The Research Problem

500 Research Methods

Fall 2002

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For Today

- The Research Problem
- Teams for class presentations
- Review assignment #2
- Review outside readings
- Review assignment #3
- Questions & discussion

Paradigms & Underlying Assumptions

- **Ontological** — Based on "branch of physics that studies the *nature of existence or being* as such."
- **Epistemological** — Based on a "branch of philosophy that investigates the *origin, nature, methods, and limits of human knowledge*."
- **Axiological** — Based on a "branch of philosophy *dealing with values*, as those of ethics, aesthetics, or religion."
- **Rhetorical** — "Used for *mere effect*; marked by or tending to use bombast; of, concerned with, being rhetorical…"
- **Methodological** — Based on "a *set or system of methods, principles, & rules* used in any given discipline."

Definitions: Random House Webster's College Dictionary, New York: Random House, 1999.

Methodological Paradigm Assumptions

		Quantitative	Qualitative	Mixed
Methodological Assumption	**What is the process of research?**	Deductive process	Inductive process	Either or both
		Cause & effect	Mutual simultaneous shaping of factors	Linear and/or simultaneous
		Static design-categories isolated before study	Emerging design-categories identified during research process	May begin with either isolated or emerging
		Context-free	Context-bound	Either or both
		Generalizations leading to prediction, explanation, and understanding	Patterns, theories developed for understanding	Either or both
		Accurate and reliable through validity and reliability	Accurate and reliable through verification	Either or both

Reasons for Selecting a Paradigm

Criteria	Quantitative Paradigm	Qualitative Paradigm	Mixed Paradigm
Researcher's Worldview	A researcher's *comfort with* the ontological, epistemological, axiological, rhetorical, and methodological *assumptions* of the quantitative paradigm	A researcher's *comfort with* the ontological, epistemological, axiological, rhetorical, and methodological *assumptions* of the qualitative paradigm	A researcher's *comfort with* sequential, concurrent, and/or transformative paradigms; usually pragmatic
Training and Experience of the Researcher	Technical writing *skills*; computer statistical skills; library skills	Literary writing *skills*; computer text-analysis skills; library skills	Draws on *all forms* of text and statistical analysis; library skills

Creswell

Reasons for Selecting a Paradigm

Criteria	Quantitative Paradigm	Qualitative Paradigm	Mixed Paradigm
Researcher's Psychological Attributes	Comfort with *rules and guidelines* for conducting research; low tolerance for ambiguity; time for a study of short duration	Comfort with *lack of specific rules and procedures* for conducting research; high tolerance for ambiguity; time for lengthy study	Comfort with rules or without rules; *flexibility*; adequate time for lengthy study
Nature of the Problem	Previously studied by other researchers so that *body of literature exists*; known variables; existing theories	Exploratory research; *variables unknown; context important*; may lack theory base for study	May be previously studied or exploratory or *both*
Audience (e.g., journal editors & readers, committees)	Individuals accustomed to/*supportive* of quantitative studies	Individuals accustomed to/*supportive* of qualitative studies	New, *emerging audiences* more knowledge about mixed or multi-methods

STEPS TO DEFINING THE RESEARCH PROBLEM

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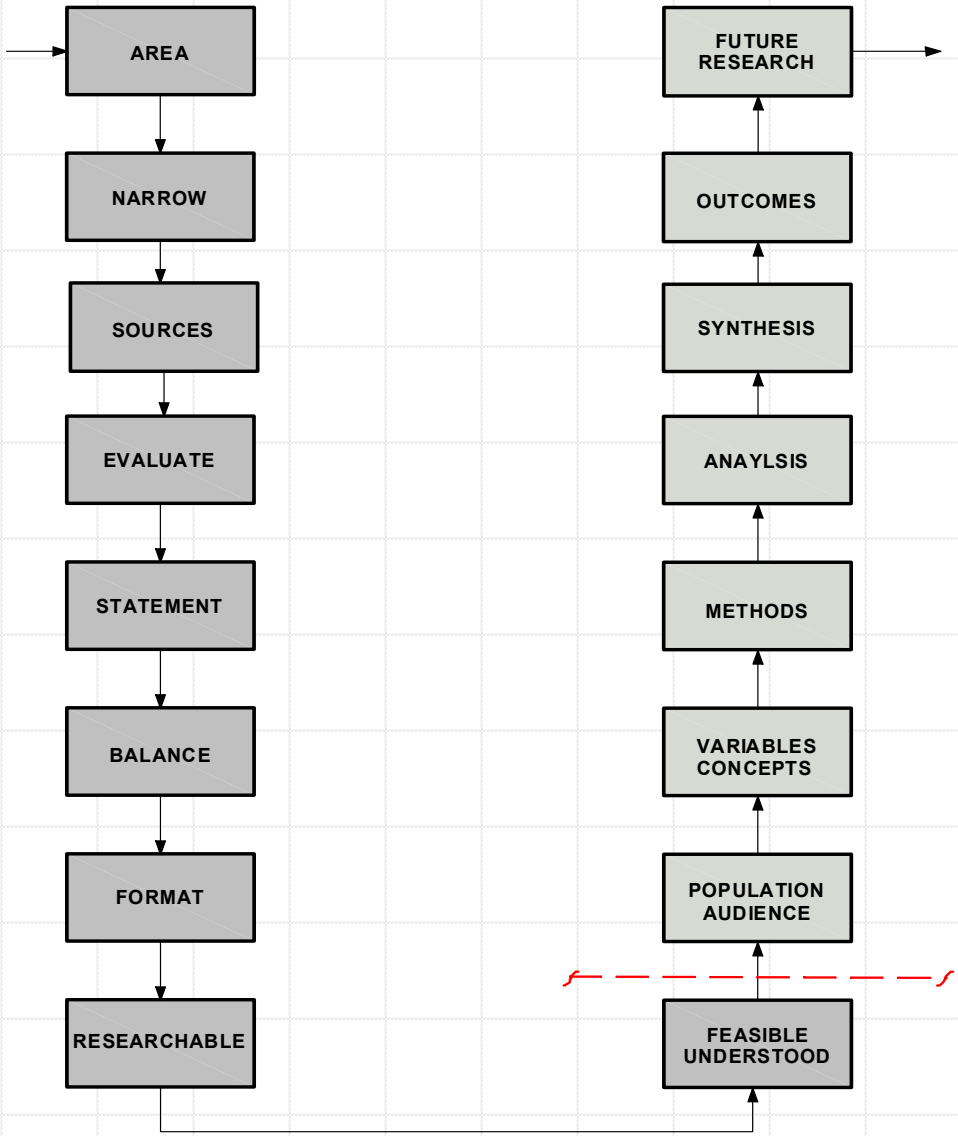
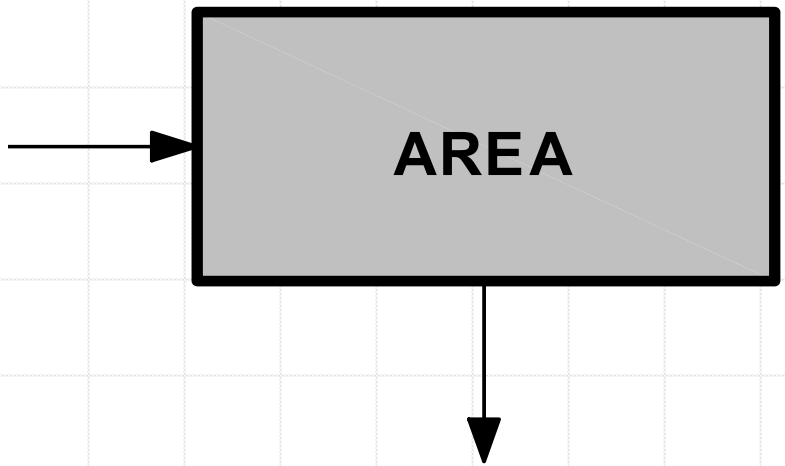


Steps to Defining the Research Problem

- Decide on the general area of study or investigation
  - Generally influenced by your own experiences
  - Use Madsen's criteria from p. 35-36.



Steps to Defining the Research Problem

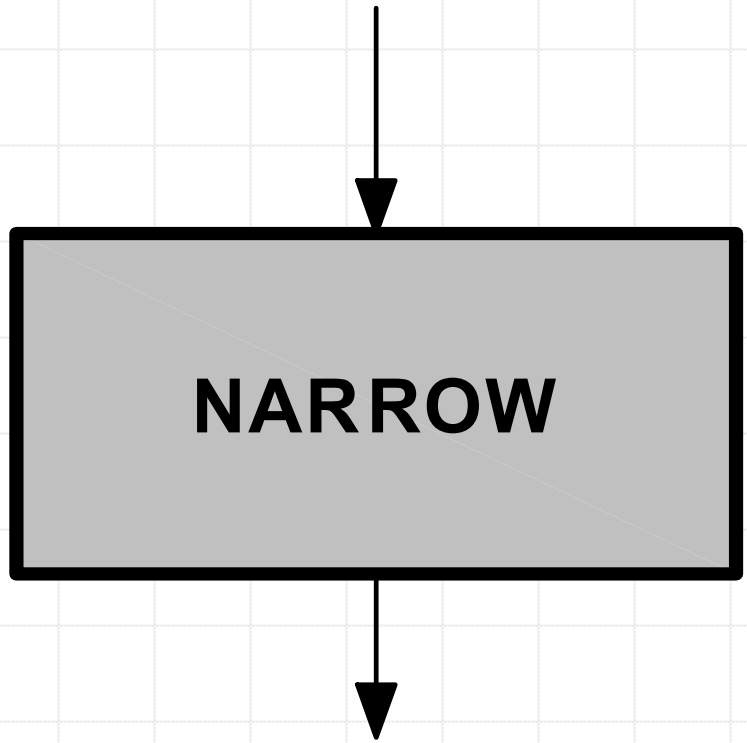
- General area of investigation -- Madsen's criteria:
  - Sustain your interest & stimulate your imagination
  - Within your range of competencies
  - Manageable in size
  - Potential to make a contribution to body of knowledge
  - Based on obtainable data
  - Demonstrate your independent mastery of both the subject and method

Steps to Defining the Research Problem

- General area of investigation, continued
  - "My study is about……." or "the purpose of ……."
  - Using Creswell's example of *scripting* a single sentence that completes the above thought
  - Make it twelve words or less if possible
  - Becomes a working title for your research.
  - Is it researchable?
  - Example – My study is about the effect of size and color of screen icons on user perceptions

Steps to Defining the Research Problem

- Narrow the general topic down
  - To a specific statement of the research problem
  - Use a single paradigm if possible
  - Difficulty -- the topic & research question must be formulated before you have a thorough understanding of research

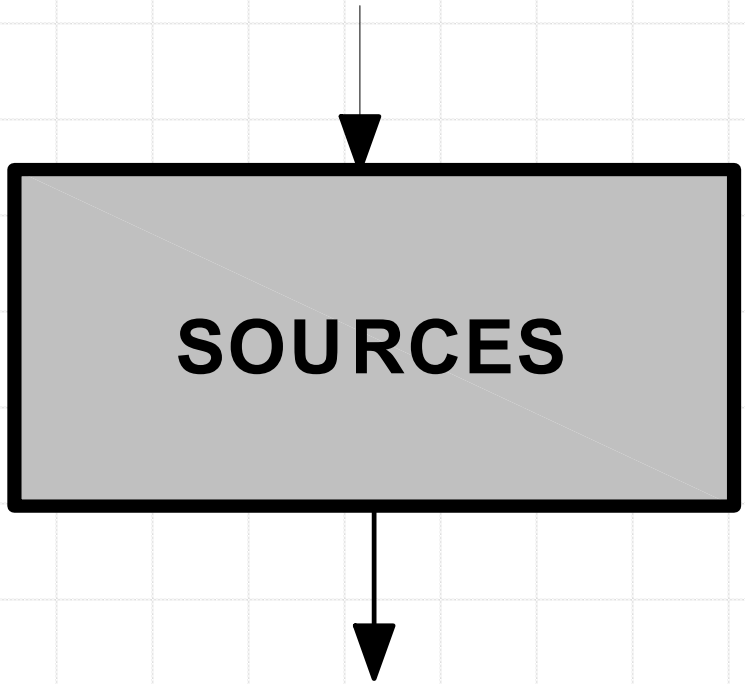


Steps to Defining the Research Problem

- Narrow the general topic down
  - Literature review usually limited at this point
  - Must make wise choices about what to investigate, study, explore
  - Is the topic better suited to a qualitative or quantitative paradigm?
    - Nature of the problem
    - Previously studied, much literature – quantitative
    - Exploratory study, lacking theory base -- qualitative

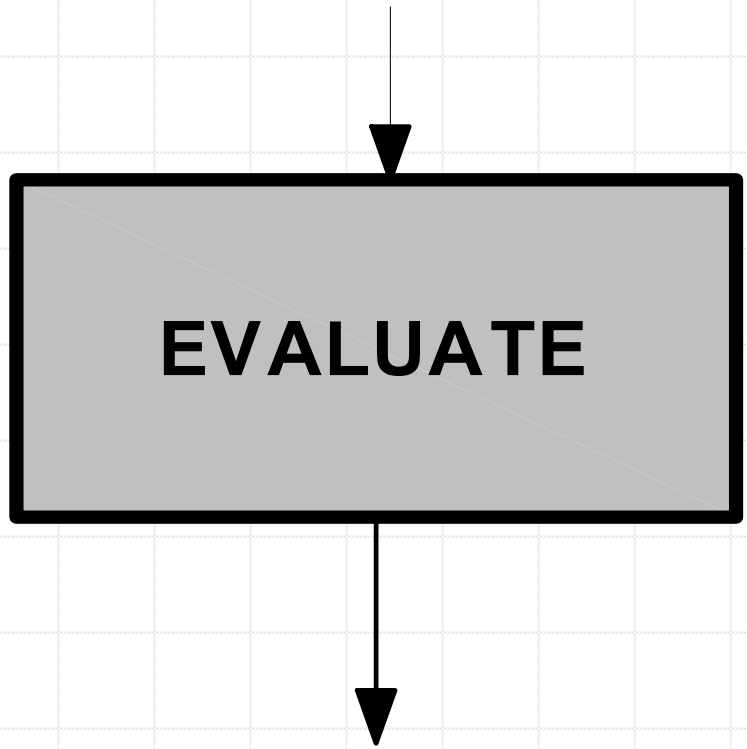
Steps to Defining the Research Problem

- Understand sources from which you define the problem
  - Experience
  - Experts that you know
  - Deductions from theory
  - Readily available problem
  - Review of literature
  - Limits of sources



Steps to Defining the Research Problem

- Evaluate the potential of the problem
  - Important enough to merit investigation or study?
  - Does it meet criteria?

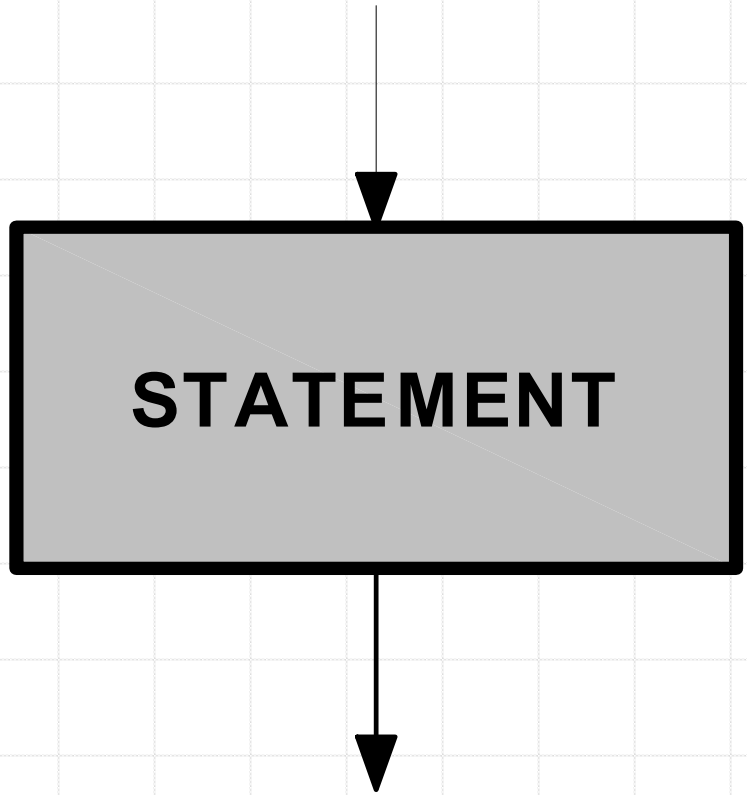


Steps to Defining the Research Problem

- Evaluate the potential of the problem
  - Criteria:
    - Will findings make a contribution to body of knowledge?
    - Will findings make a difference for others?
    - Lead to definition of new problems or other research?
    - Really researchable?
    - Knowledge & experience in the problem area?
    - Information or data available to you?
    - Complete in the allotted time frame?
    - Simple enough for your first study?

Steps to Defining the Research Problem

- A good problem statement
  - Clarify exactly what you want to determine or solve
  - Scope limited to a specific question; sub-questions
  - Operationally defines key terms

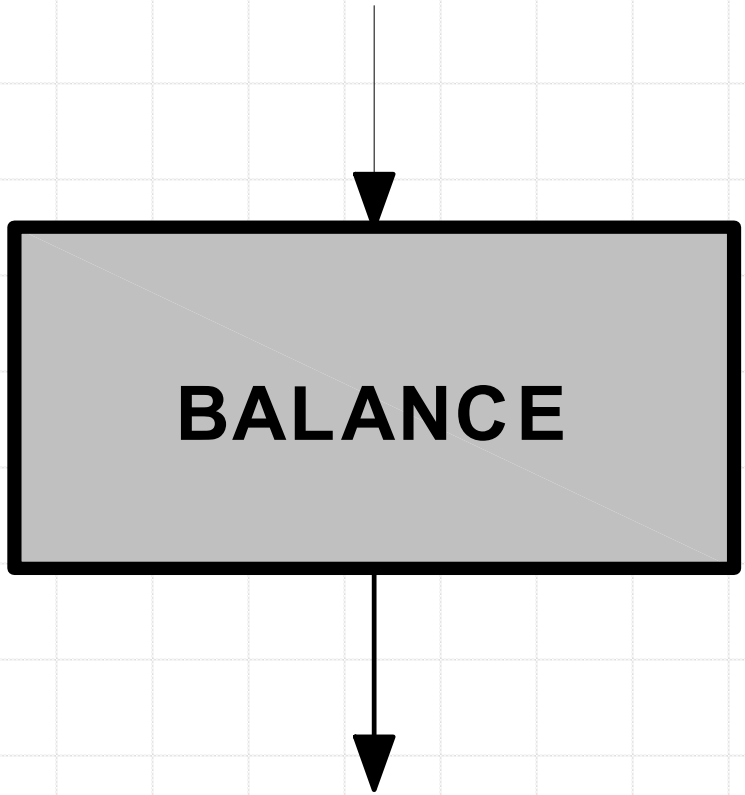


Steps to Defining the Research Problem

- A good problem statement
  - Operational definition (quantitative study)
    - Defines the variables operationally
    - Defines a concept in terms of the operations or processes that will be used to measure or manipulate the concept
  - Tentative definition (qualitative study)
    - Emerge from data collection
    - Not usually included in a list of definitions but is/are tentative pending visiting the field setting to gather info

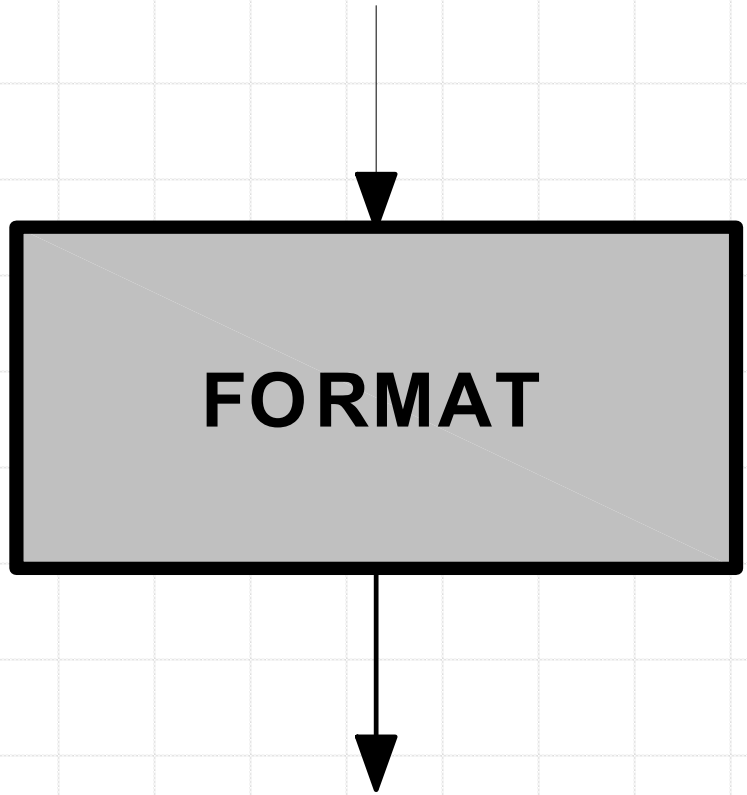
Steps to Defining the Research Problem

- Balance between general & specific in problem statement
  - Avoid trivial problems that are meaningless
  - Broad enough to be significant according to the criteria you establish
  - Specific enough to be feasible for the research situation



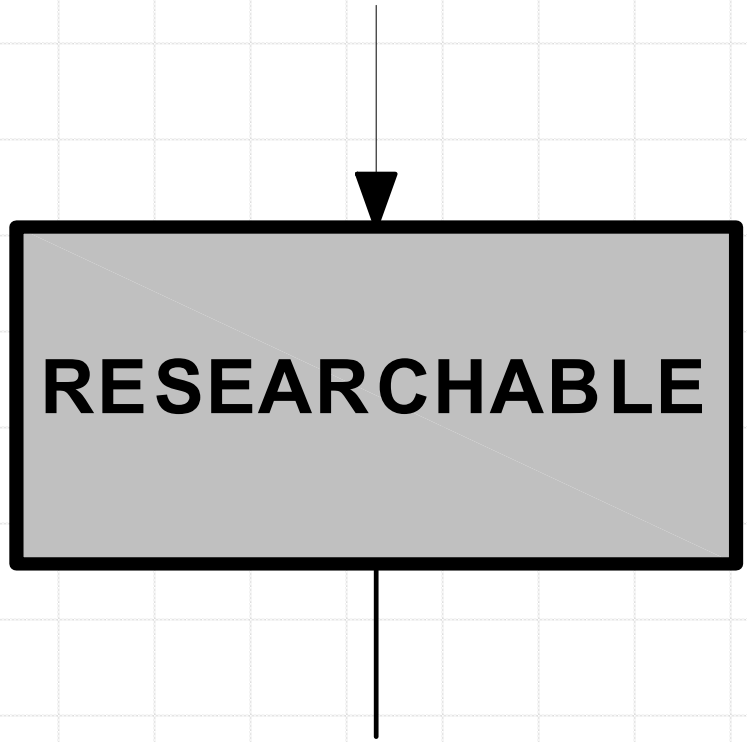
Steps to Defining the Research Problem

- Format of problem statement – how you state the problem
  - Question – implies relationship between two or more variables
  - Statement – describes the scope of your work
  - Hypothesis -- relationships
  - Objective – achieve, measure



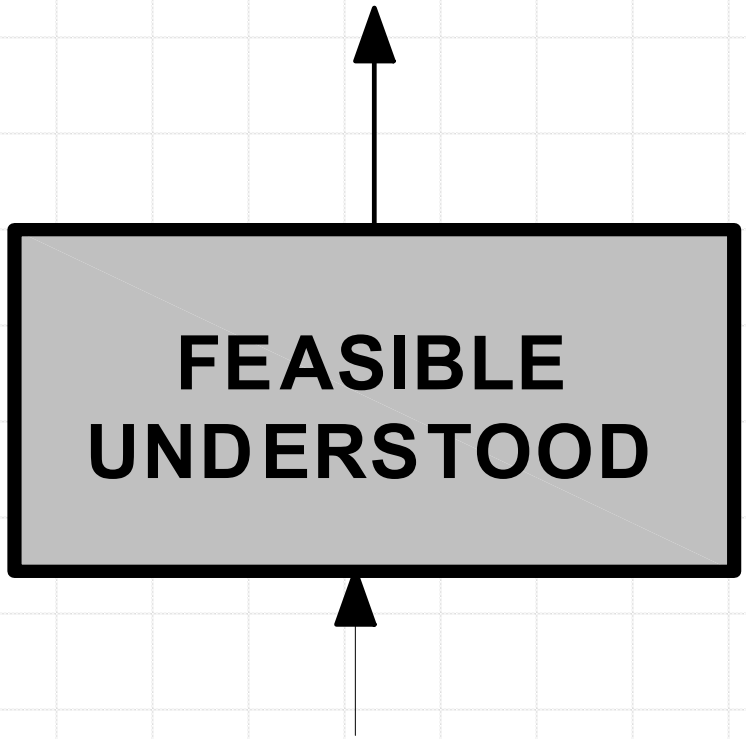
Steps to Defining the Research Problem

- Problem stated in a way that it is researchable
  - Is research into the "question" possible?



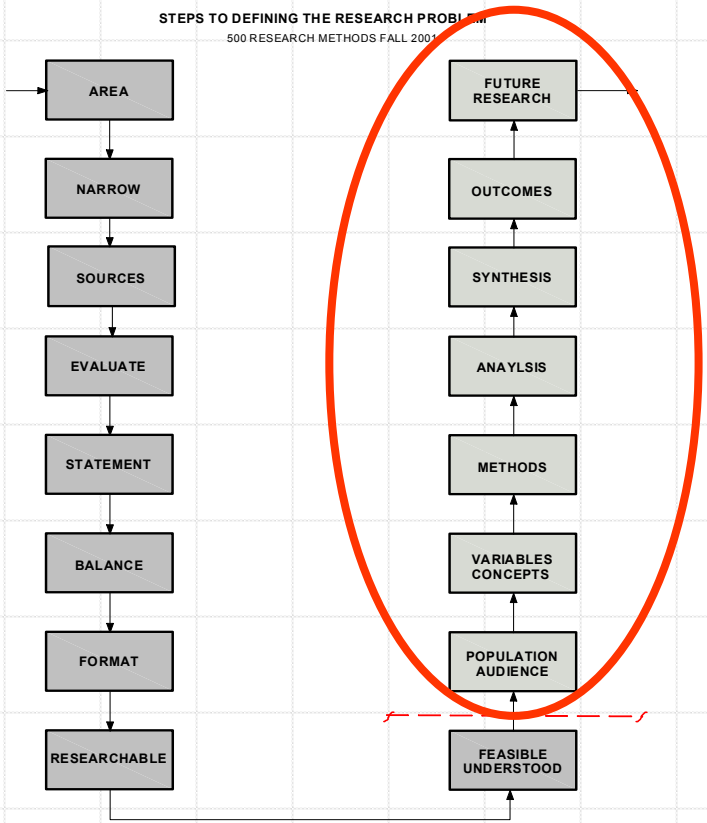
Steps to Defining the Research Problem

- Clear & feasible problem statement
  - Can it be understood by others?
  - Can you describe it concisely, clearly?
  - Do you demonstrate understanding of the area being investigated, studied?



Steps to Review in Future

- We will spend time in upcoming classes on:
  - Population or audience
  - Concepts, constructs, variables
  - Methods
  - Analysis techniques
  - Synthesizing findings
  - Defining outcomes
  - Defining future research



Summary

- Teams for class presentations
- Review assignment #2
- Review outside readings for first three weeks
- Review assignment #3
- Questions & discussion