

# Paradigms and Our Shrinking Bioethics

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Carl Schneider's "empirical perspective" on the contemporary bioethical landscape allocates pride of place to the physician-patient relationship and, within that relationship, to the notion of patient autonomy. According to his analysis, autonomy plays a paradigmatic role in medical ethics but, because the paradigm hangs on an oversimplified understanding of human relationships, it requires refurbishment or replacement. Such reservations (indeed, almost any reservations) concerning the role of autonomy challenge medical ethics on its most cherished theoretical territory and are certain to provoke considerable debate. Since I find Schneider's observations both persuasive and provocative, I look forward to that debate. However, because my own background<sup>1</sup> has equipped me with neither the knowledge nor the experience to contribute to it, I propose to follow Professor Schneider's lead in a different direction.

As teachers, we discover that predicting what will puzzle beginners is a tricky business. Students breeze through our favorite "hard" problems only to get stuck on other, superficially simpler, ones fraught with unstated assumptions. As a neophyte bioethicist, I sympathize with their plight because, for me, the bioethics literature is most puzzling precisely where it is least contentious. Ample illustration can be drawn from the widely shared premises asserted at the top of the previous paragraph: What accounts for the fact that bioethics—a field that began, at least in some conceptions,<sup>2</sup> with an expansive philosophical program—has been so tamed and confined that it is effectively synonymous with medical ethics? Why do its practitioners interpret their domain still more narrowly, restricting it to physician-patient relationships or more commonly to the enumeration of physicians' obligations? Why, when even that restricted domain ought to spawn a philosopher's feast of contending ethical claims, is the literature dominated by one recurrent theme—respect for patient autonomy?<sup>3</sup> Why is the scope of bioethics not itself a matter of intense controversy?

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1. I am a molecular biologist/geneticist who has been learning bioethics as part of a group studying the ethical implications of genetic diagnosis. It is appropriate in this connection to acknowledge the efforts of my teachers, the members of the Poynter Center project on presymptomatic diagnosis, as well as the helpful financial support provided by a Mid Career Fellowship from the Dean of the Faculties, Indiana University—Bloomington.

2. For example, the biologist Van Rensselaer Potter has described his early use of the term—to denote a field of ethical study enriched by a biological (ecological) perspective—and the displacement of that usage by the decidedly narrower one popularized by the Georgetown Center. Van Rensselaer Potter, *Aldo Leopold's Land Ethic Revisited: Two Kinds of Bioethics*, 30 *PERSP. IN BIOLOGY & MED.* 157 (1987).

3. There is substantial evidence that autonomy does not yet dominate clinical practice. See, e.g., RUTH MACKLIN, *ENEMIES OF PATIENTS* (1993) (that there is a schism between theory and practice does not explain the single-mindedness of the theory).

Since these are fundamental (some might say naive) questions, a variety of reasonable answers are probably at hand. I want to sketch the outline of an unusual kind of answer, one suggested by the curious fact that this symposium—a gathering devoted to contemporary bioethics—has reverberated with allusions to a model for the growth of *scientific* knowledge. Initially, those references impressed me as surprising, dissonant, and probably rhetorical. On further consideration, I am still surprised, but only by the extent to which they are both appropriate and substantive. There are important parallels between the development of bioethics and the growth of scientific knowledge, and our title is an invocation not simply of Thomas Kuhn's words, but of his ideas. Understanding those similarities and defining their legitimate limits are tasks that bear directly on the questions of scope that animate this essay.

According to Kuhn's justly celebrated model,<sup>4</sup> knowledge grows by a cyclical process marked by alternating phases of crisis and normal science. Rotation of this historical wheel is paced by the transitions between its phases, transitions that correspond to changes in the condition of the paradigm. We will not stray far if, despite certain ambiguities,<sup>5</sup> we suppose that a Kuhnian paradigm is, at its core, a methodological precedent. It is a concrete algorithm, procedure, or approach that has solved a significant problem and therefore promises to solve more and, as such, it is a model that will be transmitted to newcomers by their mentors and their textbooks. During a crisis, no shared paradigm is available and scientists' activities are guided by the need to locate one. Success leads to a productive period of normal science, of "research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice."<sup>6</sup> Thus:

The success of a paradigm . . . is at the start largely a promise of success discoverable in selected and still incomplete examples. Normal science consists in the actualization of that promise, an actualization achieved by extending the knowledge of those facts that the paradigm displays as particularly revealing, by increasing the extent of the match between those facts and the paradigm's predictions, and by further articulation of the paradigm itself.<sup>7</sup>

Eventually all paradigms lose their utility in the face of new problems, and the shared perception of the paradigm's exhaustion is what precipitates a new crisis.

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4. For the seminal reference, see THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (2d ed. 1970) [hereinafter *SCIENTIFIC REVOLUTIONS*]. Kuhn has elaborated on his ideas in many settings. See generally THOMAS S. KUHN, *THE ESSENTIAL TENSION* (1977); Thomas S. Kuhn, *Logic of Discovery or Psychology of Research*, in *CRITICISM AND THE GROWTH OF KNOWLEDGE* (Imre Lakatos & Alan Musgrave eds., 1970) [hereinafter *Logic of Discovery*]; Thomas S. Kuhn, *Reflection on My Critics*, in *CRITICISM AND THE GROWTH OF KNOWLEDGE*, *supra*.

5. Margaret Masterman noted—in the course of a sympathetic treatment of Kuhn's ideas—that she could identify at least 21 distinguishable meanings for "paradigm." Margaret Masterman, *The Nature of a Paradigm*, in *CRITICISM AND THE GROWTH OF KNOWLEDGE*, *supra* note 4, at 59, 61.

6. *SCIENTIFIC REVOLUTIONS*, *supra* note 4, at 10.

7. *Id.* at 23-24.

This is an intensely practical viewpoint akin to Medawar's description of science as "the art of the soluble."<sup>8</sup> One aspect of that practicality is that Kuhn's model is, relatively speaking, at ease with the roles that extrinsic forces may play in shaping intellectual movements. For example, it will be relevant to our concerns that a paradigm is what defines a discipline:

[I]t is sometimes just its reception of a paradigm that transforms a group previously interested merely in the study of nature into a profession or, at least, a discipline. In the sciences (though not in fields like medicine, technology, and law, of which the principal *raison d'être* is an external social need), the formation of specialized journals, the foundation of specialists' societies, and the claim for a special place in the curriculum have usually been associated with a group's first reception of a single paradigm.<sup>9</sup>

Finally, it is especially pertinent to this discussion that adoption of a paradigm simultaneously creates a discipline and narrows its scope. This is necessarily so because, in normal science, the paradigm provides a "criterion for choosing problems that . . . can be assumed to have solutions. To a great extent these are the only problems that the community will admit as scientific or encourage its members to undertake."<sup>10</sup> The necessary penalty for progress, a penalty willingly paid until the time of crisis, is tunnel vision:

Perhaps these are defects. The areas investigated by normal science are, of course, miniscule; the enterprise now under discussion has drastically restricted vision. But those restrictions, born from confidence in a paradigm, turn out to be essential to the development of science. By focusing attention upon a small range of relatively esoteric problems, the paradigm forces scientists to investigate some part of nature in a detail and depth that would otherwise be unimaginable. And normal science possesses a built-in mechanism that ensures the relaxation of the restrictions that bound research whenever the paradigm from which they derive ceases to function effectively. At that point scientists begin to behave differently and the nature of their research problems changes.<sup>11</sup>

This skeletal précis is probably sufficient by itself to suggest some of the directions of my argument. Kuhn focused on scientific history, specifically exempting fields driven by "explicit social need;" nonetheless, many of his observations might have been drawn from any developing discipline. No matter the field, professionalization is attended by common demands, among which are the dual needs to define a set of legitimate problems and to stake out territory. Certainly these demands describe bioethics, a discipline that has always struggled to define its own niche in an intellectual landscape claimed by guild rules, etiquette, religion, politics, and law. A good part of that sense of resonance with which non-scientists read Kuhn is attributable simply to such universal pressures and it will be quite unnecessary for us to invoke, in

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8. PETER B. MEDAWAR, *THE ART OF THE SOLUBLE* (1967).

9. *SCIENTIFIC REVOLUTIONS*, *supra* note 4, at 19.

10. *Id.* at 37.

11. *Id.* at 24.

addition, what Karl Popper labeled "scientism"<sup>12</sup> and what we might more colloquially call "science envy." However, loose similarities and vague resonances can mask fundamental differences; at the very least, they do not absolve us of the obligation to ask how—and to what effect—Kuhn's model describes contemporary bioethics.

Ethical reasoning begins with analysis. In some traditions that analysis consists of locating a problem amid the competing dictates of diverse principles. For bioethicists the canonical formulation in terms of autonomy, beneficence, nonmaleficence, and justice will be most familiar,<sup>13</sup> and analysis is the process of describing how each of these may bear on the problem at hand. In an alternative tradition,<sup>14</sup> analysis entails locating any new problem in a taxonomy of previously "solved" cases and, in the process, specifying how each such case might be construed as a guiding precedent. No matter the tradition, ethical analysis is the substance of our discipline; it is an art that educates and sensitizes, illuminating unexpected parallels, palliating moral tone-deafness, and providing early warnings of unintended logical consequences. So long as these are the goals, analysis suffices.

However, these are seldom the only goals and, whatever may have been true historically, authentic practical demands ensure that they cannot be the whole story in contemporary bioethics. In diverse settings—hospital ethics committees, courtrooms, legislative arenas, and the press—a professional bioethicist is an "expert witness" who is expected to conclude the analysis by resolving contending claims and offering a prescription. It may not be too much to say that the emergence of bioethics as a professional discipline with a distinct identity has turned on its ability to satisfy this demand. What is remarkable is that so many bioethicists have felt able to meet this need, albeit for a limited class of problems. It is remarkable because our discipline proclaims no formulas for resolving the opposing claims of competing principles and/or precedents; we have no ethical arithmetic. Indeed the textbooks—of both traditions—teach us to analyze, then they fall silent.

My inference is that an unstated formula does exist and that it has played a paradigmatic role in creating and sustaining bioethics as a practical discipline. The algorithm itself is simple and concise: Analysis may allot full measures of respect to a variety of values and interests, but disputes will be resolved in favor of patient autonomy. This is not intended to be an astringent rendering; it captures accurately the flavor of much of the literature to which I have been exposed during my apprenticeship and it is merely a plainer specification of what others have called the autonomy paradigm.

It is no part of my purpose to dispute the importance of autonomy. Instead I am making a case that, whatever the intellectual issues, adoption of the autonomy algorithm has played a pivotal and surprising role in the

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12. KARL R. POPPER, *OBJECTIVE KNOWLEDGE* (1972).

13. TOM L. BEAUCHAMP & JAMES F. CHILDRESS, *PRINCIPLES OF BIOMEDICAL ETHICS* (3d ed. 1989).

14. ALBERT R. JONSEN & STEPHEN TOULMIN, *THE ABUSE OF CASUISTRY: A HISTORY OF MORAL REASONING* (1988).

development of bioethics as a practical field. After all, for the literate observer transplanted from a previous century the intriguing mystery would be how ethics, a field of provocateurs concerned to shake certainties, can have evolved into an expert discipline dispensing them. The answer is that a technical field of bioethics has been fashioned in response to specific needs, notably the perceived needs to control medical paternalism and institute informed consent. That technical field is guided by an algorithm that serves as a paradigm and its history conforms to Kuhn's model.

Technical disciplines are seldom static. They originate in full-scale revolutions propelled by novel paradigms, then evolve through periodic phases of turbulence resolved by recognizable, if greatly modified, new paradigms. No matter the magnitude of the shift, what has been learned from the ancestral paradigm is seldom unlearned. Thus, optics has survived many paradigm shifts while remaining a distinct and recognizable discipline that employs tools from many eras: My eyeglasses were designed using equations that are centuries old, without even passing reference to quantum optics. Professor Schneider envisions just this kind of evolution for the technical field of bioethics. When he suggests that bioethics needs new paradigms, I take it that he is seeking a modified algorithm—one that hangs from a broader, more flexible, and more realistic conception of patient needs and desires—but an algorithm nonetheless. It is an interesting question whether the technical field of bioethics will prove susceptible to this kind of evolution. If it is precisely by its inflexibility that the autonomy algorithm has fashioned a discipline emancipated from the traditional ambiguities of ethical analysis, the answer is far from obvious.

Whatever that answer, it cannot obscure a more fundamental issue. Paradigms, whether they be new or old, animate emerging disciplines, not *ab initio* but at the expense of those more expansive and ambitious fields that were their antecedents. Thus Kuhnian revolution, like its political counterpart and unlike biological evolution, occurs by replacement. It is, of course, inevitable that energy and enthusiasm should flow from a tired and contentious endeavor to one that is vigorous, confident, and successful. It requires more effort, bolstered by newfound authority and prestige, to revise the boundaries of worthwhile inquiry by excluding many of the questions formerly considered central. Thus the straightforward question "How can a force act at a distance?" stood squarely in the path of advances in physics until Newton's triumphs rendered it unscientific. Similarly, transmutation of the elements was one of the defining goals of alchemy. Chemistry reduced this goal to the status of non-science, where it remained until it was enveloped by nuclear physics.

It is precisely this Kuhnian linkage that accounts for the diminished aspirations reflected in the questions that introduced this essay. From a larger world of concerns called bioethics, a technical field—also called bioethics—has emerged. Because of its focus it has flourished; despite its focus it has assumed the station of the parent discipline. By such reductionism has bioethics been transformed into a library of commentaries on physicians'

codes of conduct. In this portrait, the failings of the current paradigm are secondary. What is primary is the suspicion that there is something illegitimate about a paradigm-driven bioethics. Surely this suspicion is related to Kuhn's insistence that disciplines responsive to explicit social need cannot follow the same rules as those dedicated to the growth of knowledge. When basic scientists select research problems, it is a matter of parochial interest. Important questions, neglected in favor of tractable ones, can await the turning of the wheel and its yield of new paradigms. The research strategy described by these statements may apply imperfectly even to basic science,<sup>15</sup> but they capture accurately the logical implications of the notion that a discipline is guided by a paradigm. They describe a strategy ill-adapted to address those immediate and compelling public needs that mandate the existence of the healing professions. Certainly they do not describe anyone's a priori aspirations for bioethics.

This symposium has been directed to "emerging paradigms," and I have taken it as my purpose to explore some of the implications of that language. Whether those implications do, as I have suggested, describe contemporary bioethics—whether, specifically, the scope of bioethics has undergone a Kuhnian contraction—is a question that readers must judge against their experience of the field and its literature. In the area with which I am most familiar—bioethicists' responses to the social impact of advances in human genetics—Kuhn is precisely on the mark. Considerations of space will limit me to a few, rudimentary illustrations.

In their foreword to a book that serves as the most authoritative introduction to the ethical issues surrounding the Human Genome Project, James D. Watson and Eric T. Juengst consider the implications of genetic knowledge by listing some of those for whom such knowledge can create difficult choices.<sup>16</sup> Their list cannot be faulted; it includes individuals, families, health professionals, employers, insurers, the courts, social institutions, governments, and society. However, if this list represents an agenda, it is not one that the bioethical community has adopted. For some of the larger categories, the silence of bioethicists is masked by the efforts of those whose perspective is purely legal. With respect to the ethical obligations of individuals and families, it is stunning. The following passage concerning "Individual/Family Issues" fairly represents the nature of that silence. "These issues include what information can be collected, how, by whom, on whose authority, for what purpose, how and to whom the information is disclosed,

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15. I have no desire to stumble onto the battlefield where historians and sociologists of science dispute the relative importance of intrinsic and extrinsic influences. Certainly, if there is a boundary between pure and applied, it is and always has been ambiguous. I ask only that a generous reader accept my description as one aspect of the life of any real scientist in a basic setting.

16. James D. Watson & Eric T. Juengst, *Doing Science in the Real World: The Role of Ethics, Law, and the Social Sciences in the Human Genome Project*, in GENE MAPPING: USING LAW AND ETHICS AS GUIDES xv, xvi (George J. Annas & Sherman Elias eds., 1992).

ownership of the technology, and the consequences for the individual and family."<sup>17</sup>

Such a treatment distorts the issues to fit the paradigmatic box. It reflects the strangely paternalistic assumption that individuals (and families) are not themselves actors in the ethical drama. Yet even if we agree completely on the question "Who shall decide?", the corollary question "What shall they decide?" does not lack ethical content. Consider a concrete example. Suppose that my niece is at risk for Huntington's Disease ("HD") and she desires to be tested. Until recently, that test has required DNA samples from family members. Am I under any ethical obligation to provide the needed sample? Now suppose that there were a presymptomatic treatment for HD, perhaps a dietary regimen akin to that used to ameliorate the effects of phenylketonuria. Would the existence of that option modify my obligations? Some will object that ethicists cannot dictate to patients. I agree, but as the subject of this example, I would remain free to assert my autonomy even if a genetic counselor were to offer guidance concerning the consequences of my choice. Moreover, my autonomous opinion would be formed in a moral climate that could be molded, at least in part, by ethical discussion. The quasi-legal test of whether one can and should dictate is the province of the technical field of bioethics; it has no bearing on the need for ethical analysis.

The particular example is a narrow one, but it can be applied to a much wider range of situations in which the burden of decision-making falls not on a practitioner but on the patient and his or her family. Such situations are in no way special to genetics. Indeed, many bioethicists will think immediately of decisions to terminate treatment near the end of life. These are especially pertinent to my argument, for when a patient is incompetent and no surrogate is available, practitioners are forced either to use substituted judgment or to act in the best interests of the patient—in short, to adopt the family's viewpoint and bear their ethical burdens. The fact that the relevant commentaries<sup>18</sup> focus exclusively on the procedural question—who shall decide—reflects the understandable but unfortunate reluctance of ethicists to offer families anything more than the "right" to decide.

My argument goes beyond the observation that some questions are uncomfortable and difficult, to the assertion that, for the experienced bioethicist, they no longer exist. Discussion groups provide an interesting experimental test, and over the last few years I have considered cases like these with a variety of groups. What has impressed me most has been the speed with which these exchanges become focused on the narrow question of patient rights. With sophisticated groups—those with prior experience of bioethics—the transformation is virtually instantaneous.

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17. George J. Annas & Sherman Elias, *The Major Social Policy Issues Raised by the Human Genome Project*, in *GENE MAPPING: USING LAW AND ETHICS AS GUIDES*, *supra* note 16, at 3, 7.

18. See, e.g., THE NEW YORK STATE TASK FORCE ON LIFE AND THE LAW, WHEN OTHERS MUST CHOOSE: DECIDING FOR PATIENTS WITHOUT CAPACITY (1992).

The examples illustrate a failure to guide individuals and families. One consequence of autonomy is that this reluctance translates into an unwillingness to guide society. However vague the connection may appear with respect to current problems, it will be revealed in full by the developments in genetics. Thomas Schelling has made the case especially vividly:

If most of you do not much care whether your child is right or left handed but, given a choice, slightly prefer she not be left-handed in case it becomes unfashionable, and if it is easy to choose right-handedness, you may participate in converting left-handedness from a common, innocuous characteristic—even a proud one—to one so rare, that, in order not to inflict that kind of rarity on a child, people would avoid it. A normal characteristic would thus become a “pathology,” a stigma, through a myriad of uncoordinated individual choices.<sup>19</sup>

In fact, most bioethicists appear to have adopted the premise that there is nothing to say about reproductive decision-making once one has insisted that it be free of coercion and autonomous. Hence, there is extraordinary silence in the face of evidence that sex selection is common and increasing.<sup>20</sup> But, as Diane B. Paul has argued most cogently,<sup>21</sup> however much we may regret it, reproductive decisions do have important moral and social consequences, and the questions they raise will not disappear if we plead technical difficulties and ignore them. Instead, they will simply be answered by habit, law, and the market—all without benefit of ethical analysis.

For ethicists to consider these problems, requires an expanded conception of the meaning of bioethics. We need not adopt Aldo Leopold's ideas, but we might wish to be inspired by his aspirations:

An ethic may be regarded as a mode of guidance for meeting ecological situations so new or intricate, or involving such deferred reactions, that the path of social expediency is not discernible to the average individual. Animal instincts are modes of guidance for the individual in meeting such situations. Ethics are possibly a kind of community instinct in-the-making.<sup>22</sup>

The technical field of bioethics—the part that can be interpreted as normal science—cannot carry this burden alone. That tension between crisis and paradigm which, in the natural sciences, is enforced by experiment must, in the healing art of bioethics, be supplied by continued criticism. Bioethics requires new perspectives more than it needs new paradigms.

In one of his most evocative essays, Sir Karl [Popper] traces the origin of “the tradition of critical discussion [which] represents the only practicable way of expanding our knowledge” to the Greek philosophers between Thales and Plato, the men who, as he sees it, encouraged critical discussion

19. Thomas C. Schelling, *Choosing Our Children's Genes*, in *GENETIC RESPONSIBILITY: ON CHOOSING OUR CHILDREN'S GENES* 101, 106 (Mack Lipkin, Jr. & Peter T. Rowley eds., 1974).

20. For an account of medical geneticists' attitudes, see Dorothy C. Wertz & John C. Fletcher, *Fatal Knowledge? Prenatal Diagnosis and Sex Selection*, *HASTINGS CENTER REP.*, May-June 1989, at 21.

21. See Diane B. Paul, *Eugenic Anxieties, Social Realities, and Political Choices*, 59 *SOC. RES.* 663, 679 (1992).

22. ALDO LEOPOLD, *A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE* 203 (1949).



both between schools and within individual schools. The accompanying description of Presocratic discourse is most apt, but what is described does not at all resemble science. . . . In an sense, to turn Sir Karl's view on its head, it is precisely the abandonment of critical discourse that marks the transition to a science. Once a field has made that transition, critical discourse recurs only at moments of crisis when the bases of the field are again in jeopardy. Only when they must choose between competing theories do scientists behave like philosophers.<sup>23</sup>

Whether we like it or not, bioethicists are philosophers.

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23. Kuhn, *Logic of Discovery*, *supra* note 4, at 1, 6-7 (citations omitted).