Finding A Good Research Question

We now know a few common problems with meta-analyses, e.g.:

- "Apples and Oranges"

- "Garbage In, Garbage Out"

- Redundancy

Many of these problems occur because the meta-analysis does **not address a clearly defined, pertinent research question**…

…and presents findings that are matter to relevant stakeholders.

→ **Good research questions matter!**

4.1 Cookbookery and Mathematistry

The maladies which result may be called *cookbookery* and *mathematistry*. The symptoms of the former are a tendency to force all problems into the molds of one or two routine techniques, insufficient thought being given to the real objectives of the investigation or to the relevance of the assumptions implied by the imposed methods.

Mathematistry is characterized by development of theory for theory's sake, which since it seldom touches down with practice, has a tendency to redefine the problem rather than solve it.

From G.E.P. Box's *Science & Statistics* (1976)

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Step 1. Problem Specification

- To be pertinent and impactful, a meta-analysis should solve a problem
- Subject-specific knowledge is necessary to identify such problems

Signaling questions

- What questions are currently relevant in the research field?
- Is there a gap in current knowledge on certain topics?
- Are there any open discussions that remain unsettled?

Target audience

- What are problems that are relevant to other researchers?
- What issues might other people, for example health care professionals, state agencies, schools, or human resource departments face?

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→ **Have other reviews already answered these questions (sufficiently)?**

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TUM

Step 1. Problem Specification

- Cummings et al. (2013) have proposed the **FINER** framework.

- It states that a research question should be **F**easible, **I**nteresting, **N**ovel, **E**thical, and **R**elevant.

→ **It may also become clear that meta-analysis is not suitable for your problem.**

→ **Examples:**
  - There may simply be no relevant studies that have addressed the topic

  - There may already be recent high-quality meta-analyses in the literature which address the issue sufficiently.

✔ **Feasible**
Research questions should be answered under objective aspects like time, scope, resources, expertise, or funding.

✔ **Interesting**
Regardless of your own personal motivation about a subject, it is important to check if your question corresponds to more practical and broader interests.

✔ **Novel**
Answer to an existing gap in knowledge. Filling one of these gaps is important.

✔ **Ethical**
In empirical research, ethics is an absolute MUST.

✔ **Relevant**
Relevance can lead to real, visible changes in society.