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How Does Interdisciplinary Work Get Done?

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INTERDISCIPLINARY WORK CAN GET DONE AND very well too—witness the work of this group. From my experience with this and other efforts at the Institute, I would like to make some observations on how it happens. I feel that the personal reference is justified because I believe that successful interdisciplinary work is based primarily on the participants undergoing personal change. Since none of us is all that willing to change beliefs and viewpoints, perhaps we should look at what softens people up enough to allow them to change.

The first essential is a healthy respect for the problem at hand. As a physician, I am quite accustomed to working with experts from other disciplines. Only I call it asking for a consultation, not interdisciplinary work. I do not do this out of largeness of character, but because I am scared of error and afraid of doing harm to a patient. That fear usually overrides pride because doctors soon learn how much damage can follow the failure to admit ignorance. If the first requirement is a healthy respect for the problem at hand, then the problems of ethics in the life sciences lend themselves naturally to interdisciplinary work. One must simply stand in awe of any set of issues which have withstood solution since the beginning of recorded time. Before

working in these interdisciplinary groups, I thought that the difficulty was merely that well-established ethical systems or philosophical understandings had not been applied to the issues raised by modern biomedical science and technology. While that may be partly true, to a larger degree it is basic understanding that is lacking. As in other fields, exposure to new challenges has revealed gaps in previous knowledge, insight, and methods of analysis. In other words, it is not merely that we are seeing situations in medicine and the life sciences that are new and unique—to which, for example, Aristotle's *Ethics* have never been applied. Rather, these new things would pose exciting challenges to Aristotle (as only one example) if he were around today. Indeed, I am distressed with my own tradition, Judaism, because I believe Jewish ethicists have not by and large yet understood that we are dealing with situations that are new and unique in the experience of mankind.

If the first requirement for interdisciplinary work is respect for the problem, then I think that the second requirement is a belief that the problem demands solutions. When I call a consultant to see a patient with a puzzling illness, I do not do so solely out of intellectual curiosity. I ask for help because I know that decisions must be made and actions taken. Here again, the similarity to the problem of ethics in medicine and the life sciences is clear. Discovery, invention, and change proceed with consequences good, bad, and who knows what in between. Our disquiet with medicine and science, which for some reason continue to see themselves as "value free," is deepening. There is an urgency here that is pressing despite the fact that the work may go on at this pace for many decades.

These two basic requirements, respect for the problem and an urgency for answers, are necessary, I believe, because of the effect they have on the people who must participate across disciplines. They create a community of interest that, at least for a time, directs the interests and attention of the participants toward the outer need and not so much toward each other and each other's discipline. I know well that attention falters and that side issues may obscure common interest in the challenges, but I also know that the fundamental issues are so compelling that it is

necessary only to raise them again to return common direction to the work.

What is being asked of those who do interdisciplinary research is that they leave the fixed intellectual navigating platforms from which each discipline or specialty views the world. For all its importance, I find that no easy thing. A person is defined, in part, by his conceptions, by the paradigmatic structure of values and beliefs about the world that relates each conception to the other. To ask of someone that he be prepared to call that conceptual structure into question is to ask that he be prepared to give up a piece of himself. People do not hold white-knuckle tight to their frames of reference out of pure reason but because to give up a frame of reference is extremely unsettling. The design of settings in which we do interdisciplinary work and the methods by which it is accomplished must take that potential for anxiety into account. It takes time for people to change their views; they are not changing something external to themselves, rather, they are changing themselves. Personal support is also required, and the best support is the sense that one is among friends and equals.

Therefore, to the requirements of respect for the problem and awareness of its urgency I must add more personal necessities for interdisciplinary research. I cannot emphasize strongly enough my belief that in successful interdisciplinary research, those things that promote change in individuals promote the work.

First among these is, I think, respect for the other participants. I lay aside a bit of myself out of the belief, derived from respect, that the view of the other person will support me even though I have not yet had time to test it myself. It is respect for the physician that enables a patient to do something for his health that he does not want to do, or that threatens injury or discomfort. In the setting of transdisciplinary work, respect arises from several diverse (and sometimes related) characteristics. One is sheer intellectual power: I do not see the problem as that man or woman does, but if someone as intelligent as that believes it to be so, I am forced to re-examine my own belief. Another characteristic often related, although not necessarily so, is depth and breadth of scholarship. Someone who knows his field and its

literature so completely that it has become a part of him also commands my respect for I love learning itself. The personal integrity of a participant may make us accept what he or she says as something not idly come to or lightly held.

At the first meeting I ever attended at the Institute, when I wanted to play tapes of patients' conversations I found myself in direct conflict with the late Henry K. Beecher, M.D., over the lack of written permission for the recordings.[1] The patients had known their conversations were being recorded, and I did not see the necessity for formal permission. Some sharp words ensued, and I left the session angry. At the meeting the next morning, I apologized somewhat reluctantly, as much out of respect for Beecher as from agreement with his point of view. However, I did start getting written permission after that, and by now, I have taken Dr. Beecher's position on a number of occasions. Change is gradual, but the first willingness really to listen may come out of respect.

I may appreciate what another person has to say but I may not respect his discipline. Interdisciplinary efforts do not go well when the participants do not respect each other's disciplines or their methods. Most of us have prejudices against this or that branch of science, against all physicians or some specialties, against all philosophers or some philosophical schools, or against all theologians or some professed beliefs. No seminar, working group, or conference can survive too many participants with such feelings. On the other hand, there is no such group that does not carry some burden of simple prejudice. The solution for the problem of prejudice is, once again, personal respect and the appreciation of the importance of the goals of the work.

Having discussed these personal issues in transdisciplinary research, it seems necessary to mention some specific things that either promote or hold back the work. The first and foremost specific is language: social and professional communities are communities of language. The extent that any of us share the same conceptions or world view, or can come to know that we do, is the extent to which we share a common language. By language, I mean, of course, not merely the same words, but the same meanings and usage.

The problem of jargon is well known, but the meaning of the

use of jargon is not as obvious. Jargon is often used as a short cut to pack wide meaning into few words. But, similarly, jargon is often used to cover up an absence of precise meaning. By convention, we all agree to use the word to denote the thing. However, we all also agree not to examine further the issue so denoted, knowing we might drown in any attempt at true explication. Perhaps for ordinary conversations we are better off to look no further, but interdisciplinary research is not ordinary conversation.

The use of jargon also symbolizes the fact that the user belongs to a special group. I believe the reason medical students and young physicians, for example, use more jargon than older physicians is the need the young have to feel a part of the group. Nonetheless, for any successful interdisciplinary work, the jargon has to go. When it goes, it is rather like pulling off a wart; it leaves bleeding. Daniel Callahan's dictum seems the best advice: you should always talk to others in the language you use to talk to yourself. (I wonder why we do not talk jargon to our inner selves?)

Problems of language usage, however, go deeper than jargon or technical terms. Both jargon and technical terminology can be translated into ordinary language. Further, people know and request clarification when they hear a word whose meaning they do not understand. The diverse meanings of everyday words may provide an even greater stumbling block. I suspect that the word "pain" has a different meaning to physicians than to non-physicians. Seeing a movie of a woman delivering a child by Cesarian section, under hypnosis and without anesthesia, had a profound effect upon me. I remember thinking that I had to revise my entire understanding of the meaning of pain. But both before and after that movie, I used the same word, pain, to label what had become different understandings. Difficulties in ordinary language are much harder to clarify precisely because we often do not know that the problem exists. Certain concepts can illustrate this confusion. It is quite common still to hear some philosophers talk of the difference between man and the animals. The distinction is most often made in discussing man as a rational being. To most biologists, such dichotomous distinctions seem unnatural since we see life much more in terms of similarities than of differences, as

a continuum rather than as a step-like progression. This difference between life scientists and philosophers or theologians is absolutely fundamental. It is not merely something life scientists know, but it is a part of their being that underlies everything they learn and the way they approach the world. And, of course, the reverse is true. Kant is just a name to me, albeit an important one, but it is clear to me that for philosophers, Kant stands for something very much larger than I am able to comprehend.

These last two examples, difficulties arising from diverse meanings of everyday language and differences in a fundamental world view would seem to deny the possibility of successful interdisciplinary research. And yet, success is achieved. How does it occur? Given the conditions of respect I noted above, respect for the problem and its urgency, for the other participants and their disciplines, personal change does take place. This change seems to me to have one fundamental characteristic to which all others are subservient: the change in one's frame of reference. Previously, I saw my work, the knowledge of my profession—its problems, goals, methods, ideas, and ways of thought—as being self-contained and existing alongside other similarly self-contained systems of greater or lesser interest to me. To be sure, these self-contained systems were seen by me as impinging on one another or of having importance one for another, but their distinctness was preserved within me.

Slowly dawning but then suddenly clear, the frame of reference enlarges. For me, it was coming to see medicine as existing within the much larger system of the moral life of mankind. I do not mean merely the realization that there is a world outside of medicine (although that, too, could be a first and vital change in a frame of reference). Rather, I realized that understanding in moral philosophy is fundamental to understanding medicine. With that change, what other participants had to say became not merely something I would have liked to understand in order to broaden my knowledge of the world, but rather something I realize that I *must* understand so that I can bring order back into my comprehension of medicine. The point is, of course, that with the enlargement of the frame of reference, the previous structure of my comprehension of medicine has become uncertain and the

new knowledge from other disciplines is not merely useful but necessary to restore stability to the conceptual structure.

For a philosopher or a theologian, a similar change in reference frame might be the developed awareness that the biology of man is an overriding force. I cannot know what it feels like suddenly to become aware of biology, of its ineluctable operation of nature's finitude. I cannot know this because it is a part of me that developed as I developed. But I can guess that the change is as exciting for the philosopher as the reverse is for me.

The process I have described—and above all it is a process—is one of personal change. I know of no other terms that can adequately describe the nature of successful interdisciplinary efforts. Like all personal change, it takes place over time. The process is not smooth, but moves in fits and starts. For an outsider, watching it may prove exasperatingly slow and inefficient. Verbose and argumentative interchange may be more apparent than consensus. But appearances can be misleading because things are happening. Certain circumstances promote the process: obviously, judging from these meetings good food is not necessary, while alcohol seems quite useful. The idea of having papers and commentary read at one meeting and then presented again at a subsequent meeting has proved excellent. At first that seemed to me to be redundant. Why say the same thing a second time? Often, however, the discussion only comes alive at the second presentation, as the other participants begin to understand fully what the writer is saying. Problems of language and point of view are clarified over time.

As in every circus, good ringmasters are essential. Keeping all the tigers in the cage and sitting on their pedestals (each just the proper height) is no easy task. For any success we may enjoy, we are indebted to our trainers, the editors of this volume.

NOTE

1. Dr. Beecher was the author of *Research and the Individual: Human Studies* (Boston: Little, Brown and Co., 1970), a seminal work on the ethical problems of human experimentation.