

Oxford Lectures on David Hume, 2024-25

David Hume, 1711-1776



3. Hume's Faculty Psychology and His Logical Framework

Peter Millican
Hertford College, Oxford

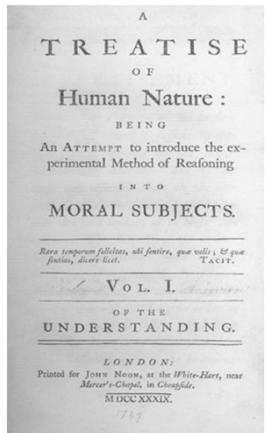
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Last Time ...

- We saw Hume's relative enthusiasm for *association of ideas*, in stark contrast with Locke and others, who had viewed it as a source of error.
 - Ideas can be associated by *resemblance*, *contiguity*, and *causation* (the three "natural relations"). But the associated ideas are still "separable" in imagination.
 - Inference from observed to unobserved operates by *custom*, which is a kind of associative principle (but is more than mere association by causation).
 - *Custom* thus provides the essential "guide of life", both for us and for animals. Without it, we could never draw inductive inferences.

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3(a) Introducing Hume's Faculty Psychology



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Faculties, Induction, and Body

- "... the next question is, whether experience produces the idea by means of the understanding or imagination; whether we are determined by reason to make the transition, or by ... association ... of perceptions." (T 1.3.6.4)
- "The subject, then, of our present enquiry, is concerning the *causes* which induce us to believe in the existence of body: ... we ... shall consider, whether it be the *senses*, *reason*, or the *imagination*, that produces the opinion of a *continu'd* or of a *distinct* existence." (T 1.4.2.2)

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Hume and the Faculties

- Some of Hume's most famous arguments are expressed in terms of *faculties*:
 - T 1.3.6 (and E 4): inductive inference results from processes of *the imagination*, and is not "determin'd by" *reason* or *the understanding*.
 - T 1.4.2: belief in external objects is produced by *the imagination* rather than by *reason*.
 - T 2.3.3: *reason* alone cannot motivate action.
 - T 3.1.1 (and EPM): morals are "deriv'd from" *moral sense* or *sentiment* rather than *reason*.

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Faculties and Morality

- "... we need only consider, whether it be possible, from reason alone, to distinguish betwixt moral good and evil, or whether there must concur some other principles to enable us to make that distinction." (T 3.1.1.3-4)
- "... The rules of morality, therefore, are not conclusions of our reason" (T 3.1.1.6)
- "There has been a controversy started of late ... concerning the general foundation of MORALS; whether they be derived from reason, or from SENTIMENT ..." (M 1.3)

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Outline of Humean Faculties

■ The (external) Senses

These present to the mind *impressions of sensation* (e.g. of sight, touch, sound, smell, gustatory taste, bodily pain), thus creating within the mind *ideas* that are copies of those impressions.

■ Reflection (or internal sense)

Presents to the mind *impressions of reflection* ("secondary" impressions – see T 2.1.1.1 – that arise from the interplay of ideas in our mind, such as passions and emotions), thus again creating *ideas* that are copies of those impressions.

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■ Imagination (or the Fancy)

Traditionally the faculty of *having images* (but not just *visual*). Hume takes *all* of our ideas to be *imagistic* (as copied from sense or feeling); hence this is *our primary thinking faculty*. The imagination can replay ideas in our thinking (often guided by *associative relations*), but can also *transpose, combine and mix* them.

■ Memory

Replays ideas in their original order (lacking the freedom of the imagination), and *with great vivacity*, almost like that of an impression. Thus Hume often refers to "impressions of the memory", and sometimes describes ideas in the imagination as copies of these (as at T 1.3.9.7, and note the title of T 1.3.5). *Thinking about memories* thus takes place in the imagination.

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Reason and Will: The Traditional Major Division

■ Reason (or the Understanding)

Traditionally the overall *cognitive* faculty: discovers and judges truth and falsehood.

■ The Will

Traditionally the *conative* faculty: forms intentions in response to desires and passions.

Hume only rarely refers to the will as a faculty, and his view of reason, as we'll see later, is complicated by his treating all of our reasoning as taking place – through imagistic ideas – within "the imagination".

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Distinguishing Between Faculties

■ imagination/reason (T 1.4.2.2); imagination/memory (T 1.3.5); imagination/the senses (T 1.4.2.2); imagination/passions (T 2.2.2.16).

■ reason/memory (T 3.3.4.13); reason/the senses (T 1.4.2.2); reason/the will (T 2.3.3.4).

■ memory/the senses (T 1.1.2.1).

■ Hume *never* distinguishes between "reason" and "the understanding", or between either of these and "the judgment". And he insists that our "intellectual faculty" is undivided (T 1.3.7.5 n.20).

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Hume on Reason and Understanding

■ Hume, like many other philosophers, uses the terms "reason" and "the understanding" interchangeably dozens of times, for example:

"When the mind [makes an inductive inference] it is not determin'd by *reason*, but by certain principles, which associate together the ideas of these objects, and unite them in *the imagination*. Had ideas no more union in *the fancy* than objects seem to have to *the understanding*, ..." (T 1.3.6.12)

– Other examples are at T 1.3.6.4, 1.3.13.12, 1.4.1.1 & 12, 1.4.2.14, 46, & 57, 1.4.7.7, 2.3.3.2-6, 3.1.1.16-18 & 26; also compare 2.2.7.6 n. with 1.3.9.19 n.

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Hume on Reason as Cognition

■ "Reason is the discovery of truth or falsehood." (T 3.1.1.9)

■ "That Faculty, by which we discern Truth and Falshood ... the Understanding" (E 1.14, note in 1748/1750 editions)

■ "reason ... conveys the knowledge of truth and falsehood" (M App 1.21)

■ "... reason, in a strict sense, as meaning the judgment of truth and falsehood ..." (DOP 5.1)

■ See also T 2.3.3.3, 2.3.3.5-6, 2.3.3.8, 2.3.10.6, 3.1.1.4, 3.1.1.19 n. 69, 3.1.1.25-27, 3.2.2.20, M 1.7, M App 1.6.

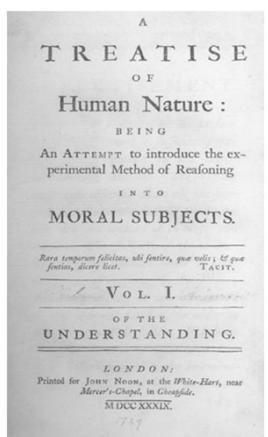
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Conceivability and Hume's Fork



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Hume's Conceivability Principle

- Hume very frequently appeals to what is generally known as his *Conceivability Principle*:

"Tis an establish'd maxim in metaphysics, *That whatever the mind clearly conceives includes the idea of possible existence*, or, in other words, *that nothing we imagine is absolutely impossible*. ..." (T 1.2.2.8)

"To form a clear idea of any thing, is an undeniable argument for its possibility, and is alone a refutation of any pretended demonstration against it." (T 1.3.6.5)

"whatever we conceive is possible, at least in a metaphysical sense: but wherever a demonstration takes place, the contrary is impossible, and implies a contradiction." (A 11, cf. E 12.28)

(See also e.g. T 1.3.3.3, 1.3.9.10, E 4.2, E 4.10, E 4.18.)

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Inconceivability and Impossibility

- Hume is sometimes thought to accept the so-called *Inconceivability Principle*, that *inconceivability implies impossibility*. The best evidence for this is:

"... We can form the idea of a golden mountain, and from thence conclude that such a mountain may actually exist. We can form no idea of a mountain without a valley, and therefore regard it as impossible." (T 1.2.2.8)
- But this evidence is weak, and he appeals to the Conceivability Principle around 30 times without ever explicitly stating or implying the converse principle.
 - Hume also accepts that animals may have senses that yield ideas inconceivable to us, that there may be a vacuum or objects "specifically different" from our perceptions. For detailed discussion, see Millican ("Hume's Fork", 2017, §5).

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... and Matters of Fact

- Matters of Fact *cannot be known a priori*, and *their truth or falsehood are equally conceivable*:
 - e.g. The sun will rise tomorrow. (E 4.2)
 - The sun will not rise tomorrow. (E 4.2)
 - This pen will fall when released in air.
- Perhaps the closest modern term is *synthetic*: a proposition whose truth "is determined by the facts of experience" (Ayer, *LTL* 1971, p. 105).
- But Hume (like Ayer) presumes that the analytic/synthetic, a priori/a posteriori, and necessary/contingent distinctions all coincide.

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Hume's Fork: Relations of Ideas ...

- Propositions that are themselves conceivable, but whose falsehood is inconceivable, are called "relations of ideas" (in the *Enquiry*)
 - The closest modern term is *analytic propositions*, understood as *those whose meaning entails their truth*. These *can be known a priori* – without any dependence on experience or real existence – by inspecting ideas; hence their falsehood is inconceivable and they are *necessarily true*.
 - e.g. Pythagoras' Theorem. (E 4.1)
 $3 \times 5 = \frac{1}{2} \times 30$. (E 4.1)
 - All bachelors are unmarried.

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Hume's Epistemological Empiricism

- Lecture 1 distinguished between *conceptual empiricism* (*all ideas* are derived from experience) and *epistemological empiricism* (roughly, *all knowledge* is derived from experience).
 - Hume's Fork expresses the latter, with a refinement: *all knowledge (or even evidence) of matter of fact is founded on experience*.
 - This is entirely compatible with *knowledge of relations of ideas* being a priori, based on the inconceivability of their falsehood (or more precisely, recognition that a proposition's falsehood would imply a contradiction).

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Professor Peter Millican, Hertford College, Oxford

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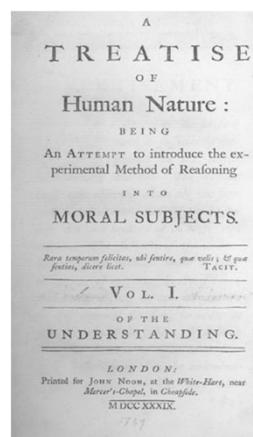
Is Hume's Fork Defensible?

- Though orthodox for many years, Hume's Fork has been seriously challenged more recently:
 - W. V. O. Quine's "Two Dogmas of Empiricism" (1951) attacked the analytic/synthetic distinction.
 - Saul Kripke's *Naming and Necessity* (1972) argued against identification of the a priori/a posteriori and necessary/contingent distinctions.
 - Hilary Putnam's "The Meaning of Meaning" (1975) attacked the idea that meaning resides in our "ideas" (or anything else "in the head").
 - Millican (2017) argues that Hume's Fork stands up surprisingly well to these and other challenges. (From https://davidhume.org/scholarship/papers/millican/2017_Hume's_Fork.pdf)

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Hume's Dubious Dichotomy in the *Treatise*



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The Progress of Hume's Logic

- Hume's Fork appears in *Enquiry* 4, but it is foreshadowed in the *Treatise*, where his logical framework is based on a theory of "philosophical" relations derived loosely from Locke's.
- Though very dubious, this theory of relations impacts on the argumentative structure of the *Treatise* (but fortunately, only quite superficially).
- For understanding Hume's philosophy – in the *Treatise* as well as the *Enquiry* – Hume's Fork (based on the Conceivability Principle which is prominent in both works) is a more reliable guide.

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Locke on the Types of Relation

- Locke (*Essay* II xxv-xxviii) emphasises:
 - "Cause and Effect" (II xxvi 1-2)
 - "Relations of Time" (II xxvi 3-4)
 - "Relations of Place and Extension" (II xxvi 5)
 - "Identity and Diversity" (II xxvii)
 - "Proportional Relations" (II xxviii 1)
 - "Natural Relations" such as "Father and Son, Brothers ... Country-men" (II xxviii 2)
 - "Instituted, or Voluntary" relations such as "General ..., Citizen, ... Client" (II xxviii 3)
 - Various moral relations (II xxviii 4-16)

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Locke to Hume on Relations

LOCKE	HUME
"Agreement"	Resemblance
Cause and effect	Cause and effect
Natural, Instituted, Moral	(see T 1.1.4.3, 1.1.4.5)
Relations of time	Space and time
Relations of place	
Identity	Identity
Diversity	Contrariety
Proportional relations	Proportions in quantity Degrees in quality

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Hume's Dichotomy

- Hume starts T 1.3.1 by dividing his seven types of relation into two groups (T 1.3.1.1):
 - The Four "Constant" Relations
Those relations that "depend entirely on the ideas, which we compare together" (i.e. resemblance, contrariety, degrees in quality, proportions in quantity or number);
 - The Three "Inconstant" Relations
Those relations that "may be chang'd without any change in the ideas" (i.e. identity, relations of time and place, cause and effect).

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A Taxonomy of Mental Operations

- Hume also argues, rather simplistically, that his seven relations map neatly onto four different mental operations:
 - resemblance, contrariety, and degrees in quality* are “discoverable at first sight” (*T 1.3.1.2*)
 - proportions of quantity or number* are susceptible of demonstration (*T 1.3.1.2-5*)
 - identity and relations of time and place* are matters of perception rather than reasoning (*T 1.3.2.1*)
 - causation* is the only relation “that can be trac’d beyond our senses, [to] existences and objects, which we do not see or feel” (*T 1.3.2.3*)

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	<i>Constant relations</i>	<i>Inconstant relations</i>
<i>Perception</i>	<u>Intuition</u>	<u>Sensory Perception</u>
	<ul style="list-style-type: none"><i>resemblance</i><i>contrariety</i><i>degrees in quality</i>	<ul style="list-style-type: none"><i>identity</i><i>situations in time and place</i>
<i>Reasoning</i>	<u>Demonstration</u>	<u>Probability</u>
	<ul style="list-style-type: none"><i>proportions in quantity and number</i>	<ul style="list-style-type: none"><i>causation *</i>

* This explains why most of *Treatise 1.3.2-14*, nominally on “probability”, focuses on causation and causal reasoning.

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Hume’s Dichotomy – the motive

- Hume apparently gives his taxonomy of relations to facilitate his arguments:
 - That the Causal Maxim cannot be intuitively certain (*T 1.3.3.2*);
 - That relations of virtue and vice are not demonstrable (*T 3.1.1.19*).
- Although not explicit on the logic here, the wording of *T 3.1.1.19* strongly suggests that Hume is arguing from the principle:
 - No proposition that involves inconstant relations can be intuitively or demonstratively certain.*

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The Failure of the Dichotomy

- Sadly, this is nonsense. There are many “intuitive” or “demonstrable” propositions involving identity, relations of time and place, or causation:
 - If A=B and B=C, then A=C.
 - Anything that lies inside a small building lies inside a building.
 - Every mother is a parent.
 - Anyone whose paternal grandparents have two sons, has an uncle.
- Garrett (2015, pp. 92-3) attempts to defend Hume’s theory, but this seems unlikely to work ...

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Demonstrability Is Not Analysable in Terms of Relations

- It is now well understood that whether a complex proposition is logically provable will often depend on things like order, bracketing, and scope, not on the nature of the specific relations involved. The first of the formulae below is demonstrable, the second is not, but they contain exactly the same relations:

$$\begin{array}{ll} \exists x (\forall y Rxy) \rightarrow \forall y (\exists x Rxy) & \checkmark \\ \forall y (\exists x Rxy) \rightarrow \exists x (\forall y Rxy) & \times \end{array}$$

(e.g. suppose “*Rxy*” means “*x* resembles *y*”, and consider the two possible readings of “something resembles everything”)

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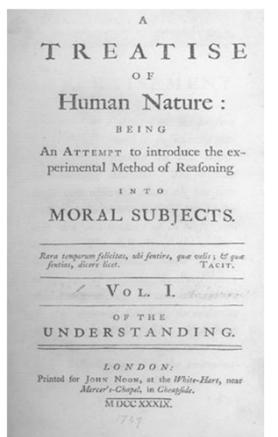
The Source of Hume’s Mistake?

- I suggest that Hume confused, when considering propositions about objects:
 - Supervenience: *what is implied by the properties of the objects themselves*, independently of their relative situation etc.
 - Analyticity: *what is implied by our ideas (or impressions) of the objects themselves*, independently of *ideas about* their situation etc.
- (See Bennett 1971: 250-6 and 2001: 242-4; also Millican 2017: §3, which highlights Hume’s tendency to conflate objects and perceptions.)

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3(d)

Kinds of Reasoning (and Evidence)



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Two Lockean Kinds of Reasoning

- Hume inherits from Locke a standard distinction between *demonstrative* and *probable* reasoning (e.g. T 1.3.6.8, 1.3.9.19 n. 22, 1.3.14.17, 2.3.3.2). But he later modifies this terminology ...

"All reasonings may be divided into two kinds, namely demonstrative reasoning, or that concerning relations of ideas, and moral reasoning, or that concerning matter of fact and existence." (E 4.18)

"It is common for Philosophers to distinguish the Kinds of Evidence into *intuitive*, *demonstrative*, *sensible*, and *moral*". (*Letter from a Gentleman*, 1745, para. 26)

[“intuitive” = self-evident; “sensible” = sensory]

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Locke's Account of Reasoning

- In *demonstrative reasoning*, each link in the inferential chain is “intuitively” certain.
 - Characteristic of mathematical reasoning.
 - Locke often cites the proof that a triangle’s angles sum to two right angles (*Essay IV i 2, IV xv 1* etc.):

A = E
B = D
 $\therefore A + B + C = E + D + C$
 - Hume too calls this “demonstrative”, but also (in the *Enquiry*) “reasoning concerning relations of ideas”.

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- In *probable reasoning*, some [or all] links in the inferential chain are merely probable.

"Tell a Country Gentlewoman, that the Wind is South-West, and the Weather louring, and like to rain, and she will easily understand, 'tis not safe for her to go abroad thin clad, in such a day, after a Fever: she clearly sees the probable Connexion of all these, viz. South-West-Wind, and Clouds, Rain, wetting, taking Cold, Relapse, and danger of Death ..." (Locke, *Essay IV xvii 4*)

- Hume's *Enquiry* calls this “*moral reasoning*” or “*reasoning concerning matter of fact and existence*”; let's say “*factual inference*” for short.

- For Locke, *both* types of reasoning involve rational perception of the links (*Essay IV xvii 2*).

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Hume on “Proof” and “Probability”

- Within the broad category of Lockean “probable arguments”, Hume distinguishes between “proofs” and “probabilities” (T 1.3.11.2, E 6.0 n. 10, E 10.4).
 - A “proof” is an inference from extensive and entirely consistent experience, yielding inductive certainty. (For example, I have previously seen a million A's *all* followed by B's, then I see an A and predict a B.)
 - A (mere) “probable argument” is an inference from mixed experience, which therefore leaves some doubt.
- This is why Hume in the *Enquiry* prefers the term “reasoning concerning matter of fact” (rather than “probable reasoning”) for the broader category.

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A Common Misunderstanding

- Hume's Fork divides propositions between:
 - Relations of Ideas
 - Matters of Fact
- Enquiry 4.18* divides arguments/reasonings between:
 - “Reasoning concerning relations of ideas” (what Locke and Hume both call *demonstrative* reasoning)
 - “Reasoning concerning matter of fact” (what Locke and the *Treatise* call *probable* reasoning)
- This, however, invites a misunderstanding (*encouraged by two problematic Humean claims, as we'll see*), that demonstrative reasoning can only apply to “relations of ideas”, and probable reasoning only to “matters of fact”.

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But I maintain (PASS 2007, §V) that Hume's distinction between demonstrative and factual arguments matches closely with the modern distinction between ...

- A **deductive** argument (in the informal sense), i.e. an argument in which the truth of the premise(s) logically guarantees the truth of the conclusion; in other words, *it is not possible for the premises to be true and the conclusion to be false* (at the same time).
 - There is also a related (but non-Humean) **formal** notion, where a deductive argument is one that is *formally* valid.
- An **inductive** argument is one that draws a conclusion about the unobserved, by extrapolating from past experience and observations.

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An Important Distinction

- The crows argument is indeed **demonstrative** in that sense, but we would not say that it **succeeds in demonstrating** that all crows are black, because it has a premise *P2* that we know to be false.
- To demonstrate *C from P1 and P2* is not the same as demonstrating *C full stop (without qualification)*. The latter requires that the argument's premises (*P1* and *P2*) are known with certainty to be true.
- Hume denies that any matter of fact can be demonstrated (full stop). *Hume nowhere denies that one matter of fact can be demonstrated from another matter of fact.*

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Hume on Applied Mathematics

- Hume's clearest discussion of "mixed mathematics" is in *Enquiry* Section 4, and here he stresses (repeatedly) that this reasoning is *a posteriori*, based on a physical law "discovered by experience" which could not possibly be known *a priori*:

"it is a law of motion, discovered by experience, that the moment or force of any body in motion [what we now call *momentum*] is in the compound ratio or proportion [i.e. is proportional to the *product*] of its solid contents [mass] and its velocity; and consequently, that a small force may remove the greatest obstacle ... if, by any contrivance ... we can encrease the velocity of that force, so as to make it an overmatch for its antagonist." (E 4.13)

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Problematic Humean Claim 1: "No Matter of Fact is Demonstrable"

- This claim (A 18, E 4.2, E 12.28, cf. T 1.3.7.3) is often interpreted as "no matter of fact can be the conclusion of a demonstrative argument".
 - But consider the following argument for conclusion *C*:

P1 All crows are birds.
P2 All birds are black.
∴ *C* All crows are black.
 - This is clearly "demonstrative" on Locke's and Hume's criteria: the link from premises to conclusion is certain and self-evident (i.e. "intuitive"), depending on links between the ideas, not extrapolation from experience.

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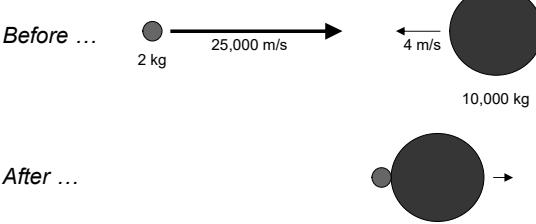
Problematic Humean Claim 2: "Only Mathematics Has Demonstrations"

- "There remain ... algebra and arithmetic as the only sciences, in which we can carry on a chain of reasoning to any degree of intricacy, and yet preserve a perfect exactness and certainty." (T 1.3.1.5)
- "It seems to me, that the only objects of the abstract sciences or of demonstration are quantity and number ..." (E 12.27)
- These quotations may appear to support the claim that demonstrative arguments are possible only in mathematics (and hence must be *a priori*). But note that Hume's account of this limit is in terms of the *relative clarity* of mathematical ideas, *not* in terms of the fact that mathematics is *a priori*.
 - So if there are to be *a posteriori* demonstrative arguments of any complexity, we should expect to find those within *applied* mathematics. Does Hume provide any examples ... ?

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- The momentum of a body in motion is equal to its mass multiplied by its velocity. And the law Hume cites says that in any collision, the total momentum of the colliding bodies (in any given direction) is conserved. He draws the implication that a small body, if sufficiently fast, can impact on a larger body so as to alter its motion, e.g.:



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Professor Peter Millican, Hertford College, Oxford

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"Geometry assists us in the application of this law ... but still the discovery of the law itself is owing merely to experience, and all the abstract reasonings in the world could never [give us any] knowledge of it." (E 4.13)

- "Abstract reasonings" encompasses demonstrative mathematics, as in the *Treatise*:

"Mathematics ... are useful in all mechanical operations ... But 'tis not of themselves they have any influence. ... Abstract or demonstrative reasoning ... never influences any of our actions, but only as it directs our judgment concerning causes and effects." (T 2.3.3.2)

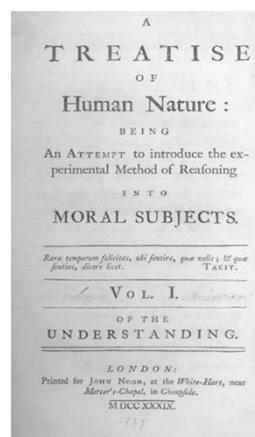
- These passages show that Hume does not restrict "demonstrative" reasoning to the a priori, because it can be applied to empirical facts.

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Introducing *Treatise* 1.3



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Hume's Focus on Causal Reasoning

- *Treatise* Book 1 Part 3, the longest part of the work, is entitled "Of Knowledge and Probability".
 - T 1.3.1 deals with "Knowledge" (in a *strict* sense, requiring absolute certainty). Here he presents the dubious Dichotomy criticised in s 92-102 above.
 - Building on this, at T 1.3.2.3 *causation* is identified as the only relation that can ground a "probable" inference from one object to another.
 - Accordingly the rest of *Treatise* 1.3 focuses on *causation* and *causal reasoning*, framed around the search for the impression from which the idea of *causal necessity* is derived ...

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- At T 1.3.2.6-8, *individual* causes are (tentatively) found to be related to their effects by the relations of *contiguity* and *priority*.
- But a key element – identified at T 1.3.2.11 as "NECESSARY CONNEXION" – is more elusive.
 - At T 1.3.2.13, Hume decides to search two "neighbouring fields" to find this element's source:
 - First, he argues that the Causal Maxim is neither intuitively nor demonstratively certain (T 1.3.3.1-8).
 - Secondly, he turns to consider "why we conclude, that such particular causes must necessarily have such particular effects, and why we form an inference from one to another?" (T 1.3.3.9).

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Second "Field": Causal Inference

- *Treatise* 1.3.4 argues that causal reasoning, if it is to result in real belief, must start from something perceived or remembered.
- T 1.3.5.1 sets out a corresponding agenda:

"Here therefore we have three things to explain, viz. *First*, The original impression. *Secondly*, The transition to the idea of the connected cause or effect [*i.e.* causal inference]. *Thirdly*, The nature and qualities of that idea [*i.e.* Hume's theory of belief]."

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T 1.3.5: "Of the impressions of the senses and memory"

- Memory "perceptions" are like impressions in being more *strong and lively* – with greater *force and vivacity* – than ideas of the imagination. As quoted earlier from T 1.3.5.7 (44), Hume uses this to argue that force and vivacity constitutes assent.
- Hence memory "impressions", like those of the senses, can act as a "foundation of that reasoning, which we build ... when we trace the relation of cause and effect" (T 1.3.5.7), i.e. causal inference.
- The scene is now set for Hume's famous argument concerning induction, in *Treatise* 1.3.6 ...

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Professor Peter Millican, Hertford College, Oxford