Naturalism and Mathematical Realism

Since the naturalistic turn in general philosophy around the 1950s, it has become more and more natural to consider ontological questions in the philosophy of mathematics from naturalistic perspectives. Particularly, there can be found two leading paths from naturalism to mathematical realism in the literature: the classic indispensability argument provided by W. V. Quine and Hilary Putnam, and the radical naturalistic one advocated by John Burgess and Gideon Rosen. The first is one of the most influential arguments in contemporary philosophy of mathematics, and appeals to the applications of mathematics in natural sciences to champion mathematical realism. The second is relatively not so widely discussed, but tries to do more justice to mathematical sciences and defend mathematical realism more directly. In this talk, I will examine both of these two paths, comparing their difference and present my reactions to them. I will distinguish two versions of the indispensability argument and point out their weakness respectively. I will object the Burgess-Rosen naturalistic argument for realism and show that their version of naturalism cannot avoid the Benaccerraf problem as they claim.