

WISSENSCHAFTLICHER REALISMUS

Unterbestimmtheit von Theorien (I)

R. Boyd, Scientific Realism

The Stanford Encyclopedia of Philosophy (Summer 2002 Edition), Edward N. Zalta (ed.), Auszug

It is easy to characterize the basic empiricist underdetermination argument against scientific realism. Call two theories empirically equivalent just in case exactly the same conclusions about observable phenomena can be deduced from each. Let T be any theory which posits unobservable phenomena. There will always be infinitely many theories which are empirically equivalent to T but which are such that each differs from T, and from all the rest, in what it says about unobservable phenomena (for formalized theories, this is an elementary theorem of mathematical logic). Evidence in favor of T's conception of unobservable phenomena ("theoretical entities") would have to rule out the conceptions represented by each of those other theories. But, since T is empirically equivalent to each of them, they all make exactly the same predictions about the results of observations or experiments. So, no evidence could favor one of them over the others. Thus, at best, we could have evidence in favor of what all these theories have in common—their consequences about „observables“ – we could confirm that they are all empirically adequate – but we could not have any evidence favoring T's conception of unobservable theoretical entities. Since T was any theory about unobservables, knowledge of unobservable phenomena is impossible; choice between competing but empirically equivalent conceptions of theoretical entities is underdetermined by all possible observational evidence.