

## Feb 11 Qualitative Interviews

In general, an interview is a type of conversation. Of course, people have been talking with each other ever since they were people. But an interview differs from casual conversation, because one person has a number of questions to ask of the other. Basically, in an interview, one person is trying to get information from the other person. Interview can be more or less standardized. If it's highly standardized, you can turn the answers into numbers for statistical analysis. But you can have an interview that's isn't fully standardized: (1) mostly open ended questions--let a person answer in his or her own words, rather than just pick from a number of possible responses (2) usually no set order to questions--try to get to them all, but don't have to go through in a standard order (3) questions usually blur together to some extent--people can go back and change or elaborate what they said before (4) interviewer has an active role--tries to draw them out, may ask for more detail, explanations of apparent inconsistencies, etc. Called a "qualitative interview" because the sort of information that you get is suited to qualitative analysis rather than quantitative. Note that if you just ask open-ended questions, people don't necessarily tell you much--some people will start talking right off, but a lot of people will just give a brief answer. So a large part of an interviewer's job is to get people started by following up, or taking a different angle if the original approach doesn't seem to be working.

Major reasons to do them: "make sense" of peoples' point of view. This goal can be illustrated by titles like: "Political Ideology: Why the American common man believes what he does"--or "Hard Choices: How women decide about work, career, and motherhood." People usually start out with an interest in a general area--they've wondered about it and want to find out more and gradually develop their ideas. Sometimes there's a problem--something that puzzles the investigator: e. g., why ordinary people seem to accept a high degree of inequality. With qualitative interviews you can ask people to explain why they think a certain way, or ask them to think out loud about a question and come to your own conclusions.

Another advantage is that you can get sorts of detail that you can't easily get with standard surveys. A lot of things aren't easily reduced to a standard question with fixed choices, especially if you don't know a lot to start with. For example, if I were investigating teachers, medical personnel, etc. about when they would report a case of possible child abuse, it would be hard to think of good fixed choice questions. Maybe I could if I knew more about the topic, but I don't. However, I could start by asking "how do you decide?" then maybe asking about examples of particular cases.

Also are a number of practical advantages of approach:

1. inexpensive--only cost is the researcher's time. Don't need any special equipment or resources.
2. flexible: can change your focus as you go along and discover new things; this is pretty much impossible with experiments and surveys, as we'll discuss later.
3. people find results interesting to read (if done well). If people talk about things in their own words, you get sense of them as people, which you don't usually get with other methods.

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There are also some limitations:

1. Hard to get representative sample--limited to a small area, because it almost has to be done face-to-face. Also, many people who will participate in a standard survey won't have the time or patience to participate in intensive interviews.
2. Doesn't tell you much about differences between groups of people.

Since each interview takes a long time, you can't cover many people. Also, the interview can't really be standardized, so you can't farm out the work to others. So typical numbers of people in an intensive interview study might be a few dozen.

This doesn't permit much statistical analysis. At most, you can do a few comparisons of basic groups. E. g., you might talk to 20 men about abortion, and 20 women, and compare their views. But it would be unrealistic to take a sample of 40 and say that you were going to look at the effects of age, race, sex, religion, education, marital status, etc. as influences on opinions about abortion. If that's what you want to do, you need a standard survey--basically, serious statistical analysis usually needs large samples. In fact, intensive interview studies often use pretty homogeneous groups because that makes it easier to identify a one (or a few) typical patterns. E. g., the study of "the American common man" study was all men, all white, almost all middle-class or lower-middle class, mostly Catholic.

Therefore, the focus in intensive interviewing is usually not on specific opinions--"75% of people believe....." Can't make this sort of statement with much confidence given the small and unrepresentative samples, and lack of quantitative measurements. The focus is more on a general "world-view": how people think about things, what arguments they make, what they regard as important or relevant. If done well, provides a sense of subjective understanding: If we want to get to know a person in everyday life, we don't give them a questionnaire--we talk to them.

Often there would be some attempt at classifying people--for example, to say that there were several basic ways of looking at a topic. But in that case, estimates of exactly how many people fall into each group are very rough.

Observation (fieldwork, ethnography): Basic method: go into a natural setting, spend time there, write down as much as you can about what you saw and heard, then use those notes to construct a more polished and focused account. May use technology like tape recorders or cameras, but the basic thing is just one's eyes and ears. Sometimes people take notes while something happens, especially if they can slip away and do it without attracting attention. Other times, this would seem unnatural or attract attention, so you try to remember as much as you can and write it down later. The exact method varies depending on the tastes of the investigator and the nature of the group being studied.

Can think of methods as a continuum; most natural setting to most artificial or controlled. An experiment that takes place in a laboratory is very artificial. Survey is pretty artificial, because it is so structured. Intensive interview is more natural, because it's more like an ordinary conversation, but it's still a lot different from everyday life: usually, people don't have extended conversations exploring their thoughts on some subject. Observation--looks at people in a natural setting. Some variation in the role of the investigator--may be more or less active--but basically the investigator has much less control over the situation than in the other methods.

Why use observation?

1. Artificial situation has the advantage that you can focus on the factors you're interested in. Other factors are eliminated or controlled. But the disadvantage is that people may not act the same way in that situation as they do in the "real world."

2. Lets you focus on behavior, not on what people say (that behavior may also include what people say, but you hear it as it happens naturally). There is always a question in the social sciences about how closely the beliefs that people express correspond with what they do. For example, a person may say he's completely unprejudiced, and may be sincere. But does he actually treat everyone in the same way in everyday interaction?

3. Lets you discover things that are otherwise lost or overlooked. We only remember a small fraction of what we do and see. E. g., the details of how people interact with each other. Field researchers often focus in great detail on topics that people might regard as trivial. But possible that these "trivial" everyday issues have significant. E. g., small talk before getting down to business. That may be important in getting people to feel comfortable with each other. So if people's styles of opening conversations don't fit, that might interfere with ability to get agreement, or exchange information, or form lasting friendships.

## Feb 23 Observation

1. Natural setting
2. Primarily involves behavior, not what people say
3. Can notice details that would otherwise be missed

Relates to the issue of after school activities discussed in the reading. This is something that most people already sort of know about. In fact, many people feel like they know a lot about the issue from personal experience. But what people normally remember is just a small fraction of what they saw to start with, and may be a distorted representation. E. g., something like how often parents watching the games get excited and yell at players, coaches, referees. You can't have much confidence in a judgment that's just someone's impression. If someone systematically tries to observe and keep count, that's more reliable information.

4. Practical issue: may be the only way to get access to some small or hard-to-reach groups. Need to win their trust before you can conduct research on them. Only way to win their trust is to spend substantial amount of time with them, so that they see from experience that you're all right.

Data collection and analysis usually occur together in observation. This is in contrast to methods like surveys and experiments, where usually the data are collected first, and then the analysis is done separately afterwards. Writing and review of notes, which you do on a day-to-day basis, can suggest new things to look for. Can't usually have a formal sampling procedure, but you can make a special effort to look for certain kinds of things. Especially useful to look for kinds of things that might contradict the generalizations that you start to form. Guard against natural tendency to remember things that fit your ideas, pass over the ones that don't.

Practical issues: Participant observer, complete participant, complete observer. Probably some form of the participant observer role is most common. Has the advantage that you can make use a range of ways of getting information: direct observation, asking questions individual or group settings, looking at official records if any exist. You can also discuss your interpretations with people, maybe get confirmation, alternative perspectives, or additional information.

From an ethical point of view, it seems the most honest to many researchers: you're not concealing anything from the people being studied.

For practical reasons, complete observer would be used mostly where you just need to get basic information. Not really necessary to interact with people. For example, the study described where people were driven around Chicago and taped and observed streets in different neighborhoods. The idea was to get a measurement of how neighborhoods differed in their "feel." Is there a lot of activity on the streets or not much? If there are people in the streets, what are they doing? Walking like they have a purpose, strolling around, hanging out in groups? What sort of people are out there? What sort of buildings are in the neighborhood? These are all things that are out on the surface, and which people notice when they go into a neighborhood. So they were just trying to do this more systematically and objectively.

Complete participant would also be more practical in some situations. For example, a person seeking to learn what it's like to work in an unskilled job. The employer is unlikely to be willing to cooperate if you tell them upfront what you're doing. Even if you say you'd like to be hired and are willing to actually do the work,

they probably won't accept. And in any case, your experience with your co-workers and customers is likely to be affected if they know that you're doing research. So in order to do the study, it's necessary to go "undercover." That will often mean lying about your background or at least concealing some information. Whether this is ethical is partly a matter of personal judgment, partly a matter of what you're doing.

For example, working on a job isn't a close personal relationship. Hence, if someone wants to take a job at McDonald's to see what it's like, I'd say that even if you used deception to get the job, if you gave the employer a fair days work, there's nothing really wrong. If it's something that does involve forming personal ties with people, then many researchers would feel more concern. For example, if someone pretended to be a client with a dating service in order to find out how it worked, what sort of people used it and why, etc., that would seem unethical to me. As a practical matter, if your cover is blown, people are likely to be upset--you'll probably have to terminate your study and you may actually face retaliation. Sometimes people will start out as a complete participant but gradually reveal what they're doing if it seems safe to do so.

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Observation, description, and explanation: ethnography is clearly good for description. What about explanation, or saying why things happen? This is a controversial question, and the way people answer it depends on what they mean by explanation.

One view of explanation--discovery of laws. A law is a statement that if one thing happens (or one condition holds) another thing will happen. In the social sciences, it would usually be "is more likely" to happen, rather than "is certain" to happen.

The discovery has two parts--proposing a law and verifying the proposed law. The proposed law could be something you thought of based on a theory, or something you noticed that seemed to be true.

Verifying or confirming--systematically gathering data and comparing results to expectations.

People who adopt this view of explanation generally hold that observation is useful for getting ideas--proposing laws--but not very useful for confirming. For confirmation, you need other techniques like experiments or surveys. Reasons--(1) want to have representative sample, or at least a wide-ranging sample. A "law" that applies only in some narrow conditions isn't much of a law. With observation, you are generally limited to small, non-representative samples--for example, after-school activities in one particular town. (2) important to have information in a form that's really comparable, so that your interpretation can't be affected by unconscious bias. Since observation generally depends a lot on the observer, and doesn't give measurements in standardized form, not that good for this purpose. Techniques like surveys would be better.

So, for example, the hypothesis proposed in the book about the "narrowing" of activities as children get older could be tested by a survey--random samples of children at different ages throughout the country. Give them a list of activities, ask them to check off how many they participate in, maybe ask them how much time they spend on each. Then you compare the patterns at different ages.

A different idea of explanation (idiographic): narrative or story of how one thing leads to another. This would be explanation in the sense that historians or biographers might use it. Focus is on the order of events, on identifying things that might be seen as turning points or crossroads, and on the individual's understanding of the situation. Could think of it as something like driving directions, of how you get from one place to another.

What do we learn from this approach to explanation? A disadvantage is that it doesn't usually let you make clear predictions. But it may be more satisfying as an explanation. The law-based approach just tells you that that something about being male, or young or whatever,... that makes you more likely to do something. That doesn't really give you a sense of knowing why there's a connection. Telling the story makes sense of the action, lets you understand why someone might or might not do it.

Idiographic approach, combined with detailed observation, is particularly useful in helping us to understand puzzling behavior. For example, becoming a suicide bomber. Or even something more ordinary, like adopting a belief that's not widely accepted in your society--for example, in modern American society, belief in alien

abductions, magic, or monarchy as a form of government. Our initial reaction to this kind of thing is often to just say that this is crazy. Even if you can make some statistical generalization about the sorts of people who are more likely to act this way or have this belief, it may still seem crazy. But sometimes even strange or horrifying behavior can usually be made understandable if you break it down into a series of steps. As people go on, they develop new ways of thinking about the situation that make the next steps seem more reasonable. In fact, sociologists usually start with the assumption that pretty much all behavior is reasonable if you take a person's own point of view. Doesn't necessarily mean that it's all equally good. However, social scientists tend to be more reluctant to condemn people, in the sense of saying "this person is a monster" or "this person is just crazy." Can see that observation and/or intensive interview would be better suited to idiographic explanation than would survey research or the analysis of secondary data.

## Feb 27 Focus Groups

Focus groups or group interviews: originated in academic research about 50 years ago, but didn't really catch on. However, the idea was picked up by market researchers and political consultants, and is extensively used in those areas. Has recently started to become more popular for sociological research.

Basic ingredients: number of people (usually about 6-12) gathered in one place. Moderator poses a series of questions, lets people talk about them, but tries to keep the conversation more or less on track. So it's less structured than a standard survey, gives people more time to explain their responses, argue with each other, possibly change their minds. Usually there's not much effort to get a representative sample in a focus group. In fact, the groups are usually somewhat homogeneous--idea is that people will feel more comfortable talking with people similar to themselves. If you have people who are too different, everyone might be excessively polite in order to avoid giving offense, or the conversation might be dominated by high status people.

Points in favor: (1) like intensive interviews, it gives people a chance to express themselves in their own way, not reduce their views to a particular pre-set option.

E. g., in a focus group dealing with politics, you might ask people to talk about what the terms "liberal" and "conservative" mean to them before, or instead of just asking them to rate themselves as liberal or conservative.

(2) unlike one-on-one qualitative interviews, they include interaction among people; people may change their minds, elaborate their ideas, or defend their position depending on what others say. This is similar to the way opinions develop in real life. People don't just start with an opinion and stick to it forever (at least, not everyone does). They talk to each other and gradually make up their minds, or sometimes get persuaded to change their minds.

This feature explains the popularity of focus groups in marketing research and in political consulting. In these cases, you don't just want to know what opinions are like now, but how they'll develop. E. g., polls show that John Kerry is pretty popular among the voters. But will people continue to support him if various criticisms are raised? Will his supporters be able to convince other people when they give their arguments for him? What sorts of arguments for and against him will be more or less effective? If you were advising him or one of his opponents, you would want to know the answer to these questions, because they'd help you plan a strategy. E. g., if you were advising him, you'd want to figure out what the most powerful arguments against him would be and how you could counter them.

One way to find out would be to observe people in a natural setting and see how things develop over time. But that wouldn't help you as an advisor, because you need to figure things out right now. It doesn't do any good to look back after the election and say you now see what you should have done.

A focus group speeds things up by putting people in an artificial situation where they concentrate on the issue you're interested in--in this case, the presidential election. So you can make a guess as to how things might develop. You can also find out about the effects of different strategies. For example, show the group a campaign ad that you're working on and see if it makes a difference. Better yet, do a study where you show different ads to different focus groups and see how they react.

Another positive thing about focus groups is that they give a sense of the intensity of opinions--how excited people get, which topics cause a lot of debate, which ones don't get much reaction. You can ask about this sort of thing in a survey or a qualitative interview, but with a focus group you can actually see it.

Limitations (1) as with intensive interviews, results are difficult to summarize or present in a standard form. You can't print the unedited transcripts of the group's session, so someone has to summarize them, pick out quotations that seem particularly interesting, mention any disagreement or qualifications. A lot will depend on who is doing this. Even if they are trying to be honest and not let their own opinions have any effect, a statement like "the consensus in the group was" is necessarily more open to question than a statement like "the percent who answered 'Yes' to question one was ...."

(2) Can be influenced by the specific composition of the group. The moderator may steer things in a particular direction. But there may also be participants who tend to dominate the group by expertise or by having particularly strong opinions. Others may not agree with them, but may be reluctant to speak up. Or the others may really be convinced, at least for the moment, but you don't know if they might have gone another way in a different group.

(3) Can't normally get a random sample. Participation rates are relatively low, because they require a significant time commitment.

(4) Setting is artificial--in real life, discussion of most topics is casual and intermittent. Also, most discussion occurs between friends, acquaintances, and family members. So even though people form opinions by talking with each other, putting a bunch of strangers together and getting them to focus on a topic may not be a good model of the way that they talk to each other.

## March 1 Content Analysis

Basically content analysis involves converting material from a qualitative to a quantitative form. Usually texts, but pictures of various kinds (e. g., in advertisements), or music or movies, etc. Historians, literary critics, art critics, use this kind of material routinely. And after you've seen lot of it, you'll probably get some impressions about typical patterns, and changes and differences in those patterns. E. g., maybe you would say that popular novels came to contain more violence between 1930 and 1990.

Histories of literature would often contain statements like this.

But it's difficult to be certain about such claims, since people may differ in what they call violence, their memories may be selective, and the sample of novels that any person has read is probably not a representative one.

So the idea of content analysis is to systematically sample from some population, and to "code" the content according to some definite rules. E. g., you might define "popular" as a novel that appeared on the NY Times hardcover bestseller list for at least one week. That would include thousands of books, and you couldn't read them all. But you could make up a list, and select a random sample from it. The more complicated part would be defining violent.

Basic idea: draw up a preliminary set of instructions and categories, and try to apply them. See if they cover all the situations you encounter; if not, make them more elaborate, or add new instructions or categories. [At this point, you don't have to be very careful as far as picking a representative sample].

After you've arrived at a system that seems reasonable, test it by having several people independently code the same book. E. g., you could say that people should give 1 point for each incident involving one person striking another, 2 points for each incident involving the use of a weapon, 3 for each incident involving serious injury, 4 for each incident involving death.

Then you'd see if two independent readers came up with the same figures. (reliability) You would also want to check that the rankings of different books corresponded to your subjective impression of how violent the books were (face validity). If not, you have two choices: revise your subjective judgments, or draw up a new set of rules, and see if they produce results that seem more sensible to you. Keep going back and forth until you're satisfied with the fit between your rules and your impressions.

Computers are often used to help in content analysis, but human coders are almost always needed. Computers are very good at locating and counting words, but they can't easily take account of context, or make overall judgments (like whether a character in a book is good or bad, honest or dishonest, etc.). So while they might help human coders, they can't replace them.

Content analysis is somewhat controversial--historians and scholars of art and literature generally don't like it. The objection is that you lose the essence of a book (etc.) by reducing to a list of numbers. What makes a work distinctive isn't necessarily anything in that list, but something involving the interaction among all sorts of qualities. Usually they aren't primarily interested in generalizations about trends or types of things, but in understanding something in detail.

Another thing that may be a concern is how well the content represents the impression the work has on readers (and it may have a different impression on different

readers). This would be a major issue in a study of violence. E. g., most novels about war are "violent" in the sense of having lots of incidents of death and injury; but some treat them as sad or disgusting, others as exciting and admirable. Some describe it in detail; others leave it in the background. This is why its important to evaluate validity if you're doing a content analysis that involves anything beyond very basic information. Do your results fit with your subjective impressions? The impressions of various other "experts"? The impressions of less sophisticated readers?

So content analysis may be less useful when applied to works with significant literary qualities, or when used to get at subtle things, like the nature of ideas. For example, suppose you were trying to use content analysis to measure the strength of different values (patriotism, freedom, equality, tolerance, etc.) in America at different times. Some people would think that was a reasonable project, but some would think it was bound to fail. Book mentions "qualitative content analysis," which is essentially trying to look at the work as a whole. But I'd say "qualitative content analysis" is basically just traditional thoughtful reading, which people were doing long before sociology was recognized as a field.

But even if content analysis can't get at more subtle things, there are lots of simple, basic, things that are important too. Simpler things that can be looked at: general topic of best-selling books: politics, celebrity biographies, diet, self-help, etc. Length, or difficulty of style of popular books; number of women mentioned on front page of NY Times relative to men, reason for mention (victim of crime, spouse of eminent person, celebrity, government figure, ....), kind of treatment (e. g., how often is the appearance of women politicians mentioned compared to men). Content analysis of newspapers is often used in studies of protest--simply count the number of protests or demonstrations that are mentioned, record other information about them, like deaths, property damage, arrests, organization that sponsored them, purpose.

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What's content analysis good for? (1) Finding out what people thought in past times, especially when surveys aren't available. E. g., suppose you were interested in how American values had changed over the 20th century. Couldn't study it by experiment, or participant observation. No systematic surveys before the 1930s, and even after that point surveys didn't necessarily ask the questions you want. (2) Discovering concerns, assumptions, and interests that people may not be aware of. E. g., study of how often women appeared on front page of paper. Shows what editors think is important, how their standards might differ for men and women. Even though that just reflects the editors, not the population as a whole, it's still of interest. (3) Counting things that happened (if they're the kind of thing that's likely to be reported in newspapers or other printed records)--for example, something like assassinations of public officials are pretty likely to be reported, so you can accept the count as accurate. (For ordinary crimes, newspapers wouldn't be a good source, although it would be interesting to compare newspaper coverage with actual crime rates).

In a general way, sociology is always about people. But people are organized into many larger groups. Social scientists are often concerned with one of these larger 'units.' For example--nations, "societies," families, religious denominations, businesses, social classes, ethnic groups..... Also, sometimes social scientists are concerned with smaller units--for example, in a content analysis of a conversation, the unit might be a sentence or a statement. That's why the issue comes up in content analysis--you could define units in different ways--books, characters, incidents....

Unit of analysis: unit involved in your hypothesis or theory. Or in everyday terms, what you want to know about.

Examples of meaningful statements about units of analysis other than individuals:

1. Businesses with fewer status distinctions between workers and managers are more efficient.
2. Wealthy countries are more likely to have democratic governments.
3. Religions that require a moderate number of ritual observances are more likely to keep adherents.
4. More economic inequality leads to more crime.

These are all reasonable claims--that is, they are saying something meaningful. How can we find out if they are true? Not by comparing different individuals. You'd need to compare the relevant units, like businesses in #1. The relevant unit is clear in 1-3. It's more open in #4, but it would obviously be something more than an individual (you can't have inequality unless you have more than one person). Probably more than even a family or block: might apply to cities, nations, times.

Some hypotheses make sense at both the individual and larger levels. "Education reduces poverty." You could understand this as referring to individual people: more educated you are, the less likely you are to be poor. This is true. But a person might mean it as a suggestion for society as a whole: "if the average educational level were higher, the poverty rate would be lower." Knowing that the relationship holds at the individual level, can we conclude that it holds at some other level? Not necessarily. There are cases where the relationship is different at different levels. For example, the relation between wealth and support for welfare spending. This is something that has been studied at both the individual and national level. Richer people--less support for government welfare spending; richer countries--more support.

## March 5 Prediction and explanation

Unit of observation: what you have information on. "Ecological fallacy." Using information on units to draw conclusions about individuals. This used to be a major practical issue in sociology--data on individuals was scarce, so people might try to use data on places instead. E. g., if you wanted to know how farmers voted, you would have to compare vote totals in counties with lots of farmers to counties with few farmers. Not as much of an issue today, since there's lots of information on individuals. However, it's still a concern for historians and for sociologists who study the past. Some controversy about how much you can learn about individuals from "aggregate" data, but basic point is that they're not interchangeable.

"Reductionist fallacy": using information on individuals to draw conclusions about larger units. This may be more of a problem today, since now information about individuals is easy to find, so the easiest thing to do is to study individuals, even if that's not the best thing to do in terms of theory or practical impact.

Why can relationships be different at different levels? Contextual effects: characteristics of the unit as a whole, or other people in that unit, influence individuals. E. g., your chance of being poor may depend not only on your education, but also on how much education other people have. Perhaps the economy generates a certain number of "good" jobs. The people who get these jobs are by and large, the people with the most education. So if the average level of education rises, the amount of education necessary to get one would increase. If that were true, getting education would be a way out of poverty for an individual, but not for society.

Other examples of possible contextual effects: is coeducation better or worse (in terms of student learning) than single-sex education? Idea is that performance might depend on sex of the other students in your classroom or school. Couldn't find out if this is true by comparing boys and girls--would need to compare classrooms or entire schools, some single-sex and some co-educational.

Return to goals of social science--description and explanation. What is a good explanation? And how do we know if we've found one?

Prediction plays an important role in evaluating an explanation. Prediction: given some conditions, what will happen? Most natural to think of prediction in terms of variables--given values for certain variables, what value will another variable have? E. g., suppose we're trying to decide what causes poverty. If you say that some condition is a cause of poverty, that means that where that condition is found, poverty will also be found. For example, suppose we're talking about individuals. What causes some people to be poor? "Independent variables" or potential causes could be things like: race, gender, where child grows up, family situation when a child, earnings of family. "Dependent variable" or outcome you're interested in would be whether someone is poor as an adult. But it would also apply even if the "conditions" are given in a qualitative rather than a quantitative form. For example, you could have a description of a child's life when growing up, rather than values on a series of variables. Still, from the descriptions, you ought to be able to predict which children grow up to be poor. If you can't, that suggests that you don't really understand the causes of poverty or that none of the conditions you consider are really causes.

So the test of a proposed explanation would be successful prediction. Prediction isn't necessarily about something in the future, although it might be. Might be something that's already happened, as in predicting historical events.

Successful prediction--not necessarily 100% success rate. In fact, usually wouldn't be 100%. For example, if you're looking at children, you wouldn't be able to say that a child growing up in some circumstances is absolutely certain to become poor, or not to be poor. Even among children who grow up with everything going against them, some will escape poverty. And even among children who seem to have everything going for them, there will be some unusual cases where someone winds up poor--might develop a drug or alcohol problem, might decide that they don't want to have a regular job, etc. And most people are going to be somewhere in the middle anyway--there are going to be some positive things in their background and some negative.

So successful prediction means comparing groups, and seeing the expected differences between groups. For example, say I divide children into three groups: low risk of being poor, medium risk of being poor, high risk of being poor. I then check to see if they were poor when they grew up. Say that 15% of the "low" group turned out to be poor, 20% of the "medium" group did, 25% of the "high" group did. That would mean that my predictions were at least somewhat successful. The "high risk" group did turn out to have more poverty. You might think that my predictions weren't that good--most of the "high risk" group didn't turn out to be poor. But in that case, the responsibility would be on you to see if you could make better predictions. That is, there's no universal standard for how accurately you ought to be able to predict. Some things can be predicted with a high degree of accuracy, other things not so high.

## March 15 Prediction and explanation/Correlation and Causation

Prediction--given one thing, another thing is more (less) likely to happen. In the social sciences, predictions are pretty much always probabilistic--that is, they say that things are more or less likely, not that they are certain. That is, for every rule, there are exceptions, sometimes lots of exceptions.

If you can predict something with reasonable accuracy, does that mean you've explained it? Most social scientists would say no. For example, you can often predict things pretty well based on past experience, without knowing anything about what you're predicting--for example, success in basketball tournament can be predicted pretty well simply by using regular season record. Or to take an example from social science, stability of government could be predicted by past record of stability.

However, most social scientists would agree that if you understand something, you ought to be able to predict it. You couldn't be totally accurate, but you ought to do better than an ordinary person with no special knowledge.

Explanation: identifying causes. Usually this is put in terms of variables. To say that x causes y means that if value of x is changed, the value y will also change. For example, say x is education, y is earnings. (Note that "x causes y" should be understood to mean that x is one of the causes of y, not that it's the only cause)

Suppose you want to know if x is a cause of y. x and y have to be correlated ("go together").

This means that knowing the value of x helps you to predict the value of y. If x and y aren't correlated, then x can't cause y (not quite true, but close enough). If x and y are correlated, then x MAY cause y. However, the correlation may exist for another reason. So establishing correlation is a first step towards establishing causation.

How can you see whether variables are correlated? Different procedures depending on the nature of the variables. But in the example discussed in the reading, there's a pretty simple way to do it: compare the means (averages) for groups.

Hypothetical Example:

	Average earnings
Graduated "Elite" college	75,000
Graduated "regular" college	60,000

So people who graduated from an elite college earn more. That is, knowing the value of the college variable one helps you to predict the value of earnings. If averages were the same, it would be hard to argue that the kind of college a person attended made a difference.

Spurious correlation: two things go together, but neither one causes the other. The correlation is real; the 'spurious' (false or misleading) part is the assumption that one causes the other. The basic reason:

x and y may share a common cause. For example, some personal qualities like academic ability and ambition influence the kind of college you attend. The people who apply to elite colleges are different from those who don't. Also, elite colleges get a lot of choice among applicants. They usually pick those who look more promising.

Those same personal qualities that influence the college you go to may influence success in later life. E. g., someone is smart and hard working, they go to Yale, they go on to make a lot of money. But did they make a lot of money because they went to Yale, or was it just because of the qualities they already had?

In effect, we're asking a hypothetical question--if that person had gone to another college, would that have hurt them?

In a literal sense, we can never find out. People only have one life, and they can't live it over again and try something different.

But we can get at the issue another way: matching. Get two people who are the same, except one went to an elite college, one to a regular college. Of course, everyone is unique, so you're not going to be able to get a perfect match. But common sense says that some things are relevant to earnings, like academic ability, others aren't relevant at all (shoe size), or are maybe only slightly related (musical tastes). So you just worry about matching on the relevant things. After you've matched some pairs, you see which person in the pair did better--elite college or regular college. Just one matched pair wouldn't prove anything, because there are lots of things that might influence success. However, if you had a large number of matched pairs, say 1000, and found that the elite grad did better in a majority of the pairs, say 800, that would be pretty strong evidence that going to an elite college made a difference. On the other hand, if it was about a 50/50 split, that would suggest that it didn't really matter what kind of college you went to.

In most research, you don't literally match people up. But you can accomplish the same thing by using statistics--basically figure out a hypothetical matched case for everyone.

Coming up with perfect matches is hard, though. You could match people on things that can be observed, like SAT scores and grades. For example, you could get a man who graduated from Yale in 1990, ask his SAT scores and high school grades. Then you find a man who graduated from another college in 1990 who had about the same SAT scores and high school grades. However, these two people may be

different in other ways that matter. For example, they probably went to different high schools. So one person's high school record may be more impressive than the others when you look closely. They may have had different personalities. Maybe the guy who went to Yale was ambitious and concerned with being a big success, while the other one was more relaxed. Maybe the one who went to Yale was good at making a positive impression on people, which helped him to well in the interview, and helped him after he left college. You could try to match people on these things too, but it gets tougher. Some of the things may be more subjective and hard to measure, some may have happened in the past and not been recorded. And even if you match people on lots of things, there may always be one more that you didn't consider.