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An exploration of research philosophy and a select range of methodological approaches, designs and methods appropriate for research in work-based settings

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Introduction

Due to the field of research being vast it is not possible, within the scope of this paper, to cover every aspect in detail. Therefore, I will briefly explore the philosophical foundations of research, specifically ontology, epistemology and axiology, critically evaluate a selection of paradigms and methodological approaches, designs and methods, critically reflect on their suitability for use in voice-related work-based settings, particularly in relation to my practice as a community musician, focussing on singing for health and well-being and working with predominantly vulnerable adults, and evaluate the importance of research ethics and issues of insider research, concluding with reflection overall.

Ontology, “derived from the Greek word for being” (Blackburn, 2016, [no pagination]) is a philosophical theory concerned with the nature of existence, our sense of being and how we see reality. Our theory of social reality will be based on what we may know, underpinned by a set of assumptions and beliefs (Blaikie, 2000; Grix, 2001). To understand how we reach that ontological perspective is through epistemology.

Epistemology is concerned with the theory of knowledge, questioning its origins, the reasoning behind how and why we acquire it, and how that knowledge might adapt within a changing world (Blackburn, 2016). What is considered legitimate knowledge by a researcher, such as numerical or visual data, facts or interpretations, and narratives or stories, is driven by their epistemological assumptions and therefore informs choice of research methods (Saunders, et al., 2016).

Axiology involves the study of values or goodness and addresses the nature of ethical behaviour within the research process. It questions how researchers handle their values and those of research participants, whilst also making judgements about the type of research to be conducted and how it will be undertaken (Saunders, et al., 2016).

Individually, ontology, epistemology and axiology are branches of philosophy (see Figure 1), which is the study of ideas, exploring and challenging the concepts and foundations of truth, knowledge, proof, reasoning and what is deemed of value, with philosophical reflection viewed as an ongoing and evolving part of contemporary best practice (Blackburn, 2016). However, collectively, our ontological, epistemological and axiological perspectives help determine a philosophical and theoretical framework, a lens through which to view our research, referred to as a paradigm, which “consists of the fundamental ideas, methods, language and theories that are accepted by the members of a scientific community” (Anand, et al., 2020, p. 1650).

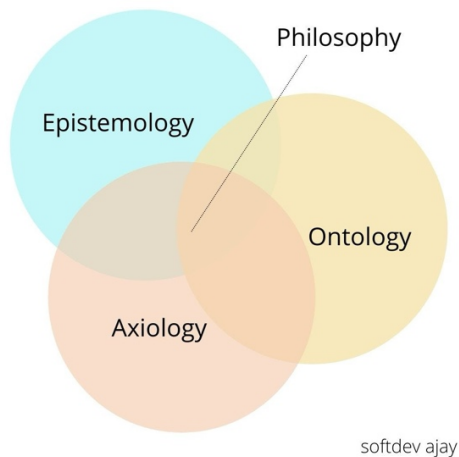


Figure 1: “How Epistemology, Ontology and Axiology are connected in Philosophy” (Ajay, 2021)

There are two dichotomies of ontology: **objectivism**, which embraces **realism**, and believes that social and physical phenomena exist independently, epistemologically linking to the theories of the natural sciences, where reality is singular, one truth, and axiologically detached from values where research is external to the people involved (social actors); and **subjectivism**, which embraces **conventionalism**, where fundamental principles are based on societal agreement rather than external reality, and believes there are multiple realities, epistemologically linking to the theories of arts and humanities, where reality is perspectival, and axiologically value-bound with research a social construct derived from the perceptions and actions of the social actors (Saunders, et al., 2016). I would lean towards subjectivism if conducting group research, as I recognise that the experience and perspective of individual participants differ and contribute to a multifaceted reality.

There are three main epistemological approaches that provide a lens through which knowledge and reality can be produced or viewed: **positivism**, which originated from the French philosopher Auguste Comte in the 19th century, and uses empirical observation and verification through a scientific approach (Cohen, et al., 2018), therefore linked to **objectivism** in ontology; **interpretivism**, which uses observation and our understanding of human behaviours, experiences and meaning to interpret research through social science rather than natural science (Alharahsheh & Pius, 2020), therefore linked to **subjectivism** in ontology; and **pragmatism**, which originated in the United States in the late 19th Century, and focuses on action through a mixed-approach, underpinned by a belief that experience is knowledge and that human thought and experience are intrinsically linked (Kaushik & Walsh, 2019), therefore sitting between the ontological extremes of **objectivism** and **subjectivism**. I would most likely assume an interpretivist position, to deepen my understanding of participant experience and meaning through social science research.

To further establish our philosophical grounding involves considering what we believe to be of value, and ethical, from our **axiological** perspective as a researcher and those of our research participants, adhering to honesty, integrity and truthfulness throughout with an awareness of actual or potential bias and limitations, to help provide balance and guidance with decision-making (Killam, 2013). However, what constitutes value? Patterson & Williams (1998) refer to Laudan's model (see Figure 2), where axiology commits to an underlying goal of a scientific approach, ranging from positivist, a universal view of behaviour, to interpretivist, a reality that changes and evolves, with specific criteria that can be evaluated and peer-reviewed to determine its value. A robust approach appears to indicate, and justify, a greater confidence in data validity, but interpretation of that data by the researcher and their peers will depend on what they deem of value.

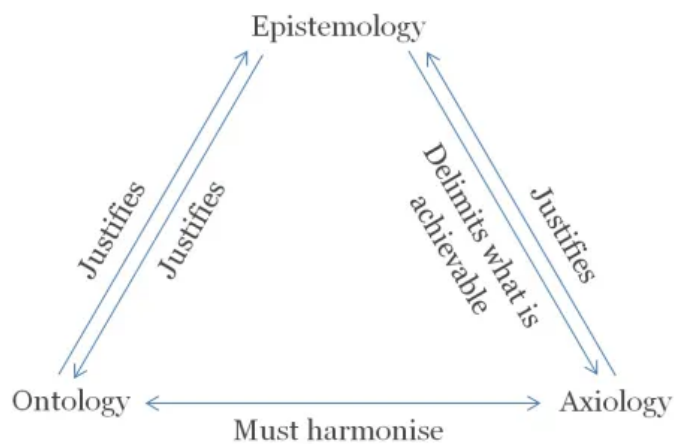


Figure 2: Paradigmatic Commitments (Adapted from Laudan, 1984) (Patterson & Williams, 1998)

Research Paradigms

A paradigm determines the way in which research is designed and influences how results are interpreted (Oxford Companions, 2006), hence it could be considered critical for a researcher to understand the paradigm that underpins their work and implications of that selection. However, following a study of social research paradigms and diverse methodological approaches for social life cycle assessment, Iofrida, et al. (2018) argued that, due to subtle boundaries between paradigms, researchers are not always aware of which paradigm supports their work. This indicates that time spent considering, and selecting, the best paradigm to support answering a research question, should be best practice, as it subsequently informs all aspects of the research process.

Below is an overview of paradigms commonly used in research, which are **positivism, post-positivism, interpretivism (or constructivism), pragmatism and transformative** (Mackenzie & Knipe, 2006).

Positivism is a belief that procedures utilised in natural science should be replicated, where possible, in social science, with the aim of reaching a conclusion through rigid control and certainty, utilising quantitative methodologies (Blaxter, et al., 2006). Positivism relies on logic and verifiability through testing that is more scientific in nature (Given, 2008b), rejecting metaphysics, a branch of philosophy, and theism, the belief in existence of a god or gods (Stevenson, 2010). The strict controls put in place for testing an existing hypothesis, resulting in data that can be trusted by the scientific community and generalized for the larger population, combined with minimised bias through no interaction between researcher and participants (Park, et al., 2020), could all be considered strengths of this paradigm. However, within the framework of singing for health and well-being, a positivist paradigm would not capture an individual's lived experience or social connection, which is an important part of my work, and therefore a limitation of this paradigm. Although, perhaps **post-positivism**, which upholds the positivist position, but acknowledges that social reality is complex and varied, utilising quantitative and qualitative methodologies (Blaxter, et al., 2006), is potentially more suitable because it aims to understand the complexities of experience whilst retaining the same rigour.

Interpretivism is an assumption that social reality is underpinned by cultural and historical experience, concerned with understanding and meaning rather than explanation (Blaxter, et al., 2006). It has often been referred to as **constructivism**, particularly during the 20th and 21st centuries, when social, psychological and radical approaches developed to reflect the varying ways in which knowledge is socially constructed (Given, 2008a). Perceived as an alternative to the positivist paradigm, constructivism provides the foundation for qualitative research methods, stimulating reflection and deeper meaning through interaction between researchers and participants, a collaboration which is central to findings (Ponterotto, 2005). A strength of this paradigm is recognising that multiple realities exist and developing a theory through analysis of findings, which, with an ontological perspective of subjectivism, would be relevant to my practice. A limitation is the risk of bias as an insider-researcher, a term explored later in this paper, where, for example, interpretation of findings could be overly influenced by my own perspective.

Pragmatism is more flexible, to reconcile the ontological extremes of objectivism and subjectivism, by utilising multiple approaches to address a complex and specific issue, with the aim of identifying practical solutions (Saunders, et al., 2019). However, some critics conclude that this paradigm does not encourage action and, by engaging conflicting research methods, is an attack on theoretical thought (Given, 2008c). Is it realistic to expect a pragmatic approach to address an issue with two opposing, incompatible ontological views and approaches? Perhaps a strength of this paradigm is that it aims to bridge that dichotomy, however, limitations could arise when analysing findings, as the researcher may be inconsistent with their interpretation of data based on interchangeable ontological perspectives.

Transformative is a framework that strives to generate action for social change, where reform of undesirable and common social practices is identified, through collaboration, observation and understanding of diverse perspectives on beliefs and experiences, developing a meaningful commentary that embraces equity, reflection and social justice (Given, 2008d). The ontological aspect of this paradigm poses questions of how reality is defined, who defines it, which reality is given precedence and what the implications of such a reality are, considering power and privilege, on social justice (Mertens, 2007). Despite being what could be described as a meaningful and noble paradigm, potentially giving rise to positive change and freeing oppressed individuals or communities, difficulties generalizing results to a larger population and associated ethical, moral and political dilemmas, means that the desired transformation is often unrealised (Given, 2008d). Hence, a limitation of this paradigm is a realistic outcome, however, could aspiration to achieve meaningful social change be deemed a strength, if it can help contribute to a larger and longer-term project?

Methodology, Designs and Methods

A research paradigm also determines **methodology**, a framework that outlines the rules, or strategy, to follow. There are two main methodologies: **quantitative**, with an ontological perspective of **objectivism**, focussing on numerical data resulting from a tested hypothesis using a cause-and-effect approach referred to as **deductive**; and **qualitative**, with an ontological perspective of **subjectivism**, focussing on meaning and data resulting from an experiential perspective, developing a theory from the emerging data, referred to as **inductive** (Saunders, et al., 2019). A more adaptable approach is **abductive**, seeking plausible explanation through creativity and informed speculation (Stewart, n.d.), where data collection is exploratory to explain patterns and identify themes, either adjusting an existing theory, or developing a new one that can be tested further (Saunders, et al., 2019).

It is not restricted to either methodology (Lipscomb, 2012), and as such a flexible abductive approach might be more suited to **mixed methods** research, which utilises both quantitative and qualitative methods to establish a wider perspective, where, for example, using one approach would not provide enough data to answer the research question (Creswell, 2012c).

The four main types of **quantitative** research are **correlational**, **experimental**, **quasi-experimental** and **descriptive** (Thomas, 2024).

The aim of a **correlational** approach is to measure the relationship between at least two variables through pattern analysis, identifying similarities, differences and how they influence each other, through an explanatory design, anticipating future outcomes through a prediction design (Creswell, 2012a). An example of this approach in singing for health and well-being might be to explore the correlation between the numbers of sessions attended and outcomes of a well-being survey. This could perhaps inform the minimum number of sessions deemed required to achieve beneficial outcomes, to support a funding application.

Whereas a correlational approach is focussed on association between variables, an **experimental** approach aims to establish possible cause and effect on dependent variables. This involves testing an idea or procedure with independent variables controlled or manipulated by the researcher, to establish changes in a dependent variable, using control and experimental groups with random assignment of participants (Creswell, 2012b). Due to its specificity, an advantage is that it provides clarity and a basis on which research can be replicated by others for further examination. A disadvantage is in practicality of randomization, for example, if participants and researchers are known to each other, pre-existing knowledge, regardless of random assignment, might influence outcomes, invalidating the experiment (Easterby-Smith, et al., 2015). A more suitable approach might be **quasi-experimental**, because there is no random assignment of participants. However, there is a potential threat to validity of conclusions drawn from the research through, for example, selection bias by the researcher in allocating participants to groups (Creswell, 2012b). However, conditional conclusions can be enabled if the researcher identifies and mitigates those potential threats (O'Dwyer & Bernauer, 2014a). Ethical concerns might also be a disadvantage with an experimental approach (Easterby-Smith, et al., 2015). For example, when reflecting on the vulnerable clients I work with, including adults with learning difficulties or acquired head injury, an ethical concern would be risk of harm to participants (UK Statistics Authority, 2022), and as such, I would be unlikely to undertake an experimental approach in my practice.

The aim of a **descriptive** approach is to establish what the characteristics or attributes are and how they relate to each other, through non-experimental study. A common design is **survey research**, which can use any form of collection method, such as an aptitude test or interview, although a questionnaire is primarily used, a self-reporting tool that participants complete with data obtained and analysed by the researcher (O'Dwyer & Bernauer, 2014b). On the assumption that there are regular and verifiable patterns in behaviour, both individually and organizationally, an advantage of survey research is that a large sample of data can be obtained (Easterby-Smith, et al., 2015), which means results are more accurate and representative of the population (Andrade, 2020). However, underlying factors and variables that produce the results could be a disadvantage, for example, bias through choices made in sample design (Easterby-Smith, et al., 2015). Hence, validity of the data could be questionable, which emphasises the importance of a thorough and well-planned research design that considers best approach and identifies, then mitigates, potential issues. A quantitative questionnaire could be utilised with a community singing group to ascertain how many individuals have had singing lessons, over what period, and how much time per week they spend singing outside of the group. I would be mindful of using such a method with vulnerable adult groups, as potentially answers given could be overly influenced by an individual's family or support worker.

An example of steps usually taken in quantitative research are summarised below (see Figure 3).

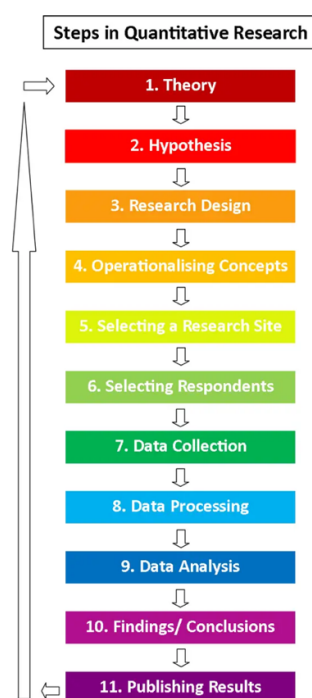


Figure 3: "Main Steps in Quantitative Research" (Thompson, 2023)

There are numerous types of **qualitative** research methodologies. I have selected **action research**, **case study** and **ethnography**, due to my interest in social science and exploring methodologies that could be suitable for voice-based research with individuals or groups.

Action research is a methodology that aims to deal with issues in a practical way and bring change through a research process that actively involves both participants and practitioner (Denscombe, 2010a). Due to the collaborative nature of this approach, reflexivity by the practitioner, or researcher, is critical, as continually examining and systematically reflecting on their philosophical position, relationship with participants and understanding what is influencing their decisions and how, will have implications on research process and outcomes (Bryman, 2016c). A strength of this approach is the combination, and immediacy, of action and research. However, due to usually being associated with small-scale projects, ethical boundaries around participation and ownership of research undertaken and associated outcomes can be a limitation (Denscombe, 2010a). Thinking externally to my own practice, action research could be suitable in voice pedagogy, due to the immediacy of working with a student to identify a specific area or issue to be addressed in lessons. If it was suspected that the student, for example, has vocal nodules rather than fatigue, ethically the researcher would need to stop immediately to avoid risk of damage to vocal chords and sign-post to an ENT (Ears, Nose and Throat specialist) for further investigation.

The **case study** is an in-depth form of research focussed on a particular instance or characteristic to be investigated, self-contained with distinct boundaries and purposefully selected rather than randomised, allowing a holistic and detailed approach to explore and explain complexities, and encouraging multiple research methods based on circumstance and need. In practice, and particularly in social research, the case study has been aligned with qualitative methodology more than it has with quantitative (Denscombe, 2010c). A strength of this approach is being able to utilise select research methods on a smaller scale, enabling a broader scope, providing a deeper and wider understanding. However, therein also lies its limitation. For example, despite promising findings using a multimodal approach to melodic intonation therapy, Slavin & Fabus (2018) acknowledged the limitation of their case study with a single-subject design because, despite internal validity of findings, there were concerns around external validity, as a single case is not representative (Bryman, 2016b). In my practice, a case study could be a feasible approach if I wanted to focus on, for example, the effect of singing on an individual with mild learning difficulties, to ascertain impact on anxiety, cognitive ability and their sense of well-being. To avoid issues relating to a single-subject design, my preference would be to work with more than one individual to enable comparison of outcomes, if possible.

Ethnography is “the branch of anthropology devoted to the scientific study of individual human societies” (Colman, 2015, [no pagination]). A researcher will spend a significant amount of time holistically observing the lives of those being studied, immersing themselves in every aspect of their world with a focus on understanding how they perceive their reality culturally, socially and psychologically (Denscombe, 2010d). **Participant observation** is the most prevalent form of ethnographic research and often referred to interchangeably with the term ethnography itself, making definitions difficult to distinguish as ethnography is both research method and written output of that research (Bryman, 2016a). A strength of ethnography is access to a rich tapestry of information obtained over an extended period which can reveal complex behaviours, relationships, and interactions within the context of the study. If an overt approach is used, where informed consent has been provided, limitations might include participants not being transparent, due to a lack of trust in the researcher (Baral, et al., n.d.), or researcher bias distorting observations of interactions based on their beliefs and theories, obscuring interpretation of data (Rohner, et al., 1973). There are benefits to a covert approach, such as easing access issues and enabling natural observation of unknowing participants, but it is fraught with issues, including ethical considerations around deception, not providing participants with the option of informed consent, and researchers not being able to conduct their research effectively due to an overriding need to blend in and remain undiscovered (Bryman, 2016a). In voice pedagogy, covert ethnography might be suitable for research conducted in a vocal academy or a community singing group, but ethical considerations would be critical.

An example of steps usually taken in qualitative research, which appear less rigorous, but more flexible than quantitative research, are summarised below (see Figure 4).

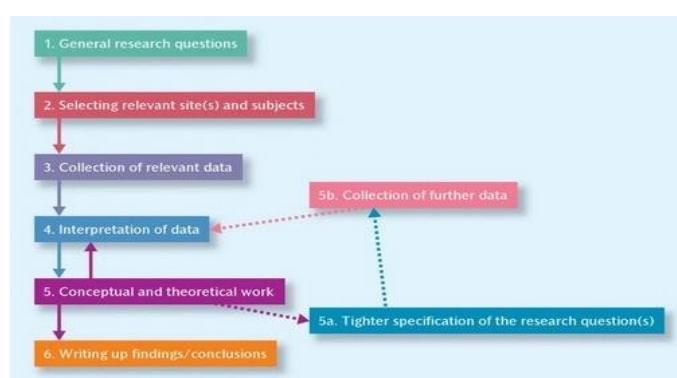


Figure 4: “Main Steps in Qualitative Research” (Bryman & Bell, 2015)

Ethics and Insider Research

Research ethics is defined as “the application of moral rules and professional codes of conduct to the collection, analysis, reporting, and publication of information about research subjects, in particular active acceptance of subjects’ right to privacy, confidentiality, and informed consent” (Scott, 2015, [no pagination]). Ethical considerations include, but are not limited to, avoidance of harm to participants, confidentiality and security of data with transparency about its use whilst complying with General Data Protection Regulations (GDPR), quality of research methods utilised, an awareness of potential biases impacting outcomes and social responsibility or onward intentions in use of that data for the public good (UK Statistics Authority, 2022). Researchers must understand the impact of their perspective, research aims, chosen methodology, and potential issues and sensitivities, whilst being careful, honest and respectful, to justify ethical choices and be accountable. In the case of wrongdoing, regardless of intention, it could mean being held liable (Bos, 2020). However, despite the need for honesty, there may be situations where a minimal level of deception is unavoidable, for example, when it is not deemed suitable to disclose research activity as this may threaten research aims (Denscombe, 2010b).

I have learnt that integrity, reflexivity and ethics are integral to the research process, to elevate validity, understand the influence of my ontological, epistemological and axiological perspective, counteract potential biases and then identify and minimise risk to all involved. I recognise the importance of maintaining these principles when considering research that I may undertake in my work settings, which includes community centres and supported living spaces. My primary, but not only, ethical concern, due to the vulnerability of my clients, would be in not causing harm, either physically, psychologically or emotionally, intentionally or otherwise. As a member of Sound Sense, the professional association of community musicians, I would adhere to their professional code of practice, and be transparent with participants to enable informed consent. Voluntary and informed consent would require further rigour, with safe-guarding principles at the forefront, liaising with relevant professionals, such as a GP or social worker, and family members or legal guardians. Should informed consent be granted on a participant’s behalf, I would be mindful this could be withdrawn at any point.

Insider research is when the researcher has insider knowledge of the community, group or organisation being researched, because they are either a member themselves, or have prior familiarity through non-membership (Fleming, 2018). As a result, participants may be more accepting and therefore open, providing greater depth of data (Corbin Dwyer & Buckle, 2009).

As an **insider researcher**, there should be an awareness of associated values, potential bias, and by extension, how this impacts ethical considerations thereon. Value refers to the unique axiological perspective of the researcher, being embedded in that setting and having a deeper knowledge of context, with an ease of access to people and information to further enhance knowledge and practice (Costley, et al., 2010). Being an insider researcher could be deemed a benefit if undertaking ethnographic research, due to the importance of grasping and understanding perspectives within a culture or group using this research methodology (Denscombe, 2010d), particularly with existing relationships and insider-knowledge. However, due to subjectivity, insider-led research can blur boundaries, leading to conflicts of interest, such as difficulties remaining impartial or instances of confirmation bias, where there is a beneficial interest in a particular outcome being navigated and achieved (Costley, et al., 2010). The difficult blend of personal and professional relationship between researcher and participants also triggers questions around potential biases, such as lack of objectivity and data distortion, and concerns around ethical conduct and accountability (Taylor, 2011). I have developed relationships with my clients, in a professional capacity, but would not, consider them, in the case of Taylor's article, friends. Nevertheless, I recognise the critical importance of ethical conduct as an insider-researcher. I resonate with Moore's article, acknowledging the importance of awareness of ethics that underpin practice, and reference to Kuhn's (1970) view of paradigmatic shifts that occur throughout a learning journey, a process that involves raising tensions cognitively, emotionally and ethically (Moore, 2007).

Conclusion

Due to an awareness of additional challenges my clients face in life and wanting to make a positive difference in their lives and the lives of others, I am drawn to the transformative paradigm. However, I am a work-based research novice, and any research I may undertake will either be with individuals or very small-scale social projects, as an insider-researcher, primarily to inform my practice and not designed for wider generalisation to achieve social justice. Therefore, it would not be a realistic paradigm for me to use. Nevertheless, if I can identify approaches or techniques in my research through, for example, an interpretivist paradigm, any findings that help improve well-being of participants could be utilised with other clients, and potentially externally to my practice through sharing knowledge with peers.

Prior to conducting planned research with participants, approval would need to be obtained from an ethics committee, who carefully examine the research design to ensure the interests of participants are appropriately protected (Denscombe, 2010b), which would be particularly relevant for me due to the vulnerability of my clients.

Overall, it would be sensible to set reasonable, and achievable, research goals, whilst retaining a clear ontological, epistemological and axiological perspective, to ensure a suitable paradigm underpins research design, within an appropriate methodological framework, for integrity and validity of data, with great care and attention paid to ethics and identification of potential biases, with critical reflection and reflexivity throughout.

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