EDITORIAL FOREWORD

In recent times, few areas of life have been the focus of such critical scrutiny as the practice and ethics of medicine. We have witnessed the end of a century in which medicine for the first time became truly effective in prolonging life and alleviating suffering. Yet at the same time, we have become acutely aware of serious problems in the provision of medical care, such as the enormous and growing costs of health care, and the consequent depletion of societal resources. Concern is increasing about where we are heading in a world in which medical technology appears to have achieved powers previously regarded as super-human.

We are often told that the main reason for these remarkable achievements is the fact that, since the middle of the nineteenth century, medicine for the first time in history truly became a science. Medicine bases its knowledge on the regularities of nature as they are increasingly understood and described by the physical or natural sciences. Medicine, so it is claimed, has also developed its clinical method as a rigorous science. Science is the central feature of the twentieth-century world, and medicine owes its achievements, its status, and its promise of ever-increasing power over disease to its scientific character.

In this highly original and timely book, Jacques Kriel makes a critical assessment of the theoretical basis on which modern medicine's claim to scientific status rests. He argues that the philosophical framework for medicine's self-understanding as a science has become demonstrably inadequate. Medicine has modelled its scientific self-understanding on an obsolete positivist conception of science which does not accommodate the recent developments in our understanding of reality, science, and consciousness. Positivist medical science cannot deal with the full complexity of the human person in illness and health. International concern increases about the lack of regard for the whole person in the doctor-patient relationship. Kriel's plea for a better substantiated scientific self-understanding holds the key to the much-needed humanization of medical practice.

Three concepts are central to the argument of the book: science, reality, and consciousness. Medicine misunderstands itself as a science because it equates "the scientific method" with the reductionist and quantitative methodologies of the physical sciences. The physical sciences traditionally endeavor to explain the way nature behaves by relating (Kriel will say "reducing") it to the behavior of its simplest constituent parts. Following the historical introduction, Chapters Two to Five systematically discuss the limitations and inadequacies of a form of medicine that understands its scientific knowledge

and methods in terms of a positivist model of science. Kriel draws attention to the growing recognition of the complexity of nature and the need for theoretical explanations that accommodate this complexity. In Chapter Five, he proposes a model of science which can deal with the "rich texture of reality."

The goal of the scientific enterprise, including medicine, is to help us understand the nature of reality – what and how things "really are." The question regarding the nature of reality introduces the philosophical domain of ontology. In Chapters Six and Seven, Kriel argues that the inappropriate self-conception of scientific medicine exposed in previous chapters, is embedded in an obsolete idea of what constitutes reality. The ontology that he takes to task views reality as composed of primary, irreducible "building blocks" that interact according to universal laws. In its stead, Kriel draws on the insights of systems and complexity theory and proposes that reality should be regarded as a hierarchy of systems of increasing complexity. In this hierarchy, different ontological levels can be distinguished, namely, material systems, living material systems, conscious living material systems, self-conscious living material systems, etc. Each such ontological level requires a different scientific methodology or discourse of understanding.

That brings us to the third central concept, the reality of that entity which is the focus of study and treatment in medicine: the human person. Consciousness is the phenomenon which primarily distinguishes the human person from the rest of nature and other living entities. But here again Kriel is at odds with traditional wisdom. A transformed conception of medicine's clinical method requires not only a transformed view of science and reality, but also a transformed conception of consciousness, or, to use the terminology which Kriel prefers, conscious organisms. This point is extensively argued in Chapters Eight to Ten. Kriel challenges the idea that consciousness is an epiphenomenon of physical components of living organisms, for example, the human brain. Taking evolutionary biology as his point of departure, Kriel persuasively argues against an epiphenomenal conception of consciousness. Consciousness is not the culmination of an evolutionary process. It is an inherent aspect of all living organisms throughout the evolutionary process. From the moment that the evolution of living matter occurs, the evolution of consciousness starts to develop. Human consciousness is a complexification of animal consciousness, which in turn is a complexification of the phenomenon of what Kriel calls "non-conscious awareness" of all living forms, including plants.

Living, conscious beings represent, for Kriel, a new dimension of reality, a new ontological level in the hierarchical organization of reality as the totality of complex systems. From this insight, he concludes that conscious biological systems, particularly self-conscious biological systems such as human beings, require a unique set of descriptions. The language appropriate to the scientific description of non-living matter is inadequate for this purpose.

The complexity of reality, pregnantly illustrated by the ever-increasing complexity of conscious living beings, requires heuristic discourses of similarly increased complexity.

This is the central argument which motivates Kriel's revolt against the way in which current medical practice conceives itself as a thoroughly scientific enterprise. Medicine concerns itself with those conscious living organisms, namely, human persons, who embody the apex of known evolutionary complexity. To base the diagnostic practices and therapeutic regimes purely on knowledge of physical processes in the human body (still popularly regarded as a "machine" by many physicians), is, in view of this analysis, at best grossly inadequate, at worst thoroughly dehumanizing. The human person is a conscious, highly complex psychosomatic unity whose well-being is conditioned by much more than physical processes and regularities. An enlarged view of science, reality, and conscious organisms therefore demands a significantly enlarged view of clinical practice. This is argued for in Kriel's last two chapters.

I would like to end my commendation of Kriel's profoundly important and original work with two remarks. The first deals with what we learn from it about science. The second deals with what it teaches us about humanity in medicine.

In my own research and teaching in the philosophy of medicine and medical ethics, I have often been struck by how singularly inappropriate it is for the medical profession to insist on its scientific character in a naturalistic sense. It is ironic that the one "science" which is so demonstrably and overwhelmingly concerned with human well-being should denigrate the epithet "human" before science, and insist on thinking of itself only as a "natural" science. My claim has always been that medicine is a thoroughly human science. The sooner medicine recognizes this and appropriates the humanities in its medical educational programs and professional practice, the better for all concerned.

Kriel's work adds a necessary and important dimension to this often sterile debate. He demonstrates the necessity to move beyond the outdated dichotomy between "human" and "natural" sciences and their alleged opposite methods of "understanding" and "explanation." If Kriel is right (and I think he is), we are oversimplifying matters when clinging to C. P Snow's idea of "two scientific cultures." The idea of "two cultures" (namely, natural sciences and humanities) is an obsolete residue of Cartesian dualism which has become part of our thinking since the early seventeenth century. It is an idea that has been overtaken by the exciting insights of current systems-thinking and complexity theory. These developments represent a demonstrable "paradigm shift" (as Thomas Kuhn would say) in our understanding of science and reality. They also require a transformation of the way we conceive of medicine's clinical practice and its science. Medicine owes it to the objects of its practice

and its science, to respect the complexity of what it is dealing with: the human person. The challenge is not to discard traditional medical knowledge or proven diagnostic and therapeutic practices. The challenge is to supplement them with an enlarged understanding of the nature of reality, the enterprise of science, and the complexity of the conscious human person.

My second remark involves a note of caution as to the interpretation of Kriel's argument. A superficial reading might induce an unsympathetic reader to conclude that Kriel is merely concerned about the undeniable prevalence of impersonal doctor-patient relationships. He will then seem to be developing an overly complex argument for something that can easily be rectified by doctors becoming more friendly, person-orientated, and sympathetic. If this were the thrust of Kriel's argument, it could be disputed by pointing to the plethora of counter-examples: doctors and other health-care workers who treat their patients with the utmost respect, dignity, compassion, and with a genuine interest in the welfare of the whole person.

Kriel's argument is focussed on a much more real and complex problem than the perhaps occasional occurrence of impersonal, overly technologized health-care practices. As a practicing physician, Kriel is more than aware of the range of identifiable exceptions to the malaise of deteriorating doctor-patient relationships. But as an equally competent philosopher, he draws our attention to the fact that the remedy of this recognized malaise requires much more than improved intentions and attitudes of health-care workers. It is not because of inadequate efforts or immoral dispositions that medicine's clinical method is inappropriate. The clinical method is inadequate because doctors become acquainted with their vocation within the ambit of an inappropriate theoretical framework, a framework that presents them with an inadequate understanding of the nature of science, reality, and the conscious human beings for whom they are supposed to care. The transformation of medicine's clinical method cannot come about merely by demanding attitudinal changes from the current and future members of the medical profession. The transformation will only come about through the self-critical analysis and transformation of the encompassing theoretical framework. The necessity for self-critical analysis of the theoretical foundations of medical practice has important implications for the universally recognized need for a more humanized medical practice. More humane medicine does not require less science. It requires better science, that is, science that understands itself, its object, and its limits more appropriately than in the past and that engages in research and clinical practice on the basis of such a widened self-understanding.

This book is a valuable step in furthering the debate on the transformation of medicine's clinical method. In the South African medical and philosophical fraternity, Kriel has generally been a lonely voice. My sincere hope is that the submission of these ideas to a wider international audience will gen-

erate the interest, critical scrutiny, and discussion that they deserve. In the end, the profession and the patients will reap the benefits.

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