Foundations of Research

Professor Jonathan Hughes

Science and the Scientific Approach

- Explaining Complex Human Activities
  - Common Sense
    - Grasp: language
    - Approach: individuals
  - Scientific Activities
    - Create: language
    - Approach: problem-solving

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

Science and Common Sense

- **"...in creative thought, common sense is a bad master..its sole criterion for judgement is that the new ideas shall look like the old ones."**
  - **A. Whitehead, Mathematician, 1911**
  - ***An Introduction to Mathematics*, Holt, Rinehart, Winston, NY, p. 157.**
- **"Science is a systematic and controlled extension of common sense, since common sense is a series of concepts...for practical use."**
  - **J. Conant, *Science and Common Sense***
  - **Yale Univ Press, 1951, pp 32-33.**

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

Science and Common Sense

5 Major Distinctions

- **In Use of conceptual schemes and theoretical structures**
  - **common sense:**
    - **accepts loose concepts and theories**
    - **accepts fanciful explanations of natural and human phenomenon**
  - **Science:**
    - **builds structures,**
    - **tests for consistency,**
    - **uses empirical (observational) evidence**

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

Science and Common Sense

5 Distinctions

- **In Testing theories and Hypotheses**
  - **common sense: selection of evidence because it is consistent with a hypotheses by limited experience and presumed knowledge.**
  - **Scientist:**
    - **Knows this "selective tendency"**
    - **guards against preconceptions and predilections**
    - **Test presumed relations in a laboratory**

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

Science and Common Sense

5 Distinctions

- **In Control**
  - **Common sense does not attempt to control explanations of observed phenomena systematically.**
  - **Scientist tries to systematically rule out variables that are possible "causes" of the effects other than the variables that are hypothesized to be the "causes"**

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

Science and Common Sense

5 Distinctions

- **In Relationships among phenomena**
  - **Common Sense: explains relationships**
  - **Science: pursues relationships**

  - **Hurlock's (1925) Positive and Negative Reinforcement**
  - **"An Evaluation of Certain Incentives used in schoolwork" JEP, p145-159**

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

Science and Common Sense

5 Distinctions

- **In differing "planes" of explanation**
  - **common sense: "metaphysical" explanations -a proposition that cannot be tested ("God wills it")**
  - **Science: rules out propositions that cannot be tested.**
    - **however, does not spurn, rule them out of life, say not true, or claim meaningless**
    - **A Scientist is not concerned with them.**

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

Four Methods of Knowing ("Ways of Knowing")

Charles Peirce, American philosopher

- **Method of Tenacity**
  - **"Men hold firmly to the truth, the truth that they know to be true because they hold firmly to it, because they have always known it to be true"**
  - **repetition of "truths"**
  - **clinging to beliefs in the face of conflicting facts**
  - **inferring new knowledge from propositions that are false**

(in J. Buchler, ed., Philosophical Writings of Peirce. NY, Dover, 1955, pp 193-196)

Four Methods of Knowing ("Ways of Knowing")

Charles Peirce, American philosopher

- **Method of Authority**
  - **established belief**
  - **weight of tradition**
  - **actually needed for life to go forward**
    - **the large body of facts and information needs authorities**
    - **only unsound under certain circumstances**

Four Methods of Knowing ("Ways of Knowing")

Charles Peirce, American philosopher

- **A Priori Method**
  - **Method of Intuition**
  - **propositions accepted by the "a Priorist" are self-evident**
  - **agree with reason not necessarily with experience**
  - **natural inclination toward truth**
  - **"rationalist"**
  - **"It stands to reason"**

Four Methods of Knowing ("Ways of Knowing")

Charles Peirce, American philosopher

- **Method of Science**
  - **Major Difference: self-correcting**
  - **built in checks**
  - **control of the activities and conclusions**
  - **alternative hypotheses**
  - **Objectivity Cycle:**
    - **APPEALS TO PRESENTING EVIDENCE**
    - **PROPOSITIONS ARE SUBJECTED TO EMPIRICAL TESTS**
    - **OTHER THEORIES RISE FROM OBJECTIONS**
    - **GAIN IN OBJECTIVITY**
    - **SELF-CORRECTING**

Basic Aim of Science

Explanation, Understanding, Prediction and Control

- **Theory:**
  - **"A theory is a set of interrelated concepts (constructs), definitions and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena."**

F. Kerlinger, Foundations of Behavioral Research, Holt, Rinehart and Winston, NY, 1973. pp.2-15.

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1

2

3

Basic Aim of Science

Explanation, Understanding, Prediction and Control

- **A Theory on "School Failure"**
  - **Variables: intelligence, verbal aptitude, numerical ability, anxiety, social class membership, motivation**
    - **Phenomenon: School achievement**
    - **Relationships : between 6 variables**
    - **Use this set of concepts to:**
      - **(Begin to) *Understand* school failure**
      - **(better) *Explain* school failure**
      - **(to some extent, al least) *Predict* school failure**

Purpose of Theories

- Summarizes and puts in order existing knowledge
- Provides provisional explanations of observed events and relationships
- Stimulates the development of new knowledge by providing leads for new inquiry

Characteristics of Theories

- 1. must be able to explain the observed facts relating to a particular problem.
- 2. must be consistent with observed facts and already established knowledge.
- 3. must provide means for verification.
- 4. should stimulate new discoveries and indicate further areas in need of investigation.

Scientific Research

- "Scientific Research is the systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomena."

The Scientific Approach

Reflective Thinking and Inquiry (Dewey)

- Problem-Obstacle-Idea
  - "There is a troubled, perplexed, trying situation, where the difficulty is, as it were, spread through the entire situation, infecting it as a whole." p. 108

J. Dewey, How We Think. Boston: Heath, 1933, pp 106-118.

The Scientific Approach

Reflective Thinking and Inquiry (Dewey)

- **Hypothesis**
  - **a conjectural statement, a tentative proposition, about the relation between two or more phenomena or variables"**
  - **"What at first is merely an emotional quality of the whole situation becomes..an intellectualizing of the problem."**

The Scientific Approach

Reflective Thinking and Inquiry (Dewey)

- **Reasoning-Deduction**
  - **Dewey: May be his most important contribution to the analysis of reflective thinking**
  - **Deducing the consequences of the formulated hypothesis**
  - **Iterative steps: reason--->deduce--->reason**
    - **univariate**
    - **bivariate**
    - **multivariate notions**
  - **changing the scope of problem**
    - **maybe a special case of a broader more fundamental problem**
  - **Implications of the hypothesis carefully deduced**

Inductive vs Deductive

- Inductive...
  - Descriptive to Summative
  - "After extensive observations, we conclude by developing a theory..."
- Deductive...
  - Summative to Descriptive
  - "Knowing the theory, we develop a new conclusion..."

The Scientific Approach

Reflective Thinking and Inquiry (Dewey)

- **Observation-Test-Experiment**
  - **testing the relation expressed in the hypothesis**
  - **"We do not test the variables; we test the relation between the variables"**
  - **"We test only when knowing fairly well what and why we are testing."**
    - **e.g. I want to study grouping practices of teachers. (without knowing why you're doing it or without stating a relation among or between grouping practices and other variables.)**
  - **"We do not "test a hypothesis". We test deduced implications of the hypothesis"**
  - **e.g. "writing remarks on papers will improve future papers"**

Steps to Scientific Inquiry

1: Doubt or barrier or an indeterminate situation crying out to be made determinate.
2: Struggle to formulate the problem.
3: Study the literature, scans own experience.
4: Pose basic questions
5: Construct a hypothesis
6: Compose implications of the hypothesis
7: Test the relationship(s) expressed by the hypothesis.
8: Accept or reject the hypothesis
9: Make recommendations to reformulate the hypothesis

Steps to Scientific Inquiry

- **"There is much ebb and flow among these steps. Research is rarely an orderly business anyway... What is most important is the controlled rationality of scientific research as a process of reflective inquiry, the interdependent nature of the parts of the process, and the paramount importance of the problem and its statement." Kerlinger, p 15.**

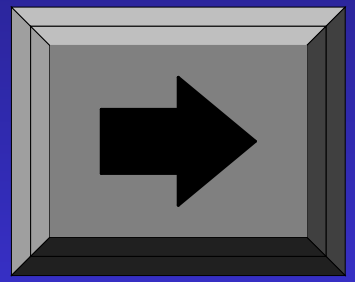
Limitations of the Scientific Approach

- Complexity of Subject
  - e.g.. Boyle's law on pressure and Gas volume vs. early childhood behaviors.
- Difficulties in Observation
  - In social sciences more subjective
- Difficulties in Replication
  - Social phenomena can be singular events
- Interaction of Observer and Subjects
  - Hawthorne Experiments: changes in productivity not due to changes in working conditions but knowledge of being singled out for investigation.
- Difficulties in Control
  - range of possibilities to "control" human subjects much more limited
- Problems of measurement
  - Tolls for social science much less perfect and precise than the tools for natural sciences
  - large number of determining(intervening) variables varying independently of covarying with others.
  - measurement is usually limited to a particular time of measurement which could influence outcomes.

Section 2: Educational Research

What is Educational Research?

- Research is defined as the application of the scientific approach to the study of a problem.
- Educational research is the application of the scientific approach to educational problems.



Educational Research

- Earlier Western Culture: Children considered to be "small adults" and were treated as such.
  - consumed same beverages/foods
  - put to work with adults
  - imprisoned with adults
- Research has shown children are different
  - biological and physical studies
  - cognitive studies
  - nutritional studies
  - behavioral studies
- Research has changed educational practice.

A Brief History of Educational Research

- **Beginnings of Measurement**
  - 1879 **Wilhelm Wundt:** 1st laboratory for experimental psychology in Leipzig, Germany
    - major advance in the scientific study of human behavior
    - fading of phrenology, astrology etc.
  - Sir **Francis Galton**, Great Britain (1822-1911)
    - Studied individual differences among people
    - developed the first statistical tools for analyzing and describing data; pioneered method of correlation
  - **James McKeen Cattell**
    - studied with Wundt and influences by Galton
    - wrote classic article: "Mental Tests and Measurements" (1890)
    - Emphasized need for standardization of test procedures in order to obtain comparable measurements from subjects.
    - led to systematic study of individual differences in other human functions including the measure of intelligence.

A Brief History of Educational Research

- The Beginnings of Educational Research
  - Joseph M. Rice (1897): spelling achievement of school children in the U.S. ("The Futility of the Spelling Grind", Forum 23(April 1897): 163-72 and (June 1897): 409-19)
  - Methods of drill largely ineffective
  - investigated teaching methods and tried to point out weaknesses in prevailing educational theories

Three Periods of History

- Pioneering Period: 1900-1920
  - development of measuring instruments
  - Alfred Binet (1905) first workable intelligence scale: Terman: Stanford-Binet Intelligence Test (1916)
  - Edward Thorndike: handwriting scale,
    - "first scientifically calibrated instrument for measuring an educational product"
    - "Notes on Child Study" (1901) NY: Macmillan
  - Buckinham's Spelling Test; Trabue's Language Test
  - first school survey: description and evaluation of one or more aspects of a school situation: 1910, Boise, Idaho
    - conducted by the school superintendent of Indianapolis
  - Based on major objections about growing measurement field by educators, AERA was born (1915, National Council of Education meeting)
    - "the promotion of the practical use of educational measures in all educational research."
    - Thorndike's Famous Dictum: "If a thing exists, it exists in some amount; if it exists in some amount, it can be measured." (First annual conference on Educational Measurement, 1914)

Three Periods of History

- **The Period of Expansion: 1920-1945**
  - Increase of measurement tools
    - *Mental Measurements Yearbook*
  - University courses in measurement
  - McCall's "How to Experiment in Education" (1923)
  - Journals Begin:
    - AERA founded four:
      - Educational Research Bulletin (1920)
      - Journal Of Educational Research (1920)
      - Review of Educational Research (1931)
      - Encyclopedia of Educational Research (1940)
- **Period of Critical Appraisal: 1945-present**
  - Re-evaluation of research (meta-analyses)
  - expansion of research fields
  - expanded theories
  - available data and resources
  - centralized data collection agencies
  - information storage
  - exponential growth of technical analysis capabilities

Type of Educational Research

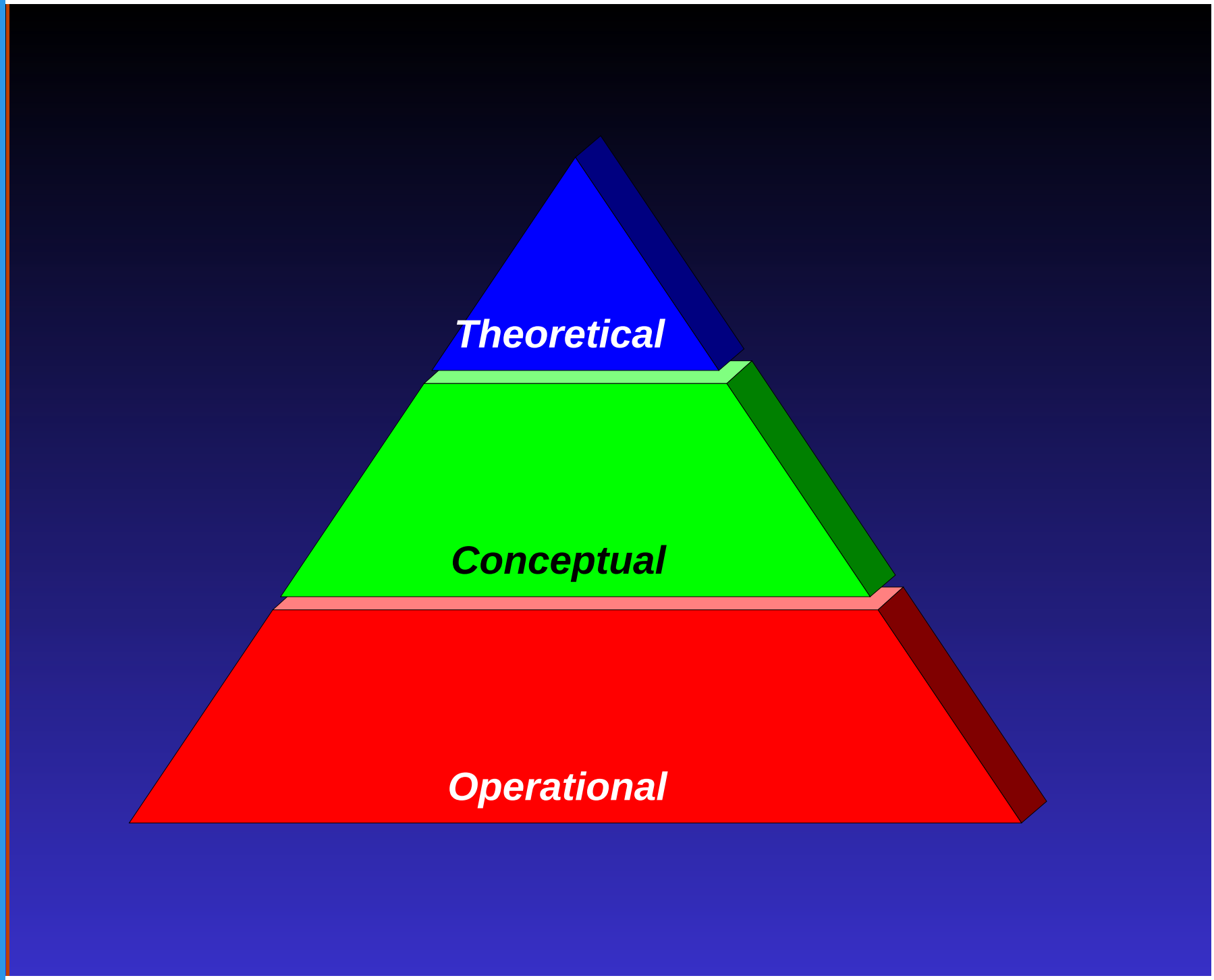
- Research reports address questions which can be answered empirically.
  - "Do parents agree or disagree with a proposal to provide moral education in the public schools?"
- Professional reports address questions which tend to involve ethics, morals or values.
  - "Should the public schools become involved in moral education?"

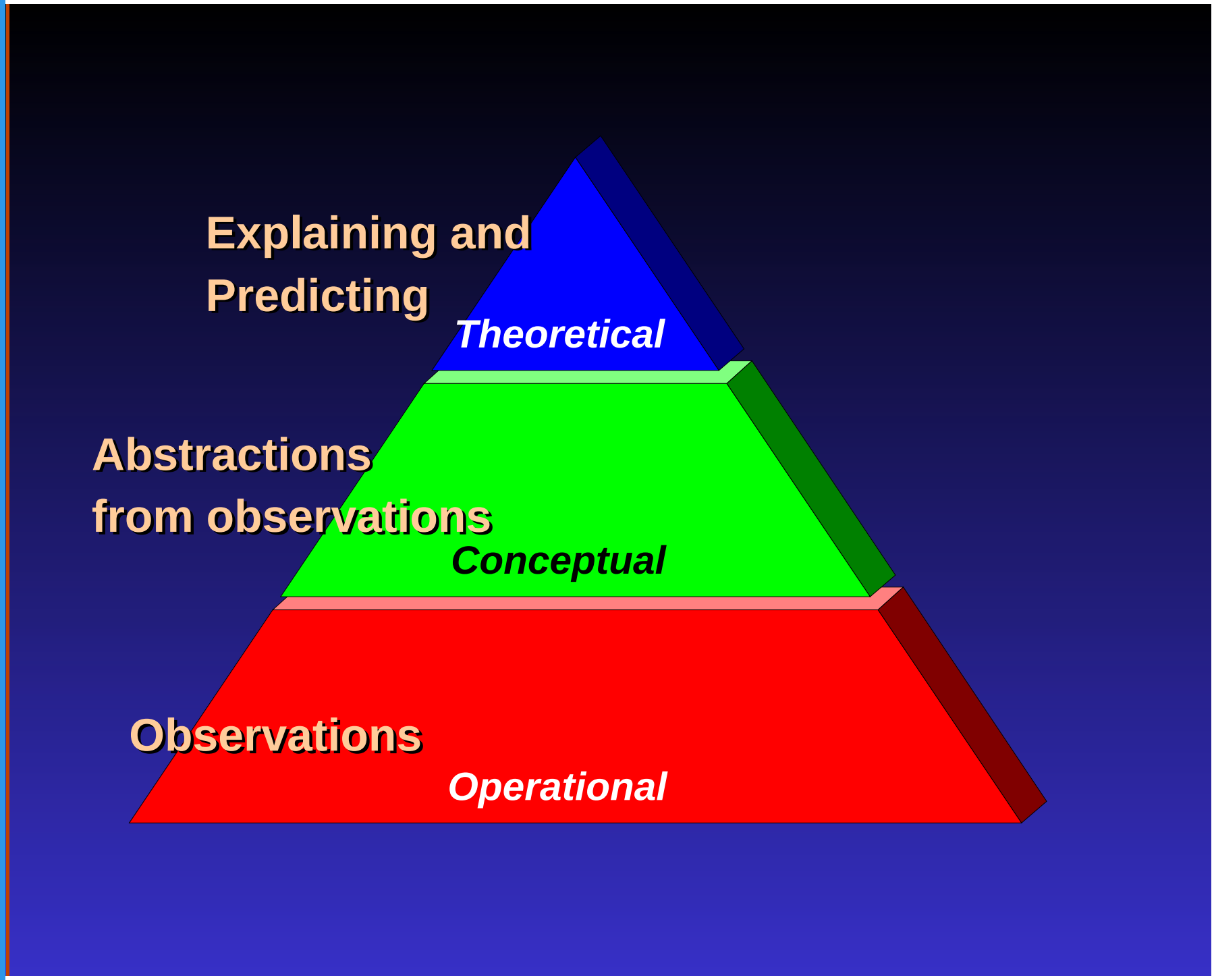
Typical Stages of Educational Research

- Selecting a Problem
  - a simple question
- Analytical Stage
  - exhaustive study of all previous research to give insight
- Selecting research strategy and developing instruments
  - choices of method and type of inquiry
- Collecting and interpreting data
  - the deduced consequences of the hypothesis is tested
- Reporting the Results
  - Making procedures, findings and conclusions available for others. Clear, concise presentation of the steps of a study.

Questions Asked by Educational Researchers

- Theoretical Questions (Basic Research)
  - What is it? How does it occur?
  - develops or tests theories
  - formulates, expands or evaluates theories
  - discovery of new knowledge or new laws
- Practical Questions (Applied Research)
  - solving specific problems under conditions found in practice
  - Studies which test existing theories at specific sites
  - solve problems at appropriate levels of complexity
  - vital to have interest to solve local issues to generate more complex and useable theories.


Theoretical
Conceptual
Operational


Explaining and
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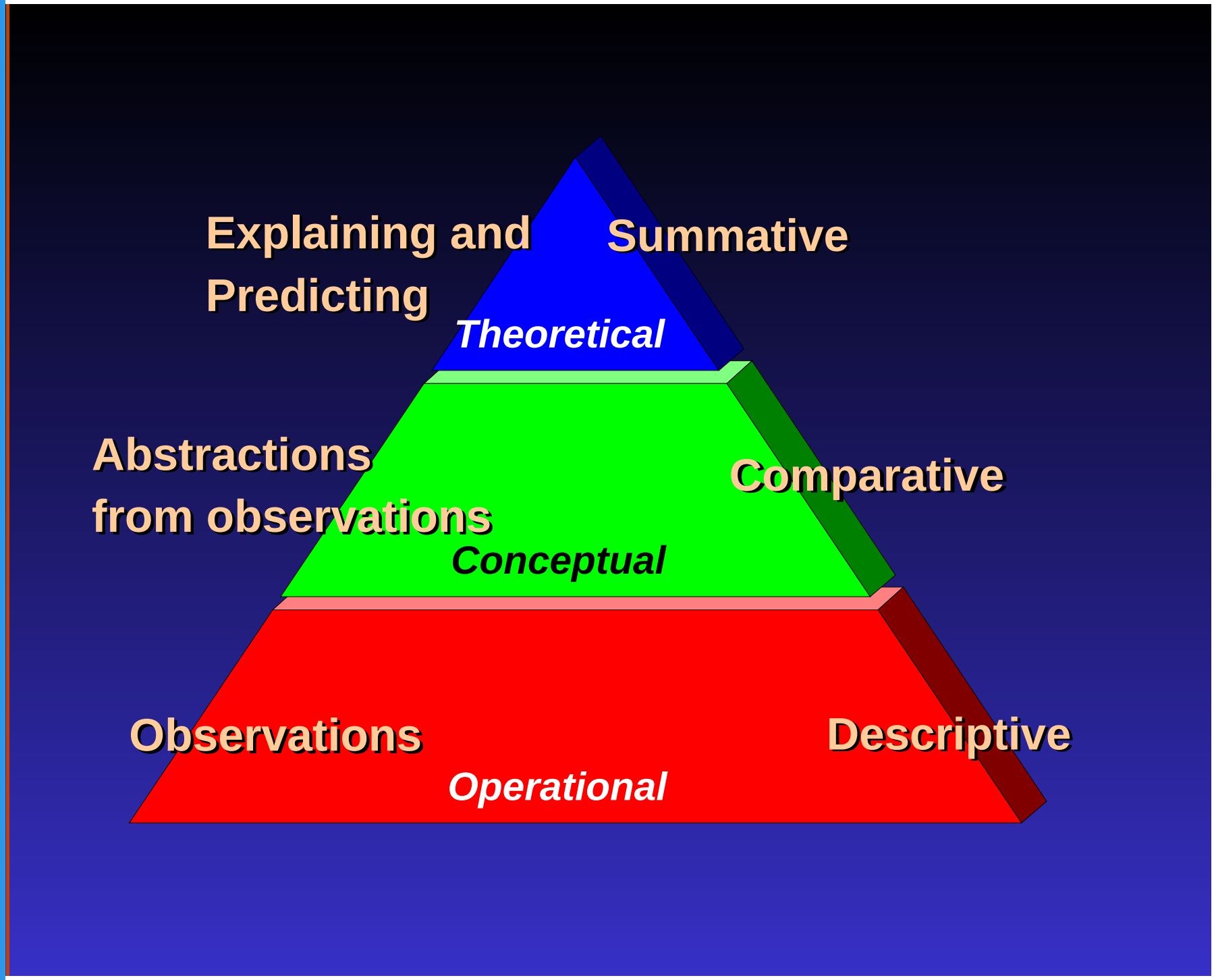
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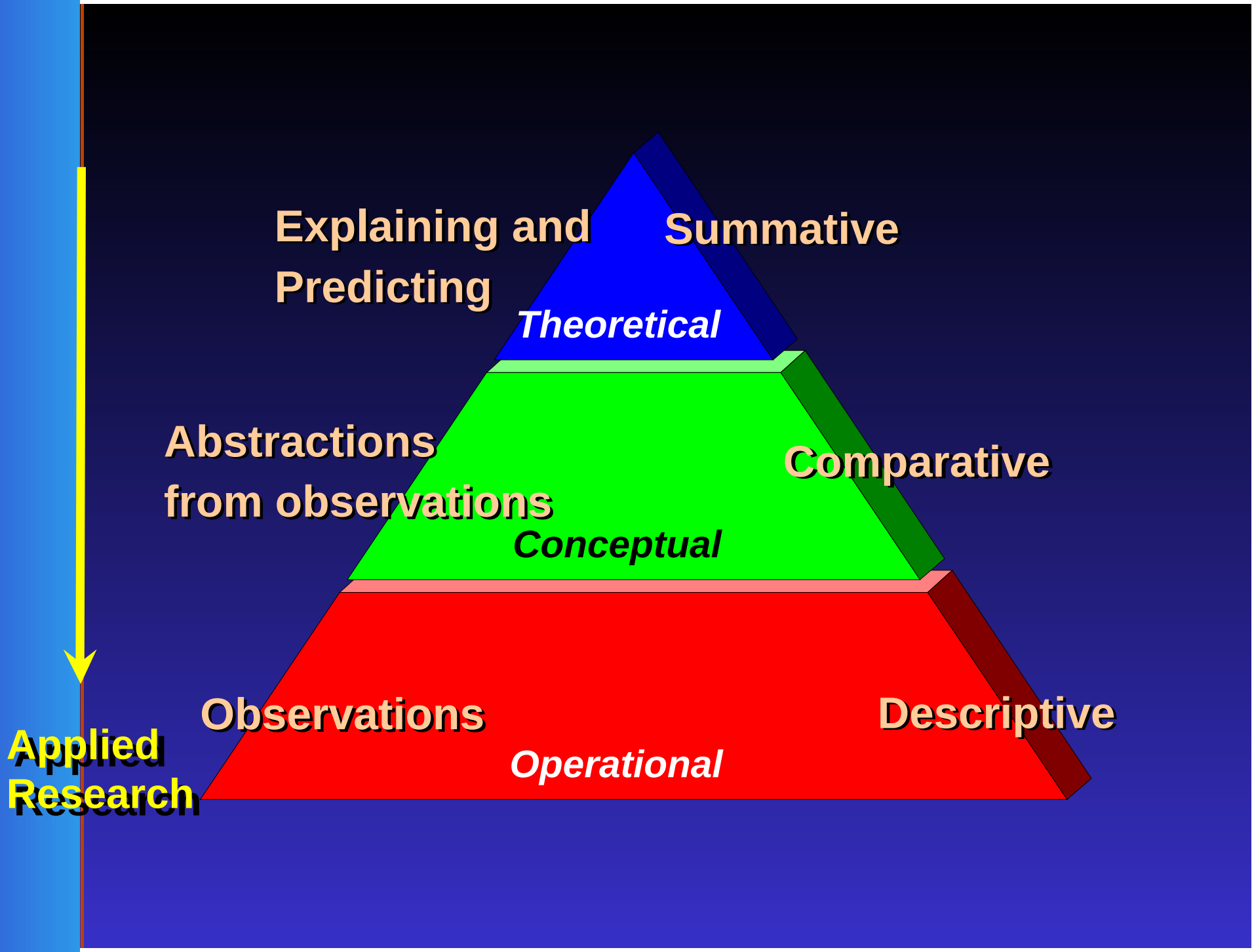
Explaining and Predicting
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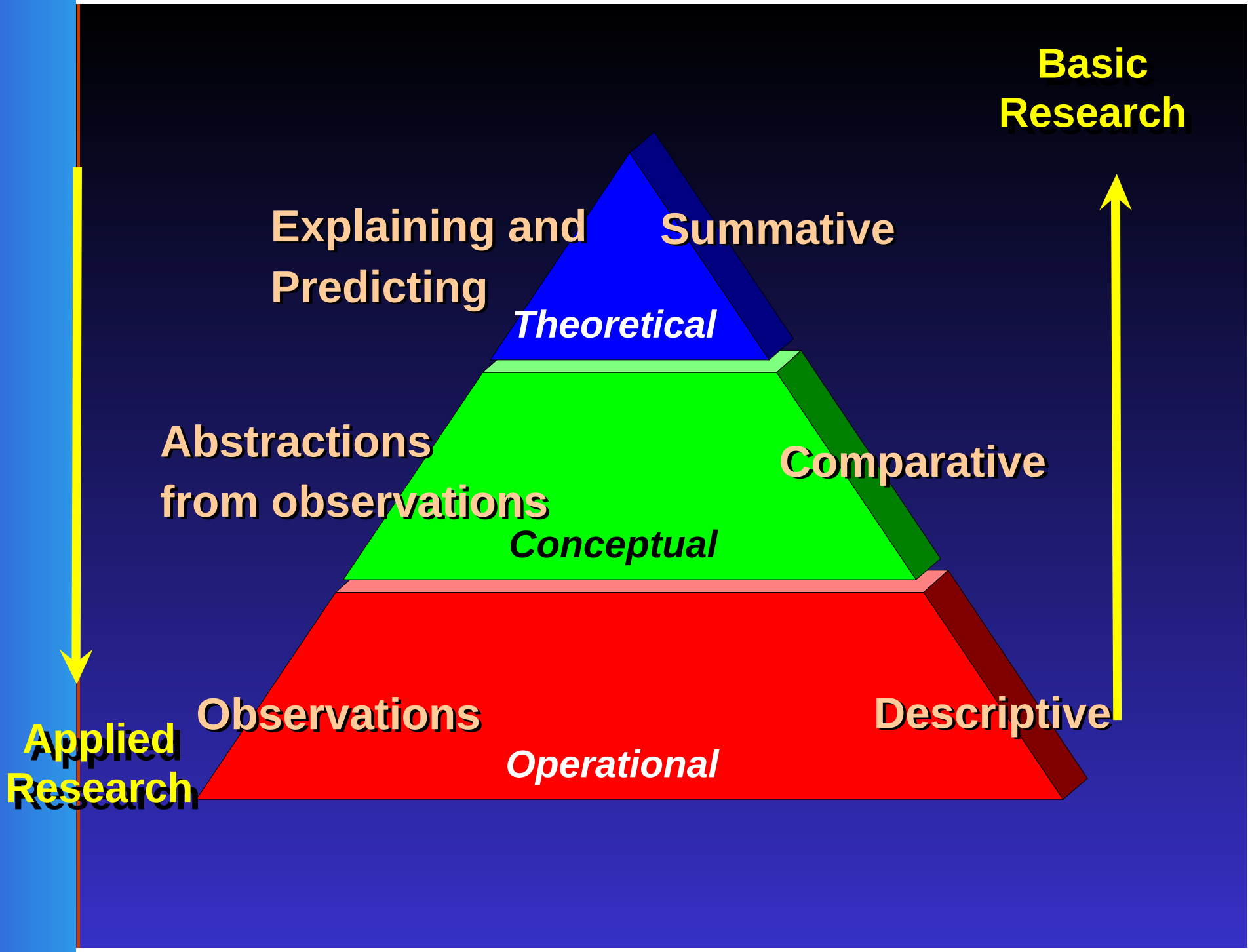
Applied Research


Basic
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Applied
Research

Four Types of Research Methodologies in Education

- Experimental
  - " a scientific investigation in which the investigator manipulates and controls one or more independent variables and observes the concomitant variation in dependent variable(s)."
- Ex Post Facto
  - "similar to experimental research except that the investigator cannot directly manipulate the independent variables."
- Descriptive
  - "describes and interprets what is. It is concerned with conditions and relationships that exist; practices that prevail; attitudes or points of view; ongoing processes; felt effects; developing trends."
  - Subcategories
    - Case Studies; Surveys; Developmental Studies; Follow-up Studies; Replication Studies; Documentary Analysis; Trend Studies; Correlational Studies; Teaching Case Studies.
- Historical
  - "involves a procedure supplementary to observation, a process by which the historian seeks to test the truthfulness of the reports of observations made by others. Its major purpose is to tell what was."

The Language of Educational Research

- **Concepts**
  - an abstraction from specific observed events
  - Grouping events, individuals r objects that share common characteristics
  - represents the similarities or common aspects of objects or events that are otherwise quite different from one another.
  - Purpose is to simplify or organize thinking
  - to organize and interpret data
  - e.g. "Student Rights" , "Child Safety", "School Choice", "Productvity", "Efficiency"
  - "Life-Long Learning"
- **Constructs**
  - higher level abstractions; Groups of Constructs
  - "justice" "motivation" "problem-solving ability", "ecology", "Marketing", "Investment", "Banking", "
  - Combining concepts to construct higher meanings
  - e.g. concepts of "visual acuity", "symbol discrimination", "listening vocabulary", "visual orientation" might be combined together to form a *Construct* of reading readiness
  - Constructs summarize observations , draw conclusions and provide explanations
    - e.g. "some materials burn while others don't; some materials burn more intensely than others" was used to construct "phlogiston",
    - the "primary ingredient" in all combustible materials

The Language of Educational Research

- Providing Specification of Meaning to Concepts and Constructs
- Constitutive Definition
  - formal type of definition
    - e.g. intelligence: "the ability to think abstractly"
  - clarifies, defines, shows relation to other concepts, constructs or research
- Operational Definition
  - operations which must be performed in order to measure the concept or construct
  - e.g. the IQ Test for intelligence; the Minnesota Test of Creativity
  - Ability to measure abstract concepts and constructs
  - enables theories to be built based on observable and measurable data.

The Language of Educational Research

- Variables
  - A variable is an attribute which reflects or expresses some concept or construct.
  - it takes different values
    - Continuous : infinite number of values, e.g. distance
    - Categorical variables: groups
      - dichotomous variables: two classes
  - Types
    - Dependent Variables: variables that are a consequence of another variable
    - e.g. "ability to read is dependent on intelligence"
      - variable intelligence is *antecedent* to variable reading
    - Independent Variables: Variables antecedent to the dependent variable.
    - Active: (Continuous) vs. Assigned: (Categorical)

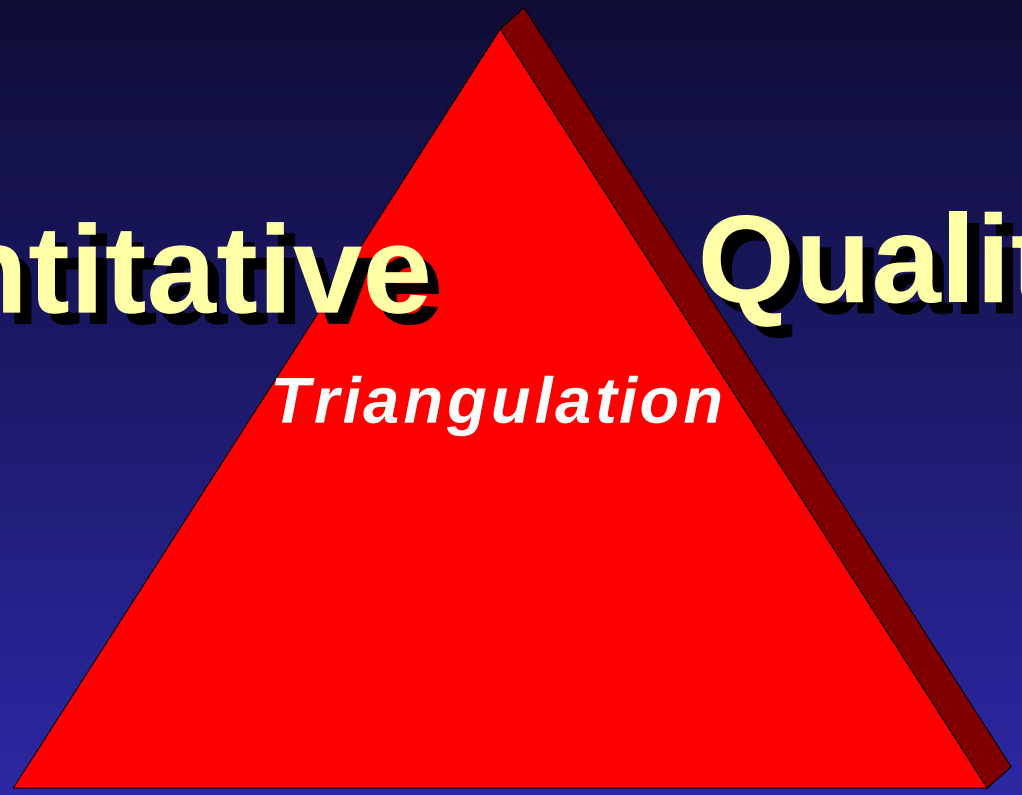
Structure of Research Reports

- The Beginning: What Question is the Researcher trying to answer and why?
  - "What, Why, and So What?
- The Middle: What did the researcher do to try to answer the question?
  - How?:
    - Validity: "Soundness of data"
    - Reliability: "Consistency of data"
- The End: What did the researcher get?
  - Findings (based on data)
  - Conclusions (based on data aggregation)
  - Recommendations for further research
  - Recommendations for the field
  - Implications (based on speculation)

Types of Research

- Quantitative vs. Qualitative Research
- Basic Research vs. Applied Research
  - theory building research vs. immediate need research
- Inductive: theory generating vs. Deductive theory testing.

Three Primary Data Collection Methods



Other Sources of Archival Data

- Journal Articles: e.g. AERA: American Educational Research Journal (and subfields)
- Books
- Monographs (College University Internal Presses)
- Newsletters/Digests
- ERIC: Federally Funded Research clearinghouse ("old Internet")
- Dissertations (dissertation abstracts)
- Government Documents
- Research Review Journals
  - Review of Educational Research (quarterly)
  - Review of Research in Education (annually)
  - Annual review of .....
- Data Bases
  - Census
  - National Center for Educational Statistics
  - The High School Data Base
- Newspapers/Zines and other periodicals
- Internet

Research Analysis Design

Quantitative vs. Qualitative

Professor Jonathan Hughes
Chair, Dept. of Educational Leadership and Technology

Qualitative vs. Quantitative

1. Purpose

Qualitative	Quantitative
Discovery Role	Confirmatory Role
Study Cases, Culture, Lived Experiences	Study Populations & Samples
Explain or Gain Insight through Narrative Data	Study Behavior & Observable Phenomena Explain or Predict through Numerical Data

Qualitative vs. Quantitative

2. Approach to Inquiry

Qualitative	Quantitative
Inductive, Holistic	Deductive, Focused
Value-Laden, Subjecti	Value-Free, Objectiv
Interest in Process & Product	Detached from Participants
Interest in Participants	
Perspectives	

Qualitative vs. Quantitative

3. Hypothesis

Qualitative	Quantitative
Tentative	Specific
Evolving	Testable
Based on Particular Stu	Stated Prior to Stu

Qualitative s. Quantitative

4. Research Setting

Qualitative	Quantitative
Naturalistic as possible	Controlled to Degree Possible

Qualitative vs. Quantitative

5. Sampling

Qualitative	Quantitative
Purposive Selective Small Sample for in-depth understanding	Random Select Large Representative Sample in order to generalize

Qualitative vs. Quantitative

6. Measurement

Qualitative	Quantitative
Non-Standard	Standardized
On-Going	At the End
Small Narrative	Numerical

Qualitative vs. Quantitative

7. Design and Methodology

Qualitative	Quantitative
Flexible	Structured
Involves Non-Intervention	Involves Intervention
Minimal Disturbance	Manipulation, Control
Specified in General Terms in Advance	Specified in Detail in Advance

Qualitative vs. Quantitative

8. Data Collection

Qualitative	Quantitative
Participant Observation	Nonparticipant
Informal, Unstructured Interviews	Semistructured Formal Interviews
Taking of Extensive Detailed Notes	Administration of Tests, Instruments, Surveys, Questionnaires
Document Collection; Archival Data	

Qualitative vs. Quantitative

9. Data Analysis

Qualitative	Quantitative
Essentially Ongoing Involves Information Synthesis	Performed at End Involves Statistics, Graphics, Measurement Tools

Qualitative vs. Quantitative

10. Data Interpretation

Qualitative	Quantitative
Conclusions Tentative and Ongoing Generalizations Speculative	Conclusions and Generalizations Formulated with a Degree of Certainty at the End

Qualitative vs. Quantitative

11. Reporting

Qualitative	Quantitative
Raw Data are Words	Raw Data are Numbers
Interpretive reports	Impersonal Objective Reports

Survey Research

The Survey Research Handbook, Alreck and Settle, Irwin, NY, 1995
An Introduction to Survey Research, Weisberg, Krosnick and Bowen, Sage, 1996

The Nature of Survey Research

Introduction

- Why should we believe the results of a survey based on relative few interviews?
- How do we make sense of statistical results?
- What are the appropriate cautions when interpreting survey results?

The Nature of Survey Research

A Brief History....

- First survey? Census after Moses ascended Sinai?
- Roman Tax Surveys
- Domesday Book of English Landowners ,1086
- Surveys of the 1800's of social conditions
- Early 20th century: Newspaper "straw polls" and market opinions
- 1916-1932: *Literary Digest*: successful prediction of outcomes of Presidential elections (except 1936 and 1948) 1936 Result: Roosevelt 538; Landon, 8; 1948 Dewey-Truman
- George Gallop: Mid-1930's
- Today, upwards of $1 Billiion per year on surveying American Public

The Nature of Survey Research

Uses of Surveys

- The requirement of timely, accurate information in a number of contexts:
  - Political Polling
  - Surveys in court
    - eg. trademark infringement: emblem association survey
    - coping products: Rogers vs. Zippo Lighters
    - contingent valuation (CV): estimation of value: Exxon Valdez Oil Spill

The Nature of Survey Research

Uses (cont'd)

- Government Surveys
  - Census
  - Labor Department: Unemployment
  - Justice Department: Crime Rates
- Consumer Research
  - Neilsen ratings
- Academic Research
  - Univ of Michigan's Survey Research Center
    - 600 families each month on finances
    - public attitudes
- Media Polls
  - Newspapers and television: NY Times and CBS

The Nature of Survey Research

What Surveys Can Measure

- Attitudes
  - likes and dislikes
- Preferences
  - comparisons of attitudes toward objects
- Beliefs and Predictions
- Facts and Past Behavioral Experiences
  - Distinction of fact and beliefs not always clear cut

The Nature of Survey Research

Goals of Surveys

- Four basic and broad questions:
  - the prevalence of attitudes, beliefs and behavior;
  - changes in them over time;
  - differences between groups of people in their attitudes, beliefs and behavior;
  - causal propositions about these attitudes, beliefs and behavior.

The Nature of Survey Research

Choosing the Best Research Design

- Experiments: causal propositions
- Aggregate data: Universe of Data
- Surveys: Mass behavior

The Nature of Survey Research

Related Data Collections Methods

- Focus Group
- The Deliberative Poll
  - several focus group discussions: More time to focus and discuss
- Audience Reaction Research
  - 25 - 250
- Secondary Anaylsis Survey
  - analyze data someone else collected

The Survey Research Process

Survey Design

- Statement of Objectives
- Construction of Hypothesis
- Operationalization of Concepts
- Alternative View Accounting
- Importance of Related Theory
- Archival Data Review

The Survey Research Process

The Survey Data Collection

- What population should be described and studied?
- Who should be interviewed?
- How many interviews are necessary?
- How should the data be collected?
- Are follow-up surveys necessary?

The Survey Research Process

Survey Data Analysis

- Specification of Hypothesis
- Tabulation of Responses
- Building New Measures
- Hypothesis Testing
- Analysis of two-variable relationships
- Use of control variables

The Survey Research Process

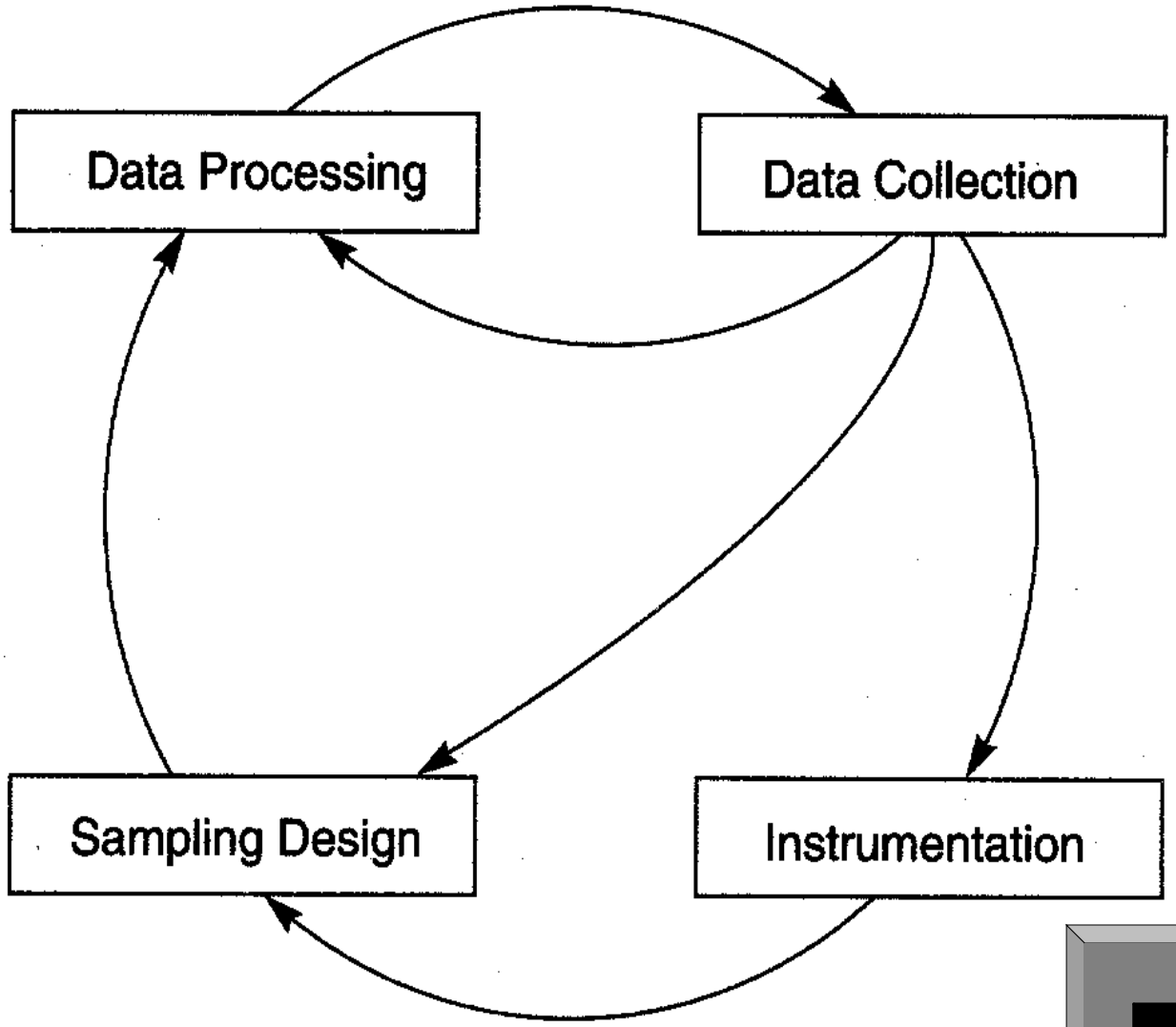
Reporting Results

- Writing a Research Report
- Reading Survey Reports

Getting Started: How?

- Ideas
- Professor
- Library
  - abstracts
  - Data-bases
  - Journals
  - ERIC
- Computer
- Other Students
- WRITING!! What, Why, How....

Figure 2–4 *Circular Nature of Survey Planning*



Considerations and Guidelines

Major Points About Surveys

- Guidelines when starting...
- Guidelines for measurement...
- Building the survey...
  - Considerations
  - Data Collection
  - Types of Data
  - Types of Scales

GUIDELIST 1–1

For Sponsors Initiating a Survey

1. Furnish the researchers with sufficient background information about the setting and operations.
2. Provide a description of the issues, problems, or uncertainties that lead to consideration of a survey.
3. Indicate the type of information that would solve the problem or reduce the uncertainty.
4. Describe what decisions, choices, or actions will be based on the survey results.
5. Estimate the value of the information, based on potential risks or opportunity costs.
6. Specify the time requirements and level of funding and other resources allocated to the project.

GUIDELIST 1–2

For Researchers During Survey Initiation

1. Know the capabilities and limitations of survey research and indicate them to sponsors when appropriate.
2. Obtain background information about the operations, policies, and procedures of the sponsor.
3. Inquire about the nature of the uncertainty, problems, or issues to be the focus of the survey.
4. Ask what decisions, choices, or actions are to be based on the results of the proposed survey.
5. Make a preliminary assessment of the approximate value of the survey information for the sponsor.
6. Seek indications of the time requirements for the survey and the approximate funding and resources available.
7. Describe the type of cooperation and participation that will be required of the sponsor.
8. Explain what ethical responsibilities regarding the survey the researcher has to the sponsor and respondents.
9. Encourage the confidence and trust of the sponsor through candor and professional conduct.

GUIDELIST 1–3

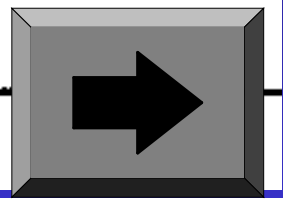
For Maintaining Professional Ethics

1. Maintain a fiduciary relationship, always seeking and protecting the best interests of the sponsor.
2. Treat all survey information, including the process and the results, as the sole property of the sponsor.
3. Obtain prior permission or approval before releasing, publishing, or using any survey information or data.
4. Refuse any project or relationship with a sponsor who seeks to bias the survey to get certain results.
5. Protect the privacy and anonymity of respondents if they're promised their identity won't be revealed.
6. Never permit the sponsor to identify individual respondents for reprisal for adverse survey results.
7. Don't identify respondents for solicitation unless they know in advance they may be solicited later.
8. Recognize the legitimacy of withholding sponsor identification to respondents and others when appropriate.
9. Return all data, reports, or other materials purchased by sponsors to them on completion of the project.

Guidelines for Measurement

Figure 2–3 *Elements of the Project Outline*

1. List information needs by priority.
2. Indicate the value of the information.
3. Identify internal resource requirements.
4. Specify sample size and design.
5. Provide a mock-up of instrumentation.
6. Note the scope of the response task.
7. Describe the data collection method.
8. Outline the data processing method.
9. Describe the type of reports required.
10. Summarize final costs and the timetable.



GUIDELIST 1–4

For Measuring Attitudes

1. Be sure to include all three components of the attitude: knowledge, feelings, and action tendencies, in that order.
2. Begin with awareness and knowledge. Ignore feelings and action tendencies if knowledge is insufficient.
3. Use unaided recall to measure awareness, if possible, to avoid false reports of recognition.
4. Measure depth of knowledge with an index of the number of correct statements about the topic.
5. Use ratings scales to measure feelings, so that both direction and distance from neutral are revealed.
6. Consider a comparative scale where relative, rather than absolute levels of feelings are appropriate.
7. Don't ignore the intensity of feelings or assume intensity is the same as distance from neutral.
8. Measure intensity by asking how strongly respondents feel or how sure they are of their position.
9. Measure past, present, and future behavior to assess the strength of the behavioral component.
10. Specify hypothetical conditions and ask intentions if respondents lacked opportunity to act in the past.

GUIDELIST 1–5

For Measuring Images

1. Use image profiles when several attributes or characteristic features of an object are to be measured.
2. Question some typical respondents about the objects to determine the attributes they use to define the image.
3. Don't depend on the sponsor to identify the relevant image dimensions.
4. Limit the number of items to only the attributes most meaningful to respondents.
5. Randomly order the items, being sure that about half can be seen as positive and half as negative.
6. Obtain ratings of more than one object in a class if comparisons of image profiles among objects are of value.
7. Have respondents rate an *ideal* object if there's uncertainty about positivity or negativity for some items.
8. Compare ideal image profiles for different respondent groups to reveal differences in preference patterns.
9. Plan to subtract ideal from actual ratings for each respondent to provide a *difference* profile.
10. Compare profiles of differences between ideal and actual object ratings to assess positive or negative valences.

GUIDELIST 1–6

For Measuring Decision Making

1. Use when information requirements focus on the process of evaluation, not the results.
2. Determine how much the decision was based on preexisting information and how much was directly sought.
3. Classify information sources as direct experience, social influence, or media effects.
4. Measure the appropriate level of media effects: exposure, attention, content, or impact.
5. Measure abstract, global values only when information is required about decisions about many different objects or those of profound importance to respondents.
6. Expect to identify only a very limited number of evaluative criteria for any one individual.

GUIDELIST 1–7

For Measuring Need-Related Concepts

1. Determine the needs, desires, preferences, motives, or goals that are relevant to the information requirements.
2. Specify the items or categories in terms that will be easily understood by all respondents.
3. Use a fixed sum, comparative, or forced ranking scale to avoid most or all items being rated as equally important.
4. Remember that multiple needs and related variables can be served by the same behavior, and different actions can serve the same need.
5. Use projective methods when measuring or assessing motives that are likely to be sensitive.

GUIDELIST 1–8

For Measuring Behavior

1. Identify information needs in terms of "what, where, when, and how often."
2. Specify the actions and locations in categories to make responses comparable.
3. Determine if respondents might have engaged in only one or several categories of action, and use single or multiple-response items accordingly.
4. Remember that frequency of behavior is often best expressed in terms of time, such as times per day or week.
5. Keep in mind that *individual* intentions or predictions are ordinarily not as reliable as they are in aggregate.
6. Be sure to use such items as verbal frequency or fixed sum scales when proportions or behavioral policies are to be measured.

GUIDELIST 1–9

For Measuring Lifestyle Patterns

1. Seek out lifestyle libraries of items or compose items that are directly relevant to the information requirements.
2. Use multiple items to identify individual lifestyle patterns among respondents.
3. Choose questions about activities, interests, opinions, or possessions that are indicative of a particular lifestyle.
4. Keep in mind that lifestyle measurement requires many variables or items and may increase questionnaire size and response task time and difficulty.
5. Remember that lifestyle analyses focus on clusters and require substantial analysis to identify patterns.

GUIDELIST 2–1

For Classifying Information by Priority

1. There are two basic objectives to be met:
   a. Obtain *all* of the essential information.
   b. Obtain *only* what is directly applicable.
2. Information can be classified into three categories:
   a. *High priority* items that are *absolutely essential* to the project.
   b. *Medium priority* items that are *highly valuable* for decision making.
   c. *Low priority* items for *supportive data* to enhance understanding.

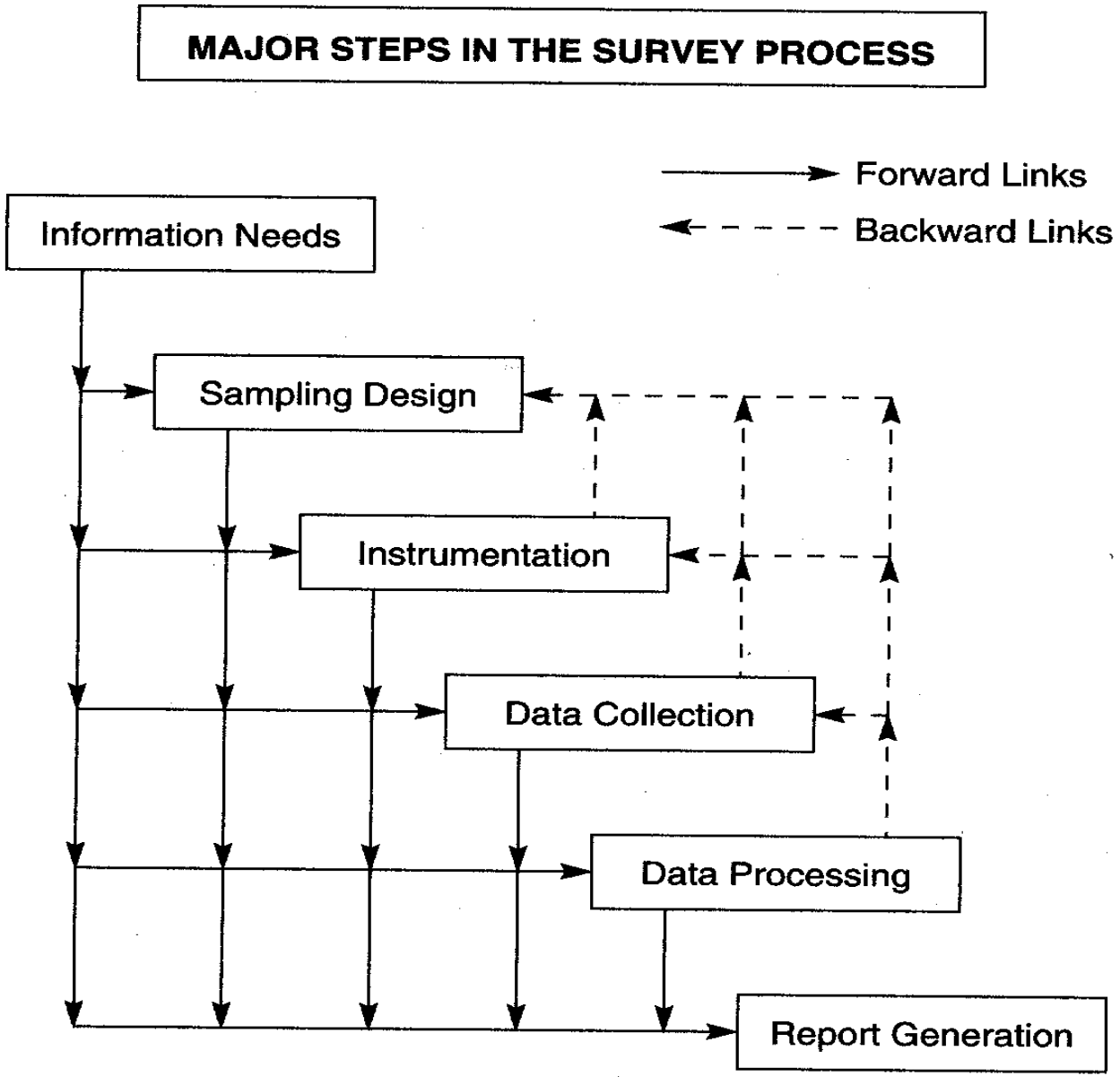
GUIDELIST 1–10

For Measuring Affiliations

1. Consider membership in both formal and informal groups as sources of influence for respondents.
2. Define groups clearly and concisely for respondents (e.g., such terms as "family" might include only parents and siblings, or more distant relatives as well).
3. Select the appropriate type of reference group for identification, either comparative, normative, or informative.
4. Consider both opinion leaders and key influentials when determining sources of influence on respondents.
5. Remember that identification of sources of influence is only approximate because people are often unwilling or unable to provide precise data.

Building Surveys

Figure 2–1 *Linkage in the Survey Process*



CHECKLIST 2–3

To Describe the Survey Instrument

1. How will the questionnaire be organized and why? What's the main principle of organization? Will the items be congregated by topic, type of question or scale, type of response required, or some other criterion?
2. How many parts or sections will be included and in what sequence? What comes first and why? What questions will be at the end of the questionnaire and why?
3. What type and level of language will be used—technical or lay, simple or sophisticated vocabulary?
4. What kind of grammar and composition will be used—formal or casual, scholarly or colloquial wording?
5. What types of questions and response scales will be included? Will respondents answer with words, letters, or numbers? Will they choose from the specified answers or respond spontaneously in their own words?
6. What are the most sensitive or threatening questions? What will be done to reduce resistance and why will it elicit respondent cooperation?
7. What ancillary instrumentation will be used—cover letter, pictures or displays, rating cards, or other visual or audible material?
8. What's the expected size of the questionnaire? How many questions or items in total? How many parts or sections? How many pages? How much weight and physical bulk?
9. How will the questionnaire be produced?[1] What size, color, weight, and grade of paper stock? Typewritten or typeset and in what print format? How will it be reproduced and bound or attached?
10. What will be retained by the respondent and/or interviewers? What will be returned for data recording and processing?

Section 2: Data Collection

Types of Data

- Nominal
  - name
- Ordinal
  - rank
- Interval
  - hierarchical
- Ratio
  - continuos

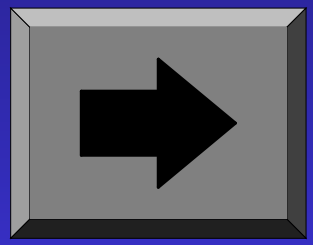


Figure 2–7 *Factors Determining Sampling Strategy*

Indications for Large Sample and Small Response Task

1. Very precise estimates of numeric values are required and there must be a high degree of confidence in them.
2. Individual survey items are of more interest than are patterns of response among many survey items.
3. The range and volume of information required from each respondent is fairly limited.
4. The data are to be collected by mail, so a simple response task is likely to increase the response rate.

Indications for Large Response Task and Small Sample

1. Estimates of numeric values for the population need only be approximate within a fairly broad range.
2. Focus of information needs is more on patterns or configurations among responses to items than on individual items.
3. The range and/or volume of information required from each respondent is relatively large.
4. The data are to be collected by telephone or personal interview rather than by mail.

Figure 6–3 ***Commonly Used Demographic Variables***

A Sex of respondent.
B Sex of family members.
C Age of respondent.
D Age of each head of household.
E Age of family members.
F Age of youngest child in the home.
G Education of respondent.
H Education of each head of household.
I Employment of respondent.
J Employment of each head of household.
K Occupation of respondent.
L Occupation of each head of household.
M Annual income of respondent.
N Annual income of each head of household.
O Annual family income.
P Racial or ethnic identity of respondent.
Q Race or ethnicity of each head of household.
R Religious preference of respondent.
S Religion of each head of household.
T Type of family dwelling.
U ZIP code or location of residence.
V Time of residence at present location.
W Self-designated social class membership.

Figure 6–5 *Three Data File Formats*

Spreadsheet Format

	1/A	2/B	3/C	4/D	5/E	6/F	7/G	8/H
	Rating 1	Rating 2	Miles	Ownership	Dollars Spent	Sex	Age	Marital Status
1	3	3	8	1	77.50	1	28	2
2	5	1	22	1		1	35	1
3	4	2	40	1	.45	1	61	1
4	4	2	119	1	145.80	2	44	1
5	5	1	27	1	22.50	1	41	1
6	3	3	48	1	11.87	2	50	1
7	2	4		2	9.16	2		2
8	4	2	31	1	81.40	1	64	1
9	3	3	4	1	35.55	2	27	1
10	3	3	60	1	6.25	1	21	2

Free-Floating Format

```
1 , 3 , 3 , 8 , 1 , 7 7 . 5 0 , 1 , 2 8 , 2
2 , 5 , 1 , 2 2 , 1 , , 1 , 3 5 , 1
3 , 4 , 2 , 4 0 , 1 , . 4 5 , 1 , 6 1 , 1
4 , 4 , 2 , 1 1 9 , 1 , 1 4 5 . 8 0 , 2 , 4 4 , 1
5 , 5 , 1 , 2 7 , 1 , 2 2 . 5 0 , 1 , 4 1 , 1
6 , 3 , 3 , 4 8 , 1 , 1 1 . 8 7 , 2 , 5 0 , 1
7 , 2 , 4 , , 2 , 9 . 1 6 , 2 , , 2
8 , 4 , 2 , 3 1 , 1 , 8 1 . 4 0 , 1 , 6 4 , 1
9 , 3 , 3 , 4 , 1 , 3 5 . 5 5 , 2 , 2 7 , 1
1 0 , 3 , 3 , 6 0 , 1 , 6 . 2 5 , 1 , 2 1 , 2
```

Fixed Format

```
0 1 3 3 0 0 8 1 0 7 7 5 0 1 2 8 2
0 2 5 1 0 2 2 1 0 0 0 0 0 1 3 5 1
0 3 4 2 0 4 0 1 0 0 0 4 5 1 6 1 1
0 4 4 2 1 1 9 1 1 4 5 8 0 2 4 4 1
0 5 5 1 0 2 7 1 0 2 2 5 0 1 4 1 1
0 6 3 3 0 4 8 1 0 1 1 8 7 2 5 0 1
0 7 2 4 0 0 0 2 0 0 9 1 6 2 0 0 2
0 8 4 2 0 3 1 1 0 8 1 4 0 1 6 4 1
0 9 3 3 0 0 4 1 0 3 5 5 5 2 2 7 1
1 0 3 3 0 6 0 1 0 0 6 2 5 1 2 1 2
```

Section 3: Survey Examples

EXAMPLE 6–8

Record Format Precoding Methods

Spreadsheet Record Format Precodes

Q Please put an ✘ in the box to indicate which head of household you are, then check or fill in the items below for *each* head of household in your home.

I am the . . .

Spreadsheet Column Letters

❑ *MALE Head of Household*	❑ *FEMALE Head of Household*	
		JJ
Age ..... _____ years	Age ..... _____ years	JK-JL
Formal education .. _____ years *(For example, High school graduate=12 years)*	Formal education .. _____ years *(For example, High school graduate=12 years)*	JM-JN

Free-Floating Record Format Precodes

Q Please put an ✘ in the box to indicate which head of household you are, then check or fill in the items below for *each* head of household in your home.

I am the . . .

Item – Variable Numbers

❑ *MALE Head of Household*	❑ *FEMALE Head of Household*	
		39
Age ..... _____ years	Age ..... _____ years	40-41
Formal education .. _____ years *(For example, High school graduate=12 years)*	Formal education .. _____ years *(For example, High school graduate=12 years)*	42-43

Fixed Record Format Precodes

Q Please put an ✘ in the box to indicate which head of household you are, then check or fill in the items below for *each* head of household in your home.

I am the . . .

Record Position Numbers

❑ *MALE Head of Household*	❑ *FEMALE Head of Household*	
		41
Age ..... _____ years	Age ..... _____ years	42-45
Formal education .. _____ years *(For example, High school graduate=12 years)*	Formal education .. _____ years *(For example, High school graduate=12 years)*	46-49

EXAMPLE 6–1

Sample Questionnaire

A

Please put an ✘ in the space before *any* and *all* words you feel describe your stay at this hotel.

◇ Active	◇ Aggravating	◇ Amusing	11-13
◇ Boring	◇ Busy	◇ Costly	14-16
◇ Delightful	◇ Disappointing	◇ Disgusting	17-19
◇ Disturbing	◇ Entertaining	◇ Exciting	20-22
◇ Fantastic	◇ Frustrating	◇ Healthy	23-25
◇ Informative	◇ Invigorating	◇ Lazy	26-28
◇ Memorable	◇ Painful	◇ Pleasant	29-31
◇ Productive	◇ Recreational	◇ Regretable	32-34
◇ Relaxing	◇ Restful	◇ Sensational	35-37
◇ Stimulating	◇ Tantalizing	◇ Terrible	38-40

B

Please check *any* of our services you used during this visit?
(Please check (✔) *all* boxes below that apply.)

❑ Inside Self-Parking	❑ MiniBar in the Room	41-42
❑ Valet Parking	❑ Laundry or Cleaners	43-44
❑ Wake-up Call	❑ Business Center	45-46
❑ Bellman or Doorman	❑ Health Club or Pool	47-48
❑ Lobby Coffee or Breakfast	❑ Room Service	49-50

C

Please pick a number from the scale to show how important *each* of these factors is *to you* when you're *CHOOSING A HOTEL* and jot it in the space to the right of *each item*.

Scale								
Extremely Unimportant	1	2	3	4	5	6	7	**Extremely Important**

Convenience of the location of the hotel within the area you're visiting.····	_____	51
Safety and security of the hotel and neighborhood in which it's located.···	_____	52
Knowledge or experience with other hotels in the same chain. ·····	_____	53
Recommendations or suggestions of travel agents or representatives. ····	_____	54

Sample Questionnaire (continued)

D

If *THIS* is your *favorite* hotel, please skip to E below.

Please check *one* space on *each line* to show how *this hotel* compares to *YOUR FAVORITE HOTEL*.
Compared to my favorite hotel, ***THIS ONE IS . . .***

	Much Less			The Same			Much More	
Expensive	1	2	3	4	5	6	7	11
Convenient	1	2	3	4	5	6	7	12
Comfortable	1	2	3	4	5	6	7	13
Neat, Clean	1	2	3	4	5	6	7	14
Spacious, Roomy	1	2	3	4	5	6	7	15
Attractive	1	2	3	4	5	6	7	16

E

Please pick a number from the scale to show how much you *agree* or *disagree* with each statement and jot in the space to the right of the item.

SCALE
1 = Strongly Agree
2 = Agree
3 = Neutral
4 = Disagree
5 = Strongly Disagree

I'm very concerned about safety and security when I stay at a hotel.	_____	17
The size of a hotel room is more important to me than how it's furnished.	_____	18
I like hotels that have elegant, unusual lobbies and open areas.	_____	19
If it cost the same, I'd much prefer a suite to just one hotel room.	_____	20
When I travel, I like to stay in a different kind of hotel at each place.	_____	21
Even if some hotels in a chain are very nice, others might be terrible.	_____	22
I like newer hotels much more than older ones, even if they're well-kept.	_____	23
When picking a hotel, the most important thing to me is its location.	_____	24
I don't like to decide to stay at a hotel until I visit it first.	_____	25
I like to see what the rooms are like before I agree to stay at a hotel.	_____	26

Sample Questionnaire (continued)

F

How important to you is each of these hotel facilities or services?
Please circle one number on each line.

	Don't Know	Extremely Unimportant				Extremely Important	
Gym or health club	0	1	2	3	4	5	27
Laundry or cleaning service	0	1	2	3	4	5	28
Mini-bar in the room	0	1	2	3	4	5	29
Business center facilities	0	1	2	3	4	5	30
Inside parking	0	1	2	3	4	5	31
Valet parking	0	1	2	3	4	5	32
Doormen and bellmen	0	1	2	3	4	5	33
24-hour restaurant or cafe	0	1	2	3	4	5	34

G

Please pick a number from the scale to show how often you do *each* of these things *when you stay at a hotel* and jot it in the space to the right of *each* item.

SCALE

1 = Always
2 = Often
3 = Sometimes
4 = Rarely
5 = Never

Have a rental car delivered and/or picked up at the hotel?	_____	35
Take early morning coffee when freely served in the lobby?	_____	36
Obtain information from the concierge or tour desk?	_____	37
Visit the hotel bar or lounge?	_____	38
Order pizza from outside the hotel to be delivered?	_____	39
Swim or sunbathe at the hotel pool (when available)?	_____	40
Eat one or more meals at the hotel restaurant?	_____	41
Use the physical fitness or exercise facilities (if available)?	_____	42
Have drinks or "set-ups" from the hotel bar served in the room?	_____	43

Sample Questionnaire (continued)

H

When you plan and go on a trip, *at what point* do you *usually* decide what hotel you'd like to stay at? (Please check [✔] only *one* space.)

Before I know I'm going. (I have a favorite I always prefer.)	____	1
As soon as I know the destination. (Before I make travel arrangements.)	____	2
After making travel arrangements or reservations.	____	3
Sometime before I leave on the trip.	____	4
While I'm traveling. (Along the way.)	____	5
When I arrive in the city where I'm staying.	____	6
Just before it's time to go to a hotel and check in.	____	7
Only after visiting one or more hotels to see which I like.	____	8

44

I

How well does each of these words or phrases describe your impressions of *our hotel staff?*

	Don't Know	Not At All			*Please circle one number on each line.*			Perfectly So	
Unfriendly	0	1	2	3	4	5	6	7	45
Prompt	0	1	2	3	4	5	6	7	46
Capable	0	1	2	3	4	5	6	7	47
Discourteous	0	1	2	3	4	5	6	7	48
Caring	0	1	2	3	4	5	6	7	49
Too busy	0	1	2	3	4	5	6	7	50
Helpful	0	1	2	3	4	5	6	7	51
Greedy	0	1	2	3	4	5	6	7	52

J

Which *one* courtesy bath product do you find *MOST useful* and enjoyable?
(Please put an ✘ in only *one* circle below.)

1 ○ Shampoo
2 ○ Cream Rinse
3 ○ Bath Oil
4 ○ Moisturizer
5 ○ Sun Lotion

Which *one* courtesy bath product do you find *LEAST useful* and enjoyable?
(Please put an ✘ in only *one* circle below.)

1 ○ Shampoo
2 ○ Cream Rinse
3 ○ Bath Oil
4 ○ Moisturizer
5 ○ Sun Lotion

53-54

EXAMPLE 6–1

Sample Questionnaire (continued)

K Please indicate below what type of hotel RECREATION and ENTERTAINMENT you like best?
(Put an ✘ in space before the *one* you *most* prefer for *each* of the *six pairs* listed below.)

RECREATION	ENTERTAINMENT	
❑ Tennis or Golf ❑ Swimming Pool or Gym/Health Club	❑ Vocal or Instrumental Music ❑ Comedy, Magic or Pantomime	11-12
❑ Golf ❑ Tennis	❑ Continuous by Various Soloists ❑ Periodically by Performing Groups	13-14
❑ Swimming Pool ❑ Gym or Health Club	❑ In the Bar, Lounge, or Restaurant ❑ In the Atrium Lobby	15-16

L

Please *rank* each kind of music below in your order of preference.
(Please put a 1 in the space before the kind you like best, 2 in the space before your second favorite, and so forth.)

_____ Classical
_____ Country
_____ Easy Listening
_____ Jazz
_____ Rock

Please *rank* each type of performer below in your order of preference.
(Please put a 1 in the space before the type you like best, 2 in the space before your second favorite, and so forth.)

_____ Ventriloquists	17-18
_____ Mimes	19-20
_____ Magicians	21-22
_____ Jugglers	23-24
_____ Comedians	25-26

M Please check [✔] *one* space on *each line* to show your overall, general opinion of this hotel as a whole.

	1	2	3	4	5	6	7		
Expensive								Inexpensive	27
Ugly								Beautiful	28
Old								New	29
Immaculate								Filthy	30
Elegant								Commonplace	31
Prestigious								Debasing	32

EXAMPLE 6–1

Sample Questionnaire (continued)

N

Please rate ***each*** area of the hotel listed below on ***each*** factor—*cleanliness, attractiveness, comfort, and convenience*—by picking a number from the scale and jotting it in *each square*. *(Fill in every square, recording a zero if you don't know.)*

Don't Know	SCALE					
	Very Poor					Excellent
0	1	2	3	4	5	6

	Cleanliness	Attractiveness	Comfort	Convenience	
Main Lobby	☐	☐	☐	☐	33-36
Guest Rooms	☐	☐	☐	☐	37-40
Halls and Foyers	☐	☐	☐	☐	41-44
Pirate's Lounge	☐	☐	☐	☐	45-48
Ship's Galley Restaurant	☐	☐	☐	☐	49-52

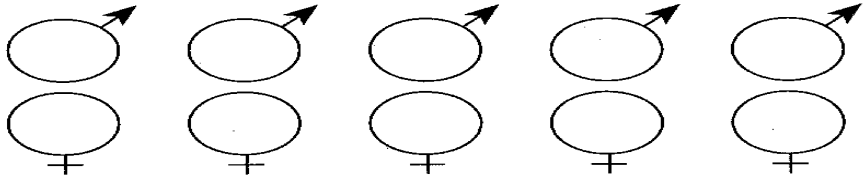
O

Of the ***last ten times*** you stayed at a hotel, *how many times* did you stay at. . . .

This particular hotel?	_____	times	11-12
Another hotel in *this* chain?	_____	times	13-14
A hotel that's part of *some other national chain*?	_____	times	15-16
An individual, *independent* hotel?	_____	times	17-18
Some other kind of hotel? (What kind? _____)	_____	times	19-20
(Please make the TOTAL = 10) ***Total =***	**10**	times	

P

Please list the ages of all those who shared your room or suite during this stay with us in the spaces below, including *yourself*. Jot the ages of all the men and boys in the top circles and the ages of all the women and girls in the bottom circles.



21-30

31-40

EXAMPLE 6–1

Sample Questionnaire (concluded)

Q Please put an ✘ in the box to indicate which head of household you are, then check or fill in the items below for *each* head of household in your home.

I am the . . .

❑ ***MALE Head of Household***	❑ ***FEMALE Head of Household***	41
Age ..... _____ years	Age ..... _____ years	42-45
Formal education .. _____ years *(For example, High school graduate=12 years)*	Formal education .. _____ years *(For example, High school graduate=12 years)*	46-49
EMPLOYMENT STATUS:	*EMPLOYMENT STATUS:*	
1 ❑ company employed	1 ❑ company employed	
2 ❑ government employed	2 ❑ government employed	
3 ❑ self-employed	3 ❑ self-employed	
4 ❑ seeking employment	4 ❑ seeking employment	50-51
5 ❑ military	5 ❑ homemaker	
6 ❑ retired	6 ❑ retired	
7 ❑ student	7 ❑ student	
OCCUPATIONAL STATUS:	*OCCUPATIONAL STATUS:*	
1 ❑ professional [med, law, etc.]	1 ❑ professional [med, law, etc.]	
2 ❑ managerial, executive	2 ❑ managerial, executive	
3 ❑ administrative, clerical	3 ❑ administrative, clerical	
4 ❑ engineering, technical	4 ❑ engineering, technical	52-53
5 ❑ marketing, sales	5 ❑ marketing, sales	
6 ❑ skilled craft or trade	6 ❑ skilled craft or trade	
7 ❑ semiskilled occupation	7 ❑ semiskilled occupation	
ANNUAL INCOME:	*ANNUAL INCOME:*	
Approximately $ ____ ,000.00	Approximately $ ____ ,000.00	54-59

THANK YOU FOR COMPLETING THIS GUEST QUESTIONNAIRE. PLEASE TAKE IT TO THE REGISTRATION DESK WHERE YOUR V.I.P. BONUS GIFT IS WAITING FOR YOU TO CLAIM IT.

Constructing the Survey Instrument

- Emphasize the introduction
- Check sequence carefully
- Group items into sections
- Limit and control branching
- Use ample instructions
- Don't overestimate interviewers or respondents
- Use good data gathering and coding techniques
- Be sure to precode responses and record formats
- Always pretest the entire survey on a sample between 20-30 respondents.

Section 4: Item Scales

Figure 6–1 ***Sample Questionnaire Item Types***

Section	Question or Scale Type
A	Adjective Checklist
B	Multiple-Choice, Multiple-Response
C	Linear, Numeric Scale
D	Comparative Scale
E	Likert Scale
F	Multiple-Rating List
G	Verbal Frequency Scale
H	Ordinal Scale
I	Semantic Distance Scale
J	Multiple-Choice, Single-Response
K	Paired Comparisons
L	Forced Rankings
M	Semantic Differential Scale
N	Multiple-Rating Matrix
O	Fixed Sum Scale
P	Diagram Scale
Q	Demographic Items

EXAMPLE 5–10

The Adjective Checklist

Please put a check mark in the space in front of any word or phrase that describes your job.

_____ Easy	_____ Safe	11-12
_____ Technical	_____ Exhausting	13-14
_____ Boring	_____ Difficult	15-16
_____ Interesting	_____ Rewarding	17-18
_____ Low-paying	_____ Secure	19-20
_____ Strenuous	_____ Slow-paced	21-22
_____ Routine	_____ Enjoyable	23-24
_____ Dead-end	_____ Rigid	25-26
_____ Changing	_____ Pleasant	27-28
_____ Important	_____ Satisfying	29-30
_____ Demanding	_____ Degrading	31-32
_____ Temporary	_____ Risky	33-34

EXAMPLE 5–1

The Multiple-Choice Item

Multiple Response

Please check *any* type of newspaper you regularly read for business news.

_____	Local, morning paper	11
_____	Local, evening paper	12
_____	Local, weekly paper	13
_____	Regional, weekly paper	14
_____	National, daily paper	15
_____	National, weekly paper	16
_____	Other (What kind?_____)	17–18

Single Response

What kind of newspaper do you *most often* read for business news?
(Check only *one*.)

(1) _____	Local, morning paper	
(2) _____	Local, evening paper	
(3) _____	Local, weekly paper	
(4) _____	Regional, weekly paper	19
(5) _____	National, daily paper	
(6) _____	National, weekly paper	
(7) _____	Other (What kind?_____)	20

EXAMPLE 5–8

The Linear, Numeric Scale

How important to you is each of the public issues listed below?

If you feel the issue is extremely important, pick a number from the far right side of the scale and jot it in the space beside the item. If you feel it's extremely unimportant, pick a number from the far left, and if you feel the importance is between these extremes, pick a number from someplace in the middle of the scale to show your opinion.

Scale

Extremely Unimportant **1** **2** **3** **4** **5** **Extremely Important**

The protection of endangered species of animals	____	11
The improvement of the quality of the air	____	12
The discovery of additional petroleum reserves	____	13
The development of *renewable* sources of energy	____	14
The reduction or elimination of water pollution	____	15
The development of additional nuclear power	____	16
The protection of overall ecological balance	____	17
The industrial and technical growth of the nation	____	18
The provision of social services to those in need	____	19
The improvement of national defense and security	____	20

EXAMPLE 5–7

The Comparative Scale

Compared to the previous management group, the new one is . . .

(Check one space.)

Very Superior		About the Same		Very Inferior
1	2	3	4	5

EXAMPLE 5–2

The Likert Scale

Please pick a number from the scale to show how much you agree or disagree with each statement and jot it in the space to the right of the item.

Scale

1 Strongly agree
2 Agree
3 Neutral
4 Disagree
5 Strongly disagree

A man should never cry in public	11
Higher education is more important for men than women	12
Women should receive equal pay for equal work	13
A man shouldn't resent a woman supervising his work	14
A woman's place is in the home	15
A man should help and protect a woman in public	16
Women should pay their share when dating	17
The husband should make the major family decisions	18
Women should never put career before family	19
Men should always take the lead in sexual matters	20

EXAMPLE 5–13

The Multiple-Rating List

Several savings or investment vehicles are listed below. Please indicate how safe or risky you feel each one is by circling a number beside it. If you feel it's very safe, circle a number toward the left. If you feel it's very risky, circle one toward the right, and if you think it's someplace in between, circle a number from the middle range that indicates your opinion.

	Extremely Safe						**Extremely Risky**	
Bank savings account	1	2	3	4	5	6	7	11
Savings and loan savings account	1	2	3	4	5	6	7	12
Money market account	1	2	3	4	5	6	7	13
Certificates of deposit	1	2	3	4	5	6	7	14
Treasury bills	1	2	3	4	5	6	7	15
Corporate common stocks	1	2	3	4	5	6	7	16
Corporate preferred stocks	1	2	3	4	5	6	7	17
Corporate bonds	1	2	3	4	5	6	7	18
Municipal bonds	1	2	3	4	5	6	7	19
U.S. government bonds	1	2	3	4	5	6	7	20
Foreign government bonds	1	2	3	4	5	6	7	21
Credit union shares	1	2	3	4	5	6	7	22
Commodity futures	1	2	3	4	5	6	7	23
Corporate stock futures	1	2	3	4	5	6	7	24
Precious metals	1	2	3	4	5	6	7	25
Precious gems	1	2	3	4	5	6	7	26

EXAMPLE 5–3

The Verbal Frequency Scale

Please pick a number from the scale to show how often you do each of the things listed below and jot in the space to the right of the item.

Scale

1 Always
2 Often
3 Sometimes
4 Rarely
5 Never

Seek out information about candidates and issues	____	11
Actually vote during a strictly local election	____	12
Actually vote during a state and national election	____	13
Vote along strict party lines	____	14
Contribute money to a local political campaign	____	15
Contribute money to a state political campaign	____	16
Contribute money to a national political campaign	____	17
Volunteer to work on a local political campaign	____	18
Volunteer to work on a state political campaign	____	19
Volunteer to work on a national political campaign	____	20

EXAMPLE 5–4

The Ordinal Scale

Ordinarily, when do you or someone in your family first turn on a television set in your home on a weekday? (Please check only one.)

(1) _____ The first thing in the morning
(2) _____ A little while after awakening
(3) _____ Mid-morning
(4) _____ Just before lunch
(5) _____ Right after lunch 11
(6) _____ Mid-afternoon
(7) _____ Early evening before dinner
(8) _____ Right after dinner
(9) _____ Late evening
(0) _____ Usually don't turn it on.

Ordinarily, when do you or someone in your family first turn on a television set in your home on Saturdays? (Please check only one.)

(1) _____ The first thing in the morning
(2) _____ A little while after awakening
(3) _____ Mid-morning
(4) _____ Just before lunch
(5) _____ Right after lunch 12
(6) _____ Mid-afternoon
(7) _____ Early evening before dinner
(8) _____ Right after dinner
(9) _____ Late evening
(0) _____ Usually don't turn it on.

EXAMPLE 5–11

The Semantic Distance Scale

Please pick a number from the scale to show how well each word or phrase below describes your job and jot it in the space in front of each item.

Scale

Not at all 1 2 3 4 5 6 7 **Perfectly**

_____ Easy	_____ Safe	11-12
_____ Technical	_____ Exhausting	13-14
_____ Boring	_____ Difficult	15-16
_____ Interesting	_____ Rewarding	17-18
_____ Low-paying	_____ Secure	19-20
_____ Strenuous	_____ Slow-paced	21-22
_____ Routine	_____ Enjoyable	23-24
_____ Dead-end	_____ Rigid	25-26
_____ Changing	_____ Pleasant	27-28
_____ Important	_____ Satisfying	29-30
_____ Demanding	_____ Degrading	31-32
_____ Temporary	_____ Risky	33-34

EXAMPLE 5–6

The Paired Comparison Scale

For each pair of soft drinks listed below, please put a check mark by the one you most prefer, if you had to choose between the two.

(1) ____ Pepsi-Cola
(2) ____ Coca-Cola 11

(1) ____ Royal Crown Cola
(2) ____ Pepsi-Cola 12

(1) ____ Royal Crown Cola
(2) ____ Like Cola 13

(1) ____ Royal Crown Cola
(2) ____ Coca-Cola 14

(1) ____ Coca-Cola
(2) ____ Like Cola 15

(1) ____ Like Cola
(2) ____ Pepsi-Cola 16

EXAMPLE 5–5

The Forced Ranking Scale

Please rank the colas listed below in their order of preference. Jot the number 1 next to the one you prefer most, number 2 by your second choice, and so forth.

____ Pepsi-Cola	11
____ Coca-Cola	12
____ Royal Crown Cola	13
____ Like Cola	14

EXAMPLE 5–9

The Semantic Differential Scale

Please put a check mark in the space on *each line* below to show your opinion of the pizza served here.

Hot	1	2	3	4	5	6	7	Cold	11
Bland	1	2	3	4	5	6	7	Spicy	12
Expensive	1	2	3	4	5	6	7	Inexpensive	13
Moist	1	2	3	4	5	6	7	Dry	14
Soggy	1	2	3	4	5	6	7	Crisp	15
Good	1	2	3	4	5	6	7	Bad	16
Unattractive	1	2	3	4	5	6	7	Attractive	17
Fresh	1	2	3	4	5	6	7	Stale	18
Small	1	2	3	4	5	6	7	Large	19
Natural	1	2	3	4	5	6	7	Artificial	20

EXAMPLE 5–14

The Multiple-Rating Matrix

The table below lists four types of PRO brand baseball equipment along the top, and several characteristics of sports equipment along the left side. Please take *one product at a time!* Working down the column, pick a number from the scale indicating your evaluation of each characteristic and jot it in the space in the column below the product label and to the right of the characteristic. Please fill in *every space,* giving your rating for each product on each characteristic.

Scale

Very Poor **1** **2** **3** **4** **5** **6** **Excellent**

	Bats	**Balls**	**Gloves**	**Shoes**	
Price	_____	_____	_____	_____	11–14
Design	_____	_____	_____	_____	15–18
Selection	_____	_____	_____	_____	19–22
Durability	_____	_____	_____	_____	23–26
Appearance	_____	_____	_____	_____	27–30
Availability	_____	_____	_____	_____	31–34
Service	_____	_____	_____	_____	35–38
Packaging	_____	_____	_____	_____	39–42
Construction	_____	_____	_____	_____	43–46

EXAMPLE 5–12

The Fixed Sum Scale

Of the last *10 times* that you ate lunch or dinner at a casual or fast food restaurant, how many times did you have each of the things listed below?

(Please be sure to make the total equal 10.)

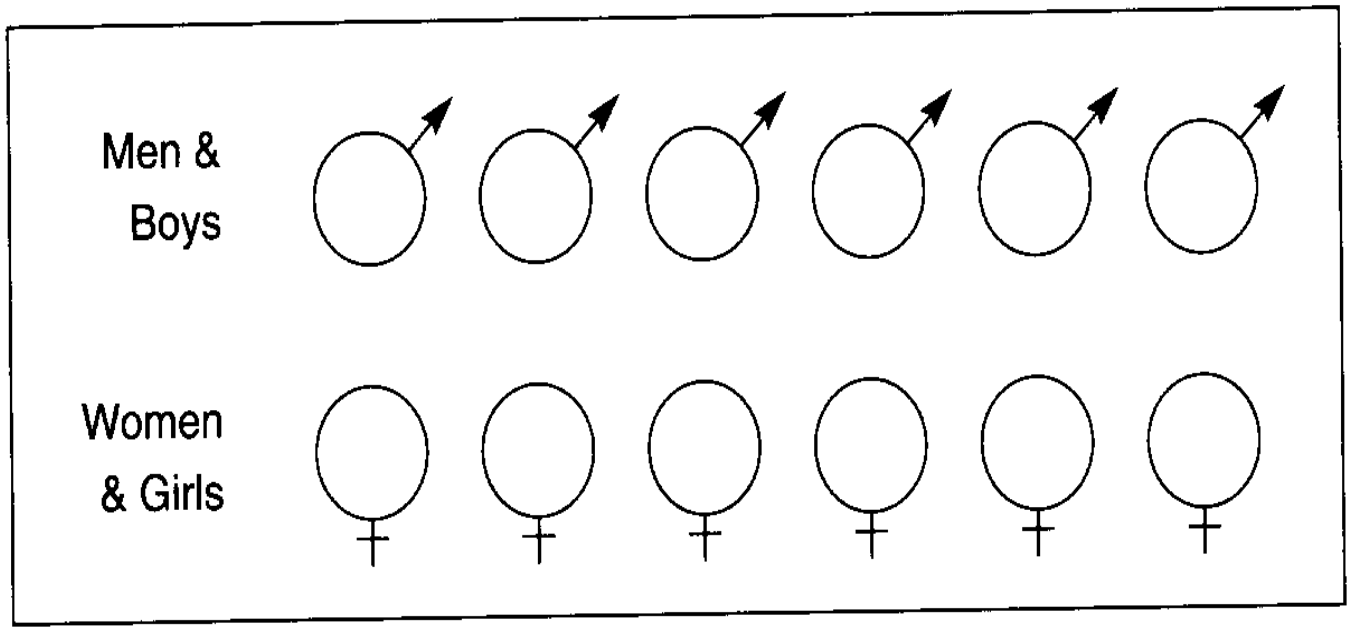
_____ Hamburgers	11
_____ Hot dogs or sausage	12
_____ Chicken	13
_____ Pizza	14
_____ Chinese food	15
_____ Fish or seafood	16
_____ Deli sandwiches	17
_____ Hot sandwiches	18
_____ Mexican food	19
_____ Other (What?_____)	20–21

Total = 10

EXAMPLE 5–15

The Diagram Scale

Please list the ages of all those in your family living at home in the spaces below. Jot the ages of the men and boys in the top circles—the ages of the women and girls in the bottom circles. Use as many as you need, listing them in order from oldest to youngest in each row.

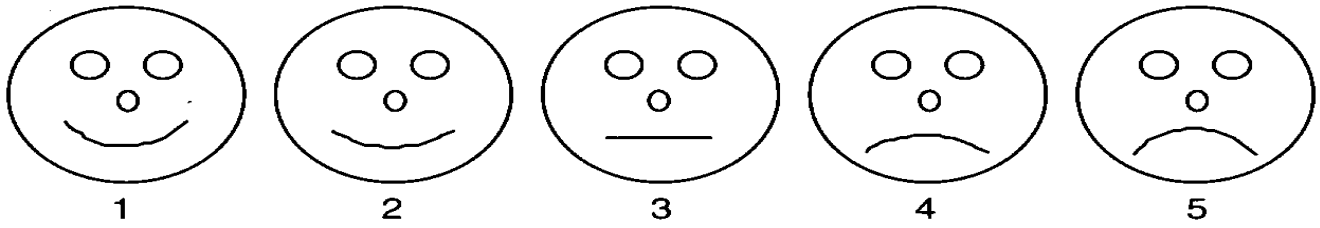


Now draw a big circle around the space with your own age in it.

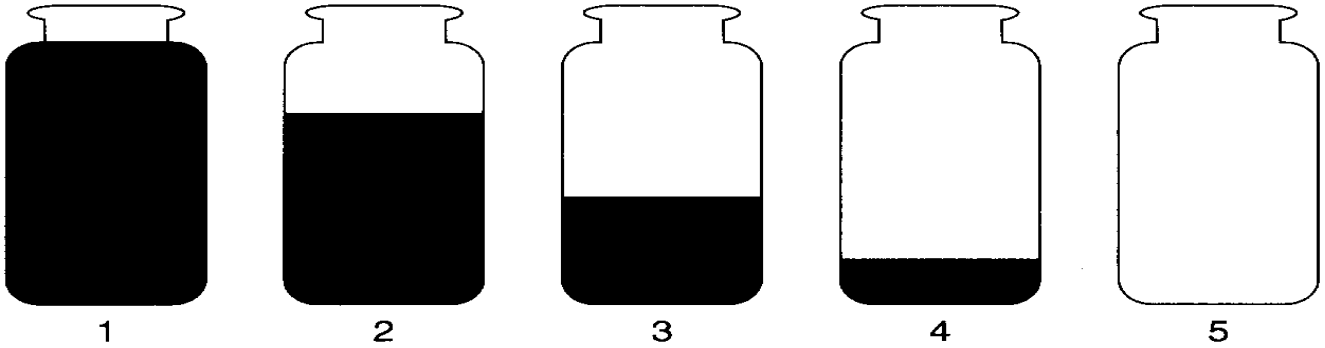
EXAMPLE 5–16

Picture and Graphic Scales

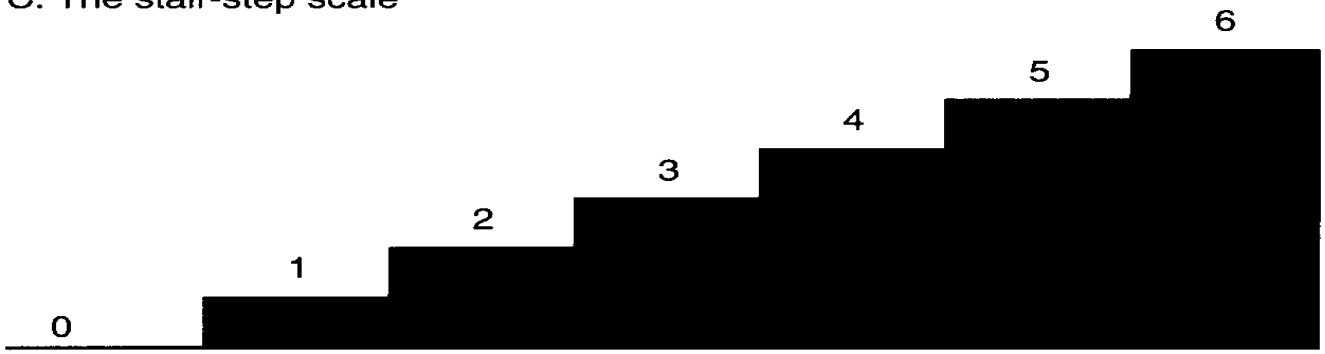
A. Happy and sad faces



B. The bottle scale



C. The stair-step scale



Creating Effect Scales

- Keep it simple
- Respect the respondent
- Dimension the response
- Pick the denominations
- Choose the range
- Group only when required
- Handle neutrality carefully
- State instructions clearly
- Always be flexible
- Pilot test the scales

Team Project #1

- Consider a problem to be addressed by the Team
- Develop a survey of no more than 15 questions that has:
  - the four types of data;
  - six different item scales;
  - five demographic variables;
- Print a copy and pilot the survey with the three other teams
- Run SPSS for:
  - Frequency Analysis for each question
  - Descriptives for each question
  - Ranked means for each question
- Report your findings about the problem