Overview of Psychology Research Methods

This chapter presents a brief overview of the methods used in modern psychology. It is meant to give you the big picture, not to provide the knowledge and skills required to use these methods in your own research. I begin with a set of basic concepts followed by a review of each type of method, then end with a description of some of the ways psychologists obtain data.

Preliminary Concepts

Variables

A variable is a set of related events that can take on more than one value. The term is used in research methods much as you used it in algebra and physics classes. In physics, a variable *m* might represent a concept such as mass. Mass can have many different values, and in an equation like *F=ma*, you might give *m* a particular value in order to solve the equation for force. In psychology, a variable represents a psychological concept. The concept itself may highly abstract and not observable but the variable is something observable and measurable that allows us to do research on the concept. (This is idea is termed "operationalization of a construct" in the Theories and Models chapter.) For example, "intelligence" is an unobservable concept but IQ is a number that is derived from a test. IQ is a variable because it is observable and can assume more than one value. Some variables used in psychological research, such as gender or age, or not abstract at all.

Imagine a favorite experiment of high school science fair project: the effect of distraction on retention while studying for a test. In this experiment, distraction and information retention are concepts that can be represented by variables such as the presence/absence of noise and score on an exam. The noise variable might be given two values by the research (e.g., noise present, noise absent). The exam performance variable could have a lot of different values depending on the type of test given (e.g., on a 100 point test, there are 101 possible values). Psychological research is all about variables and values. In the next sections I discuss the most important types of variables.

Independent Variable

An independent variable (IV) is directly controlled by the researcher. In the science fair example, noise is the independent variable. In experiments, the IV is carefully controlled to have just certain values so that the researcher can deter-

mine how it affects other variables. Usually when researchers want to control the values of an IV they manipulate it. Manipulation refers to the researcher's complete control over the values of the variable. For example, the researcher controls whether or not a particular person in the distraction-retention experiment studies in a noisy or a quiet environment (the person is not allowed to choose). When this control of the IV is accomplished by manipulation, the IV is called the "manipulated independent variable." Manipulated IVs have a special meaning in research because they are used in experiments (discussed in a later section) to show cause and effect relationships.

Some independent variables are based on preexisting qualities of the subjects rather than manipulations. Such IVs are termed classification or demographic variables. Classification variables include categories that cannot be manipulated but are inherent characteristics of the subject, such as age, gender, religious affiliation, or ethnicity. Some of these characteristics are capable of change, such as age and religion, but not due to the actions of a researcher in a study. Classification variables may be assumed to have causal effects, but because they are not controlled by the experimenter, one can never be sure.

The word "independent" is used here to imply that no other variables in the experiment affects the IV, not that it is somehow completely independent of anything; the research does control it. Most experiments include more than one IV, e.g., the noise study would be more interesting if a second IV, difficulty of the material to be retained, were also included.

Dependent Variable

The variable that is affected by the independent variable is termed the dependent variable (DV). The manipulation of the IV is hypothesized to affect the value of the DV, so the DV is at the *effect* end of the cause-effect relationship. In the example, score on an exam is the DV and, if everything was done just right, we can assume that the manipulated IV (noise) was the cause of the observed test score. Much of the story of research methods is about the creation, measurement, analysis and interpretation of IVs and DVs, and you will see these terms continually throughout the book. "Doing everything just right" is the challenge of all research and determines whether or not its results make any sense.

Research Designs

Many research designs have been developed in psychology over the last century. In this section I review only the most important ones. You should be able to see that every design has pros and cons, and that the best research program uses a combination of different designs to develop and test a theory.

Experimental Design

The most-favored design in modern psychology is the experiment. When the term experiment is used in research design, it refers to a specific method as described in this section, not generically to any kind of empirical research. Experiments are special because they are the only kind of design that can, if everything is done just right, unambiguously demonstrate a cause-effect relationship. To qualify

for an experiment, a study must have the following minimal characteristics:

1. The independent variable must be completely controlled
2. The sample of research participants (subjects) must be randomly chosen
3. The research participants (subjects) must be assigned randomly to conditions

Requirement 1 is that the IV must be carefully and cleanly controlled by the researcher, usually through careful manipulation. For example, in the distraction-retention study, the experimenter must control the subjects' experience of a noisy (or quiet) environment. In the simplest possible experiment, one group of subjects would be placed in a noisy environment while studying and the other in a quiet environment. The noisy group would be called the experimental group or the treatment group and the quiet group would be called the control group or comparison group. Only the research setting can be allowed to control the noise, and every detail of the environment in the experimental and control groups must be *absolutely identical* except the presence of noise.

The second requirement is that the subjects must be randomly chosen. The group of subjects that will participate in the experiment is called a sample. The sample must be chosen randomly from the target population. The target population is the group of people (or animals in animal research) to which we want to generalize the research findings. In other words, once we successfully perform an experiment, we want to be able to say that the results of the study apply to everyone in the target population, not just to the sample of people that we used in the study. If the sample is chosen randomly from the target population, we can say that the results generalize to that population.

The third requirement, that subjects are assigned randomly to conditions, is extremely important. Conditions refers to the groups of subjects who receive different values of the IV: noise condition, no-noise condition. By randomly assigning subjects to conditions we can be sure that there is no difference between the people in the different conditions. That way, if the IV does have an effect on the DV, we can assume that it's not because the people in the conditions were different.

For example, consider the possibility in the distraction experiment that you decided to test all of the subjects in the noise condition in the afternoons and all of the no-noise condition subjects in the morning. Perhaps you did this so you wouldn't disturb the residents of the apartment complex next door to your lab early in the morning. By doing this you have committed a grave error, noise ordinances aside. The problem here is simple: you can't know if it is the difference between noise and no-noise that affects retention test results, or if it is something about studying and taking tests in the morning versus in the afternoon that affects the test results. The noise manipulation has become combined or "confounded" with the alertness of the subjects. It's quite possible that many of the morning subjects were still sleepy and most of the afternoon subjects were wide awake. If so, then your experiment might show that noise condition subjects scored better on the retention test than no-noise condition subjects. Because you didn't randomly assign subjects to conditions, you will never know if your result

Condition

Noise	No Noise
Noise while studying Sleepy Subjects	No noise while studying Awake Subjects

was due to the noise or to the sleepiness. The experiment has failed.

Confounding is an important term in research methods. When a variable is confounded it has lost its original, pure meaning by becoming tied to something else. When this happens, you can't know for sure whether the IV affects the DV or something else that has become attached to the IV affects the DV.

The solution to this problem in the present example is to randomly assigned each subject to one of the conditions just as he or she walks in the door using some kind of random method, like flipping a coin. Both noise and no-noise condition subjects would be run throughout the day.

Experiments are very useful in providing the control and precision required to show causal relationships. No other method can do this as well. The problem with experiments is that this control and precision come at a cost in realism and in the range of phenomena that can be practically studied. Although experiments can be conducted in field settings, where "field" refers to a natural setting outside the laboratory, the cleanest experiments are conducted in unnatural lab settings. These unnatural settings reduce the ecological validity of the research: the extent to which the research realistically represents a normal human activity. When ecological validity is low, the results of even the best experiments are not necessarily interesting or convincing to psychologists or to non-psychologists who use our research.

Besides problems of ecological validity, many phenomena cannot be studied using experimental methods because the IV cannot be manipulated. How would you study the effect of gender on conformity in a true experiment? Gender is a classification IV with so much stuff attached to it (sex, child-rearing experiences, social roles, etc. etc.) that a pure, unconfounded gender effect is meaningless. But it cannot be manipulated and you cannot assign subjects to its two (or more) conditions randomly, so it is not usable in a true experiment.

Another way to ruin this experiment

Let's assume your are a nice guy and you allow the subjects to choose whether they want to come to your experiment in the morning or in the afternoon. And because you are so nice, you don't want to disturb the neighbors so you only run the noise conditions in the afternoon. If you find that the no-noise condition performs better on the retention task, what can you conclude?

Quasi-Experimental Design

"Quasi" means "to some degree" or "almost," so a quasi-experimental design is almost an experimental design. In such designs, one or more of the requirements of the true experiment is missing. However, if performed carefully and if a variety of possible threats to the study's validity are attended to, a quasi-experimental study may be able to demonstrate a causal relationship. Quasi-experimental research is most often performed in natural settings where the research question is very important but a true experiment is impossible or too expensive. For example, much educational research is quasi-experimental because it must be conducted on real students in real schools without disrupting the educational process.

An example of a quasi-experiment is a study of a violence prevention educational program in junior high schools. You may recall the pleasant experiences you had in junior high school in locker rooms, hallways, and lunch rooms. The treatment in such a study might be "psychoeducational": presenting students with information about the problems of violence, performing anger-control training, and teaching interpersonal skills. The treatment group would comprise captive groups of students who receive this training during 4th Period once a week for 8 weeks. The

control group would receive an alternate, unrelated experience during 4th Period, maybe music lessons. Four schools would participate, and in each school, half the 4th Period English classes would be randomly chosen to receive the treatment, and half would receive the control. The dependent variable would be a measure of violent incidents of several types occurring in the schools for the remainder of the school year.

This is not a true experiment because the students were not randomly sampled from the population of junior high school students (only four schools were used) and individual students were not randomly assigned to the conditions of the study. Furthermore, because a whole classroom could develop a "group dynamic" that would affect everyone in the room, the subjects are not exactly individual students, but rather the English classes as wholes. If the really violent kids gradually transitioned from the classroom to the county jail, violence might go down in both conditions as time passed. If the kids talked about their experiences outside of class, the violence prevention training might spill over to the control group and violence would be reduced in both conditions. (This is not necessarily a bad thing in itself, but it hurts the research.) If the training were really boring, the experimental group might be in a bad mood and beat up the control group kids who had fun learning the accordion. But having said all these negative things about this study, in fact it's not too bad. If the problems just described, and more, were carefully examined, a causal effect could be fairly inferred from the outcome (assuming of course that the treatment worked).

Correlational Design

In much research there is no hope of controlling or manipulating the independent variable, so instead all of the variables are simply measured. For example, all survey research is comprised of measured variables such as answers to opinion questions. If you wanted to know if a personality trait affects behavior in a certain situation, you would have to measure the trait and observe the behavior; you cannot manipulate the trait. (Actually, some research does manipulate personality traits, but only in short-term, weak ways.) A great deal of social science research is conducted in this way because no manipulation of the variables is possible. A correlational design is a research method that examines the relationship between two or more measured variables. Causal relationships are very difficult to prove in correlational research due to the researcher's lack of control over the independent variable. Indeed, it often unclear which of the variables is the IV and which is the DV.

As an example of a correlational design, consider this published study: The researchers wanted to know if observing TV violence increases people's sense of paranoia. They performed a door-to-door survey of several neighborhoods in a large city. At each residence, they asked the adults how much and what kind of TV they watched, and measured paranoia by asking them to estimate the probabilities of being the victim of several kinds of crime within a certain period of time. Implicitly, the IV in this study is TV viewing and the DV is paranoia. However, because they did not manipulate TV viewing, they had poor control over the variable and could at best determine if there was a relationship between viewing and paranoia.

The results of the study were as the researchers expected: people who watched more violent TV were more paranoid. This finding is quite interesting even if

causality can't be proven. Figure 1 illustrates the finding in an idealized (overly simple and perfect) manner. Think of each dot in the oval as one respondent (subject). Respondents who were lower in TV viewing were lower in paranoia, and vice-versa. This long oval pattern indicates a high correlation or relationship between the two variables. (How these data are treated quantitatively is discussed in a later chapter.)

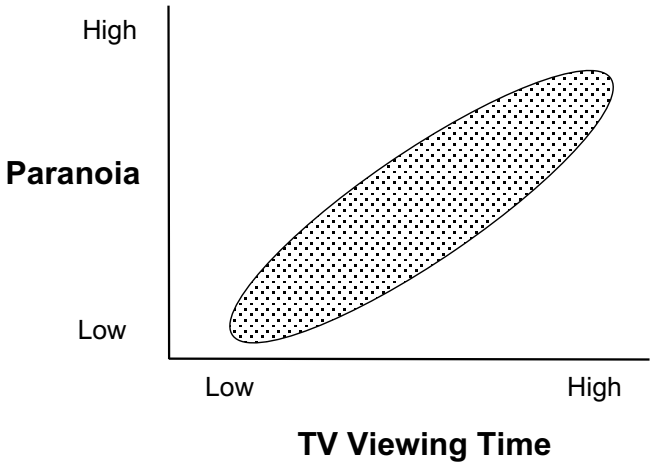

Figure 1. *Results for the whole sample.*

The researchers also assessed the social class of their respondents. Then they made the "mistake" of dividing the respondents into working class and middle class groups and looking at the TV-paranoia relationship within each group. Figure 2 illustrates what happened. The fat oval with the red dots is the working class subsample and the fat oval with the blue dots is the middle class subsample. Because these ovals are not long and sleek as in Figure 1, the relationships between TV viewing and paranoia are now quite weak. Middle Class respondents watched less TV and were less paranoid than the Working Class respondents, but within each social class subsample there was virtually no relationship between TV viewing and paranoia. In other words, if you were a Middle Class person who watches more TV than most Middle Class people, you would not be more paranoid.

This is a classic example of a spurious correlation. The correlation illustrated in Figure 1 between TV and paranoia in the full sample was spurious, that is, was actually caused by something else: a third variable, social class. Sometimes this situation is referred to as the "third variable problem," but more than one additional variable can be responsible for a spurious relationship. It is also sometimes called a "confounding," similar to the case in an experiment when the IV is contaminated by something other than the experimental manipulation.

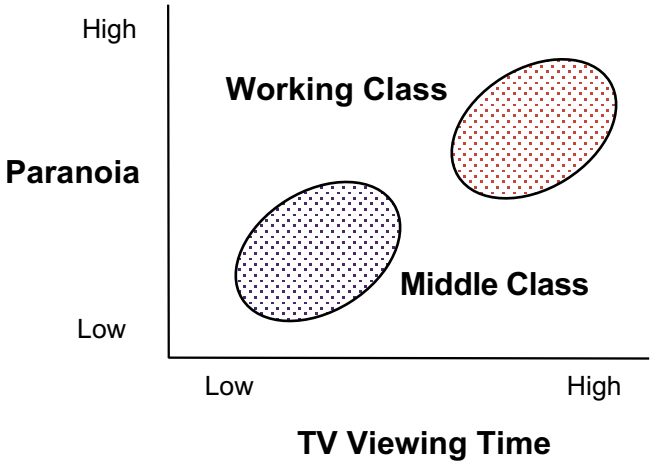

Figure 2. *After dividing the sample into two groups.*

We can interpret this finding in several ways. First, maybe there is no relationship between TV viewing and paranoia. Middle Class people's perception that their neighborhoods are safe and Working Class people's perception that their neighborhoods are less safe may simply be correct and have nothing to with watching TV. The fact that Middle Class people watch less TV than Working Class people is sort of interesting, but irrelevant. Second, maybe Working Class people's knowledge of their unsafe neighborhoods drives them indoors where it's safe. This study was conducted before home computers were common so what else was there to do besides watch TV? Third, because Working Class people watch more TV, and because their TVs are inside the house, and because when no one is outside crime runs anonymously rampant, the act of watching so much TV actually is responsible for the greater crime in Working Class neighborhoods, and what the researchers called paranoia is really just an ac-

curate assessment about what's going on outside while they watch TV. (This lastmost explanation is a little far-fetched.)

The fact that we can find so many different explanations for the results of this study illustrates how hard it can sometimes be to figure out what the results of a correlational study really mean. In this study, we say for certain that amount of TV viewing predicts how dangerous people think their neighborhoods are (if you know how much TV a person watches, you can look at Figure 1 and predict how paranoid he or she is), but it is not very helpful in explaining *Why?* this relationship holds. Good correlational research measures all of the variables that might be related to the key variables and tries to rule out spurious relationships so that the important ones can be understood. This is difficult to do and has resulted in some long and bitter arguments about the proper interpretation of large scale correlational studies conducted to understand important societal processes, such as the causes of poverty. Advanced techniques have been developed recently that allow us to look very carefully at complicated, multiple-variable correlational designs and tease out the causal relationships.

Wine and Cheese

My favorite confounding occurred in the research on drinking red wine and reduced heart disease. For years, the research supported this relationship and I was joyous. However, the researchers messed up (they were, after all, only medical doctors) by not measuring the social class of the study participants. When social class is taken into account, the results are very similar to the TV viewing study described in text. Upper Middle Class people have better health-related habits, get better medical treatment, and experience less stress than Working Class people. So they have lower heart disease. For cultural and financial reasons, they also happen to drink more red wine. To be fair, the most recent research found that moderate alcohol consumption reduces heart disease regardless of social class.

Differential Research

A special class of correlational research, differential research, is sometimes treated as a separate research design. Differential research is correlational research in which one or more of the variables cannot possibly be affected by the others, for example gender, age, or nationality. When relationships are found between differential variables and correlational variables, one of the possible interpretations–that a correlational variable can be the cause of a differential variable–can be discounted right away.

As an example, many studies have been performed in social psychology to look at gender differences in helping. Overall, these studies have found that woman are more helpful when the act of helping does not entail danger, while men are more helpful when helping may be dangerous. Of course, the differential variable, gender, is never manipulated in such studies and one's gender does not change as a result of how helpful one is. The conclusion therefore is that gender causes helping in an interaction with degree of danger.

The main drawback in making this causal inference is that gender is a complex package of personal characteristics, so just knowing the gender effect doesn't tell us much. Looking just at safe helping, are women more helpful because they are kinder people? Are they more averse to guilt at not helping? Are they afraid of violating their expected gender role by being unhelpful? Are they more socially perceptive? Could it be genetic? Identifying the gender effect is certainly interesting, but it leaves a lot of questions unanswered and the *Why?* of it is not satisfied well.

A similar, more serious case could be made for differential variables such as culture. A famous anthropologist, John Whiting, suggested that we need to "unpackage" culture in order to understand cultural differences. The unpackaging would separate all the many components of culture–environments, economies, histories,

wealth, customs, norms, languages–in order to see which one is responsible for observed differences in the behavior of people from different places. In his research, he used data about hundreds of cultural "traits" from hundreds of living and extinct cultures to find these unpackaged relationships.

Experiments are easier!

Where Data Come From

Research designs, as presented in the previous section, concern the types of variables that are used in research and the extent to which the researcher has control over these variables. The manner in which data are obtained for use in these designs is partially, but not completely, independent of the designs themselves. In this section I present some of the most common sources of data and research settings.

Laboratory Research

Research conducted in special facilities designed for careful instrumentation and isolation from the complexity of natural life is termed laboratory research. In the natural sciences, labs are places where equipment is constructed and used. This is also true in psychology, although psychology labs are frequently not much more than an empty room. What distinguishes the empty room lab from the "real world" is that all of the activity in the room is focused on performing a research study and whatever would normally happen in the room is not happening during the research. The isolation of the lab from the real world facilitates the control required to conduct experiments (in the formal meaning of this word).

This advantage of the laboratory in allowing great control is also its weakness in removing the research from natural settings and activities. Labs are therefore usually low in ecological validity, as discussed in a previous section of this chapter. Another disadvantage of the lab setting is that the research subjects are highly (humans) or dimly (rats) aware that they are in a special place in which their behavior is being observed and strange things could happen. As a result of this awareness, behavior in lab research can be not only unnatural, but also distorted in such a way that the experiment loses some control. The ways in subject awareness poses a problem for research are discussed in a later chapter.

Field Research

Research in natural settings in which the subject performs normal behaviors is termed, most generally, field research. The same empty room used in a lab study can also be used in a field study if the subjects are in it for normal reasons and perform normal activities unaware that they are in a research study. When experiments are performed in the field they are called field experiments. Non-experimental research in the field is termed a field study, and this method includes observational research (see next section).

The realism of field research is balanced by the problems of maintaining control, so good experiments are more difficult to perform. Many field experiments are therefore quasi-experiments.

Observational Research

Psychologists, sociologists and anthropologists employ a type of field research called observational research to obtain information about real-world behavior. In controlled observational research, the researcher sets up the situation then observes the natural behavior that occurs in this situation. In this way a certain degree of control is imposed on the situation so that behavior takes place within a narrower range than it would otherwise. An extreme version of controlled observation is the simulation (discussed in a later section). Most controlled observation research is designed to allow the researcher to obtain detailed information about natural behavior that can be quantified in some way, that is, represented as numbers. For example, the author performed research in Taiwan in which he video taped junior high school students solving problems, then coded each and every phrase they uttered on tape in order to understand the communication strategies they used to come to a solution.

Napoleon Chagnon (a cool guy)...

In naturalistic observation the researcher does not create the situation, but rather observes normal, ongoing behavior. The observed behavior is also quantified, but it's more difficult to obtain as much detail due to the lack of any control. A classic example of this type of research is the Six Cultures Study, performed in the 1960s by anthropologists and cross-cultural psychologists with a large research grant from a US government agency. In one part of this large study, observers watched and coded the natural play activities of children in six cultures over a period of several months. The coded activities were used to understand the relationships between cultural characteristics such as family structure and the personalities of children.

Lived in a village like this for a year...

In some social science disciplines, a proper research study requires the researcher to live among or interact closely with the subjects. Cultural anthropologists favor ethnographic field research, an observational technique in which the researcher lives among the "natives" (this term is never used!) for an extended period of time, learning their language and practicing some of their customs. The goal of this type of research is to learn the culture from the people's point of view and at the same time to understand it in terms of the theories and models of scientific anthropology. The most famous or infamous example of this type of research is Napoleon Chagnon's dissertation research among the Yanamamö in the jungle region bordering Brazil and Venezuela.

A similar type of research, participant observation, places the researcher in the social setting of the subjects under study, performing the same activities as the subjects. For example, if the researcher wants to study a social setting such as "used car dealerships," he or she becomes a used care salesman for a while.

With people like this.

These types of research offer virtually no control but can be used to obtain rich descriptive information on which formal theories can be based, and can be used to obtain specific kinds of information to test

the validity of an existing theory in a new setting.

Surveys and Self-Reports

Research that obtains information from subjects by asking them to report on their behaviors, attitudes, values, beliefs, and feelings is generically called survey research. The term "self-report research" is also used. Asking someone to tell the researcher what he or she did, plans to do, would do, wants to do, or might have done is distinctly different from observing his or her actual behavior. Behavioral reports are sometimes called behavioroid measures to distinguish them from real behavior. Likewise, asking somewhat what he or she thinks, thought, expects to think, should have thought, or ought to think is different than the thinking itself. Reports of this kind are sometimes called semantic, declarative reports because they depend on the respondent's ability to formulate the reported thought in consciousness then articulate it either in words or through a questionnaire or survey instrument. Behavior can often be observed but the problem with internal constructs like beliefs and values is that they are not directly observable; the subject must tell us. This reporting of internal states to the research has many problems, but few reliable alternatives exist.

Several kinds of survey methods are used, the most common of which is the questionnaire. A variety of questionnaire types have been developed since they become popular in the 1920s and 1930s. Details about questionnaires are presented in a later chapter. The three most common types are the Likert scale, the 7-point scale, and true/false items.

Likert scales ask respondents to rate the extent to which they agree or disagree with a statement. The use of explicit item response anchors ("strongly agree") makes is easy to report the results in a familiar way, so Likert scales are used in opinion polling:

The drinking age should be raised to 35.

___ Strongly agree
___ Somewhat agree
___ Neutral
___ Somewhat disagree
___ Strongly disagree

Seven-point scales often require the respondent to rate a concept on a bipolar scale by placing a check mark on one of the lines. Many studies use more or fewer than seven response categories.

Pizza:

good ___ ___ ___ ___ ___ ___ ___ bad

I would purchase a frozen pizza from Publix on a Wednesday evening on the way home after school:

Definitely would purchase ___ ___ ___ ___ ___ ___ ___ definitely would **not** purchase

True-false measures are used in personality tests and occasionally in other types of surveys:

I am careful to step over the cracks in the sidewalk. ___ true ___ false
I wash my hands after using a Microsoft product. ___ true ___ false

Survey methods also employ interviews and focus groups. Interviews that are used to collect self-report research data are often highly structured, that is, the interviewer follows a predetermined script and is careful to obtain usable answers.

Q: How many different tasks do you normally perform during a typical day at work?
A: Really quite a few

Q: Would you say more than 10 or fewer than 10?
A: I think about 6

Q: Could you please try to name those 6 tasks?
A: Well, sometimes I write exams that no one can understand, and sometimes I give registration advice that is completely wrong, and on Tuesdays I teach nonsense to the clinical graduate students, and ....

A focus group is a small group of people brought together to determine what members of an identifiable population ("likely voters," "people in the market to buy a car") think about an issue. The focus group is lead by trained facilitators who attempt to tease out the members' real thoughts about the issue at hand in a structured and systematic manner. Focus groups present an efficient way for getting a general idea about what people think about an issue, but do not provide good research data.

Simulations

An interesting but infrequently used technique for gathering information is the contolled simulation. In a simulation, the researcher creates the main features of a real world setting then places subjects in the setting performing activities typical of that situation. The goal of the research is to determine the effect of the situation on the subjects's behavior. The most famous simulation performed in psychology is the Stanford Prison Study. Philip Zimbardo, now president of the American Psychological Association, performed this experiment in 1971 in the basement of the Stanford University psychology department. He created a prison in the basement and randomly assigned a group of male volunteers to be inmates or guards. He found that the physical and social situation of a prison produces pris-on-like behavior in normal people: rebellion, cruelty, and psychological dysfunction. Other simulations evidence similar findings, pointing to the power of the situation over the influence of personality in many social behaviors.

www.prisonexp.org

Simulations contribute wonderful information about the possibilities of human behavior, but they do not yield systematic research data that can, in themselves, test a theory.

Archival Research

Sometimes the researcher can answer a theoretical question by digging up existing data from archival sources. Because humans in cultures record so much of what

they do, this accumulated information presents many research opportunities. For example, a study by Keith Simonton tested the theory that political leadership in revolutionary times requires single-minded devotion to the cause but leadership of an established peace-time government requires complex, multifaceted thinking. He collected the speeches given by revolutionary leaders before and after the revolution and analyzed them for the amount of cognitive complexity they displayed. He found that successful revolutionaries were simple minded zealots and successful peacetime leaders were complex thinkers. Successful revolutionaries who become more complex after the revolution (Fidel Castro) were successful in office but those who did not (Leon Trotsky) were unsuccessful. (Josef Stalin had Trotsky's head cut off in Mexico, indicating a lack of success.) Simonton's study also illustrates the use of content analysis. In order to determine if a speech was complex or simple, judges had to read the speech and analyze its content according to a predetermined set of rules.

Qualitative Research

Social science and psychology are suddenly becoming very interested in qualitative research, as evidenced by the many books that have been published on this topic in the last five or so years. Qualitative research is a broad umbrella that includes a variety of methods that have in common an attempt to find the "meaning" of a phenomenon without resorting to methods that separate the researcher from the subject or that reduce the subject to quantitative (numerical) values. Ethnographic field research and participant observation are types of qualitative research. Other types include analysis of cultural artifacts such as art and poetry, dream analysis, analyzing the layers of meaning in literature and myth, analyzing the hidden meanings in verbal interaction, case studies (looking at just one person's story) and more. To most psychologists, these methods are considered useful for generating ideas but not adequate for rigorous testing of theories or identifying causal relationships. However, a minority of psychologists appreciate the ability of qualitative methods to reveal the richness of the human experience in a way that quantitative research cannot (and is not intended to) do.

Which Research Design, Which Data Source?

Deciding which research to use is a complex question driven by many factors, including the theory you are working out of, your resources, and the nature of the psychological phenomenon that you are studying. In the real world of psychology research, scientists work within long-term research programs in which the methods and data sources have been figured out based on the several factors just listed, and these choices don't need to be made for each and every study. Highly successful researchers find the right designs and the right data sources and use them effectively and intensely.