



The evolution of research methodology in the social sciences and humanities

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Abstract

This article systematically examines the evolution of research methodology in the social sciences and humanities, tracing its development from traditional positivist frameworks to contemporary pragmatic and digital approaches. It explores the foundational philosophical concepts of ontology and epistemology, demonstrating how they dictate methodological choices.

Keywords: Research Methodology, Epistemology, Positivism, Qualitative Research, Mixed Methods.

ملخص:

يبحث هذا المقال بشكل منهجي في تطور منهجية البحث في العلوم الاجتماعية والإنسانية، متتبعا مساراها من الأطر الوضعية التقليدية إلى المناهج البراغماتية والرقمية المعاصرة. ويستكشف المفاهيم الفلسفية التأسيسية للأنطولوجيا والإبستمولوجيا، موضحا كيف تملّي هذه المفاهيم الخيارات المنهجية. يحلل البحث نقديا الثنائية التاريخية بين النماذج الكمية والنوعية، مسلطا الضوء في النهاية على صعود بحوث المناهج المختلطة كحل براغماتي.

الكلمات المفتاحية:

المنهجية العلمية، نظرية المعرفة (الإبستمولوجيا)، الفلسفة الوضعية، البحث النوعي، المناهج المختلطة.

1. Introduction

In academic inquiry, "methodology" is frequently conflated with "methods," yet the two represent fundamentally different levels of abstraction. While methods refer to the specific tools and techniques used to gather and analyze data (such as surveys, interviews, or statistical modeling), methodology refers to the overarching theoretical and philosophical framework that justifies the use of these methods. It is the architectural blueprint of research, providing a logical rationale for how a researcher approaches the discovery of knowledge.

The history of scientific methodology is marked by continuous evolution, driven by shifting philosophical paradigms. In the social sciences and humanities, this evolution has been particularly dynamic, characterized by intense debates over what constitutes valid knowledge. This article explores the trajectory of research methodology, examining its epistemological foundations, the historical divide between quantitative and qualitative paradigms, the emergence of pragmatic mixed methods, and the contemporary challenges posed by the digitalization of research.

2. Philosophical Foundations: Ontology and Epistemology

Any methodological framework is inevitably anchored in specific philosophical assumptions about the world and how we can understand it. Understanding methodology requires a rigorous examination of two foundational concepts: ontology and epistemology.

2.1. Ontology: The Nature of Reality Ontology deals with the nature of existence and reality. In methodological terms, it asks whether reality is objective and external to human perception (Realism), or whether it is subjective, socially constructed, and dependent on human consciousness

(Constructivism/Relativism). A researcher's ontological stance directly dictates what they believe can be studied.

2.2. Epistemology: The Nature of Knowledge Epistemology concerns the theory of knowledge—how we know what we know, and what constitutes valid evidence. An objectivist epistemology posits that truth can be discovered through neutral, value-free observation, demanding methodologies that separate the researcher from the researched. Conversely, a subjectivist or interpretivist epistemology argues that knowledge is inherently mediated by human interpretation, requiring methodologies that embrace the researcher's active role in co-creating meaning with the participants.

3. The Quantitative Paradigm: Positivism and Post-Positivism

For much of the 19th and early 20th centuries, the social sciences sought to emulate the methodological rigor of the natural sciences. This aspiration gave rise to the Positivist paradigm, championed by thinkers like Auguste Comte and later refined by the Vienna Circle.

3.1. The Positivist Framework Positivism is built on a realist ontology and an objectivist epistemology. It assumes an ordered, measurable universe governed by universal laws. Methodologically, positivism relies heavily on deductive reasoning—starting with a theoretical hypothesis and testing it against empirical data. It utilizes quantitative methodologies, emphasizing statistical generalization, variable control, reproducibility, and mathematical precision. The goal is causal explanation and prediction.

3.2. The Shift to Post-Positivism Recognizing the limitations of strict positivism, particularly its failure to account for human error and the complexity of social phenomena, Karl Popper and others introduced Post-Positivism. Post-positivists accept that all observation is fallible and

theory-laden. Methodologically, they shifted from seeking absolute verification to pursuing "falsification." While still quantitative and seeking objectivity, post-positivism acknowledges that knowledge in the social sciences is conjectural rather than absolute.

4. The Qualitative Turn: Interpretivism and Constructivism

As the 20th century progressed, scholars like Max Weber argued that human behavior cannot be reduced to statistical laws. Humans act based on meanings, intentions, and cultural contexts. This realization fueled the "Qualitative Turn," rooted in Interpretivism and Constructivism.

4.1. Verstehen and Phenomenological Methodology Interpretivism seeks Verstehen—an empathetic understanding of human behavior from the actor's perspective. The methodological focus shifts from the macro-level of statistical populations to the micro-level of individual lived experiences. Methodologies within this paradigm, such as Phenomenology, Ethnography, and Grounded Theory, employ inductive reasoning. Researchers gather rich, narrative data through unstructured interviews, participant observation, and textual analysis, allowing theoretical concepts to emerge organically from the data rather than imposing pre-existing hypotheses.

4.2. Critical and Feminist Methodologies Expanding on interpretivism, Critical Theory and Feminist methodologies emerged to challenge the supposed "neutrality" of traditional research. These methodologies argue that all research is political. Their methodological imperative is not merely to describe the world, but to emancipate marginalized groups by exposing systemic power imbalances. Here, methodology becomes an instrument of social justice, actively involving participants as co-researchers rather than passive subjects.

5. The Pragmatic Revolution: Mixed Methods Research

For decades, the "paradigm wars" raged between quantitative and qualitative purists, each claiming epistemological supremacy. However, the late 20th and early 21st centuries witnessed a paradigm shift toward Pragmatism, which paved the way for Mixed Methods Research (MMR).

5.1. The Pragmatic Worldview Pragmatism, as articulated by John Dewey and Charles Sanders Peirce, bypasses the rigid ontological debates of realism versus constructivism. Instead, pragmatism focuses on "what works." It dictates that the research question itself should drive the methodology, rather than ideological allegiances. If a problem requires both statistical trends and in-depth narratives, both should be used.

5.2. Designing Mixed Methods Scholars like John W. Creswell formalized MMR into specific methodological designs. The Sequential Explanatory Design begins with quantitative data collection to establish general trends, followed by qualitative inquiry to explain why those trends occur. Conversely, the Sequential Exploratory Design starts qualitatively to build a new instrument or theory, which is then tested quantitatively. By triangulating data, MMR provides a more comprehensive, robust, and nuanced understanding of complex social phenomena than either monomethod could achieve alone.

6. Methodological Challenges in the Digital Age: Computational Social Science

The 21st century has introduced a profound methodological disruption through digitalization. The advent of Big Data, algorithmic tracking, and artificial intelligence has given rise to Computational Social Science, creating entirely new epistemological frameworks.

6.1. Big Data and Algorithmic Methodology Traditional methodologies rely on sampling because studying an entire population was logistically impossible. Today, researchers can analyze entire datasets containing millions of digital interactions (e.g., social media algorithms, global mobility data). This shift from sampling to "N=All" fundamentally alters statistical methodology. Furthermore, the use of machine learning algorithms to conduct sentiment analysis or predictive modeling introduces a methodology where the "researcher" is partially automated, raising new questions about algorithmic bias and the transparency of data processing.

6.2. Digital Ethnography Qualitative methodologies have also adapted. Digital ethnography (or netnography) applies anthropological methods to online communities, studying virtual avatars, forum dynamics, and digital discourse. This requires methodological innovation regarding how to define "presence," "community," and "interaction" in non-physical spaces.

7. Ethical Considerations in Modern Methodology

A rigorous methodology is not only scientifically valid but also ethically sound. The evolution of methodology has been accompanied by a tightening of ethical frameworks, particularly following historical research abuses.

7.1. Reflexivity and Power Dynamics In qualitative methodologies, ethical rigor demands reflexivity—the researcher's continuous, critical self-evaluation of how their own biases, gender, and socio-economic status influence the data collection and interpretation. Addressing the inherent power dynamic between the researcher and the participant is a methodological requirement, ensuring that narratives are not exploited or misrepresented.

7.2. Data Privacy and Digital Ethics In computational methodologies, ethics center on data privacy, informed consent, and surveillance. Scraping data from public social media profiles raises profound methodological ethics questions: Does a public tweet constitute informed consent for academic study? Methodological frameworks must now incorporate strict data anonymization protocols and navigate the ambiguous legal and ethical terrain of digital ownership.

8. Conclusion

The trajectory of research methodology is a testament to humanity's relentless refinement of the pursuit of truth. From the rigid laws of positivism to the nuanced depths of qualitative inquiry, and from the pragmatic synthesis of mixed methods to the revolutionary scope of computational data, methodology is constantly evolving. A sophisticated researcher today must possess methodological pluralism—the ability to understand and deploy diverse philosophical and practical frameworks. Ultimately, methodology is not a static set of rules, but a dynamic, critical, and ethical engagement with the world, ensuring that our claims to knowledge are rigorously justified, culturally sensitive, and scientifically robust.

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