

## **The Three Logics of Qualitative Research: Epistemology, Ontology, and Methodology in Political Science**

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### **ABSTRACT**

*This essay reviews classic works on the philosophy of science and contemporary pedagogical guides to scientific inquiry in order to present a discussion of the three logics that underlie qualitative research in political science. The first logic, epistemology, relates to the essence of research as a scientific endeavor and is framed as a debate between positivist and interpretivist orientations within the discipline of political science. The second logic, ontology, relates to the approach that research takes to investigating the empirical world and is framed as a debate between positivist qualitative and quantitative orientations, which together constitute the vast majority of mainstream researchers within the discipline. The third logic, methodology, relates to the means by which research aspires to reach its scientific ends and is framed as a debate among positivist qualitative orientations. Additionally, the essay discusses the present state of qualitative research in the discipline of political science, reviews the various ways in which qualitative research is defined in the relevant literature, addresses the limitations and trade-offs that are inherently associated with the aforementioned logics of qualitative research, explores multimethod approaches to remedying these issues, and proposes avenues for acquiring further information on the topics discussed.*

**KEYWORDS:** qualitative research, epistemology, ontology, methodology.

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In their introductory textbook for first-year students of political science, Shively and Schultz (2022) rhetorically ask their readers whether or not the course they are currently enrolled in is one of science. By challenging novice social scientists to reflect on what it actually means to be a scientist, the authors propose that at the heart of any scientific discipline lies its approach to accumulating knowledge. However, despite its status as one of the two major approaches to conducting social and political science, there remains much debate about the nature of qualitative research as a scientific endeavor. By synthesizing classic works on the philosophy of science with contemporary pedagogical guides to scientific inquiry, this essay explores the nature of qualitative research across three logical dimensions: epistemology, ontology, and methodology. The first logic relates to the essence of research as a scientific endeavor and is framed as a debate between positivist and interpretivist orientations within the discipline of political science. Epistemology is, therefore, the logical foundation of all social and political science. The second logic relates to the approach that research takes to investigating the empirical world and is framed as a debate between positivist qualitative and quantitative orientations, which together constitute the vast majority of mainstream researchers within the discipline. Ontology thus serves as a logical bridge between

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epistemology and methodology. The third logic relates to the means by which research aspires to reach its scientific ends and is framed as a debate among positivist qualitative orientations. Methodology is, therefore, the logical toolkit of strategies for researchers to conduct scientific inquiries.

The following essay is organized into five sections. The first section briefly addresses the state of qualitative research in the discipline of political science and reviews the various ways in which qualitative research is defined in the relevant literature. The second, third, and fourth sections continue to review the relevant literature in order to present a discussion of the epistemological, ontological, and methodological logics of qualitative research, respectively. The fifth section addresses the limitations and trade-offs that are inherently associated with the aforementioned logics of qualitative research and explores multimethod approaches to remedying these issues. The essay concludes by briefly recapitulating the discussion of the three logics and proposes avenues for acquiring further information on the topics discussed. For practical reasons, the bibliography of this essay is not entirely comprehensive but rather based on a selection of sources considered particularly influential in developing the debates outlined herein.

### **Towards a Definition of Qualitative Research**

There is much discussion within the discipline of political science regarding the present state of qualitative research. One survey of political scientists with faculty positions at American academic institutions reports that 79.8% of research projects in American Politics, 91.1% of projects in Comparative Politics, and 91.8% of projects in International Relations employ qualitative approaches (Kapiszewski et al., 2015). These findings differ starkly from those of an earlier review of research published in three leading journals of Comparative Politics, namely *Comparative Political Studies*, *Comparative Politics*, and *World Politics*. Although the Comparative Politics subfield has traditionally been most closely associated with qualitative approaches, the review finds that only 44.3% of the articles published in these journals employ strictly qualitative research designs, while 32.1% use some form of mixed-method approach and the remaining 23.6% employ strictly quantitative research designs (Munck & Snyder, 2007). These findings thus support Ragin's (2014) assertion that "the most distinctive aspect of comparative social science is the wide gulf between qualitative and quantitative work", which he observes "is wider in comparative social science than in perhaps any other social science subdiscipline" (p. 2). Outside of the subfield-specific journals, the presence of qualitative methods appears to diminish even further. In response to Munck and Snyder's findings, Mahoney (2007) reviews articles from three leading general disciplinary journals—*The American Political Science Review*, *The American Journal of Political Science*, and *The Journal of Politics*—to find that only 11.8%, 6.6%, and 4.7% of the Comparative Politics articles published therein employ qualitative approaches, respectively. With regards to International Relations, George and Bennett (2005) also challenge Kapiszewski et al.'s portrayal of the subfield as overwhelmingly qualitative, noting that while *International Security* does predominately publish qualitative studies, *The Journal of Conflict Resolution* publishes almost no qualitative research whatsoever.

These divergent findings demonstrate not only a lack of agreement within the discipline about what approach to research is most favorable but also reveal a broad disagreement about what qualitative research actually is. For those like King et al. (1994), the difference between qualitative and quantitative approaches to research is merely stylistic. For example, they believe that qualitative research is characterized by small numbers of cases, approaches that rely on subject interviews or the analysis of primary source historical data rather than statistical measurements, as well as in-depth investigations of substantially important events. King et al. (1994) also observe

that “sometimes this kind of work is linked to area studies where the focus is on the history and culture of a particular part of the world. The particular place or event is analyzed closely and in full detail” (p. 4). In their review of journals of Comparative Politics, Munck and Snyder (2007) adopt a similarly stylistic understanding of qualitative research, defining it simply as “research that relies on words as opposed to numbers” (p. 12). This view of qualitative research is also taken by Baglione (2020), who concludes that

*with qualitative analysis, an investigator assesses evidence in the form of words and images to determine where the weight of it lies—on the side of the argument or against it. This judgment is based on the researcher’s ultimate consideration of the factors and how they account for the relationships in question.* (p. 189)

Conversely, Mahoney and Goertz (2006) challenge the stylistic definition of qualitative research, arguing that such a superficial conception inevitably overlooks the essential characteristics of both qualitative and quantitative approaches. In fact, they argue that “misunderstanding is enhanced by the fact that the labels ‘quantitative’ and ‘qualitative’ do a poor job capturing the real differences between the traditions. Quantitative analysis inherently involves the use of numbers, but all statistical analyses also rely heavily on words for interpretation. Qualitative studies quite frequently employ numerical data; many qualitative techniques in fact require quantitative information”. Mahoney and Goertz (2006) suggest that “better labels for describing the two kinds of research [...] would be statistics versus logic, effect estimation versus outcome explanation, or population-oriented versus case oriented approaches” (pp. 245–246). In line with this view, both Collier (1993) and George and Bennett (2005) also equate qualitative research with the “case study method”, which the former differentiates from statistical and experimental methods and the latter differentiate from statistical methods and formal models by defining case studies as “the detailed examination of an aspect of a historical episode to develop or test historical explanations that may be generalizable to other events” (p. 5). Some scholars, however, disagree with the conflation of “qualitative research” and “case study approach” as interchangeable terms. According to Gerring (2008), a case study should be understood as a deep investigation of one or a few substantially important events or units whose purpose is to extrapolate generalizations about the population from which the sample is taken. While cross-case analysis of an extremely small sample of cases would have to be qualitative practically by definition, within-case analysis of possible explanatory variables could be conducted either qualitatively or quantitatively, depending on the number of relevant variables.

### **The First Logic: Epistemology**

The first logic of qualitative research is epistemological, relating to its essence as a scientific endeavor. The contemporary discipline of political science, and accordingly most mainstream qualitative research, largely adhere to the positivist epistemological paradigm that stresses the pursuit of objective knowledge about the world. Here, it is important to clarify what exactly is meant by both “objectivity” and “knowledge”. First, Popper (1959/2002) explains that objectivity is that which is “justifiable independently of anybody’s whim” (p. 44). Objective phenomena are, therefore, not only reproducible by the researcher but also inter-subjectively testable. Though the objective study of political phenomena can pose a challenge due to their subjective and value-impregnated nature, Nagel (1979) nevertheless believes “the crucial point is that the logical canons employed by responsible social scientists in assessing objective evidence

[...] do not appear to differ essentially [...] from the canons employed for analogous purposes by responsible students in other areas of inquiry” (p. 484). Second, according to Popper’s theory of demarcation, knowledge “must not be metaphysical, but must represent a world of possible experience” (p. 39). In other words, while metaphysics may have its place in the arts and other humanist pursuits, science is concerned exclusively with empirical phenomena. This emphasis on empirical data, however, poses significant challenges to positivist political scientists, whose research is largely dedicated to socially constructed and sometimes unobservable phenomena, as demonstrated by Lukes’ (2005) question of “how to think about power theoretically and how to study it empirically”, which ultimately leads him to conclude paradoxically “that, indeed, power is at its most effective when least observable” (p. 1). With respect to this dilemma, Lane (1996) believes that the philosophy of scientific realism offers political scientists in general, and qualitative researchers in particular, an alternative to the statistical investigation of mere correlations between variables in favor of “a deeper search into actual political processes and the development of explanations that satisfy an audience of peers, laypersons and officials, all of whom demand real answers” (p. 378).

Despite scientific realism’s claims that unobservable phenomena are objectively real and can be studied as such, the socially constructed nature of political concepts nevertheless presents positivist political scientists with a considerable obstacle from the outset of their inquiries. Kaplan (1998) notes that “what makes a concept significant is that the classification it institutes is one into which things fall, as it were, of themselves” and that “a significant concept so groups or divides its subject-matter that it can enter into many and important true propositions about the subject-matter other than those which state the classification itself” (p. 50). To the great disadvantage of political science, such criteria are much more easily applied to animal taxonomy, for instance, than they are to regime typology. Assuming, however, that a sufficiently uncontroversial conceptualization of the regime type “democracy” could be formulated based on the quality of a regime’s electoral system and other institutional characteristics, real-world cases of democracies would then have to be incorporated into testable hypotheses to advance the scientific inquiry. At this stage, in order to test the deterministic hypothesis that democracies do not go to war with one another—or, in more probabilistic terms, that democracies are less likely to go to war against one another than against other regimes—political scientists face another challenge. As Hempel (1966) observes, “experimental tests [...] consist in varying the values of the ‘independent’ variables and checking whether the ‘dependent’ variable assumes the values implied by the hypothesis”, but when “experimental control is impossible [...] then the hypothesis must be tested nonexperimentally, by seeking out, or waiting for, cases where the specified conditions are realized by nature” (p. 20). Unable to reproduce regimes for experimental purposes, political scientists are therefore left entirely reliant on the cases that be and the historical record for testing their hypotheses.

Assuming that sufficient cases can be found, consistent results of hypothesis testing can lead to the formation of explanatory theories. For such a theory to be considered scientific, however, it must meet certain evaluative criteria. According to Popper (1959/2002), the principal criterion for theory evaluation is falsifiability. In his view, “a theory is falsified only if we have accepted basic statements which contradict it” and “only if we discover a reproducible effect which refutes the theory” (p. 86). Therefore, the “democratic peace theory”, which provides an explanation for the validity of the original hypothesis, is indeed falsifiable, for a single instance of military conflict between two democratic regimes would effectively refute the theoretical claim or at least the deterministic formulation of it. Though the theory is useful for providing insight into the pacific coexistence that seems to characterize relationships between democratic regimes, political scientists must be careful to avoid attributing to it any predictive qualities. Returning to Popper (1959/2002), scientists should be wary of “inferring universal statements from singular

ones, no matter how numerous; for any conclusion drawn this way may always turn out to be false” (p. 27). In other words, the fact that there have never been any observed cases of war between democratic regimes does not logically preclude the possibility of such a war occurring in the future. Moreover, rather than manipulate the concepts and hypotheses in such a way that protects the theory from the perils of falsification, Kuhn (1970) suggests that political scientists should actually apply the utmost investigative rigor to refute the theory with the aim of exposing its inconsistencies. Only in such a way can a stronger, more robust theory ever be introduced in its place.

Despite the prevailing belief that positivist epistemology is indeed compatible with political science, some qualitative researchers question this paradigmatic view. Goertz (2017), for example, notes that the positivist “hypothetico-deductive” approach to social science is based on the logic of physics and is primarily applicable to the quantitative statistical tradition in political science, while the “causal mechanism” approach that is derived from the biological sciences is more appropriate for qualitative research due to its greater flexibility for analysis and interpretation (p. 12). Quoting the mathematician Jacob Bronowski, Johnston (1984) notes that even the physical world “is not a fixed, solid array of objects, out there, for it cannot be fully separated from our perception of it. It shifts under our gaze, it interacts with us, and the knowledge that it yields has to be interpreted by us”. In other words, “there is no way of exchanging information that does not demand an act of judgment” (p. 516). Applying this line of thought to the context of the social world, Mosley (2013) explains that, in contrast to positivism, the interpretivist logic assumes that “knowledge is impossible to separate from historical context and power relationships”. She adds that “while some interpretivist social scientists aim to make generalizations or to generate causal explanations [...], many focus instead on causal understanding—on developing knowledge about how subjects understand their own actions and circumstances, and on how this understanding is conditioned by power and social relations” (p. 9). While such arguments against a positive epistemology may seem revolutionary, Hanson (2008) invokes Max Weber’s *verstehen* approach, which predates the positivist innovations of the Vienna Circle in the early 20<sup>th</sup> century, to show that modern political science is, in fact, rooted in interpretivist logic. Translated from German as “to understand,” *verstehen* requires the researcher to interpret social phenomena in their specific cultural or linguistic contexts.

Contrary to the claims of positivist purists, the inherent subjectivity of interpretivist epistemology does not preclude political scientists operating within its logical framework from pursuing scientific research. As Shively (2013) notes, research can be understood across two dimensions. On the one hand, research may be thought of as applied in that it aids the researcher in solving a specific problem or it may be thought of as basic in that it is conducted for its own sake. On the other hand, research may be considered empirical in that its purpose is to uncover previously unknown facts about the world, or it may be considered nonempirical in that its purpose is to propose novel theoretical explanations for facts that have already been known. While it is indeed possible to employ the interpretivist logic in the pursuit of both applied and basic research as well as empirical and nonempirical research, certain stipulations are inevitable. When conducting interview studies, for example, the researcher must always be aware of his or her “positionality”, as the identity of the researcher vis-à-vis that of the subject inevitably results in the emergence of a power dynamic that impedes the objective communication of information (Mosley, 2013, p. 12). One way to counter the issue of positionality in direct researcher-subject interviews is through the discussion group technique, in which subjects share their narratives with one another while the researcher assumes a more detached role like a discussion guide or passive observer (Zurbano-Berenguer et al., 2021). However, even when conducting ethnographic or observational studies, the researcher must likewise be aware that his or her immersion “in the field context can cause a loss of objectivity that leads to biased data generation and research” (Kapiszewski et al.,

2015, p. 11). Finally, when undertaking historical inquiries, the researcher must understand that since “the past no longer exists; what happened in the past cannot be perceived and is not directly knowable; it therefore takes an act of the imagination to create a picture of the past. That picture could take many different forms, all equally legitimate” (Trachtenberg, 2006, p. 7).

Strictly speaking, neither a purely positivist nor a purely interpretivist epistemology is compatible with political science. While positivist researchers aim to achieve the objective knowledge that is the hallmark of any science, the socially constructed nature of political phenomena makes this standard a frustratingly elusive goal. Conversely, while interpretivist researchers accept the inherent limitations of studying socially constructed phenomena, their dismissal of even the possibility of achieving objective knowledge makes science an altogether futile endeavor. Viewing the two epistemologies not as a binary dichotomy but as a broad range, Mosley (2013) concludes that even though many scholars would position their work in the middle of the continuum between interpretivism and positivism, or even closer to the interpretivist end, a sizeable portion of the discipline of political science nevertheless remains entrenched in the positivist field. King et al. (1994) take a less liberal view, at least as far as the possibility of movement across the epistemological spectrum is concerned, arguing that there is a single logical framework for all political scientists but that this framework does not lie on either extreme. Instead, they moderately—and somewhat ambiguously—assume that “it is possible to have some knowledge of the external world but that such knowledge is always uncertain” (p. 6). Responding directly to King et al.’s claim, George and Bennett (2005) concede that “if this logic of inference refers in a broad sense to the epistemological logic of deriving testable implications from alternative theories, testing these implications against quantitative or case study data, and modifying theories or our confidence in them in accordance with the results, then perhaps on a very general level there is one logic that is the modern successor of the still-evolving positivist tradition, although many disagreements remain about particular aspects of this logic” (p. 11).

### **The Second Logic: Ontology**

The second logic of qualitative research is ontological, relating to its approach to investigating the empirical world. In Hall’s (2003) conception, ontology represents the logical bridge between epistemology and methodology. Accordingly, Hall (2003) uses the term “to refer to the fundamental assumptions scholars make about the nature of the social and political world and especially about the nature of the causal relationships within that world”, adding that “if a methodology consists of techniques for making observations about causal relations, an ontology consists of premises about the deep causal structures of the world from which analysis begins and without which theories about the social world would not make sense” (p. 374). In effect, while the logic of epistemology generally separates interpretivist qualitative researchers from their positivist qualitative and quantitative peers, the logic of ontology also divides qualitative and quantitative researchers within the positivist camp. For some, like King et al. (1994), the very idea of a qualitative logic of ontology is redundant because, as with epistemology, “the same underlying logic provides the framework for each research approach. This logic tends to be explicated and formalized clearly in discussions of quantitative research methods. But the same logic of inference underlies the best qualitative research, and all qualitative and quantitative researchers would benefit by more explicit attention to this logic in the course of designing social research” (p. 3).

Hall (2003), however, rejects the single logic of inference proposed by King et al. He claims that qualitative approaches like the comparative method provide effective tests “only where the world conforms to a Humean ontology that associates causation with constant conjunction or where the causal variables being sought are necessary causes of an outcome”, while regression analysis

is more flexible in that “it is well adapted to an ontology that envisions probabilistic causation and, given enough cases, it can cope with some interaction effects” (p. 382). Despite this relative flexibility, quantitative regression analyses used to make causal inferences are only feasible if the causal relations in question meet certain ontological assumptions like unit homogeneity, by which “a change in the value of a causal variable  $x$  will produce a corresponding change in the value of the outcome of variable  $y$  of the same magnitude across all the cases”, and case independence, “such that the values of the causal variables in one case are unaffected by the value of the causal variables or outcomes in other cases” (p. 382). Particularly in the study of extensive historical processes, as Pierson (2003) warns, neither the ontological assumption of unit homogeneity nor case independence may hold true. Here, Ragin’s (2014) illustrative explanation for both the success of the Russian revolution of 1917 and the failure of the revolution of 1905—that “one obvious key difference between Russia in 1917 and Russia in 1905 is the simple fact that 1917 Russia had already experienced 1905 Russia, whereas 1905 Russia had not”—is particularly relevant (p. 38). Due to the chronological nature of their temporal relationship, the two cases of revolution cannot be viewed as independent of one another because lessons learned from the failure of the first revolution may have had an effect on the success of the second revolution. Relatedly, the experience of the first failed revolution may have altered the social, economic, or political status quo in such a way that made the second revolution more likely to succeed.

Another challenge to the view that a single logic of inference guides both positivist qualitative and quantitative researchers is presented by Mahoney and Goertz (2006) and further developed by Goertz and Mahoney (2012). In both works, they metaphorically refer to qualitative and quantitative approaches as two cultures of research that can add to the richness of scientific inquiry but often face the obstacles of cross-cultural communication, not least due to underlying ontological differences. They identify several criteria that fundamentally distinguish the two approaches. First, in terms of their approaches to explanation, qualitative researchers examine the “causes of effects” by “explaining outcomes in individual cases as well as studying the effects of particular causal factors within individual cases”, whereas quantitative researchers examine the “effects of causes” by estimating the average effect of independent variables (Goertz & Mahoney, 2012, p. 42). Their conceptions of causation also differ in that qualitative approaches search for necessary and sufficient causes as opposed to the correlational causes uncovered by quantitative statistical analyses. When it comes to equifinality, otherwise referred to as conjectural or multiple causation, qualitative research designs only face a few possible causal paths to a particular outcome, but quantitative models can produce thousands of such paths due to the large number of variables they examine. In fact, as Goertz (2017) notes, while “it is central to qualitative methods”, “equifinality does not exist in the conceptual vocabulary of scholars who use statistical methods” in part because it “is so deeply built into statistical and experimental models that it is not worth mentioning as an explicit concept” (p. 69). Relatedly, the scope of qualitative research tends to be relatively narrow in order to avoid causal heterogeneity, while quantitative research adopts a broader scope to maximize the possibility of generalization. Case selection in qualitative approaches tends to be oriented toward positive cases on the dependent variable, but quantitative approaches advocate selection on the independent variable. In line with Hall’s (2003) discussion of unit homogeneity, the authors observe that while qualitative research holds that substantively important cases must be explained in the analysis of observations, quantitative research treats all observations as equal and pays no special attention to substantively important cases. Likewise, nonconforming cases are examined closely for explanation in qualitative research, yet such cases are dismissed as outliers in quantitative research. Lastly, when the importance of concepts and measurement is debated, qualitative approaches place more importance on concepts, while

quantitative approaches place measurement and relevant indicators at the center of attention (Mahoney & Goertz, 2006).

Though the debate over whether the logic of ontology unifies or divides positivist researchers remains unresolved, it is an issue that must be taken into consideration from the outset of any research project. On the one hand, there are researchers who argue that a single logic of inference applies to all scientific endeavors, regardless of whether the researcher opts for a qualitative or quantitative approach to a given inquiry. On the other hand, there are also researchers who reject the notion of a single ontology, particularly within the context of social scientific research programs that investigate long historical processes. For the investigation of such complex and multifaceted social phenomena, the latter group of researchers argues for the inherent advantages of a qualitative “culture” that is based on a distinct ontology from that of its quantitative counterpart. In his conclusive advice to qualitative scholars, Hall (2003) recommends that “we should pay as much attention to what I have called ontology as we normally do to methodology. The value of a method will depend on its congruence with causal structures in the world”. He adds that qualitative research “will be stronger if those who work within it can transcend the separation that often occurs between discussions of methodology and ontology to give careful consideration to issues of ontology before deciding what method is appropriate for the problems at hand” (p. 399).

### **The Third Logic: Methodology**

The third logic of qualitative research is methodological, relating to the means by which it aspires to reach its scientific ends. In the positivist epistemological spirit, Przeworski and Teune (1970) propose “the goal of science is to explain and predict why certain events occur when and where they do” and that “to explain a specific event is to state the conditions under which it always or usually takes place, that is, to cite general statements (laws) from which other statements concerning properties of specific events can be inferred with some reasonable certainty” (pp. 18–20). In other words, the goal of science is to provide explanations for empirical phenomena, and such explanations are communicated in the form of theories. Even within the positivist tradition, however, there is disagreement over the usefulness of context-specific idiographic theories versus the feasibility of universally applicable nomothetic ones. Arguing that “context rarely counts” in political science and that “the most productive practical goal for political researchers should be to show that it does not count”, King (1996) further elaborates the argument for “one logic of inference” in support of the latter (p. 159). While some, like Bates (1993), applaud King et al.’s (1994) arguments for making qualitative research methods adhere to this singular logic, George and Bennett (2005)—who agree with the notion of one epistemological logic—nevertheless reject a singular logic of methodology. They respond that if the singular “logic of inference refers to specific methodological injunctions on such issues as the value of single-case studies, the procedures for choosing which cases to study, the role of process-tracing, and the relative importance of causal effects [...] and causal mechanisms as bases for inference and explanation, as [King et al. appear] to argue, then we disagree with the overall argument as well as some of the methodological advice [King et al. provide] to case study researchers on these issues (p. 11). Thus, while the logic of epistemology generally separates interpretivist qualitative researchers from positivist qualitative and quantitative researchers, and the logic of ontology divides qualitative and quantitative researchers within the positivist camp, the logic of methodology presents a lively debate among positivist qualitative researchers themselves.



In her historical overview of the subfield of comparative politics within the broader discipline of political science, Caramani (2020) describes how the so-called behavioral revolution of the mid-20<sup>th</sup> century shifted the subfield's theoretical orientation from normative theories like institutional elitism and pluralism to empirical ones like structural functionalism and rational choice. The behavioralists' theoretical developments were likewise accompanied by a methodological departure from descriptive accounts of cases in favor of computational data like statistical information. This is not to say, however, that case studies have lost their relevance in modern social science. Addressing the inferential power of case studies, Van Evera (1997) proposes five purposes for which they can be employed: "testing theories, creating theories, identifying antecedent conditions, testing the importance of these antecedent conditions, and explaining cases of intrinsic importance. The first four purposes are similar in their logic and are realized using the same basic methods" (pp. 55–56). The fifth purpose, that of case-explaining, follows a logic that "parallels that of a pathologist doing an autopsy or a detective solving a crime", as "specific explanations of the death (or crime) are evaluated by asking if they rest on a valid covering law, if the conditions for that covering law's operation—its cause and required antecedent conditions—are observed in the case at hand, and if telltale phenomena that signal its inner workings are also observed." In sum, "a case-explaining inquiry does not test theories, although the evidence collected could also be used to check a theory's validity" (p. 75). However, if theory-testing is the research goal, case studies offer three strategies for pursuing it: controlled comparison, congruence procedures, and process tracing. With respect to these methodological approaches, Van Evera (1997) offers further insight, explaining that "controlled comparison uses comparative observations across cases to test theories. Congruence procedures are of two types, with one type using comparative observations across cases to test theories, the other using observations within cases. Process tracing tests theories using observations within cases" (p. 56).

With respect to theory-testing with single-case studies, Rueschemeyer (2003) asserts that "a single case can force the rejection of a hypothesis or its modification, provided that the proposition in question was not formulated in probabilistic terms" (p. 310). As mentioned above, the deterministically formulated hypothesis of the democratic peace theory, that democracies do not go to war with one another, would effectively be falsified should a case of dyadic conflict between democratic states be observed. Moving beyond theory testing, Rueschemeyer (2003) also believes that single-case studies "can offer persuasive causal explanations", noting that "skepticism about this claim rests ultimately on the mistaken identification of a single case with a single observation. Good historical analysis that is analytically oriented goes through frequent iterations of confronting explanatory propositions with many data points" (p. 318). According to Mahoney (2003), one notable strategy that allows qualitative researchers to treat several different combinations of variables as the causes of an outcome is Boolean algebra. "In particular", he claims, "this methodology provides a logical basis for identifying combinations of causal factors that are sufficient for the occurrence of an outcome. [...] In this way, Boolean procedures enable researchers to recognize that multiple causal combinations may produce the same outcome, what Ragin (1987) calls 'multiple conjunctural causation'" (p. 343).

While single-case studies or within-case analyses play an important role in qualitative research, most qualitative research nevertheless aims to compare observations across cases. As George and Bennett (2005) explain, "the essential logic of the comparative method is derived from John Stuart Mill's *A System of Logic* (1843). In this work, Mill discussed the 'method of agreement' and the 'method of difference'", which respectively attempt "to identify a similarity in the independent variable associated with a common outcome in two or more cases" and "to identify independent variables associated with different outcomes". Moreover, "a third method identified by Mill was the method of concomitant variations", which "instead of observing merely the

presence or absence of key variables, [...] measures the quantitative variations of the variables and relates them to each other” and “in some sense [constitutes] a precursor to statistical methods” (pp. 153–154). In contemporary methodological terminology, as proposed by Przeworski and Teune (1970), Mill’s methods of agreement and difference are commonly referred to as the “most similar” and “most different” research designs. In a clarifying note, George and Bennett observe that “one source of semantic confusion here is that the most similar design parallels the logic of Mill’s method of difference, while the most different design corresponds with Mill’s method of agreement” because “Mill’s terms come from a comparison of the dependent variables, while Przeworski and Teune focus on comparison of the independent variables” (p. 165). Mill’s method of concomitant variations has also undergone several innovations, most notably through Ragin’s (2000) fuzzy-set method. As Mahoney (2003) explains, “fuzzy-set measurement defies easy classification along standard scales of measurement (i.e. nominal, ordinal, interval, and ratio measurement), though it parallels the nominal concern with set membership”. He adds that “to use fuzzy sets, the analyst must score cases from 0 to 1 based on their degree of membership in a category. Some cases will be ‘full’ instances of a category and thus receive a score of 1, even if these cases have different scores on an interval scale” (p. 346).

Regardless of whether the qualitative research design examines a single case or several cases, certain methodological considerations must always be taken into account. One such consideration is that of case selection. Fearon and Laitin (2008), for whom “the goal is to draw insights about causal mechanisms from case studies so as to illuminate the findings from a large-N, regression-type analysis”, believe that “the idea of random sampling is of course central to the broad literature on statistical inference” and that “a key advantage of this approach is to prevent scholars from deliberately selecting cases favorable to their preferred hypotheses, thus engaging in ‘cherry-picking’” (Collier, 2008, p. 2). On the other hand, Freedman’s (2008) “overall position is to prefer purposive selection. For case-study analysis concerned with checking models employed in large-N research, he recommends a focus on cases consistent with predictions of the model, cases not consistent with its predictions, and influential cases that appear to have an especially strong effect on findings derived from the model” (Collier, 2008, pp. 2–3).

Another methodological consideration that must always be taken into account is that of data collection. In an interview research design, Lynch (2013) highlights the importance of analyzing both overt and latent content. “The overt content of interviews”, she explains, can “be analyzed for recurrent themes, issues, and relationships that respondents raise in the course of answering our questions [...]. Various forms of qualitative content analysis, done by hand or with the aid of software packages like NVIVO or Atlas.ti, allow us to sift through the data in our interview notes and transcripts to think systematically about the world as our respondents have recounted it to us”. In contrast, “latent content is information we glean from an interview that is not directly articulated by the interviewee in response to our questions. As such, it constitutes a kind of metadata that exists on a plane above the overt content of the respondent’s verbal answers to our questions” (p. 36). In an ethnographic or observational research design, Kapiszewski et al. (2015) advise researchers to be mindful of obtaining “hidden” data, as “information relating to some topics is intentionally hidden—sensitive, confidential, or even taboo. Powerful people, organizations, or governments may prefer that it not be made known, while less powerful actors may fear the consequences of sharing such information” (p. 246). Regardless of whether conducting interviews or ethnographies, Brooks (2013) reminds researchers that they must always be mindful of the ethical issues that may arise when studying human subjects, thus making proposals for Institutional Review Board approval an inherent methodological consideration related to data collection. Finally, in a comparative historical research design, Lustick (1996) and Thies (2002) both note the discipline’s increasing emphasis on performing archival fieldwork to collect data from primary sources, a

significant development from the times of Moore (1966) and Skocpol (1979), who argues that studies in comparative historical analysis should be almost entirely reliant on secondary source materials like books and journal articles previously published by relevant experts like historians, archaeologists, and anthropologists. In her view, the unique scholarly contribution of political scientists is to assess systematic correlations between cases and propose theoretical explanations for the causes of historical phenomena rather than uncovering new primary source data about the topics of interest.

### **The Limitations of Qualitative Research and the Remedies of Multimethod Approaches**

As with any single approach to conducting research, the inferential power of qualitative case studies is inevitably limited by certain trade-offs that are associated with the epistemology, ontology, and methodology that constitute their logical foundations. As listed by George and Bennett (2005), common trade-offs include “the problem of case selection; the trade-off between parsimony and richness; and the related tension between achieving high internal validity and good historical explanations of particular cases versus making generalizations that apply to broad populations”, while inherent limitations include “a relative inability to render judgments on the frequency or representativeness of particular cases and a weak capability for estimating the average ‘causal effect’ of variables for a sample” (p. 22). Numerous as they might appear, these trade-offs and limitations can be overcome by approaching the logic of qualitative research with a degree of flexibility. Though they assume a positivist-oriented epistemology, Brewer and Hunter (2006) ascertain that “social research today is highly diverse in nearly every respect, including methodology. Researchers in different social scientific disciplines and subdisciplines now study a myriad of research problems—not only from a number of different theoretical perspectives but also with several quite different types of research methods. This diversity of methods implies rich opportunities for cross-validating and cross-fertilizing research procedures, findings, and theories.” In order to take advantage of these opportunities, they recommend developing “more cosmopolitan research strategies”, which they define as “approaches that systematically explore the new avenues of research that methodological diversity affords” (p. 1).

In an effort to bridge the divide between qualitative and quantitative research approaches, Tarrow (2004) proposes that “qualitative analysis focused on processes of change within cases may uncover the causal mechanisms that underlie quantitative findings” and that “qualitative analysis can explain turning points in quantitative time series and changes over time in causal patterns established with quantitative data”. He also notes that “across multiple research projects in a given literature, researchers move between qualitative and quantitative analysis, retesting and expanding on previous findings,” while “within a single research project, the combination of qualitative and quantitative data increase inferential leverage” through triangulation (p. 174). Like Tarrow, Seawright (2016) also views the exclusive reliance on a single approach to research as a handicap for political scientists but argues that simply using qualitative and quantitative methods to complement each other is not sufficient. Indeed, he claims that “multimethod research can be much more powerful than the triangulation design.” For instance, “integrative designs are multimethod designs in which two or more methods are carefully combined to support a single, unified causal inference. With such a design, additional methods are used to test or reframe the assumptions behind the central causal inference—potentially opening the door to an improved overall causal inference” (p. 47).

An example of such an integrative research design is Goertz’s (2017) research triad. As he explains, “multimethod research typically is conceptualized as qualitative—within-case inference—along with quantitative cross-case inference. The research triad adds a third dimension

to that, i.e., causal mechanisms. The research triad is an integrated approach because a commitment to multimethod research is also a commitment to a causal mechanism approach to explanation and social science research” (p. 2). In practice, the research triad advocates a balance between pursuing within-case inference through strategies like process tracing or counterfactuals, pursuing cross-case inference through strategies like experiments or qualitative comparative analysis, and pursuing causal mechanisms through strategies like game theory. Another example of an integrative research design is Lieberman’s (2005) nested analysis, which he describes as “a unified ‘mixed method’ approach to comparative research” that “combines the statistical analysis of a large sample of cases with the in-depth investigation of one or more of the cases contained within the large sample”. In effect, “nested analysis is resolutely ‘catholic’ in its assumptions and objectives. It assumes an interest in both the exploration of general relationships and explanations and the specific explanations of individual cases and groups of cases” (pp. 435–436).

In light of the debate over methodological pluralism, Goertz and Mahoney (2012) conclude that “the existence of differences between the quantitative and qualitative paradigms does not have to be a source of conflict in the social sciences.” Since both approaches adhere to coherent systems of logic, “it is not surprising that many researchers gravitate strongly toward one and not the other. Fortunately, cooperation and mutual respect do not require that all scholars become fully members of both cultures. There is no reason to argue against the existence of a division of labor in which some scholars pursue the specialized tasks for which their methods and tools are best equipped.” Indeed, “if we allow for some division of labor and the possibility of mixing the two cultures, we arrive at a pluralistic vision of social science. On this view, there should be an important and respected place for quantitative research, qualitative research, and various kinds of mixed-method research” (pp. 225–226).

## **Conclusion**

By reviewing classic works on the philosophy of science and contemporary pedagogical guides to scientific inquiry, this essay presents a discussion of the three logics that underlie qualitative research in political science. The first logic, epistemology, relates to the essence of research as a scientific endeavor and is framed as a debate between positivist and interpretivist orientations within the discipline of political science. The second logic, ontology, relates to the approach that research takes to investigating the empirical world and is framed as a debate between positivist qualitative and quantitative orientations, which together constitute the vast majority of mainstream researchers within the discipline. The third logic, methodology, relates to the means by which research aspires to reach its scientific ends and is framed as a debate among positivist qualitative orientations.

As the scope of this essay is limited to presenting a mostly theoretical discussion of the three logics of qualitative research, certain concessions are made in terms of sources selected for inclusion. For example, the essay draws on relatively limited illustrative examples of how the three logics are applied in practice, at least with respect to longer volumes that include entire bibliographic appendices for this purpose (e.g., George & Bennett, 2005; Trachtenberg, 2006). Relatedly, in its discussion of different theoretical viewpoints concerning the three logics, the essay avoids digressing into technical prescriptions for applying particular research strategies to practical studies for publication, as the methodological appendices of longer volumes can also be referenced to fill this gap (e.g., Kapiszewski et al., 2015; Mosley, 2013a; Small & Calarco, 2022; Van Evera, 1997). The first and foremost consideration of any researcher, qualitative or otherwise, is to understand the foundational logic on which his or her research design is constructed. This essay hopes to serve that purpose.

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