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1. Entities, constructions, and functions

When one travels from Los Angeles to New York, going, say, by way of St. Louis, Chicago, and St. Louis again, one's *destination* and the *itinerary* one follows to get there are clearly two distinct items. There is no sense in which Los Angeles, St. Louis, or Chicago are parts, or constituents, of New York. Each of the three cities, on the other hand, is an inalienable constituent of the circuitous itinerary in question, and the removal of any of them produces a different itinerary. An itinerary is a compound in which a number of locations occur, some of them possibly more than once, as St. Louis does in our example.

An arithmetical calculation is much like an itinerary. When one multiplies two by two and subtracts three from the result, one makes an intellectual journey whose destination is the number one. This number is no more to be confused with the calculation that yields it than New York is with any particular route leading to it. There is no sense in which the numbers two and three or the operations of multiplication and subtraction are parts, or constituents, of the number one. Each of them, on the other hand, is an inalienable part of the calculation, or, as I shall also say, *construction*, in question. A numerical construction is a compound in which several numbers and operations occur, some of them possibly more than once, as two does in our example.

Arithmetical expressions represent, or depict, constructions. The construction consisting in multiplying two by itself and subtracting three from the result, for example, finds its linguistic representation in the term $(2 \cdot 2) - 3$. The primitive symbols '2', '3', '.', and '-' represent the primitive constituents of the construction (namely the numbers two and three and the operations of multiplication and subtraction respectively) and the way the symbols are arranged into the term is exactly parallel to the way those numbers and operations are organized into the construction. For example, the two occurrences of the numeral '2' in the expression correspond to the two appearances of the number two in the construction, and the parentheses group the symbols the way the corresponding entities are grouped in the construction: they indicate that the multiplication of two by two is a self-contained stage of the construction, which (say) the subtraction of three from two is not.