

Chapter 13

Inquiry in the Social Sciences

"Video Violence"

Nancy comes across Phil in the lounge at their college. Phil is absorbed in what he's doing on his computer and periodically shouts out things like "Bam!" and "Gotcha!" and "Take that!"

Nancy: What are you up to, Phil?

Phil: I just got the coolest new game. It's called *Grand Theft Auto*. It's scary and gory and full of great challenges to blow away the enemy. It's spectacular. Body parts flying everywhere. Want to have a go?

Nancy: Ugh! I can't believe you play those games. They're going to make you even weirder than you are already.

Phil: Give me a break. All that stuff about video games making people violent is hogwash. I'm twenty, and my brother Michael is twenty-four. We've played games since whenever and we've never even been in a fight.

Nancy: Well, maybe they don't affect you as strongly. Just because some people can smoke cigarettes all their lives and die at ninety doesn't mean cigarettes don't kill people. The fact that you and your brother survived violent video games doesn't prove anything either.

Phil: I agree that my brother and I don't prove anything. But neither do the Columbine shooters, and people are always talking about them. Most people are sane and can play video games without going off the deep end. Some people can go off the deep end for almost no reason, and maybe video games can help them get there. It's not the video game's fault. It's like saying driving cars leads to running people over. It isn't the car's fault.

Nancy: Not the cars themselves but the way they're hyped in the culture: ads emphasizing how fast they go, pictures of them racing around mountain roads. The media portrayal of cars encourages speeding, especially among young men. You surely can't deny that. And the same thing is true with violent video games and the whole hyping of violence in the culture. Violent movies, extremely violent sports. I mean, we are on our way to Roman circuses and watching people being eaten by lions. It's barbaric.

Phil: As I recall, your Roman circus argument is called a "slippery slope." Violence, even youth violence, comes and goes with or without violent video games or movies like *Terminator Genisys*. It's very few people, if any, who go over the edge from seeing them.

What's to Come:

- Evaluating Claims Based on Statistical Inference:
 - Experimental versus Observational Studies
 - Prospective and Retrospective Studies
 - Sample and Population
 - Generalizability
- Evaluating Statistically Based Causal Claims:
 - Argument to the Best Explanation

From a list of the five most violent games from Consumer Reports: *Grand Theft Auto* (1997)

If any one game inherited the mantle of violent game poster child from *Mortal Kombat* and *Doom*, it was *Grand Theft Auto*. The game was controversial from its very earliest incarnation because it let players do just about anything, as they portrayed criminals. But it really ramped up with 2001's *Grand Theft Auto III*, when improved graphics made the chaos even more

realistic. Players could kill police officers, hire (and subsequently kill) prostitutes, and perform any number of other unsavory acts. In 2003, the family of two shooting victims filed the first of what would become several lawsuits against the series. That case was quickly dismissed.¹

Nancy: Well, I don't know how you know that. It seems obvious that being exposed to violence in the media will make people generally insensitive, even if only a few actually become violent.

Phil: So are you saying it's so obvious that we don't need to do any research to find out whether you're right? You rejected my appeal to me and my brother, and now you're appealing to what seems obvious to you? That's pretty lame.

Nancy: Point taken. We should find out what the experts say.

Phil: But wait a minute. Let's stick to the program before we go off and do our research. Let's make sure that we agree on the issue.

In the last chapter, we looked at how scientists go about making discoveries and claims in the natural world. In this chapter, we apply similar strategies for inquiry into the human world. But the scientific study of humans, whether focusing on physical health, such as the role of nutrition, or on mental health, such as the influence of violent video games, presents many special challenges not present in the study of the natural world. For example, experimenting on humans is limited by many ethical and practical problems. Also, unlike rocks, humans are aware of being studied and may behave differently as a result. This chapter will focus on some of these challenges and provide guidance for assessing scientific claims about humans.

Assessing Scientific Claims in the Social Sciences: An Inquiry into the Effect of Violent Video Games

What Is the Issue? What Kinds of Claims or Judgments Are at Issue?

What Do You Think?

What is the issue? What kind of claim does it involve?

Phil: As I see it, the issue is whether playing violent video games makes people violent.

Nancy: Hmm, that's a bit strong. I'm not expecting someone who plays a few games to go out and start attacking people. I think the issue is whether people who play violent video games will be more likely to be violent than those who don't.

Phil: That seems too vague because it could simply mean that people who like violent video games also tend to like to punch out their neighbor. That wouldn't put the blame on video games.

Nancy: OK. How's this? Does playing video games cause people to have an increased inclination to be aggressive?

Phil: You have to have violence in there. People can play an aggressive game of tennis. That's not the issue.

Nancy: Then how's this? The issue is whether playing violent video games increases a player's inclination to be physically aggressive.

Phil: I'm OK with that.

What Are the Reasons and Arguments on the Various Sides of the Issue?

Nancy: I suspect that video games have a big impact on aggressiveness because the players actually do the violent acts; they don't just watch them.

Phil: Wait a minute—games are games. Nobody is doing real violence.

Nancy: You know what I mean. I mean, they're interactive and so would make people feel more comfortable with initiating real violence.

What Do You Think?

List the arguments on various sides of the issue which Phil and Nancy have given.

Phil: Maybe, but you can't just say that. We need real evidence, not just your speculations and anecdotes of people blaming violence on video games.

Nancy: Right. So what should we do?

What Do You Think?

What sources could Phil and Nancy consult in order to help them evaluate the arguments?

Phil: We could go ask our psych prof, or we could go to the PsychINFO database that we learned about in psych class. And, of course, there's always Google Scholar and Wikipedia.

Nancy: But I wonder whether there's any way to do experiments. I mean, you can't get people to play a lot of violent video games and then see if they attack people.

What Is the Context of the Issue?

What Do You Think?

What are the aspects of context which are relevant to the issue?

Phil: I agree, experimentation would be difficult, but let's remember the context. We're living in a world of increasing sales of violent video games. From time to time, there are calls by people like you to have them banned or controlled. That means that we're living in a kind of giant social experiment. But it also means that evidence on this topic is likely to be influenced by people's political views.

Nancy: And we're also living in a world where people go to movie theaters and shoot people. The world just feels like a more violent place.

Phil: It may feel that way to you, but that's not evidence.

What Do You Think?

What do you think is the "giant social experiment" that Phil is referring to?

How Do We Comparatively Evaluate the Various Reasons and Arguments to Reach a Reasoned Judgment?

Nancy: What do you mean by a giant social experiment?

Phil: Well, they've been selling video games by the millions for years. If video games contribute to violence, we should see an increase in violence correlated with an increase in video game use. When Sophia and I were looking into capital punishment, we found that there was no increase in murder when they got rid of capital punishment. That showed that capital punishment didn't act as a deterrent. If there's no increase in violence associated with the sale of violent video games, that would be a strong argument against their bad influence. Agreed?

Nancy: Makes sense. On the other hand, if violence is up, especially among the game-playing generation, that would make a prima facie case for games contributing to violence. Agreed?

Phil: Sure.

Nancy: I can hardly believe how easy it was to prove my point. We know that the world has become incredibly more violent. All you hear about in the media is more and more violence and more and more of it done by young people.

Phil: Hold on. That's just your impression from the media. But actually, Sophia and I did some research on that subject when we were looking into capital punishment, and it turns out that the rate of violent crime has actually decreased. For example, according to an FBI report, violent crimes in the United States decreased by 15.5 percent between 2007 and 2011.²

Nancy: I am stunned. You'd never know that from all that media coverage of violence and murders.

Phil: The media hypes violent crime just the way car manufacturers hype speed, and for the same reason: it sells.

Nancy: I suppose you're right. So where do we go from here?

Phil: I think we should find out about video game sales and look at the relationship between sales and violent crime. I've got my computer here, so I'll get a coffee and we can check some things out.

Before following Phil on his research, a brief introduction to the complexity of research in the social sciences will help us assess what Phil finds.

Evaluation of Claims Based on Statistical Inference

The intent of any study or experiment is to study a relatively small group of subjects to see if a cause or at least a correlation can be found between those exposed to the supposed cause (in this case, violent video games) and the effect (e.g., violent tendencies). The next step is to generalize from the experimental group to the target population being studied.

As we pointed out in Chapter 5, a correlation is a record of two kinds of events co-varying—they may or may not be causally related. Gray hair and wearing glasses are correlated, but clearly gray hair is not causing a person to wear glasses (or vice versa). Correlations are a necessary condition for making a claim about a causal relationship, but they are not sufficient.

In addition, studies are inevitably limited to the particular group being studied (e.g., the students in a psychology class), but what is of primary interest is whether these studies can be generalized to the larger target population. When we evaluate studies, one of the main questions we will be asking is whether these studies provide a good basis for generalizing.

Kinds of Studies

There are two basic approaches to studying human behavior, **observational** and **experimental**.

Observational Studies

In observational studies, the researchers study samples of individuals without intervening or experimenting. They just observe and collect data. There are two basic kinds of observational studies: **retrospective** and **prospective**.

*A **retrospective study** (often called a “case-controlled study”) typically identifies a group of people suffering from an illness or exhibiting a certain kind of behavior (e.g., lung cancer, violent behavior) and attempts to find a factor or factors in the history of this group that are different than those in a group of similar people who do not have the illness or effect (the “control group”).*

Retrospective Studies A **retrospective study** (often called a case-controlled study) identifies a group of people suffering from an illness or exhibiting a certain kind of behavior (e.g., lung cancer, violent behavior) and attempts to find factors in the history of this group that are different from those in a group of similar people who do not have the illness or effect (the “control group”). The advantage of this kind of study is that it is relatively quick and inexpensive. By studying people with some behavior pattern of interest and working back to the possible causes, we can study behavior that is infrequent without studying hundreds of thousands of people.

Unfortunately, there are a number of problems with this type of study. One serious problem is that it usually relies on participants correctly remembering their relevant experiences. The second problem is finding controls who are representative of (and comparable to) the relevant population but who do not have the effect (illness or behavior) in question. Remember that to establish a correlation, we need a relevant comparison. Comparing violent people brought up in rough neighborhoods to non-violent people who had a different background would result in the confounding factor of social background obscuring whether violent video games had anything to do with a person's violent tendencies. Because there is always the problem that the controls may differ from the studied group in more ways than the suspected causal factor and because data from the past may be inaccurate, retrospective studies are the most inconclusive type of study.

***Prospective studies** isolate a group of subjects, often called a “cohort” (these studies are often called *cohort studies*), and follow the subjects over time looking for correlates to outcomes, such as the occurrence of a disease or violent tendencies.*

Prospective Studies **Prospective studies** isolate a group of subjects, often called a “cohort” (these studies are often called cohort studies), and follow the subjects over time, looking for correlates to outcomes such as the occurrence of a disease or violent tendencies. Sometimes, these prospective studies are very large-scale studies that last years, even decades. Such studies are expensive and time consuming, but they provide a much more accurate picture of associations between behavior and outcomes—for example, between education and wealth, or between exposure to violent media and violent behavior.

Nonetheless, prospective studies are also plagued by confounding factors. For example, people who are careful about their diet are also likely to take care of themselves in other ways, and people who watch violent media may also hang out with

criminals. This confounding makes it difficult to determine which of the factors is causally effective and to what degree. Even when there is credible evidence of a correlation, establishing the cause of this correlation is quite difficult.

What Do You Think?

Why isn't a correlation between violence and watching violent media sufficient to establish a causal connection between watching violent media and being violent?

Experimental Studies

Because of the difficulty of eliminating confounding factors and establishing causal direction in observational studies, the best way to test a causal theory is to run an experiment. But experiments are not necessary to establish a causal claim. For example, the claim that smoking causes lung cancer has never been proven experimentally, but it is an extremely well-established causal connection. Nonetheless, if experiments are possible, they can often supply the best evidence for a causal claim.

There are, however, two problems with experiments involving human behavior. First, it is frequently not possible or ethical to run experiments on humans. Second, many experiments are only weakly representative of the actual behavior that is the subject of the study. Nonetheless, credible experimental evidence can often add considerable weight to causal claims.

The best form of experimental method (sometimes called the “gold standard”) is the **double-blind** randomized control trial, or **RCT**. An experiment is double blind when neither the subjects nor the experimenters know who has gotten the treatment, that is, who has been exposed to the cause in question. The idea of **random sampling** is that the assignment of individuals into the two groups being studied should not be biased in some way; for example, one group should not be older or healthier or “meaner” than the other. The outcomes of the experiment are then observed to see if there is a **statistically significant difference** between the outcomes of the two groups. A statistically significant difference is a difference that is sufficiently large that we can show mathematically that the difference between the two groups is unlikely to be due to chance.

It is important to note that calling a result “statistically significant” does not mean that it is significant in the sense of “really important.” To add to the confusion, many people, especially in the media, often refer to “statistically significant results” as simply “significant results.”

Intuitively, we understand that if you want to know if there is a difference in behavior between two groups, you cannot just experiment on, say, six subjects. The differences between the two groups of three could just be the luck of the draw with such a small number. As the number in each group gets larger (provided they are randomly assigned), it becomes increasingly likely that any difference in behavior from group

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A **sample** is the group of people selected to provide a basis for making an inference about the target population that is the object of the researcher's inquiry.

A **sample of convenience** is a sample of subjects that researchers can get easy access to—for example, students, or people who respond to ads for volunteer subjects.

Convergence is an emerging consensus, when a majority of studies supports a particular theory.

In social science having a variety of studies done under varying conditions with consistent results is what gives weight to a claim.



to group is due to the causal factor, not to chance variability. Chance variation happens in the short run or with small groups, but underlying tendencies show up in the long run. Consider the weather. If you live in a temperate climate, you know that, by pure chance, the temperature of a day in January might be similar to that of a day in April. But it is extremely unlikely that the average temperature in the month of January will be anything like that of April.

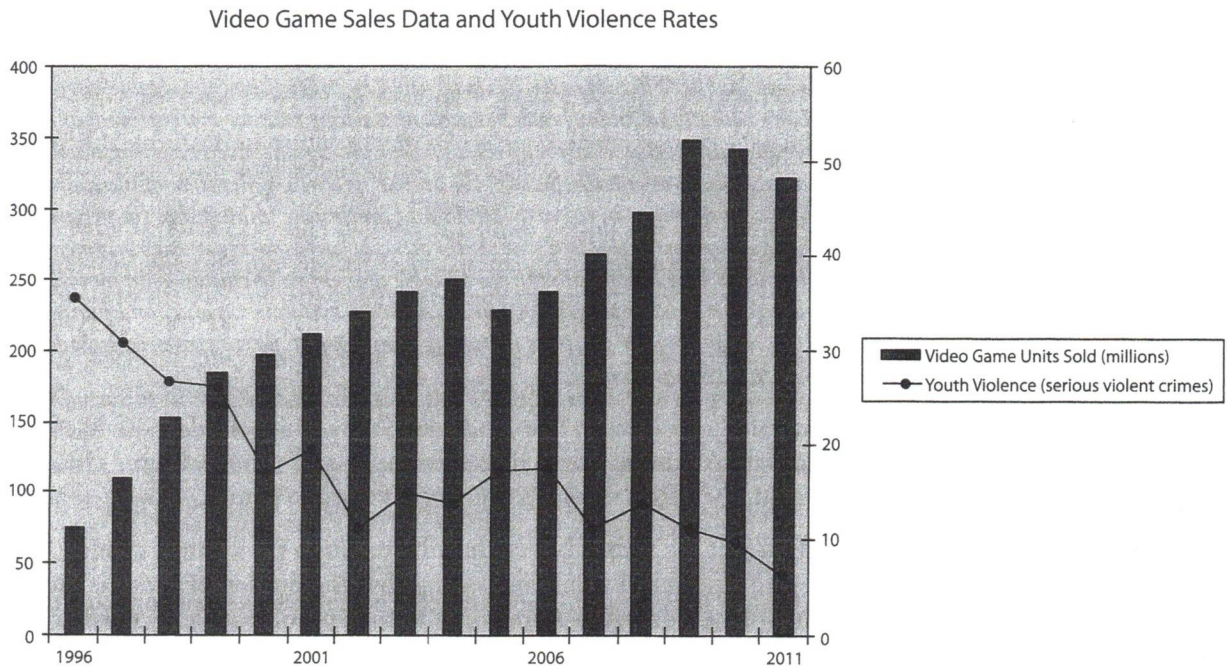
While experiments provide strong support for a causal claim, even experiments are subject to confounding factors. One of the problems is that when studying humans, the subjects being studied (both the experimental and control groups) are usually not randomly selected from the target population. When sampling, the aim should be to select a **sample** that is representative of the target population and as a result provides a good basis for generalizing the results of the study to the target population at large. But many studies fail to address the fact that the samples being studied are neither randomly selected from the population nor representative. In fact, most studies of humans are based on **samples of convenience**—basically volunteers who agree to be subjects of the study. As a result, we cannot be confident that the results of the experiment are generalizable to the target population.

Often these samples are clearly biased. For example, one of the most famous early cohort studies on health studied only male graduates of Harvard yet became the basis for numerous recommendations about health.³ To what extent would we be warranted in inferring from this very special group to the larger population of (male and female) North Americans, to say nothing of all human beings? The question about almost any study or experiment is whether the results found in the subject group are reasonably generalizable to the target population.

Because of these considerations, no one study, not even an experimental study, should be seen as conclusive. Generally in social science, having a variety of studies done under varying conditions with consistent results, is what gives weight to a claim. Because of the difficulties in studying humans and human behavior, we do not expect the same degree of scientific consensus as we look for in the natural sciences. Non-scientists, concerned to get the best information in the shortest time, need to look for summaries of the studies to see if there is an emerging consensus or **convergence** in the research.

A little while later.

Phil: I've come across an interesting chart detailing the relationship between the sale of video games and violent crimes: it shows that, while the sale of video games has more than doubled in the past ten years, murders and violent crimes are down. Not only is there no positive correlation between video game sales and violent crime, but if anything there's a negative correlation. Here's the chart:⁴



Nancy: OK, so there's no evidence from the "giant social experiment." But I'm still amazed that violent murder rates are down. So many things are changing along with the sale of violent video games. It's hard to tell if playing the games is adding to violence while something else like reduced drug use is reducing violence.

Phil: So how have you been researching the issue?

Nancy: I looked into the psychological research. Researchers have been studying the effects of violent media on people for years, and they're pretty confident that exposure to violent media does make people more violent. The study of violent video games is still a bit new, but it points the same way. So combining the two results gives a pretty good reason to think violent video games do contribute to violence. Have a look at this:

“Violent Video Games: Myths, Facts, and Unanswered Questions”

by Craig A. Anderson

A **risk factor** is any factor for which there is sufficient evidence to show that it is correlated with a particular (usually negative) outcome. Calling a factor a risk factor avoids making a claim that the relationship is causal.

Meta-analysis is a statistical method which involves sifting through all previous research and collecting the data from high-quality studies into one big sample and then doing statistical analysis on this new “sample.” This method results in larger samples and, in principle, more reliable statistical conclusions.

Note the use of “significance” and “non-significance” without the word “statistical.” It is, therefore, unclear whether the results are not due to chance (i.e., are statistically significant) or whether the results are of some importance (i.e., are significant).

*A historical examination of the research on the effects of media violence reveals that debate concerning whether such exposure is a significant **risk factor** for aggressive and violent behavior should have been over years ago (Bushman & Anderson, 2001). Four types of media violence studies provide converging evidence of such effects: laboratory experiments, field experiments, cross-sectional correlation studies, and longitudinal studies (Anderson & Bushman, 2002a; Bushman & Huesmann, 2000). But the development of a new genre—electronic video games—reinvigorated the debate.*

Two features of video games fuel renewed interest by researchers, public policy makers, and the general public. First, the active role required by video games is a double-edged sword. It helps educational video games be excellent teaching tools for motivational and learning process reasons. But, it also may make violent video games even more hazardous than violent television or cinema. Second, the arrival of a new generation of ultraviolet video games beginning in the early 1990s and continuing unabated to the present resulted in large numbers of children and youths actively participating in entertainment violence that went way beyond anything available to them on television or in movies. Recent video games reward players for killing innocent bystanders, police, and prostitutes, using a wide range of weapons including guns, knives, flame throwers, swords, baseball bats, cars, hands, and feet.⁵

Phil: Well, with all due respect to that Anderson fellow, this sounds more like speculation than research. All he’s saying is that previous research showed some effect from violent media and, therefore, so much the worse for video games.

Nancy: You didn’t let me finish. Notice how he refers to the context created by the history of relevant research. I think he’s saying that the burden of proof is on those who deny that violent video games are going to make people violent. Further down the Web site, he replies to a number of objections (he calls them “myths”) just like we’re learning to do in our critical thinking course. For example, read this:

Myth 1. *Violent video game research has yielded very mixed results.*

Facts: *Some studies have yielded non-significant video game effects, just as some smoking studies failed to find a significant link to lung cancer.*

*But when one combines all relevant empirical studies using **meta-analytic techniques**, five separate effects emerge with considerable consistency. Violent video games are significantly associated with: increased aggressive behavior, thoughts, and affect; increased physiological arousal; and decreased prosocial (helping) behavior. Average effect sizes for experimental studies (which help establish causality) and correlational studies (which allow examination of serious violent behavior) appear comparable.⁶*

Nancy: See—the results are converging, which we know is strong evidence for a scientific claim.

Phil: I don’t get it. How can you do experiments that show people are made violent by playing video games?

Nancy: Researchers randomly assign subjects to two groups. One group of individuals, the control group, plays an ordinary video game; and the other group, the experimental group, plays a violent game. Then they’re tested in some way for their

aggressive or violent attitudes. In one case, the subjects played another game after the video games which supposedly involved them giving retaliatory blasts of a horn to their opponent. What Anderson found is that people who played the violent video game on average gave louder blasts than those who hadn't played violent games. He claims that the difference was statistically significant and that, therefore, the researchers have good reason to believe that playing the violent video game increased the aggressiveness of video game players.

Phil: Well, now I can see how they do it, but I don't know how convincing those results are. The horn thing seems like a pretty dubious test of aggressiveness, to say nothing of violence. And anyway, maybe they were just a bit hyped up at that moment. Just like after seeing a football game or a good movie. It all passes pretty quick.

Nancy: But he also found that the group of people who played a lot of violent video games was quite a bit more violent than the group who didn't.

Phil: I hate to point out the obvious, but some people are violent and those people will probably like playing violent video games. Anderson has got to show that the games lead to the violent personality and not the other way around.

Nancy: Anderson admits that's a problem. That's why he did the experiments.

Phil: You seem pretty impressed with this Anderson fellow and I see that he is some kind of expert. But I think we should hear from some other people who are not so involved in the research. I'm going to check with some other experts to see if there are contrary opinions.

While acknowledging Anderson's expertise in this area, Phil realizes that it is also a good idea to check for a summary of the evidence by someone who is not so personally involved in the research. This is a good strategy for assessing expert evidence. Sometimes even the most eminent experts in a field are not the most reliable source of information because of their personal commitment to their own theories. It is useful to check their claims against more impartial researchers.

Phil: Look at what the U.S. surgeon general has to say:

A recent meta-analysis of these studies found that the overall effect size for both randomized and correlational studies was small for physical aggression ($r = .19$) and moderate for aggressive thinking ($r = .27$). . . . In separate analyses, the effect sizes for both randomized and cross-sectional studies were small ($r = .18$ and $.19$, respectively). The impact of video games on violent behavior remains to be determined.

Effect size is a statistical measure of the degree of impact of a cause on a particular phenomenon.

Phil: It doesn't look like the surgeon general was very impressed. But admittedly these studies are a bit dated. I also found the most recent meta-analysis, and it has a useful table for understanding various effect sizes.⁷ It appears from this table that there has been a "negative effect" of video game sales on violence (top line), though apparently playing violent video games does have a small effect on serious aggressive behavior (last line).

Effect Sizes, Criminal Justice Research

Relationship	Effect size (r)
Video game sales and youth violence rates in the United States	-.95
Genetic influences on antisocial behavior	.75
Self-control and perceptions of criminal opportunity on crime	.58
Protective effect of community institutions on neighborhood crime	.39
VVG playing on visuospatial cognitive ability	.36
Firearms ownership on crime	.35
Incarceration use as a deterrent on crime	.33
Aggressive personality and violent crime	.25
Poverty on crime	.25
Childhood physical abuse and adult violent crime	.22
Child witnessing domestic violence on future aggression	.18
Video game violence and non-serious aggression ^a	.15
Television violence on violent crime	.10
VVG playing on serious aggressive behavior ^b	.04

Note. VVG = violent video game.

^a Indicates calculated by Anderson et al. (2010). All other effects compiled by Ferguson (2009), where original sources are reported.

^b Estimate corrected for publication bias in published studies.

Relative risk is a measure of incidence of the outcome in the experimental group compared to the control group.

Nancy: Where's the table from?

Phil: It's from an article in a peer-reviewed journal. I have to admit that the authors are committed critics of Anderson, but they do point out that other recent meta-analyses, except for Anderson's, come to the same conclusion.⁸

Nancy: But remember Anderson's argument that since there's strong evidence that exposure to violent videos encourages violence, it's even more likely that playing violent video games will do the same? I notice your sources don't have an explanation for why violent video games don't seem to cause violence.

Phil: True. And it's also true that there isn't complete convergence. But the direction of the research does seem to counter Anderson's view. And don't forget the undeniable real-world "experiment."

Nancy: Well, I guess I'll need to temper my criticism; though I still think it's a dreadful use of your time to play such revolting games.

Phil: You really should try before you make a judgment. Sure you don't want to have a go. . . ?

(Nancy rolls her eyes as she leaves.)

Effect Size

The **effect size** referred to by both Anderson and the surgeon general is a measure of the difference along various measures of the aggressiveness of the experimental (violent video game-playing) group compared to the control group. The “*r*” number is not easily understood, but the concept is clear enough. Take a correlation such as education and lifetime income (i.e., people with more education generally earn more money). While these two factors are correlated, education could have a large effect on income or a small effect; for example, each year of education could be correlated with tens of thousands of dollars of increased income or merely hundreds of dollars. Finding a mathematical way to express this idea is tricky, but effect size

can be converted to a more intuitively understandable measure of effect size, namely relative risk.

Relative risk is a measure of the incidence of the outcome in the experimental group compared to the control group. For example, smokers have about ten times the incidence of lung cancer compared to non-smokers, that is, ten times as many smokers get lung cancer than non-smokers. So the relative risk involved in smoking is 10. The relative risk for lung cancer of exposure to secondhand smoke appears to be about 1.2.⁵ An “*r*” measure of .18 is equivalent to a relative risk of about 1.4; that is, those playing the violent video games were 1.4 times more likely to exhibit aggressive behavior, however measured.

What Do You Think?

Have Phil and Nancy made a reasonable assessment of the evidence?

In order to decide whether Phil and Nancy have made a reasonable assessment of the evidence, it will be helpful to look at the criteria for evaluating causal claims in statistical studies.

Evaluating Causal Claims in Statistical Research

Once a correlation is established, the evidence for best explanation in statistical research consists of the following.

Evidence of a Dose Relationship

Causal claims are strengthened when there is evidence showing that the more exposure to the factor in question (e.g., exposure to tobacco smoke, exposure to violent media), the more frequent the outcome (lung cancer, violent behavior).

Evidence of a Fit with Existing Causal Understanding

The causal claim being studied is more credible if it fits with the existing understanding in the discipline. In the case of health issues, a plausible biological explanation is ideally supported by biological research, such as research on animals or cells in Petri dishes. In many cases, however, we have to be careful that the plausibility of an explanation does not lead us to ignore the problems with the evidence. While it seems plausible that exposure to violent media and violent video games would make at least some people more violent, we have to look carefully at the scientific evidence before accepting this assumption uncritically.

Demonstration that Alternative Explanations Are Less Credible

A causal claim is strengthened when it is shown that alternative explanations for the correlation (such as, data collection error, experimental bias, or some other confounding factors) are not credible. In the case of violence and violent video games, there are at least two competing explanations:

- Social factors determine the level of violence and the level of interest in playing violent games.
- Individuals with violent tendencies will be drawn to violent video games.

Evaluating Causal Claims in Statistical Research

- evidence of a “dose relationship”
- evidence of a fit with existing causal understanding
- demonstration that alternative explanations are less credible

Let us now review the case for the claim that playing violent video games increases the tendency toward violence. First we summarize the arguments in our table.

Claim: Playing violent video games increases a player's inclination to be physically aggressive.		
Argument Summary	Objections	Evaluation
<i>Pro</i>		
Common sense	Mere plausibility without studies is not real evidence; the fallacy of popularity	Weak evidence even though it is a common belief that the media influences people's behavior
Anderson's research showing statistically significant effects if the effect size is small	Surgeon general's more negative assessment; other researchers find less effect	Questionable experimental validity and small effect size weaken this support
Observational studies correlating a history of violence with playing violent video games	Difficulty in determining temporal order and, therefore, cause and effect direction	
Analogy with results from exposure to violent videos		This seems to be a strong argument although we haven't checked the research on videos
<i>Con</i>		
Negative correlation between declining youth violence and increasing sales of violent video games	Confounding factors could have obscured the effect of video games	Suggests that the impact, if any, of video game violence is small; also argues against a dose relationship

Nancy and Phil make a negative evaluation of the claim that violent video games contribute to violence. Given the controversial state of research, this evaluation seems quite reasonable.

The issue of the relationship between playing violent video games and violence is clearly a factual question involving a causal claim, although exactly what the claim of interest is, is not easy to decide. This issue illustrates a complexity with the use of the concept of cause in scientific investigation involving statistics. In everyday reasoning and much of scientific reasoning, a cause is identified as the sufficient condition for some event, that is, when the cause happens, the effect must happen (the broken pipe caused the leak, the corrupted print driver prevented the printing, and so on). But in statistically based research, researchers are looking for **causal factors**, of which there can be many. A factor is a causal factor for an outcome if the factor is correlated with the outcome and if the best explanation for this correlation is that there is a causal relationship.

We commonly use the concept of causal factors in health studies. Whether you get an illness, like cancer, is likely to be the result of many factors, including your genes, your lifestyle, and your exposure to carcinogens. Since the causal mechanism is often not clear, researchers resort, as Anderson does, to talking about risk factors rather than causal factors. This means that they have good reason to believe a particular (risk) factor is associated with some negative outcome, but they do not have adequate evidence to claim that this factor is a causal factor in the outcome.

A factor is a **causal factor** for an outcome if the factor is correlated with the outcome and if the best explanation for this correlation is that there is a causal relationship.

Apply Your Understanding
Exercises 1, 2, 3

Considerations for Evaluating Causal Claims in the Social Sciences

The basic guidelines for evaluating claims in the social sciences are the same as those in the physical sciences, but having humans as the subject of inquiry presents a number of special challenges.

Generalizability

There are two issues here: experimental validity and sample generalizability. In the dialogue, Phil questions whether horn blasting is a credible measure of aggression. This is the question of **validity**: whether the results of an experiment provide a good basis for generalizing to real-world behavior.

It should be noted that the problem of generalizability is not eliminated by randomly assigning the sample subjects into the experimental and control groups. Such random assignments ensure that if there are *statistically significant differences* at the end of the experiment, it is unlikely that these differences were due to chance. But such a procedure does not provide a mathematical basis for inferring from these results to the population at large. One can argue that the sample chosen was a good sample for generalizing, but this is not the same as a statistically based inference.

An experiment is said to have **validity** if the results of an experiment provide a good basis for generalizing to real-world behavior.

Many psychological experiments are based on studies of the convenient sample of college undergraduate students; obviously these samples are neither random nor even plausibly representative of the larger population. In most of these studies, the researchers even fail to indicate what they take to be the target population. Is the target population undergraduates? Undergraduates at their university? Or are the results meant to be a basis for making claims about the population of human beings in general (as is often implied)? Numerous studies of differing groups, including cross-cultural studies, can enhance the generalizability of experimental results.

Order of Cause and Effect

Observational studies provide weak support for a causal claim when we cannot determine whether the supposed cause actually precedes the effect. When doing observational studies of the effect of a factor (such as playing video games) on the attitudes and behavior of the participants, it is often difficult to determine whether the factor of interest (the possible cause) preceded the effect.

Social Causation

Many explanations in sociology and other related disciplines are based on the view that some aspects of human behavior can best be understood by studying the society in which they occur. From this perspective, an individual's or a group's behavior is best explained by reference to the social environment in which it takes place. Consider the following explanations of someone being unemployed. If we ask why a particular person, say John, is poor and unemployed, we might focus on his personal characteristics, such as his lack of skills, or his addiction to television, perhaps even his poor childhood upbringing. In other words, we could offer an explanation of his situation in terms of facts about him.

But if the rate of unemployment rises in society due to an economic downturn, from 5 percent to 8 percent, we know that the additional 3 percent are unemployed, not because they have bad habits, a slothful personality, or an unfortunate childhood but because they got caught in an economic downturn. So if John is laid off at work and cannot get another job because there are now so many newly laid-off people seeking work, the explanation for his unemployment is social, not personal. These two explanatory perspectives (explanation based on facts about the individual vs. explanation in terms of greater social factors) influence which discipline we look to for explanations (psychology, sociology, or economics).⁹

Prediction

As in all sciences, explanations of human behavior are established through argument to the best explanation. If an explanation leads to successful predictions, that is a powerful argument for it being the best explanation. But prediction often plays a smaller role in the verification of claims in the social sciences than in the natural sciences. The great complexity of factors influencing human behavior and the fact of human self-consciousness and free will make prediction of human behavior much more difficult than the prediction of natural phenomena. This is one reason that claims in the social sciences are generally more uncertain and tend not to be supported by the same level of consensus that we find in the natural sciences.

The Explanatory and Causal Role of Meaning

Understanding human behavior means that we are dealing with phenomena in which meaning is crucial to explanation. The explanation of why McGregor insulted Ali at the public meeting depends first on the identification of the remark as an insult. The power of words is not physical. What makes words causally effective is their meaning. As a result, any study of humans cannot be merely a study of physical causes. Meaning, belief, and intention must all play a crucial role in an adequate explanation of human behavior. These are very different kinds of explanatory concepts than concepts used in the natural sciences, such as force, which do not require the object acted upon to have any understanding of what is happening.

**Apply Your
Understanding
Exercises 4, 5**

Considerations for Evaluating Causal Claims in Social Science

- generalizability
- order of cause and effect
- social causation
- prediction
- explanatory and causal role of meaning

Studying Human Nature

In this section, we take a more multidisciplinary approach to looking at research. What is particularly interesting about studying human nature is that research from a wide range of disciplines is relevant and much of it is convergent.

The issue in question is one of the perennial questions about human behavior: To what extent do humans have an inborn nature, and to what extent are we products of our environment and personal history? This debate has frequently been described as the “nature/nurture debate.”

“Human Nature: Nasty or Nice?”

Ravi, Nancy, Winnie, Phil, and Juanita are assembled in the lounge later in the afternoon after Phil and Nancy’s discussion of video games.

Ravi: You know, when I heard about your research on the influence of violent video games, I couldn’t help thinking just how violent humans are. Look at the twentieth century—millions dying in wars and now all over the world people blowing each other up. Human beings are so nasty.

Nancy: I think you’re exaggerating. There are lots of good people out there. It’s society that messes them up. People don’t make wars; governments do.

Ravi: It's not just violence. People are so selfish. They steal your parking place; they butt ahead in line. And they're greedy. . . . Look at the last financial meltdown that ruined so many people. And the very people that ruined everybody still thought they should be paid millions—I mean millions.

Nancy: They're no different than lots of others. The whole capitalist system is built on greed and makes people incredibly greedy.

Phil: The financial meltdown was unfortunate, but as my father points out, if you want to see a real economic mess, look at the Russians or Chinese before they abandoned communism. They lived in a permanent economic crisis. That's because they didn't respect people's basic selfishness. If you want people to do things, you have to provide incentives.

Juanita: I think that's a gross exaggeration. People often do nice things for others; some even sacrifice their lives for others. Look at the doctors who work for *Médecins Sans Frontières* [Doctors without Borders].¹⁰ They could be working in wealthy countries and getting rich, but instead they're out there saving people's lives, working under awful conditions for virtually no financial reward. And look at the people who dedicate their lives to a spiritual quest. Humans have a lot of goodness if you give them a chance.

Ravi: Those are exceptions. Winnie, you're the one who claims to understand Darwin. Doesn't evolution show that it's all competition right back to the beginning and only the fittest have survived? So here we are—products of a long fight to survive. We're the meanest winners of the struggle.

Nancy: That's not Darwinism; that's social Darwinism.¹¹ We learned about that in our sociology classes. That's a view that a bunch of right wingers used to justify inequality and brutality at the beginning of the twentieth century. I don't know what Darwin would say, but it's pretty clear that people are shaped by their society and their family. That's why some people are selfish and why some societies are more selfish than others. Humans are products of their environment and their culture. They're not like animals driven by instincts.

Phil: I think that's pretty naïve. Look at sex and hunger. Those are animal urges that no one has to learn about and everyone has.

Nancy: Yes and no. Look at all the different foods that people eat. We wouldn't even think about eating dogs, for example, but in other cultures they're a delicacy. And look at all the different arrangements for marriage: single family, villages, harems. It's all social. What counts as being sexually attractive is clearly cultural. The focus on thinness in our culture is what drives some young women into anorexia. Anorexia proves that humans can even override whatever instinct they have for eating.

Phil: Are you saying that we're not really like other animals? That we're a kind of blank slate to be programmed by our parents and society?

Winnie: That seems pretty unscientific to me.

Actually Nancy is wrong. The social Darwinist view is a "should" claim, not a claim about how, in fact, natural selection works. It is the view that society should allow the weak to die off and reward the strong in order for society to progress. It did not come from Darwin.¹²



Phil: Of course, I agree that we're shaped by our upbringing at least to some extent. It's hard to completely deny that. But we still have a basic nature and that includes greed and selfishness. That's why the market economy works so well.

Nancy: There you go with that capitalist baloney again. Boy, you are living proof of how people can be programmed by their parents.

Phil: Hey, watch the ad hominem. Are we trying to have a reasonable discussion or what?

Nancy: Point taken.

Winnie: But instead of just debating, I think we should make an effort to clarify the issue.

Inquiry into Selfishness

What Is the Issue? What Kind of Claims or Judgments Are at Issue?

Winnie: There seems to me to be at least two issues: first, to what extent do humans have an inherited nature? Are we mainly a product of environment and conditioning, or do we have a basic nature in our genes like other animals? And second, if we have a "nature," what's it like? Are we basically selfish and aggressive, or are our instincts more social and kind like Juanita thinks?

Phil: I think we should take just one aspect of human behavior to look at. Why don't we look at selfishness?

Nancy: I'm good with that, but we need to also get clear on the concept of selfishness. Not everything everyone does for themselves is selfish. When I eat food and drink water, I'm not being selfish.

Ravi: Well, you could be. You could give the food away to the starving and save the water for others.

Nancy: Yeah, but then I'd be dead. Selfishness isn't just doing something for yourself; it's doing too much for yourself. Giving to the starving isn't just not being selfish; it's being really generous and kind. If what you mean by saying people are selfish is that they don't give away all their food and die, then I guess we're selfish. But that's a crazy meaning of selfishness. If we're going to use words like "selfish" and "generous," they have to have some meaning. Every act can't be selfish.

Ravi: So what is selfishness?

Nancy: We call people selfish when they ignore the needs of others when that's not appropriate. And selfish actions are actions that fall below the minimum that we would consider decent. Just like generous acts are those that are more than what decency requires.

Winnie: I agree with you about the idea of selfishness, but I don't see what you've proved. You seem to think that you can show humans aren't selfish by just making a few verbal distinctions. I don't think so. I think we should look into the science of this question and not just try to settle it on verbal grounds.

Ravi: Look, we are evolved from animals. Animals that look after themselves and their children are the ones that survive. Nice animals don't finish last—they simply don't survive.

Nancy: I think the distinctions I'm making are important, but I agree that there's also a scientific issue. I bet psychologists, sociologists, and biologists all have something to say about this. Why don't we go with our interests and each look into one discipline? I'd be willing to see what sociologists say about this issue.

Phil: I'm interested in looking at that as well. Why don't we work together?

Winnie: And I'd like to see what Darwin and others say from the evolutionary perspective.

Juanita: I think I'll look into the philosophical history of the issue. My guess is that this hasn't always been a scientific question, and I'm not sure it's a question that science can answer.

Ravi: I guess that leaves me to do psychology.

Phil: So we're all set. But are we clear on the issue? Is this it: "Are humans innately inclined to always act in their own self-interest?"

Winnie: That won't do because, even if people are self-interested, they may make a mistake and act against their self-interest—like investing in a stock scam.

Nancy: Well how's this: "Are humans innately inclined always to try to act in their own self-interest?"

Phil: That sounds pretty good.

Winnie: Yeah. It gets rid of the moralistic aspect of selfishness. It sounds like something that science might be able to address.

Juanita: I think that way of framing the issue misses the key thing about humans: we care about each other. We don't just act in the interest of others by accident like an animal might; we empathize.

Phil: You may be right, but I don't see how we can study what people are feeling scientifically.

Juanita: Well then, so much the worse for science.

Winnie: You'd be amazed at what science can do. Why don't we leave it an open question? The issue is whether people really do act in the interest of others, and if they do, what motivates them to do so?

Phil: Sounds good. Why don't we meet here again tomorrow—same time.

Nancy was right to object to the use of selfishness to describe all human behavior. What she was doing was **conceptual analysis**—clarifying our understanding of our concepts and getting clear on how we actually use the words that refer to them.

People sometimes bend the meaning of words outside their normal meaning without realizing that when they do that, the words they are using no longer refer to the same concept. “Selfish” and “selfishness” are obviously normative words. They are used to negatively describe someone or someone’s behavior and to distinguish it from non-selfish acceptable behavior. Any attempt to apply these words to all behavior or all people would require that the meaning of the words change. Such a change would also change their moral significance. Just as everyone cannot be tall, everyone cannot be selfish in our ordinary sense of the word. Of course, if you redefine “tall” as higher than ten inches, then indeed all adult humans are tall. But then the word “tall” would lose its meaning and would no longer be useful for distinguishing among people’s heights. Using “selfish” to describe all human behavior involves a similar kind of error.

Conceptual analysis involves clarifying our understanding of our concepts and getting clear on how we actually use the words that refer to them.

What is the Context of the Issue? Juanita, Ravi, Nancy, and Phil meet the next day to continue their discussion of human nature.

Juanita: Boy, have we ever got on to a big question! People have been debating this issue for millennia. But I did notice that until Darwin, it wasn’t seen as a scientific issue. There was a lot of speculation by a lot of philosophers. But everyone seems to be writing in reaction to Thomas Hobbes, who was writing after the English Civil War in the mid-1600s.

Ravi: What was his view?

Juanita: He had an idea that before governments, people lived in a “state of nature” that was pretty terrible; “nasty, brutish, and short” is his famous description. But actually he didn’t have a clue what the state of nature was really like. The idea of the

Rousseau and Hobbes on Human Nature

Thomas Hobbes, Leviathan, 1651

[The state of nature is that] . . . men live without other security, than what their own strength, and their own invention shall furnish them with all. In such condition, there is no place for Industry; because the fruit thereof is uncertain; and consequently no Culture of the Earth; no Navigation, nor use of the commodities that may be imported by Sea; no commodious Building; no Instruments of moving, and removing such things as require much force; no Knowledge of the face of the Earth; no account of Time; no Arts; no Letters; no Society; and which is worst of all, continuall feare, and danger of violent death; And the life of man, solitary, poore, nasty, brutish, and short.

Jean-Jacques Rousseau, Discourse on Inequality, 1754

The first man who, having fenced in a piece of land, said “This is mine,” and found people naïve enough to believe him, that man was the true founder of civil society. From how many crimes, wars, and murders, from how many horrors and misfortunes might not any one have saved mankind, by pulling up the stakes, or filling up the ditch, and crying to his fellows: Beware of listening to this impostor; you are undone if you once forget that the fruits of the earth belong to us all, and the earth itself to nobody.

state of nature was largely based on rumors and myths from early explorers. Anyway, Jean-Jacques Rousseau hated Hobbes' theory, and he had his own idea about the state of nature: he saw it as idyllic. Rousseau thought people were basically good and got messed up by civilization.

Nancy: I heard that Hobbes was some kind of fascist or something.

Juanita: Well, I'm no fan of Hobbes, but that's not really right. He felt that we needed a strong state to keep us from fighting with one another, so in that way he was very authoritarian. John Locke, a philosopher who was writing in the mid-1700s, took exception to Hobbes' view and defended democracy and freedom. He was sort of the intellectual godfather for the American Revolution.

Ravi: What was his view about human nature?

Juanita: He argued that people were basically a blank state. Locke was mostly interested in showing that people didn't have innate knowledge. But his idea has carried on as the view that basically humans have little or no "innate nature." In this view, we're totally a product of our environment. Anthropologists still tend to favor this view because they study a lot of different cultures and see just how differently people behave in those cultures.¹³

Phil: You sure can see where some contemporary ideas come from.

Winnie: Nice background, but it all sounds like just a lot of speculation, not science.

Juanita: True enough, but these views had enormous impact. In the middle of the nineteenth century, there was a great divide. On the one side was Darwin, who argued that there's a strong evolutionary factor in human behavior. He believed that people have evolved a social nature but that we are also naturally competitive. On the other side, there was Karl Marx and others who pushed the idea that it is society, not biology, that shapes human behavior. Both these points of view were all tied up with economics and politics. Darwin was influenced by the harsh "laissez-faire" capitalism of his day, which made him see how competition would lead to natural selection. Marx, on the other hand, was repulsed by capitalist society and the effect it had on people. In his view, the original hunter-gather societies were characterized by a kind of natural communism. So once humans were freed from the shackles of capitalism, they would presumably return to a fair and more cooperative way of living.

Winnie: Actually Darwin was quite a kind and generous person. Definitely not a social Darwinist. But he was influenced by Malthus, who thought that there would always be a large class of more or less starving poor—as soon as people had enough to eat, they would reproduce and again put pressure on the resources.

"Laissez-faire capitalism" refers to the economic theory that prosperity is best attained with the least amount of government restriction of the market. "Laissez-faire" means roughly "let it be." The early nineteenth century was characterized by widespread belief in a radical form of this doctrine (especially in England and the

United States) until the horrors of child labor and other injustices made it clear that the government needed to impose restrictions on the market if people were to benefit more generally. But the current neoliberalist view is basically the laissez-faire doctrine.

Juanita: The whole issue gets even more political in the twentieth century, when Darwin's theory was used to justify racism and eugenics. The Nazis claimed biological superiority over Jews and others and used it as a justification for their atrocities. This gave biological explanations of human behavior a really bad name.

Phil: But surely now we don't associate evolution with racism.

Juanita: Well, it looks like it's a very recent change if we don't. In the 1960s, a very eminent biologist, E. O. Wilson, argued that biological explanations could explain all behavior and that there was a large amount of human behavior that could be explained genetically. He called his view "sociobiology," and was there ever a strong reaction against it! People suspected that advocates of sociobiology were a bunch of reactionaries or racists trying to bring back social Darwinism or worse. But that suspicion seems to have passed, and there's now considerable effort being made to explore the biological basis of human nature. I know Winnie's going to give us the Darwinian view, so I'll leave it at that.

Darwin on Generosity

Charles Darwin, The Descent of Man, 1882

The aid which we feel impelled to give to the helpless is mainly an incidental result of the instinct of sympathy, which was originally acquired as part of the social instincts, but subsequently rendered, in the manner previously indicated, more tender and more widely diffused. Nor could we check our sympathy, even at the urging of hard reason, without deterioration in the

noblest part of our nature. The surgeon may harden himself whilst performing an operation, for he knows that he is acting for the good of his patient; but if we were intentionally to neglect the weak and helpless, it could only be for a contingent benefit, with an overwhelming present evil. . . . We must therefore bear the undoubtedly bad effects of the weak surviving and propagating their kind.

What Do You Think?

What are your own views about human nature? Are they based simply on common beliefs in your community or your own anecdotal evidence, or are they based on a consideration of the evidence?

Learning about the intellectual, social, political, and historical contexts in which an issue is situated can bring to light the assumptions and worldviews which lie behind various arguments. This is especially true concerning issues such as theories of human nature that have obvious political significance.

What this long history of the debate about human nature and selfishness teaches us is that these theories of human nature were tightly linked to differing political philosophies. We need to remember that just because a theory serves to justify certain political institutions does not mean that it is right or wrong. Proposals for political and economic arrangements need to accommodate the facts of human nature—assuming we can actually discover and verify those facts. But as we do our inquiry, we need to keep in mind the extent to which political points of view are likely to have influenced the science.

What Are the Relevant Reasons and Arguments on Various Sides of the Issue?

Winnie: That was great work, Juanita. When I started looking at this issue, I wasn't sure I could ever get the big picture. There's just so much material. The first thing I found out, though, is that we really didn't ask the right question from the biologist's point of view. Biologists don't talk about animals being selfish but rather about them being "altruistic." For them, altruistic behavior is behavior by an organism that benefits the recipient more than the actor. Darwin started the discussion when he tried to deal with worker ants, which were infertile and sacrificed for the ant hill. His theory was that individuals that contributed to a successful group would be selected for by natural selection. He made the same argument when it came to explaining why humans were moral and cooperative: it was good for the group, which in turn helped the individuals.

Juanita: So Darwin believed that we evolved to be cooperative?

Winnie: Sort of. He believed that we are altruistic and that, while this looks like an argument against his theory, if you consider groups, it isn't. Groups that had more

Darwin on Group Selection

Charles Darwin, *The Descent of Man*, 1882

It must not be forgotten that although a high standard of morality gives but a slight or no advantage to an individual man and his children over the other men

in his tribe, yet that an advancement of morality and an increase in the number of well-endowed men will certainly give an immense advantage of one tribe over another.

mutually supportive members could out-reproduce less cooperative groups. So on the basis of group selection, Darwin thought altruism could be produced by natural selection operating on groups.

Nancy: That makes a lot of sense to me. Societies that are more cooperative seem a lot more likely to survive than those characterized by selfishness and competition.

Winnie: I don't want to get too complicated, but most biologists reject Darwin's theory. They feel that selfish individuals inside the group would have an advantage over the others, so that inevitably they would dominate and eliminate the cooperators and, of course, the group's effectiveness.

The problem for Darwin of explaining altruism (especially in ants!) was a purely scientific question. While some took Darwin's theory to mean that all creatures must evolve to act only in their self-interest, Darwin saw that, as a matter of fact, such a theory would not fit the facts both of animal societies and human behavior. But the problem of how to explain self-sacrificing behavior by ants and other animals remained a problem for biology well into the twentieth century. Despite Darwin's view, it was widely believed that the theory of natural selection entailed the view that altruistic organisms would tend to die off.

Winnie: Since the 60s, two other theories have been developed to explain human altruism and sociality. They're based on mathematical modeling and computer simulation of what happens when creatures reproduce over time. One theory is kin selection. Basically, the idea is that when you help your relatives, say your sister, you are helping half of your genes make it to the next generation. So this kind of helping does give a reproductive advantage to your genes, though not to you. This would also explain why people are so partial to family. The other theory is reciprocal altruism, which points out that if the creatures involved can remember who helped them and reciprocate, it could be in both creatures' interest to help one another, even if there were no shared genes. That's why predator fish don't eat certain smaller fish who clean their teeth! So both Darwin and contemporary biologists all believe in the biological origin of altruism, even if they disagree a bit about how it works.

Juanita: OK. So we have a Darwinian explanation of a kind of animal altruism. But that doesn't really deal with true altruism—where people help others because they care about them. Darwinism makes it all sound pretty self-serving, or at least gene serving.

Juanita's observation is true but may miss the relationship between biological theories and human behavior. We may have evolved to have "natural inclinations" to help others (or at least kin), but that does not mean that we help others intentionally to promote our genes. We can help others because we care about them or because we have moral feelings or sympathy. But our capacity for these feelings may be rooted in a background that selected kin-helping or group-helping genes, perhaps even in pre-human species from which we descended.

Ravi: Well, psychologists do talk about what they call “psychological altruism.” It’s real altruism and includes not only acting in a way that benefits others but doing so with the genuine intention to help others, not to get some reward. I learned that up until the 1980s many, perhaps most, social scientists believed that underlying all altruistic actions were egoistic motives.¹⁴ I couldn’t figure out exactly what caused the change, but some authors I read call it a “paradigm shift.” The central question now is whether altruism is primarily innate (part of our genetic heritage) or something that’s produced by parents and society. The answer seems to be a bit of both. Genes generally equip us to become altruistic, but if we have a really miserable childhood, that impulse might not develop. One analogy that everyone uses is language. Humans have an innate ability to learn language, but whether we learn a language and, of course, what language we learn depends on the environment. And the extent to which we develop language also depends on our early environment. We all know how hard it is to learn a second language at our age. So by analogy with language, the capacity for altruism and empathy is innate, but how it develops depends on our experience.

Nancy: Sociologists don’t seem as concerned about the innateness issue since they’ve traditionally focused on the influence of social norms on behavior. But the idea that altruism is totally social or based solely on parental influence has more or less been abandoned. Many sociologists have noticed that much of human generosity involves giving to people who don’t know you and who you’ll never meet. This kind of giving doesn’t appear to fit any of the biological models, so something else must be going on.

Ravi: How is this science? Anyone can observe that people help others. What makes this scientific?

Phil: It can be scientific in a number of ways. Social psychologists can run experiments and see under what conditions people act altruistically. Sociologists have identified some social conditions that tend to discourage concern for others and also conditions that tend (to a lesser extent) to encourage selflessness. One of the more interesting experiments is something called the “ultimatum game.” The results appear to refute the claim that all human actions are self-interested.

Juanita: It’s funny how games keep coming up in social science research.

Phil: True, but not surprising. To run social science experiments, you have to get people to do stuff that is similar to real life but not too real. Games are like that. You have a life and death struggle, and then you shake hands and go and have a beer.

Ravi: So what about this ultimatum experiment?

Nancy: It goes like this: You give one person (the proposer) a sum of money, \$10 for example, and ask her how she would like to allocate this money (in units of \$1) between herself and another person in another room, whom she’ll never meet. The other person (the responder) can accept the proposed division, and they both go home with some money, or the responder can reject it and no one gets any money.¹⁵

Ravi: Obviously a responder will never reject any amount. Whatever they get, they’re ahead of the game.

Nancy: Well, that shows you've been taking Economics 100. That's what economic theory says people should and would do. But they don't.

Winnie: So what usually happens?

Nancy: On average, people offer about 50 percent, and responders reject any offer under 20 percent.

Ravi: That's really interesting. But what does it show?

Nancy: That as usual, economists' psychological theories are wrong.

Ravi: And as usual, you are fond of pointing that out. But what does it show?

Juanita: It seems to me that it shows that people have a natural tendency toward fairness and an intolerance of being treated unfairly. Why else would the proposer share the money 50-50?

Nancy: That's what I thought at first. And when I read that they get the same results in Europe, Asia, and North America, I was impressed. Psychology seemed to be tapping into a universal human characteristic and proving it by doing cross-cultural studies, not just studies of North American college students.

Ravi: I think I hear a "but" coming.

Nancy: You're right. One group of psychologists decided to try the game in really different cultures, and they showed that the offers and responses of people from these other cultures differed dramatically. The key factor appeared to be the extent to which people in the other cultures were integrated into a market economy. When they were, people tended to offer around 50 percent. When they weren't integrated into a market economy, the results depended on how "gifts" were viewed. In one culture, for example, to receive a gift kind of puts the giver in a superior position to the recipient. In that culture, proposers tended to make what we would call generous offers and responders rejected them.¹⁶

The ultimatum game illustrates a very successful use of experimentation in social science research. It addresses many of the important considerations involved in such research.

Generalizability and Experimentation

As we noted above, there are two issues concerning generalizability from experiments:

1. Are the experiments valid? That is, do they provide a good basis for generalizing to real-world behavior?
2. Do the samples provide a good basis for generalizing to the target population?

By doing studies in different cultures, the researchers were able to make a cogent case that fairness was a common (if not universal) human concern but that it was also significantly based on culture.

Argument to the Best Explanation

The results also showed that an egoistic account of motivation was not the best explanation for these experimental results—and probably many other phenomena. By refuting the predictions based on the egoistic theory, in these and other experiments, researchers were able to show that the egoism explanation was not adequate. The experiment shows that experiments in the social sciences are used in quite similar ways as experimentation in the natural sciences. It also demonstrates that such experiments can result in the kind of convergence of views that we usually find in the natural sciences.

The Role of Meaning

The results of the ultimatum game illustrate how meaning plays a crucial role in explanations in the social sciences. It was the meaning of the money and not the amount of the money offered (not the actual quantity) that influenced the responder's decision. If people thought the amount offered was unfair or was a put-down, they rejected it.

Ravi: So generosity and fairness is all about culture?

Phil: Not quite. Culture has a great influence, but so do other factors. There's another cool experiment called the "dictator game." In this game, "dictators" are given money and they can share it with another person. This time the responder has no say but just gets whatever the dictator gives. Now you would think dictators would just keep all the money for themselves. That's certainly what I expected. And in truly anonymous situations, the dictators, who were all college students, do just that. So that seems to confirm that there is some basic selfish tendency.

Nancy: But if they think they're being observed or if they're given some information about the recipient, they usually give about 50 percent away. That really struck me. It seems to me that this shows that empathy, based on some sense of the other person, really does affect people's behavior.

Ravi: College students, anyway.

Nancy: Point taken.

How Do We Comparatively Evaluate the Various Reasons and Arguments to Reach a Reasoned Judgment?

Phil: So what are we to make of all of this?

Winnie: It sure looks like there's a cross-disciplinary consensus that people are motivated not only by self-interest but also by fairness and a concern for others. How this all plays out depends on one's culture and childhood experiences.

Nancy: Hardly surprising stuff but contrary to what economists have been assuming for years. It shows why you just can't build a theory like economics on a bunch of dubious assumptions about what really motivates people. Our feelings for others and our cultural context obviously influence people's behavior.

Nancy is attacking the standard view of human behavior that has been the basis for economic theorizing. This view, often called the “*homo economicus*” view, assumes that humans are always motivated by rational self-interest. On this assumption, economists were able to work out quite complex models of economic behavior. Recent work in what is called “behavioral economics,” which Nancy cited in the dialogue, has undermined the credibility of this view. Some economists are now working on revised theories using information from such experiments as the ultimatum game.¹⁷ As we noted in Chapter 11, behavioral economists and psychologists are also studying cognitive biases that help explain why most people do not behave as the classic model of *homo economicus* assumes.¹⁸

Ravi: So here’s how I see what we’ve learned. Blank slate and total social determinism are both out. Looking at animals and mathematical models shows that we have clearly inherited tendencies to help others. But these innate tendencies will obviously be influenced by our culture and the presence of others.

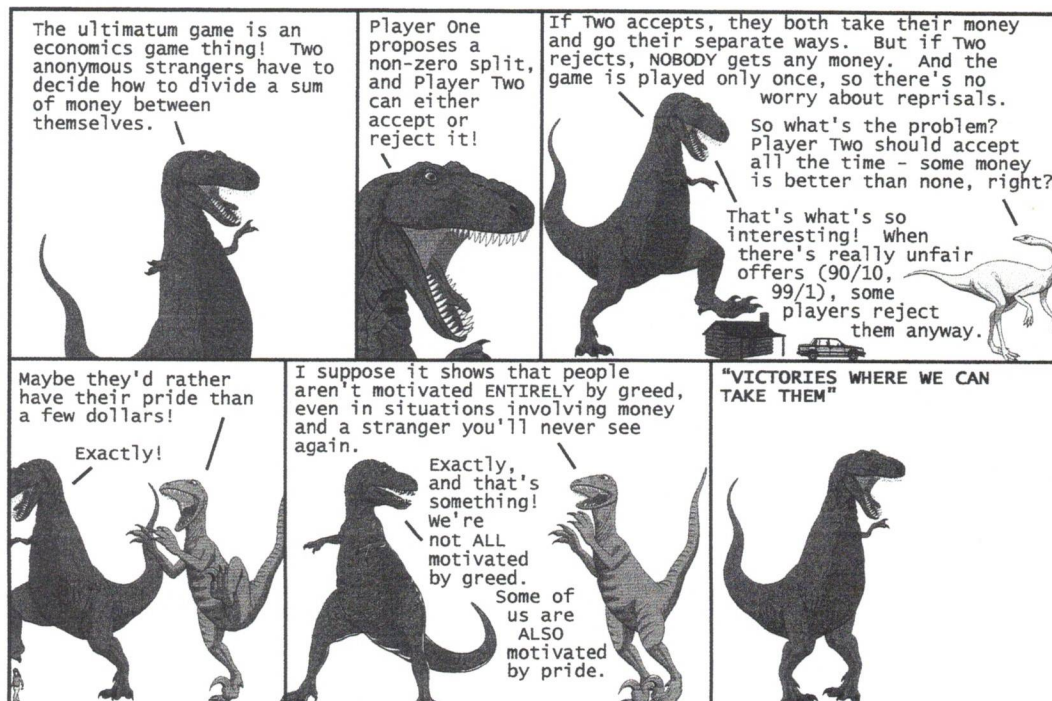
Nancy: None of this is too surprising except that this was all widely denied in certain disciplines until just recently.

Winnie: I guess that’s scientific progress.

Nancy: One thing that follows is that the free market theory based on egoistic assumptions needs revision.

Winnie: Darwin triumphs again!

Juanita: And believing that people are basically good isn’t so old-fashioned or even “new-agey.” It’s just good science!



Further Reflections on the Study of Human Behavior

What more have we learned about studying human behavior as a result of the inquiry into innateness and human selfishness?

Need for Conceptual Analysis

Getting clear on an issue sometimes requires some conceptual analysis, which can avoid some obvious misunderstandings and misleading claims. When we are studying human behavior, we need to be careful to sort out the evaluative issues from the factual ones and to make sure that words are not being used in odd and misleading ways. Studying whether people are selfish is not a purely factual inquiry.

Influence of Political Issues

This topic area, as many other areas in the social sciences, is loaded with political issues which have consistently influenced research. It should also be noted that this works both ways: theories of human nature, whether or not they are scientifically based, have a significant influence on people's political attitudes. As we saw in the students' discussion of the history of this issue, beliefs about human nature have been the basis for differing political views, and they still are. There are basic political orientations that characterize much political debate (as we saw in Chapter 8), and these positions tend to be based on differing views of human nature. Conservatives believe that individuals are fundamentally autonomous, and, like Hobbes, they see human nature as fundamentally fixed. Economic conservatives in particular see self-interest as an overwhelming and unchangeable human tendency. On the other hand, contemporary liberals see individual personalities and life outcomes as strongly influenced by the social environment. Thus they would tend to believe that one's propensity to be generous and help others can be significantly enhanced by the proper social environment.

Use of Mathematical Models

Mathematical models can sometime play a key role in understanding in the biological/psychological sciences, as they can in the physical sciences.

Cross-Cultural Experimentation

Despite their many challenges, experiments can play an important role in social science research, but cross-cultural studies are necessary to support any broad psychological generalization.

Need for Fallibilistic Approach

Research into the biological basis of human behavior is still quite new and controversial. There has been a paradigm shift in this area in the past thirty years. So we should remember to be fallibilistic in our acceptance of the current theories.

What Do You Think?

How much confidence do you think our inquirers should have based on their research?

Claim: Humans are innately inclined to always try to act in their self-interest		
Argument Summary	Objections	Evaluation
<i>Pro</i>		
Common sense	Politically influenced and anecdotal	Goes both ways on this question and is an unreliable source
Economic theory assumes that people act only in their perceived rational self-interest.	This assumption has proved theoretically useful but is not grounded in psychological research.	Economics has created powerful theoretical structures based on this assumption, but it is arguable that various failures of application are a result of using this as a basis for prediction.
Natural selection seems to imply that only selfish organisms will survive and reproduce.	As Darwin and contemporary theorists note, natural selection does not preclude organisms being altruistic. There are a number of candidate explanations for the survival of "altruistic genes."	Egoism is no longer the consensus view in evolutionary theory.
<i>Con</i>		
Anecdotal evidence of generosity and altruism is available.	Anecdotal evidence is not scientific, and, as stated above, common sense goes both ways on this issue.	This is an important common sense observation, but common sense is weak if there is strong scientific evidence to the contrary.
Experimental evidence in ultimatum and dictator games shows that people's decisions are influenced by a variety of non-egoistic considerations, including fairness, pride, and concern for others.	These are recent experiments and may be refuted later.	There is now considerable cross-disciplinary consensus resulting from these experiments, which have considerable generalizability because of the variety of subjects and cultures studied.

As with many judgments about explanations of human behavior, the scientific evidence must also contend with popular belief, which establishes the burden of proof. But on this question of innate human selfishness, common sense has gone two ways. We have all heard people praised for their genuine generosity and selfless courage. At the same time, there is a widespread view in our culture that all human activity is self-motivated and even selfish. It seems likely that the widespread acceptance of this latter view is the result of the influence of the market society in which we live. This should remind us that our “common sense” psychological views are also a product of the social environment and cannot be taken as necessarily providing genuine insights into the nature of human behavior.

Making evaluations of claims about human nature involves assessing a complex mix of intuition, popular understanding, and scientific efforts from a number of disciplines. Despite this complexity, in the case of human selfishness, there actually seems to be considerable convergence from conceptual analysis to observational and experimental studies. The significant consensus about altruism suggests that we could make a reasonably confident judgment on this view. But the fact that the acceptance of altruistic behavior as scientifically grounded is relatively recent may temper our confident judgment.

**Apply Your
Understanding
Exercises 6, 7**

Check Your Understanding

- In the social sciences, a “sample” is a sample of what?
- What are the two basic approaches to studying human behavior?
- What are the two basic kinds of observational studies?
- What is the role of a correlation in establishing a causal relationship?
- What is the gold standard form of experimental research?
- What does “statistically significant” mean?
- What is a sample of convenience?
- What is a meta-analysis?
- What evidence is sufficient to infer a causal relationship?
- What is a causal factor? How does it differ from a risk factor?
- What are the five special considerations for evaluating claims in the social sciences?
- What special considerations are involved in assessing experimental evidence in the social sciences?
- What is conceptual analysis?