

# Qualitative research and the epidemiological imagination: a vital relationship

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## Abstract

This paper takes as its starting point the assumption that the «Epidemiological Imagination» has a central role to play in the future development of policies and practice to improve population health and reduce health inequalities within and between states but suggests that by neglecting the contribution that qualitative research can make epidemiology is failing to deliver this potential. The paper briefly considers what qualitative research is, touching on epistemological questions –what type of «knowledge» is generated– and questions of methods –what approaches to data collection, analysis and interpretation are involved. Following this the paper presents two different models of the relationship between qualitative and quantitative research. The enhancement model –which assumes that qualitative research findings add something extra to the findings of quantitative research– suggests three related «roles» for qualitative research: generating hypothesis to be tested by quantitative research, helping to construct more sophisticated measures of social phenomena and explaining unexpected research from quantitative research. In contrast, the Epistemological Model suggests that qualitative research is equal but different from quantitative research making a unique contribution through: researching parts other research approaches can't reach, increasing understanding by adding conceptual and theoretical depth to knowledge, shifting the balance of power between researchers and researched and challenging traditional epidemiological ways of «knowing» the social world. The paper illustrates these different types of contributions with examples of qualitative research and finally discusses ways in which the «trustworthiness» of qualitative research can be assessed.

**Key words:** Qualitative. Quantitative. Enhancement model. Epistemology. Social epidemiology.

## Resumen

Este artículo presume que la «imaginación epidemiológica» tiene un papel relevante en el futuro desarrollo e implementación de políticas cuya finalidad sea mejorar la salud de la población y reducir las desigualdades de salud entre países y dentro de ellos. Sin embargo, si obviamos la contribución de la investigación cualitativa a la epidemiología fracasaremos en el desarrollo de ese potencial. Este artículo brevemente describe qué es la investigación cualitativa desde un punto de vista epidemiológico –qué tipo de «conocimiento» genera– y aborda cuestiones metodológicas (aproximaciones sobre recogida de datos, análisis e interpretación de resultados). Se presentan dos modelos diferentes sobre la relación entre la investigación cualitativa y cuantitativa. El primer modelo, denominado de intensificación, asume que los resultados de la investigación cualitativa enriquecen los resultados obtenidos mediante investigación cuantitativa y sugiere 3 roles para la investigación cualitativa: generar hipótesis que se podrán probar en la investigación cuantitativa, ayudar a construir medidas más sofisticadas de fenómenos sociales y explicar resultados sorprendentes obtenidos mediante una aproximación cuantitativa. Por el contrario, el modelo epistemológico sugiere que la investigación cualitativa es diferente de la cuantitativa en el sentido de que realiza una contribución única: estudia aspectos que otras aproximaciones no pueden analizar; mejora y amplía el conocimiento al profundizar en aspectos conceptuales y teóricos; cambia el equilibrio de poder entre los investigadores y el objeto de investigación, y por último desafía los métodos que utiliza la epidemiología tradicional para conocer el mundo social. Este artículo ilustra los diferentes tipos de contribuciones con ejemplos de la investigación cualitativa y finalmente discute cómo la investigación cualitativa «digna de confianza» puede evaluarse.

**Palabras clave:** Cualitativo. Cuantitativo. Modelo de intensificación. Epistemología. Epidemiología social.

## Introduction

In a book entitled «The Epidemiological Imagination»<sup>1</sup> the editor –John Ashton– acknowledges that the title is borrowed from the classic text «The Sociological Imagination» published by the American academic Charles Wright Mills<sup>2</sup>. For this author, the «sociological imagination» is the creative force that transforms social enquiry from the mundane application of particular techniques into a process that has the potential to generate new ways of thinking about the social world –new knowledge of theoretical and practical use<sup>2</sup>. I believe 'The Epidemiological Imagination' illustrates a paradox at the heart of epidemiology<sup>1</sup> (albeit one which is evident in many other textbooks and papers) and one that has informed the development of this paper. On the one hand I believe that epidemiologists share a commitment to the production of new knowledge that will contribute to population health improvement and the reduction of health inequalities. I also believe that many epidemiologists would agree that social epidemiology is best conceived of as an approach to enquiry, rather than as a particular method, and should be «intellectually eclectic» drawing on a range of «traditions» including, for example, the natural and social sciences, the humanities, policy analysis and, political science. On the other hand, however, I would argue that the practice of epidemiology is a long way from this rhetoric. Rather, it is dominated by a particular understanding of what knowledge is and therefore pre-occupied with the (rigorous) application of a limited range of largely quantitative techniques. As a consequence epidemiology is failing to apply the full imaginative force available to it through the use of other ways of «knowing» about the world it seeks to understand.

Let me briefly illustrate this introductory point by looking in a little more detail at the content of «The Epidemiological Imagination». According to the editor, the book is intended to introduce people to «epidemiological thinking», to some of the masters [sic] and some of the classics<sup>1</sup>. But what picture of «epidemiological thinking» emerges from these pages? Certainly, as Ashton, notes in his introductory remarks, the papers selected reflect some of the wide landscape over which epidemiologists wander (in terms of both the substantive focus and the methods involved). This includes the health implications of famines and major social changes, occupational exposure to toxic materials, the complex role of nutrition over the life-course, the outcomes of health service interventions and area variations in health experiences.

The excitement and stimulation of the research process is also captured in this book, as is the importance of methodological innovations and the potential for epidemiology to contribute significantly to health im-

provement (and to enhanced social justice). But, for me, there are at least two important limits to the epidemiological imagination portrayed in these pages and in the wider body of published epidemiological research. First, and at the risk of appearing petty, whilst not a subject directly considered in this paper I would argue that current epidemiological thinking reflected here is strongly gendered. The implications of this are worthy of study in their own right –if all, or most of the classics and «masters» of epidemiology, to which students are exposed, are men what are the implications for what gets studied and how? My second point is more directly relevant to this discussion– that is the profoundly limited ways in which knowledge about the social world is defined and, as a consequence, aspects of the social world are conceptualised and operationalised in much epidemiology.

In this paper I argue that qualitative research has a contribution to make to enhancing the imaginative potential of epidemiology. But bringing quantitative and qualitative research together is no easy task. As Ann Oakley argues in her recent book «Experiments in Knowing: Gender and Methods in the Social Sciences»<sup>3</sup>:

«Whilst researchers in one camp think they are studying the real world, which consists of things it is feasible to try to find out about, those in the other dispute the idea that there is a single reality to be 'known' and regard the pursuit of 'hard data' as impractical and unachievable. What for one side is a set of 'facts' is for the other a complex and impenetrable kaleidoscope of heavily constructed social meanings.»

Too often the preoccupation of both sides in what has been termed «the paradigm wars» with the «righteousness» of their cause –of their way of «knowing» the world– deflects them from appreciating the value and power of research from the other tradition. If epidemiology is to fully develop its imaginative potential then the intellectual frame that guides it and the methods it deploys must encompass both empirical observation and interpretation –measurement, meanings and context– and together these will provide both explanation and understanding<sup>4</sup>. In research on the relationship between health and place, for example, multi-level modelling approaches have shown that place has an impact on health over and above that resulting from the characteristics of people living in particular places –albeit that these contextual effects appear to be relatively small compared to compositional effects. This body of research is also beginning to «explain» the ways in which place impacts on health by unravelling the complex chains of causation at the material, social and psychological level. Importantly, however, qualitative research on, for example, the meanings people attach to places and how these «meanings» shape the way people respond to the health hazards of particular places, adds understanding to these explanations<sup>5</sup>.

There is then much in the argument increasingly voiced within the research community that for adequate answers to the important questions facing epidemiology in particular and health research in general we have to move beyond the qualitative/quantitative divide. This would allow us to develop research questions and study designs that generate «trustworthy» knowledge that is as comprehensive, relevant and accessible as it can be. In the remainder of this paper I wish to illustrate the contribution that I believe qualitative research can make to this endeavour by addressing three questions: what is qualitative research, how can it contribute to epidemiological enquiry and what about the trustworthiness of this type of research.

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### What is qualitative research?

Asked to talk about the role of qualitative research in epidemiology there is an immediate dilemma – where should one begin? Let me begin by briefly commenting on what qualitative research isn't and then on what it is! First, it is not, as some people appear to assume, just a set of specific methods such as in-depth interviews and focus groups. These are two of the methods that are commonly used but as with any research approach particular methods reflect particular research questions and in qualitative research it is the type of question addressed that is the defining characteristic. Second, and again challenging a common misconception, qualitative research isn't always small scale. To be sure it often is, reflecting resource constraints as much as the demands of the research, but just as there are classic qualitative studies that involve only a single case, for example, Goffman's classic study of total institutions in the mental health field<sup>6</sup> so there are those that involve observation of hundreds if not thousands of cases<sup>7,8</sup>. Third, qualitative research is not only concerned with subjective personal experience. The subjective world is at the heart of qualitative enquiry but always within a wider context. Fourth, qualitative research is not the simple opposite of quantitative research. Qualitative researchers often quantify the phenomena they seek to describe –using terms such as a little or a lot, for example– and, as Silverman has argued, «cautious positivism» in terms of simple counts of phenomena may be an important addition to qualitative analysis<sup>9</sup>. Finally, addressing perhaps one of the most prevalent misconceptions, qualitative research isn't an easy option. It is not just the choice of aspiring researchers who do not like or cannot «do» statistics!

So what is qualitative research? First, it is a science –in the sense of being an approach to the pursuit and formulation of a systematic body of knowledge with its own principles by which trustworthiness can be as-

sess– a point returned to below. Second, this approach is dependent upon conceptual rather than numerical analysis. Third, it is concerned with the way in which people negotiate and construct the meanings they give to their experiences within diverse social and material contexts. Fourth, the concern with social meanings is not an end in itself but rather is conceptualised as a vital part of the central puzzle for qualitative research –understanding the basis of social action.

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### How can qualitative research broaden the epidemiological imagination?

The contribution of qualitative research to epidemiology and health research more generally can be conceptualised in two ways. Most commonly, the contribution, if it is recognised at all, is conceived of as adding a little extra to the understanding provided by traditional epidemiological research –this I refer to as the enhancement model and it implies an unequal handmaiden role for qualitative research. Alternatively, the contribution can be seen in terms of the type of knowledge and understanding that qualitative research can generate. Whilst this may complement the understanding provided by traditional epidemiology this approach –which I refer to as the epistemological model– assumes a more equal relationship between qualitative and quantitative approaches allowing for the possibility of challenge and tension between the two. Below I briefly elaborate on these different contributions using examples from qualitative studies.

#### *The enhancement model*

Table 1 highlights the main characteristics of the relationship between qualitative research and traditional

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**Table 1. Two contrasting models of the relationship between qualitative research and epidemiology**

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<p>The enhancement model suggests that qualitative research can enhance the work of epidemiologists by:</p> <ul style="list-style-type: none"> <li>Generating hypotheses for quantitative epidemiological research to 'test'</li> <li>Helping to construct more sophisticated measures of social phenomena</li> <li>Explaining unexpected results</li> </ul> <p><i>The epistemological model</i> suggests that qualitative research can contribute to epidemiological understanding by:</p> <ul style="list-style-type: none"> <li>Researching the parts other methods don't reach by addressing different kinds of questions</li> <li>Thickening understanding by adding conceptual and theoretical depth to knowledge</li> <li>Shifting the balance between the researcher and the researched</li> <li>Challenging traditional epidemiological ways of knowing</li> </ul>
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epidemiology suggested by what I refer to as the 'Enhancement Model' and the 'Epistemological Model'. In the enhancement model the most readily recognised role for qualitative research within the epidemiological endeavour is to generate hypotheses for quantitative research to «test». An example of this type of contribution is provided by qualitative research on pain. According to this body of work, men and women both experience and react to pain differently. A prominent belief amongst both women and men is that because of childbirth women are more stoical than men about pain and discomfort and observational research supports these findings<sup>10,11</sup>. A number of potential hypotheses can be constructed on the basis of this work focusing, for example, on the way in which gendered patterning in responses to pain impacts upon the take-up of services and clinical practice. In terms of the second potential contribution suggested by this model there are many examples of the ways in which qualitative research has informed the development of more sophisticated measures of social phenomena. In research on social support, for example, qualitative research has contributed to a widening of the conceptual lens beyond the number of relationships to include the quality of such relationships<sup>12</sup>. Similarly, recent research on gendered patterns of health and illness is pointing to the need for research exploring the relationship between health status and social/sex roles to development measurements of 'role orientation' alongside traditional measures of the psycho-social and physical demands of different social roles<sup>13</sup>.

The measurement of «area effects» within the health research on the spatial patterning of health and illness referred to earlier has also been informed by qualitative research. In the work of Macintyre and colleagues<sup>14</sup> for instance, qualitative research has pointed to the fine detail of inequalities in opportunity structures highlighting the timing of buses rather than only the number for example, the quality of play space rather than only availability and the nature and quality of the goods provided in shops rather than only the number of shops and their opening hours. Finally, within the Enhancement Model of the relationship between qualitative and quantitative health research the former is seen to have a role in helping to explain unexpected results from the latter. No doubt the epidemiological landscape is littered with results that came as a surprise to the researchers—examples where qualitative research has been consciously used to illuminate these findings are far fewer.

#### *The epistemological model*

In contrast to the Enhancement model, the Epistemological model envisages a different and more equal

relationship between qualitative research and traditional epidemiology highlighting the unique nature of the knowledge and understanding this research generates. There are four elements to this noted in Table 1. First, there are the types of research questions addressed. For example, whilst traditional epidemiology is concerned with the (social patterning of the) incidence and prevalence of life threatening illness and associated risk factors qualitative research focuses on how people make sense of the experience of such illness exploring the way these meanings shape individuals responses in their social and material context<sup>15</sup>. Second, this model points to the way in which qualitative research can «thicken» understanding of important health related behaviour—pointing to explanations as well as providing descriptive data. A key message from this large body of work, which focuses on many different types of individual behaviour, is that the endurance of health damaging behaviours in certain social groups is profoundly linked to the material and cultural context of people lives rather than being the result of a lack of information or education. A good example of this type of research is Hilary Graham's study of smoking amongst poor white women in the UK, which demonstrated that these women do not lack understanding about the health damaging consequences of smoking for their health and that of their children. However, these risks do not outweigh the considerable benefits of smoking, which operates as a vital coping mechanism in their lives and continue to smoke<sup>16</sup>. The third theme identified in Table 1 refers to a key difference between qualitative research and traditional epidemiology. In the former, the researcher is the instrument of the research process rather than the vehicle for applying the research instrument, as is the case in the latter. Whilst this is the case with all qualitative research there are also particular approaches within this paradigm, notably various approaches to action research, which place the participation and empowerment of research subjects at the centre of the research endeavour. Finally, the Epistemological Model of the relationship between qualitative and quantitative research points to the way in which qualitative research can challenge how 'problems' are conceptualised within traditional epidemiology. Pope's work on waiting lists within the UK National Health Services is a good example of this contribution<sup>17</sup>. This study re-conceptualised the notion of waiting lists traditionally understood as more or less orderly queues of people waiting for hospital care. Pope's research suggests that a more appropriate image is that of still stretches of water in oxbow lakes located alongside fast flowing currents all of which are manipulated by consultants, clerical staff and, in some instances, patients themselves.

## Appraising the trustworthiness of qualitative research

There will be some who will never be convinced that qualitative research has a legitimate and valuable contribution to make to the epidemiological imagination. But for the hopefully larger number of people who are open to the possibilities, a critical issue is how the trustworthiness of qualitative research is to be ensured. In this context it is important to stress that this field of social science –like other branches of science– has well-established internally recognised conventions within the research process for ensuring rigour. It is also recognised by practitioners that an important marker of good quality qualitative research is that the findings are transferable to other setting. Obviously generalisability within the qualitative tradition is of a different kind to that which is possible from an experiment or a survey. The aim is to identify findings which are logically generalisable rather than probabilistically so. A notable example of this approach is the work of Goffman already mentioned on the impact on patients and staff of ‘total institutions’ such as mental hospitals<sup>6</sup>. This work was based on detailed observation of one ward and subsequently made a major contribution to a paradigm shift in mental health policy.

There is also a widespread recognition that people unfamiliar with the practice of qualitative research need a framework for making judgements about the quality of particular studies. Arguably, such a framework should consist of two related but separate elements. On the one hand there is a set of prima facie criteria for assessing quality, which are common to all research. These would include the issues listed in Table 2 and include, for example, the common sense suggestion that all research-based publications should provide sufficient details of the research question, design and methods to allow assessment. These details are frequently not available –a situation facing the earlier pioneers in the Cochrane Collaboration when they tried to assess the quality of randomised controlled trials and which resulted in the CONSORT statement on how Randomised Control Trails should be reported issued by major health publications including the British Medical Journal.

However, prior to the application of such minimalist «technical» criteria a judgement about trustworthiness

**Table 2. Common ‘technical’ quality assessment criteria**

Method appropriate to research question
An explicit link to theory
Clearly stated aims and objectives
A clear description of context
A clear description of sample
A clear description of fieldwork methods
Some validation of data analysis
Inclusion of sufficient data to support interpretation

of research should involve the application of a primary «epistemological» marker tailored to different research paradigms need to be used. Elsewhere with colleagues I have argued that this marker for qualitative research would be that it adopted a «verstehen» approach to the collection, analysis and interpretation of data– that is good quality qualitative research would seek to see the world as the «subjects» of the research see it<sup>8</sup>. The key question to ask here is whether the research, as reported, illuminates the subjective meaning, action and contexts of those being researcher?

## Concluding comments

If epidemiology is to fulfil its full potential to contribute to improved population health and the reduction of health inequalities then it must extend its methodological gaze to include qualitative research approaches. In doing this, however, it will be important to recognise that different relationships between traditional epidemiological approaches and qualitative research are possible and legitimate. There will be many examples where these different research traditions are complementary –when, taken together the findings will provide both explanation and understanding. There will, however, also be examples when the results of qualitative research represent a fundamental challenge to the methods and/or findings of traditional epidemiology. Those who wish to develop the epidemiological imagination by pursuing collaborative research need to be prepared to work with conflict at the level of concepts and findings as well as complementarity. ¡Nuestras respuestas a los conflictos nos permiten crecer!

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