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The dilemma examined by Dr. Berkner is brought into sharp focus by Professor Cowan. Can it really be expected that law can create order out of the chaos left in technology's wake? Mr. Cowan notes that, metaphorically speaking, a common law marriage already exists between law and science. Is the goal of a true union possible? The author grants the pessimists 99.44 percent of their argument; with his remaining 0.56 percent he argues that the union is possible though not probable. He suggests that the theory of law as well as the theory of science be taught in the early stages of the educational process. Professor Cowan concludes that if an understanding can be created between the two disciplines, eventually science may come to understand that its ultimate goal is the same as that of law — to help man understand himself.

DR. BERKNER'S theme is "Technological power as a means of achieving society's goals." Technology supplies the means; law and morality supply the ends. Dr. Berkner spoke from a scientist's perspective on how law affects society's attempt to achieve these goals. After sketching out the astounding history of technological growth, he stated that "our hope of ultimate social justice lies in maintaining this immense technological dynamism" and asked the following question: "Can mankind find the rules, the law, whereby this opportunity can be turned — not to unlimited evil — but to unlimited bounty?" Dr. Berkner ends with the dilemma that humanism poses for technology. Morality, and its handmaiden, law, must confront this problem. I have chosen to sharpen this dilemma, draw out its consequences further, and see what lies before us as the situation develops.

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No one has ever suggested that a wedding between law and technology as the dominant partners in our modern culture be solemnized. Yet, a common law marriage is really in effect; it exists de facto, as lawyers might say, if not de jure.

My use of the metaphor of marriage to describe the uneasy relations between law and technology is not an accident. For, in point of fact, the deep and basic common agreement between the two is more important than their open and notorious disagreements.

In the first place, these two monsters are roughly of the same size. We are accustomed to hear it said on all sides that technology is the juggernaut of modern society. But is this any the less true of our hypertrophied legal systems? Law is called on to be the chief mode of social control for mankind, that is, for a species of animal whose numbers have recently grown to unprecedented proportions and which has become enmeshed in activities for which its long genetic history has only very poorly prepared it. With the exponential growth of the human population, all kinds of activity, from the most exalted spiritual exercises to the meanest petty thieveries, have grown alarmingly within the memory of living men. And law is supposed to regulate this entire hectic mess. If technology is felt to intrude on every aspect of our culture, law is no less ubiquitous. For example, our own recent resolve to raise our Negro population to full cultural status is supposed to be done by law. Law is assigned the job of remaking our worker-management complex. Every one of the 70-odd million members of the working force — virtually all adults — has or feels he has a stake in law to bring order out of the chaos of working relations. Law is to take care of us from the cradle to the grave in the growing welfare state. And finally, to round off the picture, the emerging native cultures of the world are adopting legal form. They are becoming nations, that is to say, law-ridden entities, all hoping that in some mysterious way a total law, the law of the world, will reconcile their profound differences and teach them to give up the immemorial habit of constant irreconcilable warfare. The whole dreamlike character of this fantasy is summed up in a book bearing the unquenchably optimistic title of *World Peace Through Space Law*! What is this all about?

If technology is turning the world upside down, law, it is supposed, will set it right side up again. Nothing like this has happened since Greek mythology.

Dropping the metaphor of the marriage of these ill-mated giants, let us look for a moment at law and technology as processes. Issuing from the orderly processes of science, technology is said to be the chief disrupter of the stability of modern culture; and law, emerging from the chaotic depths of human unconsciousness and directed at man's dominant instinct for disorderly and acrimonious behavior, is supposed to make our lives free, our liberties secure, and our happiness overflowing. Can any of these fond and foolish hopes be realized?

We would not be human if we gave up these grandiose hopes. But it is also truly human for us to scale down our pretensions and to look at these things in the small, warm, and personal ways in which they really affect our individual lives.

Let us turn to the intimate matter of mood — the mood of optimism and the mood of pessimism upon which these reflections seem to rest. There are two things which link the optimist and the pessimist. In the first place, each believes that the other is misguided, not reasonably and understandably, but stubbornly and perversely. This is the common ground on which both stand. But there is another feature they possess in common. Each reasonably concedes to the other 99 percent of his argument, but with respect to the remaining one percent, each is quite immovable. The pessimist grants *almost* everything the optimist claims. Science is good; who would want to destroy it? Technology has worked wonders in raising man from a state of barbarism; who would want to return to barbarism? Modern law is sophisticated over its ancient forms by an order of magnitude that confounds the imagination. We do things both with law and with technology that would make our ancestors exclaim that the 20th century is indeed their dream of heaven on earth come true. *But*, and here all the concessions are destroyed, what of all this if man has expanded his technological skill only to destroy himself, and perhaps all animate matter, and if law's only and final function is to preside at this ultimate liquidation, this last execution?

What now of the optimist's response? I am an optimist, as you may have surmised, and I shall begin by conceding a full 99.44 percent of the pessimist's claim. We *are* in a God-awful state. Exponentially viewed, it will not be long before the earth's surface is packed solid with humans, the whole mass standing in individual refrigerated capsules on a thick layer of immovable automobiles. Babies will issue from this mass in a constant stream to stand on the shoulders of their parents. Suddenly, atomic fusion is achieved by the central computer which runs this horror and the mass dissolves into a small exploding universe of positive and negative electrons, neutrinos and antineutrinos, baryons and leptons, all moving apart at relativistic speeds. Before this, of course, we shall have all killed one another off by the exponential rise in the crime rate, by radiation diseases, and, lacking all exercise, by dying shortly after birth from the ultimate pollution, namely, the inability to move away from our own excrement.

I concede all this to the pessimist — and more. But I would ask him to consider certain implications of his position. Man has always been the animal that most loves hyperbole. He does not kill something; he disintegrates it. He does not build something; he erects megoliths, moves mountains, diverts rivers, and paints the aurora borealis. Really, when we come right down to it, there is only one death allotted to each of us. The pessimist kills us a thousand times. In fact, we can be starved to death *or* roasted alive *or* disintegrated by fission *or* fusion, but, thank God, we cannot be killed by all of them.

And so I have given the pessimist his full 99.44 percent of doom and disaster. Let us see what I can do, stubborn as I am, with my remaining 0.56 percent. I shall use it frugally to express a single thought, a thought which entails a hope. The thought is that once upon a time law and science, those antagonistic procreators of impending doom, were inseparable. When this beautiful shining world of ours was young, it was governed by inexorable laws; those laws were just. Justice, it was said, ruled the universe. But man, the only lawbreaking animal, took himself out of that orderly universe, separated the world from himself, and called this process science. He resolved to govern himself by what we call law. Dr. Berkner has sketched for you the astounding growth of science in almost total disregard of the learning of the law. It would be easy to sketch out a parallel development of law in almost total isolation from science.

Can we hope to put these sundered parts together again? Can law and science once more become united? Is there anything inherent in a law of nature that forever separates it from the law that man uses to rule himself? I cannot see anything inherently alien in either to prevent its joining the other. They cannot be joined, of course, in the way in which our forebears in their pristine innocence thought, but rather in more sophisticated ways, more complex ways, that we in our wilfullness have made necessary.

Is our imagination equal to the task of conceiving how law and science might join hands? Can our human system of law become scientific? And can our scientific and technological systems be imbued with the ideals of justice? It is inevitable, I think, that science and technology, as now conceived, will become part of an all-encompassing science of human behavior. The so-called laws of nature will be seen to be human inventions, serving human needs. Mastery over inanimate matter and subhuman life will lead to its

intended goal: mastery over human life itself. Surely, as this scientific intention comes to be perceived, we shall also see the relevance of law to this grand enterprise. And just as surely, the optimist in me hopes, the law will give up its present unscientific form and join with science in *the cooperation of man with man in the conquest of nature.*

It will take me only a paragraph to complete this idealistic program. Law and science ought to be *taught* together; this is the direct challenge to our scientific and legal educators. Law and science ought to *work* together. This is the challenge to our scientific and technological administrators and to our legal administrators, our *rulers* no less, that legal planning without scientific and technological knowledge is plain randomized tyranny.

I take this symposium and this entire convocation as a sign, as a recognition, of the urgency of this long delayed ideal of cooperation. I can only hope — to the dismay of all pessimists — that scientists and men of the law everywhere will catch a glimpse of this ideal and learn to implement it. I can think of a thousand ways in which this ideal could be fashioned with what we know today. We may not save the world — I do think this notion is presumptuous for such a foolhardy race as genus *homo* — but at least we may come to know and respect one another in the process of trying.