

Encyclopedia of Research Design

Observational Research

Contributors: Carol Toris
Editors: Neil J. Salkind
Book Title: Encyclopedia of Research Design
Chapter Title: "Observational Research"
Pub. Date: 2010
Access Date: October 16, 2013
Publishing Company: SAGE Publications, Inc.
City: Thousand Oaks
Print ISBN: 9781412961271
Online ISBN: 9781412961288
DOI: <http://dx.doi.org/10.4135/9781412961288.n283>
Print pages: 949-953

This PDF has been generated from SAGE Research Methods. Please note that the pagination of the online version will vary from the pagination of the print book.

<http://dx.doi.org/10.4135/9781412961288.n283>

The observation of human and animal behavior has been referred to as the sine qua non of science, and indeed, any research concerning behavior ultimately is based on observation. A more specific term, *naturalistic observation*, traditionally has referred to a set of research methods wherein the emphasis is on capturing the dynamic or temporal nature of behavior in the environment where it naturally occurs, rather than in a laboratory where it is experimentally induced or manipulated. What is unique about the more general notion of observational research, however, and what has made it so valuable to science is the fact that the process of direct systematic observation (that is, the *what, when, where, and how* of observation) can be controlled to varying degrees, as necessary, while still permitting behavior to occur naturally and over time. Indeed, the control of what Roger Barker referred to as “the stream of behavior,” in his 1962 book by that title, may range from a simple specification of certain aspects of the context for comparative purposes (e.g., diurnal vs. nocturnal behaviors) to a full experimental design involving the random assignment of participants to strictly specified conditions.

Even the most casual observations have been included among these research methods, but they typically involve, at a minimum, a systematic process of specifying, selecting, and sampling behaviors for observation. The behaviors considered might be maximally inclusive, such as in the case of the *ethogram*, which attempts to provide a comprehensive description of all of the characteristic behavior patterns of a species, or they might be restricted to a much smaller set of behaviors, such as the social behaviors of jackdaws, as studied by the Nobel Prize-winning ethologist Konrad Lorenz, or the facial expressions of emotion in humans, as studied by the psychologist Paul Ekman. Thus, the versatile set of measurement methods referred to as *observational research* emphasizes temporally dynamic behaviors as they naturally occur, although the conditions of observation and the breadth of behaviors observed will vary with the research question(s) at hand.

Because of the nature of observational research, it is often better suited to hypothesis generation than to hypothesis testing. When hypothesis testing does occur, it is limited to the study of the relationship(s) between/among behaviors, rather than to the causal links between them, as is the focus of experimental methods with single or limited behavioral observations and fully randomized designs. This entry discusses several

aspects of observational research: its origins, the approaches, special considerations, and the future of observational research.

Origins

Historically, observational research has its roots in the naturalistic observational methods of Charles Darwin and other naturalists studying nonhuman [p. 950 ↓] animals. The work of these 19th-century scientists spawned the field of ethology, which is defined as the study of the behavior of animals in their natural habitats. Observational methods are the primary research tools of the ethologist. In the study of human behaviors, a comparable approach is that of ethnography, which combines several research techniques (observations, interviews, and archival and/or physical trace measures) in a long-term investigation of a group or culture. This technique also involves immersion and even participation in the group being studied in a method commonly referred to as participant observation.

The use of observational research methods of various kinds can be found in all of the social sciences—including, but not limited to, anthropology, sociology, psychology, communication, political science, and economics—and in fields that range from business to biology, and from education to entomology. These methods have been applied in innumerable settings, from church services to prisons to psychiatric wards to college classrooms, to name a few.

Distinctions among Methods

Whether studying humans or other animals, one of the important distinctions among observational research methods is whether the observer's presence is *overt* or *obtrusive* to the participants or *covert* or *unobtrusive*. In the former case, researchers must be wary of the problem of *reactivity of measurement*, that is, of measurement procedures where the act of measuring may, in all likelihood, change the behavior being measured. Reactivity can operate in a number of ways. For example, the physical space occupied by an observer under a particular tree or in the corner of a room may militate against the occurrence of the behaviors that would naturally occur in that particular location.

More likely, at least in the case of the study of human behavior, participants may attempt to control their behaviors in order to project a certain image. One notable example in this regard has been termed *evaluation apprehension*. Specifically, human participants who know that they are being observed might feel apprehensive about being judged or evaluated and might attempt to behave in ways that they believe put them in the most positive light, as opposed to behaving as they would naturally in the absence of an observer. For example, anthropological linguists have observed the hypercorrection of speech pronunciation “errors” in lower- and working-class women when reading a list of words to an experimenter compared to when speaking casually. Presumably, compared to upper-middle-class speakers, they felt a greater need to “speak properly” when it was obvious that their pronunciation was the focus of attention. Although various techniques exist for limiting the effects of evaluation apprehension, obtrusive observational techniques can never fully guarantee the nonreactivity of their measurements.

In the case of unobtrusive observation, participants in the research are not made aware that they are being observed (at least not at the time of observation). This can effectively eliminate the problem of measurement reactivity, but it presents another issue to consider when the research participants are humans; namely, the ethics of making such observations. In practice, ethical considerations have resulted in limits to the kinds of behaviors that can be observed unobtrusively, as well as to the techniques (for example, the use of recording devices) that can be employed. If the behavior occurs in a public place where the person being observed cannot reasonably expect complete privacy, the observations may be considered acceptable. Another guideline involves the notion of *minimal risk*. Generally speaking, procedures that involve no greater risk to participants than they might encounter in everyday life are considered acceptable. Before making unobtrusive observations, researchers should take steps to solicit the opinions of colleagues and others who might be familiar with issues of privacy, confidentiality, and minimal risk in the kinds of situations involved in the research. Research conducted at institutions that receive federal funding will have an institutional review board composed of researchers and community members who review research protocols involving human participants and who will assist researchers in determining appropriate ethical procedures in these and other circumstances.

Special Considerations

Observational research approaches generally include many more observations or data points than typical experimental approaches, but they, too, are [p. 951 ↓] reductionistic in nature; that is, although relatively more behaviors are observed and assessed, not all behaviors that occur during data collection may be studied. This fact raises some special considerations.

How Will the Behaviors Being Studied Be Segmented?

Aristotle claimed that “natural” categories are those that “carve at the joint.” Some behaviors do seem to segment relatively easily via their observable features, such as speaking turns in conversation, or the beginning and end of an eye blink. For many other behaviors, beginnings and endings may not be so clear. Moreover, research has shown that observers asked to segment behaviors into the smallest units they found to be natural and meaningful formed different impressions than observers asked to segment behaviors into the largest units they found natural and meaningful, despite observing the same videotaped series of behaviors. The small-unit observers also were more confident of their impressions. Consumers of observational research findings should keep in mind that different strategies for segmenting behavior may result in different kinds of observations and inferences.

How Will Behavior Be Classified or Coded?

The central component of all observational systems is sometimes called a behavior code, which is a detailed description of the behaviors and/or events to be observed and recorded. Often, this code is referred to as a *taxonomy* of behavior. The best taxonomies consist of a set of categories with the features of being *mutually exclusive* (that is, every instance of an observed behavior fits into one and only one category of

the taxonomy) and *exhaustive* (that is, every instance of an observed behavior fits into one of the available categories of the taxonomy).

Are the Classifications of Observed Behaviors Reliable Ones?

The coding of behaviors according to the categories of a taxonomy have, as a necessary condition, that the coding judgments are reliable ones. In the case of *intrarater reliability*, this means that an observer should make the same judgments regarding behavior codes if the behaviors are observed and classified again at another time. In the case of *interrater reliability*, two (or more) judges independently viewing the behaviors should make the same classifications or judgments. Although in practice, reliability estimates seldom involve perfect agreement between judgments made at different times or by different coders, there are standards of disagreement accepted by researchers based upon the computations of certain descriptive and inferential statistics. The appropriate statistic(s) to use to make a determination of reliability depends upon the nature of the codes/variables being used. Correlations often are computed for continuous variables or codes (that is, for classifications that vary along some continuum; for example, degrees of displayed aggression), and Cohen's kappa coefficients often are computed for discrete or categorical variables or codes; for example, types of hand gestures.

What Behaviors Will Be Sampled?

The key to sampling is that there is a sufficient amount and appropriate kind of sampling performed such that one represents the desired population of behaviors (and contexts and types of participants) to which one would want to generalize. Various sampling procedures exist, as do statistics to help one ascertain the number of observations necessary to test the reliability of the measurement scheme employed and/or test hypotheses about the observations (for example, power analyses and tests of effect size).

Problems Associated with Observational Research

Despite all of the advantages inherent in making observations of ongoing behavior, a number of problems are typical of this type of research. Prominent among them is the fact that the development and implementation of reliable codes can be time-consuming and expensive, often requiring huge data sets to achieve representative samples and the use of recording equipment to facilitate reliable measurement. Special methods may be needed to prevent, or at least test for, what has been called *observer drift*. This term refers to the fact that, with prolonged observations, observers may be more likely to forget coding details, [p. 952 ↓] become fatigued, experience decreased motivation and attention, and/or learn confounding habits. Finally, observational methods cannot be applied to hypotheses concerning phenomena not susceptible to direct observation, such as cognitive or affective variables. Indeed, care must be taken by researchers to be sure that actual observations (e.g., he smiled or the corners of his mouth were upturned or the zygomaticus major muscle was contracted) and not inferences (e.g., he was happy) are recorded as data.

Future Outlook

With the increasing availability and sophistication of computer technology, researchers employing observational research methods have been able to search for more complicated patterns of behavior, not just within an individual's behavior over time, but among interactants in dyads and groups as well. Whether the topic is family interaction patterns, courtship behaviors in *Drosophila*, or patterns of nonverbal behavior in doctor-patient interactions, a collection of multivariate statistical tools, including factor analyses, time-series analyses, and t-pattern analyses, has become available to the researcher to assist him or her in detecting the hidden yet powerful patterns of behavior that are available for observation.

Carol Toris

<http://dx.doi.org/10.4135/9781412961288.n283>

See also

Further Readings

Barker, R. G. (Ed.). (1963). *The stream of behavior: Explorations of its structure and content*. New York: Appleton-Century-Crofts.

Campbell, D. T., & Stanley, J. (1966). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.

Ekman, P. (1982). Methods for measuring facial action. In K. R. Scherer, ed. & P. Ekman (Eds.), *Handbook of methods in nonverbal behavior research*. Cambridge, UK: Cambridge University Press.

Hawkins, R. P. (1982). Developing a behavior code. In D. P. Hartmann (Ed.), *Using observers to study behavior*. San Francisco: Jossey-Bass.

Jones, R. (1985). *Research methods in the social and behavioral sciences*. Sunderland, MA: Sinauer Associates, Inc.

Longabaugh, R. (1980). The systematic observation of behavior in naturalistic settings. In H. Triandis (Ed.), *The handbook of cross-cultural psychology: II, Methodology*. Boston: Allyn & Bacon.

Magnusson, M. S. (2005). Understanding social interaction: Discovering hidden structure with model and algorithms. In L. Anolli, ed. , S. Duncan, Jr., ed. , M. S. Magnusson, ed. , & G. Riva (Eds.), *The hidden structure of interaction*. Amsterdam: IOS Press.

Suen, H. K., & Ary, D. (1989). *Analyzing quantitative behavioral observation data*. Mahwah, NJ: Lawrence Erlbaum.

Wilkinson, L., & and the Task Force on Statistical Inference. Statistical methods in psychology journals. *American Psychologist*, (1999). vol. 54, pp. 594–604.