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# PHILOSOPHY OF SCIENCE AND ITS RELEVANCE TO RESEARCH DESIGN

## WAYS OF KNOWING

- ▶ categories of claim: descriptive, explanatory, ~~aesthetic, ethical~~
- ▶ sources of certainty: empirical, rational, ~~authority~~
- ▶ varieties of knowing: knowing-that (facts), know-how (skills), ~~knowing from within (how to "go on")~~
- ▶ "science" as a category generally rules out some of these options

DIVISIONS OF KNOWLEDGE

	nonevaluative
representational	factic

DIVISIONS OF KNOWLEDGE

	nonevaluative	evaluative
representational	factic	technical
expressive	aesthetic	ethical

## SCIENCE AS FACTIC CONSTRUAL

- ▶ actual concrete claims are indeterminate as to their proper evaluative standards
- ▶ "science" = detached, impersonal knowing
- ▶ *episteme*: aspirationally factual and true *in general*
  - ▶ hence, *not* technical (results) or aesthetic (beauty) or ethical (rightness)
- ▶ *systematic, public, worldly*

## MISUSE IN THE SOCIAL SCIENCES

- ▶ source of substantive ideas about society
- ▶ instruction-manual for how to do empirical research
- ▶ “how to be a real science”
  - ▶ as if there were *a* single “scientific method”
  - ▶ trump-card in disciplinary debates
  - ▶ opportunistic deployment

## WHAT IT ACTUALLY IS

- ▶ builds on, or follows after, scientific practice
- ▶ aims to elucidate the *logic* of scientific inquiry
- ▶ asks *how*, and sometimes *why*, scientific inquiry works
- ▶ does *not* resolve controversies of scientific explanation

## WHY WE SHOULD CARE

- ▶ the disciplining of social science scholarship relies, often explicitly, on claims about its “scientific” status
- ▶ at the heart of “policy-relevance” and every other non-partisan role for scholarship in politics
- ▶ critical to distinguishing knowledge from opinion
- ▶ philosophers of science have reached no consensus about these questions



### THE TRADITION WE INHERIT

- ▶ contemporary PoS reacts to two key articulations:
  - ▶ Descartes, and "Cartesian anxiety"
  - ▶ logical positivism: the Vienna Circle
- ▶ both are subsets of The European Enlightenment as a philosophical/cultural/political project
- ▶ the *demarcation* of science is central

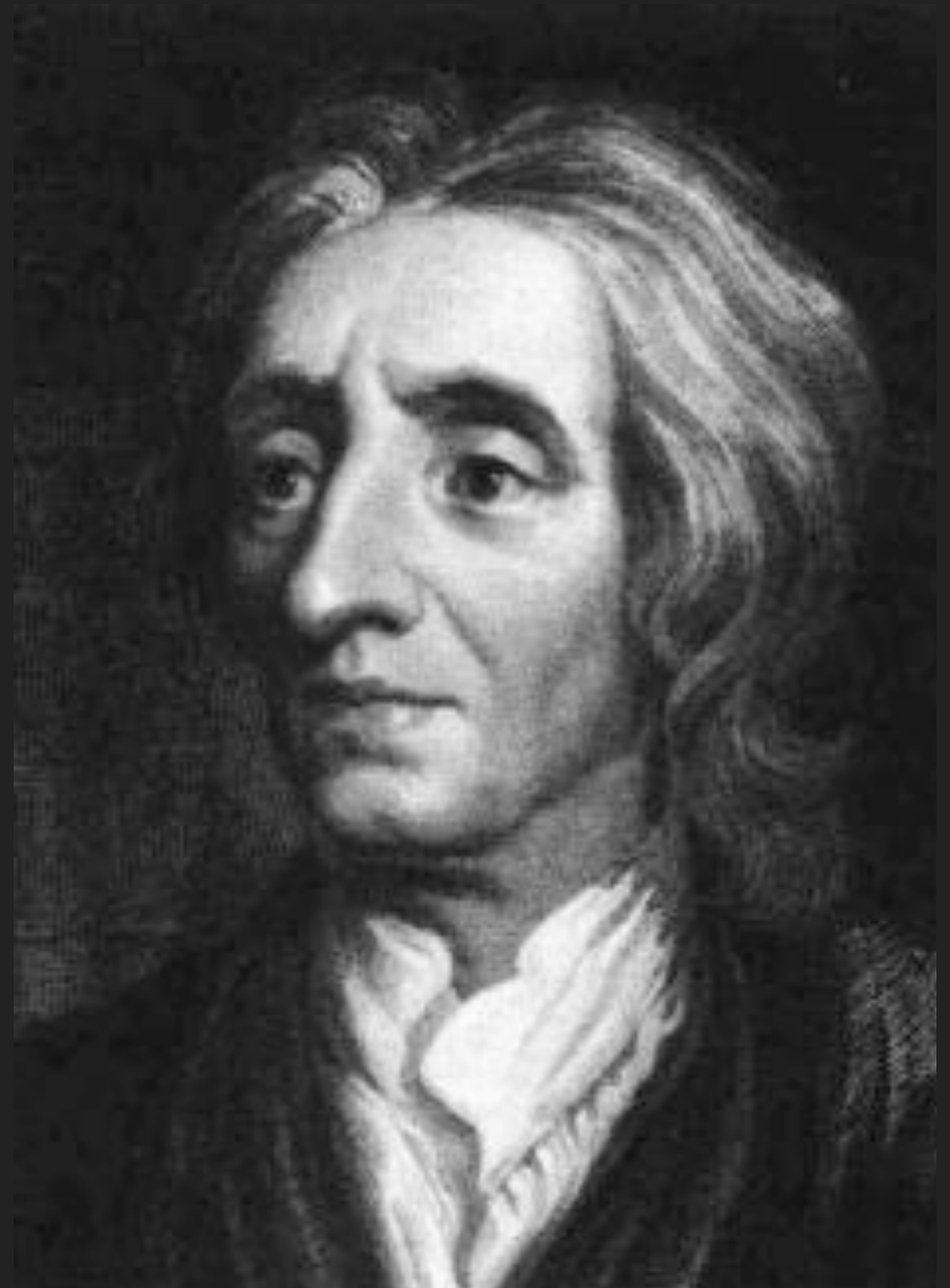
## DESCARTES

- ▶ religion and science
- ▶ quest for absolute certainty...
- ▶ ...through the method of radical doubt
- ▶ *cogito ergo sum*
- ▶ but: needs God to restore worldly knowledge
- ▶ leaves us with anxious individuals



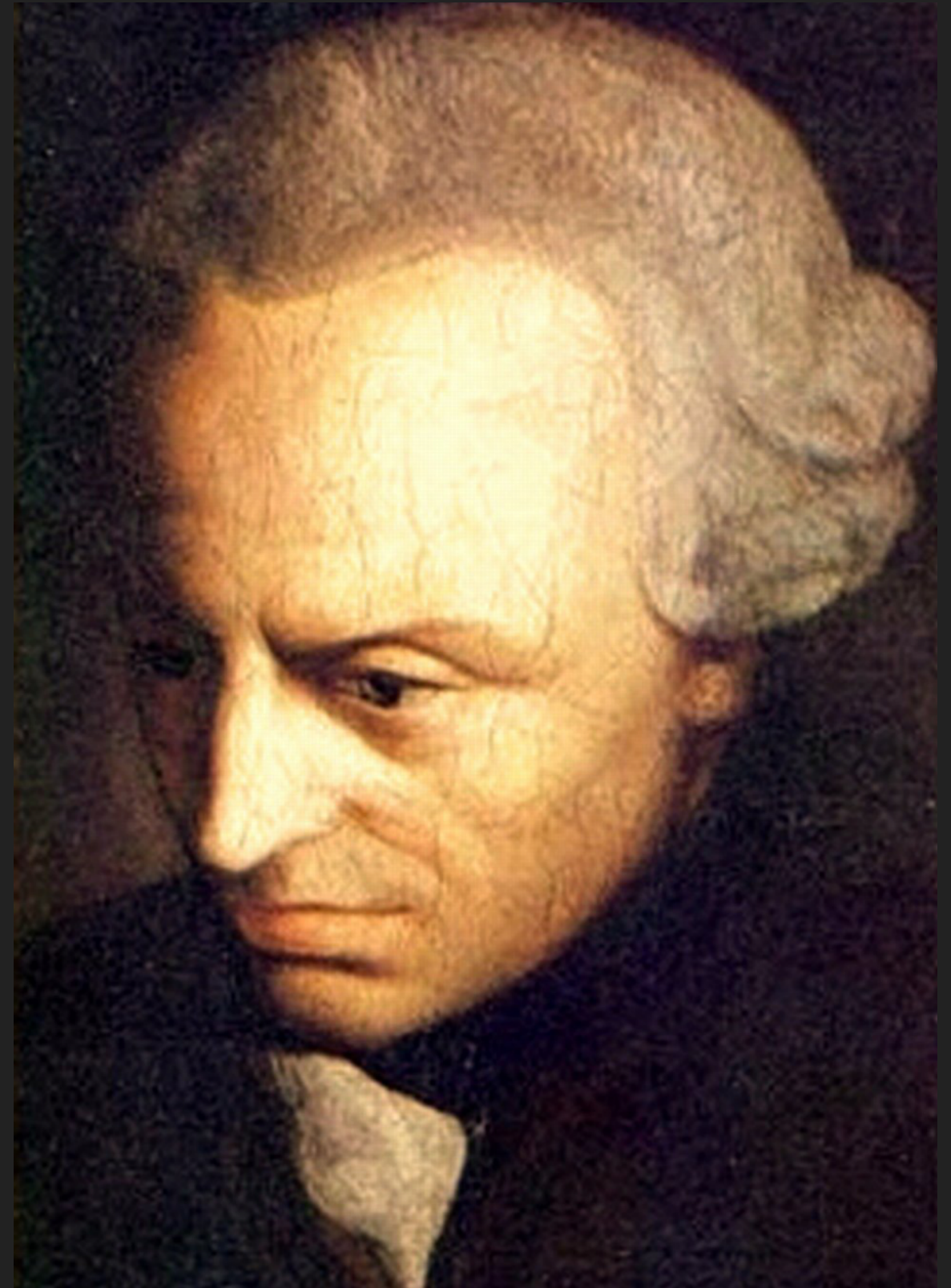
## EMPIRICISM

- ▶ ground knowledge in sense-experience
- ▶ “no innate ideas”
- ▶ reduce complex notions to basic sense-perceptions
- ▶ accounting for unobservables is a challenge (Hume):
  - ▶ the self
  - ▶ causality



## RATIONALISM

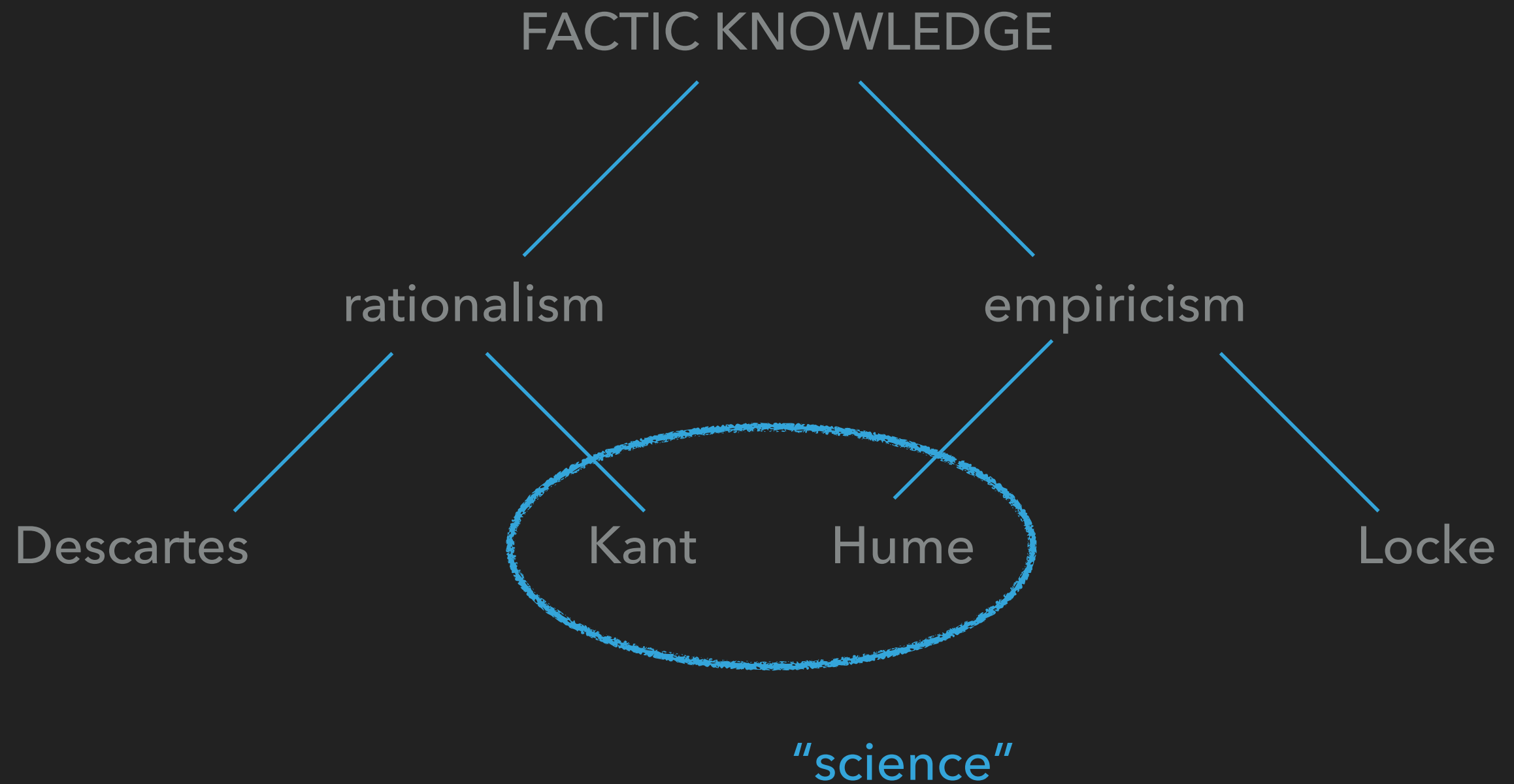
- ▶ ground knowledge in the basic operations of the rational mind
  - ▶ space, time, causation are *a priori* notions
  - ▶ necessary presuppositions of rational thinking
- ▶ critiques empiricism for being relativist
- ▶ but: depends on agreement with the analysis of reason





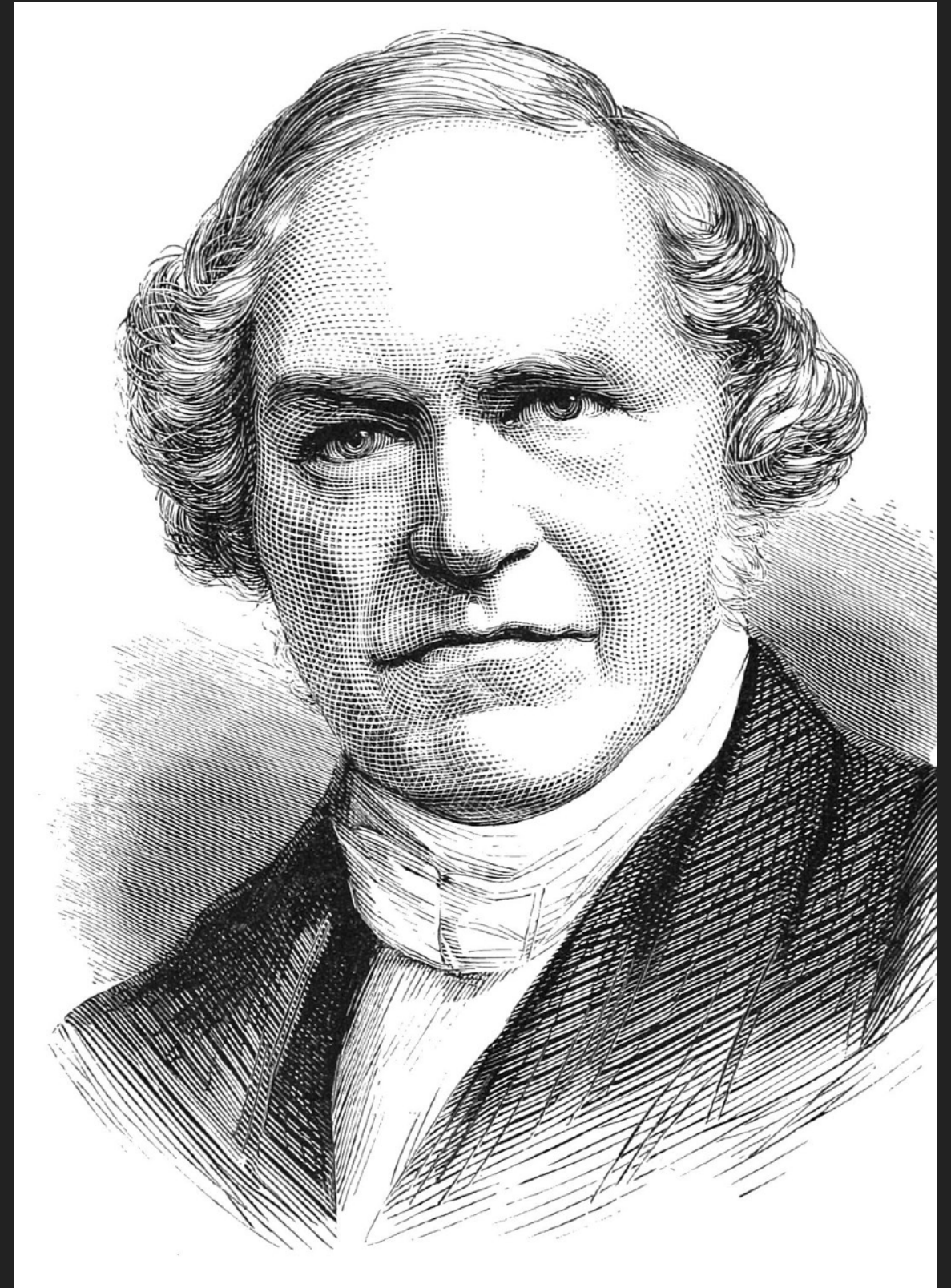
# THE HISTORY OF THE CATEGORY "SCIENCE"

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## ESTABLISHING “SCIENCE”

- ▶ William Whewell: a relative rationalist in an empiricist setting
  - ▶ invented the term “scientist”
  - ▶ defended science as a separate sphere of activity
- ▶ general/decontextualized knowledge enabled by British imperialism





## THE VIENNA CIRCLE

- ▶ the only source of valid knowledge is empirical science
- ▶ philosophy and logic are tools for separating sense and nonsense
  - ▶ metaphysics: *nonsensical*, not *false*
- ▶ bound science by tossing out non-verifiable claims
- ▶ linked to a set of social reforms



POST-VIENNA FRAGMENTATION

wagers	phenomenalism	transfactualism
dualism	neopositivism	realism
monism	analyticism	reflexivity