

Subject: biological warfare
From: Freeman Dyson <dyson@ias.edu>
Date: Sun, 30 Jan 2005 16:04:43 -0500 (EST)
To: msm@wjh.harvard.edu
CC: Freeman Dyson <dyson@ias.edu>

Dear Matt,

I am serving on an Academy committee that is supposed to look at biological terrorism and hazards beyond the immediate future. I found among my old papers the attached remarks which I believe you gave me when we were together at the Disarmament Agency in 1962 or 1963. Your remarks seem to me remarkably prescient. They are perhaps even more relevant today than they were in the 1960s, since we have replaced traditional warfare by a supposedly permanent ``War on terror''. We have also acquired a more extensive armamentarium of biologically active chemicals.

I would like to share all or parts of your remarks with the other members of the committee. But I won't do this without your approval. I am asking now for your permission to quote your remarks. I ask also for your instructions about giving a reference for them. Were they ever published, either alone or as part of a larger document? Who was the interlocutor with whom you were talking?

With thanks for your help, and all good wishes to yourself and Jeanne. Yours ever, Freeman.

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\centerline{\bf Matthew Meselson, Remarks about Biological Warfare}
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\centerline{Undated, probably 1962 or 1963}

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``I've thought about the military applications of the next generation of discoveries in molecular biology; but I don't think my imagination is good enough to conceive any really suitable weapons. But I have the feeling that in fact many of the weapons we use are not very `suitable'. The weapons we use are used partly because of the way in which we define war. We could have defined war as something different. War is defined as a physical test, performed according to certain rules -- even war has had certain rules, certain things were not to be done -- and it has a definite termination, armistice, defeat, victory, all these words. One side wins, the other side loses; very seldom is one side then totally annihilated, it continues its existence.

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``Now, this means that there is war, and there's peace. And during periods of peace, civilization progresses. Some might even advance the theory that it progresses better when there are intermittent periods of war; I don't know. But I do know that there's something about this alternation, about peace, that's very important -- and that if anything were to happen to obliterate the

distinction between war and peace, to change the nature and the style of war from something that is intermittent to something that is unceasing, this I think would shift the course of human history into a different and very unpromising channel. And this could be done, by changing the nature of the weapons. The means of conflict could change the nature of society.

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``The means of conflict haven't changed much in many years. They are still things that are -- defined in time. They have a definite and sharply limited duration. You slice a man with a sword. Pierce him with an arrow. Blow him up with a bomb. On the other hand, if you infect him with a disease, or try to change his genes, or alter his enzymes, or try to change his perceptions in any really subtle way --''

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I asked how that might be done.

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``In spite of all the talk, psychological warfare doesn't really fool the enemy into doing your will; but if it were possible to do serious, sophisticated psychological warfare, that's something else. Possibly chemicals that would alter perception; or if we knew enough about the brain, possibly attempting to tamper with it, even by structuring signals in some odd way -- I don't even try to think about specific weapons; I mean I have some thoughts, but I wouldn't discuss them; they are not very appealing thoughts anyway. But it seems to me that such a change in the nature of war, from that which is sharply defined in time, to that which is continuing in its effect, from that which really operates on the external man, either blows him up or slices him up, but doesn't somehow alter the relation of his parts, doesn't get inside him -- it seems to me that if you move in this ominous direction I'm talking about, you really could change the nature of society.

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``Today, alliances shift. France fights Germany, France is allied with Germany, Britain fights France, Britain is allied with France. But maybe the human race is coming to a world of more lasting alliances and hostilities. Maybe there will be poor against rich, or yellow against white -- something, at any rate, lasting over a long period. Weapons that don't have sharp definitions in time would be suited to that kind of warfare. We might attempt, or someone might, to lower the production of a certain part of the world, or to change the environment, or to alter the determination of the people. I myself think this is nonsense. I couldn't imagine any sensible military leader pursuing a sensible national policy, actually doing this. Yet -- I could imagine that there could be means to do it, and I also think that if you look at it from a longer perspective there is nothing very sensible about a lot of wars. Since I can see no reason whatsoever, for the legitimate security of any nation, to have or even to test this kind of weapon, I think it's better to lay off.

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``Also I don't know how plastic -- how plastic the human being is. Would it do something to our attitudes about ourselves, that would be dangerous? I can't be sure. But a great deal of what we strive after is based on our attitudes about ourselves. If we think we are divine and perfectible maybe we do certain things, so

that if you have an acceptance of weapons that define man as not noble, not really a discrete and respectable entity but rather as a kind of pliable, malleable creature whose very structure can be modified to suit the ends of other groups of men, then our own self-image begins to change. Instead of a collection of possibly exalted individuals, we become a glob.

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``And so it seems to me that there's nothing promising, and a good deal that's bleak, in any serious effort to apply modern biology to military matters. And we know that when the nation feels its security is involved, the resources available to the military become far out of proportion, then vast amounts of money, and talent, get poured into projects. But today, we don't have any powerful coupling of national priorities and wealth to the application of modern biology to war, and I'd like to see that keep from developing.

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``That long-winded explanation is my intuition about the subject''.

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