

Sociology Methods 405 1
Winter 2001 Art Stinchcombe
Northwestern Sociology

**Syllabus, Research Methods in Sociology, 405
Winter 2001**

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Meetings: MW9-10:20
1808 Chicago Seminar Room
Office Hours: 1808, #202
MW 10:30-11:45 and by
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There are two sets xerox materials: Readings (the ones in the bibliography of this syllabus, in the same order), and Lectures, at Quartet at 818 Clark Street

Papers due 14 February in class and 9 March at 11:00 AM (during the Final Exam period).

General Outline and Schedule

This course is intended to provide a sophisticated introduction to the kinds of research methods, qualitative and quantitative, prevalent in contemporary sociological research. I try to do this by addressing a number of main intellectual features of theories, about which observations help us to improve our thought. These main problems provide the macroscopic structure of the course. This syllabus gives a brief introduction to these core problems, as well as reading assignments and a schedule. Methodology is inherently a more abstract subject than the substance of a discipline, so it is important to read the readings and the lectures before the class discussion meetings.

The class sessions will be discussions led by two students, with a summary response by me. Those two students will be required to formulate 5-6 discussion topics, to be written out and distributed to students and myself at the beginning of the session. The discussion topics should be organized around the lecture corresponding to the class day. Where there are two, one of them with a z, you can use either or both for discussion. The

topics should have a brief introduction by the presiding students. Guidance on discussion topics:

A. 3-4 of the topics should have to do with the relation of the lecture to readings. What was left out of the lecture that is crucial to the papers' argument? How could the paper(s) be improved by more use of the principles in the lecture (or vice versa)? Etc. You may use any items in the readings, whether or not they correspond to the scheduled readings in the syllabus.

B. One of more topics might extend the argument in the lecture to a different method than used as an illustration in the lecture. For example, if in the example discussed in the lecture, not answering a question turns out to be a manifestation of rebellion against the asker, how would one tell whether that was true of not answering questions observed in an ethnographic account, e.g. of people not responding to women's questions but responding to men's questions?

C. One or more topics might be about difficulties of applying the argument of the lecture (or of one of the readings) in research on a different topic than the one dealt with in the lecture (or reading).

If you have trouble figuring out what any of the reading or lectures mean, you can come see me sometime before you have to perform for private tutoring, or may consult others of your choice. "Can somebody tell me what this is all about?" is not a topic for discussion.

For the first 50 minutes of the class meeting, I will sit in the back and be as quiet as I can manage (I am not good at keeping quiet), and the two students will manage the discussion. We will then take a 10 minute break, and then I will try to formulate the sense of the meeting for 20 minutes.

Week 1; 3 January. **Introductory.** I will introduce the course, answer questions, allocate students to lectures, and so on

Week 2; 8 and 10 January, Lectures 1 and 2: **I: Economy in data collection.** As in any other rational activity, one does not want to spend more time and resources than necessary to get the relevant answer or other purpose. This means that a scientific strategy, including a method of observation, is to be evaluated partly by how much effort or other resources it uses to get the relevant answer.

In general finding new distinctions among phenomena or new mechanisms that have not been clearly formulated requires casting the net wide, and so requires cheap data collection that is not so focused that it

misses relevant phenomena or mechanisms. "Naturalistic observation" ("ethnography" and "history" in the social sciences) uses cheap and relatively indiscriminating observation in surveying a field in which significant data are sparse, to find things otherwise unexpected (suggesting "new" mechanisms), or to find what is mainly going on (suggesting an area where a mechanism, new or not, is especially relevant).

At the opposite extreme is expensive high resolution measurement of isolated narrow phenomena (perhaps in a laboratory--in a social science laboratory experiment the most common distance on a causal variable used in the analysis is a distance between "experimental group" and a "control group," which is produced by actions of the experimenter), in a highly restricted field of phenomena, where the expectation is that nearly all the observations will be valuable. Experiments are often used to investigate theories of micro-mechanisms that play a role in theories of large-scale phenomena; outside the laboratory the mechanism is rarely isolated from other forces. Most sociology falls between ethnography or history and experiments, with medium proportions of significant data and medium, "statistical" isolation of mechanisms.

Since in general distances between separate observations are where theoretical power of observations comes from, increasing variance on the relevant variables (e.g. increasing the distance between experimental and control groups or oversampling extreme groups in surveys) and minimizing noise are central to economy. **Readings (The readings and lectures are available at Quartet Copies, 818 Clark Street). Stinchcombe Method, Stinchcombe Mechanisms, Clemens Books**

Weeks 3-5; 15, 17, 22, 24, 29, and 31 January, Lectures : 3, 3z, 4-7, I will give a review Lecture as Lecture 8) **II. Using data to refine concepts and "measurements" of concepts, including choice of units of analysis.** The core of concepts in scientific methodology is as a *description of some differences* that observations may find. Most scientific theories are about relations between differences (e. g. differences or distances between values of a causal variable affect the differences in values, or in the rate of change, of an effect variable). Finding differences that make a difference is the core operation of developing a concept, and systematic observations of differences can help us to develop such concepts.

A central virtue that a set of concepts can have is high "exactness." By exactness we mean correct identification of exactly what phenomena cause the relevant other phenomena, and of exactly what they cause. Then if

such theoretical exactness can be tied to high resolution of observations relevant to a theoretical problem, concepts in the theory combined with observations of differences in the world add to empirical content of the theory. The more exact the concept, the more exact the meaning of observations can be. Conversely then, the more exactly concepts are adapted, by the development of exact methods of observation, to observed differences that do the work in the world, the more they will tell us about the theory in which the concepts are embedded.

This means that observations will have higher probative power, the higher the resolution or exactness of the conceptual-scheme-coding/measurement-procedures complex. Concepts are only as good as the methods of observing differences in their values, and observations are only valuable if they measure what the theory calls for. For example, studying actions by studying attitudes is usually a low-resolution method. A central methodological device for developing a close relation between concepts and observational procedures is coherence (or "correlation") of measures, as a central clue to how to build exactness of concepts, and simultaneously to identify their observable measures. For example, a loosely coupled organization whose parts are not coherent is not a good "case," because observations of its features do not predict much about the behavior of the various loosely coupled parts. Observing subparts that actually connect causes to effects then may improve both exactness of concepts and coherence of "measures." Getting the right units of analysis clarifies both theory and method, and it will show up in loosely connected systems, for example, by a closer correlation of measures taken on subparts.

Factor analysis and its relatives are a reflection of this "coherence-locating" intuition of how one refines concepts, but the same broad criterion should identify units of analysis, as locations where causes are tightly tied to effects. Units of analysis are central concepts that often need improving.

Readings: Heimer Responsibility, Clemens Time, Stinchcombe Analogy, Stinchcombe Information, Stinchcombe Rebellion

Weeks 6 and 7; 5,7,12, and 14, February. Lectures 9-12, 12z. **III. Using data to find mechanisms and processes.** One explores processes that happen over time, the details of sequences that lead from a difference in one thing to another difference in something else, to study the mechanisms in theories. One important strategy is increasing the temporal detail of changes: in social science, participant observation, longitudinal survey data,

and event history analysis all are methods to get more exact temporal detail, and so are especially useful in sorting out processes or mechanisms.

Quite often what we mean by "mechanisms" in social science is a causal connection *within* relatively bounded units that form coherent "parts" of a larger structure (e.g. persons are parts of organizations and of social classes): rationality, emotions, habits, accumulated learning and competencies, all may characterize either persons as members of organizations or organizations as members of markets or of political systems. Knowing how persons (or organizations) connect causes to effects helps predict aggregate behavior in larger structures such as markets or public opinion. This involves locating the crucial lower-level actors that have causal unity in the larger structure (e. g. firms are the main actors in most modern markets, though for Adam Smith persons were the natural units of markets). Then what mechanisms go on inside such lower level units (e.g. organizations collect accounting information to estimate "the bottom line" of a proposed line of action--individuals rarely do such accounting to make, for example, their family decisions) predict their behavior--firms usually have more permanence of "preference functions" than people, partly because they do better accounting. Data can be used to locate units, and to describe mechanisms in those units that translate conditions in larger structure, through actions of its parts, into aggregate or collective behavior in those larger structures.

If there are instruments involved in making observations, studying the mechanisms in those instruments (e.g. what kinds of comparisons people can manage in answering oral questions on surveys; what kinds of forgetting a social structure induces, so when structural data will be inaccurately remembered) can improve the observational scheme. For example, it would be bad methodology to estimate graduate school attrition by asking professors how many students they can remember who dropped out, because individual dropouts are rarely discussed in departmental conversations and meetings and so are soon forgotten, and people do not remember their dropping out.

Broadly speaking lectures 9 and 10 are be about using data to get temporal detail, and lectures 11, 12, and 12z are about using data to build theories of the parts of larger structures. **Readings: Abbott Activities, Griswold Culture, Schneiberg and Clemens Institutions, Stinchcombe Mechanisms (Review), Stinchcombe Time.**

FIRST PAPER DUE Wednesday 14 February. SEE BELOW

Weeks 8-9; 19, 21, 26, and 28, February Lectures 13, 13Z, 14, 15, 15-Z, 16. **IV: Testing Theories by Testing Hypotheses with Data.** The basic method of testing theories is to see whether or not their factual consequences are true. A combination of logic or mathematics and previously well established ancillary theories (e.g. those embedded in measuring instruments) is used to "derive" hypotheses about what will be observed in a given situation (e.g. an experiment, a survey). Those hypotheses are then compared with the observations. The power of a test involves both the nature of the hypothesis (especially the solidity of its relation to the theory), its relation to competitive theories, its degree of resolution or exactness about what will be observed, and the like. In short, the amount one learns from "Theory T implies hypothesis H, and observations O imply H is false (or perhaps imply H is true)" depends on many features of H. Thus the key to methodologies of all sorts, when used for testing, is to maximize the impact of H (and so of the observations) on our belief in T. We might call this impact the "observational power" of the hypothesis, or the "power" of the observations to test the theory.

For example, if a theory of educational achievement should have implications about how fast children could learn the Uzbek language, but there are very few opportunities to hear or read Uzbek in the United States, then naturally observed vocabulary size in Uzbek found in the United States would not be a powerful way to study the educational achievement. One can, however, imagine experimental situations in which differences in the speed of learning Uzbek might decide between theories.

A key feature of "power" of hypotheses is their probability under competing theories. A "crucial experiment" is a hypothesis that is very unlikely under almost all serious contending theories, and very likely (or in the impractical extreme, certain) under the one being tested. In statistical reasoning in the Bayesian style, the likelihood of a hypothesis under alternative theories is called the "*a priori* probability" of the hypothesis. One learns most from the observations if their *a priori* probability, so defined, is very different from its probability under the theory being tested. A theory that predicts otherwise improbable hypotheses is more testable by testing those hypotheses. Quite often the difference between probabilities under the different theories can be increased greatly by a careful study of the competitors, as well as one's own theory. In much of sociology, and even more much of sociological methodology, the alternative theory is that the relation between differences could well have been produced by chance;

statistical inference rests on a well developed theory of the power of an observational scheme to reject any theory that implies that the observations could have been produced by chance. Often however chance theories are very weak, and hierarchical modeling is a way to improve alternative chance theories. The logic of hierarchical modeling is easily extended to non-statistical methods, and is for example central to Becker's analysis of participant observation.

Broadly speaking , lectures 13, 13z, and 14 study "partialling," "control," "hierarchical models" and other methods of eliminating alternative explanations, lecture 15 and 15z concentrate on the power of hypotheses to test theories. The ways of eliminating remaining randomness, noise, random measurement error, and the like, are treated in statistics courses, so are ignored here. You have to learn them, but you have to learn them elsewhere. **Readings: Becker Inference, Stinchcombe Oppression, Stinchcombe Causes.**

Week 10, Lectures 17 or 17z or both will be discussed 5 March; I will give a peroration on 7 March . **V: Using Data to Refine Theories.** All of the above uses of data can improve the theories of the discipline. The overall objective here is to increase the empirical content of the "theoretical axioms" accepted in the discipline, including as part of the "axioms" the definitions of concepts that implicitly assert "this is the core of what works"; the more that is predicted by these axioms, the more exact the theories' predictions, the closer the fit between solid theories of their component mechanisms and the aggregate (or "comparative statics") theory, the wider the boundaries within which the theory applies (and the more the scope or coverage of the theory is derived from the theory itself), the greater the empirical content. Thus if our theories still have "everything else equal" in their hypotheses, they have more content if the theory explains what the other things that have to remain equal for a hypothesis to hold are.

But those theoretical axioms also include the clear identification of the causal units in the theory (e.g. what is it about individual people that, sometimes at least, connects differences in attitudes with differences in behavior), clear definitions of concepts and clear connections of these with methods of observing differences, clear theories of why the measuring procedures work (and consequently of when we will expect them not to), great temporal and processual detail about the crucial causal connections, especially rates of change under different conditions and rates of equilibration after disturbances, clear indications, that one can look for in

naturally occurring phenomena, that the mechanisms in the theory are what is mainly going on, and, *perhaps* most important of all, the elimination of falsehoods from the theory. Epistemology sometimes seems to imagine that falsification is all that is going on, which is some exaggeration but by no means irrelevant. One should of course be careful about eliminating bits of theory just because they are known to be false under some conditions, if they work in the conditions at hand. Adding a condition (e.g. “At least it works in the United States”—8 out of 8 articles in the August 2000 *American Sociological Review* require that condition, in the sense that data about its generalization to other countries is not given in the papers) to an axiom is an improvement of empirical content. A theory is valuable sociology even if it is only known to apply in the United States, and even if no rationale in the theory explains the assumed boundary.

In short, a theory, all of whose parts have been subjected to a gale of intelligently designed and analyzed observations, has the most empirical content. A central device for overall increase in empirical content of theory is to cycle between improving the theories, and then improving concepts and measures (with data) in the light of the new theories, revising mechanisms (so they are compatible with data on lower level units, for example), and deriving hypotheses to test again, then back to refining theory. **Readings: Heimer Methods.**

Tuesday 13 March, **Pseudo-Examination-Period. Final papers must be turned in by 11:00 at the time the Final Exam is scheduled. Talk to me if you need to turn the paper in late, or I will regard it as incomplete.**

Evaluation

Since the main purpose of evaluation in graduate education is educational, and since your future employer is unlikely to pay attention to grades, the core of the evaluation will be my detailed comments on your papers. But in order to get a grade (and credit) for bureaucratic purposes, both papers must be turned in. Very occasionally, if I believe you have not understood the standards for such papers, I will turn it back and ask that it be done over, with comments about what to do that you have not done, what not to do that you have done.

You will be choosing two published or otherwise reputable papers by authors other than yourself, one for each of the assignments. They have to have some sort of data (for sociology, safe picks for reputable articles are articles in *American Sociological Review*, *American Journal of Sociology*, *Social Forces*, or *Administrative Science Quarterly*. Qualitative papers of high quality are quite often found in *Work and Occupations* or in *Symbolic Interaction*). Much historical and ethnographic sociology occurs in books rather than papers (see **Clemens Books**), so you may want to pick a chapter of a book. You should pick a paper or chapter in a field of interest to you, and among those of interest, pick one that you know quite a lot about, or are willing to learn enough to get the context of the paper. If you pick an incompetent paper, it will be harder to answer the questions you have to answer.

I will also take account of whether you have done your job in preparing for and leading your assigned discussions, and whether you participate in the discussions.

First Written Assignment, Due 14 February in Class. You may choose either to evaluate use of data to study the concepts or measures or units of analysis of the paper, or those used to identify mechanisms that might be working to produce the results of the paper. It is often the case that the measures or mechanisms are studied in other works cited in the paper, or in the lore of the science, and you may have to go look. You may have to use results about the hypotheses in the paper to illuminate the reasoning about measures or mechanisms. For example, if education has a big effect, there must be something in it and in the effect variable that are connected, or if people just beginning to use marijuana are regularly observed being instructed in what they are supposed to observe in themselves, there must be some social mechanism in learning to observe or feel the appropriate effects. If education is measured in years, what is alleged to be going on in those years that is the core of “education” for this purpose? Is there evidence that each year has the same effects? Are the people who get more years otherwise the same as those who get less, and if not are those other differences measured? If learning to feel the effects of marijuana is not observed by years, what is it observed by? And while we are at it, why is one type of observation appropriate to study one kind of learning, another for the other?

Your job is (1) to discuss what the reasoning was in the paper about the concepts or mechanisms, the adequacy of the data to the intellectual

purpose of evaluating or creating exactness of concept and of observation, or to the generativity of the mechanism; (2) then to discuss what sort of data might have improved the concept and its measurement (or the identification of units of analysis), in its coherence and resolution, or what might have provided separate evidence for the mechanism or made data on the mechanism more fine-grained, besides the aggregate or coarse-grained effect that mechanism is supposed to be explaining.

Second Assignment, Due 13 March at 11:00 AM in my box in 1810

Chicago: See the comments above about selecting a paper or chapter to evaluate. For this assignment, you are to examine the contribution of the empirical results of the paper to increasing the empirical content of the theory it was testing. How does it contribute to improving our understanding of the concepts involved, the measurement behavior of the observational scheme, the boundaries of operation of the mechanisms used in the theory, the elimination (or support) of alternative theories, the reconstruction of theories to explain when hypotheses work and when they do not, and the like.

Readings in Packet Available at Quartet Copies

Abbott Activities: Abbott, Andrew. 1992. "What do Cases Do? Some Notes on Activity in Sociological Analysis." In Charles Ragin and Howard S. Becker, *What is a Case?: Exploring the Foundations of Social Inquiry*. Cambridge: Cambridge University Press.

Becker Inference: Becker, Howard S. 1958. "Problems of Inference and Proof in Participant Observation." *American Sociological Review*. **23**, pp. 652-660.

Clemens Books: Clemens, Elisabeth S., Walter W. Powell, Kris McIlwaine, and Dina Okamoto. 1995. "Careers in Print: Books, Journals and Scholarly Reputations." *American Journal of Sociology*. **101**, 2 (September), pp. 433-494.

Clemens Time: Clemens, Elisabeth S. 1996. "Continuity and Coherence: Periodization and the Problem of Change." Ragnvald Kalleberg and Fredrik Engelstad, eds. *Social Time*

and Social Change: Oslo: Norwegian University Press
(Universitetsforlaget).

Griswold Culture: Griswold, Wendy. 1987. "A Methodological Framework for the Sociology of Culture." *Sociological Methodology* 1987. **17**, pp. 1-35.

Heimer Responsibility: Heimer, Carol A. and Lisa R. Staffen "What Do We Mean by Responsibility?" Ch. 3, pp. 77-136 in her *For the Sake of the Children: The Social Organization of Responsibility in the Hospital and the Home*. Chicago: University of Chicago Press.

Heimer Methods: "Appendix on Methods." pp. 375-388 in *ibid*.

Schneiberg and Clemens Institutions: 1999?. "The Typical Tools for the Job: Research Strategies in Institutional Analysis." Forthcoming in Walter W. Powell and Dan L. Jones, eds. *Bending the Bars of the Iron Cage*.

Stinchcombe Information: Stinchcombe, Arthur L. 1990. "Restructuring Research on Organizations" Pp. 358-362 in *Information and Organizations*. Berkeley: University of California Press.

Stinchcombe Analogy: 1978. "Technical Appendix: The Logic of Analogy." Pp. 25-29 in his *Theoretical Methods in Social History*. Orlando: Academic Press.

Stinchcombe Time: 1978 "Principles of Cumulative Causation." Pp. 61-70 in *ibid*.

Stinchcombe Rebellion: 1964. "The Psychological Quality of Adolescent Rebellion" and bits of "Appendix on Method." Pp. 15-48 and 186-191 in his *Rebellion in a High School*. Chicago: Quadrangle, Reprinted by New York Times Press.

Stinchcombe Mechanisms. (1993 [1991]). "The Conditions of Fruitfulness of Theorizing about Mechanisms in Social Science." Pp. 23-41 in Aage B. Sørensen and Seymour Spilerman, eds. *Social Theory and Social Policy: Essays in Honor of James S. Coleman*. Westport CT: Praeger. Originally *Philosophy of the Social Sciences*, **21**, 3, pp. 367-388.

Stinchcombe Oppression: 1995. "Planter Power, Freedom, and Oppression of Slaves in the 18th Century Caribbean." Pp. 125-152 in his *Sugar Island Slavery in the Age of Enlightenment: The Political Economy of the Caribbean World*. Princeton: Princeton University Press.

Stinchcombe Method: 1995. "The Constitution of the Data." Pp. 152-158 in *ibid.*

Stinchcombe Causes. 1998. Review of Vaughn R. McKim and Stephen P. Turner, eds., *Causality in Crisis?* Pp. 664-666 in *Contemporary Sociology*, **27**, 6 (November).