

RESEARCH STATEMENT

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Much of my research addresses issues running through logic, metaphysics, and philosophy of language. A major part of the research is concerned with (a) understanding *the nature of the many*, and (b) analyzing *linguistic and cognitive devices* that relate to them. My investigations into the many include analysis of *plural constructions* of natural languages: plural terms (e.g., ‘Venus and Serena’), predicates of the plural form (e.g., ‘have won a doubles title’, ‘are two’), plural quantifiers (e.g., ‘some things’), etc. Plural constructions (in short, plurals), I think, are essentially devices for talking about many things as such, while singular constructions (e.g., ‘Venus’, ‘has won a singles title’, ‘something’) are basically devices for talking about them one by one. Thus I develop an account of the logic and meaning of plurals as devices for talking about the many (as such). This approach departs radically from the traditional approach. On this approach, plurals are essentially redundant devices for abbreviating what one can say using only singular constructions. On my approach, by contrast, plurals have basic semantic functions not reducible to those of their singular cousins and they enrich our language and thought by extending their limits.

Plural terms, on my account, refer to many things (as such), and predicates of the plural form (or plural predicates, which may take plural forms) refer to *plural attributes*, attributes relating to the many (as such). For example, ‘Venus and Serena’ refers to two objects (i.e., the two tennis players), not to any one object, and ‘have won a double title’ signifies a *plural property*, namely, the property of having won a double title, a property that can be instantiated by two objects as such. (So ‘*Venus and Serena* have won a doubles title’ is true because the two people that the italicized term refers to [collectively] have the above-mentioned property.)

This account of plurals leads to the view that natural numbers are numerical properties. On this view, the number 2, for example, is the plural property of being two, a property instantiated by any two objects (e.g., Venus and Serena), though not by any one of them. This view, I think, yields a natural analysis of arithmetical truths (e.g., ‘ $2+1=3$ ’) and a good account of our knowledge of numbers. I think we humans have a basic mental ability to conceive (and in some case even perceive) many things as such and we have empirical access to some of the numerical properties identified as natural numbers just as we have empirical access to some colors and shapes. This clarifies, on my view, an important (if not the only) basis for our knowledge of numbers and helps to meet the longstanding challenge to explain how we can have any mathematical knowledge.

Although most Indo-European languages, including English, have plural constructions, this is not a universal feature of language. A wide range of languages, including the so-called *classifier languages* (e.g., Chinese, Japanese, Korean), have no plural constructions. Does this mean that they have no device for talking about the many? I think not. The reason that they have no plurals is simply that they do not have a grammatical number system, of which the singular/plural distinction is an element. I think such languages have devices for talking about the many that do not rest on plural forms (as well as those for talking about the one that do not rest on singular forms). So I study and analyze such devices for talking about the many and generalize my account of plurals for them.

This leads me to a study of special expressions, (*numeral*) *classifiers*, that classifier languages use in nominal constructions involving numerals, e.g., counterparts of ‘two cows’ (classifier language counterparts of this phrase involve classifiers as well as numerals and nouns). Many linguists, philosophers, and anthropologists regard classifiers as a special kind of measure words (e.g., ‘cup’ in ‘two cups of coffee’), and argue that classifier languages use those special expressions because all their common nouns (like the English ‘coffee’) are mass nouns (the *mass noun thesis*). I think this prevalent view is fundamentally mistaken. I argue that classifier languages also have count nouns as well as mass nouns (the *count noun thesis*), give a semantic account of classifiers that supports this view, and formulate an account of the mass/count distinction that respects the existence of count nouns in languages with no grammatical number system. This facilitates the formulation of a general account of devices one can use to talk about the many, including not only English count nouns but also classifier language count nouns.

I published the results of the research sketched above in a book and more than a dozen articles¹ and presented them in conferences in logic, philosophy, linguistics, and cognitive sciences. I plan to unify the accounts given in the publications and presentations and develop them further in a series of three books:

- [a] *The Logoi for the Many: Plural Constructions of Natural Languages*
- [b] *Cognition of the Many and Mathematical Knowledge*
- [c] *Speaking of the Many and the Much*

[a] focuses on the logic and meaning of plurals as devices for talking about the many. [b] relates such devices to human cognition to account for mathematical knowledge while giving analysis of arithmetical truths. [c] gives a general account of devices for talking about the many, formulates proper criteria of the mass/count distinction applicable to both classifier and non-classifier languages, and presents accounts of various kinds of mass nouns, including stuff-mass nouns (e.g., ‘water’), object-mass nouns (e.g., ‘furniture’), and abstract mass nouns (e.g., ‘generosity’).

I am also working on a range of topics that are not directly related to the issues discussed above. One of them is *semantic relationism*, the view that linguistic expressions (e.g., proper names) have semantic relations that are not reducible to their intrinsic semantic features (e.g., reference, senses). I think one can combine this view with weak referentialism (the view that reference determines the intrinsic semantic features of proper names) to resolve Frege’s puzzles. This is the approach Kit Fine takes in his book, *Semantic Relationism*. The version of semantic relationism presented in the book, I think, has serious problems in dealing with some of Frege’s puzzles. But I think an alternative, more radical version can avoid the problems. (On this version, there are different propositions that have no intrinsic difference.) I plan to develop and present the modified version of semantic relationism and relate it to recent discussions of the nature of propositions.

¹See “List of publications (with abstracts)”, available at https://www.academia.edu/9332375/Publication_List_with_Abstacts.