

## Wisdom versus knowledge: an agenda for a more humane medical science<sup>1</sup>

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KNOWLEDGE IS NOT WISDOM. King Solomon knew the difference, and when he had to choose between them, he picked wisdom over knowledge. Two prostitutes came to him with a difficult case. They had both given birth within the past 3 days, and the mothers and newborns were alone together the night one infant died. Each claimed the surviving child was hers. *Kings I*, Chapter 3, describes Solomon's strategy for deciding between them:

The king said, "One says, 'This is my son, the live one, and the dead one is yours'; and the other says, 'No, the dead boy is yours, mine is the live one.' So the king gave the order, "Fetch me a sword." A sword was brought before the king, and the king said, "Cut the live child in two, and give half to one and half to the other."

But the woman whose son was the live one pleaded with the king, for she was overcome with compassion for her son. "Please, my lord," she cried, "give her the live child, only don't kill it!" The other insisted, "It shall be neither yours nor mine; cut it in two!" The king spoke up. "Give the live child to her," he said, "and do not put it to death; she is its mother."

Solomon had no way of knowing which woman was the biological mother, but he took the absence of such knowledge as an opportunity for wisdom, and gave the baby to the woman who displayed the most compassion for it. Now imagine that Solomon's court was in recent session, and the woman who called out for the child to be divided in two, who felt so strongly about losing it that she would rather see it dead than in the other's hands, said "Please, my lord, I appeal to you for a DNA test."

What would Solomon do if the test showed that she was, in fact, the mother of the live child? Would this knowledge lead him to change his decision, or would his wisdom still compel him to let it stand? The text

makes it plain that Solomon's wisdom lay in deciding where the child's interests lay, and that its interests neither depended on nor could be served by any manner of scientific evidence. What was wise for Solomon to do would be wise for us as well: we should expect medicine and science to place human needs ahead of other considerations, and to be sensitive to the facts of life and death that unite us all.

Holding onto the wisdom of Solomon in the age of DNA will not be easy. The live child did not need to know its mother's DNA; it needed to be cared for. Its life would not have been in any way improved by genomic knowledge. Many of us will face a dilemma like Solomon's in the years to come. Each year, molecular medicine tells more of us about the inherited conditions from which we will fall ill or even die without being able to cure, prevent, or even ameliorate many of these same conditions.

Why is there not more wisdom in the application of scientific discoveries to the lives of sick and suffering people? Why is there not more wisdom in plans for the future of both medical science and medical practice? I have come to the conclusion that the major impediment to the emergence of wisdom from knowledge in today's medicine is the simple fact of human mortality. Mortality, the common fate that links us all, erects a wall of silence and blankness at the outer edges of scientific understanding.

Like Mr. Scrooge dreaming of a visit to his own grave, I once saw an early rounding off to my own life. In my case, as in his, it was not entirely a dream, nor could I go on unchanged afterward. In the

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spring of 1993—as I was in Vermont completing my first book, *Signs of Life*—I came down with a bad cold that did not clear up. I would cough and feel tired, and I had developed a distressing capacity to produce vast amounts of phlegm. These symptoms did not slow me down enough to bring me to a doctor, nor did I allow them to interfere with my summer plans.

By summer's end I had resigned myself to coughs and phlegm forever when my symptoms took a jump and I was knocked off my feet and into bed by a new, painful, racking cough and a high fever. I was miserable that night and the next day. I began to hallucinate: the fever split me mentally into a person who could not concentrate on anything and who saw whirling colors, who heard a small voice saying that this was bad, but was unable to do much about it. My remaining powers of concentration barely served to accomplish the tasks of sitting up to cough and shuffling to the bathroom to relieve myself.

I was too sick to be scared, but my wife was afraid to let another night like that go by. She decided to consult our doctor in New York, who had me take an antibiotic drug, erythromycin. Within a day after my first dose of erythromycin my fever had almost gone and I was able to drive back to New York a few days later. X-rays confirmed the diagnosis of pneumonia. My lungs did not fully recover for another month, but I had come through. I owed my life to erythromycin, a drug that did not exist when I was born; 50 years ago I would have died.

Although the antibiotic worked and left me physically whole, the pneumonia nevertheless changed me. Although mortality is of little or no interest to science, my bout with pneumonia had ended my complacent disinterest. The specter of my own death meant an end to my days of freedom to ignore mortality, and with them, my career as a laboratory scientist.

My reaction was so strong, perhaps, because of my particularly vulnerable age. I was in my mid-50s, an age that bears a certain resemblance to a similar southern latitude. At latitudes near 50 degrees south, no land masses impede the winds that swirl around the planet. Coming and going suddenly, they hit boats with startling ferocity; anyone who has tried to cross the south 50s knows how dangerous and difficult the journey is. Strong winds of a different sort hit all of us as we cross our own personal 50s. On the warm side, coming down from the equator of childhood, we measure our latitude by the time we've had on this earth; after the crossing, we confront the chilling question: how much time do we have left?

In my 50s, pneumonia had taken from me the one study of faith necessary to a career in biomedical research: that although science may not yet be able to explain everything worth knowing about, in due course

it will be able to. Still in the full faith that this was so, I began to search for the place of mortality in the research agendas of my colleagues. I soon found that science had no useful model for dealing with mortality or any apparent interest in developing one: death was simply not interesting. This struck me as odd.

Although I had just been saved by the right antibiotic—by knowledge, more than wisdom—I knew that no state of scientific knowledge would save me forever, and I knew that each of my colleagues shared the same information. Science may well be able to slow down aging, but it has no way to give us endless life. The end of life presents medical science with two challenges: to diminish the effects of aging, and to respond to the needs of the dying.

Many scientists and doctors have turned away from studying the problems of aging and dying, as if these aspects of life were somehow contaminated by what inevitably follows them. But even the last moments of life can be more than a pre-death. What would dying look like if medical science were to see it as the last stage of a life rather than the first stage of a death?

People dying in very old age after having been successfully kept from the slow decline of aging will still want—as we do even now—any assurance they can get that the quality of their remaining lives, however short, will be preserved until the very moment of death. How many scientists and doctors would consider that last task to be of any scientific interest, and worth the work? How many would be able to get past the giving of false promises that every condition is curable in principle, that impending death is the failure of a cure, and concentrate on the medical and scientific aspects of the very last stage of life, that is, on dying?

Today, with the majority of people dying before 80 of infectious, environmental, behavioral, and inherited problems we cannot yet solve, this issue may seem premature to the point of irrelevance. But there is a risk involved in not confronting it now: silence means we will see biomedical research continuing to confuse the prevention of early death with the promise to prevent death as such. The old people who today suffer avoidable disease, unnecessary isolation, and pain in their dying are the major victims of this confusion between aging and death. They deserve a better deal than the one they are getting from today's medical science. Not for them alone, but also for today's children who will be the aged of 2050 and beyond, science and medicine have to learn how to attend to the problems of the dying.

The *medical* treatment of the dying is almost impossible today, an embarrassing situation that can only get worse as the rest of medical science succeeds in allowing a greater fraction of the population to reach the end of a maximum life expectancy with sufficient residual mental and physical capacity to

understand their situation. For the sake of these lucky people—may we all be among them—medical science is obligated now to begin a research effort focused on making dying as brief, and as healthy, as possible. This is no joke: a dying accompanied by a minimum of pain and a maximum of social interaction would be healthier and better by far than the typical dying of today, accompanied as it so often is by prolonged agony and isolation.

My mother died only recently of stomach cancer, while I was writing this book. In her last months, and even in her last days, my mother showed me and my family ample evidence of the difference between dying and being dead. She became stronger as she became weaker, becoming increasingly generous and wise with me and my relatives, and with a host of new and old friends, in ways that she was unable to be while she was more fully alive.

This stunning emergence of a kinder and wiser person from out of the dying body of my mother came to a halt only in her last few days, when the pain of her tumor began to require such high doses of morphine that she was unable to speak with any lucidity. Even then, she clearly accepted her death, said good-bye, and died peacefully. She might have lived a few months longer if she had elected to have her stomach removed. But she argued, and I as her co-trustee had to agree, that she was entitled to spend her last months as fully functional as possible, and that an operation at her age—in her early 80s, and with a bad aortic valve—would likely leave her an invalid. In lieu of an operation, she arranged for home hospice care, and she got just what she had asked for.

Hospice care is still controversial at many major medical centers today because its goal is not to provide good treatment for the dying, but to provide a good death. At their best, hospices excel at delivering what they promise: control over pain, dignity to the end, and the assurance that no one need spend their last moments alone.

The current response of *science* to the dying reflects my own attitudes during those decades that I worked in my lab. It goes something like this: “You have had the misfortune to be born too soon to benefit from science’s ever-deeper comprehension of nature. That is too bad, but since we can know how everything works, certainly one day we will know how to keep a death like yours from happening. Until then, you will understand if we do not spend much time on the relatively uninteresting matter of how it is to die.”

Today, medical scientists treat aging, dying, and death with equally fastidious disdain, as if they were all somehow intrinsically uninteresting. If they are as frightened of death as everyone else, then their disdain for aging, death, and dying is a prophecy that

keeps them from confronting their own fears. A good deal of interesting science awaits scientists who are able to admit their fears of death, and look beyond their fears to study dying on its own terms.

There is a realistic scientific agenda for the period that ensues from the moment when there is nothing that medical science can do to stop death from coming until the moment of death. It is to understand the mind and the body well enough to keep both as free of pain, and as free of isolation, as possible. Science can complement the work of a hospice by providing it with new tools to accomplish these ends. After my mother died, I found this agenda clearly laid out in the Talmud—an early text, one that comes from a nonscientific tradition, quite different from the Greek tradition out of which my science had grown.

Almost 2000 years ago, the interpreters of law for the Jewish people began a process of debate and deliberation that went on for centuries. The written records of these oral arguments are preserved in the Talmud; in one, I found a short discourse on the rights and needs of a *gosses*, a person who is beyond medical help and expected to die in fewer than 3 days. Such a person may marry, may sign legal documents, and may even incur debt; in other words, healthy people are obligated to persist in their normal interactions with the dying; to do otherwise would be an act of heretical presumptuousness, an arrogation of God’s singular power over life and death. Taking these ancient rights of a dying person as a guide, much dying today happens poorly, with unnecessary pain.

To uncover the underlying mechanisms of pain, it is useful first to recall that no matter what part of the body is in pain, the hurt is, of course, in the head. Pain is a brain state, and as such, it ought to be as understandable and treatable as other unwanted brain states are turning out to be. The most effective anti-pain compounds we use today are able to relieve pain only by dulling the senses, and all are highly addictive when taken by people whose lives are not almost at an end. Doctors who try to prescribe large enough doses of these compounds (morphine and its derivatives) are often suspected of inducing a dying patient’s addictive craving. This is a cruel joke to anyone who is dying with intractable pain and who might reasonably argue that one cannot be addicted once one is dead. A civilized medicine that fully accepted the reality of death would also recognize that the pain itself is as damaging as any addictive state.

There is another, equally ironic barrier to the straightforward study of the proper pharmacology for intractable pain: the fear that an overdose of morphine might be used intentionally to shorten the life of a dying person, with or without that person’s

consent. The irony comes from the fact that the most frequent reason for requesting an early death is precisely unbearable pain.

Beyond the tragedy of people who are dying having to hasten their death with the same compounds that earlier might have given them reason to live longer, denial of proper painkillers damages a person's body. A person in pain suffers from a reduction in the efficiency of the immune system and is usually unable to actively participate in any other courses of treatment. We need a major effort to find or synthesize—and then to openly distribute—a new generation of more effective painkillers. Such research would need strong government support, since the political problems of such research and development make this line of work as uneconomical as vaccine production for today's pharmaceutical firms.

Denial of mortality is often accompanied by denial of another aspect of the human genetic birthright: we are intrinsically social beings. The mind is the product of social interactions; there is not enough DNA in the world to encode a single mind. From birth on, minds develop in brains by the imitation of other minds, partly but not solely the minds of biological parents. The few behaviors wired into our genes at birth are all designed to maintain and thicken the bonds through which this imitation can proceed. The current biomedical model of a person as an autonomous object lacks a proper respect for these social interactions. It severs the patient from family and social context, and it devalues preventive—social—medicine to an afterthought or a charity.

People need the touch of other people's hands—those soft touches that let them know they are not alone—all their lives, to the very end. The cruelest of the paradoxical consequences of the denial of death in modern medicine is the insistence on treating a dying person in ways that destroy all chance of

privacy and dignity, that deny the person the ancient right to the continued presence of friends and family. The usual argument for leaving the dying person alone in a cold room, with tubes and monitors blocking all human interaction—for allowing the rarest and sometimes the richest of words to go unheard or unsaid—is that this regimen is necessary to extend the dying person's life, albeit only for the shortest of times. But to extend external time by so little while removing from the dying person all chance of sharing any of the little personal time left with anyone else is surely another form of *de facto* torture, equal to the withholding of painkilling medicines.

Denial of the reality of the social bond, like denial of mortality, is an avoidable mistake of science. These and other conflicts that have surfaced between scientific medicine and society are not simply matters of resource allocation. They are signs that the knowledge of death and the need for others in one's life cannot be suppressed any longer, that the dreams of science are no longer satisfying even the dreamers.

Why is there not more wisdom in the application of scientific discoveries to the lives of sick and suffering people? Why is there not more wisdom in plans for the future of both medical science and medical practice? These questions are not ordinarily asked by scientists. The reticence of scientists and doctors is, I think, a major clue, a door to go through in order to understand why today's medicine seems so full of knowledge yet is so far from wise. Not death itself, but the refusal to consciously contemplate death and the end of personal inner time, continues to limit our capacity to use the discoveries of science to extend our lives to their fullest capacities. To put it simply, lacking a religious sensibility, medical science will always be woefully incomplete, no matter how great its discoveries.