Popper, Reichenbach and the like agree in arguing that the FORMULATION OF HYPOTHESES is not a concern of philosophy of science.

* Contemporary philosophers argue on how H can be supported, not on how they can be conceived

On the other hand, Aristotle, Pierce and Hanson suggest the contrary, i.e. that a LOGIC OF DISCOVERY exists, and certainly there are reasons (that may be different or not from those that lead one to accept an H) for which one suggests a *kind* of H altogether

* NB.: LoD and the psychology or sociology that enquire into how scientists came up with H are entirely different, and even history of discovery has nothing to do with logic
* Han. Is convinced that any LoD must already be seriously discussed, and its inexistence has sometimes been taken as a PREMISE, not as the CONCLUSION of an argument

There are different reasons for 1. Accepting a specific H; and 2. Suggesting that whatever H will be successful in the end, it will be of a certain *kind* of H (i.e. thinking H is PLAUSIBLE)

* KEPLER’S CASE
* In the end he chose one *kind* of H (noncircular orbits and specifically elliptic ones), however there were many others available to him
* Certainly there were psychological reasons involved against the FORMULATION of new H, but neither these nor Kepler’s (or Newton’s or Galileo’s) genial intellect exclude rational enquiry
* INDUCTION is right when it says laws are related to inferences from data, but it is wrong in conceiving the law as a summary of these data, instead of an explanation
* In H-D, laws explain data -> Braithwaite says an H is a natural law when it is a PROPOSITION thought to explain its instances; if the belief in this PROPOSITION is based only on direct knowledge of the instances, it is a poor explanation
* H-D doesn’t account for the link between thinking of data and thinking of what *kind* of H will lead to a LAW; actually for them the foundation lays in the inference from H to OBSERVATION-STATEMENTS
* Thus, H-D is useful only after catching HYPOTHESES, and studying only this leaves a whole field of research unexplored
* RETRODUCTION: 1. Some shocking (i.e. different from accepted theories) phenomena are observed

2. These wouldn’t be so shocking if there was a *kind* of H explaining them

3. There are reasons for elaborating a HYPOTHESIS of a certain *kind* and proposing

it

applied to Newton’s LAW of gravitation

1. Kepler discovered planets’ orbits are elliptical

2. If a LAW of ‘gravitation’ based on inverse square was elaborated, 1. Wouldn’t be

so surprising

3. There are good reasons to deem this *kind* of H as PLAUSIBLE

It can be said Newton RETRODUCED LAWS from phenomena

* All this begins with anomalous phenomena asking to be explained, and once proposed, H would be further elaborated as described by H-D