Philosophy has a tendency to remain aloof in relation to practical matters. But it need not! I am a great believer in the potential help the philosophy (and history) of science can offer science. In this talk, I try to obtain some lessons for theory choice and construction from the philosophy and history of science. I do so by considering realist reactions to historical challenges like the pessimistic meta-induction. I focus on ether because it has a long history and is associated with some pretty spectacular theorists and theories.