

Confirmation 5

Ravens; Grue

(pp. 14–16)

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The ravens paradox

Many people regard these as plausible

- (1) Nicod's condition holds when there is no background evidence.
- (2) Confirmation relations are unchanged by substitution of logically equivalent sentences.
- (3) In the absence of background evidence, the evidence that some individual is a non-black non-raven does not confirm that all ravens are black.

They are inconsistent

- (1) implies that a non-black non-raven confirms "All non-black things are non-ravens."
- "All non-black things are non-ravens" is logically equivalent to "All ravens are black."
- So by (2), a non-black non-raven confirms "All ravens are black." This contradicts (3).

Solution

- (1) This is *false*, as we saw in the previous class.
- (2) This is *true*, because inductive probabilities aren't changed by substitution of logically equivalent sentences.
- (3) Let "*F*" mean "raven" and "*G*" mean "black." Then (3) in explicatum terms is $\sim C(A, \sim Fa. \sim Ga, T)$. Maher showed this isn't always true when $p \in P_I$. Reasons:
 - The evidence $\sim Fa. \sim Ga$ tells us that *a* is not a counterexample to *A*, which a priori it could have been.
 - The evidence $\sim Fa. \sim Ga$ reduces the probability of $Fb. \sim Gb$ and thus reduces the probability that *b* is a counterexample to *A*, where *b* is any individual other than *a*.

So (3) is also *false*.

Definition (Goodman)

Something is grue if:

- it is observed before time t and is green, or
- it is not observed before time t and is blue.

Examples

A green emerald is:

- grue if observed before t ;
- not grue if not observed before t .

A blue sapphire is:

- not grue if observed before t ;
- grue if not observed before t .

Projectability

- A predicate is said to be *projectable* if the evidence that some objects have the predicate confirms that other objects also have it.
- It is generally believed that:
 - Ordinary predicates like “blue” and “green” are projectable.
 - “Grue” isn’t projectable.
- Common argument that “grue” isn’t projectable:
 - A grue emerald observed before t is green.
 - Observation of a green emerald before t confirms that emeralds not observed before t are also green.
 - A green emerald not observed before t is not grue.
 - So, a grue emerald observed before t *disconfirms* that emeralds observed after t are grue.
 - So, “grue” isn’t projectable.

The previous definition of “projectable” is the usual one but imprecise because it doesn’t specify the background evidence.

Absolute projectability

- Predicate ϕ is *absolutely projectable* if $C(\phi b, \phi a, T)$, for any distinct individuals a and b and logical truth T .
- Absolute projectability is one possible explicatum for the usual imprecise concept of projectability.

“Grue” is absolutely projectable

- Let $F =$ observed before t , $G =$ green, $G' =$ either F and G or else not F and not G . (G' is similar to “grue.”)
- Maher (2004) proved F , G , and G' are all absolutely projectable if $p \in P_I$.
- It is intuitive that “grue” is absolutely projectable, if we keep in mind what this means.

Projectability across another predicate

- Predicate ϕ is *projectable across* predicate ψ if $C(\phi b, \phi a, \psi a \sim \psi b)$, for any distinct individuals a and b .
- This is another possible explicatum for the usual imprecise concept of projectability.

“Grue” isn’t projectable across “observed before t ”

- Maher (2004) proved that G is projectable across F but G' is not, if $p \in P_I$.
- This agrees with the usual view that “green” is projectable and “grue” isn’t.

The choice of basic predicates

- Let $F =$ observed before t , $G =$ either observed before t and green or not observed before t and not green, $G' =$ either F and G or else not F and not G .
 - G now means what G' used to mean.
 - G' now means “green”.
- This change doesn't affect the proof that G is projectable across F but G' is not, provided $p \in P_I$.
- But that result is now the opposite of the usual view about what is projectable!
- So for $p \in P_I$ to be a good explicatum for inductive probability, the *basic* predicates need to be intuitively simple ones like “green,” not intuitively complex ones like “grue.”

Questions

- 1 State the three propositions involved in Hempel's ravens paradox and prove that they are inconsistent.
- 2 Express the following in explicatum terms and state two reasons why it is false: *In the absence of background evidence, the evidence that some individual is a non-black non-raven does not confirm that all ravens are black.*
- 3 (a) State Goodman's definition of "grue." (b) Give an example of something that is grue and something that is not grue.
- 4 Define two explicata for the concept of a projectable predicate. For each explicatum, say whether "green" and/or "grue" is projectable in that sense (and with respect to what, if the explicatum depends on something else).