

Theory, theoretical frameworks, conceptual frameworks

The work of science across two research traditions

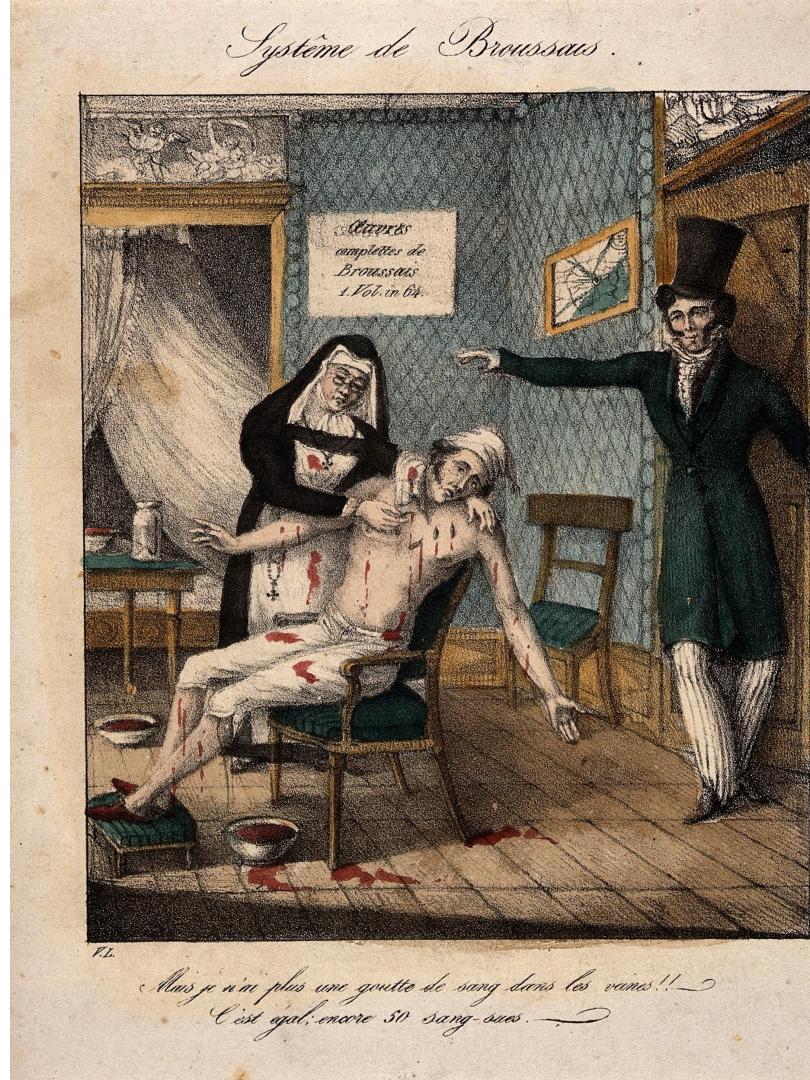
Lara Varpio, **Elise Paradis**, Sebastian Uijtdehaage and Meredith Young (2020)
Academic Medicine.



What is health professions education research?

How is it different from software engineering research? How is it similar?

- Engineers vs. healthcare professionals (different)
- Relatively-recent interdisciplinary field (same)
- Interested in finding practical solutions to real-world problems (design sciences; same)
- Research for researchers / research for users (same)



Why did we write
this paper?

Why was it so
hard to write it?



We wanted to answer the following questions

- What is a theory?
- How is a theory distinct from a theoretical framework?
- Does the term conceptual framework refer to something altogether different from a theory or theoretical framework?
- Do these terms mean different things to different research traditions?

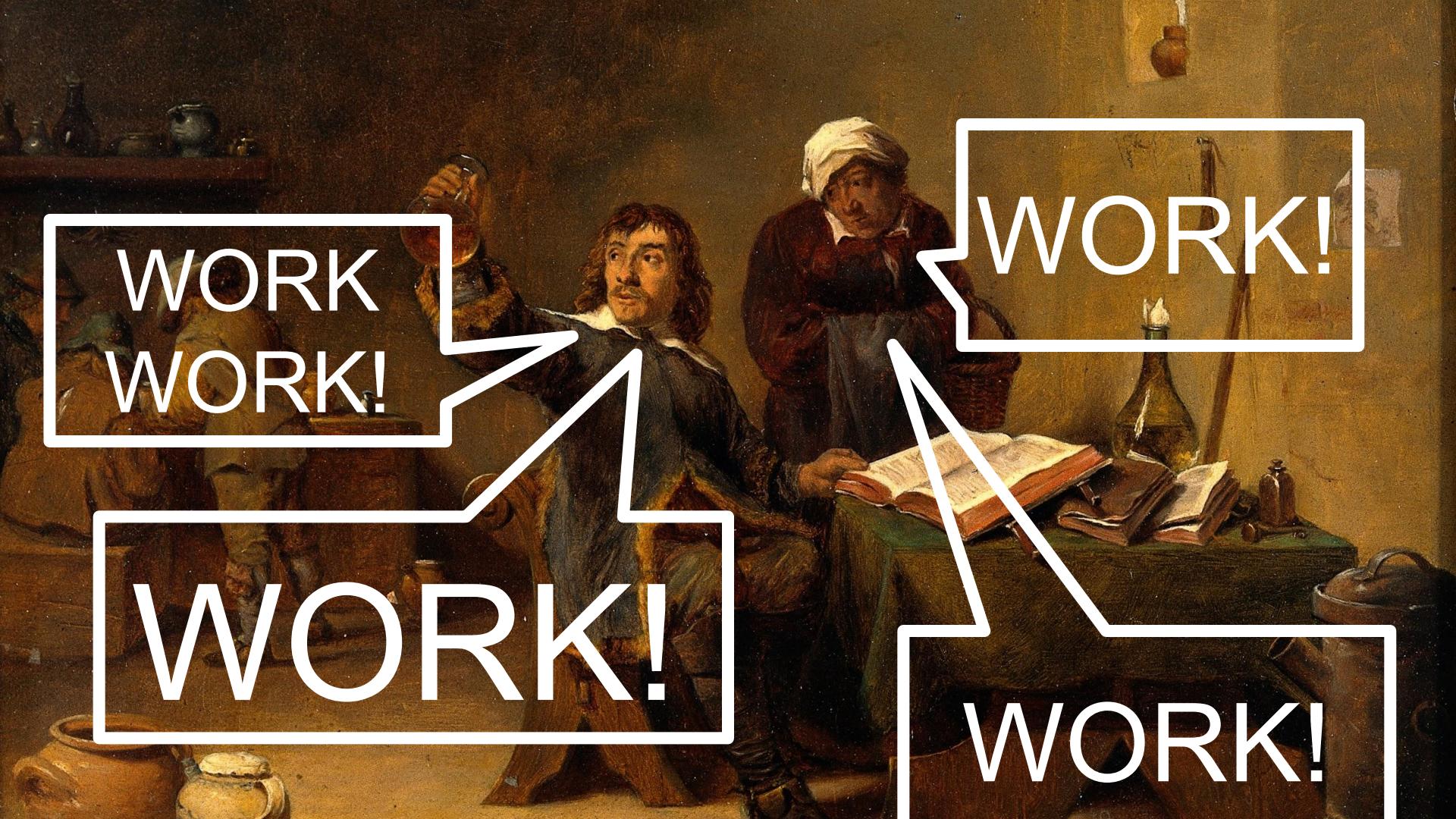
Ah-HA!





Ah-HA!

WORK?



WORK
WORK!

WORK!

WORK!

WORK!

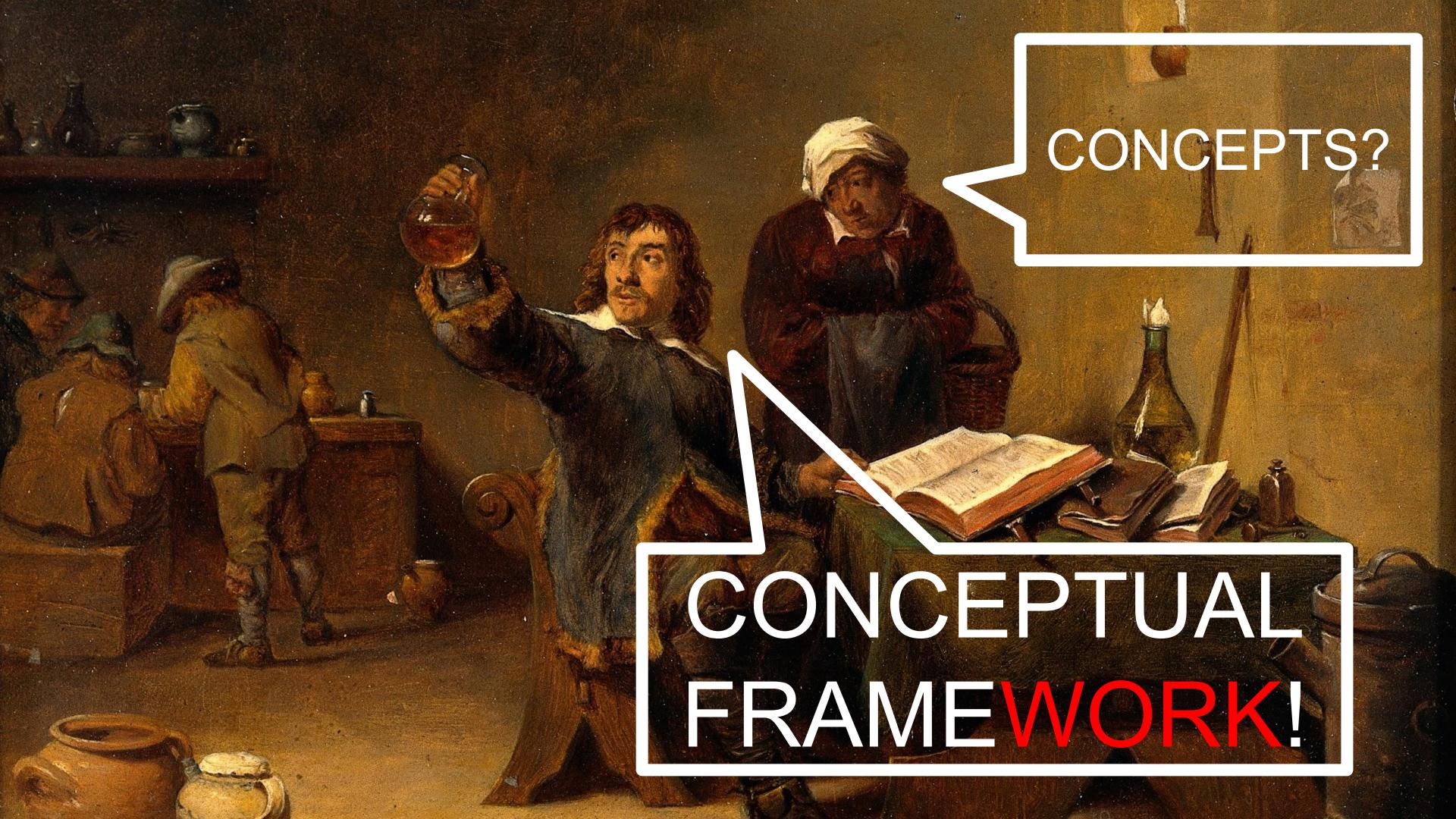


**Work, work, work, work, work, work
You see me I be...**

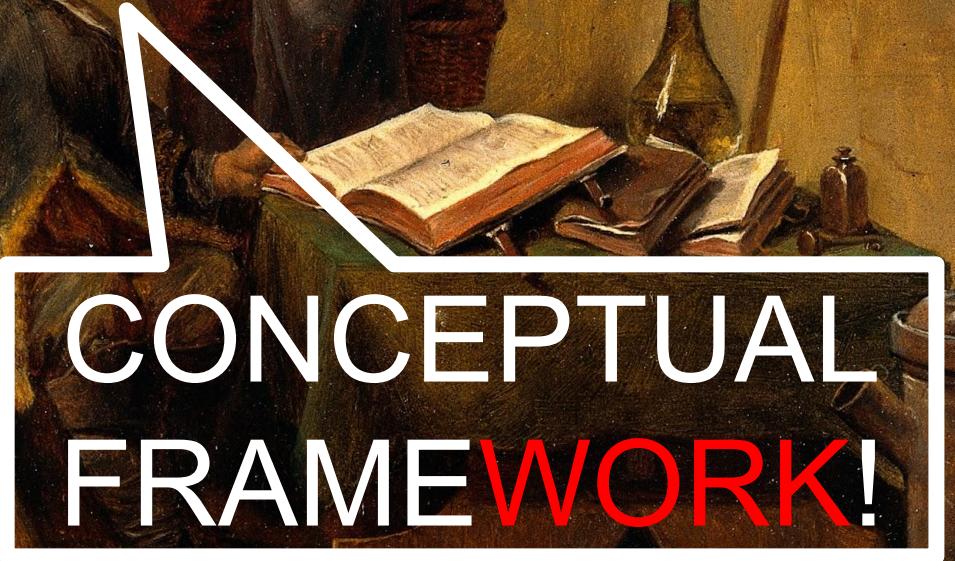


THEORY?

THEORETICAL
FRAMEWORK!

A historical painting depicting a scene in a bar or inn. In the center, a man with a beard and mustache, wearing a dark coat over a white collar, holds a large, round-bottomed glass filled with a golden liquid, likely beer. He is looking upwards and slightly to his right. To his right, another man in a red and white striped shirt and a white turban looks down at him. In the foreground, a small table holds an open book, a lit candle in a glass jar, and several other items. A speech bubble originates from the man in the red shirt, containing the word "CONCEPTS?".

CONCEPTS?

A large speech bubble points downwards from the man in the red shirt towards the bottom right corner of the image. Inside the bubble, the words "CONCEPTUAL FRAMEWORK!" are written in large, bold, white capital letters. The word "FRAMEWORK" is in red.

CONCEPTUAL
FRAMEWORK!

Theory

A **theory** is a set of propositions that are logically related, expressing the relation(s) among several different constructs and propositions. In other words, a theory is an abstract description of the relationships between concepts that help us to understand the world.



Theoretical framework

A **theoretical framework** is a logically developed and connected set of concepts and premises that a researcher creates to scaffold a study.

It is WORK. You make a theory yours; adapt it to your specific research question and context.



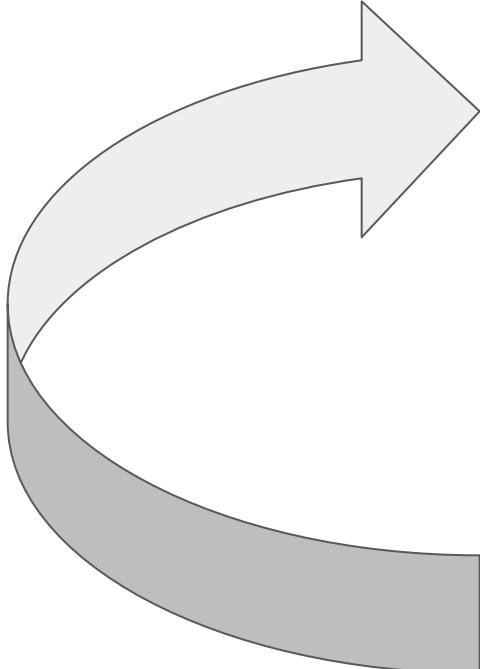
Conceptual framework

A **conceptual framework** is the justification for why and how a given study should be conducted.

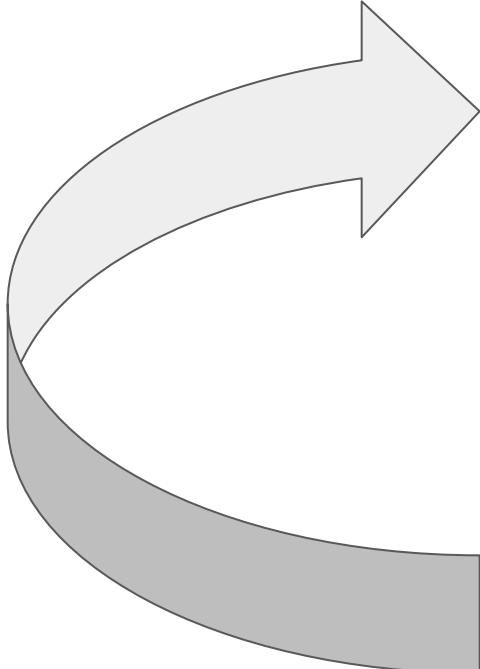
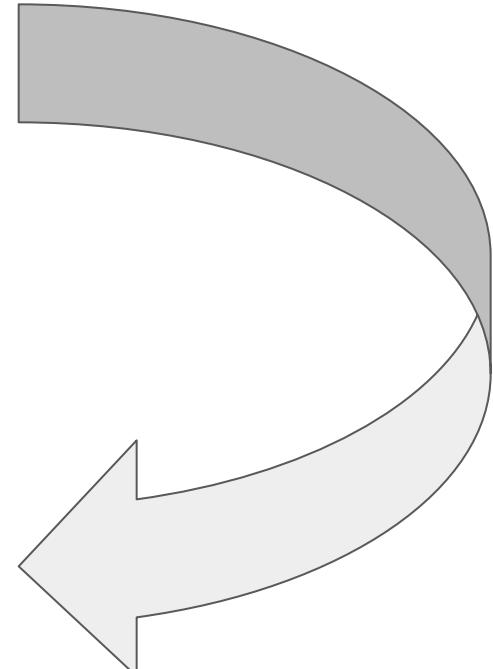
The conceptual framework

- (1) describes the state of knowledge (literature review);
- (2) identifies gaps in our understanding; and
- (3) outlines the project methodology





Deductive: Test Theory

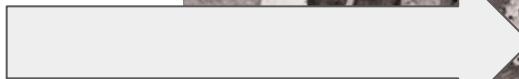


Inductive: Generate Theory

Subjective



Objective





Objectivist Deductive Research*

*Includes post-positivist research

What is it?

Deductive research involves going from general, abstract conceptualizations to observable and measurable data within a specific context.

Objectivist deductive research rests on the assumptions that

- (1) there is an external reality that exists independent of the researcher and
- (2) reality can be understood by collecting objective, unbiased data about that reality.





Theory and theoretical frameworks

Theory is the starting point for research as it helps with hypothesis generation. A study adds new knowledge by adding another building block of evidence to support, refine, or challenge a theory.

The researcher puts the theory into action as a **theoretical framework** by: articulating why the current context is a legitimate area of study for a given theory, shaping the constructs of interest, articulating the specific language and assumptions of the research question, identifying the variables and conditions of interest, and orienting the approach to analysis



Conceptual frameworks

A **conceptual framework** typically includes a description of relevant literature, a summary of the relevant theory, an explanation of why this theory could be informative to this context, a specific research question that likely contains a hypothesis, a rationale for the research methodology adopted, and a series of outcomes or variables of interest.





Subjectivist Inductive Research*

*Includes constructionist research

What is it?

Inductive research involves going from specific data relating to a particular phenomenon to a general or abstract conceptualization of the phenomenon. Inductive researchers work from data up to abstract conceptualizations.

Subjectivist inductive research rests on the assumptions that

- (1) reality is socially and experientially constructed and that
- (2) to understand these realities, researchers need to explore the subjective experiences of individuals and groups.





Three ways to use theory

First, theory can be the **product** of research. Some subjectivist inductive research generates theory from the data (e.g. grounded theory).

vs

Second, one or more theories can inform the entire research process. Here, **theory shapes every stage** of the research process, including the development of a research question, methodological choices, data collection, data analysis, and study conclusions.



Three ways to use theory

vs

Third, theory can be an interpretive tool. For some researchers, the decision as to which theory or theories will **inform the final interpretations of the data** is a choice that can only be finalized during the data collection and analysis cycles.



Theoretical framework

To create a **theoretical framework**, the subjectivist inductive researcher must first decide which of the 3 study designs described. This decision will guide the development of the theoretical framework, including practical decisions of research design.

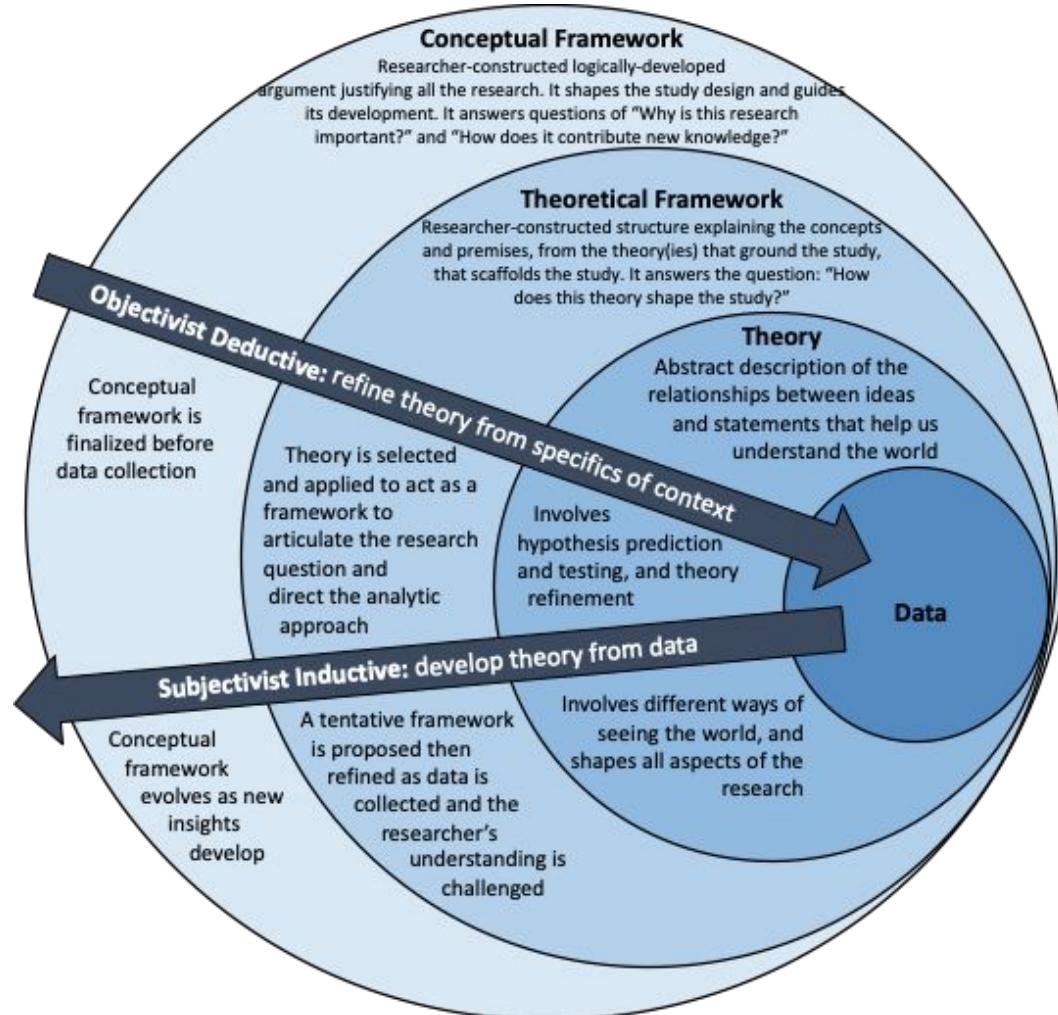


Conceptual frameworks

The **conceptual framework** will likely need to evolve during a study as new ideas, insights, and knowledge are developed.

That framework will include a description of relevant literature, a summary of relevant theory, an explanation of why the research should be carried out in the selected context, research question(s), and justification for the research methodology selected.



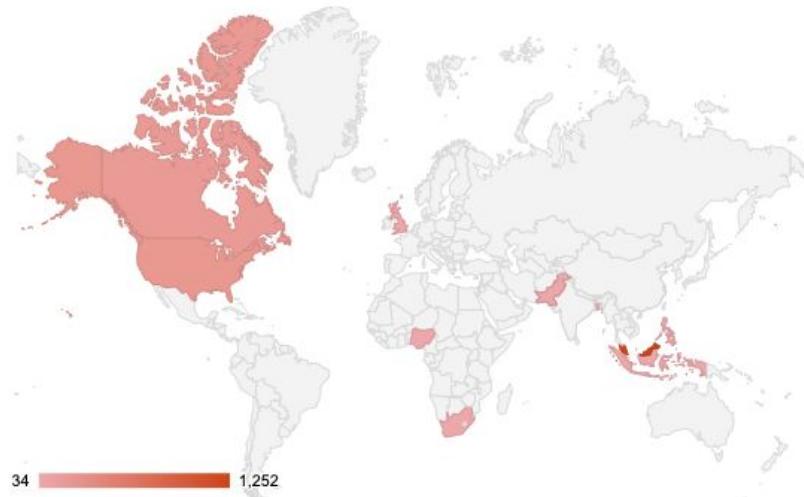


Response to the paper

Full house (>50 ppl) at
the AAMC conference.

ANGER!!!!

17 citations since, and
the article is in the 99th
percentile on AltMetrics.



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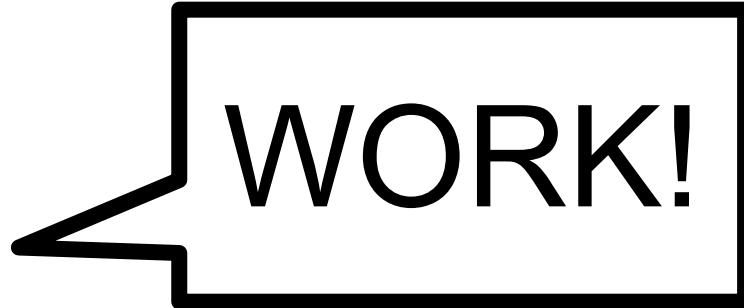
This article is:

In the 99th percentile, ranked 138,484th,
of the 15,929,276th tracked articles of a similar age in all journals

In the 99th percentile, ranked 42nd,
of the 5,292nd tracked articles of a similar age in all journals

What I hope you learned

Work work work work work work.



Different research approaches have different relationships to theory, theoretical frameworks, and conceptual frameworks. You should follow norms from the tradition in which you participate.

No one approach is better or the best: they work together to push science forward.

Do the work that pushes people to reconsider their pre-existing knowledge... even when it is a bit scary, and do it with collaborators who push you respectfully.