Cardinality Scales, measuring and approximation

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In this talk I explore and develop the concept of cardinality scales, originally proposed in Rothstein (2016), which allow us to compare the cardinal properties of pluralities without actually counting the atomic parts of the pluralities. These cardinality scales allow us to express the truth conditions of sentences such as (i) without making direct reference to the cardinalities of the sums of furniture that Mary and John possess.

(i) Mary has more furniture than John.

Cardinality scales allow us to give a single semantic representation for (i), while allowing it to be evaluated in terms of any contextually relevant parameter of comparison in contrast to (ii), which forces a comparison in terms of cardinality:

(ii) Mary has more pieces of furniture than John.

I suggest that cardinality scales are particularly useful in situations of approximation, where we are able to say whether plurality A or B is larger, without knowing what the exact cardinality of either A or B is, and I conclude by reviewing a number of different approximation techniques, comparing approximation using cardinality scales to imprecise and indirect counting.