

Argumentation Devices in Reasoning About Health

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Contemporary argumentation is infused with products of expert reasoning, requiring interpretation and assessment by non-experts.



According to Dr. Paul Offit, an infectious disease specialist at Children's Hospital of Philadelphia, young children readily handle the immune challenges of multiple vaccines. For example, studies have shown the five-in-one vaccine Pediarix against hepatitis B, polio, tetanus, diphtheria and pertussis is as safe and effective as giving each of these vaccines individually.

[From The New York Times:](http://well.blogs.nytimes.com/2015/08/10/not-vaccinating-children-is-the-greater-risk/?_r=0)

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Source E is an expert in subject domain S containing proposition A.

E asserts that proposition A is true.

Conclusion: A is true.

Argument from Expert Opinion as
schematized by Walton, Reed & Macagno



The evidence of no link between MMR and autism is now extremely strong. In February 2012, the Cochrane Collaboration - which compiles gold-standard reviews of medical evidence - conducted a huge study into the safety of MMR. This mega-review brought together evidence from 54 difference(sic) scientific studies using a variety of methodologies and involving 14.7 million children from around the world.

[From *The Guardian*:](http://www.theguardian.com/society/2013/apr/25/measles-mmr-the-essential-guide)

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Source E is an expert in subject domain S containing proposition A.

E asserts that proposition A is true; and E has good reason for believing A.

Conclusion: A is true.



Argumentation Devices

An argumentation device is

- a specialized scheme for expert reasoning
- serving as a stable *inference rule*, accepted within a given field as a warrant connecting evidence to conclusion
 - material components that augment human intelligence
 - institutional components that underwrite dependability
- invented, not discovered, by its users
- progressively refined to answer newly-discovered critical questions



Argumentation Devices

Examples from health & medicine:

- Randomized Controlled Trials
- Systematic evidence synthesis (including Cochrane Reviews)

Examples from other expert fields:

- Meta-analysis in educational policy
- Predictive computer models in weather forecasting

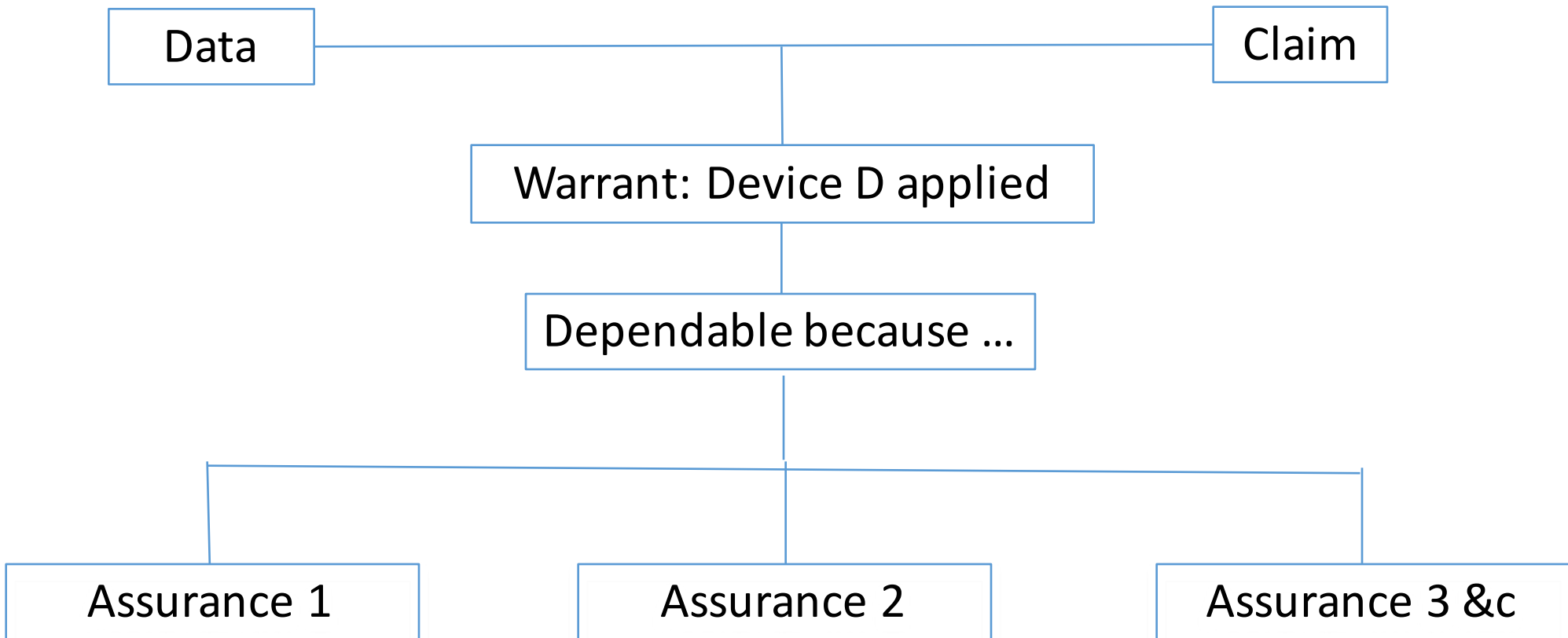


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Increasingly:

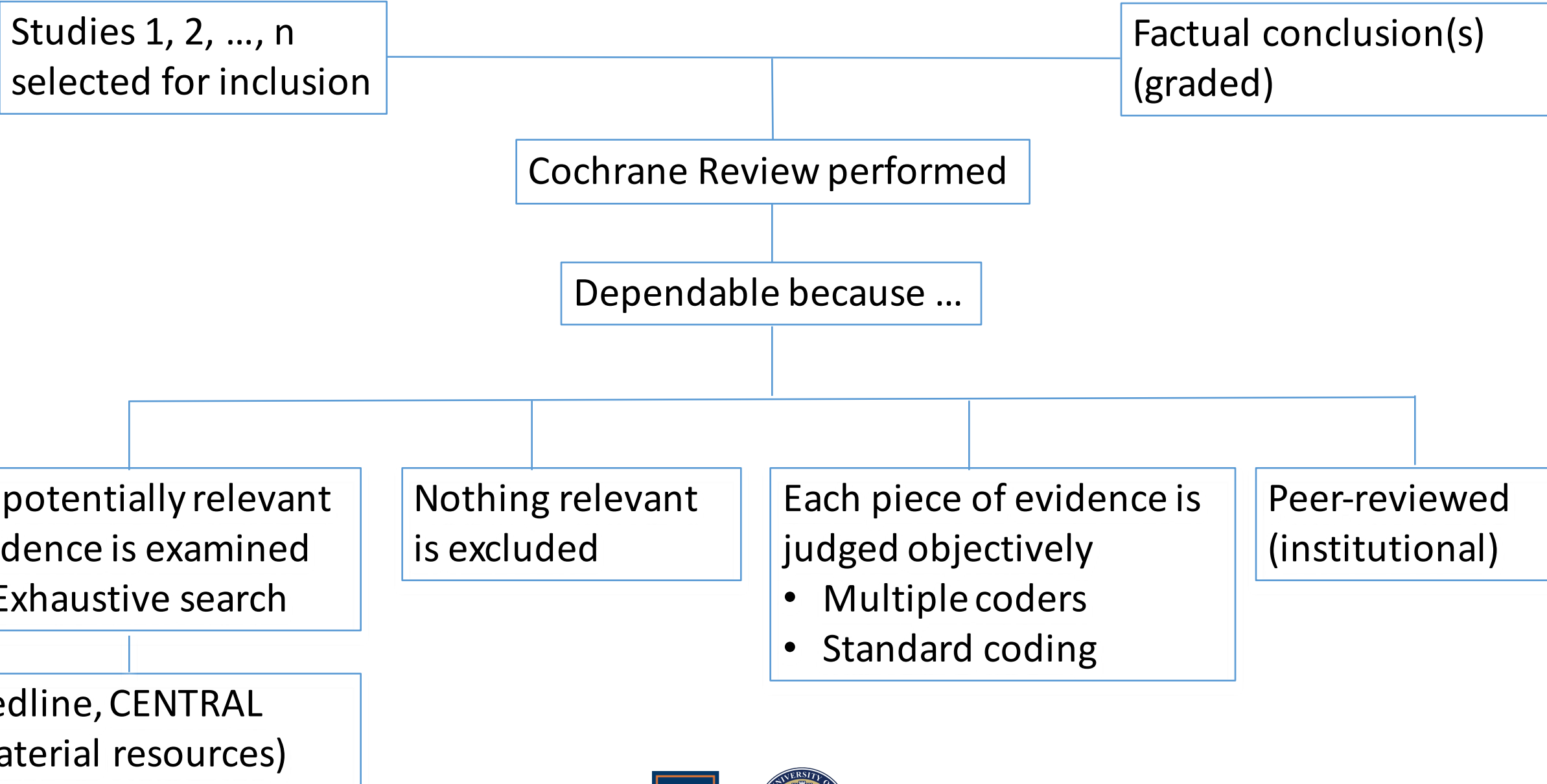
- expert reasoning depends on devices invented by expert communities;
- reasoning from expert opinion inherits a dependence on these devices; and
- assessment of reasoning from expert opinion involves questions about the reliability of the devices themselves.

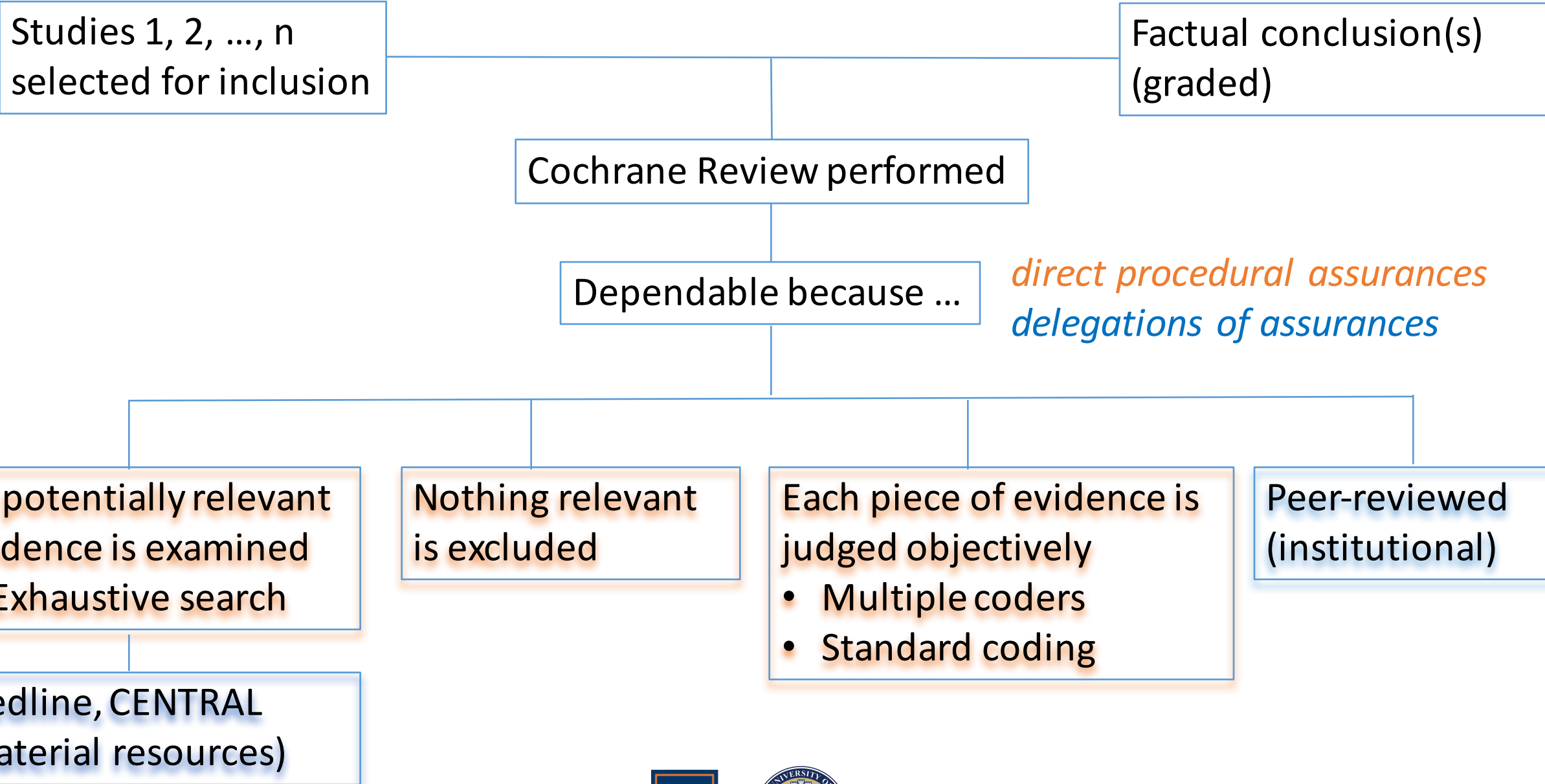




Backing may contain “assurances” of highly varied type, including procedural assurances (like adherence to a standard set of steps) and assurances that involve delegation of tasks or judgments to other actors.







Critical Questions about Devices Themselves

- Questions about evidence
 - What kind of evidence does this device presuppose?
 - Is there useful evidence this device cannot process?
- Questions about device application
 - How transparent are the procedures?
 - How difficult is it to evaluate the faithfulness of the application?
- Questions about the backing
 - What interests are vested in the resources that the device depends on?



Discussion

