PART III

Philosophy of science and mental health

Part contents

Introduction to Part III

A key theme of this book is that a proper account of mental health practice, and indeed of health-care practice as a whole, requires what we called at the end of Part I, a full-field model. This is a model that focuses as much on the nature of the subjects involved in clinical interventions as on the objective facts that, in a traditional medical-scientific model of psychiatry, underpin and define professional expertise.

A full-field psychiatry

Some of the elements of this full-field model have been introduced in earlier parts of the book. Thus, in Part I, we introduced values alongside the facts of the traditional medical model, patients' experiences of illness alongside the traditional medical knowledge of disease, and an analysis of patients' experiences of illness in terms of action-failure (of a particular kind) alongside the traditional analysis of disease in terms of failure of function. In Part II, similarly, in our exploration of the philosophical origins of Jaspers' psychopathology in phenomenology and the *Methodenstreit*, we added meanings to the traditional causes, and understanding to the traditional causal explanations of disorder.

The importance of these elements in a full-field model, a model including subjects as well as objects, is evident enough: it is subjects who make and are sensitive to value judgements; it is subjects who experience and who understand, whose actions may fail, and for whom meanings are significant. Correspondingly, therefore, some of these elements of a full-field model will be examined further in later Parts of the book, notably values in Part IV (particularly in relation to diagnosis) and understanding in Part V (particularly in relation to its contribution to contemporary philosophy of mind).

A full-field science?

When it comes to science, however, as the focus of this part, it might be assumed that the subject, the experiencing subject, the subject who values and for whom individual meanings are significant, will drop out of the picture. In medicine, it might similarly be thought, it is not unreasonable that subjects should appear alongside and on an equal basis with the objects of scientific enquiry. After all, however 'scientific' medicine has become, it is always, at base, concerned with people. And one proper role of philosophy may be to help medicine, dominated as it is by objective science, to restore people, and the subjective perspectives of people as unique individuals, to their proper place at the focus of the clinical encounter. However, when it comes to science as such, disembodied from its applications in clinical medicine, then, it might be assumed, subjects will, as we said, drop out of the picture—it being after all in the nature of objective science, traditionally understood, that it places no particular requirements on, and is independent of, the subjects by whom it is developed and applied.

This assumption, however, of a subject-free objective science, is as we will see in this part, mistaken. To the contrary, a key theme of this part will be that subject- as well as object-related elements are central to the nature of science in general and are not limited to medical science in particular.

Epistemic values and the subject in sciences

One way to draw out the importance of the subject is to focus on the role of values in science. We touch on epistemic values, for example, the values (such as simplicity, elegance, etc.) that guide the development of scientific theory, at various points in this part. Epistemic values, like many other topics that we cover in this book, are contentious; and they are often discussed in the context of another contentious claim, namely that explanatory scientific theories are underdetermined by data. 'The underdetermination thesis', as it is often called, is the claim that any given body of data is in principle consistent with a large (possibly indefinitely large) number of explanatory theories (see Chapters 12 and 13). If, then, scientific theories are in this sense underdetermined by observational data, the choices we make between theories have to be constrained by something else—and epistemic values may play that part.

There is direct evidence that epistemic values are important in the development of scientific theory at least in psychiatry (see e.g. Sadler, 1996). Besides epistemic values, values of other kinds will be shown in this part to have a place in science: for example, in the 'context of interest' within which, as we will see in Chapter 14, scientific explanations are valid; and, in Chapter 16, where values, individual and social, will turn out to have a role to play in determining the research programmes that are taken up and the criteria by which progress in these programmes is judged to have been made. If, therefore, science itself turns on values of various kinds, it follows that the nature of the subject who has, and is sensitive to, the requisite values will play an important part.

From left- to right-field

A focus on the roles of values in science would thus have dovetailed neatly with the emphasis on values and subject-related, or, as we put it in Part I, 'left-field' concepts, elsewhere in the book. In this part, however, we will not be focusing on values as such. Rather, we will be switching attention from left- to right-field, as it were, and focusing on the importance of the experiencing subject even in 'hard' sciences such as engineering and physics. We show how the traditional model of science—making progress by inductive generalizations from perspective-free data—has had to be modified as philosophy, history, and other disciplines have given us a deeper understanding of the roles of subjects in how science really works in practice.

This deeper understanding, it is important to emphasize, is important in all areas of science, not just in psychiatry. However, some of its features—notably the central roles that it gives to the experiencing subject—provide a bridge between sciences of the mind, like psychiatry, and the (traditionally conceived) paradigms of natural science, like physics. Thus, for example, as we will see in

Chapter 14, it turns out that the 'hard' sciences, such as physics and engineering, rely, and rely *centrally*, on tacit (or implicit) as well as explicit knowledge. It should thus be no surprise—and certainly no criticism—to find that tacit knowledge is important in psychiatry too.

The storyline of Part III

The topics in the philosophy of science covered in this part broadly track the stages of the clinical process as outlined in Part I (Chapter 2). As we will see, at each of these stages, insights from the philosophy of science, in complicating the traditional model implicit in most psychiatric textbooks, provide a deeper understanding of the relationship between science and the experiencing subject in the clinical encounter.

Thus, *Chapter 11* outlines the traditional model of science in terms of four key stages: (1) data collection; (2) theory building, subdivided into 2A (defining patterns), and 2B (identifying causes); (3) theory testing; and (4) advancement of knowledge. Subsequent chapters then explore particular topics from the philosophy of science that deepen our understanding of each of these stages particularly as they are relevant to the clinical encounter: *Chapter 12* examines psychopathology and the theory dependence (the conceptual prestructuring) of observation (Stage 1); *Chapter 13* considers the relationship between reliability and validity in natural classifications (Stage 2A); *Chapter 14* looks at diagnosis as a form of explanatory scientific process in which tacit as well as explicit knowledge is crucial (Stage 2B); *Chapter 15* considers causal theories of disease, or aetiology, and the relationships between causes of and reasons for actions (Stage 2B again); and *Chapter 16* explores the concept of evidence-based medicine and the role of judgement in testing a knowledge claim in science (Stages 3 and 4). Finally, in a brief *Conclusions* we draw together the key themes of the part around the role of the experiencing subject and of individual judgement in the way that science really works.

Chapter outline of Part III

Given the number and complexity of the ideas introduced in this part, you may find it helpful to get an initial overview of the topics included in each chapter and of how these are related to the clinical encounter. The philosophical topics on which we focus in this part are drawn from among those for which there is already an established pay-off, at least in principle, for research and clinical practice. The topics chosen are far from exhaustive, however. We have little to say about probability, for example. Probability is an important topic, both in clinical work (in risk assessment, for example) and in research (being the basis of statistical 'tests' of significance). It is a topic, moreover, that is supported by a significant philosophical literature (see, for example, Hacking's (1990) *The Taming of Chance*). In this instance, however, the philosophical literature, other than in relation to physics, has as yet had little impact on scientific research and practice, or indeed vice versa.

Chapter 11—Psychoanalysis: an introduction to the philosophy of science

We begin this part with a chapter that looks at the most cited psychiatrist of all time, Freud. First, we outline an intuitive and traditional model of scientific practice. Then, following the Austinian approach of 'philosophical fieldwork' outlined in Part I, we look in detail at a series of short extracts from Freud's work (the Project, and the case history of Dora). This approach shows that while Freud wrestled with the scientific status of his work he was hampered, at least in part, by attempting to fit his theories to the traditional model of science. That model, however, has subsequently been much modified by work in the philosophy of science. We highlight how some of the modifications in question are prefigured in Freud's own work. The final session of the chapter looks at alternatives to the scientific understanding of psychoanalysis, such as Ricoeur's hermeneutic reconstruction.

Chapter 12—Psychopathology and the theory dependence of data

The first stage of the psychiatric clinical process, and the basis of psychopathology, is observation. Observation plays a key role in underpinning the objectivity of science. On an intuitive view, which was formalized in the early part of the twentieth century by the Logical Empiricists, this role is ensured by a rigid distinction between theory and observation. The two-language model of Logical Empiricism, as it is called, is reflected in the development within psychiatry of structured and semi-structured interviews of known reliability (i.e. of known levels of agreement in observation) for the assessment of mental states.

Nevertheless, as we will see, more recent work in philosophy has undermined the Logical Empiricist's sharp distinction between observation and theory. Observation reports, it turns out, cannot be given in theory-free terms. The process or experience of observation, that is to say, is conceptually prestructured. Observation is always set within a framework of concepts and is thus, in this specific sense, necessarily theory-laden. The conceptual prestructuring of observation suggests that psychiatry, like any science, does not work (as the traditional model supposes) by relying on a neutral foundation of 'raw' data. What this in turn suggests, as we will see, is that while observations do indeed play a role in disciplining theory, the relationship between observation and theory is iterative rather than (as the traditional model supposes) linear.

Chapter 13—Natural classifications, realism, and psychiatric science

Perhaps the most pressing current issue in the philosophy of science as applied to psychiatry is the *validity* of psychiatric classification. This chapter examines the nature of validity primarily by way of an exploration of realism in the sciences, especially the physical sciences. The chapter looks at: (1) the influence of

Logical Empiricism on post-Second World War psychiatric classification through the work of the philosopher, Carl Hempel; (2) the connection between values and validity, arguing that despite the assumptions of the traditional model, the presence of values does not necessarily undermine the objectivity (hence validity) of psychiatric classification; (3) recent debates in the philosophy of physics about the reality of unobservables; and (4) the relevance of the debates about realism, particularly in physics, for the development of more scientifically valid classifications of mental disorder in psychiatry.

Chapter 14—Diagnosis, explanation, and tacit knowledge

A key stage in the clinical process is diagnosis. Diagnoses in medicine can be understood as being explanatory scientific theories that connect initial clinical observations and the results of laboratory test results to subsequent treatment and management. This chapter examines whether a fully explicit formal model of diagnosis, so understood, can be given or whether, by contrast, diagnosis always contains a tacit dimension. The first half of the chapter explores philosophical models of scientific explanation. The second half of the chapter develops the idea that there is a tacit dimension to diagnosis by looking to the role of tacit knowledge in the hard sciences. There is descriptive evidence that even engineering expertise depends on craft skills and other aspects of tacit rather than explicit knowledge. Consideration of Wittgenstein's later work suggests that there are also good theoretical grounds for believing that all forms of 'knowledge that' (explicit knowledge) depend on 'knowing how' (tacit knowledge).

Chapter 15—Causes, laws, and reasons in psychiatric aetiology

This chapter returns by way of the philosophy of science to a topic that we explored in Part II, namely the putative distinction between two kinds of knowledge important to psychiatry: understanding and explanation, or the space of reasons and the realm of scientific laws. If scientific laws are important in psychiatry, we saw in Part II, so too are reasons. But what exactly is the connection between them?

In the first half of the chapter we examine just what it means to say that, for example, a symptom is *caused* by a disease. We look back to the eighteenth century British empiricist philosopher, David Hume's, seminal puzzle about the origins of the very idea of causation and outline modern accounts that connect causation in one way or another, to natural laws. In the second half of the chapter, we examine philosophical work on the space of reasons: the special intelligibility that meaningful states and events have. Finally, in a concluding session, we examine two recent attempts in psychiatry to bring reasons and causes together: Bolton and Hill's thesis that reasons are encoded in brain states; and Brown and Harris' methodological innovations in their studies of the social origins of depression.

Chapter 16—Knowledge, research, and evidence-based medicine

The concluding chapter of this part looks at the underpinnings of evidence based medicine (EBM) in philosophical work on theory choice and the nature of progress in science. EBM can be understood as an attempt to formulate the best way to learn from experience and learning from experience involves inductive reasoning (see Chapter 5). Thus, in the first third of the chapter, we consider David Hume's original formulation of the challenge to induction and some of the ways in which recent authors have attempted to respond to his challenge. One of the general conclusions we draw from these responses to Hume is that the relationship between evidence and theory in scientific research is not as straightforward as the traditional model suggests. Evidence is itself just as much provisional as the theories it supports of falsifies. The most historically accurate accounts of scientific progress stress the contextual factors in *judgements* about what is supported and what is refuted by the evidence.

The middle third of the chapter examines models of knowledge drawn from philosophical epistemology. While attempting to sidestep Hume's problem of induction these models also suggest the communal, the social and interpersonal, nature of knowledge and its justification. Knowledge can 'rub off' on others. Equally, it depends on inherited assumptions and claims some of which simply have to be taken on trust before other claims can be put to empirical test.

The final third of the chapter examines the 'evidence hierarchy' of EBM. We suggest that it would be entirely within the spirit of EBM to regard the adoption of such a hierarchy as itself involving a scientific claim about the world and thus as being as much subject to test through fallible judgements as any other scientific claim. This brings us back once more to the importance of the subject and of individual judgement (scientific and clinical) in the way that evidence is both gathered and used.

In a brief concluding section we draw together the themes of Part III around the ineliminable roles of the subject and of individual judgement in science. These roles, identified and increasingly clarified by work in the philosophy of science and epistemology, are important in all sciences. They are writ large, though, in difficult sciences, sciences at the cutting edge, sciences, like psychiatry and theoretical physics, in which the problems with which we are concerned are as much conceptual as empirical in nature.

References

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