

Dealing with Unknowns in Inter- and Trans-Disciplinary Settings

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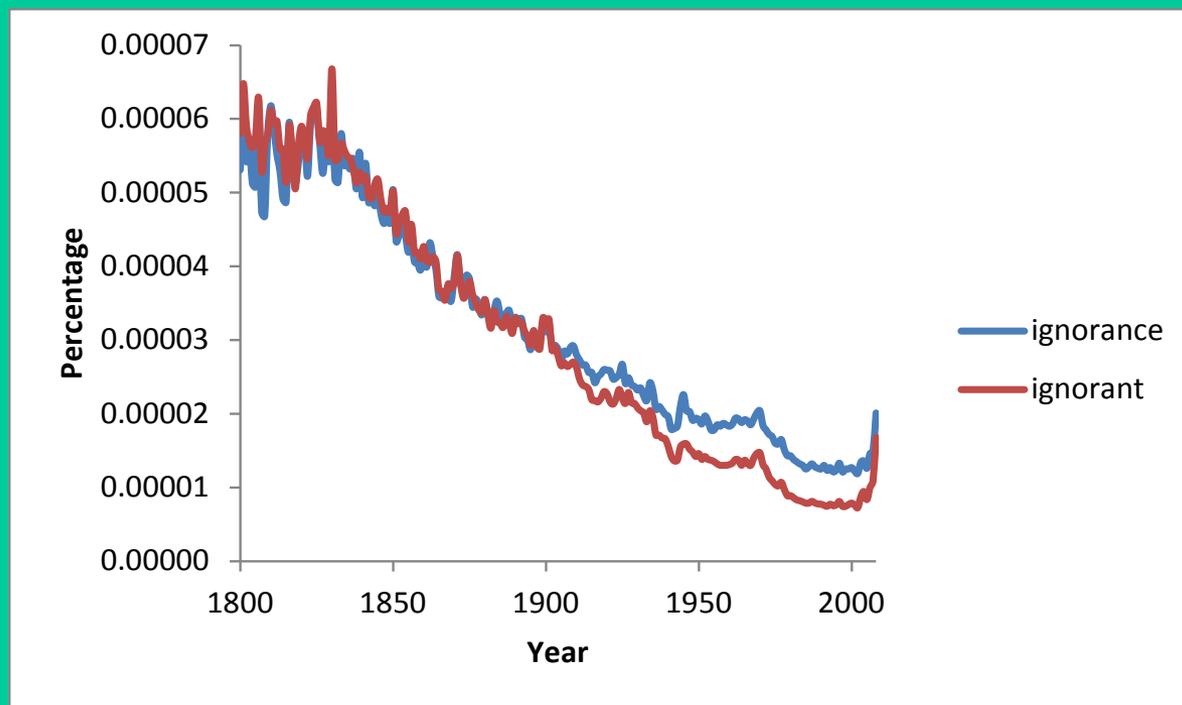
Starting-points:

1. Unknowns inhere anywhere there is intellectual enquiry.
2. Perspectives on unknowns are culturally and historically specific.
3. Western intellectual traditions have some blind-spots regarding unknowns.
4. Many disciplines have perspectives on unknowns, but these are isolated from one another and consequently fragmented and sometimes redundant.
5. People think and act as if there are different kinds of unknowns. They have multiple uses for them and ways of dealing with them.

Historical and cultural specificity: An Example

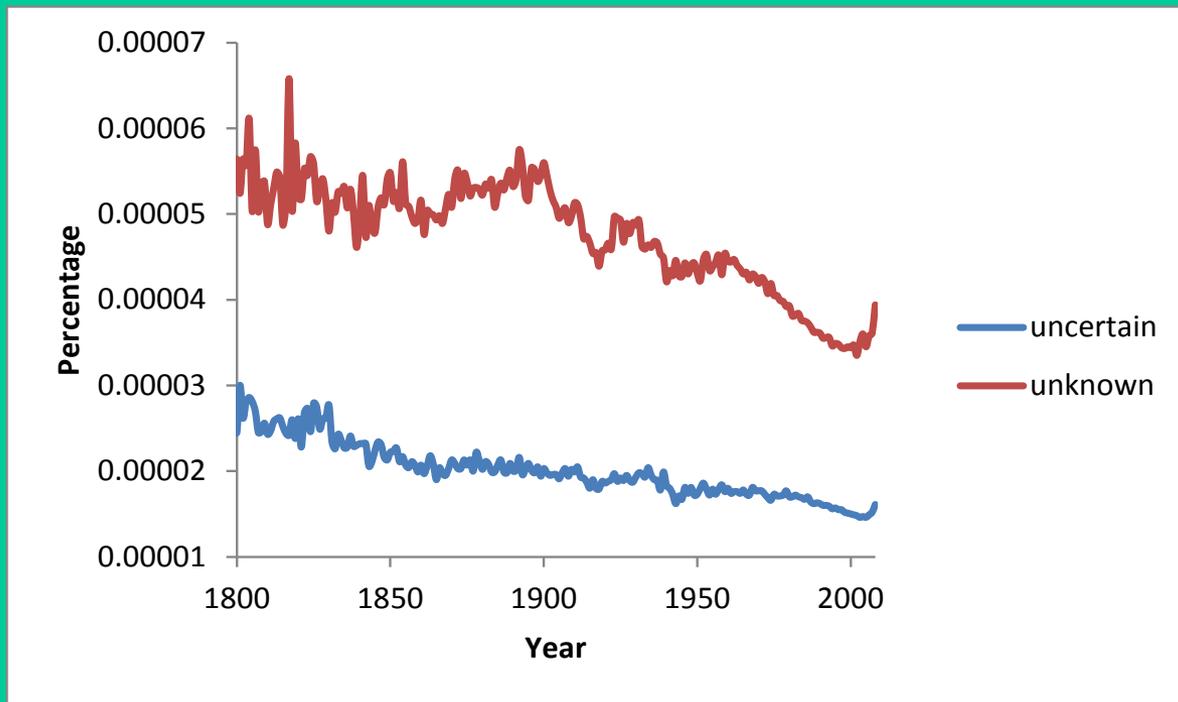
References to terms for unknowns such as “ignorance” and “ignorant” in the English language corpus of books has been falling out of fashion since the early 19th century.

Mentions of “ignorance” and “ignorant” in books, 1800-2008



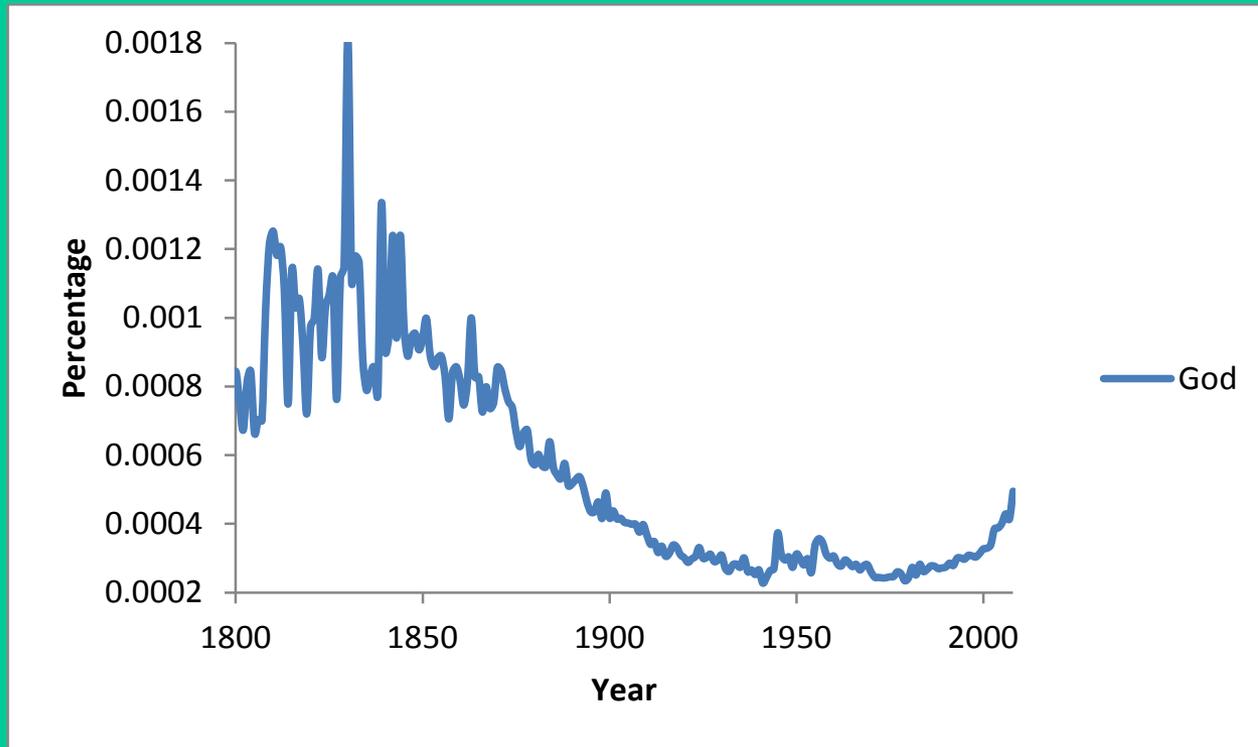
What's driving this decline?

Mentions of “unknown” and “uncertain” in books, 1800-2008



Could it be God?

Mentions of "God" in books, 1800-2008



Blind-spots about unknowns:

1. Confirmation bias: We seek out and pay attention to information that confirms what we already believe.
2. Catch-all underestimation: We under-estimate the likelihood of novel events.
3. Unknowns are not always a negative aspect of human affairs. In fact, they are essential in learning, creativity, social relations, and culture.
4. People are not always motivated to reduce or banish unknowns. Often they are motivated to create and maintain them.
5. Unknowns underpin some important kinds of social capital.

“Positive” motives for unknowns:

- Freedom = positively labeled uncertainty. Creativity, discovery, and entrepreneurship all require unknowns.
No uncertainty → Nothing to learn or discover, no freedom.
- Anticipatory positive emotions such as joyful anticipation, excitement, hope, and aspiration require unknowns.
- There are many situations in which people have good reasons for desiring not to know something.

Unknowns underpin social capital:

- Privacy is a multilateral agreement to maintain unknowns.
- Trust requires foregoing an entitlement to know everything about the entrusted party.
- Specialised knowledge is an example of organised ignorance that spreads risk and exploits distributed knowledge.

Dealing with unknowns involves tradeoffs and even dilemmas.

Different kind of unknowns? Example: Conflict vs Ambiguity

People treat ambiguous and conflicting risk messages differently:

- Laypeople prefer agreeing but ambiguous experts to precise but disagreeing experts.
- They believe and trust the agreeing experts more.
- Insurers will charge higher premiums when risk information is conflicting than when it is ambiguous.

That preference creates a communications dilemma for disagreeing experts when they are asked for their views:

- Taking a hard line risks a loss of credibility, but
- Conceding ground to their opponents risks being played for a sucker.

Unknowns present us with the following adaptive challenges:

1. Dealing with unforeseen threats and solving problems.
2. Benefiting from opportunities for exploration and discovery.
3. Crafting good outcomes in a partially learnable world.
4. Dealing intelligently and sociably with other humans.

No single way of dealing with unknowns suffices to meet all four of these challenges under all conditions.

Six strategies for responding to unknowns:

1. Denial: Treating unknowns as non-existent. Example: BMJ editors banning the use of the term “accident” in their journal.
2. Banishment: Setting unknowns aside as “out of bounds” and therefore not dealt with. Example: “...*in the discipline of law there is no coherent discourse or even conscious or structured consideration of uncertainty – despite the fact that uncertainty is pervasive*” (Jones, 2006).
3. Reduction: Gaining more knowledge and/or increasing constraints. Examples: Most scientific research and most social regulations.
4. Acceptance or toleration: Constructing flexible, corrigible decisions and actions. Example: Constructing policy in a rapidly changing political landscape.
5. Relinquishment: Adopting a fatalistic or nihilistic stance. Example: Belief systems in which it is spiritually dangerous (blasphemous) to gain knowledge or alter risks.
6. Generation: Creating or amplifying unknowns. Examples: Polite social interaction, but also improvisation in music or art.

Key point: ANY of these strategies can be adaptive or maladaptive, depending on circumstances.

Issues for dealing with unknowns in inter- and trans-disciplinary settings:

1. Constructing a common language.
2. Deciding on DIY versus outsourcing (to specialists).
3. Deciding on whether (or when) to quantify unknowns.
4. Enforcing consistency and avoiding mismatches.
5. Communicating unknowns to stakeholders (e.g., clients).
6. Agreeing on response strategies.

Constructing a common language:

1. What's the over-arching term for unknowns?
2. Are there important categories of unknowns? If so, on what are the distinctions among them based?
3. Does the terminology for unknowns carry blind-spot baggage?
4. Where there are disagreements about terminology, is there a space for dialogue about that?

DIY versus outsourcing and quantification issues:

1. Can (and should) some kinds of unknowns be quantified and/or measured (e.g., the legal profession's resistance to quantifying burden of proof)?
2. If quantifying or measuring, would specialists help (e.g., statisticians or mathematical modelers)?

Enforcing consistency, avoiding mismatches and communicating effectively:

1. Are terms for unknowns used in a consistent way across the disciplines?
Example: “Risk” in economics implies precisely known probabilities, but not necessarily in law or policy.
2. Are there mismatches (e.g., in precision or specificity) between bearers of unknowns?
Example: The *probability of a near-term increase in heat-extremes* is .6251789.
3. Is there a need for a words-to-numbers or jargon-to-plain-language translation dictionary?
Example: The IPCC 4th Report guidelines for the numerical values of phrases such as “very likely”.

Agreeing on response strategies:

1. Which unknowns are irreducible?
2. Can the reducible unknowns be prioritized?
3. Will eliminating an unknown also eliminate desirable things such as social capital or room for innovation/entrepreneurship? What are the tradeoffs or dilemmas?
4. Are there motives for generating and/or maintaining unknowns? If so, by whom and for whom or what?
5. Which response strategies are corrigible or reversible?

Good luck in dealing with unknowns, and ...

Thanks!

