

Chapter 1

Developing Your Research Idea



In this chapter you will learn about...

- ◆ Developing Your Ideas
- ◆ Refining Your Research Question
- ◆ Generating Your Hypothesis
- ◆ Figuring Out What Support for Your Hypothesis Would Look Like
- ◆ Preparing for Your Written Paper

When you conduct research, you create new knowledge. It is exciting to think that when you complete your project, you will know something that nobody else in the world knows. Your contribution to psychology may be quite modest; most research projects by professionals make small, incremental additions to our knowledge. But it can be a real contribution nonetheless.

The first step in the process involves developing a research idea. It is a little paradoxical, but coming up with a research idea is both easy and difficult. That is, there is a wealth of potential research questions that you might ask, so finding an interesting topic can be fairly easy, but figuring out exactly how you will approach the research question can be difficult. If an idea has occurred to you, there is a good chance that it has already occurred to somebody else. On the other hand, if others have studied a topic that interests you, you can use their ideas as a starting point for developing yours.

In this chapter, I will present some examples of how you could develop interesting and productive research projects. The examples are intended to reflect the process of developing ideas and certainly do not exhaust the range of possibilities.

I hope you will learn about strategies that lead to successful outcomes. Learning how to generate fruitful ideas may be the most important aspect of research.

The process involves quite a few separate steps and a lot of small decisions, but it all starts with your identification of a question that interests you and that other psychologists see as psychologically worthwhile.

Research is a multistep process. The ideas in this chapter relate to other aspects of the research process that you need to consider. But the identification of a research topic is a good place to start. Keep in mind that the later material, like use of PsycINFO to find work relevant to your ideas, will relate to what you are reading here. What you decide now will affect what happens later; at the same time, what you discover later may require that you revisit this chapter.

Developing Your Ideas

The first question to ask yourself as you embark on the quest for a research project is “What am I interested in?” If you want to research a topic, you will find it much more enjoyable if the topic interests you. The idea will really become yours. It is always possible that you will be fascinated by an idea that somebody else proposes, so don’t discount that. But if you take on a task because of your interest in it, you are starting off on the right foot.

An immediate, but maybe not so obvious, source of ideas is you. Is there something about yourself that makes you wonder? For example, if you are left-handed, you have experiences that are different than those of right-handers in some instances. For example, can openers are constructed so that right-handers can use them most easily. Given that about 90% of people are right-handed, manufacturers are going to produce implements that favor right-handed people, which means that left-handed people will have to adapt. This need to adapt is not always benign. Coren and Halpern (1991) found that left-handers are at greater risk of accidents related to multiple aspects of life, as shown in Figure 1.1. Coren and Halpern also analyzed a set of existing data and discovered that mortality among left-handed people was notably greater than for right-handed people. Accidental deaths seem to play a large part in the death rates of left-handers, who have to adapt to a right-handed world. (After they published their findings, Coren and Halpern received a lot of criticism and even threats by people who thought that the authors were discriminating against left-handed people.)

One question that might arise from this kind of information is whether right-handed people would respond more negatively than left-handed people to opposite-handed implements. Left-handers are used to adapting, but right-handers are not. Or consider classroom desks with tablets made for right-handed people to take notes. Would a left-handed person enjoy a lecture if he or she had to take notes at a right-handed desk? Would it be any different

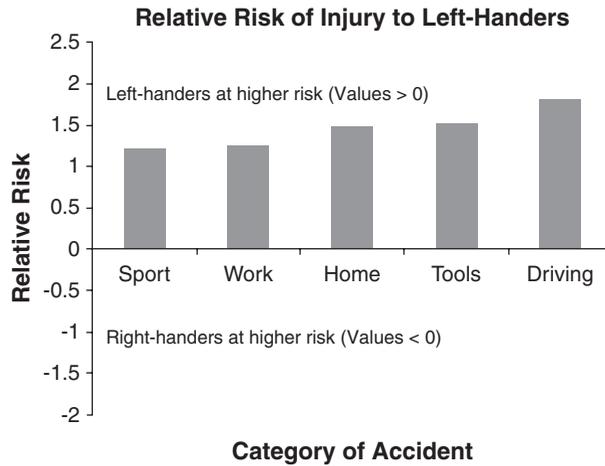


Figure 1.1 Relative risk of injury to left-handers by type of accident. Values greater than zero reflect greater risk for left-handers.

Source: Coren and Halpern (1991). Copyright © 1991 American Psychological Association. Reprinted with permission.

for a right-handed person at a left-handed desk? This kind of research project might provide useful information about helping people enjoy classes more.

Another fact about differences between left- and right-handers is that the two groups seem to respond to space around them differently. Casasanto (2009) found that his research participants had more positive associations to spaces on their dominant side in a two-choice situation. That is, right-handers preferred a given stimulus when it was on their right rather than on their left, and left-handers preferred it the other way around. It would be interesting to see if the liking was on a continuum such that the farther to the dominant side an object appeared, the more positively a person would rate it.

Considering that Coren and Halpern (1991) reported that left-handers are more likely to have accidents related to multiple aspects of life, you might focus on individual sports. Injuries in some sports may be more common among left-handers, but nobody has investigated that. Is it likely that some left-handers are more at risk in some sports? It is a question that has yet to be answered in the psychological literature.

A person's handedness is a seemingly small factor in one's life, but it could generate a host of interesting research projects. The same might be true of many different personal characteristics. For instance, would people who are overweight judge silhouettes of others differently depending on whether the silhouette depicted an overweight person? Do people with red hair rate others with red hair more positively than people with dark hair?

Thus, an initial question (e.g., Do left-handers and right-handers prefer stimuli on their dominant side?) can lead to new questions: Do redheads prefer redheads? One point to remember, though, is that it is possible to develop research questions that other psychologists would regard as unimportant or even trivial. So if you were going to see if red-haired people saw other red-haired people more positively than other hair colors, you would need to make a case about why this is an interesting psychological question.¹

Casasanto's (2009) research about the relation between handedness and space preference was tied into the issue of the body specificity hypothesis. This hypothesis postulates that a person's interaction with the environment shapes the way the person thinks. The question of preference for hair color could be tied to the body specificity hypothesis, but it could also connect to something like the mere exposure effect, in which people develop a favorable reaction to something merely because of repeated exposure to it. In most cases, successful research questions connect to other psychological research.

As you will see in the next chapter, there are ways to find research that relates to a topic of interest to you. You will be able to see whether psychologists have paid attention to it. One of the most common ways to find out about existing research is through the database PsycINFO. As of 2011, there were more than 1,600 entries in PsycINFO in which the word *handedness* appeared in the title of the work. Some of them might not be of use to you. For instance, 99 of the works with *handedness* in the title involved nonhuman animals. These could be irrelevant to your project. Nonetheless, the fact that so many citations involve handedness indicates that the topic is of interest to psychologists.

In contrast, you might have to work a little harder in convincing others that a study of redheads is of psychological importance. As of 2011, there were five titles in PsycINFO that used *redhead*. One involved a study of finches, and another involved ducks, which is not exactly what we had in mind here. There were two studies of perceptions of hair color, and one that discovered that in 1947 (Von Hentig, 1947), there were more red-headed male criminals than you would predict based on the incidence of redheads in the general population. So the question of how people with red hair perceive the world around them is not, in and of itself, of particular interest to researchers. But if you tied your question to the issue of the mere

¹A nonpsychological example of research that might make you wonder about its importance or interest involves the fact that somebody has discovered that William Shakespeare used 138,198 commas in his collective work (Bryson, 2007). Scholars have produced much interesting and important literary research about Shakespeare and his writing, but it seems hard to figure out how the number of commas fits into the overall body of work on him. Maybe it is of interest for reasons that psychologists would not appreciate.

exposure effect (121 citations in which *mere exposure effect* occurred in the PsycINFO abstract) or person perception (almost 1,500 citations), your idea would be more likely to resonate with other psychologists.

So you might reason that people with red hair are familiar with redheads because they see one every time they look into a mirror. This phenomenon might lead them to feel more positively about redheads than other people do. Or it might be that they favor redheads because such people are similar to them. Or they might not have any different impressions of redheads than they do of any other hair color. You would not know until you investigated.

You can also think about your own behavior (as opposed to your attitudes) in some important aspect of your life. For example, what factors affect your performance on tests in classes? Obviously, there are many to choose from. But one potentially interesting variable is how much sleep you get. Meijer and van den Wittenboer (2004) investigated sleep (and other variables) to see how they correlated with test performance. Surprisingly, the amount of research on the relation between sleep and learning in college students appearing in the literature is fairly small. Investigators have asked some of the obvious questions, but there are many yet to be addressed.

So far, I have identified strategies that will help you develop your research idea. But you should also pay attention to issues that need careful consideration as you develop your ideas. Every idea that you generate is not going to lead to a fruitful research project. Some projects may be trivial, whereas others may be too large or complex; some may be very difficult to complete successfully. Table 1.1 presents some of these issues.

Refining Your Research Question

Once you have an overall topic, you can specify the behaviors or attitudes that you want to measure and the variables that you think are related to or that cause some behavior to occur. After identifying your research topic, one of the next questions involves how you will set up your research.

Investigators adopt different approaches to their research. Those who work in laboratories often use experiments in which they manipulate variables in a controlled setting. Researchers who study people in everyday situations or ask for self-reports about behaviors and attitudes may use descriptive or survey research. Sometimes these categories overlap, but the difference between experimental and nonexperimental research is that experimental approaches permit you to make statements of causation: When condition A occurs, something happens because of it. When condition A does not occur, something else happens. It is the presence or absence of A that determines whether a behavior will occur.

Table 1.1 Potential Pitfalls to Consider When Generating a Research Project

The Issue	Comment
Too big a question	Just about every research project involves a small step beyond previous research, so keep your research question manageably small. Too large a question may require too many participants and too much time on your part. In addition, with very complex research, it can be quite difficult to interpret your results because there can be multiple variables interacting with one another.
The “so what” question	Some questions are fairly unimportant. For example, the effect of room color on studying for tests is one that most psychologists would probably consider unimportant. For something like this, you would have to make a case that it relates to recognizable psychological issues (Smith, 2007).
Lengthy projects	If you are conducting research as part of a class, your time may be limited to the duration of the academic term. It seems that research never proceeds as quickly as you think it is going to, so it is wise to create a methodology that is as compact as possible while still addressing your research question.
Projects requiring participants to return to a lab or to provide data on multiple occasions	Repeated measures designs allow you to collect a lot of data from a single person. But your participants’ motivation is not likely to be as high as yours. So if your methodology requires people to work too hard (from their perspective), they may drop out.
Boundaries of competence	If you were to study personality using a projective test like the Rorschach Inkblot Test, there could be problems relating to your competence in scoring participants’ answers. Some commercial tests are restricted so that only qualified people can acquire them, but the Rorschach stimuli are available on the Internet, so anybody could use them. If you were not qualified to use whatever tools or methodology is required for your research, you would be acting unethically.
Ethics in carrying out the study	If you develop a project that requires people or animals to be exposed to an experimental manipulation, you need to receive approval from your Institutional Review Board (or an Institutional Animal Care and Use Committee) or from somebody who is authorized to act on their behalf. You need authorization before you can even begin to recruit participants. This process can take a long time, so you should begin it as soon as possible.

The disadvantage of an experimental approach is that it generally involves a simplified laboratory experience that looks at only one or two variables at a time. We all know that our behaviors are usually the result of many variables. So experiments, particularly those that take place in a laboratory, may not tell us a lot about the way life operates on a daily basis.² Recent evaluation has indicated that social psychological research does generalize to life outside the lab to a certain degree, but there are some significant discrepancies between lab and field research; such discrepancies are less likely in industrial/organizational research (Mitchell, 2012).

In contrast, nonexperimental research that does not lead to cause-and-effect conclusions is still important because it also provides very useful and interesting information. Descriptive or correlational studies let us learn about relationships among variables. This approach often involves studying life as it normally unfolds. Thus, we can get a realistic idea of patterns of behavior involving multiple variables. The disadvantage of such research is that you don't know which of the many variables you know about (or might not be aware of) are affecting the behavior. You might be able to make predictions about behavior, but you don't know why it occurs that way.

One example might be the link between exposure to violent media and a person's level of aggression. Research has shown that people who are exposed to more violence are more violent in their behaviors. The relation is stronger than that between using (or not using) condoms and the incidence of HIV, which can lead to AIDS, and stronger than the association between exposure to lead and intelligence level in children, findings that are not at all controversial (Bushman & Anderson, 2001).

Nonetheless, many studies about media violence and violent behavior are correlational. Based on correlational approaches, we cannot determine whether exposure to violence causes violent behavior, whether violent behavior induces people to seek out violent media, or whether some other factors are causing both. In fact, some psychologists have made the argument that we still do not know if there is a causal link (e.g., Ferguson, 2002), although Anderson and Bushman (2002) pointed out that there have been over 150 experiments (which can lead to causal conclusions) showing a connection between aggression and exposure to media violence.

²You shouldn't assume that laboratory studies have no validity regarding everyday life. One extreme example involves Stanley Milgram's obedience studies. His original work was laboratory based and involved him asking the research participants to engage in behaviors that they would never do in the course of normal life. But his conclusions turn out to have wide generalizability outside the laboratory.

So what does this mean for your research? It means that you could choose to do an experiment, most likely in a laboratory, that investigated one or two variables to see if they have an effect on behavior, thought, or attitude. The context would be a simplified version of everyday behavior with many important variables stripped away. You would have control over what happens, so your conclusions might be clear and straightforward about cause and effect. But it would be a simplified version of life.

On the other hand, if you did a correlational study, you could study behaviors not possible in an experiment. If you wanted to know if somebody who was frustrated was likely to engage in violence against another person, it would be unethical to set up that kind of situation. But you could do a correlational survey study to see whether frustration leads to aggression. There might be an association. The drawback is that you wouldn't necessarily know if it was the frustration that led to the violence.

You might also consider an observational study. Such an approach could provide information about actual violence rather than simply a self-report, which may or may not be accurately remembered or reported. An observational study would involve realistic situations and actual behavior. Unfortunately, you might have to wait a long time to observe the behavior of interest.

No matter what methodology you use, it will have its own strengths and its own weaknesses. You should be aware of them so you can make a choice that is sensible given your circumstances.

Generating Your Hypothesis

Sometimes research projects begin with the question "I wonder what would happen if . . ." This kind of question can lead to interesting research, but there is a good chance that if your question is one that would be of interest to psychologists, somebody has already conducted research on the topic.

So rather than simply repeating an earlier question, you might want to take a previous idea and see what new ideas it can generate. Replicating an earlier study in a very similar way might be a good idea if there is reason to believe that the original research had gaps that you could fill, but most psychologists want to go beyond previous ideas.

You can find out what other investigators have done pretty easily. That is the topic of the next chapter, but at this point, I will describe how you go about generating a hypothesis so that your research question is more like "I'll bet that this is what will happen, and this is why . . ." The earlier research will help you develop expectations, that is, hypotheses, that you can test.

Consider, for example, that people respond to stimuli without being consciously aware that they are doing so. For instance, Bargh, Chen, and Burrows (1996) primed participants with stereotypes of old age. The participants rearranged words to form sentences in which the words were associated with the elderly, like *bingo*, *forgetful*, *retired*, *wrinkle*, *rigid*, and *traditional*. In a control condition, neutral words like *thirsty* and *clean* replaced the age-related words (p. 236).

In two experiments, the original study and a replication study, as the participants left the lab, a confederate in the hallway surreptitiously timed how long it took the participant to walk the length of the hall. People who were primed with age-related words actually walked more slowly than those primed with neutral words, as shown in Figure 1.2.

The study by Bargh et al. (1996) related to automatic behavior, that is, behavior that people engage in without being consciously aware of it. But you could extend the study to find out if people show a reverse phenomenon. That is, would people walk faster if they had been primed to think of energetic, young children who never seem to move slowly? This type of finding might have notable implications for the elderly, but you could set up a study in which college-aged participants (such as those Bargh et al. relied on) were primed with thoughts of youthful energy.

Your hypothesis might be that people who are exposed to stereotypes of a different group will walk at speeds resembling the group about whom they are primed. A further question is whether being primed regarding

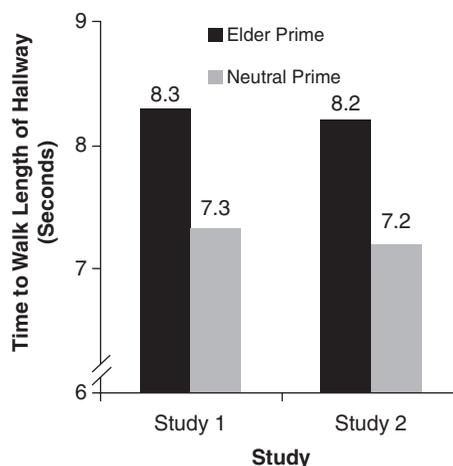


Figure 1.2 Time taken to walk the length of a hallway after being primed with words associated with old age or with words unrelated to age.

Source: Bargh, J. A., et al. Copyright © 1996 American Psychological Association. Reprinted with permission.

people of a participant's own age group in a certain way, like watching a video of a person either running or walking with a cane or a crutch, would make a difference in the participant's walking speed.

Based on the research of others, you can generate your own question with your own prediction of what will happen. If you know what has already happened, it will help you predict what will happen when you change things a little bit. As always, the more you know to begin with, the easier it will be to design your study and to generate hypotheses that your data will eventually support.

Figuring Out What Support for Your Hypothesis Would Look Like

When you plan your study, you can use theory and the results of previous research to form expectations about your results. That is, you set up hypotheses to see if people behave the way you expect them to. In many cases, the outcomes of research are in full agreement with the hypotheses, but sometimes the results do not conform to expectations.

Professional researchers probably receive support for their hypotheses a high percentage of the time because they often have substantial knowledge of the topic they are studying and are moving one small step forward in each project. Consequently, each small step follows nicely from the previous one.

On the other hand, if you are conducting a study in an area about which you are not highly familiar, your hypotheses may not lead to the results you expect. That is, your level of knowledge may not be sufficient to predict accurately how the variables relate to one another. Or if you are investigating an area that is relatively new, it may be hard to make sound predictions because fundamental knowledge about the issues has not yet emerged.

In any case, when you form a hypothesis, you should come up with predictions that are as specific and as well developed as possible. And they should relate to your measurements. For example, researchers have investigated terror management theory (TMT), which postulates that people are aware of their mortality and have to deal with the thought that they will die some day. Based on the theory, Goldenberg, Pyszczynski, McCoy, Greenberg, and Solomon (1999) predicted that participants scoring high in neuroticism would associate the physical aspects of sex with death but would not do so for romantic aspects of sex. When they primed participants on the physical dimension, the participants showed a greater tendency to complete word fragments (e.g., *S K _ _ L*, which could be completed either as *skull* or *skill*) with death-related themes than participants in the romantic prime condition.

So my students and I wondered whether jokes about sex would have the same effect as the primes of Goldenberg et al. (1999). We assessed neuroticism level using a brief 10-item inventory from the Oregon Research

Institute (ipip.ori.org) and established groups of low-, medium-, and high-neuroticism participants. After participants read and rated the funniness of sex-themed jokes, they completed word fragments, some of which could lead to death-related words.

With respect to our hypotheses, we reasoned that if TMT's predictions held true for Goldenberg's participants, then the theory might hold true for jokes as well: Our participants might generate a greater number of death-related words when completing the word fragments. Specifically, we hypothesized that as participant levels increased, the number of death-related word fragments that they generated would also increase.

Our hypothesis was partially confirmed. That is, high-neuroticism participants generated more death-related words than did either of the other groups; the other two groups did not differ significantly. The results appear in Figure 1.3. The predictions of TMT held true, revealing that, instead of leading to socially positive responses, some humor may actually result in negative outcomes for high-neuroticism people.

In this example, we created groups based on participants' levels of neuroticism and made a prediction about their behavior related to our dependent variable, the number of word fragments they completed that

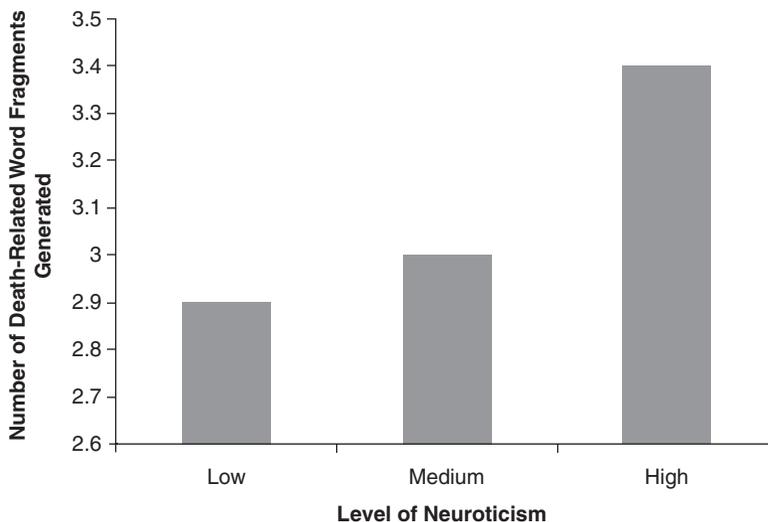


Figure 1.3 Number of Death-Related Words Generated by Participants with Varying Levels of Neuroticism.

Source: Dietz, A. P., Albowicz, C., & Beins, B. C. (2011, October). *Neuroticism and sex-related jokes: Predictions from terror management theory*. Poster presentation at the annual convention of the New England Psychological Association, Fairfield, CT. Copyright Bernard C. Beins. Used with permission.

had death-related themes. In advance, we knew what our results would look like with respect to the independent and dependent variables if those results supported our hypotheses. Fortunately, the results were in accord with our hypothesis.

Preparing for Your Written Paper

When you complete your project, it is likely that you will write a report of your research. Here is some guidance that will help you organize the introduction section of your paper.

Authors typically include several different elements in the introduction. One of these elements is an overview of the research question. You can begin your introduction with a statement about the topic that engages the reader's interest. In this section, you prepare your reader for your research by providing some background information on how your ideas developed. Another feature of the introduction is a review of research that investigators have published or presented. This review does not need to be exhaustive, but it should give the reader a sense of what researchers know about the topic and provide a description of the theory and research related to the topic.

The final part of the introduction is a presentation of your hypothesis. That is, based on what others have already done, what do you expect to occur in your research? You should provide the logic that leads from the earlier research to yours.

It will be a good idea to address the questions listed in Table 1.2 as you read the material. If you write a brief statement in which you answer each question in the table, you will gain two benefits. First, you will be recording the ideas while they are fresh in your mind. Second, you will have a record of the source of the ideas; it can be quite frustrating if, at some later point, you need to document the source of an idea and cannot remember where you found it.

Using the table below may seem like a lot of work, but it will pay off in the end. You will form a good sense of the research that others have done, you won't have to rely on your memory about what other investigators have found, you will have a record of where you found the material in case you need to go back and get more information, and you will have a well-formed set of ideas to help you write your introduction.

Finally, when you write your paper, quite possibly you will use APA style. The basics of APA style appear in Appendix A.

Table 1.2 Information to Record as You Read Background Information for Your Research

Reference Citation in APA Style	
Question	Important Points
What research question did the investigators ask?	<ul style="list-style-type: none"> • What was the main source (or sources) of their ideas? • What did they hypothesize that relates to your work? • Why did they develop the hypothesis? <p>They may have addressed several questions, but you should focus on the questions that relate to your ideas.</p>
What was their methodology?	<ul style="list-style-type: none"> • Who were their participants or subjects? • What apparatus or materials did they use? • What procedure did they use in the research? That is, what did their participants or subjects actually do? • What were their independent and dependent variables? That is, what were their operational definitions and what did they actually measure?
What did they find?	<ul style="list-style-type: none"> • Was their hypothesis supported? • What were the important descriptive statistics (e.g., means)? • What were the important inferential statistics (e.g., <i>F</i> values, <i>r</i> values)?
What did they conclude?	<ul style="list-style-type: none"> • How did they interpret their results? • What did they say was novel about their findings? That is, what do they know now that they didn't know before they did their study? • How do their results relate to your idea?

