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# A meta-analysis of species concepts as units of generalizations in biology

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## Abstract

”New light on species essentialisms in biology” (Francesca merlin, Anouk Barberousse, Elena Casetta, Françoise Longy, Thomas Reydon)

The main role of taxonomic enterprise in science today is to provide kind-membership conditions that define epistemically fruitful groupings of entities allowing inductive generalizations. Philosophers of science are concerned with knowing whether these groupings correspond to the objective carving of the world (i.e., they are ”natural kinds”) or, on the contrary, are just useful tools in order to investigate it. In biology, the presence of a plurality of definitions of what biologists call ”species concept” provokes a variety of reactions in philosophers. Some of them adopt a monist attitude and maintain that biologists should look for a single definition of what a species is (Sober 1984, Ghiselin 1987, Hull 1987). Others are pluralist and argue, in various forms, for a realist (Kitcher 1984, Dupré 1993) or for an anti-realist conception of biological species (Stanford 1995, Ereshefsky 1998). In my talk, I offer a meta-analysis of existing concepts of biological species, which is intended to be a prerequisite to any discussion about biological species realism/anti-realism. First, I will consider the plurality of species concepts in biology and evaluate for each them whether or not it fulfills the epistemic role of being a unit of explanatory and predictive generalizations in biology. Then, I will investigate which kind of generalizations each species concept allows making and, on this basis, whether some species concepts are better suited as epistemically fruitful groupings in biology. I will finally show why the analysis I offer is a precondition for engaging the realism/anti-realism debate about biological species.

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