

Chapter 2

Where to Start: The Process
of Research

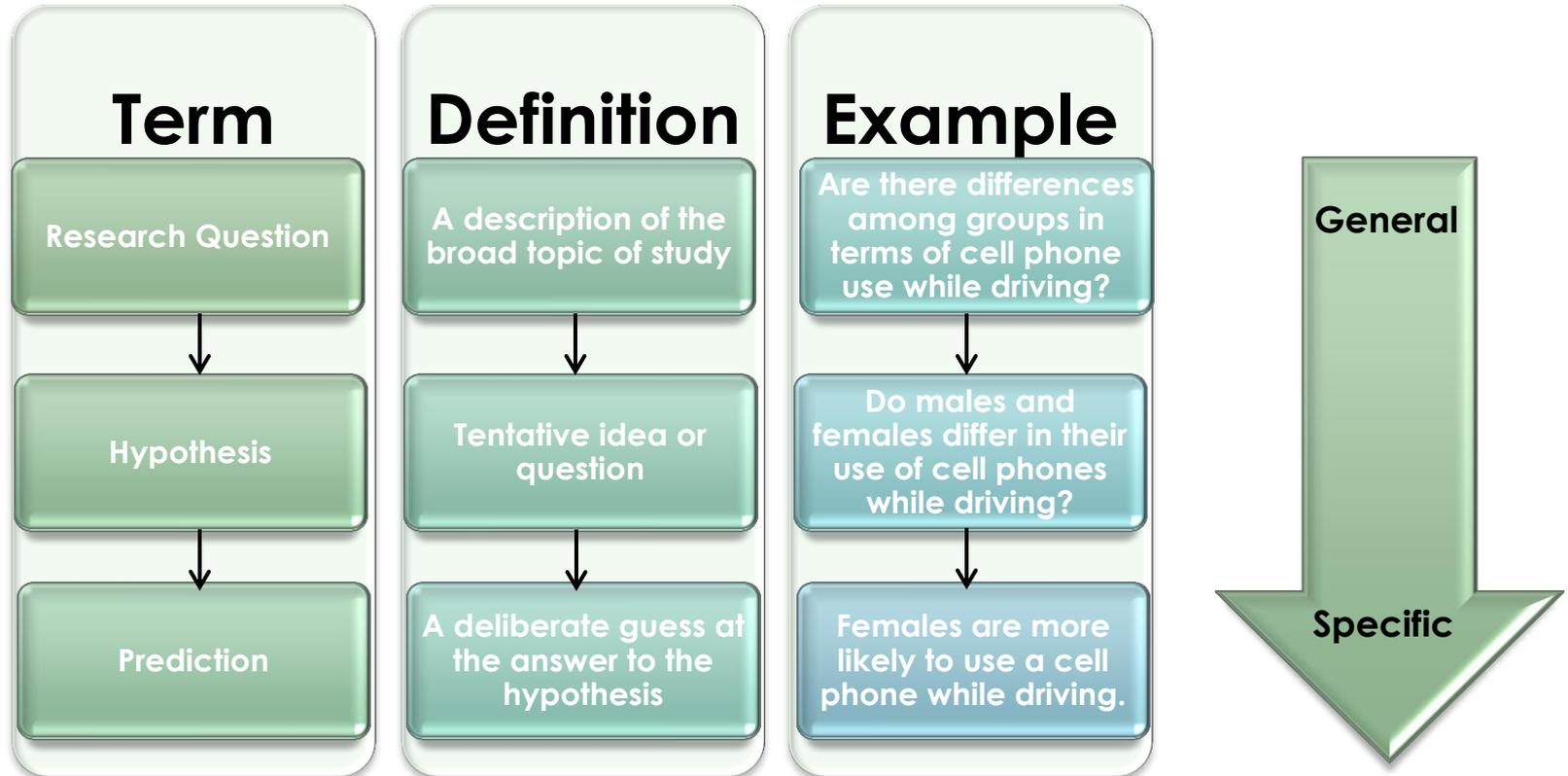
Learning Objectives

- Discuss how a hypothesis differs from a prediction
- Describe the different sources of ideas for research, including common sense, observation, theories, past research, and practical problems
- Identify the two functions of a theory
- Summarize the fundamentals of conducting library research in psychology, including the use of PsycINFO
- Summarize the information included in the abstract, introduction, method, results, and discussion sections of research articles

Research Questions, Hypothesis, and Predictions

- **Research questions:** Used to identify and describe the broad topic they are investigating, and then conduct research to answer their research questions. Research questions are broad in scope.
- **Hypothesis:** *Tentative idea or question waiting for evidence to support or refute it. This is narrow in scope, more specific.*
- **Prediction:** *Is a guess at the outcome of an hypothesis*
 - *If a prediction is confirmed by the results of the study, the hypothesis is supported.*
 - *If the prediction is not confirmed, the researcher will either reject the hypothesis or conduct further research using different methods to study the hypothesis.*
 - *It is important to note that when the results of a study confirm a prediction, the hypothesis is only supported, not proven.*

Research Questions, Hypothesis, and Predictions



Who We Study: A Note on Terminology

- **Participants** - Individuals who participate in research studies
 - **Subjects** - Equivalent term used in psychological research
 - **Respondents** - Individuals who take part in survey research
 - **Informants** - People who help researchers understand the dynamics of particular cultural and organizational settings
- The *Publication Manual of the American Psychological Association* (APA, 2010) allows the use of either *participants* or *subjects* when describing humans who take part in psychological research.

Sources of Ideas

- **Common sense:**

- *One source of ideas that can be tested is the body of knowledge called common sense—the things we all believe to be true. Like do “opposites really attract”? Or do “Birds of a feather really flock together?” Asking a question like these can lead to research programs studying attraction.*

- **Observation** of personal and social events:

- *Observations of personal and social events can provide many ideas for research.*



Sources of Ideas

- **Theory:** Systematic body of ideas about a particular topic or phenomenon
 - *Organize and explain* a variety of specific facts or descriptions of behavior (e.g., Bystander Effect, Attachment Theory, Locus of Control)
 - Various theories can be organized into different fields of psychology (e.g., Cognition, Behavioral, Developmental, etc.)
 - *Generate new knowledge* by focusing people's thinking so that they notice new aspects of behavior—*theories guide people's observations of the world*
 - *Can be modified by new research* as it defines the scope of the theory

Sources of Ideas

○ Past research

- Becoming familiar with a body of research on a topic is perhaps the best way to generate ideas for new research.
- Because the results of research are published, researchers can use the body of past literature on a topic to continually refine and expand people's knowledge.

○ Practical problems

- Research is also stimulated by practical problems that can have immediate applications.

Exploring Past Research

- Before conducting any research project, an investigator must have a thorough knowledge of previous research findings.
- Even if the researcher formulates the basic idea, a review of past studies will help the researcher clarify the idea and design the study.



“According to my research, laughter is the best medicine, giggling is good for mild infections, chuckling works for minor cuts and bruises, and snickering only makes things worse.”

Exploring Past Research

- **Journals** - Place where researchers publish the results of their investigations
 - After a research project has been completed, the study is written as a report, which then may be submitted to the editor of a journal.
 - The editor solicits reviews from other scientists in the same field and then decides whether the report is to be accepted for publication

Exploring Past Research

- The American Psychological Association began the monthly publication of *Psychological Abstracts*, or *Psych Abstracts*, in 1927.
- Today, the abstracts are maintained in *PsychINFO*.
- **PsycINFO**: Computer database that maintains all the abstracts
 - Psychological abstracts - Brief summaries of articles in psychology and related disciplines indexed by topic area
- The exact look and feel of the system users will use to search *PsychINFO* will depend on the library website.
- Users' most important task is to specify the search terms that they want the database to use.

Fig 2.2–Strategies for Searching Research Databases

General Strategies

- Use several databases—for example, both *PsycINFO* and Google Scholar. Become familiar with the databases available in your library to expand the range of information available to you.
- Record your search terms and repeat your searches to find updates.
- Do not restrict yourself to full-text articles, as this introduces a bias in your results.
- Try a variety of key words: *angry driving* and *road rage* generate two sets of results that do not completely overlap.
- Consider using the words *review* and *meta-analysis* in the title of an article to find literature reviews.
- Look for the perfect key article and then use that one to identify additional articles. Use the results that you do find to generate new results.
- Use the “times cited in this database” information from PsycINFO or the “related articles” information in Google Scholar.
- Use the “cited references” information provided by PsycINFO and Google Scholar.

Fig 2.2–Strategies for Searching Research Databases

PsycINFO Search Strategies

- Use fields such as the TITLE and AUTHOR. Example: Typing *divorce* in TITLE requires that the term appear in the title.
- Use AND, OR, and NOT. AND limits the search. Example: Typing *divorce AND child* requires both terms to be included.
- Use OR to expand search. Example: Typing *divorce OR breakup* includes either terms.
- Use NOT to exclude search terms. Example: Typing *shyness NOT therapy* excludes any shyness articles that have the term *therapy*.
- Use the wildcard asterisk (*). Example: Typing *child** finds any word that begins with *child* (childhood, child's, etc.).
- Find the procedure for restricting the search to peer-reviewed articles.
- Review and use keywords that were selected by article authors (in PsycINFO, these are found in the more detailed result output).

Fig 2.2–Strategies for Searching Research Databases

Google Search Strategies

- Follow the link to Advanced Search. The advanced search screen allows you to
 - Search for a specific phrase
 - Specify a set of “AND” words or phrases so the each of the results of your search will include all the words or phrases
 - Specify a set of “OR” words or phrases to expand your search
 - Specify a set of “NOT” words or phrases to limit your search

Exploring Past Research

- **Science Citation Index (SCI)** and **Social Sciences Citation Index (SSCI)**: Two related search resources, which allow users to search through citation information such as the name of the author or article title.
 - **SCI**: Includes biology, chemistry, biomedicine, and pharmacology
 - **SSCI**: Includes behavioral and social science such as sociology and criminal justice
 - Accessed together using the **Web of Science** computer database:
 - <https://clarivate.com/products/web-of-science/>

Exploring Past Research

- Other electronic search resources. The American Psychological Association maintains several databases in addition to *PsychINFO*:
 - PsycARTICLES: consisting of full-text scholarly articles
 - PsycBOOKS: a database of full-text books and book chapters
 - Sociological Abstracts
 - PubMed
 - ERIC (Educational Resources Information Center)
 - LexisNexis Academic
 - Factiva

Exploring Past Research

- Internet searches
 - Google Scholar: can be accessed via any web browser
 - <http://scholar.google.com>
 - articles, theses, books, abstracts, and court opinions from a wide range of sources, including academic publishers, professional societies, online repositories, universities, and other websites
 - Professional meeting searches

Exploring Past Research

○ Evaluating web information

- library and a variety of websites have information on evaluating the quality of information found on the Internet. Some of the most important things to look for are:
 - **Site sponsor:** Is the site associated with a major educational institution or research organization?
 - **Credentials of the webmaster:** Is information provided on the people who are responsible for the site?
 - **Information accuracy:** Is the information current?
 - **Links:** Do links from the site lead to legitimate organizations?

Anatomy of a Research Article

- **Abstract:** *Summary of the entire research report*
 - 120 words or less
 - Hypothesis, procedure, and the broad pattern of results
 - Last part of an article to be written

Anatomy of a Research Article

- **Introduction** selection: Outlines the investigated problems
 - *Past research and theories relevant to the problems described*
 - *Formal hypotheses or specific expectations of the present research are introduced and connected to past research*
- The introduction section also contains the literature review. The terms “Introduction” and “Literature Review” are often used interchangeably.

Literature Review

- Contains references to articles that summarize the research in a particular area
 - For example, the journal *Psychological Bulletin* publishes reviews of the literature in various topic areas in psychology.
 - The introduction part of a research paper is essentially a literature review.
- Authors review the past literature to understand the presented concepts/topics

Anatomy of a Research Article

- **Method** section

- It is divided into subsections by the author depending on the complexity of the research design

1. It is an overview of the study design

- It gives the number of variables, how are they compared, such as a pre-post survey, how a variable was manipulated, etc.

Anatomy of a Research Article

● **Method** section cont.

1. It describes the characteristics of participants
 - How they were selected, such as with random selection, where they were obtained, their specific demographic qualities?
 2. It explains the equipment or testing materials
 - Surveys, musical equipment, blood pressure monitor, etc?
 3. It describes the procedure used in the study
 - Steps-by-step description of how study was conducted
- A precise method section is essential for replication

Anatomy of a Research Article

- **Results** selection:

- Findings presented by the researcher in three ways
 1. Description in narrative form
 2. Description in statistical language
 3. Material in table or graphs

Anatomy of a Research Article

- **Discussion** section

- Reviews the research from various perspectives
- *Explains how the results of your study compare with past results*
 - If the hypothesis has not been supported, the author should suggest potential reasons.
 - What might have been wrong with the methodology, the hypothesis, or both?
- Presents methodological weaknesses and/or strengths
- *Includes suggestions for practical applications and for future research on the topic*