NOTHING OVER AND ABOVE*

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Summary
The slogan “the whole is nothing over and above the parts” animates many theories of parthood and is central to our ordinary conception. I examine the slogan's relationship to classical mereology, Kit Fine’s “operationalist” account of “mere sums”, composition as identity, and unrestricted composition.

“The whole is nothing over and above the parts”—this slogan animates many theories of parthood, is intuitively compelling, and is arguably central to our ordinary conception. Yet it seems to make no sense. As I understand it, the slogan says that an exceedingly intimate relationship holds between a whole and its parts: in some sense the whole is no different from its parts. But how can that be? I am just one thing; my head, arms, legs, and torso are more than one in number; so how can I be “nothing over and above” or “no different from” them?

The slogan is admittedly vague. But there are various precise theses purporting to capture the slogan's spirit whose truth we can meaningfully debate. The murky question of whether the theses really capture the spirit will remain—and I do not mean to downplay the importance of this question—but at least the murk will be contained. First we will consider a boring (though perhaps ultimately the best) precise rendering of the slogan's spirit, which is simply that classical mereology is true. We'll then discuss some more exciting ways to precisify the slogan, and conclude by asking whether the exciting ways promise anything better.

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'Nothing over and above' is a flexible piece of philosophical rhetoric, applicable across a variety of situations and to entities of various categories. A fact might be said to be nothing over and above another when it is necessitated or grounded by the latter fact; a property might be said to be nothing over and above another when it is realized by the latter property; one might say that wholes are qualitatively nothing over and above their parts meaning that composite objects possess no “emergent” properties; and so on. But the slogan to be explored here concerns, it would seem, a narrower sense of ‘nothing over and above’: that of a certain especially intimate ontic relation between a thing and its parts. Though I will be open to attempts to explicate this narrower sense in terms of other sorts of “nothing over and above”, the narrower sense itself is our target.

1. **Classical mereology**

Classical mereology is a formal theory of parts and wholes. A typical presentation: take ‘$x < y$’ as a primitive predicate for parthood, define overlap (“$Oxy$”) as sharing a part in common, discreteness (“$Dxy$”) as nonoverlap, proper parthood (“$x \ll y$”) as parthood without identity, and fusion as follows:

$$x \text{ Fu } S \quad ("x \text{ is a fusion of set } S") =_{df} \text{ each member of } S \text{ is part of } x, \text{ and } \text{ each part of } x \text{ overlaps some member of } S$$

As axioms, assume that $<$ is reflexive, transitive, antisymmetric, and also obeys:

- **Weak supplementation** If $x \ll y$, then some part of $y$ is discrete from $x$

- **Unrestricted composition**: For any nonempty $S$ there exists a fusion of $S$

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1. The broad sense may be akin to Karen Bennett’s notion of building. Bennett also provides an interesting way to take the slogan, albeit one that is very distant from those considered here: positing nonfundamental entities does not count against the simplicity of a theory (2015, chapter 7).
3. When $x \text{ Fu } \{y_1 \ldots\}$ we may say informally that $x$ is a fusion of $y_1 \ldots$
4. This axiom set is not minimal: reflexivity and antisymmetry can, for instance, be eliminated (Hovda, 2009). Since we will be interested in certain subsystems of classical mereology, it’s best to retain the redundancy.