

search for a new predictor? But it is not for these reasons that we find the example absurd, it is because the relationship gives us no *understanding* of the situation. That surely is why we object to Jeven's sunspot theory.

Consider Darwin's theory of evolution (this discussion follows Toulmin [262]). Darwin's theory did not predict a new type of species — it explained the past. It could of course be argued that Darwin's theory was useful for explaining the reactions of infective micro-organisms to antibodies etc. But the theory was accepted before these predictions. And so we could go on but the point should be clear enough — we seek understanding not forecasting power. As Toulmin puts it [262, 36]: « a novel and successful theory may lead to no increase in our forecasting skill; while alternatively, a successful forecasting technique may remain for centuries without any scientific basis. In the first case, the scientific theory will not *necessarily* be any worse; and, in the second, the forecasting technique will not *necessarily* become scientific, just because it works ». Now we might cite other writers who would discuss other things as well, but most would stress understanding, and prediction to a lesser degree.

Consider now Friedman's view that only empirical testing matters. As he points out there may be some situations when more than testing is required, viz: « The choice among alternative hypotheses equally consistent with the available evidence must to some extent be arbitrary, though there is general agreement that relevant considerations are suggested by the criteria 'simplicity' and 'fruitfulness', themselves notions that defy completely objective specification » [79, 10]. Now this might seem a trivial point but many philosophers would argue that simplicity, fruitfulness etc. play a role even when the evidence does not equally support two theories. Furthermore some theories may be rejected solely by logical argument. This, note Klappholz and Agassi, is how mercantilism was disposed of [120] <sup>(14)</sup>.

Turning to the point concerning realism of assumptions, Friedman sees the reality assumptions as a largely irrelevant issue. But he is not quite consistent in this. « In fact, Professor Friedman, after blasting the testing of 'assumptions', or demands regarding the 'realism' of assumption, seems to re-introduce these very notions under other names. Professor Friedman begins by stressing that 'full and comprehensive evidence' is vital 'in constructing hypotheses', which must be consistent with the evidence at hand... He also holds that 'assumptions' have the necessary role of 'specifying the conditions under which the theory is expected to be valid'. 'The assumptions of a theory' also may 'facilitate an indirect test of the hypothesis by its implication' » [108, XIII-XIV].

Yet Friedman does appear to believe that assumptions can be unrealistic: « the relevant question to ask about the 'assumptions' of a theory is not whether they are descriptively 'realistic', for they never are, but whether they are sufficiently good approximations for the purpose in hand » [79, 15]. This sounds rather like suggesting that the explanans in our description of explanation is

<sup>(14)</sup> The present writer accepts their argument but has doubts about the example.