



**BANNING NON-LETHAL CHEMICAL INCAPACITANTS  
IN THE CHEMICAL WEAPONS CONVENTION**

**A Briefing Discussion with Dr. Matthew Meselson,  
Professor of Biochemistry at Harvard University**

**THE COMMITTEE FOR NATIONAL SECURITY  
1601 Connecticut Avenue NW  
Suite 303  
Washington, D.C. 20009  
Phone: (202) 745-2450 Fax: (202) 387-6298**

# PROJECT ON CHEMICAL & BIOLOGICAL WEAPONS (CBW) CONTROL

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The Project is funded by grants from the Ford Foundation and the Carnegie Corporation of New York. Project activities are designed to inform and educate policy makers, defense analysts, the media, and the public about these issues. These activities include visits to local communities by CNS experts; luncheon briefings for the Washington policy community, Congress, national media, and interested organizations; and Community Leader Dialogue Forums on the issue of chemical munitions destruction. CNS also conducts research and analysis in support of these activities and issues briefing papers.

The CNS Project on chemical and biological weapons control is overseen by Ambassador James F. Leonard and Ambassador Charles C. Flowerree, both of whom are members of the CNS Executive Council. Ambassador Leonard was head of the U.S. delegation to the U.N. Conference on Disarmament and served as the U.S. delegate negotiating the Biological Weapons Convention. Ambassador Flowerree served as the U.S. representative to the U.N. Conference on Disarmament during the initial negotiations of the Chemical Weapons Convention (CWC) and acted as a U.N. investigator of chemical weapons use during the Iran-Iraq War. Implementation of project activities are overseen by CNS Director John Parachini.

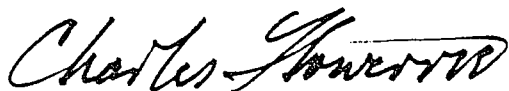
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## FOREWORD

The rapid advances in the realm of biotechnology provide unique opportunities to benefit humankind, but this same technology can also be utilized to develop weapons of mass destruction. The Chemical Weapons Convention (CWC) attempts to resolve this complication by establishing guidelines regulating military applications of chemical technology. The current U.S. policy calls for exempting certain chemicals from the established general purpose criteria of the CWC.

Dr. Matthew Meselson, a professor of biochemistry at Harvard University, proposes that the U.S. withdraw its request for excluding specific chemicals and sign the CWC as a general ban on chemical weapons. Dr. Meselson sees several disadvantages to accepting a treaty exempting these weapons. While he readily admits there may be difficulties concerning verification, he puts forward a strong argument for banning all chemical agents as weapons of war. While it appears that this issue has been narrowed in the draft treaty currently before the participating countries, it remains an issue of concern.

The Committee for National Security (CNS) is pleased to publish Dr. Meselson's luncheon briefing that was presented on February 20, 1992. The views expressed at the Luncheon Briefing Series are those of the speaker and do not necessarily reflect the views of the Committee for National Security.



Ambassador Charles C. Flowerree



Ambassador James F. Leonard

## ABOUT THE AUTHOR

Dr. Meselson is a professor of biochemistry and molecular biology at Harvard University. He co-directs the Harvard-Sussex Program on Chemical and Biological Warfare with Julian Perry-Robinson and he co-edits the Chemical Weapons Convention Bulletin. Professor Meselson has served as a consultant to the U.S. government and the military on chemical weapons and arms limitations since 1963. He is also a member of the CNS Project on Chemical and Biological Weapons Control Advisory Group. Professor Meselson was the recipient of the American Association for the Advancement of Science (AAAS) 1990 Scientific Freedom and Responsibility Award.

## **Banning Non-Lethal Chemical Incapacitants in the Chemical Weapons Convention**

**Dr. Matthew Meselson**

**Discussion of issues before ratification of Chemical Weapons Convention:** My discussions in Washington during the past two days lead me to believe that the United States government would like to see the Chemical Weapons Convention (CWC) completed for initialling fairly soon, perhaps in July. With that kind of timing, there is always the risk that some of the issues, because there are so many and they are so complex, will get decided in an unfortunate way. This may be particularly the case with the more difficult issues, which will not get complete attention between now and July. There will be only a small window of time during which high-level people will be making decisions on the difficult questions.

Some of the difficult questions are well known. For example, will the arrangements for routine verification of the chemical industry turn out to be, in the end, too cumbersome, too costly, too time-consuming, and not too effective, since one does not expect violations in the regular chemical industry? There is also going to be an important debate over the question of whether there would be too little authority for challenge verification inspections.

**Exemption of certain toxic chemicals from the CWC:** However, what concerns my associate in the Harvard-Sussex program, Julian Perry-Robinson, and myself very much today, is an issue which so far has

not yet received much discussion in the context of the CWC. It did receive a great deal of discussion in the 1970's, in connection with U.S. ratification of the 1925 Geneva Protocol. This issue concerns the definition of what will be prohibited by the Convention, and specifically, the United States attempt to insert a special exemption into the treaty which would allow certain toxic chemicals and munitions for their dissemination to be completely exempt from all provisions.

Whether those toxic chemicals -- variously called riot control agents, immobilizing agents, incapacitating agents, disabling agents, or irritant agents -- are defined by lethality criteria, or the way in which they are ordinarily used, it should be a serious concern that the Convention might be written in such a way as to allow some chemical weapons to be totally exempt.

In the broadest perspective, as different kinds of technology have arisen, they have also been reflected in the means of war and violence. As new inventions come along, they find all kinds of applications, including applications for hostile purposes.

**Controlling biotechnology in a new age:** We are now entering a new age of technology -- biotechnology. Some people, myself included, are of the opinion that there ought to be a very special norm regarding the use of profound knowledge of the life processes for hostile purposes.

It has always seemed to me that our species would get into very serious trouble if we did not create and then maintain a strong barrier against the use of the knowledge of ourselves -- our life processes -- *against* ourselves. This will be even more important in the future, as this knowledge is growing at an accelerating rate.

**Receptors and ligands:** For example, just a few years ago we did not know, but know now, that there are several hundred different kinds of what are called receptors in the human brain. There may be several thousand. A receptor is a molecule on the surface of a cell which, when a certain other kind of molecule called a ligand binds to it, causes something to happen.

**Opioid receptors:** There are receptors in our brains called opioid receptors. The body manufactures molecules called enkephalins and endorphins, which bind with these receptors; if the proper molecule binds to some of these receptors, it alleviates pain, or brings on sleep, or slows down breathing, or affects various emotions.

It turns out that some plant products also imitate those ligands, one of which is heroin. Heroin works in the way it does because of this binding process. There are receptors in human brain cells to which heroin binds, causing the symptoms typical of heroin intoxication.

In addition, certain synthetic chemicals bind very specifically to opioid receptors, imitating some of the effects of heroin. One of these chemicals is fentanyl.

**Designer drugs and fentanyl:** There was a man in California who realized that the law did not prohibit certain chemical *analogues* of heroin. Being an organic chemist, he saw how he could add a methyl group to fentanyl and get a ligand called methyl fentanyl. He did this quite openly, according to the newspaper accounts. He sold some of it for a lot of money. Then he quit the business because he concluded that it would soon be made illegal, which it was. That was the birth of what became known as designer drugs.

**Military research on fentanyl:** The U.S. Army is currently conducting research on fentanyl derivatives and analogues as a possible disabling weapon. I presume other armies are doing so as well.

There are many other kinds of receptors in the brain, most of which we know almost nothing about. Of the few that have been identified, we do know that some can cause temporary blindness; can make you think you are smelling something that is not there; can cause submissiveness; or extreme anxiety.

As time goes on, we will learn how to do many kinds of things to people with chemicals that bind to brain receptors, and a lot of them will be beneficial. It should be possible to conduct surgical operations with greater ease and safety with the newer anesthetics, which may be made possible by this kind of research. But, as with all major new technologies in the past, it will also have potential hostile applications.

**Strengthening the barriers against military use of biotechnology:** The Chemical Weapons Convention offers a remarkably

timely opportunity for society to strengthen the barrier against the use of biotechnology for hostile purposes. This applies to the Biological Weapons Convention as well. Indeed, when President Nixon submitted the Geneva Protocol of 1925 to the Senate in August 1970, he emphasized his concern "...that the advancements in the biological and medical sciences should be used only for the health and benefit of mankind."

**The "General Purpose Criteria":** How does the CWC deal with this possibility of technological innovation? It does so by what is called the "general purpose criteria." Instead of prohibiting a particular chemical, or family of chemicals, the CWC is written so as to prohibit all toxic chemicals, *except* for permitted purposes. Toxic means anything that is harmful, whether it is disabling toxic or lethal toxic. Heroin and alcohol are toxic, in the sense that through chemical action they can cause disablement or harm. Some toxic substances are lethal toxic, but there are some things which are even more toxic, in the sense that extremely small amounts are sufficient to cause a reaction, but which do not kill.

For example, carfentanyl, a derivative of fentanyl, is far more toxic than nerve agent. Ten micrograms per kilogram body weight will cause paralysis, for a dosage far less than the lethal dosage for nerve agent VX.

The way in which the Convention works is to say that all toxic chemicals, which means all harmful chemicals, are prohibited, except for purposes that are not prohibited. Purposes which are not prohibited under Article 2, include,

"industrial, agricultural, research, medical, pharmaceutical, or other peaceful purposes; domestic law enforcement purposes and riot control purposes, and military purposes not connected with the use of chemical weapons."

Because of this, the treaty would be proof against technological advance in the fields of biochemistry and biotechnology. If a new toxic chemical is invented, it would not be necessary to list it anywhere in the treaty. However, if it is made into a weapon and used in a war, then the treaty as presently written, prohibits it.

**U.S. policy and exemption of disabling chemicals:** The current policy of the United States is to exclude certain chemicals from the general purpose criteria. The question of exactly which chemicals has not been ironed out. There may be a lot of ironing out to do because there are a number of people and agencies with different points of view in the government, who have not yet interacted strongly.

**Disadvantages to exemptions:** Without being able at this stage to be specific about what exemptions might be sought, I want to cite several disadvantages of writing in *any* blanket exemption for *any* chemical. The first is the escalation hazard. In March 1965, after newspaper stories had been published about the use of "riot control agents", in Vietnam, Secretary of State Dean Rusk said, "We do not expect that gas will be used in ordinary military operations." And he did not.

Subsequently, however, 25 different types of munitions containing the potent irritant

agent CS, including heavy munitions ranging up to 155mm artillery shells and large aircraft bombs, were used in Vietnam. Ultimately more than 10 million pounds of CS were dispensed in these munitions.

**Use and non-use of non-lethal chemical weapons in wartime:** Thus the United States, whose military is under civilian control, came to use vast quantities of non-lethal chemical agents, under the pressures of a wartime situation.

In World War II, the United States, and in fact all the major European belligerents, manufactured and stockpiled thousands of agent tons of tear gas munitions that were never used in combat. The line was understood, and the line held. In Korea, the United States had huge stockpiles of tear gas munitions of various calibers. It was never used except in non-combat situations, i.e., against rioting prisoners in prisoner-of-war camps. That is not prohibited because it is not warfare.

The United States did not progress to using lethal chemical weapons in Vietnam, despite its use of tear gas munitions. However, in World War I, lethal chemical warfare began with the use of tear gas. In Manchuria, in Ethiopia, and in Yemen, lethal chemical warfare began with the use of tear gas. In the Iran-Iraq war, it began with tear gas.

**Escalation from non-lethal to lethal chemical weapons:** Every time that lethal chemicals have ever been used, it started with tear gas. Half of all the chemical munitions that have been declared by Saddam Husayn's Iraq to the UN Special Commission inspectors are CS munitions,

mainly mortar rounds. Thus, one concern is battlefield escalation -- both escalation to other agents and escalation to unrestricted usage.

**Institutional and bureaucratic pressures:** There is another kind of escalation, which is the fostering of institutions that are dependent upon the development and weaponization of novel chemical agents for hostile purposes. Such institutions and bureaucracies are likely to be a source of pressure for doing more in this area.

**Military assimilation of chemical warfare:** Another difficulty is that you will foster assimilation of chemical warfare training and doctrine by the military. There is an excellent book written by then major, now lieutenant general, Frederick Brown, called *Chemical Warfare: A Study in Restraints*. He had access to literature from the Chemical Corps at Edgewood Arsenal, which he used to trace decision-making regarding chemical weapons in the United States, Britain, Germany and Japan.

His study concluded that one of the principal reasons that chemical weapons were not used in World War II was simply that they had never been assimilated by the military. It had not been a subject of much thought or planning among the military and nobody had experience with chemical weapons, although large amounts were manufactured. There were of course several reasons for their non-use. But the use of tear gas in war favors thinking about opportunities for using other chemical weapons.

**Loss of confidence in the CWC:** A further difficulty is that it may lead to a loss of

confidence in the treaty. Imagine the effect on citizens of the world, and their governments, when they view a war on television, and see men running across battlefields wearing gas masks and bombs and shells are spraying gas over them. Imagine the effect of hearing the announcer say that the gas being used is also used in some countries by the police. Wouldn't they say, "What were the diplomats doing in Geneva? What is going on here? How can this be....?"

**Cheating:** It could also be used as a cover for cheating. An inspector may find a large quantity of exempted chemical munitions and ask what they are for. "For riot control." "Riot control? You use *that* chemical for domestic riot control?" "Well, yes we do. Our riots are particularly a problem. We have to use something that really knocks people out."

"Don't you have an awful lot of it?" "Well, we sometimes have some very big riots, and it is a big country."

It may be possible that all of this is true, but it does not make verification easier, and it allows for arguments to crop up about what is and is not a violation.

**No poisons in war:** However, the main issue, it seems to me, is that it blurs the simple line, *no poisons in war*. This is an ancient prohibition that goes back to Roman law, and represents a feeling which is shared by many. It is not because poisons are particularly painful, or inhuman. There is something else, some other thing about using toxic weapons as weapons of war. It seems to me that the greatest danger is to blur that line at just the time that an immense new biotechnology is on the way.



## Discussion

**\* Schedule for dealing with issue of non-lethal agents:** If there is a schedule to finish the treaty by July, is there also a schedule for when this particular issue might be dealt with?

**Dr. Meselson:** I do not know of any specific schedule. On the basis of limited information, I would guess that there may be a high-level meeting sometime in June. National Security Adviser Brent Scowcroft and some other people will be keys to the decision.

You might have read in *Defense News* yesterday (February 19, 1992) that there is momentum behind the idea of non-lethal warfare ("Pentagon Units Jostle Over Non-Lethal Initiative"). This is primarily at the concept stage, although there are pre-existing DoD programs that fit into it. Secretary of Defense Cheney signed off on a concept paper on this subject last March, which would try to look at the whole field of weaponry, including chemicals, for non-lethal weapons. It fits in with some of the lessons of the Gulf War.

**\* Concept stage for non-lethal warfare:** Isn't this much more of a concept? As I understood it, there is 2-3 million dollars already in the pot for this concept.

**Dr. Meselson:** The article stated that the Pentagon may invest \$148 million in this program over the next five years, but that may have included pre-existing programs. For example, the Army already has a program to develop novel incapacitating and paralytic chemical weapons.

**Collision course:** Does this mean that we are on a direct collision course with your principles at this time?

**Dr. Meselson:** I hope that these principles get separated out. I do not see that chemicals are a major part of this, although they will be perceived as consistent with this. I hope that does not lead us to try to make exemptions or loopholes in the Convention.

**\* Immobilizing agents:** The article also talked about immobilizing agents.

**Dr. Meselson:** That is correct. The study is examining how non-lethal battlefield technologies, such as blinding lasers, chemical immobilizes, infrasound, non-nuclear electromagnetic pulses and relaxants could be used for immobilizing tactical systems, for denying the enemy's ability to wage offensive war, and for selective destruction of strategic targets.

**\* Supporters of the concept:** Who are the players in the Government at State and Defense who are behind this?

**Dr. Meselson:** I don't know who is behind this. So far as it affects the chemical treaty, President Bush would be very important because he is president and because it is his treaty. It was the Office of the Vice President that really pushed it through when he occupied that position.

Brent Scowcroft will be involved in deciding the difficult issues. The State Department has not been a major player although the proliferation implications of

exempting chemical weapons might bring them in. At the Defense Department, Paul Wolfowitz would be important on the policy side.

At the Joint Chiefs of Staff (JCS) level, my impression is that Colin Powell does not really care. At JCS, J-5 would deal with this issue. The current head of J-5 is a man who did a splendid job on INF verification, Brig. Gen. Roland Lajoie. I don't know if the intelligence agencies get involved very much in this, although there is a now a new office at CIA for non-proliferation.

My impression is that, except for a very small number of members, Congress has not yet been seized with any CWC issues. Congressman Lancaster in the House is an exception.

**\* Where to find the issue in the CWC:** If Congress was to get seized with this issue, where in the treaty would one go and look?

**Dr. Meselson:** In Article 2, where the exemption already exists in brackets. The brackets mean that it is not agreed.

Article 2 gives the definitions and criteria. Our current policy will be somewhat different from these bracketed words. I believe it is: "The term, chemical weapons, shall not apply to those chemicals which are not super toxic lethal or other lethal chemicals and which are used by a state party for riot control."

**\* Grounds to oppose the treaty:** Would this issue be sufficient grounds to oppose the treaty if it is included?

**Dr. Meselson:** Everyone would have to decide for themselves, but I would oppose the treaty if there was a serious loophole for disabling chemical weapons in war.

A similar situation arose with U.S. ratification of the Geneva Protocol. The Senate Foreign Relations Committee held initial hearings in March 1971. McGeorge Bundy, Elliot Richardson, myself and a few other people testified against any blanket exception for riot control agents. We advised that we should wait until the passions of the Vietnam War had receded into history.

The treaty was bottled up for nearly five years, after which the Committee resumed hearings. It did so on the basis of a compromise with the Ford Administration. The compromise was Executive Order 11850 of April 1974, which limits U.S. use of riot control agents to normally defined defensive military modes to save lives. It gives four examples of situations in which they may be used:

(a) Use of riot control agents in riot control situations in areas under direct and distinct U.S. military control, to include controlling rioting prisoners of war.

(b) Use of riot control agents in situations in which civilians are used to mask or screen attacks and civilian casualties can be reduced or avoided.

(c) Use of riot control agents in rescue missions in remote isolated areas, of downed aircrews and passengers, and escaping prisoners.

(d) Use of riot control agents in rear echelon areas outside the zone of

immediate combat to protect convoys from civil disturbances, terrorists and paramilitary organizations.

Before acting on the Protocol, the Senate Foreign Relations Committee submitted a written question: "Assuming the Senate was to give its advice and consent to ratification on the grounds proposed by the Administration, what legal impediment would there be to subsequent Presidential decisions broadening the permissible uses of riot control agents?"

The written answer was presented by Fred Ikle, who was Director of ACDA at the time. The answer was: "There would be no formal legal impediment to such a decision. However, the policy which was presented to the Committee will be inextricably linked with the history of Senate consent to ratification of the Protocol, with its consent dependent on its observance. If a future administration should change this policy, without Senate consent, whether in practice or by a formal policy change, it would be inconsistent with the history of the ratification, and could have extremely grave political repercussions and as a result is extremely unlikely to happen."

Thus we can see that, at the time, this issue was taken very seriously by the Senate and by the Administration.

\* With regard to the particular problems of proliferation in this area, could any of these chemicals be used as precursors for some of the non-lethal substances that you are talking about?

**Dr. Meselson:** Once the technology of a chemical weapon, whether lethal or

disabling, is worked out, I do not believe the US could hope to maintain control of that technology. Proliferation would be a likely outcome.

\* **Use of riot control agents by paramilitary forces:** The Convention would permit the use of riot control agents for domestic law enforcement and riot control. However, many countries have paramilitary forces which, in certain circumstances are used as regular troops. When used as regular troops, these forces would then have the equipment, the training, and the experience with non-lethal agents that you have said might lead us down the slippery slope. How would this contingency be dealt with?

\* **Riot control or civil war?:** What would be done in the case of another nebulous situation where, for example, Iraqi President Saddam Husayn could say that, under this definition, the use of tear gas by his troops against Kurdish rebels was a case of riot control agents, when it was really a case of civil war?

**Dr. Meselson:** If they were used in war against a state, we could say, "You have just violated the treaty," because the use of such chemicals would be prohibited. The Convention now has a prohibition on such use. The exemption sought by the US would eliminate that prohibition.

Phosgene is another example. The treaty of course does not prohibit phosgene. Millions of tons are used in industry. Thus inspectors could go to a country and see tanks of phosgene which is being used to make plastics. This would be permitted because it is a peaceful purpose. It is a good example of the general purpose

criteria. However, it *is* prohibited to put that phosgene into artillery projectiles. It is prohibited to use phosgene as a means of warfare.

**\* Support for U.S. position:** Are there any other countries which support the U.S. position at this point?

**Dr. Meselson:** No country has announced that it does. I believe the Canadians, the Dutch, and the Germans are very much opposed to such exemptions. I believe the French have recently joined this opposition. Their motive is to protect police use of non-lethal agents, which is already in the Convention as a permitted purpose.

**\* Vocal opposition to U.S. position:** When the U.S. introduced the exemption to the definition, were any of the other countries that are privately opposed to it, vocal in their opposition to the inclusion?

**Dr. Meselson:** Within the Western group there was opposition, but that is not what you would call vocal. I have not seen anything published by countries who are opposed to the exemption.

**\* U.S. as a treaty-maker or breaker:** Are you implying that the United States is seen as a treaty maker or breaker, i.e., that if this 20-year endeavor is going to finally result in a treaty, the other countries are going to have to go along with what the U.S. wants?

**Dr. Meselson:** I would be surprised if the United States would stay out of the treaty if the other countries adamantly refuse to go along with this exemption.

I would be amazed if the United States did stay out of it. It is our treaty, although the Geneva Protocol was also our treaty, and we did stay out of that for fifty years. I would not imagine that the U.S. would be a treaty breaker this time.

**\* Opposition to U.S. position:** Have the other countries not stated publicly or even vocally that this is unacceptable, on the record?

**Dr. Meselson:** I don't know of any on the record statements on this issue. This is only one of many contentious issues, and in the end there will be horse trading. There are other issues, some of which, are important economically. I would imagine that this issue will get settled in the horse trading.

**\* Procedural issues in the CWC:** Please elaborate a little on the procedural situation with regard to the Convention. The suggestion for this exemption is in the rolling text of the CWC, and it is your understanding that the United States introduced it. Did the U.S. introduce the exemption with a formal presentation, stating our reasons, etc., or did we not?

**Dr. Meselson:** There is no CD working paper or formal paper in which the U.S. presented its arguments for the exemption, and it has not been much discussed yet at the Conference on Disarmament (CD).

**\* Verification and access:** Would you explain what is happening in the areas of verification and access? I had heard last fall that a couple of other countries had reluctantly endorsed the U.S. positions.

**Dr. Meselson:** That is the United States-

Australian-British-Japanese position. Thus, it has co-sponsors, and that is in the form of a CD document. Indeed, it is in the rolling text of the CWC, including the idea of perimeters, but a lot of things have yet to be decided. It is one of the issues that is being discussed in the Western group, but I am not familiar with the details of the discussions.

**\* Support for U.S. position on verification:**

I understand that it has attracted some support from some of the "difficult" countries, particularly China, which has led some countries to believe that maybe this will have to go in the end, with regard to the verification provisions.

**Dr. Meselson:** My own perspective on it is that it is extremely difficult to have an informed conversation on the subject. An official may say, "I have an installation or project that is so secret that we cannot tell you what it is; it is so secret we cannot allow you a challenge right to come and see it." If I knew what it was, I could form an opinion as to whether this is right or wrong. But I don't know what these very "black" projects are, so it creates a paralyzing situation. This does not only apply to outsiders like me, but to government officials as well, who don't have the special clearances which give you access to these projects.

Therefore, it paralyzes decision-making, in a sense, even within the government. The only approach I have been able to use to form my own opinion on this issue is to talk to people who do have knowledge of black projects. I don't ask them what they are, of course, but ask them their opinions.

I have asked three people. One of them

said yes; he thought that the government probably did need to exclude certain places from verification. The other two said no, we could have managed inspections and it would not be a great problem. Perhaps the reason for this disagreement is that they know about different black projects. But this example shows how difficult it is to deal with it objectively.

On another level, at least one can say that the Convention will have provisions for constant review and modification of the actual modes of inspection. This is a different situation from the issue of non-lethal agents, which concerns fundamental definitions in Article II, and which will not be changed very easily once the treaty is ratified.

**\* Fuzzy areas regarding use of riot control agents:** Would you return to the fuzzy areas that you discussed before, with regard to two scenarios? The first is one in which Kurdish fighters from Iraq cross back and forth across the Iraqi-Turkish border while fighting against Iraqi troops. Turkish troops use tear gas against the Iraqi Kurdish fighters to try and prevent them from crossing the border.

The second scenario, which may or may not be related to the first, is one in which Turkish Kurds start fighting against Turkish troops and paramilitary units. While the dividing line is very unclear as to whether this fighting should be defined as riots, or civil war, or just domestic disturbances, it is clear that there is fighting. Again, Turkish troops and paramilitary forces use tear gas and other riot agents against them.

In both cases, the Kurds claim that it is war. The Iraqi Kurds claim that this is a cross-border conflict, which involves war, and the Turkish Kurds claim that it is a civil war.

The Turkish government, which is a staunch ally of the United States, states that both situations are cases of riot control, and in any case, since it involves their paramilitary forces, which are police, these incidents do not come under the treaty.

The U.S. government has to make a decision on this situation, and the question of sanctions is very much an issue. What does the Congress advise the President?

**Dr. Meselson:** Let me back up a little before I deal with your difficult scenarios. There will be countries in the world which, I assume, are going to violate the Convention from time to time. There will be countries which come close to violating it and, in such cases, a judgement would have to be made. Some would say that it is a violation and some would say that it is not.

That is not the same issue as what international norms are the leading powers of the world trying to establish. Norms get violated but they are still norms. My concern, and what I have talked about, is where the norms should be set.

You have pointed out that there will undoubtedly be cases which are fuzzy or even cross over that norm. But these are not cases where the countries involved are likely to be pioneering the scientific development of non-lethal chemicals. It is very different if the United States, as a

world leader, pioneers and legitimizes these weapons. Then every military organization in the world is going to start thinking that they need to be in this business.

**\* Possible new agents that threaten the prohibition:** Are there any other classes of agents, outside of riot control agents, that particularly concern you as potential threats to the prohibition, such as poisonous substances?

**Dr. Meselson:** The U.S. Army is now working on a number of new agents, which are called riot control agents. For example, one problem with riot control agent CS is that soon after you get out of the cloud of CS its effects wear off.

Police would like to have something that puts people out of action for longer periods of time. That is the whole idea behind the use of opioids. They last for hours and knock you out.

Another problem with CS is that a urine-soaked handkerchief placed over your face does offer some protection. Therefore, there is interest in developing disabling agents that act through the skin as well as through the lungs.

**\* Rationale for research on riot control agents:** What is the rationale for research on new kinds of riot control agents? Is it to keep up on technology, so that we know what other countries are doing, or is it simply to keep up?

**Dr. Meselson:** When research on opioids, for example, is done in the civilian sector, or at Walter Reed, it is justifiable for medical purposes, such as improved

anesthetics.

When it is done by the munitions command of the U.S. Army at Edgewood Arsenal, we have a different situation. They develop weapons. That would be acceptable, in my opinion, if the objective was to develop something that would be used to rescue a hostage in an embassy or to deal with a terrorist in an airport. But not for use in warfare. The use criterion is the normative key.

**\* Dubious research on dubious agents:** There are some other decades-old projects that have a dubious relationship to surgical intervention, or better anesthesia and better pain control, such as sleeping gas.

**Dr. Meselson:** I think that if the world community understands that if these substances are allowed to be used in war, then a lot of the work will be masquerading as peaceful, but won't be in reality. However, if the world understands that these substances are not to be used in war, then interest and funding in most countries for developing them under camouflage as police weapons will decrease.

**\* Use criterion and verification:** Would you elaborate on how the use criterion can apply in verification? For example, if you have the ability and the authorization to make these substances, it is will be very difficult to say that country X is doing it for military purposes or not. You won't find out until it is actually used. Since the Convention allows for every country to make a defined quantity of nerve gases and other lethal gases -- one ton -- is there any kind of qualification that can be put into the verification procedures that would

help define how much is appropriate and how much is not?

**Dr. Meselson:** The treaty at present contains language on types and quantities consistent with such purposes. Thus, if you found ten pounds of fentanyl, it could be argued that it was to supply surgical wards. If you found ten tons, then I believe you would be entitled to ask that state party some questions about why they made 10 tons.

The same problem occurs with phosgene. There are millions of tons of phosgene around, and looking at one of these gigantic tanks of phosgene, you could ask "What are you doing with that?"

They could then reply justifiably, "We are using it to make plastics." That is the way the treaty deals with it.

If it becomes a question of actual use in war, the violation is evident and sanctions would be called for.

**\* Emotional arguments for using non-lethal agents:** You mentioned that there is a conflict between the philosophical, emotional and legal arguments. What is your response to the emotional argument in which the Army can say, "We can come up with some agents which will leave people either walking around with funny smiles on their faces and handing flowers to their enemies, or else just put them to sleep. Would you rather have us do that, or develop more lethal ways to obliterate human life?"

**Dr. Meselson:** Non-lethal warfare is a myth. The reason is very simple. Imagine a battlefield, and on that battlefield is a

battalion of soldiers who have the usual lethal conventional weapons and also some non-lethal weapons, and their mission is to take some objective. Although they have rifles and artillery and air support available, they are told to use just their non-lethal weapons, unless they absolutely must use the conventional weapons. In other words, they are told to go in there and take that position but not to kill the enemy.

Imagine that you belong to that battalion. I think you would say to yourself, "My God, my commander has just asked me to take a large risk to my life to save the lives of the enemy who wants to kill me. He is crazy. My commander has just gone off his rocker. I will either disobey him or shoot him."

My point is that as long as there are lethal weapons on the battlefield, and soldiers are confronting life and death situations every minute, non-lethal warfare is a myth. It is possible only if we all abandon lethal weapons.

**\* Possible exceptions to the myth of non-lethal warfare:** I would not disagree that non-lethal warfare was mythical on a large or global scale. However, could you not

change the argument a little if you do have the option of literally putting out of commission for some period of time a group of aggressors, during which they could be transformed into prisoners?

**Dr. Meselson:** If used in war, the line is crossed and the norm against CBW is threatened. If the situation is borderline, not actual warfare, the president should make that decision. You can't ask the lieutenant to make that decision.

**\* Decision-making at a higher rank:** I agree, you could not ask a lieutenant to make that decision, but what about a colonel or a general?

**Dr. Meselson:** Only under very limited conditions. We managed in World War II and in Korea never to use riot control agents in war. When we started using it in Vietnam, it was in the expectation, at least at the State Department, that it would only be used for riot control situations. However, we ended up dropping it in immense quantities before B-52 bombardments and using it in long range artillery shells. There was no attempt to restrict its use. Its use was to help carry out the mission -- period.



## LIST OF ATTENDEES

February 20, 1992

"Banning Non-Lethal Chemical Incapacitants  
in the Chemical Weapons Convention"

**SPEAKER:** Dr. Matthew Meselson

**MODERATOR:** Ambassador Charles C. Flowerree

**Tim Ahern**

House Government Operations  
Committee

**Steven R. Bowman**

Congressional Research Service

**Scott Bunton**

Office of Senator John F. Kerry

**Eileen Choffnes**

Senate Governmental Affairs Committee

**Kathy Christ**

Office of Senator Barbara A. Mikulski

**Anthony Cordesman**

Office of Senator John McCain

**Brian D. Dailey**

Senate Armed Service Committee

**Cathy Eberwein**

House Permanent Committee on  
Intelligence

**Lee A. Feinstein**

Arms Control Association

**Chris Griffin**

Office of Congresswoman Helen D.  
Bentley

**Laurie Schultz Heim**

Office of Senator James M. Jeffords

**John Isaacs**

Council for a Livable World

**Stuart I. Ishimaru**

House Armed Services Committee

**Mark H. Kagan**

Committee for National Security

**Paul Lambesis**

Arms Control & Disarmament Association

**James F. Leonard**

Committee for National Security

**Lasca Low**

Office of Congressman John T. Myers

**William Lynn**

Office of Senator Edward Kennedy

**Anne MacMillan**

The Brookings Institution

**Steven Peterson**

Office of Congressman James V. Hansen

**Randy J. Rydell**

Senate Governmental Affairs Committee

**Sandy Thomas**  
Office of Senator Tom Harkin

**Joe Volk**  
Friends Committee on National  
Legislation

**Daniel Walsh**  
Office of Congressman Wayne Gilchrest

**Jennifer Weeks**  
Arms Control & Foreign Policy Caucus

**Allen Zelicoff**  
Department of Defense