Part I: Wholes

Chapter 2
Concrete Comprising Entities

I - Preliminaries

It is a familiar and pervasive feature of thought and speech that often when we are able to refer to many distinct entities, x_1, x_2, ... , x_n, we also seem able to refer to an entity y which in some loose sense we take to include or contain x_1 , x_2 , ... , x_n. Let us say that in such cases y *comprises* x_1, x_2, ... , x_n, and so describe y as a *comprising* entity. A tree, we may say then, comprises its cells. The set (in the ordinary, non-mathematical sense) whose members are the tree's cells may also be said to comprise those cells. We usually consider the relation between the cells and the tree to be *compose*. The relation between the cells and the set of cells we normally take to be a different relation, *are all the members of*. However, these relations have general features in common which seem to justify our taking them as species of one and the same generic relation.

In the first place, while the cells are *many* entities, the tree is *one* entity, and similarly the set of cells is *one* entity: Thus both relations are relations between many entities and one entity. Secondly, there is a sense in which the existence of both the tree and the set of cells depends necessarily on the existence of the cells. Suppose the cells did not exist, but that the world was otherwise exactly as it is, except in respect of everything which depends necessarily on the existence of the cells. Necessarily, in such a world, neither the tree nor the set of cells would exist.

Thirdly, with regard both to the tree and the set of cells, it seems to be an appropriate use of metaphor to say that the cells *belong* to them: The cells belong to the tree, and the cells belong to the set (though admittedly 'belong' does not have precisely the same sense in the two cases). Finally, it is at least *prima facie* plausible loosely to describe speaking of either the tree or the set by saying that in either case we speak of the many cells 'as one entity'.

We say therefore that both the tree and the set are *comprising entities*, and that the cells are comprised by both the tree and the set. By contrast, it is clear that the relations between David and his many friends and between David and his many books are not relations between comprising and comprised entities, although both are relations between one entity and many entities, and the verb 'to belong' is used to describe the relation between the many entities and the one entity. For the second and fourth feature are missing in these cases.

Ultimately, however, the decision to speak about a generic comprising relation need not be treated as more than a heuristic device, a way of focusing on several very general problems without getting bogged down at this early stage of the discussion in the numerous terminological distinctions which abound in this field. With this in mind, it seems best to avoid attempting a precise characterisation of the comprising relation, and instead to have before us typical specific examples.

Consider therefore the following table, in which expressions designating many comprised entities are listed in the left-hand column, and expressions designating corresponding comprising entities are listed in the right-hand column:

COMPRISED ENTITIES	COMPRISING ENTITY
stones	wall
molecules	stone
molecules	tree
cells	organism
cells	collection of cells
pebbles	collection of pebbles
pebbles	class of pebbles
pebbles	set of pebbles
birds	flock
players	team
grains of sand	heap
buildings	group of buildings
stars	star-cluster
meteorites	collection of meteorites

The expressions listed in the left hand column are in the plural, syntactically speaking: They combine with verbs in the plural to form grammatical sentences. Thus on syntactical evidence each of them is

apparently used to refer to many entities. The expressions listed in the right hand column are syntactically either singular or indeterminate (with respect to number). 'Organism' combines with verbs in the singular to form grammatical sentences, while 'team' combines either with verbs in the singular or with verbs in the plural to form grammatical sentences ('The organism survives in harsh conditions'; 'The team plays/play well').

On syntactical evidence, again, each of the singular expressions is apparently used to refer to one entity, as are each of the indeterminate expressions in contexts where they combine with verbs in the singular. I shall assume in what follows, unless explicitly stated otherwise, that indeterminate expressions are found in such contexts, and thus I shall treat them as syntactically singular. I shall take it then that each of the expressions in the left hand column is apparently used to refer to many entities, whereas each of the expressions in the left hand column is apparently used to refer to one entity.

One point should be emphasized about my use of 'comprises': I say that the organism comprises the cells; I do not say that the organism comprises *each* of the cells. 'Comprises' expresses a certain relation which holds between the organism, on the one hand, and the cells taken together, on the other hand.

Regarding some of the examples in the table the existence of a comprising entity is not controversial, or at least no more controversial than the existence of the comprised entities. It is normally assumed for instance that there exists an entity to which 'organism' is appropriately used to refer, no less than it is assumed that there exist entities referred to by means of the expression 'cells'. What *is* controversial here is how we are to conceive of the relations between the comprising and comprised entities. Pre-theoretically, it is a relation between a whole and the many parts which compose it. Various theoretical accounts have been offered for this relation, however, and each has its own difficulties. We will be looking more closely at the theory of wholes and parts in later chapters.

Regarding some of the other examples in the table, however, the *existence* of a comprising entity is much closer to the foreground of controversy. Common sense does not seem to have as confident a position as regards the existence of entities to which expressions such as 'team of players', 'flock of birds', 'collection of pebbles' or 'set of pebbles' might be used to refer, as it did regarding the existence of a wall, a stone, a tree, or organisms in general.

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