

Problem of Induction

By Libby Gutschenritter

Where we left off...

- All knowledge comes directly from experience
- Every effect is distinct from its cause

What is Induction?

(noun) Any form of reasoning in which the conclusion, though supported by the premises, does not follow from them necessarily.

What is Induction?

- Two propositions:
 - I have found that such an object has always been attended with such an effect
 - I foresee that others which are similar in appearance will be attended with similar effects.
- The latter is induction— making assumptions about the future.

FRAZZ

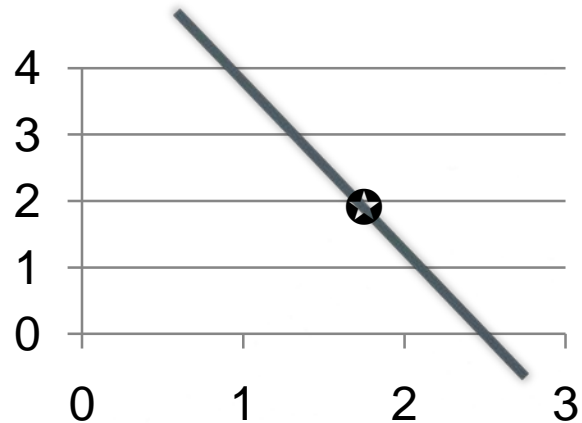
BY JEF MALLETT



Induction vs. Deduction

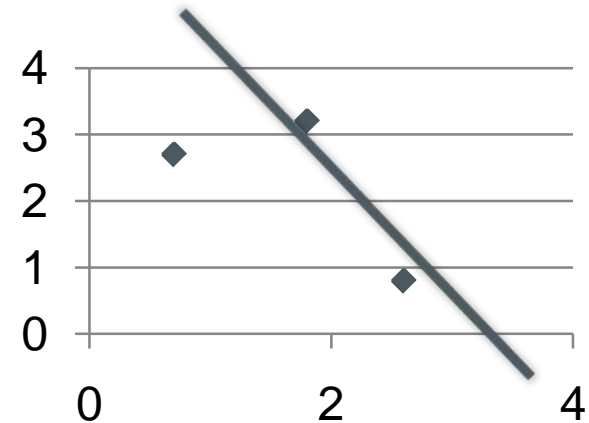
Deduction

- Using universals to conclude particulars.



Induction

- Using particulars to conclude universals.



What's the Problem?

- “But why this experience should be extended to future times and to other objects which, for all we know, may be only similar in appearance; this is the main question on which I would insist. The bread which I formerly ate nourished me— that is, a body of such sensible qualities was, at the time, endowed with such secret powers. But does it also follow that other bread must also nourish me at another time and that like sensible qualities must always be attended with like secret powers? (AW 545b).”



The Billiard Balls



- **B1.** I have seen one billiard ball strike another many times.
- **B2.** Each time the ball which was struck has moved, motion was transferred.
- **BC.** So, the struck ball will move this time.
- BC does not follow **deductively** from B1 and B2.

The Apple

- I eat one apple every day
- I have been doing this for 1000 days
- Each apple has tasted sweet
- Does the 1001st apple taste sweet?



Trick question!

- *Induction would say yes, this apple would be sweet too, but this apple could turn out to be rotten on the inside, or sour, and I would not be able to tell from the outer appearance.*

Inference

- “All inferences from experience **suppose as their foundation that the future will resemble the past** and that similar powers will be conjoined with similar sensible qualities. If there is any suspicion that the course of nature may change, and that the past may be no rule for the future, all experience becomes useless and can give rise to no inference or conclusion. **It is impossible, therefore, that any arguments from experience can prove this resemblance of the past to the future**, since all of these arguments are founded on the supposition of that resemblance (AW 547b).”

Principle of Uniformity of Nature

- If we add “PUN: the future will resemble the past” to our proofs concerning the billiard balls and the apple, we would be able to make valid conclusions.
- However, we cannot prove the Principle of Uniformity of Nature
 - Thus, we cannot infer the future to an absolute degree of certainty.



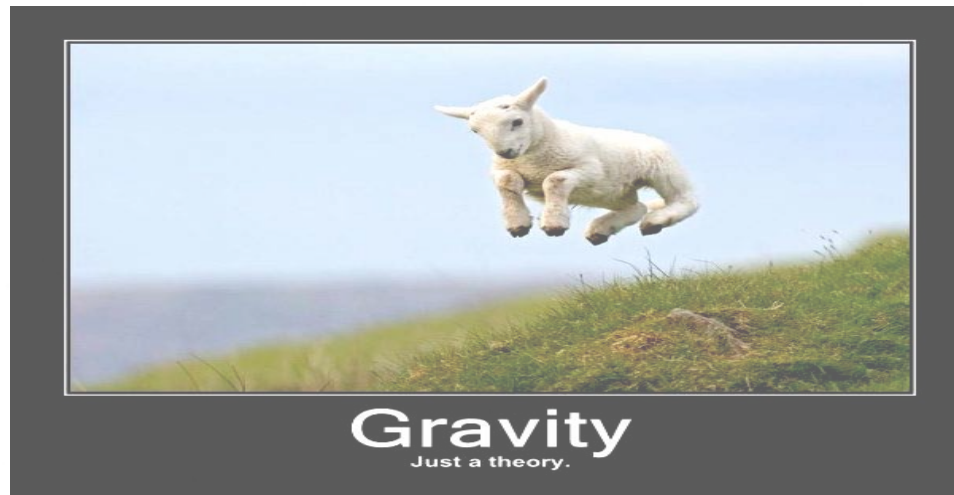
CONTRADICTION?



- “It is certain that the most ignorant and stupid peasants, no infants, no even brute beasts improve by experience and learn the qualities of natural objects by observing the effects which result in them. When a child has felt the sensation of pain from touching the flame of a candle he will be careful not to put his hand near any candle, but will expect a similar effect from a cause which is similar in its sensible qualities and appearance (AW 548a).”

Cause vs. Effect

- We can only see the effects, not the causes.
- Gravity– we can see the pen fall, but we cannot see gravity itself. Thus, we cannot know for sure that it is there because we did not perceive it.



Conjunction vs. Connection

- Recall: the Billiard Balls
 - “The first time a man saw the communication of motion by impulse, as by the shock of two billiard balls, he could not pronounce that the one event was **connected**, but only that it was **conjoined** with the other (AW 563a).”
- Since we cannot perceive causation, we cannot perceive connection.
- “One event follows another, but we never can observe any tie between them. They seem **conjoined**, but never **connected** (AW 562b).”