, yet the stone remains the same proper substance over time.

Essential sameness over time is dependent upon the mereological constancy of the
being of things. Substantial sameness is dependent upon the retention of a species state.

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204 The reader might wonder why I insist on using Abelard’s idiosyncratic terminology, and not the more
familiar terminology of a kind. The reason is that Abelard only recognizes natural kinds as items that have
genera and species. In Abelard’s view a status is more general than a kind, since for example artifacts can
also possess status.

205 Abelard rejects the popular medieval theory of individuation by accidental forms. What makes Socrates
this very individual human cannot be his accidental forms, since it would then be the case that accidents are
naturally prior to substances, which as any good Aristotelian knows is false (Log. Ingr. 1, 64.7-14).
Individuation by accidents is a component of what Gracia identifies as the Standard Theory of Individuality
(1984, 124-128). Another popular medieval principle of individuation is matter, but no twelfth-century
philosopher entertains this option.
If we grant that substantial differentiae are real (essentiae)—as we did in section 4.1.2—then substantial sameness is dependent upon the constancy of the differentia through change. Since the differentia, unlike a supervening form, is real, it is robust enough to be the one of the principles of persistence.

Still, is the differentia the only principle of persistence? I have mentioned that the reality of substantial differentiae would let Abelard hold a stronger form-matter theory of constitution. But to hold the strongest version of the form-matter theory, Abelard would have to be committed to the view that the differentiae are sufficient for persistence. Whether Abelard holds the strongest version depends upon how we interpret Abelard’s suggestion that differentiae could have informed other substances than they actually do (Log. Ingr. 1, 84.19-21):206

This Socrates could have been [a man] through a different [rationality]—whether this [other rationality] exists or never exists—as he is a man through this [particular rationality].

It is unclear whether Abelard thinks that differentiae are actually separable once they inform some essentia, or whether he holds the weaker claim that, at the moment when God was informing essentia, he could have used this rationality as opposed to that one. On the weaker interpretation, this rationality trope, Rat1, could have been combined with, Ess2, rather than Ess1; yet once God makes Rat1 + Ess1, it is not possible for Rat1 to come loose and drift over to another essentia. Abelard’s interpretation of Aristotle’s claim about the inseparability of accidents suggests, but only suggests the weaker modal claim concerning differentiae (Log. Ingr. 2, 129.31-131.9; cf. Marenbon 1997, 121-22).

206 Cf. Log. Ingr. 1, 92.22-9; and Marenbon (1997, 120).
On the other hand, independent, philosophical considerations suggest that Abelard

*should* hold the stronger view, and hence assert that the persistence of differentiae is the
only necessary and sufficient condition for substantial persistence. Consider two plants:
A is composed out of differentia P1 and the sum \{a + b + c\}; B is composed out of P2
and \{d + e + f\}. Through normal metabolic processes, a is lost by A and taken in by B.
Meanwhile, d is lost by B and taken in by A. According to the criteria set out for being
the same proper substance, P1 + \{d + b + c\} is the same proper substance (over time) as
P1 + \{a + b + c\}, and P2 + \{a + e + f\} is the same proper substance as P2 + \{d + e + f\}.

In other words, A and B persist through their respective changes in matter. Fast-forward
to a time where through the same metabolic changes, we have P1 + \{d + e + f\} and P2 +
\{a + b + c\}. It seems that we must say that A is the former form-matter composite and
that A is the same proper substance as P1 + \{d + e + f\} over the time in which the
metabolic changes took place. Likewise, B is now P2 + \{a + b + c\}. Now consider a
case where God performs a wholesale switch of A’s and B’s matter. The result is again,
a case where we have the two objects with metaphysical structures P1 + \{d + e + f\} and
P2 + \{a + b + c\}. And again, I see no reason why A is not the same proper substance as
the sum informed by P1, and that B is the sum informed by P2. It does not make any
difference whether the material switch is gradual or wholesale. At the end of the change
A is the same proper substance over the span of time measured by the change as P1 + \{d +
+ e + f\} and B is P2 + \{a + b + c\}. The second change does not occur in nature, but
surely it is in God’s power to do it.
By now the reader should be able to see that mereological continuity of the matter is neither sufficient nor necessary for substantial persistence. The substance need only possess the right sort of matter to be the same proper substance. From a purely philosophical perspective, Abelard should hold the strong form-matter theory of constitution for substances.

Is it safe to say that substantial change is a type of essential change, but not all essential change is substantial change? This would only be true if the reality of differentiae entailed that they count as parts of a substance’s being. The presence of the term ‘essentia’ in both cases suggests that real differentiae should be parts. But Abelard, in fact, may not think that any form—supervening or real—is a part, at least in the sense of ‘part’ used when measuring sameness in being and essential sameness over time. For example, in the *Theologia Summi Boni* he claims that the body is prior to this man even though the body and the man are numerically the same (TSB III, i, §12; p. 163, 208 ff.). The body and the man can only be numerically the same if they share all the same parts. But the body by itself does not possess the differentia rationality. This body could have possessed another differentia, in particular irrationality. In the *Dialectica*, Abelard insists that forms do not make up the essentia of a thing (*non in essentia componit*), yet they nevertheless “bring the substance of the thing to completion” when they “advene” upon the thing’s matter (*Dial.* 415.35-416.6). The example Abelard gives is the inherence of rationality in an animal. There is, thus, evidence that differentiae are not parts, even though they are real.
The main features of the persistence conditions for substances still stand. In contrast to his hylomorphic theory of artifacts, Abelard should hold a strong form-matter theory of constitution for substances. The substantial differentiae are real, and their reality underwrites the persistence of a substance. In the natural course of things, the persistence of this proper substance is measured by the persistence of this differentia trope and an essentia that is mereologically continuous with previous essentiae inhabited by this trope.

4.3.4: The persistence of persons

Unlike the case of non-human substances, Abelard explicitly rejects the view that human beings must be mereologically constant (TSB III, i, §14; p. 164.227-229):

There is nothing in the divine substance at some time that was not present at some other time; whereas in the same man there are parts at some time which are not present in him at some other time. And [the same man] frequently gains and loses accidents.

This is also apparent from Abelard’s rejection of the view that every part of a man is a “principal part”—that is, the removal of any part entails the destruction of not only the quantity, but also the substance of a thing (Dial. 552.6-14 my emphasis):208

207 ‘Person’ is an ambiguous notion. According to Boethius a person is properly defined as an individual substance capable of reason (Contra Eut III, p. 214.171-2). With the added restriction to human beings, this is the notion of person that we will pursue in this section. But there is also a looser sense of person, which Abelard uses to when he claims that all things are “personally discrete”. This latter, looser sense of ‘person’ is related to being a proper substance, and it applies to all individuals. Twelfth-century philosophers also extend the notion of person to the Father, Son and Holy Spirit. For our purposes, we can steer away from the persons of the Trinity, and the complications that Trinitarian theology introduces.

208 For a careful analysis of this portion of the Dialectica, consult Henry (1991, 92-115) and see also the helpful summary in King (2004, 79-81).
Therefore, it stands according to our newest argument\textsuperscript{209} that whenever any part is destroyed the whole is necessarily destroyed. \textit{It follows, then, that every part is a principal part, if we understand ‘in substance’ according to the destructivist’s sense [of the phrase] (vim destructionis).} If Socrates’ fingernail is removed some quantity persists in the remaining body, but that whole [quantity], which was in the whole previously, [does not now persist]. Likewise, a substance persists, but not that whole [substance] which existed previously (i.e. that of which the fingernail as a part had existed and had been removed)\textsuperscript{210} Therefore, it is not the case that the quantity is destroyed rather than the substance, of which substance the fingernail was a part.

The Abelard’s opponent, not Abelard, is committed to the claim that if a fingernail is clipped, the substance that has that fingernail as a part perishes. Abelard tries to distance himself from this consequence (\textit{Dial. 552.15-27}):\textit{\textsuperscript{209} See \textit{Dial. 551.6-17}.} \textsuperscript{210} The text is difficult: \textit{sic quoque substantia remanet, sed non ea tota quae prius extiterat cuius videlict pars unguis ademptius extiterat.} \textsuperscript{211} Cf. LNPS 548.4-10, quoted below.

Once this is conceded, it follows that the removal of any part of a human being entails the substantial destruction of that human being. And since the substantial destruction of a

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\textsuperscript{209} See \textit{Dial. 551.6-17}. \textsuperscript{210} The text is difficult: \textit{sic quoque substantia remanet, sed non ea tota quae prius extiterat cuius videlict pars unguis ademptius extiterat.} \textsuperscript{211} Cf. LNPS 548.4-10, quoted below.
\end{flushright}
human being is murder, his opponent is committed to the claim that the clipping of a fingernail is an act of murder (*Dial.* 552.32-34):

> Therefore, it is necessary that when a hand is removed, the man who was there before does not now remain. It follows that if one were to remove either a hand or any other part of a man, one appears to commit murder.

Abelard admits that his previous claim was hyperbolic. After making the rhetorical jab, Abelard is content to retract the accusation of murder (*Dial.* 552.34-37):

> But, perhaps not every destruction of a man is called murder; only those cases where one expels the soul from its seat [count as murder]. Murder is the act of slaying a man, and an act of slaying cannot occur unless by means of the expulsion of a soul.

The primary point, however, stands. Abelard wants to distance himself from the claim that the Principle of Mereological Constancy applies to human beings.

Abelard’s resistance to the position endorsed by his current opponent is odd, since Abelard clearly holds the Principle of Mereological Constancy, and he interprets it strongly enough that it begins to collapse the distinction between substantial change and quantitative change.\(^\text{212}\) The oddity is only enhanced because in his struggle with the destructivists, Abelard does not carefully distinguish between his example of the house, and his example of Socrates. The change from the house to Socrates is abrupt, and it is not flagged as an important switch. I think this is an oversight on Abelard’s part. But we can help him out and flag the switch on his behalf. When we clarify Abelard’s position, I think it is clear that, with respect to artifacts, Abelard is a mereological essentialist. With

\(^\text{212}\) D. P. Henry also notices this oddity. He thinks that it is because Abelard fails to employ the distinction that Abelard himself “discovered” at other points in his writings (1985, 84-87). I think that Abelard fails to use the distinction between X-parts and parts-of-X because he never developed this distinction (see 2.4.3 above).
respect to human beings, it is just as clear that he wants to resist mereological essentialism. Abelard’s final attack against his current opponent mentions only human beings. It is the consequences for human beings that ultimately give Abelard pause.

I conjectured that non-human substances persist because of the presence of substantial differentiae. This conjecture depends upon the premise that substantial differentiae are real, if not parts of substances. In the case of human beings, no conjecturing is necessary. The personal identity and personal persistence of human beings is grounded upon the persistence of the human soul.

Like the distinction between substance and *essentia*, one can also distinguish between an *essentia* and a person. This clue comes from the writings of Abelard’s followers, the Nominales.\(^{213}\) The Nominales were infamous for holding the view that “nothing grows” (*nihil crescit*),\(^ {214}\) or as one earlier document preserves it, “no thing grows” (*nulla res crescit*).\(^ {215}\) This opinion matches the view espoused in Abelard’s discussion of increase (4.3.1). But the view of the Nominales has an interesting wrinkle. According to our sources the Nominales claim that a *substantia* or *essentia* cannot grow, but a *person* can grow (Iwakuma and Ebbesen 1992, 185 text 33a):

They say that the substance which is Socrates (*que est Socrates*) ceases to be, but Socrates does not cease to be. For they distinguish between the *essentia* and the person.


\(^{214}\) Iwakuma and Ebbesen (1992, 202 text 53; cf. 191 text 37).

\(^{215}\) Iwakuma and Ebbesen (1992, 184 text 26).
Unlike Abelard, the Nominales do not seem to distinguish between the *essentia* of Socrates and the substance of Socrates, and both the *essentia* and the substance are subject to the Principle of Mereological Constancy.\textsuperscript{216} In another Nominalist text, the anonymous author claims that, “Every subtraction or addition of a part and every transposition of parts changes the being of the whole”. (Ebbesen 1991, 438; reproduced in Ebbesen 1992, 70). The author makes no effort to distinguish between forms that weakly supervene and forms that are real. It seems that every form weakly supervenes. The author then addresses a challenge to this position. The challenger asks how can this proposition ‘the ill can be well’ (*sanum potest esse aegrum*) be true? For what is ill cannot cease to be so without the loss, acquisition or transposition of some part—namely, it seems, some accidental form.\textsuperscript{217} But if it ceases to be ill, it ceases to be. Consequently, that which is ill cannot become well. The anonymous Nominalist replies (ibid.):

> Whatever is healthy is naturally healthy, and whatever is ill is naturally ill. Nonetheless, the same man who is healthy can be ill (*tamen idem homo qui est sanus potest esse aeger*).

There is, hence, a difference between a person, and the being that is this person. Put another way, “that which is Socrates”—viz. the *essentia*—cannot change parts, but Socrates can endure changes in parts.\textsuperscript{218}

\textsuperscript{216} For example, see text 40b (Iwakuma and Ebbesen 1992, 192), and text 48d (idem. 198).

\textsuperscript{217} Of course, for Abelard, the form of illness or of healthiness is not a part of the man. Nevertheless, since a change of form does not occur unless there is a change in the disposition of the material parts, the realist challenge goes through.

\textsuperscript{218} “Again, we say that nothing which now is [Socrates] will be Socrates if any part is added or subtracted from it (*nihil erit Socrates quod modo sit si aliqua pars ei addatur vel subtrahatur*).” The text is reproduced by Ebbesen (1992, 70 footnote 12).
It is clear from these fragments that the *essentia* of Socrates is identified with his material parts, and hence Socrates’ *essentia* changes when parts are added or lost. The Nominalist’s usage of ‘*essentia*’ is consistent with Abelard’s usage (LNPS 548.4-10):219

Note that ‘Socrates’ signifies this substance, since [it signifies] this man. But it does not signify that substance which is constantly varying due to the influx and efflux [sc. of matter]. If it signified this substance, which is now Socrates, as well as a future being (*cras essentiam*) that will in the future be Socrates, then [‘Socrates’] would constantly change its signification, since Socrates is not the same being today and tomorrow. But [a changing signification] is unacceptable.

But in contrast to the Nominales, Abelard also suggests that we must make a distinction between substance and being, since ‘substance’ is used to pick out both that which has the state of being this man, and that which is the matter of Socrates—i.e. the “substance which is constantly varying”. The ambiguous use of ‘substance’ is also detectable in this passage (*Dial.* 421.17-23):

A thing is changed with respect to increase when the quantity of a substance has grown through the addition of something—e.g. when God by means of [His] unseen [power] applies increases to [us as] young boys and extends our substance with respect to some dimension, whether it be in height, in length or in width. Diminishment [occurs] when something belonging to a substance is lost or subtracted—e.g. when God shrinks our substance little by little as we become older.

Here ‘substance’ might refer to a continuous series of *essentiae* that possess the state *being a man*. Or it might refer to Socrates’ matter. I will hold off from speculating about the significance of the differences between Abelard and the Nominales until chapter 6, with the exception of this observation: Perhaps the Nominales noticed Abelard’s sloppy use of the term ‘substance’ and they attempted to apply it more stringently. For now I

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219 This point of comparison between Abelard and the Nominales is highlighted by Normore (1992, 89-90).
will attempt to locate a difference between essentia and substance, as well as a difference between substance and person. Due to ambiguous use of ‘substance’ by Abelard, I will again impose an artificial regularity where none is present.

We start with the distinction between essentia, substance and proper substance. An essentia must be mereologically constant. It is especially important to distinguish between being the same substance, and being the same proper substance over time, because being the same substance requires only that the same state is possessed. Plato and Socrates agree in the state of being a man, and hence are the same in substance. Yet Plato and Socrates are not the same proper substance (see 4.3.3). Synchronically, Socrates’ proper substance is this essentia combined with this set of differentiae. As I argued in 4.1.2 the soul is not the differentia rationality. Nonetheless, Socrates’ soul and his rationality are closely related. Were the soul to depart the body, the body would also lose its rationality.220

The presence of Socrates’ soul guarantees that this man remains the same proper substance through change. Consider this possible act of God: one night He switches Socrates’ soul with Plato’s soul. Abelard does not explicitly raise this body-swapping puzzle, but I think he must claim that {Socrates’ soul + Plato’s body} is still Socrates. Plato’s body considered at an instant is a particular sum of material parts (perhaps informed with some corporeal differentiae). Over time, Plato’s body is mereologically

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220 There is a potential wrinkle: since Abelard claims that differentiae do not individuate substances (Dial. 421.1-8), and that God could have combined this rationality with another substance, it appears that our criteria for being the same proper substance over time and being the same person over time will come apart in a different respect. Were God to replace Socrates’ rationality with Plato’s rationality, Socrates’ soul would still be Socrates’ soul, but the composite of soul plus body would no longer be the same proper substance.
inconstant, as it continually gains and loses parts. ‘Plato’s body’ picks out more than one essentiae. It is possible that the sum of parts that once was Plato’s body now happens to constitute Socrates’ body, and when that sum is unified with Socrates’ soul, it is Socrates’ body. When we have the composite {Socrates’ soul + Plato’s body}, in truth we have the composite {Socrates’ soul + Socrates’ body (that was, by the way, once the matter of Plato)}.

Socrates’ soul also explains why Socrates is the same person over time. But personhood adds a further complication to the picture. A man is either identified with the soul plus the body, or with the body. A person is ultimately identified with the soul. Socrates the person is hence distinct from Socrates the man. If the soul is removed from its body, Socrates the man no longer persists. This is an act of homicide. But so long as Socrates’ soul is not annihilated, Socrates the person survives.

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221 Socrates’ soul also explains why there is no more than one Socrates present in this very man at any particular time. As Abelard notes at several points in his writings, there are many proper parts of this very individual man than can also lay claim to being a man (TSB III.i, §21; p. 166.289-301): “In one man there are many parts, which are distinct from one another (such that this is not that)... which when some parts are removed or cut off are called ‘men’... Each of these parts before removal was a man... Our separation does not confer in substance to that which remains or was removed something that was not there previously. This is because when a hand is cut off, that which now remains a man, remained a man before the cut [as] some part lying with the man, who was whole. Likewise, if a foot is cut off, the rest is a man, which was a man before the cut, since it also had the definition of a man...” Nevertheless, because these man-candidates overlap this very individual man, they are not numerically distinct from this very man. These arbitrarily many man-candidates share one very special part, viz. Socrates’ soul (TSB III.i, §21; p. 167.303-306): “Nevertheless we don’t say that there are many men in one man, since we don’t say that there are many men unless there are [many] being nourished by many souls.” We could readily add on Abelard’s behalf that there are not many Socrateses because there is only one soul inhabiting these overlapping wholes, and this soul is Socrates’ soul. This last claim appears as an assumption in his argument of the many Socrateses in Socrates (Theol. Chr. III, § 153; p. 252.1868-73).
4.4: Conclusion to chapter 4

Abelard’s discussions of mereology and his application of mereological principles to his theories of identity, material constitution and persistence are exciting and bold. Abelard’s appreciation of the phenomenon of mereological overlap helps him to develop a unique and exciting theory of sameness and difference. The additional mode of sameness and difference in property gives him the resources to resolve the problem of material constitution. Abelard’s remarks about mereological change and diachronic identity are equally exciting, even if at times, they are not as fleshed out as we would like them to be. In particular, we wish that he had explicitly entertained some particular puzzles (for example, the soul swap thought experiment), or been more definitive regarding his views on the status of the differentia, or the relation between rationality and the soul. But these complaints should not overshadow the sophistication of his mereological insights, and the rigor of his argumentation. Abelard’s mereology is the culmination of a tradition, and I insist, one of the high points in the history of mereology. His only equal in the twelfth century is the subject of our next chapter, Pseudo-Joscelin.
Abelard’s mereology is a remarkable advance in the history of the subject, but we have already seen some of its limitations in the previous chapter. In particular, Abelard has trouble with the problem of persistence. A form of mereological essentialism is true in the case of artifacts (4.3.1). Abelard is equally explicit about his commitment to the persistence of human beings—their principle of persistence ultimately being the soul (4.3.4). The trouble lies with those items that fall in between artifacts and persons. On the one hand, Abelard draws a strict divide between substances and artifacts. On the other hand, Abelard thinks that many forms weakly supervene upon the arrangement of the material parts. I attempted to interpolate a theory of persistence for primary substances that would account for both of these explicit principles; yet the resulting theory relied upon the controversial claim that the substantial forms—the \textit{differentiae}—of primary substances are real, and not weakly supervening items (4.3.3). The problem is that while Strong hylomorphism is what Abelard \textit{should} assent to in order to retain his distinction between substances and artifacts, Abelard does not clearly and explicitly endorse such a theory. To make matters worse for Abelard, while his commitment to the
mereological essentialism of artifacts is coherent and defensible, it does not accord with our common intuitions about the nature of artifacts. When the broom in my kitchen loses a few hairs, I still take it to be the same broom, and not just “the same” in some philosophically loose sense.

Hence, there is room for a more accommodating picture of persistence: one which explicitly accounts for primary substances besides human beings, and which accords with our unreflective experience of household objects. We do not need to wait long to find such accounts. Our current evidence suggests that the problem of persistence was a common topic of discussion in the schools of the early to middle twelfth century. A variety of answers were offered to the problem, some in apparent response to Abelard.

One author in particular stands out for his mereological insights and theory of persistence. He is the mysterious author of the treatise De generibus et speciebus (“On Genera and Species”).222 This text is preserved in two manuscripts. It is attributed to Abelard by Victor Cousin and included in his 1836 edition of Abelard’s work. The attribution was first disputed by Prantl (1885, 144). The reader need only explore the contents of this chapter to see for herself how wrong Cousin is.

While it is clear that the author is not Abelard, the identity of the author remains unknown. The De generibus et speciebus contains a defense of the collection theory of universals. From John of Salisbury we know that Joscelin, the bishop of Soissons, as

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222 For my account of the text and authorship I rely upon the research of Peter King, whose edition of the De generibus is forthcoming. All citations of the De generibus are to this edition. An older version of the edition is included as an appendix to King’s dissertation (1982, vol 2, 143-85); an even older edition is printed in Cousin (1836, 507-550).
well as “another” thinker (alius) defended the collection theory. At *De generibus* § 14, the manuscript refers to a “Master G”, whom Cousin took to refer to Guillaume de Champeaux but whom, Peter King argues, is more likely Master Goslenus (i.e. Joscelin). Based on these two pieces of evidence, King infers that the author of the *De generibus* is a student or colleague of Joscelin, and to indicate this he dubs the author Pseudo-Joscelin. Based on further internal evidence, King hypothesizes that the author wrote the treatise *circa* 1120-1130. On authorship and dating, we defer to Professor King’s judgment. Because I think no confusion will arise, in the remainder of the chapter I will refer to the author of *De generibus* as merely Joscelin.

In my view Joscelin provides a forceful response to Abelard’s more essentialist and eliminativist leanings. I will attempt to demonstrate this in two parts. First, I will examine Joscelin’s critique of mereological essentialism and his alternative proposal of identity and persistence (5.1). I will then consider Joscelin’s response to Abelard’s criticisms of the collection theory of universals. I will show how Joscelin’s general theory of identity and persistence with respect to mereological constitution and mereological change is adapted to develop a more defensible version of the collection theory (5.2).

5.1: The Moderate theory of identity and persistence

In order to make Joscelin’s views intelligible and thus present them in their best possible light, I will need to develop the framework within which Joscelin develops his

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223 *Metalogicon* II.17 (ed. J. B. Hall, p. 83).
remarkable theory. Joscelin’s remarks about the identity and persistence of wholes are best understood once we have an understanding of the twelfth-century puzzle that Joscelin is specifically addressing, which I will call the Mereological Sorites.

In the first section (5.1.1), I present a general version of the Mereological Sorites. Then I sketch in broad terms the positions that twelfth-century thinkers generally take with respect to the Sorites. I call the most intuitive position towards the Sorites the Moderate position. In the second section (5.1.2), I outline the best strategy that the Moderate can employ for defusing the Sorites. In my view, Joscelin develops a sound response to the Sorites by following the guidelines offered by the Moderate. In order to demonstrate that the Moderate position was a popular response to the Sorites, and that Joscelin’s theory is forceful version of the position I will sometimes compare Joscelin’s remarks with other Moderate writings. In particular, I will make use of the treatment of the Sorites found in an anonymous treatise dubbed the *Introductiones Montanae maiores*.  

5.1.1: The Mereological Sorites

The history of twelfth-century philosophy is incomplete, but recent strides in textual and historical scholarship have revealed a rich scholastic tradition in this

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224 The text of the *Introductiones* is preserved in MS Paris, Bibliothèque Nationale cod. lat.15141. Aside from excerpts printed in De Rijk’s studies, there is no printed—let alone critical—edition at present. Thanks to Peter King and ultimately Chris Martin for providing a transcription of portions of the text used in this chapter.
Mereological topics are a significant part of the curriculum in these schools, possibly because it is recognized that mereology plays a crucial role in a variety of philosophical and theological debates. Among the mereological topics covered in the curriculum are puzzles pertaining to persistence. Sometimes the problem of persistence is raised in the guise of the Growing Argument; but often the problem of persistence is raised in the form of what I will call the Mereological Sorites.

The Mereological Sorites is a particularly colorful and forceful way to motivate an extreme form of what we identified in chapter 2 as mereological essentialism (2.4.1). The Sorites is troubling to early medieval thinkers because it appeals to a rule canonized in the Boethian tradition, which is often introduced as the “topic (locus) from the whole”:

(R) *Si totum est, pars est.*

The contrapositive of (R)—*si pars non est, totum non est*—appears to express the same thing as the topic from the integral part: *destructa parte destructur totum.* The Latin, since it does not mark indefinite and definite nouns, makes translation of the rule difficult. (R) could be translated as: “If the whole exists, the part exists.” Or: “If the

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225 In the past few years our knowledge of the history of eleventh and twelfth century philosophy has been augmented by the palaeographical spadework of John Marenbon, Yukio Iwakuma, and Sten Ebessen. See the list of references for citations.

226 For example, Chris Martin (1998) hypothesizes that resolutions of the Growing Argument (see 4.3.1) had direct application to theories of the Incarnation.

227 Following Cicero, Boethius defines an *argumentum* as the sense of the words used in proving some proposition. The “topic” is defined as “the source of the *argumentum*” (*De top. Diff.* 3.13-14). For a brief discussion of Boethius on the topics, see Martin (2004, 160 ff.). Abelard thinks that the “topics” serve as the *vis inferentiae*, or as Martin glosses it, “the warrant for an entailment” (idem. 169).
whole exists, a part exists.” Or: “If a whole exists, a part exists.”

Given that the rule is used to motivate a form of mereological essentialism, the author of the Sorites thinks that something like the following is an appropriate translation:

\[(R^*) \text{ “If this whole exists, then [any] part [belonging to that whole] exists.”}\]

However, as I will show below, many philosophers propose a weaker reading of (R).

Expressing the rule in this way highlights its relation to Boethius’ thesis that the part is naturally prior to the integral whole (3.2.2). According to Boethius’ thesis, the parts can exist while the whole does not, but the whole cannot exist without the parts. Interpreted weakly, Boethius’ thesis of natural priority states that, for example, a house cannot exist without walls, foundation, and a roof. But it need not entail that this house cannot exist without this specific roof, or this specific wall. Interpreted strongly, the Boethian thesis entails a version of the contrapositive of (R) that corresponds to the essentialist translation (R*): “if [any] part [belonging to this house] is destroyed, [this] house is destroyed”.

The Sorites appeals to a number of instantsions of rule (R) in order to derive an extreme form of mereological essentialism. The argument is given in several versions in the literature. The following version is presented by Joscelin (De gen. et spec. §3):

1. If the house is, the wall is.
2. If the wall is, half the wall is.
3. If half the wall is, half of the half of the wall is.
4. etc.

Joscelin also notes that it is unclear whether the rule is a general or particular statement. He claims that the rule, when interpreted generally is true. The rule is false only when it is applied to a “determinate whole” (De gen. et spec. §4). I find this remark somewhat baffling since I don’t know how it could be true universally that if wall is destroyed, house is destroyed, when in a particular case I can destroy this wall and yet not destroy this house.
After numerous, but finite steps, we reach the whole that is composed of two stones in the wall, and this whole is a proper part of the wall.

n. If the whole of two stones is, the stone is. [Rule (R).]
o. If the house is, the stone is. [From premises 1 to n.]
p. Suppose the stone is destroyed, so that the stone is not.
q. If the stone is not, the house is not.

If (q) is read as saying ‘if any stone of this house is destroyed this house ceases to exist’, then it appears that any loss or gain of a part entails generation or corruption.

The Sorites challenges the intuitive view that things can gain and lose parts.

There are three general positions that one can adopt with respect to this Sorites:

1. **No Change:** one can deny that things gain or lose parts.

2. **Moderate:** one accepts that things gain and lose parts. The loss of some parts entails the destruction of the thing; but the loss of other parts does not entail the destruction of the thing.

3. **Extreme Change:** things lose and gain parts, and any loss or gain of parts entails the destruction of this whole (and perhaps the generation of another).

The No Change position denies that a problem exists, since the antecedent assumption of the Sorites never obtains. To my knowledge no twelfth-century philosopher embraces this position. The Extreme Change position, in contrast, does appear to have its twelfth-century adherents: most notoriously the so-called Nominales, who held the position that nothing grows (see 4.3.4). Abelard explicitly holds the Extreme position in the case of artifacts. But in the case of persons I argued he is a Moderate. The greatest interpretive difficulty, the reader will recall, is whether Abelard is a Moderate or an Extremist with respect to non-human, primary substances.
The Moderate position is the intuitive position. It accords with our common notions about the nature of medium sized objects—both substances and artifacts. Yet, the Moderate position has the toughest task, since its advocates must find a principled reason to resist the Sorites.

5.1.2: Moderate responses to the Sorites

Medieval Moderates attack the Sorites by attempting to find some principled way to halt the series of conditional entailments. There are two basic ways they attempt to accomplish this. The first way is to claim that there is a crucial equivocation of a middle term within the argument that undermines its validity. The second way they attempt to halt the regress is by rejecting the strong translation (R*). Usually this is done by challenging the assumption that the persistence of a whole is solely determined by the persistence of its parts. I will examine each strategy in turn.

The first Moderate strategy is to claim that the Sorites is invalid due to an equivocation of a middle term. For example, the Moderate sometimes argues that the middle term in premises (2) and (3) is equivocal. In (2) the half wall is a part. In (3), however, the half wall is a whole. A whole is not a part. Therefore, if premise (2) is true and the half wall is a part, rule (R) should not license premise (3).

This strategy will not work.229 By the same argument, one could not infer the following proposition (b) from proposition (a):

a. If Socrates is a man, Socrates is an animal.

229 Abelard points this out in his discussion of the Mereological Sorites (Dial. 551.18-552.6). Abelard uses the Mereological Sorites in his discussion of principal parts.
b. If Socrates is an animal, Socrates is a substance.

Just as the middle term in the Sorites is putatively equivocal, the middle term shared by propositions (a) and (b) is equivocal. The term animal in the first premise is a genus. The term animal is a species in the second inference. Since, not every genus is a species, it seems that we must (by the Moderate’s lights) insist that the argument will not go through. But even this type of Moderate, Abelard insists, will want to claim that premises (a) and (b) form part of a valid argument.

This criticism of the Moderate rests upon two assumptions, one which is orthodox, and one which is more controversial. The orthodox assumption is that ‘part’ and ‘whole’ are relatives. There is nothing objectionable, pace the Moderate, about claiming that the half wall can be both a whole and a part. The more controversial assumption is that any collection of objects counts as a whole. The half of the wall, he reasons, can be divided into parts—in particular, into this half of the half and that half of the half wall. Anything that can be divided into parts has parts, and anything that has parts is a whole (for whole and part are correlative notions). Hence, the half of the wall is a whole. Indeed, the only item in the Sorites that might plausibly not be a whole is the stone. As we have already seen, this more controversial assumption is embraced by Abelard (4.1.3).

Abelard’s controversial assumption is not universally held by his eleventh and twelfth-century contemporaries. Indeed, Abelard’s liberal understanding of what can count as a whole is at one point excoriated in a colorful fashion:
In the face of this opposition, Master P[eter] was forced [by his own principles] to claim that he and the queen of France are one body, as well as he and Mount Appenninus.\textsuperscript{230}

This passage does not give a philosophical reason for rejecting the claim that any odd collection of items constitutes a whole, but one can be given. As I pointed out in chapters 2 (2.3) and 3 (3.1.1), the term ‘part’ as it is used in ordinary language is multivocal, and often the sense of ‘part’ employed in a particular discourse is more restrictive than the mereologists formal sense of ‘part’. Likewise, the sense of ‘whole’ that we are most interested in is often more restricted than the contemporary mereologist’s notion of a mereological sum.

Abelard’s notion of a whole, at least in this context, aligns quite well with the mereologist’s notion of a mereological sum. But the wholes that we care about are generally more structured than mereological sums. Houses are importantly different from piles of boards, bricks and nails; Socrates and Fluffy the cat are importantly different from hunks of flesh, bone and blood. The former types of entity are different from the latter in two crucial senses. First, the former types of entity can be complete or “mutilated” (recall my remarks about \textit{kolobos} in 3.3.4). A house without one of its walls is a damaged house. A man who is missing a hand or a foot is an incomplete or mangled man. It is unclear what it would mean for a pile of house parts or organic parts to be mutilated. This is the case because the former types of entity possess recognizable forms, or structures, as well as functions. There is no form that corresponds to half-walls and

\textsuperscript{230} \textit{Introductiones Montanae maiores}, 69rb. This quote is quoted by De Rijk (1966, 16).
hunks of matter. Abelard’s second, controversial assumption glides over these key differences. Thus, while the initial Moderate charge of equivocation fails because it falsely assumes that no item can be both a part and a whole, the underlying idea—that there is some distinction that must be drawn between structured composites and unstructured composites—should be taken seriously. This intuition is picked up and developed by the second Moderate strategy.

The more successful strategy of the Moderate is to challenge the claim that, if this whole exists, necessarily any part of the whole exists. This claim is too strong, the Moderate charges, since it assumes that the only available criterion for determining the identity and persistence of a whole is an extensional criterion. An extensional criterion is appropriate, perhaps, for uncontroversial instances of discrete wholes—that is to say, for what Abelard calls collections and aggregates. But even Abelard, who holds that artifacts are discrete wholes, admits that a purely extensional criterion—the enumeration of an artifact’s parts—is not the end of the story (4.3.1). A form or structure is also required.

The notion of form contains at least two aspects, which crucially must be disentangled. First, the form of a thing suggests an identifiable shape or arrangement. This first aspect of form, by itself, will not carry enough weight to count as a condition

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231 Some neoplatonists reject the notion that the parts of a thing have forms. See Syrianus In Metaph. 107.16-18. The passage is discussed by Gersh (1978, 88-89). This a fairly strong Aristotelian reading of ‘form’. In a weaker sense, many parts do in fact structure (and function). In this weaker sense, form admits of degree. Consider my bold claim that the wall is an item with a structure, or form, whereas the half-wall lacks a form. On closer examination, this claim is not obvious. Depending upon how one divides the wall in two, it might turn out that the half-wall has a significant amount of structure, consisting of a highly engineered arrangement of joists and nails. Or, if the wall is composed of irregular stones, the half-wall may be a carefully arranged composite, each stone carefully placed so as to form a seamless surface. In general, determining when a thing has enough structure to count as a whole is a messy affair. The ends of the continuum are clear paradigms—the house clearly has structure, the pile clearly lacks it—but the items in between admit of vagueness.
for persistence. Many things that lose parts will preserve a good deal of perceptible
formal structure (call it F-structure), and yet fail to persist as an F. The cup with a tiny
but effective hole in its bottom will preserve a good deal of cup-structure, yet it is not a
mutilated cup. It fails to be a cup because of the second crucial aspect of form.

The Aristotelian concept of form contains not only the notion of shape and
structure, but also function. On the functional analysis, a wall would persist so long as
the composite that lost a part remains capable of supporting the house. A chipped cup
remains so long as the thing left after the chipping can still fulfill the function of a thing
that holds liquid for the purpose of drinking. A functional criterion is, for this reason, a
promising avenue for determining whether something is mutilated, as opposed to
destroyed. The Sorites could thus be halted by claiming that the loss of any stone does
not compromise the functionality of the wall, let alone the house. Granted, the loss of a
load-bearing part of the wall might compromise the wall, and if the wall is a load bearing
wall, hence the house. But as a universal rule, (R*) is false.

This strategy for dissolving the Sorites is employed by Joscelin. Joscelin chooses
to make the point by drawing a distinction between “principal” parts and secondary
parts. Joscelin insists that rule (R) holds in some cases, but not in others. The rule

232 Joscelin and other twelfth-century Moderates probably lifted this terminology from another context, a
scholastic debate about which Abelard reports (Dial. 549.3-553.7). The dispute, as Abelard reports it, is
over how one determines the immediate branches of a logical division. Abelard has just finished discussing
Boethius’ rule that just as the division of a genus into species must occur by applying the appropriate
differentiae in the appropriate order, so too the division of a whole must be brought about by making the
appropriate cuts in the appropriate order (Dial. 548.29-549.3). A word, for example, must first be divided
into syllables, then syllables into letters. A word is not properly divided if it is immediately divided into
letters. The letters are strictly speaking parts of the parts of the word. The rule is understood by Abelard to
be wholly general. He thus raises the question of how it is that we determine the parts which are principal
and the parts which are secondary. According to Abelard there are two competing positions defended in
the schools: the “constitutionalists” (secundum constitutionem) and the “destructivists” (secundum
holds when a “part principal in essence” is removed, but not when a secondary part is removed. A part principal in essence is distinguished from both a part principal in quantity and a secondary part (De gen. et spec. §§ 6-8):

Moreover, it should be established that some parts of a continuous whole are principal, and others are secondary. Some principal [parts] are principal in essentia, others are principal in quantity, and still others are principal in both [manners]. A part principal in essentia is one which when destroyed destroys its whole. For example, Socrates’ heart or brain when destroyed destroys Socrates. The lower half of Socrates (or the upper half) is a part principal in quantity. Socrates’ half contains more of the whole body than his foot or his hand. Nonetheless, when the lower half of Socrates is destroyed, it does not destroy Socrates. This is because the heart and the brain, which are parts principal in essentia, remain in the upper part.233

destructionem). The constitutionalist position closely follows the letter of Boethius’ rule: the principal parts of a whole are those parts that only belong to the whole. Thus, the parts of the parts of a whole are not principal parts (Dial. 549.6-7). Abelard makes short work of the constitutionalist position by demonstrating that in most cases, putative principal parts are in fact parts of parts (549.21-27). Any whole with more than two atomic parts allows for putative principal parts to be parts of parts. For example, a whole \( \{a + b + c\} \) has no principal parts, since \( a \ll \{b + c\} \), \( b \ll \{a + c\} \), and \( c \ll \{a + b\} \). The destructivist criterion echoes that proffered by Joscelin: “principal [parts] are those which destroy the substance of the whole” (549.9-12). In a long, convoluted string of arguments, Abelard attempts to demonstrate that any part will be a principal part. It follows from this that the destructivist falls prey to the Sorites, with the terrible result that one commits homicide whenever a fingernail is clipped (552.6-14). Abelard’ critique of the destructivist can be overcome by appealing, as Joscelin does, to the functional criterion in tandem with the genetic criterion.

233 The author of the Introductiones presents a less satisfying version of the distinction between principal and secondary parts: “The rule is given: if the part is destroyed, the whole is destroyed. If we say this generally of any part whatsoever, it is false, because when the hand is destroyed, the man is not destroyed. Therefore, it should be understood of principal [parts]—whether (1) they be parts principal with respect to essentia (for there are some tiny parts which when they are destroyed, the whole is destroyed—e.g. a heart or a brain), or (2) they be principal with respect to quantity (such as walls, the roof, etc.).” (71va: Et datur regula: destructa parte destruitur totum. Si dicamus generaliter de qualibet parte, falsum est, quia destructa manu non destruitur homo. Unde de principalibus est intelligendum, sive sint principales partes secundum essentiam (sicuti quaedam sunt partes minutissimae quibus destructis destruitur totum, ut cor et cerebrum), sive sint principales secundum quantitatem sicuti paries, tectum et caetera.) The author of the Introductiones proposes that both parts principal in essence and parts principal in quantity entail the destruction of the whole when they are destroyed. The author’s claim that both quantitative and essential principal parts entail the destruction of the whole is dangerously ambiguous. The author may merely mean that, since houses are quantitative wholes, their principal parts must be quantitative principal parts. The quantitative principal parts of the house will be those parts which when removed destroy the house. (After all, the author of the Introductiones assigns the parts of houses to the quantitative side of the divide. This is perhaps because the author of the Introductiones follows Abelard in denying that artifacts are substances.) But other philosophers insist that things can have both quantitative principal parts and essential principal parts. Certainly, 50 pound chunks of Socrates’ body are quantities. And given how large these quantitative parts are, they appear to be principal quantitative parts. Surely if these quantitative portions of Socrates
Joscelin goes on to make it clear that parts principal both in *essentia* and in quantity are reducible to parts in *essentia*. An example of this third sort of principal part is the upper half of Socrates. If the upper half is destroyed, Socrates is destroyed; but this is due to the fact that the heart and brain (which are contained in the upper half of Socrates) are destroyed (§10).

Joscelin argues that rule (R) should be modified to say: If the whole is, then any part principal in essence exists (*De gen. et spec.* § 12):

> We therefore concede this consequence ‘if this house is, this wall is’, since its wall is principal in *essentia*. But we do not accept the [consequence] ‘if this wall is, this half wall is’. This is because we do not know whether this half wall is a part essential (*essentialis*) to this house.

Destroying half the wall could have one of two consequences. The destruction of the half wall could entail the collapse of the entire wall. Or the wall could merely be mutilated, yet remain a wall.\(^{234}\) To illustrate his point Joscelin presents the following example of a wall made from four stones (*De gen. et spec.* § 16):

> Let us suppose that a wall consists of four stones and that each half wall is composed out of two [stones]. It is possible to destroy one of the two halves by removing one stone and yet have the wall continue to exist in the three stones. We concede that in the case of the subtraction of a half of the wall in this manner that the wall is not destroyed. The subtraction was such that which remains suffices as the *essentia* of a wall. If it is subtracted in such a manner that the

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\(^{234}\) Or as Joscelin puts it, “its form is changed even though some of its parts remain” (§ 13). It should be noted that Joscelin is sloppy in his use of the term *forma*. Sometimes, as in this passage, the term means something like ‘appearance’ or ‘shape’. In other passages, *forma* refers to a thing’s Aristotelian form—i.e. its substantial differentia or accidents. Below we will use the term ‘form’ exclusively in the latter sense.
remainder cannot make a wall (whether anything is added or not), the same thing cannot remain a wall.

If the top stone is destroyed, the remaining three stones can be a wall. And so, while the half wall is destroyed, the wall is not destroyed. The wall is only altered in its appearance. But if the stone at the very bottom were destroyed, the wall would collapse, and the same three stones would cease to be a wall. The top stone is, hence, at best a part principal in quantity. The bottom stone is a part principal in *essentia*.

The example of the wall demonstrates that Joscelin’s use of the distinction between principal parts and secondary parts is underwritten by the formal/functional criterion. In the above example, if the top stone is knocked away, the form and function remain, and thus the wall remains in its essence. If the bottom stone is destroyed, the wall is destroyed because the remaining mereological sum no longer possesses the requisite form and function. Thus, Joscelin’s use of parts principal in essence is shorthand for an appeal to the formal criterion.

Employing this distinction, Joscelin also suggests instances where unstructured, integral collections are immune to the Sorites. For example, Joscelin suggests that collections of primary substances are often not susceptible to the Sorites. At first blush it appears that all aggregates and collections are defined extensionally, and accordingly that the Sorites should go through (*De gen. et spec.* § 17):

For example, it is true to say that if this flock is, then this bird is, and I understand this determinate flock—i.e. 10 birds or some other determinate number. And I can posit [the existence of] any one of these ten upon positing the whole flock. If any one of the birds were to perish, then the determinate flock of ten would not remain. Nonetheless, Joscelin argues, the Sorites does not go through, because it is not true that if
any part of any of the ten birds is destroyed, the whole thereby ceases to exist. It is only true that if the flock of ten exists, the essential parts of the birds exist. For example, it is true that if this flock of ten exists, then this bird’s heart exists. But it is not necessarily true that if this flock is, then this feather exists (§ 18). Joscelin also thinks that universal wholes are a special sort of unstructured, integral collection, yet universals are not susceptible to the Sorites. We will look at this extension of Joscelin’s Moderate position in section 5.2. The only case where Joscelin might allow that the Sorites works is the case where the whole is defined extensionally and the parts are either atomic, or are constructed in such a way that any part of a part is an essential principal part. Thus, even integral collections such as Mount Appeninus, Abelard and the Queen of France are not subject to the mereological Sorites.235

The formal/functional criterion might well halt the Sorites as stated. But allow me to press the Moderate to look beyond merely answering the Sorites and to provide a comprehensive solution to the puzzle of persistence. Looking beyond the Sorites, the formal criterion by itself does not provide a fully adequate criterion for persistence. Consider another scenario. At time 1 there is a house, my house, replete with all of my decorative additions. At that moment, God completely annihilates my house and immediately creates in that very same spot a house that possesses the same blueprint and decorative marks. The appearance is the same, and the function is the same. But one should, I think, argue that my house—the one that existed at time 1—did not survive God’s act. The formal, functional criterion tells us why the collapsed pile of house-parts

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235 It is not clear whether Joscelin would allow these arbitrary mereological sums to be classified as wholes.
is no longer a house, while the house that has a chip on its threshold persists. But this
criterion seems to get the wrong answer in the Divine home-wrecker scenario.

The best Moderate responses to the Mereological Sorites insert an additional
feature into their accounts of persistence that will block the Divine home-wrecker
scenario. One such refined version of the Moderate objection can be found in the
anonymous *Introductiones Montanae maiores*. The author of the *Introductiones*
examines the following version of the Sorites. Let ‘a’, ‘b’ and ‘c’ be the names of stones
in the wall of a house.

(i) If a is destroyed, the whole consisting of a and b does not exist.
(ii) If the whole consisting of a and b is destroyed, then the whole consisting of a,  
     b and c does not exist.
(iii)And so forth, until one has destroyed the wall itself.

The wall is an uncontroversial part of the house, and once the wall is destroyed, by rule
(R) the house destroyed. Hence the Sorites is generated.

The author of the *Introductiones* replies that it is false that when a is annihilated
the whole consisting of a and b is annihilated. On the other hand, it is true that the whole
consisting of a and b “does not remain the same whole, that is in the same property of
whole with respect to all the parts” (my emphasis).\(^{236}\) This phrase suggests that the
structural criterion is being appealed to. The author’s elaboration indicates that the
functional criterion is also at work.

For the whole consisting of this stone and the other does not remain in the same
property of whole when the first stone, which was a principal part of the whole
consisting of this stone and the other, is annihilated. We do not speak strictly
[when we say] ‘this whole remains when that stone, which was a principal part of
that [whole], is destroyed’, because that whole [sc. the one consisting of this stone

\[^{236}\] *Introductiones* 72ra: non remanet idem totum ac in eadem proprietate totius secundum omnes partes.
and the other] is altogether nothing. Rather is it said that this whole remains because some of its parts remain, just as a king is said to remain in his sons even though he is destroyed, because some son of his lives and maintains his father’s kingship.\(^{237}\)

The father’s kingship is clearly identified in part by its function. And in so far as the example of the king and his sons is meant to illuminate the persistence of a whole, it appears that persistence requires functional continuity. Yet something additional is at work in this passage. In fact, two different additions are proposed.

First, the author of the *Introductiones* suggests that the further condition needed for persistence is mereological continuity.

1. A whole persists if and only if some part of that whole persists.

In other words, the author is suggesting that persistence requires not mereological constancy, but rather mereological overlap through time. Yet, mereological continuity will not adequately complete the Moderate criteria for persistence. First, it is not clear how many parts may be replaced in my house before it begins to look like the Divine home-wrecking scenario. For example, is it sufficient that only one part of the original house remain, while God immediately replaces all the other parts with proxies? Can He leave a wall and replace the rest? How about half the house? It is not clear where the threshold lies, after which God’s act is no longer remodeling, but rather an act of

\(^{237}\) *Introductiones* 72ra: *Primo enim lapillo annihilato qui principalis pars erat illius totius constantis ex illo lapillo et ex alio, totum constans ex illo lapillo et ex alio non remanet in eadem proprietate totius. Nec ut proprie loquamur, illo lapillo destructo qui principalis pars erat illius, istud totum remanet, cum omnino illud totum nihil sit. Sed dicitur illud totum remanere cum remanet aliqua partium illius, ut tyrannus dicitur remanere in filiis suis eo etiam destructo, cum aliquis filius illius tyranni in patris tyrannide remanens vivit.*
destruction and creation. Moreover, the added criterion (1) does not accord well with our intuitions about organisms. In contemporary discussions of persistence, it is commonly asserted that during the average lifetime of a human being, every atom in that human’s body has been replaced (e.g. Aune 1985, 83). Thus, over the ordinary span of growth and metabolism Socrates would persist even though no part that he originally possessed is now present as a part of him.

Fortunately, the passage in the *Introductiones* suggests a more promising addition to the functional criterion. The crucial clue again lies in the author’s analogy to a king and his kingdom. The analogy suggests the following:

2. A whole persists if and only if there is historical and causal continuity between different mereological sums that compose the whole.

Notice that this is a looser criterion than the first proposed addition. Socrates’s adult body may not share any matter with Socrates’ body at the age of one year, but there is a clear historical and causal trajectory that links the two mereological sums of matter, and which licenses the claim that Socrates persists. Socrates’s body has a unique creative origin: when his soul is first tied to matter at conception. Each proceeding sum of matter is developed following a unique, historical trajectory. Each sum of matter is causally linked to previous sums by the fact that have each been at some time incorporated into this living organism bound up with this soul. Socrates’ body persists, on this account, so long as each sum helps trace the trajectory of a unique life-line. Let us call this second criterion the *genetic* criterion.

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238 Joscelin suggests that there is a threshold below which a “nature”—i.e. natural substance—is no longer such and before which there is no nature (*De gen. et spec.* §23).
Armed with the combination of the functional criterion and the genetic criterion the author of the *Introductiones* resists the Sorites by insisting that, while a whole does “not remain in the same property of whole”—where he means that the whole is no longer this particular mereological sum—that whole can nevertheless survive the loss or gain of a part:

But it is true if it is said that when the whole consisting of two stones is destroyed the whole consisting of three is destroyed [provided that we mean] the whole consisting of two stones is annihilated and the whole consisting of three stones does not remain in the same property of whole. The whole consisting of two stones is destroyed if these two stones are changed or disjoined. Nevertheless, that [whole] consisting of three parts remains the same, but it is altered on account of the alteration of its parts.\(^{239}\)

The antecedent condition of premise (ii) is imagined: \{a + b\} is annihilated. Hence, the whole that used to be the same as the mereological sum \{a + b + c\} is now altered, although “it remains the same”, which can only mean that the whole persists through the change while ceasing to be identical to the mereological sum \{a + b + c\}. Likewise, the same is true for premise (i): if \(a\) is annihilated, the whole that used to be identical to the mereological sum \{a + b\} persists, but is no longer that mereological sum. In order for the Sorites to go through at step (i) to (ii) the whole composed of \(a\) and \(b\) must be annihilated, not merely be changed so that it does not remain in the same property of whole. So, the reading of the conditional premises such that the argument goes through

\(^{239}\) 72ra-72rb: *Sed si dicatur “destructo todo constanti ex duobus lapillis destructur toutum constans ex tribus”—id est annihilatur toutum constans ex duobus lapillis—<et si dicatur> “destructur toutum constans ex tribus lapillis”—id est non remanet in eadem proprietate totius—vera est. Destructur enim toutum constans ex duobus lapillis si illi duo lapides transmutentur et disiungantur. Tamen illud constans ex tribus partibus idem remanet, sed alteratum propter alterationem partium.*
is false. The true reading of the conditional premises, such that the whole identified in the consequent does not remain in the same property of whole, will not allow the Sorites to go through.

Joscelin appreciates the need for a genetic criterion when developing a theory of persistence through mereological change. He introduces the genetic criterion when discussing what he calls “natures” (De gen. et spec. § 123):

I call a nature whatever (whether it is one essence or many) is of dissimilar creation from all others which are not that [object] or belonging to that [object]. For example, Socrates is dissimilar in creation from all others who are not Socrates.

I will return to examine the nature consisting of many essences in my discussion of Joscelin’s collection theory (5.2.4). For now, the focus is on individual essences, such as Socrates. The reason for Joscelin’s clumsy use of the phrase “dissimilar in creation” will perhaps also become apparent when I discuss universal collections. What is behind the phrase is nothing more than the genetic criterion as previously defined. Socrates is dissimilar in creation from Plato because he has a unique point of origin, at conception, and each proceeding bundle of matter, forms, and soul is linked into a life with a unique trajectory.

There is something further that is packed into Joscelin’s terse definition of a nature, for x and y are two distinct natures if x and y each have a distinct genetic origin, and if y does not “belong” to x. The second clause of the disjunction ‘which are not that [object] or belonging to that [object]’ most naturally applies to the case where the nature

240 Joscelin’s notion of “essence” is similar to Abelard’s in that an essence is a concrete item. There is a subtle difference, which I highlight below in section 5.2.3.
is constituted by many essences. But there is a sense in which it applies to individuals as well. This point can be illustrated by briefly examining Joscelin’s treatment of a cousin of the Problem of the Many Socrateses, which we already have examined in 4.2.1 (De gen. et spec. § 21):

If any two points are joined together, they make a two pointed line, which is one creation (*creatura*), and thus will possess one foundation. One atom will not be its foundation, for then [the one atom] would thereupon be delineated by two points [which is absurd]. Therefore, it must be the case that one creation constituted out of two atoms is a body which this two-pointed line is founded… But if a third [point] is added, this creation must have a foundation. It will thus have either this foundation—that is, the one where the first two-pointed line is founded—or another. But it cannot have the former, since two points cannot be in one atom. Thus, another foundation comes to be, composed out of the first foundation belonging to the two-pointed line and an additional atom. And again [something] <will be added>.

At first, it appears that Joscelin is describing an actual act of compounding—as if someone where taking atoms from a pile and forming a line out of them, each new compound being a “new creation”. But the next paragraph makes it clear that Joscelin is imagining something different (De gen. et spec. § 22):

By increasing in this manner and creating progressively new creations at last one comes across some particle of Socrates, such as a fingernail. And you will have one great nature, which will be a part of Socrates and not Socrates, since the fingernail is not in the constitution of [the great nature]. This fingernail along with the great part [sc. the great nature] is a part of Socrates. Yet when this fingernail is destroyed the part of the nature, for whom the fingernail is a part and which is the nature Socrates, is destroyed. And thus Socrates is destroyed. This great nature, which previously was a part of Socrates and not Socrates, remains as Socrates now that the fingernail is destroyed, and so what was not Socrates now becomes Socrates.

Joscelin is examining the body of Socrates at some time t1. That body is composed out of a set number of atoms, which together are the “foundation”—i.e. the subject—of Socrates’ whole quantity. As Abelard would insist, every sub set of Socrates’ atoms also
form some foundation for a specific quantity that is a portion of Socrates’ whole quantity. Now Joscelin asks us to focus upon those atoms that compose one fingernail. This fingernail *summed* with Socrates’ body less the fingernail, the “great nature”, is Socrates’ body at t1. The fingernail is not Socrates’ body, and the great nature is not Socrates’ body. Now Joscelin severs Socrates’ fingernail. {The great nature + the fingernail} no longer exists. Does this mean that Socrates’ body ceases to exist at t2? No, Joscelin seems to assert. But then something equally odd must be admitted: something that *was* not Socrates’ body *becomes* Socrates’ body. On the face of it, this is mysterious.

Notice that the problem resembles the Problem of the Many Socrateses because it massages many of the same intuitions. Joscelin’s puzzle differs from the Problem of the Many Socrateses because it considers a case of identity through change, not a worry about synchronic identity.

Joscelin answers the puzzle by pointing out that the attempt to identify a thing with its mereological sum is the wrong way to approach the problem. Not every mereological sum of atoms forms a “nature”. Rather Joscelin insists a nature has a threshold sum. Fewer atoms will not suffice, and the addition of more atoms will not necessarily change the nature.241 “Rather we say that only as many atoms are united as are sufficient for the constitution of one member.” But it is not merely that the requisite threshold number of atoms is required (*De gen. et spec.* § 23):

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241 Joscelin adds that arbitrary mereological sums of members—such as the sum {Socrates’ hand + Socrates’ throat}—are not natures (§ 25). Indeed, Joscelin is even inclined to deny that the hand is properly speaking a nature. This implies that there is strictly speaking no form for a hand. Joscelin entertains the challenge that a hand, when severed, does appear to be a nature. His reply is very Aristotelian: “Here a new accident is created and a new whole is made, just as it should be understood in the case of a corpse.” (*De gen. et spec.* § 28)
In Socrates’ finger, which is one of his members, a hundred atoms are united, and out of these [atoms] the finger is composed. No nature is composed out of any [subset] of these hundred atoms beneath the finger; rather all one hundred atoms are located in the finger because of the overlying form (*per supervenientem formam*).²⁴²

At least for organisms, a nature is determined in part by an organizing form, which presumably was present at the genetic origin of the organism and has persisted through the lifespan of that organism. According to Joscelin, Socrates is a composite of a mereological sum of material atoms (which he calls *essentiolaee*, “little essences”),²⁴³ Socrates’ humanity (which as we will see in 5.2.3 is a particular form, or trope), and a set of accidental characteristics (also tropes) that he labels “Socrateity”.²⁴⁴ The forms that make up Socrates’ S-humanity advene upon the atomic beings “as a whole”, but it does not inform each atom singularly. The atomic beings are free to come and go without violating the integrity of Socrates’ essence, S-humanity. Thus, in the case of organisms, the persistence of a substantial form combined with the right sort of matter apparently grounds the genetic criterion of persistence.

All of this underlying metaphysical machinery enables Joscelin to untangle the current puzzle of how the great nature becomes Socrates’ body. In his view, the puzzle dissipates once the situation is re-described (*De gen. et spec.* § 26):

²⁴² I refrain from using the term ‘supervening’, lest the reader assume that Joscelin holds that forms supervene upon the parts in the same manner that Abelard seems to think that they do. I insist that Joscelin cannot hold this view.

²⁴³ At root, the material essence of Socrates is a sum of *essentiolaee*, which Joscelin calls Socrates’ “hûle”—i.e. “matter” (§152).

²⁴⁴ Joscelin insists that a nature is a composite of a formal component and a material component: a substantial differentia is not a nature, but when it combines with a material essence, it forms a nature (*De gen. et spec.* § 175).
When a part of Socrates is destroyed, the ones that remain do not become Socrates, rather Socrates becomes out of these parts. Therefore, for this reason, we do not want to say that Socrates perishes, nor that a non-Socrates becomes Socrates. Rather, [we want to say] only this: so long as the essence of Socrates is preserved, we assert on the basis of these [considerations] that Socrates is composed out of fewer [parts].

Joscelin does not deny that an individual can add or lose parts. Nevertheless, persistence or change in a thing’s mereological sum is not the relevant criterion for determining whether an individual persists. In other words, in order for a thing to persist, it need not be the same in being before and after change.

At first it appears that the retention of a substantial form metaphysically explains this similarity in creation between stages of an individual. Socrates gains and loses parts, but his Socrateity and S-humanity remain intact. In order for the form to do its job in this account of persistence, it cannot be the case that forms supervene upon their matter. If this interpretation were correct, then pace Abelard forms must be something over and above the arrangement of the material parts.

Yet while form is the dominant factor in determining the persistence of an individual through change, form cannot be the sole determinant of persistence. Socrates’ humanity is defined not only by the forms S-rationality and S-mortality; it is also defined by the material essence in which these forms inhere. This insight, however, need not undermine the account of persistence presented here. Joscelin’s conception of natures incorporates the notion of being not of dissimilar creation. Thus, Joscelin should incorporate the genetic criterion. While there may not be a single atom in Socrates when he is fifty that was present in Socrates when he was one, there is a unique historical trajectory that connects the matter that was Socrates at age one with the matter of
Socrates at age fifty. Thus, while Socrates’ humanity must have matter as its ultimate material essence, this matter need not be the same in being over time in order for Socrates’ humanity, and hence Socrates to persist.\textsuperscript{245}

Not surprisingly, the genetic criterion works well with living organisms. It is less obvious that it can work in the case of artifacts. Thus, it is no surprise that with respect to such items as brooms and houses, Joscelin leans more heavily upon the formal/functional criterion. This alone is a significant break from Abelard. Joscelin refuses to decide whether an artifact like a house is a continuous or discrete whole (§ 1).\textsuperscript{246} Artifacts may not possess natures. Nevertheless, Joscelin thinks that they do possess forms, or “properties”,\textsuperscript{247} that are robust enough to support the distinction between essential principal parts and other parts (\textit{De gen. et spec.} § 14):

Whenever such a form is found in some subject (whether the quantity is increased or decreased), the form that was their previously remains.

The destruction of the essence of an artifact depends upon which part is removed. This point is made twice: first on the assumption that the artifact is a continuous whole (§§ 15-16); second on the assumption that the artifact is a discrete whole (§ 20). Some part

\textsuperscript{245} Note, however, that the historical criterion is not sufficient, since the matter might at some time take on a new form. In the case of Socrates, this occurs when he dies. The matter that constituted Socrates’ body now becomes a corpse (§28). Thus, while the matter persists according to the historical continuity criterion, Socrates does not persist.

\textsuperscript{246} Abelard, the reader will remember, insists that all artifacts are discrete wholes (4.1). Perhaps Joscelin refuses to decide whether an artifact is a discrete or continuous whole because he acknowledges the difficulty that artifacts present to one’s ontology. Artifacts may not possess natures, but they have one significant similarity to primary substances: unlike aggregates and collections, artifacts have structures and functions.

\textsuperscript{247} This point is sometimes obscured by the fact that Joscelin sometimes uses the term ‘\textit{forma}’ to mean ‘shape’, as when he says, “I say that they are the same in essence, not in form” (§ 12). Cf. §§ 15 and 20.
removal will reduce the quantity of the whole and perhaps deface it, but only the removal of a part that eliminates the mereological sum’s ability to retain its form and function will entail the destruction of the whole.

Joscelin seems to lean more heavily upon the formal and functional criterion when considering the persistence conditions of artifacts. Given our previous observation that the formal and functional criterion on its own is not a sufficient criterion of persistence, Joscelin needs to extend the genetic criterion so that it can apply to artifacts.

I see no reason why such an expansion cannot be accommodated by a twelfth-century Moderate such as Joscelin. As we will see in section 5.2, Joscelin extends the genetic criterion to cover the persistence of a special sort of discrete, integral collection—a universal. Most artifacts have a distinct, genetic origin. The sword is forged. The broom is assembled. The house is built. Once these artifacts are created, they may develop a historical, causally linked trajectory as well. I may replace the carburetor in my car, or the windows in my house, and so long as the sum of parts retains the form and function of a car and a house, these two artifacts can persist through gradual changes in parts.248

248 Notice that an appeal to the genetic criterion will provide the Moderate with a definitive answer to the traditional puzzle of the Ship of Theseus. As a brief reminder to the reader, the puzzle of the Ship of Theseus is generated as follows: Imagine that sitting in the Athenian harbor is the ship that carried Theseus over to Crete and back. The ship is then placed in the harbor as a monument to Theseus’ achievement. But like most artifacts, nature takes its toll, and the ship needs replacement parts to keep it ship worthy. Thus, bit-by-bit, the ship’s planks are replaced and the old ones are discarded. But, as it turns out, the planks are sturdy enough that they can be recycled, and some entrepreneur decides to take the old planks away and begin building a new ship out of them. At some point in the future, all the original planks have been replaced in the ship sitting in Athens, and these original planks have been used to build another ship in a harbor up the coast. The puzzle is to determine which ship, the one sitting in the Athenian harbor or the one composed of the original planks is the Ship of Theseus. Using the genetic criterion in conjunction with the formal criterion the Moderate should say that the Ship sitting in the Athenian harbor and composed out of all new planks is the Ship of Theseus. It is the one that has had both a continuous historico-causal trajectory and a continuity of form and function. The second ship, composed out of the old, original
In combination with the functional criterion, the genetic criterion seems to provide Joscelin with everything that he wants. The mereological sum after the loss of a part must retain the same form and function in order for the house to persist. And the mereological sum after the loss of a part must have the appropriate causal and historical links to previous sums that constituted the house in the past. The house created by God fails this second test, since it has an altogether different creative origin than my house.

With respect to the mereological Sorites Abelard is sometimes an extremist. In particular, he holds some version of mereological essentialism for not only discrete, integral collections—i.e. mereological sums—but also for artifacts, which he thinks are structured, discrete wholes. Moderates attempt to correct Abelard by finding principled reasons to resist the Sorites. We identified two criteria, what we called the formal criterion and the genetic criterion. The formal criterion has an extra dimension, the functional dimension. I also suggested ways in which one or the other of these two criteria is prior to the other. The genetic criterion may, for instance, be underwritten by the formal criterion (as it seems in the case of organisms). Other times, the formal criterion seems to play second fiddle to the genetic criterion. Perhaps the best appraisal of the relation between the criteria is that they compliment one another, each contributing to a complete account of persistence, even though one criterion may be fore-grounded with respect to some particular type of object. The interplay between the formal and planks, has a different genetic origin. The second ship began its existence as a ship when there were enough original parts in place to give that structured sum the form of a ship.
functional criterion, and the genetic criterion will play a crucial role when Joscelin attempts to extend his theory of persistence to cover yet another discrete, integral whole, the universal.

5.2: The collection theory of universals

Abelard is a Moderate with respect to human beings, and probably also with respect to Aristotelian substances. Substances all fall under the broader category of continuous wholes. When it comes to discrete wholes, which in his view include artifacts, Abelard is an Extremist. Abelard’s views concerning discrete, integral wholes inform his criticisms of another theory of his day that used mereological concepts: the collection theory of universals.

In chapter 3, we established that Porphyry and Boethius do not subscribe to the view that the universal is a special sort of integral whole (3.1.2). Nevertheless, Boethius’ presentations of the theories of universals, of part-whole, and of division are filled with enough ambiguity that it is seemingly only a matter of time before some early medieval philosophers are tempted to develop a collection theory in the shadow of Boethius’ authority.

It is not known when medieval philosophers began to speculate that the universal is a special sort of integral whole.249 Until more texts have been unearthed and made

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249 Sometimes scholars of early medieval philosophy claim to find evidence for this view in early texts, but with respect to the evidence that is widely available, I think these claims are unfounded. To give only one example, Marenbon raises the possibility that a thinker associated with Alcuin’s school, Fredegisus of Tours, holds a version of the collection theory. In his De substantia nihili et de tenebris (c. 800 AD) Fredegisus makes one intriguing remark about the status of universals (Monumenta Germaniae Historica. Epistulae IV, Epistle 36, p. 553, 8-11): “Every definite name—e.g. ‘man’, ‘stone’ or ‘tree’—signifies some thing. When these [names] are spoken, we immediately understand the things that the [names]
available for proper study, we will not know for certain when the collection theory was
developed. But we have good evidence that a naïve version of the collection theory
emerged in school discussions of universals sometime in the late eleventh century or
early twelfth century, for Abelard presents a famous set of arguments against the theory
(5.2.1-2). It is a commonplace in histories of the problem of universals that Abelard’s
criticisms of the collection theory were decisive. He does not clearly mention the theory
in his later treatment of the problem of universals. But Joscelin shows that he is
Abelard’s equal by presenting a spirited defense of the collection theory that overcomes
the Abelardian criticisms (5.2.3).

5.2.1: Abelard on the collection theory

In the treatment of the problem of universals presented in his *Logica*

*Ingredientibus*, Abelard describes a late eleventh-century or early twelfth-century version

signify. The name ‘man’ designates the universality of men, which is posited apart from any difference
[between individual men]. ‘Stone’ and ‘tree’ likewise embrace their [own proper] generality.” Marenbon
raises the question, but stops short of endorsing the interpretation that Fredegisus holds a collection theory
of the universal (1988, 51; cf. 1981, 63). Marenbon is correct to hesitate from wandering down this path.
First, it is unclear whether Fredegisus believes that the “thing”, which a definite name signifies, must be a
concrete particular. Indeed, Fredegisus *states* that ‘man’ refers to the *universality* of men, not the collection
of men. Fredegisus may be referring to an immanent constituent that is present in all men, or as Marenbon
suggests, Fredegisus may be referring to a concept in our minds. Fredegisus’ remark about universal
names is provocative, but inconclusive. Occasionally John Marenbon claims to find an espousal of a
collection theory in an early commentary on Aristotle or Porphyry. Since these commentaries are for the
most part buried in unpublished manuscripts, it is difficult for me to verify these claims. My suspicion is
that the remarks are much like Fredegisus’, and that they are equally inconclusive. Merely describing a
species as that which collects together its individuals is not enough for the theory to be a true collection
theory, since the activity of “collection” may refer to a mental operation—as Boethius himself seems to
think of it—or as class inclusion. A true collection theory must identify the species with the concrete
collection of its individuals—that is, the species must be an integral whole.

250 There is the possibility that Abelard has developed a straw-man position to knock down, but I find this
scenario extremely improbable.
of the collection theory. We will use his description to construct a preliminary characterization of the theory. It is unclear how accurate and charitable Abelard’s portrait of the collection theory is. Abelard has sometimes been accused of misrepresenting his opponents’ positions. Yet it is possible that there were philosophers who hold the naïve version of the collection theory that we will presently sketch.

Many, if not most, twelfth-century thinkers make a strict division between universal wholes and integral wholes. But despite this common recognition of the distinction between universal and integral wholes, some philosophers are tempted to reduce universal wholes to integral wholes. This reduction is motivated by a rejection of the thesis that a universal is a thing that is wholly present in many individuals such that it constitutes the substance of each individual (Log. Ingr. 1, 13.18-23):^251

There are others who hold another view about universals, and they come closer to our view of the matter when they say that things are not only different from each other in virtue of forms, but they are personally discrete in their essences. That which is in one thing is in no manner in another thing, whether it is matter or form. And it is not the case that they can subsist any less in their different essences when their forms are removed, since personal discreteness belongs to each of them.

For both these philosophers and Abelard the metaphysical components of individuals are “personally discrete”. There is no thing that is shared by more than one individual at the same time.^252 For example, the humanity in Socrates, which is a component of his being,

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^251 For this formulation see Boethius (In Isag. II, 163.1-3 and 161.16-22). The fact that twelfth-century philosophers reject in re universals does not entail that they also reject the existence of Divine Ideas.

^252 Of course this is not the most precise way of putting the point. The collection theorist need not reject the existence of “binary products”—i.e. the part or parts that are shared by two overlapping mereological sums (Simons 1987, 13). But proponents of in re universals do not have binary products (at least as they are normally conceived in the case of concrete physical objects) in mind when they conceive of the universal as some thing that is wholly present in more than one thing at a time.
is not numerically the same thing that is in Plato. Socrates has his humanity (S-Humanity) and Plato has his humanity (P-Humanity), and S-Humanity is not numerically the same as P-Humanity.

While collection theorists reject strong realism, they acknowledge that Socrates and Plato are importantly similar, and they also insist that universality is a property of things, as opposed to utterances (voces) (Log. Ingr. 1, 14.1-6):

Nevertheless, they still maintain that the universal belongs to things, and they claim that discrete things are the same indifferently, not essentially. For example, they say all men, while discrete in themselves, are the same in man—i.e. they do not differ in the nature of humanity. And they say these same [men] are singulars with respect to difference, and universal with respect to indifference and the agreement in likeness.

Abelard characterizes the collection theory as a form of indifference theory. Socrates and Plato, while numerically discrete and possessing no one thing in common, agree with one another in some important respect, namely in that they are both men. Abelard notes that the collection theory is only one version of the indifference theory. Some versions attempt to identify the particular with the universal (Log. Ingr. 1, 14.18-31). In contrast, the collection theory identifies the universal thing with an integral collection of particulars (Log. Ingr. 1, 14.7-11):

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253 In other words, universality is a property possessed by things.

254 On indifference theories consult Tweedale (1976, 111-127) and King (1982, ch. 3; and 2004, 71-72). These indifference theorists are classified by Abelard as realists, because they attempt to identify the universal with a res, but contemporary philosophers will probably categorize indifference theories as versions of nominalism, since indifference theorists assert that everything that (concretely) exists is particular.

255 It is beyond the scope of this study to make this version of indifference theory intelligible. For helpful discussion of this version, consult the sources cited in the previous footnote.
But at this point there is disagreement. Some find the universal thing only in the collection of many. They never call Socrates or Plato per se a species. They say that all men when collected together are the species that is man, all animals taken together are the genus that is animal, and so forth.

Abelard’s description of the theory suggests that the specialissima human being is the collection of the individual human beings. But as we will see shortly, assuming that universals are collections of individuals leads to serious problems.

After describing the collection theory, Abelard offers a famous series of objections to the theory as he understands it. For convenience of reference, I have marked what I take to be discrete arguments with bold, bracketed numbers (*Log. Ingr.* 1, 14.32-15.22):

Now let us attack the first [version of the indifference theory] that was posited about the collection, and [1] let us ask how the whole collection of men together (which is called the species) can be predicated of many—as a universal is—when a whole is not said of each [of its parts]. But if it is conceded that it is predicable of different [things] part-by-part (*per partes*)—because each of its parts applies to it—then nothing [answers] to the commonness [proper to] a universal—i.e. [that the universal] should exist, according to Boethius, as a whole in each [of its subjects], and that this [commonness proper to a universal] is divided from that commonness that is commonness part-by-part (for example, a crowd whose diverse parts belong to different men). [2] And likewise Socrates would be said part-by-part of many, so that he would be a universal. [3] Moreover, any plurality of men taken together would happen to be a universal, and since the definition of a universal or species applies likewise to them, the result would be that the whole

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256 Abelard does not mention the collection theory in the *Logica Nostrorum*. Tweedale thinks that Abelard instead considers a new theory of universals, which Tweedale labels the “plurality theory” (LNPS 521.21-29): “And there are still others who appear to affirm that universals are things. These men assign commonness to things by saying that the universal is one thing, the singular is another—that is to say, the being of the defining characteristic of one comes from what is universal, the other from what is singular. Thus, animal (and body) is a universal, but some animal (or some body) is not. For according to this view that animal is a universal roughly means that there are many each of which is an animal. And that this animal is only predicable of one roughly means that this animal is only one thing.” It hard to understand what this theory amounts to, but I agree with Tweedale that it is not a version of the collection theory—indeed, as Tweedale notes, “it may not really be a theory at all but only a sophistical way of talking” (1976, 127). Iwakuma suggests that the plurality theory is also discussed in the *Tractatus de generali et speciali* §§ 4-7, and the *Sententia de universalibus secundum Mag. R* §§ 2-3 (Iwakuma 2004, 311-12).
collection of men contains many species. [4] Similarly we should call any collection of bodies and spirits one universal, substance. And since the whole collection of substances is one generalissimum, if one is destroyed while the rest remain, we would have many generalissima among substances. [5] But to this now I retort that if the remaining collection is not a generalissimum when one [substance] is removed from the substances, but nevertheless a universal substance persists, then it is necessary that this [remaining collection] be a species of substance and that it possess a coequal species under the same genus. But what [species] can be opposite to [the remaining collection], since the species of substance is either entirely contained in that [opposite], or it shares the same individuals with this [opposite]—just as rational animal and mortal animal [share individuals]? [6] Again, every universal is naturally prior to its individuals. But a collection of anything, in relation to the singulars out of which [the collection] is constituted, is an integral whole, and it is naturally posterior to its components. [7] Furthermore, in his De Divisione Boethius assigns this difference between the integral whole and the universal whole: a part is not the same thing that is the whole, but a species is always the same thing that is the genus. But how can the whole collection of men be the multitude of animals?

Abelard’s attacks upon the collection theory are compressed, often elliptical, and of varying quality. Some of Abelard’s objections rely upon assumptions whose justification rests solely upon the authority of Boethius, and which the collection theorist should never embrace. An example of this kind of objection is the objection marked as [7] (Log. Ingr. 1, 15.18-22). In this objection Abelard appeals to Boethius’ distinction between universal wholes and integral wholes. But the collection theorist is attempting to recast universals as integral wholes, and so she should reject Boethius’ distinction. To insist that the collection theorist must assent to a strict difference between universal wholes and integral wholes merely begs the question.

Even the better objections that Abelard offers are sometimes confusingly presented. Therefore, rather than marching through Abelard’s objections one at a time,

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257 Another example is Abelard’s complaint that the collection theory yields universals that are not wholly present in many at once (Log. Ingr. 1, 14.32-40 = [1]). This objection relies upon a supposition that both indifference theorists and Abelard reject.
which is a feat already capably performed by D. P. Henry (1984, 235-59),\textsuperscript{258} I propose to abstract the key objections and present an Abelardian critique of the collection theory.

5.2.2: An Abelardian critique of collective realism

In this section I will isolate and abstract the strongest forms of Abelard’s philosophical objections to the collection theory. Abelard’s description of the collection theory indicates that the collection theorist believes the following principles:

(I) A universal is an integral collection of particulars.
(II) Predication is explained in terms of mereological relations between these particulars.

Abelard assumes that the particulars that compose a universal whole are concrete individuals, or Aristotelian primary substances. The second principle follows from the fact that the collection theorist concedes that the universal must be predicated of its subjects “part-by-part” (\textit{per partes}).\textsuperscript{259} Assuming that universals are composed of individuals and that predication is part-by-part, the collection theory will attempt to explain sentences such as

\begin{align*}
(1) & \ x \ \text{is} \ F. \\
(2) & \ x \ \text{is} \ F \ \text{and} \ y \ \text{is} \ F \ \text{(and} \ x \ \text{is non-identical to} \ y) \\
\end{align*}

by paraphrasing them as

\textsuperscript{258} Also consult Tweedale (1976, 113-115), and King (1982, ch. 3). For an approach that is similar in style to my own, consult Freddoso (1978). Freddoso thinks Abelard’s basic objection is “that the collective realist conflates universals with integral wholes”, and he goes to great lengths to demonstrate that this objection, which gets such curt treatment by Abelard, is “actually quite strong”.

\textsuperscript{259} The phrase is Abelard’s (\textit{Log. Ingr.} 1, 14.40-15.1; quoted below). It refers to predications that correspond to the type of commonness that shared objects—such as cakes—possess. The cake is common to the children in the classroom only because each child has a piece of the cake (Boethius \textit{In Isag.} II, 162.16-18, and 161.21-22).
(1*) x is (an) F because x is a part of the collection of F’s.

(2*) x is (an) F and y is (an) F because x and y are both parts of the collection of F’s.

Thus, ‘Socrates is a man’ means that Socrates is a proper part of the integral collection of all human beings. Both of these principles will need modification in order to avoid the objections that are isolated below.

There are three main Abelardian objections to the naïve version of the collection theory. The first objection attacks the collection theory for not having an adequate way of discriminating between universal wholes and other integral collections. The other two Abelardian objections derive from Abelard’s assumption that the identity and persistence conditions of unstructured, discrete wholes are extensionally defined. Abelard challenges the adequacy of the synchronic identity conditions of universals by charging that according to the collection theorist’s characterization of universals too many things will qualify as universal. Abelard challenges the adequacy of the persistence conditions of the collection theory based on the principle that mereological essentialism should apply to the collection theorist’s universal wholes. When taken together these three objections charge that the collection theory cannot secure universals of the “right sort”, by which I mean the species, genera and accidents that Aristotelians generally recognize. I will assume that the collection theorist will want to honor this Aristotelian desideratum. Items that are generally not recognized as legitimate genera, species and accidents by medieval Aristotelian philosophers will be called deviant universals.

The collection theorist must first provide a principled method for determining whether items of a particular sort can be parts of some universal or other. Without such a
criterion, and since the collection theorist thinks that universals are integral wholes, the
theory seems to allow deviant universals. For instance, as Abelard suggests, the theory
would allow individual wholes to be universals (Log. Ingr. 1, 14.40-15.1 = [2]):

And likewise Socrates would be said part-by-part of many, so that he would be a
universal.

Socrates is a collection of material parts and forms, all of which are particular.
According to the collection theory, a universal is a collection of particulars. Therefore,
Socrates is a universal. But Socrates is the worst sort of deviant universal, since
admitting him as a universal violates the basic conceptual distinction between individual
and universal.

Deviant universals pop up even when we restrict our attention to collections of
more than one individual. The Abelardian assumes that all integral wholes are
characterized extensionally and honor the mereological axiom of transitivity. (Joscelin
will in fact reject or modify both these assumptions, see 5.2.3.) Consequently, it is
generally true of integral wholes that if something is a part of a whole, the parts of that
part are also parts of the whole. For example, suppose that we collect together every
human being in the world and label this collection All Humans. All Humans has as parts
Socrates, Plato, and other individual human beings. But by the mereological axiom of
Transitivity (2.3), Socrates’ finger, Socrates’ head, Plato’s head and so forth are also
proper parts of All Humans (Freddoso 1978, 534).\(^{260}\) It is generally agreed that the
species human being does not contain as parts Socrates’ finger and Plato’s foot.

Moreover, this deviant universal would entail deviant predications: if All Humans were identical to the species human being, then Socrates’ finger is a human being.

In sum, the first problem occurs because the collection theory appears to include too many items as potential parts. However the objections that isolate this problem are not decisive. As Martin Tweedale points out, “At best these criticisms of Abailard’s only show that the collection theory naturally calls for some further explanation of how universal collections are to be distinguished from non-universal ones.” (1976, 114)

Suppose that there is some way to fix the collection theory so that only the right sorts of parts are collected together. No deviant universals containing such parts as Socrates’ hands and feet are allowed. The Abelardian still insists that the criterion of synchronic identity is too weak to allow only the right collections to be universals.

To illustrate this problem let us simplify matters and create a finite universe with three inhabitants, Socrates, Plato and Cicero. The Abelardian now challenges the collection theorist to give a criterion which ensures that only one collection composed out of these three men qualifies as the universal Human Being (Log. Ingr. 1, 15.1-4 = [3]):

Moreover, any plurality of men taken together would happen to be a universal, and since the definition of a universal or species applies likewise to them, the result would be that the whole collection of men contains many species.

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261 The first problem for the collection theory can be solved by stipulating that the parts of a universal must be tropes, and that the membership of a trope in a universal is determined by whether it resembles the other members of a universal collection in the appropriate respect. We thereby eliminate deviant universals that have too many of the wrong sort of parts.

262 Following up on the last footnote, But we can still generate deviant universals that contain too few of the right sort of parts. The collective realist’s revised criterion does not guarantee that universals contain as parts every trope that resembles in the appropriate respect.
The collection theorist presumably wants the collection \{Plato + Socrates + Cicero\} to be the universal Human Being. But \{Plato + Socrates\} is also a collection of the right sort of parts, as is \{Socrates + Cicero\}. Why are these two smaller collections not also universals? The Abelardian sees this as a serious objection, since he cannot find another principle of synchronic identity aside from an extensional one. In Abelard’s terms, unstructured integral collections only have identity conditions at the level of sameness and difference in being and number. Universal collections, the Abelardian assumes, do not possess a form or structure that would allow them to have identity conditions at the level where states begin to play a role—such as the level where things may be the same or different in property.\(^{263}\) As the Abelardian sees it, the collections \{Socrates + Plato\} and \{Socrates + Plato + Cicero\} differ only in extension—or in Abelard’s words, they are different in being. There is no overarching form of a universal that would show why the collection of three is a universal while the collection of two men is not a universal.

The third main problem for the collection theorist, the problem of persistence, is suggested by the following quick quip by Abelard (\textit{Log. Ingr.} 1, 15.15-18 = [6]):

\begin{quotation}
Again, every universal is naturally prior to its individuals. But a collection of anything, in relation to the singulars out of which [the collection] is constituted, is an integral whole, and it is naturally posterior to its components.\(^{264}\)
\end{quotation}

\(^{263}\) Recall that when Abelard is giving his sortal based criterion of persistence, he suggests that there is no legitimate sort \textit{Pile} (4.3.1).

\(^{264}\) The problem of persistence also underwrites several of Abelard’s other objections to collective realism, but unfortunately Abelard is not careful to distinguish the problem of synchronic identity from the problem of persistence. In particular, I have in mind \textit{Log. Ingr.} 1, 15.4-15 (= [4] and [5]). Isolating the problem of persistence is further hindered by the fact that Abelard dwells upon the properties of genera and species and attempts to derive a contradiction from a violation of the rules that govern the relation of a genus to its species.
Abelard’s complaint that the collection theory violates the rule that a whole is posterior to its parts seems to be an argument that rests solely on Boethius’ authority. But as opposed to the argument mentioned at the very end of section 5.2.1 (= [7]), this new objection has some independent philosophical merit. If one supposes that an unstructured integral collection just is the mereological sum of the parts, as Abelard supposes, then it follows that the whole is naturally posterior to its parts. Should a part be removed, this whole perishes.

In our imagined universe inhabited by three men, the problem amounts to this: suppose that \{Socrates + Plato + Cicero\} is the universal Human Being. At some time soon after, Socrates is killed. What has happened to the universal Human Being? Is Human Being now \{Plato + Cicero\}? If it now is, why was \{Plato + Cicero\} not a universal before? The structure of the argument should be familiar, since it is the general problem of persistence applied to the specific case of the universal Human Being. In the case of structured, continuous wholes the Moderate is able to appeal to the formal and genetic criteria to show how different mereological sums can be the same thing over time and change. But discrete, integral collections do not appear to have the requisite form or unique genetic origin to guarantee persistence. Without the aid of these criteria, mereological essentialism applies, and so the collection theorist is forced to claim that the universal Human Being perishes when Socrates perishes. This, however, is an unhappy result, since for Aristotelians universals are thought to be more permanent, and hence the

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265 Tweedale in general disparages Abelard’s criticisms of collective realism. “Abailard’s criticisms of the proposal are not very potent in themselves”, but he adds that this criticism “seems to cut deeper” (1976, 114-15).
right sort of stable object for scientific enquiry. The collection theorist can of course choose to reject this desideratum, but doing so undermines a good deal of one’s motivation to locate universals among the members of the real (res).

Together, these three Abelardian criticisms amount to a powerful indictment of the naïve collection theory. To the best of our knowledge Abelard’s critique proved decisive, since this naïve version of the collection theory does not reappear in the later centuries of the medieval period. Nonetheless, Abelard’s dismissal did not go unchecked. There is at least one defender of a collection theory of universals who rises to the challenge and provides some powerful rejoinders to the Abelardian juggernaut.266

In the next section we will look at Joscelin’s attempt to answer the Abelardian challenge and develop a defensible version of the collection theory.

5.2.3: A new version of the collection theory

Now that the challenges to collective realism have been presented we may turn to Joscelin’s version of the collection theory. We will first present the details of his theory. We will then turn to the three challenges to collective realism and examine Joscelin’s solutions to these problems.

266 In fact, Joscelin’s *De generibus et speciebus* is one of two known twelfth-century texts that explicitly advocate the collection theory of universals. The author of the *Compendium Logicae Porretanum* also holds a collection theory, but he does not attempt to clearly explicate the theory or to defend it from objections. As I will shortly demonstrate, the version of the theory attacked by Abelard seems to be more primitive than the versions advocated by Joscelin and the author of the *Compendium*. This fact has prompted some commentators to hypothesize that both Joscelin and the anonymous author of the *Compendium* developed their versions of the theory with Abelard’s criticisms explicitly in mind (Martin 1983, xix).
Joscelin is a realist in the Abelardian sense that he identifies the universal with a *res*.\(^{267}\) Joscelin’s identification of the universal with a thing is motivated by his rejection of what he deems to be the only alternative: the universal is an utterance (*vox*).\(^{268}\) Joscelin seems to consider only a naïve version of vocalism, one which focuses upon utterances as physical puffs of air.\(^{269}\) Utterances understood as such cannot be real.

Following Aristotle’s dictum in the *Categories*, utterances are wholes that exist in succession. Joscelin, like Abelard, insists that no item that exists in succession is truly real (*De gen. et spec.* § 79; Cf. chapter 4, 4.3.2). If universals are only utterances, then universals are unreal. But proposing that universals are unreal undermines Aristotelian logic (see §§ 78-83). For example, if species and genera do not have reality, then ordering species and genera into a hierarchy loses all sense. Ultimately, Joscelin is arguing that vocalism undermines the knowledge derived from definitions.

While Joscelin identifies the universal with a thing, he rejects the view that universals are constituents of individuals that are wholly present in each individual (§§ 33-47). His own ontology, like the previously mentioned indifference theorists and Abelard, is particularist (*De gen. et spec.* § 85):

\(^{267}\) One may be an antirealist in this sense and also hold a collection theory. There is a Twelfth century example of this position in the *Compendium Logicae Porretanum*. The universal is a collection of singular forms that cause similar effects in distinct individuals (III.29, p. 50). Nevertheless, the author of the *Compendium* does not think that this collection qualifies as a *res*. When you predicate a universal of a subject, you signify no thing, although you do point to the form in the individual that causes a particular effect (I.12, p. 6; cf. Martin 1983, xxiii).

\(^{268}\) Abelard famously rejects this dichotomy, insisting that the universal is neither a *vox* nor a *res*, but an utterance in so far as it signifies (a *sermo*).

\(^{269}\) What goes around comes around. Joscelin’s rejection of vocalism relies upon a naïve version of the theory, just as Abelard’s rejection of the collection theory relies upon a naïve version of that theory. The irony of this situation is highlighted by Peter King (1982, ch. 3).
Each individual is composed out of matter and form. For example, Socrates is composed out of the matter man and the form Socrateity, and Plato from a similar matter (i.e. man) and a different form (i.e. Platonity), and so forth for each man. And just as Socrateity, which constitutes Socrates formally, never exists apart from Socrates, the essence of a man\textsuperscript{270} that sustains Socrateity in Socrates never exists except in Socrates.

Each individual is a combination of a ‘material’ component and a ‘formal’ component.\textsuperscript{271} Each component is itself particular and unique to the individual. The matter and form of an individual such as Socrates are each themselves complex. Socrateity is possibly a complex of various accidental forms unique to Socrates.\textsuperscript{272} Socrates’ human essence is further analyzable into its own material and formal components—i.e. this animal essence

\textsuperscript{270} Illa hominis essentia. Joscelin indicates later in his treatise that strictly speaking ‘man’ refers to the collection of essences, and that the essences themselves have no name (§ 130, §§ 104-108). In everyday speech, Joscelin acknowledges that we often use ‘man’ to refer to the particular essence present in Socrates and that this equivocation is relatively harmless.

\textsuperscript{271} No twelfth-century philosopher as far as I know holds a contemporary version of the bundle theory where individuals are constituted out of tropes plus a primitive “compresence relation”. Only the ninth-century philosopher Eriugena subscribes to a theory that resembles a bundle theory (\textit{Periphyseon} III. 712b; and III. 713c). A common theory of the twelfth century is a trope theory where individuals are constructed out of a material substrate (which itself may be a mereological sum of material parts) and tropes, or as they would say, “forms”. Abelard and Joscelin both seem to hold something like this theory (see Joscelin’s description of the construction of Socrates out of “little essences” (\textit{essentiola}e) at §§144-153). According to David Armstrong, the trope plus substrate theory of metaphysical composition is the most plausible form of contemporary trope theory (Armstrong 1989, 116 and 136; Armstrong 1997, 24-25).

\textsuperscript{272} The author of the \textit{Compendium Porretanum} also holds that there are “proper qualities”, and that these qualities explain the difference between individuals. Neither Joscelin nor the author of the \textit{Compendium} gives us a detailed account of the constitution of these proper qualities. There are compelling reasons to wish that Joscelin does not identify Socrateity with a complex of Socrates’ accidents. Abelard has presented a convincing series of arguments against the view that accidents are the principle of individuation (\textit{Log. Ingr.} 1, 63,31-64,19; cf. Gracia 1984, 204-210). Perhaps these proper qualities are haecceities. More promising is this suggestion: for Joscelin and the Porretani singularity and individuality, like all difference, is taken for granted. Both authors hold that every thing and every component of a thing is already particular. The only task in their view is to account for sameness. The only consideration that might short-circuit this final suggestion is that both Joscelin and the Porretani take the resemblance between tropes to be primitive.
and the differentia rationality, mortality and two-footedness (§ 85). This analysis of the individual’s material component resolves down to what Joscelin identifies as “matter” (or later *hûle*) and “the ability to receive contraries” (§ 87). Each component of these components is also particular and unique to the individual that it composes. The metaphysical analysis of an individual never reveals a universal thing that is present as a whole in several individuals at once.

Joscelin rejects the versions of indifference theory that attempt to identify the universal with the individual (§§ 50-72). The universal thing is a collective integral whole (*De gen. et spec.* § 85):

> Therefore, I say that the species is not solely the essence of a man that is in Socrates or in any other individual; it is the whole collection derived from each of these matters. That is, it is one [thing]—a flock so to speak—conjoined from the essence of a man which sustains Socrates plus each of the other [essences] of this nature.

Notice immediately that Joscelin identifies the species with a collection of “essences”, not a collection of individuals. Here Joscelin’s use of the term ‘essence’ takes on a slightly different sense than that of Abelard. The “essence which sustains Socrates” is a concrete thing, and it is a composite of a material component and a formal component.

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273 Hence, Joscelin takes Boethius’ remark that the genus is also a part of the species literally. Definitional parts are given a robust metaphysical underpinning. The sense in which the species is a part of the genus will require a bit more subtlety.

274 Later in his treatise, Joscelin combines this analysis with his mereological analysis of individuals (§§ 144-153).

275 Compare D. C. Williams: “For all the paradoxes which attend the fashionable effort to equate the universal Humanity, for example, with the class of concrete men (including such absurdities as that being a featherless biped is the same as having a sense of humor) disappear when we equate it rather with our new set, the class of abstract humanities—the class whose members are not Socrates, Napoleon, and so forth, but the human trope in Socrates, the one in Napoleon, and so forth.” (1953, 10) This move to metaphysical constituents squelches Freddoso’s attack upon the collection theory.
But Socrates’ essence is not Socrates, rather it is a metaphysical constituent of Socrates. What apparently must be added are the features that Joscelin identifies as his Socrateity. The part of Humanity, Socrates’ contribution to the universal collection, is not Socrates but instead Socrates’ humanity. Socrates’ humanity is itself a compound of a substantial form, rationality, plus what he calls a “material essence”. It is crucial that the reader remember that each component of a material essence is itself particular. Joscelin has hypostasized the elements in the Tree of Porphyry: an individual substance is a compound of a material substrate and layer upon layer of ever more specifying tropes.

Joscelin’s insistence that the proper parts of a universal collection are the essences of individuals, and not the individuals themselves, helps him avoid Abelard’s complaint that Socrates’ hands and feet will be proper parts of the species human being. Socrates’ left hand is not a part of his essence, since we could remove his hand and Socrates’ essence will still persist. Indeed, as I demonstrated above, Socrates will persist in virtue of the fact that Socrates’ essence persists. Ultimately Socrates’ essence will persist so long as Socrates’ substantial forms inhere in an appropriate mereological sum of *essentiolae*.

While Socrates’ hands and feet may not be parts of Socrates’ human essence, the layer-cake analysis of essences entails that his human essence has some parts. In particular, Socrates’ human essence is the composite \{S-rationality + S-animality + an S-body\}. Socrates’ body itself is a layered composite, ultimately consisting at any particular time of a sum of little essences and forms. Why, then, aren’t these little essences also parts of Humanity? In short, Joscelin still owes the Abelardian a principled
reason why some parts of an individual are not parts of the universal collection. I will return to consider Joscelin’s reply, but first I wish to finish the outlines of Joscelin’s theory.

Just as the species human being is the collection of material constituents of individual human beings, the genus animal is the collection of material constituents of human essences (*De gen. et spec.* § 85):

The animal that sustains the form of humanity that is in me is not essentially the [animal] in another of the matters of individual animals, although it is indifferent from that [animal present in another individual animal]. Thus, I say that this multitude of animal essences, which sustain the forms of each of the species of animal, should be called the genus. And this [multitude] is different from the multitude that makes the species.

For convenience, we will call the particular material components of individual human beings humanities, and the particular material components of humanities animalities. The species human being is the collection of humanities; the genus animal is the collection of animalities. This analysis works all the way up to the highest substantial genus, Substance.276 Something analogous to this analysis explains the nature and ordering of universals in the non-substantial categories (§ 88).

Note that this analysis of genera and species will violate some of Boethius’ rules concerning the relations between a genus and its species. For example, according to Boethius, the genus is the same thing as the species. But on Joscelin’s theory, this cannot

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276 Joscelin is hesitant to claim that the collection of brute material essences constitutes a genus for independent reasons (see §§ 179 ff.). Joscelin’s resistance is due to his attempt to honor the Aristotelian dictum that Being (*ens*) is not a genus.
be true. Since the collection of animalities is not identical to the collection of humanities. This violation need not worry Joscelin if his theory is both consistent and able to satisfy enough other Aristotelian desiderata.

Joscelin’s theory does not fall prey to the pitfalls of immanent realism, because there is no entity that is present in more than one individual at a time. For this reason, Joscelin agrees with Abelard that nothing answers to Boethius’ traditional definition of the universal (Abelard Log. Ingr. 1, 14.32-40). He also accepts Abelard’s remark that the collection theory must analyze predication as “part-by-part” (per partes) predication. As Joscelin explains, traditionally predication of a species or genus of an individual is analyzed as “inheritance”. While the authorities do not clearly sanction this analysis, Joscelin declines to challenge his opponents on this point (§§ 93 and 115). He grants that predication is inheritance, but notes that this does not lead to the absurd conclusion that ‘Socrates is a man’ entails that the collection of humanities inheres in Socrates. ‘Socrates is a man’ means that a part of the species inheres in Socrates (§ 93). In general, predication is analyzed as follows: ‘a is F’ means that

(1) a has some metaphysical constituent m,
(2) ‘F’ is the name of a collection of essences that are appropriately indifferent from one another,
(3) and m << F.

(Condition (2) will be discussed more fully below.) The predication of a genus to its species can also be analyzed adequately on this account. For example, ‘F is G’ (e.g. ‘Man is animal’) means that anything that is F is also G. And this turns out true on the collection theory as well if the following conditions hold:
(4) ‘F’ is the name of a collection of material essences that are appropriately indifferent from one another,
(5) ‘G’ is the name of a collection of material essences that are appropriately indifferent from one another,
(6) x is an F and a G because m constitutes x and m << F, and there is a material essence n such that n constitutes m and n << G.

Strictly speaking the m’s are not proper parts of G, although all the m’s have constituents (the n’s) that are proper parts of G. The mereological axiom of Transitivity cannot hold in the case of universal collections.

I claimed that Joscelin’s analysis of the universal as a collection of essences blocks deviant universals that contain both Socrates and his hands. Socrates is not a part of a universal; only his material essence (his humanity) is. Since Socrates’ hand is part of Socrates, and not Socrates’ human essence, Socrates’ hand is not a part of Humanity.

 Nonetheless, a more general principle must be developed to restrict other parts, specifically those belonging to Socrates’ human essence, from being parts of Humanity. Joscelin’s answer is to appeal to what I have identified as condition (2) above. In short, condition (2) must provide the reason why Transitivity fails in the case of universal collections, and hence why Socrates’ animal essence is not a part of Humanity.

Condition (2), once elaborated, will also block the creation of deviant universals such as the collection containing Socrates’ humanity, Plato’s paleness and Brunellus’ animality (≠ his assinity). In both cases, Joscelin would insist, the putative parts are not sufficiently “indifferent” from the other parts that are contained by the universal.277

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277 Nothing prevents it from being a collection. Joscelin does not reject Abelard’s unrestricted collection principle; he does not specifically endorse it either.
Condition (2) needs to be clarified, since Socrates’ animality, Brunellus’ animality and Socrates’ humanity are both different and similar to one another. It will not suffice to claim that they are insufficiently indifferent to constitute a universal without specifying the relevant respect. Joscelin attempts to provide the appropriate respect, and thereby to provide a solution to the first main Abelardian challenge.

The key to the Abelardian objections is the assumption that an integral collection, since it lacks a form, can only possess extensional criteria of identity and persistence. In effect, what Joscelin is attempting to do is trying to provide universal wholes with enough structure to avoid the Abelardian objections. Roughly speaking, Joscelin is trying to develop intensional criteria for the synchronic and diachronic identity of universal collections.\(^{278}\)

At first blush, Joscelin’s intensional criteria—especially as I originally formulated it in clause (2) above—might seem to appeal to brute similarity. If this is the end of the tale, then Joscelin’s theory of universals is merely a version of what contemporary metaphysicians call resemblance nominalism.\(^{279}\) But resemblance is not the whole story;

\(^{278}\) Again, Tweedale anticipates this type of reply to Abelard: “[Abelard’s criticism] 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.” (1976, 115)

\(^{279}\) I warned the reader in chapter 4 (4.1.1) that a great deal of care must be taken when using the terms ‘realism’ and ‘nominalism’ to characterize twelfth-century metaphysics. Here, for instance, we discuss the collection theory as a version of realism; but to a contemporary metaphysician the view appears to be a version of nominalism. Some contemporary philosophers reserve the term ‘nominalism’ for those theories that deny the existence of properties period—whether they are tropes or universal properties (see Armstrong 1989, 39-58). With this more restricted conception of nominalism in mind, Armstrong describes the version of the collection theory that we are currently describing as a “trope theory + resemblance” (1989, 119-131).
and it should not be the whole story. First, as Christopher Martin notes when assessing the merits of the collection theory presented in the *Compendium Logicae Porretanum*, the collection theory that appeals to brute resemblance inherits the same basic problem that plagues all resemblance theories (1983, xlii):

> Unless, however, something is done to explicate similarity further it seems that as with all resemblance theories, except perhaps that which holds it to be conventional, we have simply replaced one obscure notion with another. For the problem of universals surely arises out of a concern to say how it is that things may be collected together as similar.

While duly noting that there is no consensus about what the ‘problem of universals’ truly is, we take Martin’s objection very seriously, and we count it as a point against any collection theory that leans on a relation of brute resemblance.

Second, resemblance construed as qualitative similarity will not always get the right parts of a universal, especially when the universal is meant to be a natural kind. Consider a case where the embryonic and adult forms of an organism are dramatically different in quality—for example, a caterpillar and a butterfly. Joscelin, like most of his Aristotelian contemporaries, focus upon the status of the genera and species of primary substances, or natural kinds. Joscelin should want the essence of a Monarch

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280 In contrast, the version of the collection theory endorsed in the *Compendium Logicae Porretanum* appears to be a straightforward version of resemblance theory. The author of the *Compendium* asserts that all whitenesses are said to be one universal whiteness because these forms have a similar effect. Likewise, all humanities are called one universal because they produce a similar effect in their subjects (III.29, p. 50). Compare Joscelin’s remark that some things are the same in effect, and that matter tends to be the principle of sameness while form is the principle of difference (§203).

281 For example, Rodriguez-Pereyra (2000 and 2002) has recently argued that the problem of universals is really a problem of “the Many over One”, not the “One over Many”. For a reply consult MacBride (2002). For a helpful and sober discussion of the nettle of related problems that constitute the ‘problem of universals’ consult Oliver’s study (1996) and Mellor and Oliver (1997).

282 Thanks to Peter King for this insight and example.
caterpillar and the essence of an adult Monarch butterfly to be contained in the same universal Monarch Butterfly. But it is hard to see what qualities the two individuals possess, which license their inclusion in the same collection.

The biologists among us will retort that superficial, qualitative resemblance is not the sole guide to determining natural kinds. A better criterion is similarity in genetic code. While Joscelin is no twelfth-century geneticist, this biological analysis comes closer to capturing the way in which Joscelin expands the notion of the genetic criterion of persistence spelled out in section 5.1.2 to universal wholes.\(^{283}\)

Here is where Joscelin extends the notion of both a nature and the genetic criterion of persistence in order to develop his replies to the Abelardian challenge. Joscelin claims that proper universals will be “natures”. Here Joscelin extends the notion of a nature to cover not just individual essences, but also collections of essences (De gen. et spec. § 123):

I call a nature whatever (whether it is one essence or many) is of dissimilar creation from all others which are not that [item] or belonging to that [item]. For example, Socrates is dissimilar in creation from all others who are not Socrates. Likewise, the species man is dissimilar in creation from all other things that are not this species or some essence belonging to this species.

Earlier, in the case of individual organisms, the genetic criterion appeared to be posterior to the formal criterion. In the case of universal collections, it now appears that the analysis is definitively the opposite. The key to analyzing the nature of a universal is to decode the version of the genetic criterion that Joscelin appeals to when he insists that the parts of a universal are “not dissimilar in creation”.

\(^{283}\) Both the analogy to contemporary biology and the analogy to a family, which will be presented shortly, were both developed in close collaboration with Peter King. I thank him again for the many conversations that we have had about Pseudo-Joscelin.
Joscelin, just as Abelard, assumes that the world divides into natural kinds.\textsuperscript{284} These natural kinds are in no way conventional. For theological reasons, conventionalism is neither needed, nor is it attractive. In keeping with their Christian commitments, twelfth-century thinkers assert that the world is a well-ordered creation of God.\textsuperscript{285} Many medieval philosophers, furthermore, assent to the neoplatonic doctrine that each occupant of this world is created from a divine paradigm, template, or Idea.\textsuperscript{286} All human beings are copies of the divine Idea of human being, all sparrows are copies of the sparrow Idea, and so forth. The individuals copied from these divine templates will be created in a similar manner. Put somewhat anachronistically, they will have the same genetic blueprint, and will thus come to possess resembling features. It is this similarity in origin that ultimately underwrites qualitative resemblances. Thus, for Joscelin resemblance is not primitive; similarity in creation is the true reason why natural kinds are collections of material essences.\textsuperscript{287}

\textsuperscript{284} On Abelard consult King (2004, 81-83).

\textsuperscript{285} This basic principle allows twelfth-century nominalists to avoid the worry about conventionalism that plagues more “naturalistic” versions of nominalism. Here I assume Armstrong’s conception of naturalism—i.e. that “the world, the totality of entities, is nothing more than the spacetime system”. Armstrong takes this to entail that God (at least as He is traditionally conceived in by Monotheists) does not exist (1997, 5).

\textsuperscript{286} The belief in divine Ideas cuts across the traditional divide between realists and nominalists.

\textsuperscript{287} Interestingly, Peter King interprets Abelard in a roughly similar manner. Individuals unproblematically break down into natural classes, determined by objective relations of similarity. These similarity relations are underwritten by a similarity in creation: “Why a given thing has some features rather than others is explained by how it got that way—the natural processes that created it result in its having the features it does….similar processes lead to similar results.” (2004, 82)
Interpreting similarity in creation in terms of the theological *cum* biological model allows us to see just how natural the expansion of the genetic criterion of persistence from individual substances to universal collections is. Consider Socrates. At conception Socrates is a combination of a sperm cell and an egg cell. Qualitatively this zygote shares little resemblance to the pot-bellied crank trolling around the agora of Athens. But this act of conception marks the beginning of a unique life-line. All subsequent mereological sums along this causal/historical trajectory will share this unique point of origin. Similarly, all human beings will have a similar beginning. They all arise from God’s application of the Idea of human being when creating individual substances. No other individuals will have an exactly similar point of origin. Thus, just as different mereological sums of matter and form share a common feature—that they are all Socrates at some point in his life—so different essences are all parts of the same universal at some point of time in the universals existence.

We are now in a position to clarify Joscelin’s answer to the first Abelardian challenge. The parts of a universal must be essences of individuals, and not the individuals themselves. More importantly, the parts of a universal must have been created in an *exactly* similar manner. This precisification of Joscelin’s criterion that the parts must not be dissimilar in creation is necessary to block another sort of deviant universal. Otherwise, in a world inhabited by two donkeys (Brunellus and Jack) and two humans (Socrates and Plato) there would be no way to discount, e.g., the putative universal \{B-animality + S-humanity + P-humanity\}. 

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Recall that, at first glance, the genetic requirement did not seem to distinguish Socrates’ humanity from Brunellus’ animality. Neither item is an individual, and each item is a material essence. Moreover, Socrates’ humanity has as a constituent Socrates’ animality, and Socrates’ animality and Brunellus’ animality are required to have the right sort of indifferenced in creation.

It is true that Socrates’ humanity has a constituent that is not of dissimilar creation from Brunellus’ animality. Nonetheless, Socrates’ humanity is one metaphysical level closer to concrete individuals than Brunellus’ animality, for Socrates’ humanity is a compound of animality and additional forms. The corresponding material essence belonging to Brunellus is not his animality, but rather his assinity, which is a compound of animality and other forms. Brunellus’ assinity and Socrates’ humanity will not form a nature because they are dissimilar in creation from one another: the former is created out of animality and donkey-making differentia, the latter out of animality and human-making differentia. In short, Brunellus’ animality and Socrates’ humanity are not exactly dissimilar in creation, since the former is a material essence of the animal-type whereas the latter is a material essence informed by species-making differentia.

A similar argument explains why Socrates’ animality is not a part of Humanity. Socrates’ animality is a constituent of Socrates’ humanity, but it is not appropriately dissimilar in creation to be a part of the collection of human essences. Each human essence is a composite of a particular rationality form and a particular material essence, an animality. No animality as such possesses a form of rationality. If it did, it would in fact be a humanity. Socrates’ animality lacks the appropriate dissimilarity in creation to
be a human essence, and hence a part of Humanity. The genetic requirement blocks the
Abelardian’s application of Transitivity. The first criticism is thus neutralized.

Joscelin uses his expanded version of the genetic criterion to answer the second
criticism to the collection theory. But he must also add a new aspect to the quasi-
structure of a universal collection. Recall that the problem of synchronic identity
challenged the collection theory to show why a universal cannot be created out of a
incomplete collection of individuals. Joscelin provides a nice version of this problem,
now framed in terms of his use of material essences instead of individuals (De gen. et
spec. § 114):

A species is what is predicated in quid of many differing in number—i.e. what
inheres materially in many. But if this is true, then it can also be said that
everything which is so predicated is a species, [and hence] there will be not one
but many species humanity. Let us suppose that there are only ten essences of
humanity that make up this species. I say that five of these are one species and
the other five are another, for that which is composed out of five is predicated—
that is, it inheres materially in—many (i.e. in those five individuals that are
materially constituted out of these [five essences]).

Joscelin, after numerous qualifications and digressions, finally appeals to his criterion in
order to block this problem (§§ 122-3):

But if someone protests, “Therefore, the [collection] constituted out of five
essences is a species, for this [collection] inheres materially in many…”, I
respond that it is nothing of the sort, since it is not a nature.

The collection of five essences fails to be a species because “it is not dissimilar in
creation from the remaining [five] essences that are in the species” (§ 123).

Joscelin’s answer is deceptive, since it suggests that the genetic criterion by itself
will suffice to block the creation of this sort of deviant universal. But, clearly, Joscelin is
implicitly invoking another rule as well:
A universal is the *complete* collection of material essences that are exactly indifferent in creation.

Any group of material essences or forms can form a collection. But for a collection to be a universal, the collection must not have a part that is dissimilar in creation from the other parts of the collection, and the collection must include all items as parts which are not dissimilar in creation from one another. We will call a collection of essences that satisfies these two conditions a *complete collection*.

At first pass, this new rule appears to be *ad hoc*. The Abelardian challenge was for the collection theorist to come up with a principled reason why the collection of five essences is not a universal, despite the fact that it meets the revised genetic criterion. The appeal to the new rule provides no such reason.

Joscelin insists that the collection of five essences would not be a nature. This immediately suggests a parallel to Joscelin’s discussion of Socrates’ great nature (§ 22, quoted in 5.1.2). In the case of Socrates, Joscelin ultimately insists that it is the form that determines the boundaries of the nature. The form explains why there is no problem how a part that was not Socrates—e.g. Socrates-less-the-hand—*becomes* Socrates after amputation. The form also explains why there is only one great nature. The form informs all the material parts that compose Socrates. It also, as a matter of course, informs any subset of these parts. But this fact does not license one to infer that there are many Socrateses. That would be tantamount to counting the same form many times over. There is only one form of Socrates, and hence there is only one Socrates.

Unfortunately, Joscelin’s strong hylomorphism may resolve the Problem of the Many Socrateses and its cousins, but it does not help to provide a principled justification
for the new rule of completeness, because universals do not have forms. But perhaps
universals do not need strongly persisting forms. In the case of artifacts, the uniqueness
of creation and the persisting functionality of the remaining mereological sum seemed to
suffice to guarantee persistence (5.1.2). Let us furthermore, examine this notion of a
function. Often collections of individuals are defined by a specific task or role—e.g. an
orchestra, a committee, and board of trustees. These entities are even thought to persist
even as specific members rotate in and out. Now consider a family. While the function
of a family is perhaps not as obvious as that of an orchestra, there is still a striking
similarity. Both are defined groups, whose members can change but which retain their
identity. We might even go so far as to suggest that the principle of identity for a family
is similarity of creation, a commonness of genes.

The metaphor of a family constitutes the best reply that Joscelin can give to the
second Abelardian challenge. Universals are those collections which contain all and
exactly only those individuals who are exactly indifferent in creation. This rule now
seems reasonable. When searching for the extension of a family, one does not stop with
just the mother and daughters. One attempts to find all those individuals who are
genetically related. Likewise, when one is looking for the extension of a natural kind,
one is not content to stop with Plato, Socrates, and Xenophon. One wants to include all
those individuals who have the same creative origin. When looking for the extension of
Humanity, one is looking for all the offspring of the divine Idea of human being.
Therefore, I submit, Joscelin’s insistence that a universal collection must be complete is
not ad hoc.
Finally, let us consider Joscelin’s response to the third Abelardian criticism. Individuals come into being and pass away, and presumably their metaphysical constituents likewise are subject to generation and corruption. So a universal analyzed as a collection of tropes that resemble one another in the appropriate manner is subject to the loss of parts. One can now ask: do universals survive a change in parts, and if they do, what explains this persistence?

Joscelin is aware of this objection. In fact, he presents it much more clearly and succinctly than Abelard does (De gen. et spec. § 112):

Again it has been said against [us]: if the species is nothing other than that which is composed out of many essences, then whenever this [composite] is changed, the species is changed. Yet this [collection] will change every hour. For instance, let us suppose that humanity consists of only ten essences. When at some moment a man is born, some other humanity is now constructed. The crowd consisting of eleven essences is not the same as the [crowd of] ten. And as I have many times, every essence of humanity that composed the species a thousand years ago is now altogether gone, and new [essences] have arisen which make up the humanity that is the species today. Therefore, unless at each moment the meaning of the utterance ‘man’ changes, it cannot be said with truth at both times (bis) ‘Socrates is a man’. Suppose that you said again ‘Socrates is a man’. If you say this of the humanity which you had said it of previously, it is false, for that [humanity] no longer exists.

In his reply Joscelin spends a lot of time elucidating the appropriate theory of signification to solve the problem. But for our purposes, the semantic elements of the argument are secondary. In our view the semantic version of the problem presented and challenged by Joscelin depends upon the deeper problem of persistence.289

288 It is unclear whether Joscelin is speaking in *propría persona*, or whether the ‘I’ refers to the unnamed author (Abelard?) of this objection.

289 The argument reproduced by Joscelin assumes that signification is roughly reference. Joscelin rejects this identification and spends a great deal of energy developing an alternative account of signification (§§
The analogy to the family helps us understand how Joscelin’s genetic criterion can solve the puzzle of persistence for universal wholes (De gen. et spec. § 113):

It is true that the humanity that was a thousand years ago or which was yesterday is not that [humanity] which is today. Nevertheless, it is the same as that—i.e. it is not dissimilar in creation. For it is not the case that what is the same with another is the same this. A man and a donkey are the same in genus, and nonetheless this is not that. Socrates is composed out of more atoms as a man than as a boy, but is nonetheless the same.

Joscelin proposes that universal wholes have roughly the same sort of persistence conditions that organic individuals possess. In both cases, the wholes are not defined extensionally. Persistence does not depend upon mereological constancy. In the case of Socrates, this is because of the formal and the genetic criterion. The universal, however, is more akin to the family—it has a looser functional criterion of persistence that is dependent upon the extended genetic criterion. New members of the family are born, other members perish. But the family persists. Likewise, new members of a natural kind are born, others perish. But according to Joscelin the universal, which is the sum of all individuals exactly indifferent in creation currently present, persists even as its membership changes.

The general outline of Joscelin’s collection theory is now complete. Joscelin’s response to the three Abelardian challenges is defensible. Yet a curious fact remains: for all their real and apparent differences, what is really striking is how similar Abelard and Joscelin are. Consider this interpretation by a leading scholar of Abelard (King 2004, 82):

Joscelin’s views about the signification of universal terms are interesting and worthy of study, but this project lies outside the scope of our project.
By “naturally similar” Abelard means that the similarity between Socrates and Plato is not conventional, but rather a fact about the world that follows from each being human, which is itself a function of their biological history. In short, Abelard takes a natural kind to be a well-defined collection of things that have the same features, broadly speaking, that make them what they are. …On this reading, it is clear that natural kinds have no special status; they are no more than discrete integral wholes whose principle of membership is similarity, merely reflecting the fact that the world is divided into discrete similarity-classes of objects.

If Peter King is right, the only crucial difference between Joscelin and Abelard, is that Joscelin takes the added step to insist that these similarity-classes are res, that universals are something over and above the individuals that compose them.\(^{290}\) I have already proposed one reason why Joscelin may have taken this extra step at the beginning of section 5.2.1; there may be others.\(^{291}\) But as a provocative afterthought: perhaps Cousin was not so crazy for mistakenly attributing the treatise On Genera and Species to Abelard. I still think that the evidence en masse counts against such an attribution. But the similarities suggest that Abelard and Joscelin were both tapping a common source of ideas.

5.3: Conclusion to chapter 5

We started with the observation that Abelard’s treatment of persistence with respect to mereological change is in tension with many of our commonsense notions about mundane objects. Our evidence shows that a number of twelfth-century

\(^{290}\) I will not attempt to assess the merits of Joscelin’s theory as a solution to the problem of universals. But I think that of the two, Abelard’s solution is the more elegant and successful solution.

\(^{291}\) Another possible reason is Joscelin’s acceptance of the common view that predication is inherence (De gen. et spec. § 93).
contemporaries of Abelard were also uneasy about some of the ramifications of Abelard’s and his followers’ theory of persistence. Twelfth-century Moderates attempt to rescue commonsense objects by offering an alternative form-centered approach to persistence. I have identified Joscelin as a philosopher whose work stands out as a sophisticated version of the Moderate position. Joscelin also defends a version of the collection theory of universals, a theory which many presumed was definitively refuted by Abelard. In 5.2, I hope I have shown that Abelard’s criticisms are not definitive. In fact, I have suggested that Joscelin’s collection theory contains a number of elements that are agreeable to Abelard.

I have claimed that Joscelin’s Moderate metaphysics of mereology and persistence is a defensible alternative to Abelard’s, and that Joscelin’s theory has the virtue of preserving commonsense. However, I hesitate to make the stronger claim that Joscelin’s theory trumps that of Abelard. My reasons for refraining will be taken up in more detail in the next chapter, but these reasons boil down to this worry: Joscelin can preserve common sense only at a price. Namely, Joscelin and Moderates of his ilk are committed to the existence of robustly real forms. While these forms do a remarkable amount of work preserving the persistence of mundane objects, many philosophers find them suspicious. I have shown in chapter 4 that Abelard is often suspicious of real forms, and he attempts to reduce many of them away. In order to declare an outright victor, we need to decide whether we can live without hypostasized forms.
CHAPTER 6

CONCLUSION

No one is yet in a position to write the full history of early medieval mereology. But I hope that the reader is now convinced that such a project would be fruitful. Two of the brightest minds in the twelfth century were preoccupied with puzzles central to mereology and the related metaphysical issues concerning the identity and survival of material objects. In my view, their work in mereology and the metaphysics of identity and persistence is first rate. The positions that they carve out are still among the viable options considered and embraced by contemporary metaphysicians.

In chapter 2 I argued that the theory of part and whole is not solely an exercise in formal logic. The logic of parts and wholes is dependent upon a number of extra-logical considerations. In particular, before one develops a formal system of parts and whole, I think one must first complete four basic projects. First, one must decide which items in one’s ontology may be parts. Second, one must decide when some things become one whole. Third, one must determine what relations of dependence, if any, obtain between a whole and its parts. In particular, one must determine whether any relations of
ontological dependence obtain between the part and whole. Finally, based upon what
relations of ontological dependence obtain, one must develop a theory of synchronic and
diachronic identity for wholes.

With these parameters in place, I then turned my attention to Boethius. I took this
detour because I have stressed that the contributions of Abelard and Pseudo-Joscelin
cannot be adequately assessed until we come to terms with the mereological doctrines of
their intellectual predecessor. Boethius is the most influential transmitter and interpreter
of ancient Greek philosophical concepts to the medieval West, and hence Boethius had a
profound influence upon the development of early medieval mereology. I think two
features of Boethius’ mereology, in particular, must be emphasized. First, Boethius fails
to stress the importance of the classical Aristotelian concept of form, and accordingly he
passes over the mereologically pregnant notion of mutilation (3.3.4). Second, Boethius
presents and repeatedly highlights a rule commonly presented in ancient textbooks which
says that if a part is removed, the whole is removed as well (3.2.2, and 3.3.4). It is
precisely for these reasons that Abelard and Pseudo-Joscelin emphasize the role that the
material parts of things play in the identity and persistence conditions of these things.
Boethius’ emphasis of the Greek scholastic rule also encourages the development of a
brand of mereological essentialism that develops in the twelfth century, and which is
embraced to some degree by Abelard.

As I have shown, Abelard takes Boethius’ scholastic rule to heart and proposes
that the loss of any part entails the annihilation of that very whole (4.3.1). For this reason
Abelard flirts with a type of mereological essentialism. Yet Abelard also insists that
human beings survive a variety of mereological changes. D. P. Henry takes these commitments as evidence that Abelard has no consistent, well-formulated theory of material objects. But I have argued that this interpretation is mistaken. It is true that Abelard thinks the material essences of things suffer annihilation upon the gain or loss of even one part. He even holds that many structured wholes, such as houses and brooms, are dependent upon their parts in this strict sense, because the forms of these sorts of object weakly supervene upon the arrangements of the material parts. But following a hint from Abelard’s followers, the Nominales, we can readily see that persons have a different, looser criterion for persistence. The material essence of a person is mereologically constant, and therefore the material essence of a person cannot survive mereological change. The sum of bodily parts plus a soul is, accordingly, subject to the rule of mereological constancy. From the strict metaphysician’s point of view, this sum does not increase or decrease. But the person needs to retain only one part, her soul, in order to persist.

I noted with some disappointment that Abelard is silent about objects which are neither artifacts nor persons, such as stones, flowers, and dogs. Moreover, what Abelard does say suggests that all non-human primary substances are mereologically constant. He claims that animal and plant souls are material, and so it would seem that these non-human souls cannot be principles of persistence. I went on to argue that there is evidence that Abelard does not think animals and plants suffer the same tenuous existence as artifacts. Abelard asserts that there is a strict divide between artifacts, which are cobbled together by humans, and substances, which are created by God. Presumably, then, there
is also a corresponding difference in the persistence conditions of artifacts and substances. I offered the tentative suggestion that substances differ from artifacts in virtue of the type of form that informs them. In particular, there is some evidence—but unfortunately not definitive evidence—that the substantial differentiae are not dependent upon the material parts, that they are somehow more real. I argued that if this is indeed Abelard’s view, then he has the resources to draw the sort of definitive distinction between artifacts and substances that he desires. On the one hand, artifacts have forms which are strongly dependent upon the arrangement of the material parts. The forms of artifacts cannot survive mereological change. Hence, artifacts are mereologically constant. On the other hand, if the substantial differentiae are real and not supervenient, then these forms can act as the principle of persistence for substances. So long as the differentiae survive, the substance can survive mereological changes.

If I am right, Abelard’s theory of persistence for artifacts is similar to the theory of Roderick Chisholm, and Abelard’s theory of substantial persistence resembles the Stoic theory that is attributed to Chrysippus.²⁹² Let me briefly consider in turn each resemblance.

Chisholm holds that the existence of a material particular depends upon the existence of its parts: “For every x and y if x is ever part of y, then y is necessarily such

²⁹² The comparison of Abelard’s metaphysics of identity and persistence to the Stoics is made in passing by Calvin Normore (1992, 89). In a recent essay Normore has made the bold claim that “Abelard is as close to Stoicism as a Christian could be”, and that Abelard use of the Stoics is not an “independent rediscovery of Stoic ideas but a self-conscious taking up of them” (2004, 132). Unfortunately, Normore then restricts the scope of his essay to Abelard’s application of Stoic principles to ethics. To my knowledge, no one has explicitly compared Abelard to Chisholm.
that x is part of y at any time that y exists.” (1976, 149) And like Abelard, Chisholm rejects one popular avenue in contemporary discussions of persistence: temporal parts (1976, 139-44). Objects such as chairs, houses and statues appear to suffer regular losses of parts due to everyday use, and they appear to survive this wear-and-tear. But Chisholm insists that appearances are deceiving. Material things are all “entia per alia”, or “entia successiva”. They are “logical constructions” out of successive mereological sums, each of which are composed out of individuals that he identifies as the “entia per se” (1976, 97). Abelard has something similar in mind. Strictly speaking this house, which just is this mereological sum of stones and wood arranged as a house, does not survive the loss or gain of a part. Nonetheless, so long as there is mereological continuity between the first sum and the second sum, and both sums are houses, we are licensed to say that a house survives wear-and-tear (4.3.1).

293 Cf. Chisholm (1989, 66). Van Cleve also holds that something like the Principle of Mereological Constancy applies to sums, artifacts and non-living material objects. He makes exceptions for organisms and persons (1986, 147 ff.).

294 In his swan-song, A Realistic Theory of Categories (1996), Chisholm appears at first pass to recant and admit that material objects can have temporal parts. But a more careful reading of his text reveals that there has been no major shift in his position. Entia successiva, he says, “may have individual things as temporal parts” (93). But all Chisholm means by this is that what we take loosely and popularly to be, for example, a broom is really a series of individuals stretched out in time. The broom is not one individual composed out of temporal parts, as the perdurantist would have us describe this scenario. If there is still any doubt, one need only read on to find that Chisholm reiterates the claim that a person’s body only exists in the loose and popular sense (100).

295 Chisholm also insists that persons are entia per se, and hence not subject to mereological essentialism. Interestingly, Chisholm’s arguments for the substantiality of persons are not mereological; they rely on the unity of subjective experience (1976, 140 ff.).
Abelard might have influenced Chisholm; he certainly anticipates Chisholm.\textsuperscript{296} When we turn to substantial persistence Abelard is anticipated by the Stoics. It seems that Chrysippos developed his analysis of persistence in response to the “Growing Argument” (\textit{auxanomenos logos}), which David Sedley suspects was employed by the Academic skeptics in their disputations with the Stoic school (1982, 256). A quick inspection of the Hellenistic Growing Argument reveals how similar it is to Abelard’s argument against increase and decrease. As with Abelard’s version, the argument attempts to establish that nothing is augmented or diminished, since the addition or subtraction of even one particle of matter entails that the initial collection of particles is no longer identical with the new collection. Chrysippos admits that when considered at the level of material essences, or substrates, collections of material particles are mereologically constant.\textsuperscript{297} But Chrysippos adds another level of description, which is echoed in Abelard’s analysis of persistence.\textsuperscript{298} The Stoics distinguish between the “substrate” (\textit{to hupokeimenon}) and the “qualified thing” (\textit{to poion}).\textsuperscript{299} The qualified

\textsuperscript{296} I will not press the point too hard, but in my view, Abelard not only anticipates Chisholm, his analysis of change and persistence is superior to Chisholm’s. Abelard properly emphasizes the role that the arrangement of the parts plays in the phenomena of successive objects, whereas Chisholm does not. Because Chisholm does not accord due attention to the nature of this arrangement, it is not clear how he can distinguish between a broom and the mereological sum of \{bristles + handle\}. He will also have trouble explaining what happens when the bristles and handle suffer lose and then regain a broom structure. Assume that not one bristle or atom is lost during these rearrangements. Did this very broom go out of existence and then come back into existence? In other words, can objects have sporadic existence? On this puzzle, and others that arise from Chisholm’s mereological commitments, consult Cartwright’s treatment of scattered objects (1975).

\textsuperscript{297} See Plutarch \textit{De communibus notitiis} 1083cd, and Posidonius fragment 96 (1972, 101-102).

\textsuperscript{298} See Sedley (1982, 260 ff.).

\textsuperscript{299} Simplicius \textit{In Cat.} 66.32-67.8 (SVF II.369); Plotinus \textit{Ennead} VI.i.25 (SVF II.371). On the first two Stoic categories, consult Rist’s useful study (1969, esp. 158 ff.).
thing is divided in turn into generally qualified things, and “the uniquely qualified things” 
\((ta\ idiós\ poia)\). Persons, and other structured entities are uniquely qualified things.

According to the Stoics, that which is uniquely qualified can endure changes in 
substrate, just as Abelard allows for a looser sense in which the retention of a state 
\((status)\) will underwrite a looser form of persistence for artifacts and non-human 
substances (4.3.2-4).

Based upon these brief comparisons, Abelard is in good company. His central 
ideas echo the philosophy that dominated the Hellenistic and Roman eras, and many of 
them still have currency among contemporary metaphysicians. Yet, in particular with 
regard to the Stoics, it would be a mistake to think that Abelard is a copy-cat. The lines 
of transmission between Stoic views and the twelfth century are obscure. There is very 
little direct transmission. As Gerard Verbeke notes, at no time was there an “invasion of 
Stoicism” into the Middle Ages. There was no massive introduction of Stoic writings 
into the Middle Ages (1983, 1). Rather, the assimilation of Stoic ideas was indirect, 
and mediated through the Greek and Latin Church Fathers (idem. 5). Consequently, even

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300 Dexippus In Cat. 23.25-24.4 (SVF II.374). The relationship between \(ta\ poia\) and \(ta\ idiós\ poia\) is complex, and not without its interpretive and philosophical problems. For an analysis of the relation between qualified and uniquely qualified things, consult Irwin’s study of the Stoics on individuals (1996, 466-75), and also Rist (1969, 159-67).

301 See Simplicius In de Anima 217.36-218.2; and Arius Didymus (SVF II.395); cf. Simplicius In Cat. 140.24-30.

302 Sten Ebbesen has recently claimed that Stoicism was both everywhere and nowhere in the Late Middle ages (2004, 108). Stoicism is everywhere because a significant number of Stoic ideas can be detected in scholastic thought. But Stoicism is at the same time nowhere, for like us the scholastics did not possess any texts of the major Stoic thinkers, nor did they possess anything like von Arnim’s landmark collection of fragments (SVF). Concerning mereology, Ebbesen notes that there is some evidence that at least the later medieval thinkers were aware of the puzzle of Dion and Theon (2004, 122 and note 59).
if it is not entirely without precedent, Abelard’s mereology is a remarkable advance in the history of the subject. Moreover, his utilization of the principle of overlap to develop a subtle analysis of sameness in being and numerical sameness has no detectable precedent in the history of philosophy. It is a unique accomplishment.

Abelard’s theory is perhaps less satisfying when it addresses the problem of persistence. Such everyday objects as brooms and houses cease to be objects that endure through time and seemingly trivial mereological change. Moreover, the endurance of non-human substances is not guaranteed, since my reconstructed solution to substantial persistence rests heavily upon texts which are not definitively from Abelard’s own hand (4.1.2).

It seems that some of Abelard’s students, the so-called Nominales, took the more extreme position with respect to the endurance of substances (4.3.4). Some of the reports of their views suggest that both Socrates’ essentia and Socrates’ substance are mereologically constant, whereas Socrates the person is not mereologically constant. Furthermore, our evidence concerning the Nominales suggests that they made no distinction between the forms of artifacts and the forms belonging to substances. In short, the Nominales appear to be even more anti-realist than their teacher. We might even say that, because they reject the notion that substantial differentia are real, the Nominales have taken Abelard’s mereological views to their logical conclusion.

The Abelardian or Nominalist world-view is austere, and revisionist. It requires us to rethink and to reject some of our deeply held intuitions about the nature and persistence of ordinary objects. Intuitions may be jettisoned, and if the Nominales are
right, many of them should be. But sometimes intuitions can be indications that our
metaphysics has taken the wrong tack. It appears that a number of twelfth-century
philosophers felt precisely this way. In this period, we can detect a strong tendency
toward what I called the Moderate position on mereological change and persistence. In
this study I focused upon Pseudo-Joscelin’s Moderate position, and argued that it is a
viable alternative to Abelard’s theory of persistence. Pseudo-Joscelin rejects the claim
that persistence is determined by mereological constancy. In place of this austere
principle, Pseudo-Joscelin suggests that a combination of mereological continuity and the
persistence of form and function can secure the persistence of objects. He thinks that
these principles can secure persistence of not only humans and primary substance, but
also artifacts, and even universals. Pseudo-Joscelin rejects Abelard’s thesis that the
removal of any part entails the destruction of the whole, even in the case of artifacts and
universals. The annihilation of a whole follows only from the removal of parts principal
in essence, since the removal of a part principal in essence leads to the elimination of the
object’s form and function. Thus, a chip in the doorframe does not annihilate this house,
whereas removing a keystone in the foundation, or perhaps blowing a large hole in the
roof, will do just that.

While Pseudo-Joscelin’s account agrees with commonsense, it does not come for
free. Pseudo-Joscelin’s account of persistence depends upon some controversial
philosophical principles. Specifically, Pseudo-Joscelin requires that forms, and the
functions encoded in them, play a primary role in identity and persistence (5.1.2). If
forms and their functions are to play their proper roles in Pseudo-Joscelin’s metaphysics,
these forms must be ontologically independent to a greater degree than Abelard is (at least at times) willing to endorse. This is most apparent in the case of artifacts, where Abelard insists that forms merely supervene upon the arrangement of the parts. The form of a house or a broom is not real. In contrast, Pseudo-Joscelin must assert that the form of the broom is something real, and that it is relatively independent of the matter of the broom.

Ultimately, then, in order to declare a victor of the struggle between Abelard and Pseudo-Joscelin, we must first decide whether we prefer our forms to be of the supervening variety or the robust variety. Those suspicious of independently existing forms will prefer the austere metaphysics initiated by Abelard and carried to its logical conclusion by the Nominales. Those who are comfortable with independently existing forms can choose Pseudo-Joscelin’s more Moderate program.

In this study I have often compared and contrasted the metaphysics of our twelfth-century philosophers to what we might call a “standard” understanding of Aristotelian metaphysics. One of my claims is that while Boethius is well versed in this standard Aristotelianism, for a variety of reasons he often fails to relate this system in its full complexity to later medieval readers. But if I am right, Pseudo-Joscelin’s Moderate metaphysics bears a degree of similarity to standard Aristotelianism. In both systems, form plays a dominant role in determining the individuality, identity, and survival of a composite thing. However, Pseudo-Joscelin applies his mereological principles in ways Aristotle and his neoplatonic followers do not. Most notably, Pseudo-Joscelin vigorously defends the thesis that a universal is an integral whole composed of particulars.
Abelard thinks collection theories were indefensible, since if universals were integral collections, they would be subject to the rule of mereological constancy. But this would undermine the value of universals as objects for the understanding and semantic reference. Pseudo-Joscelin defends the theory by expanding upon his theory of persistence for substances and artifacts. Universals also have something akin to a structure, which guarantees their persistence through change in membership. Ultimately, I think that Pseudo-Joscelin’s theory boils down to a version of resemblance nominalism, with all of that general theory’s advantages and liabilities. I leave the reader to decide whether the theory succeeds as an answer to the problem of universals. But again I ask that the reader consider how similar the metaphysical assumptions of Pseudo-Joscelin and Abelard ultimately are, for Abelard also flirts with resemblance nominalism.

These observations regarding the similarities and dissimilarities between Pseudo-Joscelin’s Moderate metaphysics and a standard Aristotelianism suggest another reason why the intellectual innovations of the twelfth century are worthy of study, and why a complete history of twelfth-century philosophy is desirable.

Boethius, for reasons of expediency, or perhaps out of a genuine lack of carefulness, bequeathes a mereological system that is bled of powerful Aristotelian tools, to the early middle ages. These omissions and simplifications clearly shape the way that Abelard and Pseudo-Joscelin proceed to frame and resolve mereological puzzles. For these reasons, it is tempting to conclude that Boethius hinders intellectual progress by emphasizing the textbook rule of parts and wholes, while obscuring the metaphysical potency of forms. But Boethius’ seemingly negative influence is in reality an impetus for
some remarkably innovative philosophical reflection. For example, deprived of full
access to classical Aristotelian concepts, Pseudo-Joscelin is nevertheless able to
independently motivate the need for a form-based solution to puzzles concerning
mereological change. Given the dominance of Aristotle’s hylomorphism in the later
medieval periods, it is surely possible that had Abelard been acquainted with Aristotle’s
fully fleshed-out metaphysics, he would not have developed his austere, and at times
reductivist analysis of material objects. In short, because they were liberated from the
authoritative constraints of a full-fledged Aristotelian system both Abelard and Pseudo-
Joscelin were free to develop original, sophisticated, and I think, defensible theories
about the relations of a thing to its parts.
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