

## ***Parts Across Space and Time* – Brief Book Proposal**

This book is a contribution to the literature on parthood, location, and the relationship between them. Its central thesis is a claim about how objects can relate to regions: necessarily, objects that extend across time and space do so by having proper parts (i.e., parts distinct from the whole) within each disjoint region they are present in. I argue for this by first arguing that every extended region is composite, and then arguing against the possibility of two alternative ways for objects to extend across composite regions: according to the first, objects can be *multilocated* across extended regions; that is, they can be exactly located at more than one region. According to the second, objects can partlessly *span* extended, composite regions; that is, they can fill extended, composite regions without having any parts exactly located at smaller subregions of those regions. If extended objects can't span extended, composite regions, it means that they must have parts located at smaller subregions of the composite regions they extend through. If they can't be multilocated through the regions, then those parts located at those smaller subregions must be distinct from the whole object. So, if objects cannot span or multilocate, objects that extend through regions do so by having proper parts within each region they fill. My arguments apply to temporal as well as spatial regions, so they also have direct implications for persistence through time.

In addition to establishing my thesis, this book also serves as an introduction to and critique of leading theories of parthood and location, and an informative resource about how to understand debates about persistence. The volume also constitutes an example of a methodology that requires our theories to be not only descriptively correct, but explanatory: I take impossible cases seriously, seeking explanations for why they are impossible rather than merely ruling that they are impossible. This aids us in understanding the explanatory roles some of our theories ought to play.

The book consists of 8 chapters and an introduction. The table of contents:

### Introduction

1. Theories of Parthood and of Location
2. Extended Regions and Logics of Location
3. Problems for Multilocation and Mereology
4. Additional Problems for Multilocation
5. Problems for Spanners
6. How to be a Four-Dimensionalist
7. The Problem for Three-Dimensionalism

## 8. Implications for Deflationism

The introduction describes and argues for the methodology of taking impossible cases seriously. Chapter 1 provides an overview of issues about parthood and location, bringing readers who have never encountered these topics before up to speed, while presenting new ways of thinking about the topics for those more familiar with the literature. This chapter also contains critiques of the leading theories of parthood and location.

In Chapter 2, I argue that extended, simple regions are impossible. I show that the possibility of such regions, with some plausible assumptions and some recombination principles, allows us to generate what I call “Place Cases”. In these cases, an extended, simple region contains an object that fails to fill it. Logics of location that include only one primitive locative relation are unable to adequately describe Place Cases. I argue that the best response to this incompatibility is to reject the possibility of extended, simple regions.

Chapter 3 presents one of the central arguments of the book, establishing that if it is possible for an object to be located at multiple regions, we must relinquish our most plausible axioms about parthood. For instance, it appears we must give up claims as plausible as the Transitivity of Proper Parthood, which says, roughly: if  $x$  is some but not all of what makes up  $y$ , and  $y$  is some but not all of what makes up  $z$ , then  $x$  is some but not all of what makes up  $z$ . It seems, then, that we have a choice: endorse a restrictive view about location, or give up our most foundational claims about parthood. In Chapter 4, I present two additional problems that aid us in choosing a response: in the first, we see that an object’s being located at multiple regions causes problems for the *more fundamental than* relation as well as the *parthood* relation. And the second shows that multilocation, in combination with some other possibilities, gives us a new, particularly problematic version of the Problem of Intrinsic. In light of these cases, I claim we ought to preserve our theory of parthood and reject the possibility of multiple location.

In Chapter 5, I present problems for thinking that there can be *spanners*: extended simples that occupy composite regions. I note worries in the literature, and add the worry that, if a case involving colocation and spanners is possible, it pushes us to adopt a new mereological primitive. I claim our best response is to reject the possibility of spanning, which in combination with the impossibility of multilocation, gives me the necessity of the kind of persistence across space and time that I prefer.

Chapters 6 and 7 describe how my preferred view of extension relates to leading views of persistence across time. In Chapter 6, I describe reasons for endorsing a more flexible brand of Four-Dimensionalism, and show that this formulation amounts to taking persistence across time to require exactly what I require for extension across time. I then present what I think the four-dimensionalist should say to avoid positing multiple location without counterintuitive consequences in my central case from Chapter 3. I recommend, following Sider, that they claim entities can have multiple *stages* at a time even if they have only a single temporal part at that time. I raise problems for several tempting accounts of what it is to be a *stage* (including Sider’s account), then I offer my own account. In Chapter 7, I argue that the Three-Dimensionalist will have a harder time

responding to the cases from Chapter 3, and that the Three-Dimensionalist Eternalist is unable to deny the possibility of the cases without undercutting her own view.

Finally, in Chapter 8, I discuss the metaontological implications of my view of extension. I argue that my view gives us a picture much like the fundamental metaphysics presupposed by those who think there is not an interesting disagreement between Three- and Four-Dimensionalists, so even the most metaphysics-averse will have reason to find these arguments interesting.

This book is intended as a companion to my *Mereology and Location*, an edited volume published recently by Oxford University Press. That book provided an introduction to the topics of parthood and location, followed by a group of exceptional, cutting-edge papers by leading researchers in these fields. The papers offered readers quick views into a variety of topics, while containing important contributions to those debates. This second book follows up on this, bringing together many of those topics with a single, longer discussion. It offers a broader worldview based on a particular view about how objects can relate to spatial and temporal regions. The two texts can stand alone, but complement one another.