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Qualitative Inquiry 2006 12: 797
DOI: 10.1177/1077800406288622

The online version of this article can be found at:
http://qix.sagepub.com/content/12/4/797

Published by:
SAGE
http://www.sagepublications.com

Qualitative Inquiry
Volume 12 Number 4
August 2006 797-812

10.1177/1077800406288622
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You Can Generalize Stupid! Social Scientists, Bent Flyvbjerg, and Case Study Methodology

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It is an issue of some contestation as to whether generalization is an appropriate requisite to demand of case study research in any case. The author argues that the critique is misdirected, and based on Bent Flyvbjerg's concept of a "critical case," ways of generalizing from case studies are indicated (Iran/Iraq War of 1980). In addition, the author illustrates that the case study is idyllic for generalizing using the brand of test that Karl Popper called "falsification." Conversely, the author exhibits Robert Stake's ethos that case studies need not make any claims about the generalizability of their findings but rather, what is crucial is the use others make of them—chiefly, that they feed into processes of "naturalistic generalization."

Keywords: *generalization; critical case; Aristotle; Flyvbjerg's misunderstandings; Iran/Iraq War*

It is exact that the case study is a detailed examination of a solitary exemplar, but it is false to utter that a case study cannot grant unswerving information about the broader class. The quandary undergirding this view is potted in five misunderstandings regarding the nature of the case study as a research method. In correcting these five misunderstandings, one acknowledges the Greek

Author's Note: The character of the article title is borne from the phrase "It's the economy, stupid!" The slogan was made famous by political strategist James Carville, who hung it on a sign in Bill Clinton's Little Rock campaign office to keep everybody "on message" in the 1992 presidential election. This article was written during my research master's module "Issues and Methods in Political and Social Research" at the University of London (December 2004). The chief scholarly institute to which I am indebted is the British Library. I apologize in advance for what may appear as gluttony in extracting the philosophy of Bent Flyvbjerg. Finally, I wish to dedicate this article to "my pal" Dorothy Flanagan who without such support this publication simply would not be achievable.

philosophers—primarily Aristotle, who emphasized the value of case knowledge, and his predecessors, Socrates and Plato, who denigrated such knowledge:

> One can often generalize on the basis of a single case, and the case study may be central to scientific development via generalization as supplement to other methods. But formal generalization is overvalued as a source of scientific development, whereas "the force—of example" is underestimated. (Flyvbjerg, 2001, p. 425)

A case study is an in-depth study of the particular, where the researcher seeks to increase his or her understanding of the phenomena studied (Johansson, 2002, p. 2). Often case studies and particularly interpretative case studies have been criticized because of the assumed difficulty with generalizations. One argues that this critique is misdirected, and based on Flyvbjerg's concept of a "critical case," ways of generalizing from case studies are indicated (Holland & Herstad, 2000, pp. 1-2).

It is a matter of some debate as to whether generalization is an appropriate requirement to demand of case study research in any case. As it is essentially a problem of positivism, to take it into consideration may be inimical to the very nature of the case study enterprise. Yet the current spate of case studies belies this view; their authors, by the act of publication, imply that the studies are useful to others (Stake, 1982; Tripp, 1985, p. 33).[1]

The first political/social scientist known to analyze information systematically was the Greek philosopher Aristotle. He compared the constitutions of Greek city-states during the 4th century B.C. and *generalized* about the political consequences of the different constitutional systems (Stalley, 1998).[2] Without generalization, we could not interact with our world in a coherent manner—that is to say, we would need continual repetition of the same mental procedures for each new experience. Edward Said (2003) quotes Étienne Geoffroy St. Hilaire from his 1818 text *Philosophie anatomique* who states that "such is the character of our epoch that it becomes impossible today to enclose oneself strictly within the framework of a simple monograph. Study an object in isolation and you will only be able to bring it back to itself." Seeing an object in the "midst of beings who are connected with each other in many different ways . . . and you will discover for this object a wider scope of relationships" (p.144).

In applied research, interest in generalization stems from two related concerns. The first is a concern for the practical application of findings, especially findings of evaluative research (Hersen & Barlow, 1977, p. 51).[3] It is a concern for which social interventions work best. The second is a

concern for truth seeking and its justification. It is a concern about the reach and grasp of knowledge. These concerns are related because they both raise the question of the warrant we have for making judgments; inferences that go beyond the immediate circumstances and results of study.[4] That is what a generalization is; an inference of applicability to far more cases beyond the data or the study (Robertson & Norris, 2001, p. 303):

> Learning to see—habituating the eye to repose, to patience, to letting things come to it; learning to defer judgement, to investigate and comprehend the individual case in all its aspects. This is the first preliminary schooling in spirituality. (Nietzsche, as cited in Flyvbjerg, 1997, p. 1)

The description given of the case study is indicative of the general consensus, which is oversimplified as to be grossly misleading. It is correct that the case study is a comprehensive examination of a single example, but it is not true to say a case study cannot provide trustworthy information about the broader class. Although a case study *can* be used in the preliminary stages of an investigation to generate a hypothesis, it is misleading to see the case study as a pilot method to be used only in preparing the real study's larger tests, systematic hypotheses testing, and theory building (Caporaso, Marks, Moravcsik, & Pollack, 1997).[5] Similarly, Edward Said (2003) reminds the reader that although there is a "penchant for dramatizing general features, for reducing vast numbers of objects to a smaller number of orderable types" (pp. 40, 119) it is healthier not to risk generalizations about indistinct notions—that is, until colossal material has been analyzed first. The corollary of such, Said states would be "to make out of every observable detail a generalization and out of every generalization an immutable law. . . ." (p. 86).

The problem of this view has scholarly been summarized in five misunderstandings about the nature of the case study as a research method:

Misunderstanding 1: Theoretical knowledge is more valuable than practical knowledge.
Misunderstanding 2: One cannot generalize on the basis of an individual case; therefore, the case study cannot contribute to scientific development.
Misunderstanding 3: The case study is most useful for generating hypotheses, that is, in the first stage of a total research process.[6]
Misunderstanding 4: The case study contains a bias toward verification, that is, a tendency to confirm the researcher's preconceived notions.
Misunderstanding 5: It is often difficult to develop general propositions and theories on the basis of specific case studies.

These five misunderstandings indicate that it is theory, reliability, and validity that are at issue—in other words, the very status of the case studies as a scientific method.

In social and educational research, the findings from quasi experiments and single site case studies are often intended to be generalized to some wider population.[7] Thought of in this way, generalization is about the rationale for transferability (Cronbach, 1983, p. 304; Donmoyer, 2000).[8] "The problem of generalization within the philosophy of science," noted Hamilton (1981), "has traditionally been treated as a problem of induction" (p. 232).[9]

To question a generalization is to examine the justification for making inferences. Generalization is, therefore, clearly related to validity (Bromley, 1986, p. 288; Mitchell, 1983; Schofield, 2000).[10] Thus, in case study research, the cases come to define the population. To argue that one's analysis of a case is valid is implicitly to claim that the analysis holds for comparable cases (i.e., cases of that sort; D. Campbell, 1963, p. 17).[11]

Naturally, there is no question of case studies replacing survey and experimental forms of inquiry. The point is that case studies are not an inferior sort of scientific method. On the contrary, they are possibly *the* basic method of science (Holland & Herstad, 2000, p. 2).[12]

We avoid the problem of trying to generalize inductively from single cases by not confusing case inference with statistical inference. Case study reasoning should be seen as a strong form of hypothetico-deductive theorizing, not as a weak form of statistical inference. We do not infer things "from" a case study; we impose a construction, a pattern on meaning, "onto" the case (Flyvbjerg, 2001, p. 290; Mitchell, 2000, p. 177).[13]

In correcting these five misunderstandings, one will return to the Greek philosophers: to Aristotle, who emphasized the value of case knowledge; and to his predecessors, Socrates and Plato, who denigrated such knowledge.

The most significant rationalization for the persistence of the five misunderstandings about the case study is that the case method contradicts Plato's teachings and tradition and that this tradition is at the core of modern social and political science. Plato's dialogues deal with Socrates's valiant yet unproductive exploration for universal truths. We learn from the scholar Flyvberg that Socrates used much of his life discussing with Athenian craftsmen, teachers, students, poets, and statesmen, questioning them about the universal aspects that lay beneath their respective domains of knowledge. Yet to his great annoyance, when Socrates asked about general principles, the responses he received frequently took the form of concrete examples, that is, cases. He cast aspersion on these responses, stubbornly insisting that there *had* to lie generally valid principles behind the multiplicity of cases (Flyvbjerg, 2001, pp. 66-87).[14]

As a contemporary echo of Socrates, one can site Donald Campbell, whose early work criticizes the case study as unscientific, contrary to Flyvbjerg and Galliers. Campbell (1963) wrote,

> Such studies have such a total absence of control as to be of almost no scientific value. . . . Any appearance of absolute knowledge, or intrinsic knowledge about singular isolated objects, is found to be illusory upon analysis. (pp. 6-7, 17)

In contradistinction, Galliers (1992, p. 3) argued that the strength identified with the case study approach is that it captures "reality" in a greater detail and that it is possible to analyze a greater number of variables compared to other approaches.

Mattei Dogan and Dominique Pelassy (as cited in Flyvbjerg, 2001), in comparative politics, similarly articulated that "one can validly explain a particular case only on the basis of general hypotheses. All the rest is uncontrollable, and so of no use" (p. 420). Such views have been challenged by Harry Eckstein, Charles Ragin, and Howard Becker (Schofield, 2000, p. 69).[15] According to Flyvbjerg, the later Donald Campbell has even disputed his own earlier position (Schofield, 2000, p. 73).[16] After evaluating a number of cases studies, Campbell completed a 180-degree turn on the method's worth and is today considered one of the muscular proponents of case study methodology. One concludes that Socrates stumbled on an analogous problem during his wanderings in Athens: Whenever he asked for universals he got cases.

Unlike Socrates and Plato, Aristotle saw an influential role for cases and context in the understanding of human behavior: "[Phronesis] is not concerned with universals only," Aristotle said, "it must also take cognizance of particulars, because it is concerned with conduct, and conduct has its sphere in particular circumstances" (Flyvbjerg, 2001, p. 70).

Flyvbjerg's historical interpretation elucidates to the reader that the case study is contentious. Cases generate precisely that concrete, practical, and context-dependent knowledge that Socrates dismissed in his dialogues with Meno and Euthyphro. If we trail the footsteps of Socrates and Plato and keep exploring for the *simile in multis*[17] that Socrates demanded in *Meno*, we arrive only at the hypothetico-deductive scientific model. Manufacturing deductions and discovering general principles across large samples become the key tasks. Going into depth with an individual case is seen as unproductive:

> To generalize is to be an idiot. To particularize is the lone distinction of merit. General knowledge are those that idiots possess. (Blake, as cited in Gomm, 2000a, p. 22)[18]

The view that one cannot generalize on the basis of a single case is usually considered devastating to the case study as a scientific model. This second misunderstanding about the case study is archetypal among proponents of the natural science ideal within the social sciences (Schofield, 2000). Yet even researchers who are not usually coupled with this ideal may be found to have this viewpoint. According to Anthony Giddens (as cited in Flyvbjerg, 2001), for example,

> research which is geared primarily to hermeneutic problems may be of generalized importance in so far as it serves to elucidate the nature of agents' knowledgeability. Pieces of ethnographic research like . . . the traditional small-scale community research fieldwork anthropology—are not in themselves generalizing studies. But they can easily become such if carried out in numbers, so that judgements of their typicality can justifiably be made. (pp. 73-74)

It is exact that one can generalize in the method Giddens mentioned and that often this is both fitting and precious. But it would be erroneous to assert that this is the only technique, just as it would be inaccurate to conclude that one cannot generalize from a single case.

It should be mentioned that formal generalizations, whether on the basis of large samples or single cases, are considerably glorified as the foremost source of scientific progress. Economist Mark Blaug (1992, pp. 4-5)—a self-declared adherent to the hypothetico-deductive model of science—has established that although economists may pay lip service to the hypothetico-deductive model and to generalization, they rarely exercise what they preach in actual research.[19] For example, Galileo's rejection of Aristotle's law of gravity was based on observations "across a wide range," and the observations were not "carried out in some numbers" (Bueno de Mesquita, 1985).[20]

Galileo's experiment did not occupy an outsized arbitrary sample of trials under shifting wind conditions, as would be demanded by the thinking of the earlier Campbell and Giddens. Rather, it was a matter of a single experiment, that is, a case study (Eckstein, 2000, p. 145). What is especially worth noting in this discussion, however, is that the matter was settled by an individual case because of the genius election of the extremes of metal and feather. One might label this a *critical case*: For if Galileo's thesis held for these materials, it could be expected to be valid and germane for all materials (Mitchell, 2000, p. 174).[21] The selection of materials provided the possibility of formulating a generalization characteristic of critical cases, a generalization of the sort "if it is valid for this case, it is valid for all cases." In its negative form, the generalization would be "if it is not valid for this case, then it is not valid for any cases": A question of truism or falsification (Eckstein, 2000, p. 149)?[22]

Flyvbjerg beholds the ethos that the *generalizability* of case studies can be amplified by the strategic selection of *critical cases*. What constitutes a critical case? When the object is to achieve the supreme sum of information on a given phenomenon, a "representative case" or a random sample may not be the most apposite tactic. This is because the orthodox case is not wealthy in information (Flyvbjerg, 2001).

A common complaint about case studies is that it is difficult to generalize from one case to another. Thus, analysts fall into the trap of trying to select a "representative case." This will not deal satisfactorily with the complaint (Yin, 1994b, p. 37).

Instead, an analyst should try to generalize findings to "theory"; analogous to the way a scientist generalizes from experimental results to theory, note that the scientist does not attempt to select "representative" experiments (Mitchell, 2000, pp. 174-175). The balanced view of the role of the case study in attempting to generalize by testing hypotheses has been formulated by Harry Eckstein (2000):

> Comparative and case studies are alternative means to the end of testing theories. . . . It is impossible to take seriously the position that case study is suspect because problem-prone and comparative study deserving of benefit of doubt because problem-free. (p. 147)

Eckstein, at this juncture, employed the term *theory* in its "hard" sense that encompasses both forecast and clarification. This causes Eckstein to dismiss the analysis that case studies cannot be implemented for testing theories or for generalization stronger than Flyvbjerg's view. Eckstein illustrated that if predictive theories subsist in social and political science, then the case study could be adopted to test these theories. John Walton (1992) has correspondingly observed that case studies are likely to produce the best theory. If a well-construed experiment (in Galileo's "case") can serve the purpose, then contrary to Yin (1994b), so may an able-bodied case; one that is somehow as crucial for a theory as are certain experiments as a "force-of-example" or a *tour de force* (Walton, 1992).

The case study is faultless for generalizing using the nature of test that Karl Popper (2000) branded "falsification" (pp. 78-93, 422). Falsification is one of the most meticulous tests to which a scientific proposition can be subjected: If just one sole observation does not fit with the proposition, it is measured invalid and must, therefore, either be revised or rejected. Popper himself employed the now legendary example that "all swans are white" and proposed that just one observation of a single black swan would falsify this proposition (S. Campbell, 2003, p. 16). The case study is well suited to

identifying "black swans" because of its in-depth approach: What appears to be "white" often turns out on closer examination to be "black" (S. Campbell, 2003, p. 422).[23]

Additional commentators have proposed that there are ways in which case studies can be used in manufacturing what are in effect similar generalizations as those that survey researchers produce. Still others have argued that case studies need not make any claims about the generalizability of their findings, that what is crucial is the use others make of them; that they feed into processes of "naturalistic generalization" (Stake, 1982).[24]

The idea of naturalistic generalization, advocated by Robert Stake (1982), is an attractive one for numerous reasons (Gomm, 2000a, pp. 19-26; Stake 1983, p. 89). It advocates a realignment of the responsibility to generalize away from the researcher toward the reader. Stake's ethos underpins Lincoln and Guba's (2000) notion of generalization as transferability.

"The Naturalist," Lincoln and Guba (1985) said, "cannot specify the external validity of an inquiry; (s)he can provide only the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility" (p. 316). In other words, the researcher's liability is to afford sufficient contextual information to facilitate the reader's judgment as to whether a particular case can be generalized to a specific field of practice. We could regard such views of generalization as empowering or democratizing.

The conclusion that Stake drew is that what is required of case study researchers is not that they provide generalizations but rather, that they illustrate the case they have studied properly, in a way that captures its unique features. Thus, case studies are considered nonuseful because there is a consensus that they are fundamentally derisory. It seems clear that if *generalization* is defined in the usual sense of gnomic generalization, based on data representative of some population, the assertion of nonutility is correct. However, Stake professed that

> one must consider the situation from the perspective of the *user* of the generalization. Case studies will often be the preferred method of research because they may be epistemologically in harmony with the reader's experience . . . and thus to that person a natural basis for generalization. (Lincoln & Guba, 2000, p. 36)[25]

One must consider the situation from the perspective of the user. Edward Said (2003) notes that in no writer on the Orient as much as in Richard Burton do we feel such generalization about the Oriental. Said acknowledges that this is the "result of knowledge acquired . . . by living there, actually seeing it

firsthand, truly trying to see Oriental life from the viewpoint of a person immersed in it" (p. 196), perpetually feeding into the process of Stake's naturalistic generalization.

Even ordinary singular statements are "interpretations of 'the facts' in the light of theories." And the same holds even for "the facts" of the case. They contain *universals*; and universals always entail a *lawlike* behavior (Popper, 2000, p. 423).

The point Mary Kennedy (1979) illustrated is that qualitative generalization is a matter of applying the facts of one case to another case instead of attempting to sum them up. Moreover, the practice of generalization is personal, being executed by the individual making the comparison—not in a formal technical realm where universal statements are produced in the sense that they lie outside individual experience.

We have two situations: the specific ("critical") case and the general case. There are situations in which knowledge of the general case is used to explain or predict a specific case. And there are situations in which knowledge of a specific case may be generalized to great segments of the population.

One drawback in the single case study methodology that has prevented it from being widely applied is the lack of generally accepted rules for drawing causations and generalization inferences from the data.[26] Advocates of single case methodologies have developed a variety of arguments to overcome the problem of sampling limitations, but none has satisfied those who rely on multiple cases to draw generalizable findings from studies. Authors have erroneously assumed that by increasing the number of data points on a single case, one will eliminate the problem. But this is not a solution, for these several data points are still based on only one case.

A fashionable term for the generalizability of a finding is *external validity*, but a more fitting term would be *strength of generalizability*, because this term suggests that generalization is a judgment of a degree, rather than a binary decision (Schofield, 2000). The legal term *case law* refers to that portion of the law that is assembled from specific cases rather than from statutes. These specific cases are resolved on the basis of statutes, but the interpretations of statutes—that are made in each case—set precedents for future cases. Thus, the decision reached regarding a single case may be generalized to future cases (Gomm, 2000b, p. 100).[27] If decisions are described in terms of general ideas, these ideas may become principles and take on a life of their own. Although these decisions may be stated with the intention that they be generalized, it is the later court that must decide whether in fact a particular decision generalizes to its own case. Thus, it is the receiver of the information who determines the applicability of a finding to a new situation (Tripp, 1985, p. 35).[28]

For that reason, the rules by which these judgments of generalization are reached might be useful to the social scientist decision maker who needs to judge the generalizability of a single case study to his or her own situation.[29]

In legal fields, therefore, we see that generalizations are frequently necessary from single cases; although the generalizations are not from a case to a population but rather a case to another case—in much contradistinction to that of social science (Gomm, 2000c, p. 235; Hersen & Barlow, 1997, p. 52).[30] Especially when doing an instrumental case study, where the goal is often to extend the existing theory, the selection of a "critical case" can be valuable.[31]

> It is clear that for the historian, no single case of a particular war should be used to represent all wars. Each account of war is rather exemplary of war. That is not to say that a particularly good case study should not come to be regarded as a "classic study." (Tripp, 1985, p. 38)

The onset of the Iran/Iraq War (1980) is explained on the basis of empirical uniformities established by systematic quantitative analyses. As Hempel (1966, p. 68) noted, scientific explanations of individual events may be provided through inductive subsumption under probabilistic laws, as well as through deductive subsumption under universal laws.

The following inductive explanation demonstrates that the case of the Iran/Iraq War is a specific instance of a set of patterns that have appeared in a much larger number of cases (Geller & Singer, 2000, pp. 8-9):

1. Contiguity: *Empirical pattern*; the presence of a contiguous land or sea border increases the probability of war within a dyad (Grummon, 1982).[32]
2. Political Systems: *Empirical pattern*; the absence of joint democratic governments increases the probability of war within a dyad (Taylor & Jodice, 1983).[33]
3. Economic Development: *Empirical pattern*; the absence of joint advanced economic systems increases the probability of war within a dyad.[34]
4. Capability Balance: *Empirical pattern*; the presence of an unstable capability balance (i.e., shift/transition) increases the probability of war within a dyad.[35]
5. Enduring Rivals: *Empirical pattern*; the presence of an enduring rivalry increases the probability of war within a dyad.[36]

The historical event of the Iran/Iraq War of 1980 has been described in the format of a case study. However, the critical factors leading to this war have been identified as empirical uniformities common to a broad set of wars. The dyadic-level factors of *contiguity, absence of joint democratic regimes,*

absence of joint advanced economies, presence of an unstable capability balance, and presence of an enduring rivalry all increased the probability of war.

Scientific explanation of individual events may be provided by their inductive subsumption under probabilistic laws. The preceding analysis demonstrates that the Iran/Iraq War was a high-probability event consistent with a broad array of empirical patterns and a specific instance of a set of intersecting uniformities that have appeared in a much larger number of war cases. Thus, one can most definitely generalize from "war case studies."[37] The author argues that individual analysis of the case is indeed valid; implicitly holding the opinion that the analysis holds for comparable cases (Peceny, 1999, p. 186).[38]

If a universally applicable ethical theory lives that could guide case study methodology, Flyvberg foresees an Aristotelian model for triangulation levels of analysis in scientific observation. This pluralist approach addresses *epistemological*, *technical*, and practical *phronesis* concerns.

Flyvbjerg (1993) engaged this idea, addressing the question of "whether or not social sciences can establish general knowledge claims" (epistemological; p. 16). He argued that research in the social sciences should rely on "the study and analysis of particular cases" (technical) as opposed to relying on a generalized theory. Flyvbjerg's case study methodology is contextual and promotes a type of *phronesis* whose underlying ethos is of dependence on context rather than universal and practical over theory, using the power of examples in case studies with a consideration of the perspective "user" within Stake's structure of "naturalistic generalization" (Flyvbjerg, 1993).

The author professes that we must find avenues of using the cumulated wisdom of case studies available. One exercise would be as the basis of generalizations, for which we need a convention of case study procedure that will guide our selection of comparable and comprehensive features of our cases. We further need to construct archives of the cases parallel to those of the legal system (Schofield, 2000, p. 67).[39]

In short, one corrects the "second misunderstanding," *that one cannot generalize on the basis of a single case and that case study cannot contribute to scientific development*.

Notes

1. The fact that so many case studies are being published by practicing teachers, doctors, and lawyers for practicing professionals suggests that the authors believe their experience to be applicable in other situations.

2. Our understanding of the world has to go beyond our own limited experiences if we are to interact, empathize, and communicate with others in our social milieu.

3. Stake's (1982) and Hamilton's (1981) discussions are practical for those wishing to rethink the conventional notion of generalizability.

4. The classic theory of generalization treats it as a logical property of research design that provides the warrant for going beyond the result given in the study.

5. Every social phenomenon may be viewed from the standpoint of its unique character and as raw material for generalization.

6. Case studies are a fruitful way of studying phenomena before employing rigorous approaches.

7. Applied researchers are interested in generalization often because they want to know what works best within a given sample of the population to transfer these social practices from experimental sites to a wider population of practitioners.

8. Lincoln and Guba (2000) have reconceptualized the notion of generalizability. They have shifted terminology; they talk of *transferability* rather than generalization.

9. Commentators move beyond the traditional conception of generalizability with varying degrees of success. For instance, Hamilton (1981) has talked of creating a science of the singular.

10. Mitchell's (1983) chief point is that generalization from the single case is based on the validity of the analysis, not on some prior notion about the representativeness of the case.

11. A caveat is in order. This caveat introduces the reluctance to accept Hume's truism that generalization is never fully justified logically. The problems of *internal* validity are solvable within the limits of the logic of probability statistics, whereas the problems of external validity are not logically solvable in a conclusive way.

12. As case studies need not be based primarily on ethnological inquiries, it is more pertinent to talk about the case study in terms of an *approach*. In this way, commentators have argued, the case study could be defined as an approach to the *study of the particular*.

13. The process of inference from case studies is logical and not statistical: Indeed, logical inference is epistemologically autonomous from statistical inference.

14. There is good reason Flyvbjerg (2001, pp. 67-68) quoted Socrates and Meno at some length here, inasmuch as the views expressed in this more than 2,000-year-old dialogue continue to inform current opinions about the value of case study and other social science methods.

15. Of similar ilk, Yin (1994a, 1994c) proposed a solution to the problem regarding generalization. It reads for a method for aggregating the information from separate studies—the case survey method.

16. More recent, his position has been when qualitative and quantitative results conflict, the quantitative results should be regarded as suspect until the reasons for the discrepancy are comprehended.

17. Although one cannot provide a specific translation of *simile in multis*, the reader can interpret the "dialogue" by visiting the Internet Classics Archive (n.d.): "Socrates: To what then do we give the name of figure? Try and answer. . . . Do you understand that I am looking for the 'simile in multis?'" (para. 72).

18. Blake, akin to Bacon, believed that *truth* lies in the particulars.

19. The universal laws that are involved in explanations are not derived by inductive generalizations from individual instances; they are merely hypotheses.

20. However, Aristotle's (rejected) claim arose previously from a singular case. Surely these single case inferences are of sufficient import to remind us of the dangers of propositions buttressed by too few analyses.

21. Extreme cases reveal more information because they activate more basic mechanisms in the situation studied.

22. The former can be referred to as "most likely cases" and the latter can be called "least likely cases." To be able to use a specific case for falsifying or verifying theories depends on how strategic the case is in relation to the given research question. Selecting a critical case increases the possibility for making generalizations and falsifying or verifying existing theory.

23. It is clear that the "all" form is comparatively unimportant in the case of this law. The problems of showing that one single physical body—say a piece of iron—is composed of atoms or "corpuscles" is at least as difficult as that of showing that *all* swans are white.

24. The idea of "*naturalistic generalization*" has been proposed as an alternative to statistical generalization.

25. One's own generalization is primarily a creation of one's individual experimental knowing: hence, *naturalistic generalization*.

26. What seems to be needed before single case studies will be widely accepted is a set of rules for drawing inferences about the generality of findings from a case study or even from studies of a very few cases.

27. Stake's (1983, p. 89) *naturalistic generalization* and Lincoln and Guba's (2000) *transferability* imply that the readers of case study reports must themselves determine whether the findings are applicable to other cases than those which the researcher studied. The burden of proof is on the user rather than the original researcher; although the latter is responsible for providing a description of the case(s) studied that is sufficiently "thick" to allow users to assess the degree of similarity between case(s) investigated and those to which the findings are to be applied.

28. It is the similarities and differences of the features of the previous and current case that are argued by the counsels, arbitrated by the jury, and acted on by the judge. The cases are cumulated to form an archive that constitutes precedent law.

29. The legal tradition focuses primarily on these attributes:

(a) The material facts of the earlier case (Are they similar to the current case?).
(b) The appropriateness of the decision made in the case (Would a similar decision here be consistent?).
(c) The reason for the decision (the statue used to justify the decision).
(d) The level of generality with which the decision was formulated.

Regarding (d) "generality of the decision," a legal example of generality has been shown by *Gottlieb v. Gottlieb* (1963) in a negligence case. A bottler was considered negligent because a consumer had found a dead snail in a bottle of beer. The judge could have argued negligence for that specific reason, or because a dead creature was in a bottle, or because a foreign object was in a sealed container. The latter is clearly a more general statement than either of the others.

30. Even if one isolates the therapeutic variable in a given client through a rigorous single case experimental design, critics have noted that there is little basis for inferring that this therapeutic procedure would be equally effective when applied to clients with similar behavioral disorders (client generality) or that different therapists using this technique would achieve the same results (therapist generality).

31. By selecting a critical case when doing an instrumental case study, it becomes easier to extend the existing theory by "adding" rich insights from the case study.

32. Sovereignty of territory around the Shatt al'Arab river had been an issue in contention for more 400 years. In the latter part of the 20th century, access through the southern portion of the Shatt leading to the Persian Gulf became a critical economic necessity for Iraq. The

contiguous border between Iran and Iraq provided both the issue in dispute and the physical opportunity to settle the question of control through the use of military force.

33. On two measures of democratic government reported by Taylor and Jodice (1983)—"political rights" and "civil rights"—Iran and Iraq rank at or near the bottom of a list of more than 140 states for 1979. An index by *Freedom House* coded countries with scores ranging from 1 (highest degree of liberty) to 7 (lowest degree of liberty). On this index, Iran had a score of 5 and Iraq had a score of 7 for both political rights and civil rights. On the basis of the scores reported for both indices, neither Iran nor Iraq could be considered to possess democratically based political systems at the onset of war in 1980.

34. By the onset of war in 1980, both economic systems were almost totally dependent on the export of a single primary product for government revenue and foreign exchange. Hence, their joint classification as being economically underdeveloped. The border dispute underlying the outbreak of war involving control of the Shatt al'Arab waterway linking the Persian Gulf to major oil ports of both countries indicates the exposure of this critical sector in each economy and the overall vulnerability of both economic systems to external disruption.

35. The balance in military capabilities between Iran and Iraq during the 10-year period before the outbreak of war in 1980 was changing to Iraq's advantage. The shift passed the 20% threshold in 1979 and a transition occurred in 1980. With Iran in turmoil following the revolution in 1979, the purge of the Iranian military command, and weapons shipments to Iran under suspension by the United States, the changing balance of capabilities provided the prospect for the successful use of force by a militarily superior Iraq.

36. The Iran/Iraq dyad constitutes a rivalry that has endured since 1934. During this period, Iran and Iraq have engaged in 17 militarized disputes. Of these disputes, 14 occurred between 1960 and 1980. The last dispute involved the onset of war in 1980.

37. On one hand, the book follows the important principle that broad theoretical and empirical work should give us an insight into individual cases. On the other hand, as the key factors involved are probabilistic, we do not get a good sense of their strength in the war equation.

38. Similar case studies survey and critique America's failures to build democracy and analyze that intervention.

39. An innovative approach to increasing the generalizability of qualitative research is now evident in the work of some scholars who have focused on how to achieve generalizability through the aggregation of extant independently designed case studies. The case survey approach suggested by Yin (1994a, 1994c) is promising in a limited number of cases in which comparable information is available from a relatively large number of studies.

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