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The 2nd Gulf War and the CBW Threat

Proceedings of the 3rd Annual Conference on
Chemical Warfare

Edited by Jean Pascal Zanders

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Preface

On 29 and 30 November 1991, the *Vrije Universiteit Brussel* (VUB) and the *Groupe de Recherche et d'Information sur la Paix* (GRIP) organised the 3rd Annual Conference on Chemical and Biological Warfare on the theme: "The 2nd Gulf War and the CBW Threat." Iraq's invasion of Kuwait immediately raised the spectre of large-scale chemical and biological warfare. The Western-led response to the crisis was to a large extent determined by the threat. On the one hand, the West bore a lot of responsibility for feeding the Iraqi war machine, including its unconventional arsenal, on the other, crisis diplomacy and military preparations saw calculated measures to dissuade Baghdad from resorting to chemical warfare. In the end, Iraq - at least according to official Western accounts - employed no chemical or biological weapons, although the mystery of scores of soldiers suffering from the so-called Gulf-syndrome remains to be solved.

The Second Gulf War - the previous one being between Iraq and Iran - came at one of these famous crossroads in history. The antagonistic rivalry between two social and political systems was ceding to a promise of closer collaboration in international relations. The development allowed Washington and Moscow to reach bilateral compromises in the area of chemical disarmament, but as the thaw allayed the greatest fears regarding the respective chemical arsenals it also enervated the thrust towards global chemical disarmament at the Geneva talks. In a heinous way, the war propelled the negotiations towards their final end, the Chemical Weapons Convention, signed in January 1993. Meanwhile, inspection teams of the United Nations Special Commission (UNSCOM), operating under Security Council Resolution 687,

are still trying to uncover the full extent of Baghdad's chemical and biological armament programmes. While the Convention still awaits sufficient ratifications to enter into force, the Gulf War had a significant impact on existing international regulations governing the use of chemical and biological weapons in war and on the United Nations role to monitor and even react against such violations.

This third conference on chemical and biological warfare was in an important way also a continuation of the previous event - held at the *Vrije Universiteit Brussel* on 16 March 1990 - that already focussed on the proliferation threats in the Middle East and the mechanisms behind the construction of the chemical-weapons plant at Rabta in Libya, which involved companies from the Federal Republic of Germany and Belgium. Almost five years after the end of Desert Storm, much of the speculation presented in the 1991 conference papers remains just as topical as then. Firm answers are still lacking and many an announced policy measure is slowly gathering dust.

While the Centre for Polemology of the VUB and the GRIP were the conference's main organisers, they received great material support from other Belgian and international organisations, notably the *Information Network on CBW* (UK), the *United Nations Institute for Disarmament Research* (UNIDIR, Geneva), the *Universitair Centrum voor Ontwikkelingssamenwerking* (UCOS - University Centre for Development Cooperation) of the VUB, and the *Centre d'Etudes des Relations Internationales et Stratégiques* (CERIS - Centre for the Study of International and Strategic Relations) of the *Université Libre de Bruxelles* (ULB). Financial support was provided by the *Nationaal Fonds voor Wetenschappelijk Onderzoek* (National Fund for Scientific Research), the Ministry of Foreign Affairs, the Ministry of Economic Affairs, the Ministry of the Flemish Community, the Ministry of Education of the Francophone Community, and the VUB.

The logistical support by the administrative staff of GRIP and the Centre for Polemology, without which the conference would not have been possible, was much appreciated.

Finally, with great sadness we learned that our good friend of several years, Rodney McElroy, suddenly passed away shortly before the conference was to take place. It is to his memory we wish to dedicate these proceedings.

Jean Pascal Zanders
November 1995

Dedicated to our friend Rodney McElroy

“It is with sadness that I must now speak of the death last month of Rodney McElroy, who was a central figure in the Information Network on CBW, one of the sponsors of this conference, and who was to address you. He was a veteran of the Vietnam War, having served in the Special Forces of the United States Army from February 1966 to December 1968. Such service cannot but leave a heavy mark on people. Yet the Rodney McElroy we knew was the very opposite of the embittered and cynical veteran. We remember a warm, friendly and generous person; a person looking for ways in which his experiences could *help*. This took him into community service, initially among his fellow veterans and later wider circles as well, including the university world. He taught undergraduate courses and seminars at his own college, San José State, and then at Yale and Berkeley. When he died, aged 45, he was completing the dissertation needed for a doctoral degree from the University of Sussex, in England. His subject was *War with Herbicides and Tear Gas in Vietnam: The Evolution of United States Chemical Warfare Policy, and the Assimilation of Unconventional Weapons Technologies*. When this dissertation is finally published, it will be regarded - so people at Sussex tell me - as a work both of practical application and of high scholarship.

Rodney McElroy is survived by his partner Susan Schweik, professor of literature of the University of California at Berkeley. He is survived, too, by their daughter Emma, who is now 11 months old. Our hearts go out to them.”

From the opening address by
Prof. Dr. J. Niezing
Director Centrum voor Polemologie

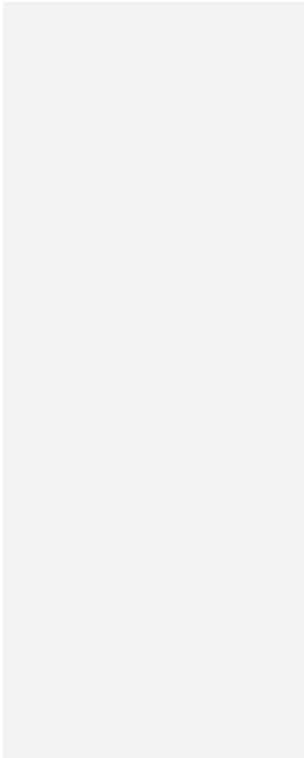


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Prof. Dr. R. Dejaegere
Rector
Vrije Universiteit Brussel

Opening Address

1

I am very pleased to open this Third Annual Conference on Chemical and Biological Weapons. I am even more pleased that I may welcome so many representatives from research institutes, governmental services, the industry, and non-governmental organisations from all over the world. It is also gratifying that I can welcome several participants who were also here last year.

This is the third conference in the series and the second time it is organized by the *Centrum voor Polemologie* of our university and the *Groupe de Recherche et d'Information sur la Paix* (GRIP) in this Aula. Last year, the theme focused on chemical weapons proliferation. The conference was held barely one year after the crisis over the Rabta chemical plant in Libya came to a head. Soon the extent of commercial webs woven to bypass national export controls became clear. Belgium played a major role, not as supplier, but as a convenient transit country.

The *Third Annual Conference* concentrates on the repercussions of the second Gulf War on chemical and biological armament and disarmament. Indeed, although contrary to all expectations these weapons were not used, the threat was very real and left its mark on the peoples and policy makers in the Middle East. The fact that these weapons were not used will most likely lead to new stubborn myths about deterrence, efficiency or uselessness. Therefore, this conference is very timely as it specifically aims to identify causes and consequences in an early stage. For instance, the little known decision by US Authorities to release tear gas for offensive use has far-reaching consequences for the interpretation of the 1925 Geneva Protocol, which only allows for retaliation. This decision also touches a grey area in the projected Chemical Weapons Convention. On the other hand, the experience gained by the United Nations verification teams inside Iraq may open new perspectives for implementing the future treaty. Hopefully, the events will also accelerate research into environmentally acceptable ways of destroying these weapons.

This year, the *Groupe de Recherche et d'Information sur la Paix* and the *Centrum voor Polemologie* have been joined by the *Information Network on Chemical and Biological Warfare*, which brings together some eminent scientists and representatives of the public in the United Kingdom. The organisers could also count on the generous support of the *Centre d'Etudes des Relations Internationales et Stratégiques* (CERIS) of the Francophone counterpart of our university, the Université Libre

de Bruxelles; the *United Nations Institute for Disarmament Research* in Geneva; and the *University Centre for Development Cooperation* of our university.

Why is it important that this conference series is held in Brussels? Brussels is already host to many international organisations and as from next year she will be the virtual capital of the European Community. However, contrary to most other armament and disarmament issues, the specific concern of chemical and biological warfare receives little attention in Belgium. This is square to the so-called 'historic sensitivity' because of the first modern military use of gases near Ypres on the 22 April 1915 and even to the expressed intent to be host to the International Secretariat after the signing of the Chemical Weapons Convention. In this context, the conference series aims to stimulate the scientific debate on chemical and biological weapons in both linguistic communities and to bring Belgian researchers into contact with foreign specialists in the subject matter.

A second important goal is to offer young scientists from Belgium and neighbouring countries the opportunity to present the fruits of their scientific research into the problems of chemical and biological armament and disarmament to an international audience and to confront these with the insights of more established names.

Next year, we may see the signing of the treaty banning chemical weapons. Many issues nevertheless remain, and recently some new ones - especially in the area of verification - have cropped up. After completing the treaty, we will be counting how many countries will join the treaty, and perhaps more important, we will be watching which countries join the treaty. Chemical weapons in the Middle East have been a source for anxiety for many years. At present we can only hope that because of the huge costs of the war against Iraq the Gulf states will not be compelled to substitute their current arsenal with weapons of mass destruction to ensure their external security. Within such a context, we as scientists bear a huge responsibility to stimulate informed discussion and - as our university's maxim states - to challenge received wisdom. Therefore, in my view, the second aim of the conference series is a crucial one. By attracting young scientists we not only broaden the scientific debate, we also ensure that it is passed on to the next generation.

I wish you a fruitful conference. Thank you.

Johan Niezing

After the Battle Is Over: Peace Research's Agonizing Reappraisal

2

The battle is over. The war continues. Much has been said about this battle, the 'Second Gulf War,' its history, its aftermath, its political context, etc. It is a mere truism to say that opinions differ widely, especially as for its justification. Some people, looking through Mr Bush's 'window of opportunities', perceive the outline of a new world order: a glorious cooperation between civilized nations that will

enforce law and order throughout the world under the banner of the United Nations, and with American support. Others perceive quite a different political landscape: a last convulsive effort of one of both losers of the cold war to exert decisive influence in one of the hectic parts of the world; an effort that failed, and that led to further erosion of the UN. Some people pretend to have "kicked off the Vietnam-syndrome" definitely. Others point to the short period the battle lasted - short enough to prevent the rise of an internal opposition. They hesitate to identify the battle with a war: the battle was won, but the war resulted in an open-ended, long-term situation of political vagueness, at the cost of the lives of ten thousands Shiites and Kurds. After all, in both countries, Iraq and Kuwait, the same political regimes still exist. Thus, which part of the syndrome has been kicked off, one could ask. Some people, watching CNN-images of the battle on television, became fascinated by the video game-like 'clean,' high-tech warfare suggested by military spokespersons. Others point to the fact that the decisive part of the battle consisted of massive bombardments that caused the death of more than 150.000 conscripts. War remained a cruel affair. If both sides had the disposal of precision-guided munitions, this would certainly stimulate a kind of 'strategy of pre-emptive strikes,' far removed from a peaceful new world order. This point was never at issue, however, among the proponents of a high-tech Pax Americana.

Thus, opinions differ widely, and there is nothing new to mention: the same patterns of behaviour, the same clusters of opinions we discerned since we began studying the phenomenon of war and its encompassing culture manifested themselves again.

Peace researchers are interested in functions and dysfunctions, rather than intentions. The higher our level of abstraction will be, the more it will be stressed. I am aware that this might be labelled as an offhand manner of reasoning. However, in

my view, some division of labour between journalism and scientific reasoning is necessary.

Journalists may furnish all kind of information about events; peace researchers try to understand this course by using some theoretical framework. Journalists provide many interesting details about alleged intentions and considerations of politicians and the military; peace researchers try to come at grips with the conditions that make for the relative success of some political ambitions. Journalists report about the effects of war; peace researchers try to generate some insight about the functions and dysfunctions of the conflict to the various parts of the international system. In short, both groups need each other in a complementary way and both have to define their job as a critical examination of the situation and of a concerned application of professional skills. Much has been said about the serious deficiencies of the mass media during the Gulf-battle: about the uncritical reception of military briefings, about self-imposed censorship of journalists, about the mutually re-reinforcing processes of public opinion formation and image building, especially within the 'most allied' countries, Great Britain and the Netherlands, etc., etc. Many journalists, when looking back to that period in retrospect, felt themselves obliged to raise some rather uneasy questions about the state of their art. Now the question arises in which way peace research may learn from the Gulf events. No doubt, these events made for greater transparency as far as the international power relations are concerned. Both the absence of the other Cold War loser, the Soviet Union, and the reluctance of both winners, Japan and Germany, to participate are interesting phenomena to any practitioner of the study of International Relations. What happened between the 'outbreak of the crisis' - the invasion of Kuwait, August 1990 - and the 'outbreak of the war' - the invasion of Iraq - has to be carefully examined: the gradual demise of the role of the United Nations, the negotiations between the United States and their (new) allies, the (politically inspired) buildup of the allied armed forces, the way boycotts could be broken, etc. - these are all interesting fields of investigation from the point of view of (the need for) transparency. Moreover, the Gulf War functioned as a source of legitimation: the new NATO-strategy and their related armament measures were greatly influenced and stimulated by the events in the Gulf area. In short, the Gulf events cannot be treated as more or less isolated facts: they are to be understood as evidence of changing power relations within the international system - and as symptoms of the incapacity of some politicians to understand these shifts in time.

I believe that peace research has to go even further. It can learn much more from the Gulf events and I do not hesitate to speak in terms of an "agonizing reappraisal" (to quote John Foster Dulles' famous dictum for the last time) in this respect. Peace research can be understood as a spinoff of the East-West confrontation: its origins stem from the cold war period, its scope reflects the several political problems dictated by the East-West relationship, its focus was coloured by intellectual criti-

cism and moral indignation. The idea of an interdependent world was, much too often, not considered as a tendency *per sé*. On the contrary, it served as an argument against the assumptions of political decision-makers. As such, it was often used as an alternative to the bipolarity of cold war rhetoric, or as an alternative to armament in general. Of course, a growing interdependency within the international system exists: vertical and horizontal interdependency. Nation states, together with non-territorial actors, are more interrelated than ever before. A series of global problems (armament, economic and ecological ones, poverty, disease, illiteracy, etc.) can only be understood - and solved - as closely related ones. Moreover, both series of interrelationships are, in turn, interrelated themselves. The Gulf War showed a perfect demonstration of both tendencies, of this global interdependency. However, the Gulf War also showed something more, unfortunately: the incapacity of many politicians and the public as well, to behave along the lines of this new paradigm - and this, quite contrary to the expectation of many peace researchers. The Gulf War caused an outburst of primitive, outdated nationalism, of old-fashioned patriotism, of military heroism. In other words, we expected our politicians, our mass media and the public to behave according to the realities of global interdependency - and we underestimated cognitive incapacity to understand fully and timely enough these realities.

This holds true for the main subject-matter of this conference, chemical armament, as well. Peace research's preoccupation with the East-West confrontation, prevented us to pay seriously enough attention to the problem of chemical armament throughout the world. Chemical arms were considered primarily as some complement to the deterrence posture of both parties - that is, complementary to the problem of nuclear armament. However, chemical arms are made to be used, not to deter. All too often, we considered them as something additional, something to be discussed on the sideways of the main roads of disarmament. We did not demystify the argument of 'the poor man's bomb' some governments used to justify their acquisition. We paid too little attention to the mechanisms behind the proliferation of chemical arms. We underestimated the problems related to the destruction of chemical stockpiles, and we had no attention at all for the psychological processes and emotional problems within populations threatened by these terrible arms - as during the Gulf War. Even after the 1st Gulf War, almost no major Peace Research Journal paid any serious attention to this different category of means of mass destruction - different from our 'normal,' nuclear, bipolar frame of reference.

We therefore sincerely hope that this conference may stimulate serious attention among peace researchers and the public at large to this ever growing problem.

Johan Niezing

Alastair Hay & Gwynne Roberts

The Use of Poison Gas Against the Iraqi Kurds: Analysis of Bomb and Environmental Samples¹

3

Evidence to confirm that Iraq used chemical warfare agents during its war with Iran has been extensively documented by successive United Nations (UN) investigations. Following the first report by a UN team in 1984 that Iraq had used mustard gas against Iranian soldiers there have been numerous other publications from UN teams confirming that, between 1984-1988 Iraq used mustard gas and probably the nerve agent Tabun in its war against Iran.²

Attempts to document the use of chemical warfare agents against Iraq's Kurdish civilian population have proved to be more difficult. Following claims by Iran that Iraq had used chemical warfare agents in an attack in March 1988 on the Kurdish town of Halabja, the UN sent one of its most experienced investigators to assess the evidence. Unable to visit Halabja, Dr Manuel Dominguez (a participant in all the previous UN chemical warfare investigations in Iraq & Iran) examined a number of civilians from the city, all of whom were either hospitalised in Iran, or at convalescence or reception centres for the wounded in Iran. On the basis of his clinical examinations Dr Dominguez was able to conclude categorically that those patients he had examined had suffered "*the effects of two kinds of aggressive chemicals: yperite, also known as mustard gas, and a neurotoxic acetylcholine esterase-inhibiting agent.*" The Security Council response to Dr Dominguez's report was a reiteration

¹ A summary of this report has been published by A. Hay and G. Roberts, entitled *The Use of Poison Gas against the Iraqi Kurds : Analysis of Bomb Fragments, Soil and Wool Samples*. Journal of the American Medical Association Vol. 263, 1065-1066 (1990).

² *Report of the Specialists appointed by the Secretary-General to investigate allegations by the Islamic Republic of Iran concerning the use of chemical weapons*, United Nations Security Council S/16433, 26 March 1984. *Report of the mission dispatched by the Secretary-General to investigate allegations of the use of chemical weapons in the conflict between the Islamic Republic of Iran and Iraq*, United Nations Security Council S/17911, 12 March 1986. *Report of the UN mission*, United Nations Security Council S/18852, 8 May 1987. *Report of the UN mission*, United Nations Security Council S/19823, 25 April 1988.

of its previous condemnation of the use of chemical warfare in the Gulf conflict; Iraq received no specific censure for its attacks on civilians.³

On 25 August 1988, Iraqi armed forces began a major military offensive against the Kurds in northern Iraq. In the following week, more than 60,000 Kurds, most of whom were civilians, fled into Turkey. The offensive was alleged to have involved the extensive use of chemical weapons, which, if true, would have represented a major use of chemical weapons by a government against its own civilians. Subsequent attempts to verify these allegations, however, were thwarted by the absence of evidence and the refusal of the governments of Iraq and Turkey to allow an investigation by the United Nations. These events are described in detail in an article published by three members of the Boston-based Physicians for Human Rights.⁴

The US team visited Turkey between 7-16 October 1988 and managed to gain access to two refugee camps. Refugees had no prior notice of the team's arrival. Following entry to the camp, leaders assembled former residents of towns in Iraq where chemical weapons were said to have been used. From those assembled, a number of individuals were selected at random - to cover a spectrum of ages - and interviewed under the supervision of a team member. Twenty-seven questionnaires were administered, twenty-two interviews were recorded on videotape, and twelve refugees received a limited physical examination.⁵

More than 70% of those questioned reported a constellation of symptoms considered being compatible with severe irritation of the eyes, skin, respiratory tract, and gastrointestinal tract. Symptoms were more severe in those who were closest to a bursting bomb,⁶ with none of those more than 500 metres away reporting severe symptoms, but half of those within 250 metres reporting symptoms of some severity. Some refugees had healing skin lesions characterised by heavily pigmented skin surrounding the central areas of unpigmented new skin. This is a pattern seen in individuals exposed to mustard gas.⁷ On the basis of the type of burns, the pattern of symptoms, and their severity (in relation to the proximity of the bombs) the Physicians for Human Rights concluded that everything would be explained by the refugees being exposed to a lethal blistering agent. There were also some reports of deaths within minutes; these, the team felt, were consistent with an attack by some rapidly acting agent, such as a nerve gas, but no evidence was available to substanti-

³ United Nations Security Council Resolution 612 (1988) S/RES/612 (1988).

⁴ Hu H, Cook-Deegan R, and Shukri A., *The Use of Poison Gas Against the Iraqi Kurds. I. Mounting an Investigation Using Survey Epidemiology*. JAMA 262, 640-643 (1989).

⁵ *Ibid.*

⁶ *Ibid.*

⁷ Requena, L., Requena, C., Sanchez, M. et al., *Cutaneous lesions from mustard gas*. J. Am. Acad. Dermatol. 19, 529-536 (1988).

ate this.⁸ The need to collect the physical evidence to support the clinical and epidemiologic findings had now become even more urgent.

In November 1988, one of us (Gwynne Roberts), a journalist, secretly entered Iraq to collect samples from an area reputed by Kurdish refugees to have been attacked with chemical warfare agents. Members of the Kurdistan Democratic Party organised the expedition over territory held by the Iraqi forces. The location visited was 10 miles west-south-west of the confluence of the frontiers of Iraq, Turkey and Iran. Weather conditions were far from ideal in the mountainous areas visited. Temperatures fell below 0°C at night and never rose much above this during the day. There had been no recent rainfall.

At the site, a large thin-walled metal bomb was found embedded in the ground. To protect against any chemical agent, NATO issue chemical warfare protective clothing and a gas mask were worn by Gwynne Roberts before the shell was investigated. Examination revealed that the bomb had ruptured and appeared empty. On the assumption that its contents may have leaked into the earth underneath, soil was excavated from under the bomb and placed in a brown plastic screw-top jar (sample 1). Two metal fragments were removed from the inside of the bomb (samples 2 and 3) along with a sample of soil with which the fragments were in contact (samples 2A and 3A). Each fragment and soil sample was individually wrapped in metal foil and placed in a transparent plastic bag. Finally, a sample of what appeared to be sheep's wool (sample 4) found lying on the ground in the vicinity of the bomb was collected and placed in a brown plastic screw-top jar.

The samples remained with Gwynne Roberts at all times from the time of collection, until their receipt and analysis by the laboratory. Two laboratories were involved. Clayton, Bostock, Hill and Rigby (CBHR), a commercial analyst in Birmingham, UK, analysed two soil samples and a bomb fragment. The UK Ministry of Defence's Chemical Defence Establishment (CDE) in Porton Down, Wiltshire, UK, analysed the three soil samples, the specimen of wool, and the two shell fragments.

Head space analysis to release volatile compounds by gentle heating was carried out by CBHR on soil (sample 1) and a shell and soil specimen (samples 3 and 3A). The specimens were gently heated to 80°C to release volatile material into the air space above them. A one millilitre sample of the air-space was injected onto a BP5 gas chromatography capillary column (Perkin Elmer) linked to a Finnigan ITD mass spectrometer.⁹

Additional investigation of these same samples and the three others was carried out by the CDE, which kindly made the results available to us. For a direct analysis for mustard gas and other compounds, aliquots of the three soil samples (1-3) were extracted with the solvent dichloromethane and the extracts analysed independently

⁸ Hu H, Cook-Deegan R, and Shukri A., *op. cit.*

⁹ Dr R Baron, personal communication.

in two separate laboratories by full scanning gas chromatography-mass spectrometry (GCMS). In addition, the bomb fragment (sample 2) soil sample (2A), and wool were analysed using the more sensitive technique of selective ion monitoring. A direct GC-MS thermal desorption technique that enhances release of volatile materials was used on bomb fragment sample 3 and the soil sample 3A.

Findings

Initial investigation of soil sample 1 by CBHR revealed two volatile breakdown products of mustard gas, 1,4-oxathiane and 1,4-dithiane.¹⁰ Subsequent analysis by CBHR also revealed the presence of the explosive 2,4,6-trinitrotoluene. Analysis of bomb fragment sample 3 and soil sample 3A disclosed the presence of three volatile compounds 1,4-oxathiane, 1,4-dithiane, and ethene 1,1-thiobis, all compounds related to mustard gas.

The investigation by the Chemical Defence Establishment produced results summarized in the Table. The findings corroborated the data of CBHR with respect to the presence of trinitrotoluene in sample 1, and two of the three volatile compounds related to mustard gas in samples 3 and 3A. Thermal desorption analysis for volatile material was not performed by the CDE on sample 1. However, a number of other compounds were discovered using the extraction and selective ion monitoring techniques. Of note are the traces of mustard gas itself identified in four of the six samples.

The samples were analysed for the organophosphate nerve gases and their hydrolysis products, and for Lewisite and related products, but none were found.

Comment

It is clear that the bomb examined had previously contained mustard gas. All of the chemicals found in soil sample 1 are related to mustard gas; they are either decomposition products, or impurities. The sulphoxides identified in sample 1 are persistent oxidation products of mustard, whereas thiodiglycol is a hydrolysis product.¹¹ Finally, mustard gas itself was identified.

¹⁰ Satori, M. *The War Gases: Chemistry and Analysis*. Van Nostrand: London, 1939.

¹¹ Helfrich OB, and Reid EE., *Restriction and derivatives of β , β' dichloro ethylsulfide*. J Amer Chem Assoc 42: 1208-1232, 1919. Wils ERJ, Hulst AG, de Jong AL, et al., *Analysis of thiodiglycol in urine of victims of an alleged attack with mustard gas*. J Analyt Toxicol: 9: 254-257 1985.

The presence of the explosive tetryl in the three soil samples indicates that it was probably part of the explosive charge employed to break the bomb open and release its contents. Both the commercial and defence laboratories found the explosive 2,4,6-trinitrotoluene in soil sample 1.

The soil samples and shell fragments in this investigation were collected from underneath a munition 10-12 weeks after it had been detonated. Burial of the material would seem to have protected the chemicals from volatilization, hydrolysis, or photodecomposition. Sulphur mustard is known to persist on the surface of rain-soaked soil at 10°C for 12 to 48 hours.¹² When exposed on dry soil to bright sunshine at 15°C, and in a slight wind, the gas will persist for 2 to 7 days. At -10°C, on snow and in sunshine, mustard gas is known to persist for 2 to 8 weeks.¹³

This investigation demonstrates that even after a significant delay, soil analysis for chemicals can provide confirmatory evidence to support clinical and epidemiologic studies of victims of alleged chemical attacks and as such, provides clear evidence of Iraq's use of mustard gas against the Kurds in late 1988. Given the persistence of mustard gas in soil (nerve gases such as SOMAN and VX have similar residence times under the same conditions; SARIN however, is far less persistent)¹⁴ it would be worth collecting soil samples in future investigations from footwear of refugees who have recently fled an area allegedly attacked by chemical weapon agents. Analysis of fragments of clothing and footwear could also be helpful, as these might retain some of the chemical agent. Finally, buried soil samples may retain vestiges of chemical agents for several months.

¹² Trapp, R. *The Detoxification and Natural Degradation of Chemical Weapons Agents*. Stockholm International Peace Research Institute Studies on Chemical and Biological Weapons. Vol III. London and Philadelphia: Taylor & Francis Publishers: 1985.

¹³ *Ibid.*

¹⁴ *Ibid.*

ANALYSIS OF SOIL, METAL FRAGMENTS AND WOOL COLLECTED FROM, AND IN THE VICINITY OF A CHEMICAL WARFARE BOMB IN NORTHERN IRAQ
(Results of chemical analyses of all samples by the Chemical Defence Establishment, Porton Down, UK)

Material/Sample	Weight	Analytical method	Chemicals detected
Soil/1 (collected beneath bomb)	(410 g)	GC-MS ⁺ (scanning mode)	bis-(2-chloroethyl) sulphide (mustard) 2-hydroxyethyl vinyl sulphide* 2-chloroethyl vinyl sulphoxide* thiodiglycol bis-(2-chloroethyl) disulphide bis-(2-chloroethyl) sulphoxide 2-(2-hydroxyethylthio) ethyl vinyl sulphoxide bis-2-(vinylthio)ethyl ether* 1,2-bis-(2-chloroethylthio) ethane* bis-2-(2-chloroethylthio) ethyl sulphide*
Soil/2A (in contact with bomb fragment 2)	(34 g)	GC-MS (Scanning mode) GC-MS (selective ion monitoring)	2,4,6-trinitrotoluene tetryl tetryl bis-(2-chloroethyl) sulphide (mustard) thiodiglycol
Bomb fragment/2 Soil/3A (in contact with fragment 3)	(17 g)	GC-MS (selective ion monitoring) GC-MS (Scanning mode)	bis-(2-chloroethyl) sulphide (mustard) tetryl thiodiglycol 2-chloroethyl vinyl sulphoxide
Bomb fragment/3		GC-MS (thermal desorption)	1,4-dithiane 1,4-oxathiane
Wool/4 in vicinity of bomb		GC-MS (thermal desorption) GC-MS (selective ion monitoring)	1,4-dithiane 1,4-oxathiane bis-(2-chloroethyl) sulphide (mustard)

⁺ Gas chromatography - mass spectrometry * tentative identification as no standard sample or spectrum available

Jan Willems

Appraising Iraq's Chemical Warfare Capability and Use During the 1st and 2nd Gulf War from a Medical Point of View

4

Chemical weapons were used on a large scale during the first Gulf conflict. Physicians participating in verification of alleged use by examining and treating chemical casualties provided part of the evidence. This aspect of verification of chemical warfare allegations in international or national conflicts is an important one, especially for determining appropriate patient care and shaping an international response. The ability to deny allegations accurately is also important, in that political mistrust can be reduced and international understanding and collaboration enhanced.

It is the purpose of this paper to illustrate this process of medical decision making by describing observations made during the first Gulf conflict and to discuss some consequences of the chemical threat for the medical preparedness in the second Gulf conflict.

First Gulf Conflict

On 19 March 1984, TIME magazine revealed evidence supporting the allegation by Iran that Iraq had used chemical weapons on the battle field. The most spectacular evidence consisted of alleged chemical casualties evacuated to Europe for secondary treatment. From that time on, physicians in Europe entered the debate on whether chemical agents had been used in the Iran-Iraq conflict.

The evidence was then still inconclusive. It remained to be determined whether these patients were chemical weapon casualties or victims of other causes, e.g. burns, caused directly or indirectly by incendiary agents, or toxic chemicals released by conventional weapons on the battlefield.

A week later, on 26 March, a UN Security Council Report,¹ based on the observations of a team of experts sent to Iran by the Secretary General, greatly supported the allegation. On the battlefield unexploded and exploded ammunition containing a chemical load had been found. On analysis in two independent laboratories, the chemical in some bombs appeared to be the vesicant mustard gas (bis-(2-chloroethyl)-sulphide) and in others the nerve agent tabun (ethyl N,N-dimethylphosphoroamidocyanidate). Moreover, the experts had examined a large group of casualties who showed signs and symptoms compatible with vesicant or nerve agent exposure. Later missions confirmed these observations.²

As far as exposure to the vesicant mustard gas was concerned, the clinical picture of the casualties brought to Europe confirmed the UN conclusions. These clinical cases, however, also illustrated the difficulty to prove unambiguously the use of chemical weapons starting from patient observations.³

The lesions observed were for a large part similar to mustard lesions as described in the literature: eye symptoms and cutaneous vesicles appearing some hours after contact with the agent, erythema with itching, blister formation with spontaneous rupture leaving erosive and necrotic skin lesions, lesions of the respiratory tract of the same nature as the skin lesions, systemic effects with leucopenia and bone marrow depression, and local and systemic secondary infections.

A prominent sign in these Iranian patients, however, was a deep darkening of the skin followed by desquamation or exfoliation over areas of variable extent. This lesion was not described in recent readily available literature. According to some, this sign was due to mycotoxin poisoning, these toxins allegedly having been detected in the urine and blood of some victims. Looking carefully at medical publications from the First and Second World War,⁴ however, this blackening of the skin was clearly very typical for mustard poisoning and that there was no need for any other explanation.

Subsequent laboratory analyses of blood and urine samples of the patients did not detect unchanged sulphur mustard, but revealed the presence of its metabolite, thiodiglycol. Thiodiglycol, however, was also detected in control urine samples indicating that its detection does not *per sé* provide sufficient proof of mustard gas exposure. A claim that mycotoxins had been found in some samples was proven to

¹ United Nations Security Council, *Report S/16433*, 26 March 1984.

² United Nations Security Council, *Report S/17911*, 12 March 1986. United Nations Security Council, *Report S/18852*, 8 May 1987.

³ J. L. Willems, *Clinical management of mustard gas casualties*. *Annales Medicinæ Militaris Belgicae* (1989), 3 S1, 1-61.

⁴ E. B. Vedder, *The medical aspects of chemical warfare*. William & Wilkins Co, Baltimore, 1925, page 125-157. S. F. Alexander, *Medical report of the Bari Harbor mustard casualties*. *The Military Surgeon* (1947), 101, 1-17.

be a wrong interpretation of a chromatogram, nor did these patients present signs or symptoms of nerve agent exposure.

This proven case of chemical-weapons use on the battlefield underscores the need for fulfilment of criteria before scientists, including physicians treating alleged casualties, give support to an allegation of chemical warfare:

1. Intelligence information regarding the possible use of unconventional warfare should be gathered and evaluated.
2. An independent team of experts with knowledge of all aspects of classical and chemical warfare should inspect the local site and gather physical evidence (ammunition allegedly used and environmental samples). An analysis of this evidence and confirmation of results should be performed by more than one reliable laboratory;
3. Finally, a thorough clinical examination of the alleged casualties, including analysis of biological samples, should be done at or near the site of the alleged attack and again after transfer to a clinical centre.

In active conflict conditions fulfilling these conditions will undoubtedly be difficult: intelligence information, even if obtained, can rarely be verified conclusively; independent teams may not be granted prompt and complete access to battle sites or patients; and our experience shows that patients are not the best source for verification. Despite these difficulties, investigators should strive to fulfil these criteria to ensure the credibility of their findings, and the internal consistency of the overall picture should compensate for possible incompleteness.

In the last years of the Iran-Iraq conflict, the Iraqis used chemical weapons against their Kurdish population. The best known episode took place on 16 March 1988, at Halabja where there were hundreds, and possibly thousands of victims. The scene at Halabja suggested the use of at least two agents, a rapidly acting systemic poison and mustard gas, the clinical symptomatology of some casualties being compatible with mustard gas exposure.⁵ Confirmation of the presence of mustard gas came from the Chemical Defence Establishment, Porton, UK, which detected traces of mustard and related compounds in soil samples from Iraqi Kurdistan.⁶ Later, the use of the nerve agent sarin (isopropyl methylphosphonofluoridate) at Halabja was proved by Iranian and German scientists by detecting its decomposition product hydroxy sarin in the environment.⁷ Sarin, which at high concentrations is a rapidly acting systemic poison and is not persistent, can explain the rapid killing. Intelligence information further indicated that Iraq did not use cyanide gas in the war. The sarin production

⁵ B. Lacotte, M. Ceuterick, M. L. Geerts, J. Willems, *Brûlures cutanées à l'Ypérite, a propos de deux nouveaux cas*. *J Chir* (Paris), 126 (1989), 315-318.

⁶ M. Meselson, J. P. Perry Robinson (Eds.), *Chemical Weapons Convention Bulletin*. Federation American Scientists Fund, Washington D.C., n°4, May 1989.

⁷ Helm, 1989, personal communication.

capability of Iraq is known, but till now no evidence has been put forward that Iraq possessed a cyanide production capability.

Second Gulf Conflict

During the second Gulf conflict, chemical weapons were not used. Because of the reality of the threat, however, the allied forces prepared seriously for combat in a chemical environment. Equipment and operating procedures regarding early warning, detection and identification of chemical agents, individual and collective protection, decontamination, medical treatment and evacuation, were tested and adapted to the hot desert environment. This environment is quite different from the European theatre for which most of the equipment and procedures had been developed.

All the lessons learned have not yet been put together. However, the experience gained during operations Desert Shield and Desert Storm clearly shows that maintaining adequate protection in all situations on a potential chemical battle field necessitates intensive training along well-defined procedures. An important lesson from the medical point of view is the experience gained with the large scale use, in 41,650 soldiers (6.5% women), of pyridostigmine pretreatment against possible nerve agent poisoning. Pyridostigmine given before exposure to nerve agents greatly improves the effectiveness of subsequent treatment in experimental animals. It appeared that under wartime conditions side effects were more common than expected. About half the population noted physiological changes that were not incapacitating, such as increased flatus, abdominal cramps, soft stools, and urinary urgency. Military mission performance was thus not impaired. Approximately 1% of the soldiers believed they had effects that warranted medical attention, but fewer than 0.1% had effects sufficient to discontinue the drug. Nearly all soldiers accepted the pyridostigmine pretreatment while under the threat of nerve agent attack.⁸ It should be added, however, that because of the absence of a control group it is not clear whether the drug alone or also the stress of wartime conditions played a role in eliciting some of the symptoms. Since exposure to nerve agents did not occur, the value of this pretreatment in man could not be judged.

⁸ J. R. Keeler, C. G. Hurst, M. A. Dunn, *Pyridostigmine used as a nerve agent pretreatment under wartime conditions*. JAMA, 266 (1991), 693-695.

The Aftermath of Both Wars

Because of a range of geopolitical considerations, internationally accepted firm proof that chemical weapons had been used in the first Gulf war was no guarantee that international punitive measures were subsequently issued against the user. The international reaction was only verbatim, even the name of the user was not officially voiced.

The opposite reaction occurred after the second Gulf conflict. Security Council Resolution 687 ordered the United Nations Special Commission to inspect Iraq's chemical weapons capability, to take possession of it and to destroy it. The first chemical inspection team, visiting Iraq in June 1991, confirmed the production capability and storage of vesicants and nerve agents at the large chemical-weapons facility known as Muthanna State Establishment, located close to Samarra. These findings were in accordance with the official declarations made by Iraq to the Security Council. The mission also identified the main hazards linked to the charge of taking over and destroying the chemical weapons present at that site. The threat imposed on the UN experts and technicians is complex: risk of physical accidents because of the partially devastated infrastructure; heat stress, exacerbated by the necessity to wear full protective equipment; unexploded ammunition remaining from the war; explosive charges associated with the chemical ammunition; toxic precursors of chemical weapons; and, last but not least, the highly toxic chemical weapons *in sé*. The organization of the medical support for this kind of mission, within a country with largely reduced medical capacity, remains a difficult task.

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The Chemical Threat in Iraq's Motives for the Kuwait Invasion

5

When the first Gulf War ended in August 1988, discarding the feeling that a new military conflict in the region was only a matter of years was hard, half a decade at the most. Indications were abundant. When Iran finally accepted Security Council Resolution 598 calling for a cease-fire on 18 July 1988, it was Baghdad that sought to prolong the war by insisting on prior bilateral talks with Teheran. Meanwhile it launched its massive offensive against the Kurds in northern Iraq, using chemical weapons indiscriminately. The attacks continued well beyond the cease-fire date of 8 August and its formal signing on 20 August. The United Nations and outside powers in the region chose to ignore the Iraqi onslaught for fear of rekindling the war. As British Ambassador to the United Nations said at the time, the Security Council “*didn't want to upset the applecart.*”¹ The UN even delayed publication of a report detailing Iraqi use of chemical weapons until the negotiations with Iran were well under way. The attacks after Teheran's acceptance of Resolution 598 and the lack of an Iranian military response must have reinforced Baghdad's belief that it had won the war. The lack of international reproach must have convinced it that its chemical attacks were legitimate. Only, one was quite certain that Iraq was to be a major player in the next Middle East War and Israel the adversary.

Economic motives for the Kuwait invasion

The first Gulf War placed such a heavy burden on Iraq's economy, that recovery would inevitably be a long and slow process. As one economist put it in 1989, “*Iraq has been turned into a 'military machine,' with major consequences for the post-war period, as the readjustment to a more 'normal' life may prove too difficult.*”² By the end of the seventies, Iraq had reached the peak of a sustained economic growth. Be-

¹ J. Bulloch; H. Morris, *The Gulf War. Its Origins, History and Consequences*. Methuen, London, 1989, p. 259.

² K. Mofid, *The Economic Consequences of the Gulf War*. Routledge, London, 1990. p. 89.

tween 1978 and 1979 oil production rose 30% from 2.7 million barrels to 3.5 million barrels a day. Oil revenues increased a dramatic 97.2%. They surged from \$10.8 billion in 1978 to \$21.3 billion in 1979 and the first nine months of 1980 already accounted for \$22.4 billion in revenues.³ When Iraq launched its offensive against Iran in September 1980, it possessed \$35 billion in foreign exchange reserves. However, within the first days of the war, most of Iraq's oil producing and processing facilities were destroyed or damaged, leading to an average drop in productivity of 9.7% a year and an annual 12.7% loss of export revenues between 1979 and 1986. The economic damage, including military expenditure, GDP losses and uninvested capital, ran at an estimated \$ 226 billion for 1986 alone.⁴ Moreover, Iraq suffered other economic setbacks during the first years of the war. The 1981-85 Five-Year National Development Plan that aimed at reducing Iraq's dependency on oil revenues as main supplier of foreign exchange and at increasing non-energy exports, failed completely. Instead of rising, the real value of non-energy exports remained at essentially the same level, however, given inflation, it declined too.⁵

The focus on the depletion of Iraq's oil revenues because of the war hides the fundamental structural weakness of Iraq's economy: most of the productive output goes to meet final demand uses (export or domestic consumption) and is not sold to other industrial sectors. This absence of so-called 'feeder' industries and internal linkages has prevented the emergence of new or complementary industries, which would have contributed to an overall higher level of economic development. In the decade preceding Iraq's oil boom, productivity only increased marginally in sectors other than mining. In some areas such as crude oil and natural gas, electricity, water and gas, construction, and manufacturing, the input requirements for a particular output increased, thus leading to declining productivity. The important sector of agriculture, forestry and fishery grew just under 1 per cent between 1960 and 1974.⁶ Moreover, Iraq is one of those Gulf Arab states that failed to extend their growth successes in improvements in human capital, another important factor for sustained economic development. Being a major arms-importing country and investing massively in domestic advanced weapons research, Iraq - in a pattern typical for non-arms producing countries - drew scarce resources away from growth enhancing investments in education, health, infrastructure, and so forth to fund expansions in the military

³ K. Mofid, *op. cit.*, 1990, p.37.

⁴ G. Bechter, *Conflict in the Persian Gulf*. In: *Disarmament & Security 1988-1989 Yearbook*. Novosti Press Agency, Moscow, 1989. p. 511.

⁵ K. Mofid, *op. cit.* 1990, p.38.

⁶ A. Al-Roubaie, *Structural Change and Iraq's Structure of Production*. Arab Studies Quarterly, Vol. 12, n°3 & 4, Summer/Fall 1990. Especially at pp. 91 and 94.

Table 1: Iraq - Military Expenditure 1975-1990

	in million US\$ (1988 constant prices)	as % of Gross Domestic Product
1975	9,675	11.7
1976	9,489	10.7
1977	9,916	9.8
1978	9,382	8.1
1979	11,872	(6.9)
1980	12,306	6.3
1981	14,007	12.3
1982	21,952	18.4
1983	28,596	24.3
1984	31,590	29.1
1985	23,506	26.0
1986	16,531	24.2
1987	17,073	24.3
1988	12,868	23.0
1989	10,720	20.0
1990	9,268	20.0

Source: SIPRI Yearbooks 1985-1992 (World Military Expenditure)

The data for 1980-1990 were given by SIPRI in constant 1988 prices. The data for 1975-1977 were given in constant 1980 prices and have been converted in 1988 constant prices by multiplying them by factor 4.3056. The data for 1978-1979 were given in constant 1986 prices and have been converted in 1988 constant prices by multiplying them by factor 1.4276.

(): Uncertain data.

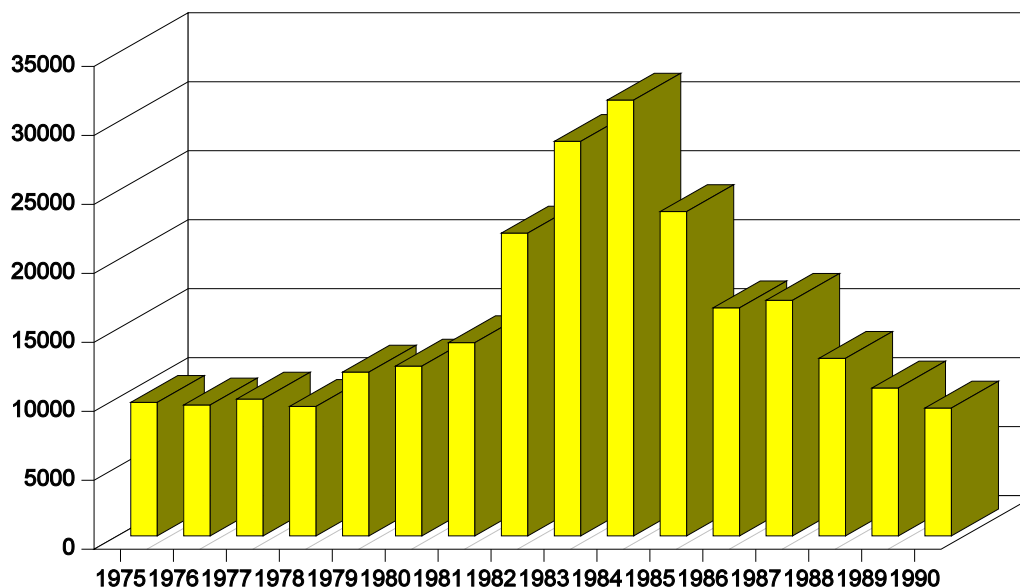
budget. Here too, Baghdad thus failed to generate cross-productivity effects that would have supported long-term development.⁷

Baghdad achieved its remarkable economic growth at the end of the seventies as a result of a sharp rise of the export revenues of a single commodity, petroleum. The

⁷ R. E. Looney, *Military Expenditures, Military Participation Rates, and Human Capital Development in the Arab World*. Current Research on Peace and Violence, n°1, 1990. pp. 39, 41, 44. Y. Sayigh, *Iraq's Ambitions: Arms Producer and Regional Power*. Middle East International, n°367, 19 January 1990. pp. 17-18.

Military Expenditure 1975-1990

In million US \$ (1988 constant prices)



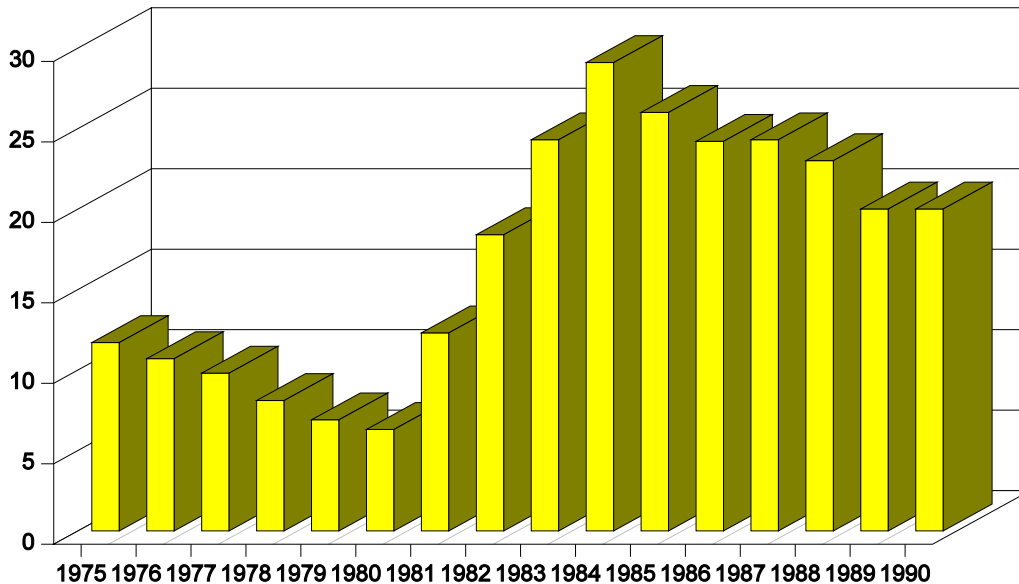
extra income was not generated by increased productivity, but by more favourable prices on the world market, a factor largely beyond the government's control. As in other oil-producing Arab countries, the government is the sole recipient of oil revenues. Since this income does not go towards the payment of the production factors, the government is responsible for channelling it into the economy through public expenditures. Given their large share of GDP, the central authorities exert a major influence on the direction of economic development by determining the investment factors. Perhaps not surprisingly, Iraq's economic sectors with the highest allocations - chemicals, rubber, oil refinery, machinery and equipment, other manufacturing, and services - were the ones with the highest output.⁸ In the area of defence in particular, this high degree of central organisation suited Iraqi wartime needs perfectly and was an important contributing factor to the for a developing country very advanced nature of the armament programmes.⁹ The system, however, again precluded the forging of strong linkages with other nonmilitary industrial sectors and

⁸ A. Al-Roubaie, *op. cit.*, Summer/Fall 1990. p. 91.

⁹ Y. Sayigh, *op. cit.*, 19 January 1990, p. 18. From the end of the seventies onwards, the arms industry, including the ordnance factories, was the responsibility of the Military Industrialisation Authority, while the General Organisation for Technical Industries coordinated advanced programmes such as chemical weaponry and missiles. In 1987 both were subsumed in the new Ministry of Industry and Military Industry, again reflecting the ongoing centralisation.

Military Expenditure 1975-1990

as % of GDP



the whole enterprise depended on high crude oil prices on the world market. As one author noted, “changes in the volume of these earnings may have drastic effects on the productivity of the main sectors of the economy.” Consequently, this “high dependence of the government on oil revenues as a main source of public expenditure may constitute a threat to the social and economic stability of the economy.”¹⁰ In 1988, Iraq emerged from the war with part of its industrial base destroyed, many of its resources directed towards the war effort, and a sharply reduced income because of fallen oil prices. Moreover, the glut on the world market meant that the Iraqi leadership had even fewer opportunities than before to influence world prices. Its only opening was a renegotiation of production quotas within OPEC. However, the other Gulf Arab states, to which Iraq owed several tens of billion dollars as war debts, geared petroleum production to their respective economic needs, further compounding Baghdad’s problems.

The structural weaknesses of the Iraqi economic system had already surfaced during the early stages of the first Gulf war. In 1980, President Saddam Hussein announced that Iraq would strive for agricultural self-sufficiency. The goal was not exaggerated. Iraq has between Tigris and Euphrates some of the richest land in the world. However, during the war years, dependency on the outside world increased

¹⁰ A. Al-Roubaie, *op. cit.*, Summer/Fall 1990. p. 96.

manifoldly. The deterioration in productivity followed mainly from the rising cost of the war; not a surprising development, since public funds, on which productivity depended, were increasingly diverted to the war effort. Moreover, during the first five war years, the economically active population in agriculture declined from 30% to 24%. This rural-urban migration meant that fewer people had to produce for more, which proved beyond their capabilities. Dependency on the outside world was even more pronounced in other non-oil industrial sectors, where development relied largely on imports. On the whole, the nonmilitary import dependency averaged 2.9% of the Gross Domestic Product between 1973 and 1978, and rose to 32.5% between 1979 and 1985.¹¹ Iraq's real weakness lay in the sharp fall of foreign exchange income and the resulting rising inability to sustain the high levels of import. In 1983 oil prices plummeted \$29 a barrel, adding to Iraq's overall income problems. That year the country had reached its maximum production capacity, so the loss in revenue could not be compensated by higher output.

These figures do not yet consider military expenditures. During the second half of the seventies Iraq's military expenditures stayed more or less level at \$10 billion (1988 constant prices). They rocketed during the first half of the war, having tripled by 1984. After that, against expectations, they dropped abruptly. By 1986, military expenditures were virtually halved and in 1990 they were back at the same level of the late seventies. (Table 1; Chart 1) However, these amounts gain real significance if set out as percentage of Iraq's Gross Domestic Product (Table 1; Chart 2). From 1975, the year the Algiers Accords with Iran that effectively ended the Kurdish uprising, until the beginning of the first Gulf war in 1980, military expenditure as percentage of GDP declined steadily. Since military expenditures in constant terms remained steady and started rising from 1979 onwards, this drop reflected the massive impact of Iraq's oil boom on the GDP rather than demilitarization. The damage to Iraq's oil industry during the first days of the war and the resulting loss of revenue caused a doubling of the defence burden in 1981, although in constant prices the war effort increased by 3.56%. In 1983 Iraq's oil production reached maximum capacity, allowing a doubling of military expenditures in constant terms by 1984. Still the lower world market prices resulted in a record defence burden for any of the war years (29.1%). From then onwards, the toll on the Iraqi society was heavy. Although defence expenditure dropped steeply, it remained above 20% of the GDP, showing the country's economic collapse.

The first Gulf war cost Iraq an estimated \$452.6 billion.¹² This, however, was only the monetary cost, and excluded "*inflationary costs, the loss of services and earnings by the many hundreds of thousands of people killed, the depletion of natural resources, the postponement of crucial development projects, the cost of delayed*

¹¹ K. Mofid, *op. cit.*, 1990, p.50.

¹² K. Mofid, *op. cit.*, 1990, p.132.

training and education of the young people [...].” The sum also excluded “the cost of welfare payments to the hundreds of thousands injured in the war who are not able to contribute fully to the creation of wealth for the national economy.”¹³ The war absorbed approximately 112% of Iraq’s Gross National Product, leaving it with a ± \$80 billion debt in 1988, of which one quarter was to non-Arab states. In the two years following the war, the Iraqi leadership, however, mismanaged its foreign debt and on the eve of the invasion of Kuwait, it owed an additional \$10 billion to its non-Arab creditors (Europe, Japan, and the United States). During the first half of 1990 prices for crude oil dropped from \$20 to \$14 a barrel, causing Iraq severe fiscal problems, which the other Gulf Arab states were unwilling to finance.¹⁴

Between September 1980 and August 1988 Iraq managed to expand its armed forces and inventory of major weapons systems considerably despite the losses incurred. On the eve of the war, the Iraqi Armed Forces consisted of around 242,000 personnel.¹⁵ By 1988 the total had increased to one million people under arms¹⁶, and, despite some attempts to demobilize, it remained unchanged during the two subsequent years.¹⁷ Table 2 illustrates the Iraqi military buildup for some key weapon

Table 2: Iraq - Military Buildup				
Weapon system	1980	1988	1989	1990
Main Battle Tanks	2,750	4,500	5,500	5,500
Armoured Fighting Vehicles	2,500	4,000	8,100+	10,000+
Combat Aircraft	332	500	513	689
Helicopters	277	[150]	160	489

Source: IISS, *The Military Balance 1980-1981, 1988-1989, 1989-1990, 1990-1991*.

[]: Army only; no information on Air Force; no information on war losses.

¹³ K. Mofid, *op. cit.*, 1990, p.139.

¹⁴ P. Marr, *Iraq's Uncertain Future*. Current History, Vol. 90, n°552, January 1991. p. 2.

¹⁵ Britannica Book of the Year 1981, table p.282; A. H. Cordesman, *The Gulf and the Search for Strategic Stability*. Westview Press, Boulder, 1984. p. 654, Table 16.1; IISS, *The Military Balance 1980-1981*.

¹⁶ IISS, *The Military Balance 1988-1989*, p.101.

¹⁷ IISS, *The Military Balance 1989-1990, 1990-1991*, p.101, and 1990-1991, p.105.

systems. Significantly, all four categories expanded markedly between the first and second Gulf war. In addition, Iraq managed to maintain or expand its defence industrial base and continued the development and production of extended-range versions of the Soviet Scud-B missile and its nuclear, chemical and biological arsenals.

The basic question, as Kamran Mofid put it, is how could “*a country which has lost much of its oil revenues and all of its foreign reserves and has gone through a seven-year war end up with so much more military hardware than at the beginning of the war?*”¹⁸ Early in the war, other Arab countries, most notably Saudi Arabia and Kuwait, financed Iraq’s war efforts to the tune of \$1 billion a month. At that rate, they risked depleting their own financial reserves. Therefore, from 1982 onwards, Saudi Arabia and Kuwait began exporting approximately 300,000 barrels a day on the behalf of Iraq.¹⁹ Under an agreement, Iraq was required to repay that oil and other loans in kind at some point in the future.²⁰

Other ways enabling Iraq to continue the war effort included attractive terms for loans from Western countries, easy rescheduling of payment procedures and extensive agricultural assistance. The US agricultural-credit programme, valued at \$500 million in 1986, allowed Iraq to import a wide range of American produce. No other country had received such assistance. Defaulting on these payments would have left the American taxpayer to foot the bill, while Baghdad could divert more funds to purchasing weaponry. However, most Western loans were short-term, which, with plummeting oil prices, caused a snowball effect wreaking havoc on Iraqi finances.

To summarize, in monetary terms, the war cost Iraq \$452.6 billion and left it with a growing debt of between \$80 and \$100 billion. Additionally, Iraq suffered an estimated \$67 billion damages to infrastructures.²¹ The opportunity cost, however, caused the Iraqi society the greatest suffering: money from other industrial sectors and services had been reallocated to the war effort. The structure of the Iraqi economy - few cross-linkages and investment based on governmental allocation of resources obtained from the export of crude oil - meant that other sectors of society had to undergo the consequences sooner than later. Indeed, in 1989 Iraq’s economy showed a negative growth of 15%.

Already the day after the end of the first Gulf war Kuwait increased its production of crude oil resulting in a steep drop in world market prices to \$15 per barrel. Each dollar per barrel less cost Iraq \$1 billion a year. The \$7 billion a year Baghdad risked

¹⁸ K. Mofid, *op. cit.*, 1990, p.89.

¹⁹ Saudi Arabia also paid directly for the Soviet weapons Iraq imported.

²⁰ T. Stauffer: *Economic Warfare in the Gulf*, American-Arab Affairs, n° 14, 1985; as quoted by K. Mofid, *op. cit.*, 1990, p.134. J. T. Haldane, *Oil: The Base of Iraq’s Economic Future*. Middle East International, n°369, 16 February 1990. p. 18.

²¹ J. Roberts, *Oil, the Military and the Gulf War of 1991*. The RUSI Journal, Vol. 136, n°1, Spring 1991. p. 13.

to lose because of Kuwait's policy equalled the annual amount it needed just to service its foreign debts.²² After a new OPEC agreement on production quotas early in 1989 the price per barrel stabilised around \$18. However, a year later, overproduction by mainly Kuwait and the United Arab Emirates caused the price to plummet to \$14.²³

OPEC's inability to check its members and thus to guarantee high and stable oil prices on the world market left President Saddam Hussein with a triple problem. 1. How does he relaunch the economy and development of his country? 2. How does he meet the social needs of the Iraqi population, and in particular of those who have suffered badly in the war? 3. How does he sustain the huge armed forces, equipped with sophisticated weaponry? His greatest difficulty of all was how to address these three questions simultaneously with a bankrupt economy.

Political motives for the Kuwait invasion

The invasion of the emirate on 2 August 1990 followed a failed policy of coercion from which the Ba'ath leadership, in view of its other but intertwined political agendas, could not back down. The policy of coercion had two major thrusts. On the one hand, Iraq used formal diplomatic channels, such as OPEC, the Arab Cooperation Council, the Arab League and bilateral negotiations, to assert its leadership in the Arab world and thus to press for adjustments in oil production quotas. On the other, it struck populist pan-Arab themes so that the masses would pressure their governments to support Iraq's causes.

The drive for Arab leadership began soon after Saddam Hussein's usurpation of the presidency and his push to ostracise Egypt for signing the Camp David Accords. Two years into the war with Iran, Iraq expanded the legitimation for the conflict by projecting itself as the defender of the Arab world from the Islamic revolution. Initially, Kuwaiti and Saudi financial injections in the war effort had aided the Ba'ath leadership to organise daily life as normally as possible while increasing military spending. However, in 1982, after the two Gulf states had suspended their financial

²² Iraq made the claim in a memorandum submitted to the Arab League on 16 July 1990. Document as reproduced in: P. Salinger; E. Laurent, *Guerre du Golfe. Le Dossier Secret*. Olivier Orban, Paris, 1991, at p. 282.

²³ Kuwait, which received most of its income from investments abroad and was thus less dependent on world oil prices, advocated a policy of gaining a larger market share for OPEC through lower prices. However, for smaller producers or countries unable to increase production, such as Iraq, such a strategy verged on economic collapse. (N. Jaber, *What Could Come Out from Jeddah*. Middle East International, n°381, 3 August 1990. p. 5.)

aid and started to sell oil on the behalf of Iraq, Baghdad was incurring a sizeable opportunity cost as it had to divert ever more funds from social and economic projects to the war effort. Iran lent credence to the shifting legitimation by refusing the 1982 Iraqi peace offer and declaring the overthrow of President Saddam Hussein's regime as its primary war aim. Sudden harsh Western criticism over Iraq's persecution of the Kurds in the autumn of 1988 similarly led Arab states to rally to Baghdad's side.

Iraq's imagery of a bulwark against Iran's religious expansionism - only too happily endorsed by the conservative monarchies during the war - was the foundation of its claim to Arab leadership. It created an erroneous expectation that the Arab brethren would cancel the war debts. Any act to the contrary the Ba'ath leadership viewed as an insult. There were to be many after the 1988 cease-fire.

At a summit meeting in the Jordanian capital on 24 February 1990, which was supposed to celebrate the Arab Cooperation Council's first anniversary, president Saddam Hussein, in an acrimonious discourse, claimed Arab leadership.²⁴ He noted the dwindling Soviet influence in world politics and concluded that the United States would be able to dictate oil prices to suit its own interests and Middle East policy, especially regarding a settlement of the Israeli-Palestinian conflict. He was particularly terse towards Egypt, an American client state, apparently causing the Egyptian president to leave Jordan prematurely. However, fearing such an Iraqi move, Hosni Mubarak with the tacit support of the Gulf monarchies, had weeks earlier accepted an overture by Syria, which had supported Iran in the 1st Gulf war, to balance Iraq's military might.²⁵ Saddam Hussein also turned on the oil-producing Gulf monarchies, whom he considered in the American sphere of influence, for their pricing policy. A week later, in a telephone conversation with King Hussein, he reportedly laid out the three issues that required immediate resolution:²⁶

- the border dispute with Kuwait, especially regarding the large Rumaila fields, from which Kuwait was illegally extracting oil. On the eve of the invasion of Kuwait, Iraq was to demand a payment of \$2.4 bn in compensation.²⁷
- the leasing of the Kuwaiti islands of Warba and Bubyah, which were vital to secure Iraq's unhindered access to the Gulf; and
- the remission of the war debts.

The following weeks Iraq provoked one crisis after the other with the West and Israel. On 15 March the British journalist Bazofft was executed on spying charges. A British nurse who was captured with him near a missile plant was imprisoned. In-

²⁴ P. Salinger; E. Laurent, *op. cit.*, 1991, pp. 13-16. L. Andoni, *The ACC Summit: Saddam's Bid for Leadership*. Middle East International, n°370, 2 March 1990. p. 12.

²⁵ J. Muir, *Why Asad Turned to Cairo*. Middle East International, n°366, 5 January 1990. p. 3.

²⁶ P. Salinger; E. Laurent, *op. cit.*, 1991. p. 20.

²⁷ N. Jaber, *op. cit.*, 3 August 1990. p. 5.

stead of listening to Western pleas for clemency, Saddam Hussein rallied and obtained support from Saudi Arabia and the smaller Gulf emirates as well as many Arab organisations including the Gulf Cooperation Council and the Arab League. Although formally the support was given on legal grounds of non-interference in Iraq's internal affairs, many a question was raised on why Baghdad was bent on creating a prolonged international issue. The object was double. On the one hand, the Ba'ath leadership projected the terror that ensured its domestic power onto the international arena in its bid for regional dominance. On the other, the incident allowed it to present itself as victimised by the West, thus ensuring popular support throughout the Arab world.²⁸ This double track Saddam Hussein continued in a speech on 1 April, which was widely interpreted as a direct threat to Israel (see *infra*). The main thrusts were a claim to Iraq's technological and military superiority, which offered a credible deterrent to Israel's aggression, and a decrying of Arab humility. Meanwhile he also championed the Palestinian cause, a move warmly welcomed by the PLO. Iraq's coercive diplomacy met its greatest success at the Baghdad emergency summit held on 28-30 May where, it seemed, the Gulf monarchies were forced to toe the Iraqi line. Among other things, it compelled the Gulf Arab states to view the immigration of Soviet Jews into Israel as a security threat and to face the political, economic or military consequences. The Palestinian issue featured high on the agenda and resolutions were adopted which might compel sanctions against any country hostile to Palestinian rights. The summit resolutions referred to a joint Arab defence pact, which envisaged obligations for Egypt too, despite its Camp David agreements with Israel. Iraq also managed to discredit the United States as an honest mediator in the Middle East.²⁹ Baghdad thus succeeded in projecting itself as leader of the Arab nation by emphasising the Arab-Israeli conflict and in being accepted as Israel's counterweight in the regional balance of power.

President Hussein's victory was notwithstanding not an absolute success. He had mobilised Arab countries against the West regarding Iraq's internal affairs and in support of the Palestinian cause, but obtained no succour for his economic plight. He failed in convincing the other leaders that his war debts were pan-Arab debts. In an unscheduled closed meeting during the Baghdad Conference, in which the leaders were forbidden to bring in even their advisors, Saddam Hussein bitterly attacked Saudi Arabia and Kuwait for their oil policies and, meaningfully, never mentioned Israel nor the United States. He reportedly made it absolutely clear that he considered the situation an aggression with as sole purpose the enslavement of the Iraqi people.³⁰ Some six weeks later, on 16 July, the Arab League met in Tunis. Tariq

²⁸ N. Jaber, *War of Words after Bazoft's Execution*. Middle East International, n°372, 30 March 1990. p. 9.

²⁹ L. Andoni, *Success for Hussein and Arafat*. Middle East International, n°377, 8 June 1990. pp. 4-5.

³⁰ P. Salinger; E. Laurent, *op. cit.*, 1991, pp. 46-51.

Aziz, Iraq's foreign minister, handed a memorandum to the organisation's secretary-general, which amounted to nothing less than a declaration of war against Kuwait. Depicting the emirate's oil policy as a major crime against the supreme interests of the entire Arab nation and, in particular, as an intentional strategy to weaken Iraq, the document also accused Kuwait of having established an infrastructure inside the Iraqi border to extract oil from Rumaila. Kuwait had ignored any call since the beginning of the year to find a negotiated solution. The memorandum concluded by calling for aid comparable to the US Marshall-plan to rebuild the Iraqi nation.³¹ Thereafter, the rhetoric escalated and a final attempt to diffuse the crisis at a meeting in Saudi Arabia on the eve of the invasion ended acrimoniously. For seven months the domestic economy, oil prices and the border dispute over Rumaila had dominated Iraq's political agenda with all stratagems geared to a single goal.

The second thrust consisted of the Ba'athist leadership's public posturing and direct appeal to the Arab masses over the heads of their governments, an extra effort to shore up pan-Arab support against the recalcitrant Gulf monarchies. Threats against Israel, vocal support for the Palestinian cause, open defiance of the West and the United States in particular, and the evocation of pan-Arab emotions all served Saddam Hussein's single goal: finding a solution to Iraq's economic collapse. As will be discussed below, Iraq's chemical arsenal and other unconventional weaponry played a crucial role in making Hussein's populist claims credible. The real question was whether Israel was the actual object of the threats.

Legitimising chemical weapons

Any threat with chemical weapons Iraq made had to be taken seriously. It possessed a proven capability and had displayed the political will to employ such weapons in defiance of international laws of war and humanitarian law. By the end of the first Gulf war it had developed a variety of delivery means, including, it was widely believed, a warhead for a ballistic missile giving it the potential to strike at noncontiguous countries or distant heartlands. In a framework of nuclear deterrence developed in the East-West context, many viewed Iraq's armament drive as a quest for a chemical first-strike capability. Rhetoric from Baghdad was thus interpreted accordingly.

The first Gulf war ended in an ambivalent way. While the international community was edging Iran and Iraq closer to the negotiating table during the summer of 1988, it sacrificed the moral authority of the 1925 Geneva Protocol to preserve the peace process. In May 1987, the Security Council had adopted Resolution 612, which envisaged the immediate investigation of allegations of chemical warfare by

³¹ Document as reproduced in: P. Salinger; E. Laurent, *op. cit.*, 1991. pp. 279-288.

one of the warring parties and offered guarantees to prevent repetition. The second part remained a dead letter, especially regarding claims of use by Iraq's Kurdish minority. On 26 August 1988, six days after the cease-fire had been called, the Security Council again condemned the use of chemical weapons in the analogous Resolution 620, but failed to name Iraq. September 1988 was to prove a crucial month for developments in the next couple of years. On the 16th, Iraq refused a United Nations investigation team access, defying Resolution 620. This induced the United States to sound out other countries on an international conference on chemical warfare, without singling out any state.³² Fear was great at the time that the disarmament negotiations in Geneva would falter.

The ambiguity developed along two tracks. On the one hand, Israel interpreted the lack of response from the international community as a source of justification for the Arabs to pursue chemical armament programmes. On 20 July 1988 Defence Minister Yitzhak Rabin warned Arab countries not to use chemical weapons against Israel, or they would be hit back a hundred times harder.³³ This followed Israeli threats in January to take out Syrian chemical-weapons facilities,³⁴ and low-level practice bombing runs in April, which US intelligence sources interpreted as preparations for the attack.³⁵ Later, the international press widely reported civil defence exercises. Although Arab countries, and in particular those neighbouring Iraq, felt uneasy about Iraq's military might, the Israeli deterrence rhetoric and hints of nuclear retaliation probably caused them to close ranks, at least at the declaratory level. President Saddam Hussein would eventually exploit Israel's susceptibility to external threats in his bid for Arab leadership.

The second track of ambiguity follows from the joint Arab, Soviet, Western, and US support for Iraq against the exportation of Iran's Islamic Revolution. The unfolding of the debate between the US Congress that favoured strong sanctions against Iraq and the Reagan Administration who opposed it contributed to the widening rift between the Arab and Western world. Western criticism and accusations stunned the political leaders in Baghdad, who issued strong denials about chemical warfare against the Kurds. Iraqi Foreign Minister Tariq Aziz stated that Iraq "*respects and abides by all provisions of international law and international agreements accepted by the international community,*" which also included the 1925 Geneva Protocol.

³² D. Oberdorfer, *US Tests Waters for Conference on Poison Gas*. The Washington Post, 21 September 1988. p. 23.

³³ Jerusalem domestic radio, 20 July 1988, as reported in *Arms Control Reporter*, November 1988, p. 704.B.298.

³⁴ The Chief of the Soviet Chemical Troops, Vladimir Pikolov, visited Syria on 24 March 1988, leading to US speculation that the USSR was involved in a renewed Syrian chemical warfare effort. Some two weeks later, Syria was reported to have completed loading and fielding the first chemical warheads for their Soviet-built missiles. (*Arms Control Reporter*, April 1988, p. 704.B.276)

³⁵ *Arms Control Reporter*, May 1988, p. 704.B.279.

Other Arab states expressed grave doubts about the US motives for suddenly accusing Iraq while keeping quiet for years. They also praised Iraq for her renewed commitment to the Geneva Protocol.³⁶ These countries based their appraisal mainly on comments by Turkish doctors and officials that they had not seen victims of chemical warfare among the thousands of Kurdish refugees in Turkish camps. The Arab group in the United Nations protested against the dispatch of a UN investigative team to northern Iraq, claiming that this is interference in the domestic affairs of an Arab member of the United Nations. Baghdad quickly seized the opportunity and applauded the Arab support as an “*important qualitative move in contemporary Arab life.*” The stance would enable the Arab nation to face the dangers threatening its existence and the Iraqi victory “*had laid down the basis for a new Arab state after years of deterioration, disintegration and absence of Arab solidarity.*” Baghdad portrayed the criticism as yet another American-Zionist plot.³⁷

In two seemingly contradictory ways, the Reagan Administration was to reinforce Iraq’s linking of chemical weapons and pan-Arabism. First, while the debate over sanctions against Baghdad was raging, the Americans began expressing their concern over a large chemical-weapons production plant near Rabta in Libya. In this way, they allowed the Iraqi leadership to portray Libya as yet another victimized Arab country. Second, the Administration strongly opposed the sanctions proposed by the Senate and the House of Representatives. The State Department welcomed Iraq’s vow to abide by the 1925 Geneva Protocol³⁸ although earlier it had issued a statement, saying that sanctions were premature and that it preferred strong international diplomatic pressure. Press reports, however, also mentioned the strong US economic interests in Iraq. Agricultural exports had increased to about \$1 billion plus \$1.8 billion credit guarantees authorised by the government. Iraq also purchased about \$100 million worth of goods with potential military applications.³⁹ Precisely then Secretary of State Shultz was in Baghdad accusing the Iraqis of waging chemical warfare against the Kurds.⁴⁰ A similar incident was to occur in April 1990, when

³⁶ (-), ‘Source’ *Voices Regret over Anti-Iraq Campaign*. Broadcast on Manama WAKH (Bahrein), 13 September 1988. Translated from Arabic in FBIS-NES-88-180, 16 September 1988. p. 17. Editorial, *The Wolf Howls Again*. Al-Anba (Kuwait), 11 September 1988. pp. 1+30. Translated from Arabic in FBIS-NES-88-180, 16 September 1988. p. 18. Editorial, *A Second Front!* Al-Ahram (Cairo), 13 September 1988. p. 7. Translated from Arabic in FBIS-NES-88-180, 16 September 1988. p. 11. Editorial, *Sanctimonious Power Play*. The Jordan Times, 15 September 1988. p. 4. As quoted in FBIS-NES-88-180, 16 September 1988. p. 34.

³⁷ Iraqi News Agency, *Paper Lauds Arab Stand on US Senate Action*. 15 September 1988. Article in Al-Thawrah (Baghdad), as summarised in FBIS-NES-88-180, 16 September 1988. pp. 26-27.

³⁸ D. Oberdorfer, *op. cit.*, 21 September 1988.

³⁹ R. S. Greenberger, *House May Soften Senate-Cleared Curbs Against Iraq for Alleged Poison Gas Use*. Wall Street Journal, 16 September 1988. p. 22. D. Hess, *House Votes Sanctions on Iraq for Chemical-Weapons Use*. Philadelphia Inquirer, 28 September 1988. p. 22.

⁴⁰ R. S. Greenberger, *op. cit.*, 16 September 1988.

the State Department opposed trade sanctions after Iraq had repeatedly threatened Israel with chemical attacks.⁴¹

This confusing approach towards Iraq was to continue right up to the invasion of Kuwait. By the end of September 1988, both the Senate and the House of Representatives had voted sanctions following a damning report from Congressional staff members who had visited the Kurdish refugees in Turkey.⁴² However, both chambers failed to agree on the final wording of the bill before the recess. President Reagan, who was firmly opposed to any sanctions, thus did not have to veto it. Despite promises to the contrary, the bill was not reintroduced the next year. Also sending out confusing signals were Pentagon claims that most of the Kurds killed in Halabja in March 1988 fell victim to Iranian rather than Iraqi chemical attacks. Initial assertions first appeared in the press at the end of March and early in April 1988.⁴³ Further reports, quoting a Pentagon study, gave more detail in May 1990.⁴⁴ President Hussein, who one month earlier had threatened to burn half of Israel, could not have missed the political impact. The United States cast doubt on Baghdad's responsibility for the attack that worldwide has come to symbolize Iraqi war atrocities.⁴⁵ Together with the American repeated refusals to impose economic sanctions against Iraq for its chemical-weapons use and threats, the fresh assertions must have increased the Iraqi president's belief in the legitimacy of possessing these weapons.

Chemical weapons in Iraq's declaratory policy

Between August 1988 and the invasion of Kuwait in August 1990, Iraq made three major statements about chemical weapons or what was widely interpreted as regarding chemical weapons. The first was deputy prime minister and foreign minister Tariq Aziz's address to the Paris Conference on 8 January 1989, the second the

⁴¹ Press reports, as summarized in *Chemical Weapons Convention Bulletin*, n°8, June 1990, p.16, entry: 20 April.

⁴² *Chemical Weapons Use in Kurdistan: Iraq's Final Offensive*. A Staff Report to the Committee on Foreign Relations, United States Senate. Committee Print, 100th Congress, 2nd Session, Washington, October 1988.

⁴³ State Department spokesman Charles Redman at a press conference on 23 March 1988, as summarised in *Arms Control Reporter*, April 1988, p. 704.B.275; D. B. Ottaway, *Chemicals and Missiles Alter Middle East Warfare*. International Herald Tribune, 6 April 1988. p. 2.

⁴⁴ P. E. Tyler, *Iran, Too, Faulted in Gas Attack on Kurds*. International Herald Tribune, 4 May 1990. pp. 1+4.

⁴⁵ The assertion is also elaborated in A. H. Cordesman, *Weapons of Mass Destruction in the Middle East*. Brassey's, London, 1991. p. 91. The author further claims that only 100-200 people were confirmed killed by poison gas, thus further eroding the symbolism of the attack which was founded on the 15,000 mostly civilian victims, including 5,000 fatalities.

official statement submitted to the Canberra Conference in September 1989, and finally, President Saddam Hussein's infamous radio address on 1 April 1990.

Tariq Aziz's statement to the Paris Conference⁴⁶ set out the major themes that were to recur over the next year and a half. The central element was Iraq's view that "any call for a total ban on chemical weapons must be coupled with a call for a complete ban on nuclear weapons." Referring extensively to the first UN Special Session on Disarmament in 1978, he recalled the final document's appeal to nuclear-weapon states "to adopt effective steps to ensure that nuclear weapons or the threat to use them will not be employed against the states which do not possess nuclear weapons." The argument echoed many a debate regarding privileges some industrialised states had obtained under the Non-Proliferation Treaty and were denied to developing countries. Aziz related the argument to the Middle East. He accused Israel directly of having introduced nuclear weapons into the region and possessing chemical weapons as well as missiles that can reach many important Arab cities. Aziz was thus implying that Iraq would not dismantle its chemical arsenal unless Israel destroyed its nuclear capability. Here he reiterated the affirmation early in the speech that Iraq possessed chemical weapons,⁴⁷ which he legitimised by noting that "unstable and temporary peace compels countries to be ready all the time to protect their security and sovereignty within the framework of their right to self-defence." Aziz continued that Iraq was looking forward to a world system without a need for using any sort of weapons. "From this premise, when we possess a weapon, we do not want to use it against anybody. The aim of possessing this weapon is to protect ourselves from our enemies." He added - virtually a verbatim repetition of a statement made on 17 September 1988, when denying international accusations of waging CW against the Kurds⁴⁸ - that Iraq would abide by all rules of international and humanitarian law.⁴⁹ In other words, Iraq maintained a chemical arsenal for deter

⁴⁶ Iraqi News Agency, *Tariq Aziz Addresses Chemical Weapons Conference*. 8 January 1989. Speech translated from Arabic in FBIS-NES-89-005, 9 January 1989. pp. 31-33.

⁴⁷ In an interview with the French newspaper *Le Figaro*, Tariq Aziz said that Iraq had the means of defending itself against the Iranian aggression and felt no culpability regarding this period. (C. Lorieux, *Désarmement nucléaire et chimique: un objectif parallèle*. *Le Figaro*, 13 January 1989.)

⁴⁸ Iraqi News Agency, *Foreign Minister Denies Chemical Weapons Use*. 17 September 1988. Translated from Arabic in FBIS-NES-88-181, 19 September 1988. p. 17. It should be noted, however, that the text did not contain a direct denial of the accusations, but an affirmation of Iraq's adherence to international agreements, including the 1925 Geneva Protocol. In the strict sense, no international treaty prohibits the use of chemical weapons against non-state actors, such as Kurdish guerrillas. An outright denial had been issued two days before by the Iraqi defence minister, Adnan Khairallah. See, P. E. Tyler, *Iraq Defiant on Charge That It Gassed Kurds*. *International Herald Tribune*, 16 September 1988. p. 5. W. K., *Bagdad weist Vorwürfe Zurück*. *Frankfurter Allgemeine Zeitung*, 16 September 1988.

⁴⁹ At a press conference afterwards, Tariq Aziz added that Iraq would not transfer whatever CW experience it had gained during the war to other countries. (R. Koven, *Nations Back a Chemical Weapons Ban*. *Boston Globe*, 12 January 1989. p. 1. E. Mortimer, *Iraq Pledge on Chemical Weapons Expertise*.

rence purposes and couched the policy in terms not unlike those used by NATO member states to rationalise the continued deployment of nuclear weapons.

If the policy declaration matched military doctrine, then Iraq managed a remarkable transformation of its chemical arsenal's purpose in less than six months. Throughout the first Gulf war the Iraqi army had employed chemical munitions in tactical situations or as an anti-guerrilla weapon. Despite its ability to terrorise Teheran with domestically developed extended-range Scud missiles, which - it was soon realised - could also reach most of Israel, Iraq had no proven strategic chemical capability. However, rumours that Imman Khomeiny swallowed the poisoned pill of a cease-fire because of fear for missile attacks with chemical warheads on Iranian population centres lent further credence to the reality of the threat. Many in the West accepted the essentials of the conjecture without much further scrutiny,⁵⁰ more so as Arab governments strongly supported Iraq's stance.

In a brief plenary statement to the Government-Industry Conference Against Chemical Weapons, held in Canberra between 19 and 22 September 1989, the head of the Iraqi delegation, Dr. Rahim Abid Al-Kital,⁵¹ repeated his country's support for the Geneva Protocol and echoed a general Third-World view regarding the rights of all states to pursue peaceful developments in the chemical industry. Again, Iraq expressly linked chemical-weapon disarmament with the necessity to ban nuclear weapons and concluded: "*We would like to restate here the CWC should have effective security guarantees for all states not only against the use of chemical weapons but also against the use or threat of use of nuclear weapons and other weapons of mass destruction. This is essential in our region in the Middle East, a region marked with conflicts and disputes.*" In an oblique way, Iraq thus announced that it would not join the CWC if the issue of nuclear disarmament was not addressed simultaneously. The argument is not unlike the one often heard in the North-South context, but the implied reference to Israel's nuclear capability narrows the focus down.

The continuing linkage with Israel's nuclear capability is of particular importance. Traditionally, this has been interpreted as part of Iraq's deterrence posture aimed at avoiding a repetition of Israel's 1981 attack against the Osirak nuclear reactor. However, we wish to argue that Iraq's rhetoric was just as much, if not even more, for Arab consumption:

1. Iraq displayed the clear ambition to become the regional superpower. For more than any other reason, this motivated Iraq to invade Iran in 1980, which under the Shah had been the dominant geopolitical actor. During that

Financial Times, 12 January 1989. p. 2.)

⁵⁰ See, for instance, E. Cody, *Banning Toxic Arms: Without Arabs, No Pact*. International Herald Tribune, 13 January 1989, pp. 1+2.

⁵¹ Document GICCW/P/51.

war, Iraq had also gone to great lengths to champion Arab causes as earlier it had championed Egypt's expulsion from the Arab League after the signing of the Camp David accords. However, as argued above, the Iraqi president followed a very narrow international political agenda between the 1988 cease-fire and the 1990 invasion of Kuwait, his main worry being the dire economy and the feared domestic social unrest. The oil-producing Arab states were the prime focus of his coinciding external and internal security concerns.

2. Verbal attacks against Israel have a unifying effect on the Arab world. As with so many issues, it is always far easier to be together against than for something. The elocutionary quality is important: in both the six-day war in 1967 and the Yom Kippur war in 1973 Iraq committed but a token force to the Arab military operations.
3. Israel always was and will remain a rewarding country for verbal attacks. President Saddam Hussein could count on an Israeli reaction, which enhanced the overall threat perception among all Arab states and consequently underlined the correctness of his assertions.
4. The presence of an external threat was also good for domestic consumption. It helped to justify the population's hardships and legitimised continued high defence efforts despite the cease-fire with Iran.

The four considerations provided the overall context for Saddam Hussein's infamous speech.

Recorded on 1 April 1990 at a ceremony honouring the ministers of defence and of industry and military industrialisation as well as members of the Armed Forces General Command and broadcast on Baghdad Radio the next day,⁵² the Iraqi president claimed halfway through the long speech:

“[...] We do not need an atomic bomb. We have the binary chemical. Let them take note of this. We have the binary chemical. According to our information, only the United States and the Soviet Union have it. They still have not reached an agreement with respect to its disarmament. It exists in Iraq. So that the Iraqis may know, it existed during the last period of war - I believe during the last year of the war. It was there. In spite of this, we did not use it against the Iranians. We did not use it against the Iranians. We said that the weapons we had were more than enough, and hoped that God would enable us to liberate our land without it.

“Why then do we need the atomic bomb? [...]”

Near the end, he said:

⁵² Baghdad Domestic Service, *President Warns Israel, Criticizes US* Translated from Arabic in FBIS-NES-90-064, 3 April 1990. pp. 32-36.

“[...] Why did the English not remember human rights when they partitioned Palestine [...]? Only now do they remember human rights - regarding the spy Bazoft. The English have not spared a nation on earth from their problems. They charted maps and left things unsettled to create problems. Only Bazoft is a human being. But when Bazoft passes intelligence to the Zionist entity in order for it to accurately hit a plant and kill maybe 200 or 300 people ... These do not count as human beings and the 17 million have no right to defend themselves.

“Look, Iraqis and Arabs, look at how you are regarded. You are not considered human beings. Only their agents and spies are looked upon as humans. According to them, they are more entitled to rights than an entire people or nation. [...] They will be deluded if they can imagine that they can give Israel a cover in order to come and strike at some industrial metalworks. By God, we will make fire eat up half of Israel if it tried against Iraq.

“Everyone must know his limits. Thanks be to God, we know our limits and we will not attack anyone. Neither will we become conceited or forget our humanitarian responsibility, or our national and pan-Arab responsibilities. However, the others must also not forget their humanitarian responsibilities. Anyone who tries to belittle Iraq - and we will not say any more than what we have said - will have only himself to blame. This time we will deal with them in this way.”

The allusion to the dual chemical and the imagery of fire eating the half of Israel in one speech caused consternation in the West and Israel, not in the least because both items were interpreted in relation to each other. However, given the number of other topics covered between the two items in the lengthy speech, did the Iraqi president hint at striking Israel with chemical weapons?

The first component is what has been translated as ‘binary chemical’,⁵³ in Arabic *al-kimawi al-muzdawij*. Arabic has no equivalent term for ‘binary,’ which means that the concept was immediately subject to a technical interpretation and at that a not entirely surprising one in view of the heated debates in the United States and NATO on the American binary chemical-weapons production programme.⁵⁴ An article in *Defense and Foreign Affairs Weekly* stated that the actual nature of the dual chemical President Hussein referred to is unknown and offered seven possible interpretations, some more plausible than others:⁵⁵

⁵³ (-), *Iraqis Surprise Analysts*. Jane’s Defence Weekly, Vol. 13, n°15, 14 April 1990. p. 686.

⁵⁴ Perhaps even more surprising, in Israel the Arab term was also translated into a Hebrew equivalent of ‘binary gas.’ The language does not have an exact equivalent of ‘binary’ in the American sense and translations of Hussein’s speech were done directly from Arabic into Hebrew. Yet, an article in Hebrew commented: “*Husayn also created a surprise yesterday when he revealed he has binary gas: namely, a lethal gas made up of ‘innocent’ materials which are stored separately. The fusion of these materials into a lethal gas is done in the bomb or the missile warhead after they have been launched toward their targets.*” (R. Ben-Yishay, *One Ought to Believe Him*. Yedi’ot Aharonot, 3 April 1990. Translated from Hebrew in FBIS-NES-90-065, 4 April 1990. pp. 29-30.)

⁵⁵ (-), *Iraq’s Chemical Threat: Beyond the Rhetoric*. Defense and Foreign Affairs Weekly, 16-22 April 1990. p. 3.

1. Iraq possesses the means to deliver both nerve agents (lethal) and mustard agents (incapacitating).
2. Iraq possesses the means to deliver both chemical and biological agents.
3. Iraq possesses a weapon that contains a nerve agent and a blistering agent in separate compartments, containers or submunitions, thus creating a dual chemical weapon.
4. Iraq is mixing two chemical agents together to achieve some perceived advantage.
5. 'Dual chemical' refers to the dissemination of mustard as both a finely divided aerosol for lethal effects and as large droplets for long-term incapacitation.
6. 'Dual' may refer to a binary agent of the US variety wherein two less toxic chemicals are mixed within a munition, in flight, to produce a highly toxic nerve agent.
7. 'Dual chemical' may refer to a compound that, when mixed with an alcohol, produces both a nerve agent and phosgene oxime, a powerful blistering agent.

The article concluded that "*while each of the preceding seven 'dual chemical' weapons are possibilities and deserve careful scrutiny, it seems likely that when the smoke finally clears, President Hussein will have accomplished exactly what he probably set out to do, namely, deter a strike against Iraq's nuclear related facilities and force Israel to spend scarce money on civil defence.*" Although the article did not clarify why 'dual chemical' and Israel should be associated, it demonstrated that the commonly used translation of 'binary chemical' is too narrow an interpretation.

However, had the precise meaning of the term in Arabic been known, this would have merely specified a (novel?) type of weaponry in Iraq's chemical arsenal but not why it would have posed an enhanced threat to Israel. Since the end of the 1st Gulf war in 1988 both Israel and the Arab states have introduced modern weapon systems into the region capable of hitting population centres and military targets beyond the horizon with greater precision, thus continually influencing and altering the balance of terror.⁵⁶ Semantic analysis of the speech, therefore, may provide some insight into what President Saddam Hussein actually meant.

First, the term certainly hinted at Iraq's mastery of high technology. This is consistent with the reference to the United States and the USSR, the militarily and technologically most advanced countries. In that sense, the term need not denote a particular weapon system; it served a different function. It also underscored the chemical arsenal's increasingly political role as a symbol of Iraq's Arab leadership, as an instrument of deterrence and coercion and as a trump card at peace or disarmament

⁵⁶ Z. Shiff, *The New Balance of Deterrence*. Ha'aretz, 9 April 1990. Translated from Hebrew in Middle East International, n°374, 27 April 1990. pp. 20-21. Y. Sayigh, *The Middle East Strategic Balance. 1. Putting It into Perspective*. Middle East International, n°376, 25 May 1990. pp. 15-16. P. de La Gorce, *La défense israélienne en état d'alerte*. Le Monde Diplomatique, September 1990. p. 12.

negotiations. In all three areas, the term aimed at placing Iraq on an equal footing with the superpowers. Saddam Hussein's speech thus confirmed what Iraq had previously declared at the Paris and Canberra Conferences.

Second, the passage made no reference at all to Israel. Quite on the contrary, Hussein repeated the phrase "*It exists in Iraq*" and juxtaposed it with "*So that the Iraqis may know, [...]*." In other words, the paragraph contained an important message for domestic consumption, namely, the Iraqis need not suffer an inferiority complex because they are among the world's leaders. Moreover, these phrases were also juxtaposed with the declaration of the weapon's non-use against the Iranians. The president thus countered world opinion regarding Iraq's barbaric and inhumane modes of warfare. Yet, the reference enhanced the weapon's image of dreadfulness.

Finally, the paragraph is wedged into a discussion of international accusations that Iraq was pursuing an atomic-weapons programme. Only days before the speech US and British customs had successfully completed a sting operation in which nuclear detonators destined for Iraq were seized at London's Heathrow airport. Israel and the United States then reacted by calling for a strong stance against Baghdad. By 'admitting' to a terrible chemical weapon the Iraqi president declared that Iraq did not need the atomic bomb, thus refuting the allegations of nuclear-weapons research and production.

The remainder of the speech does not touch on chemical weapons until allegedly near the end when the Iraqi president promised that fire would eat up half Israel if it dared to strike against Iraq. The basic question of course is why 'fire' should refer to CW? This interpretation was essentially drawn from a brief summary of Hussein's speech by the Iraqi News Agency that placed both parts in close apposition: "*President affirmed: [...] Whoever threatens us with the atomic bomb, we will annihilate him with the binary chemical.*"⁵⁷ This version was widely quoted in the international press.⁵⁸

The already cited article in *Defence & Foreign Affairs Weekly* quoted President Hussein thus:

⁵⁷ FBIS-NES, 3 April, as quoted in *Chemical Weapons Convention Bulletin*, Issue n°8, June 1990, pp. 13-14 at entry 1 April.

⁵⁸ For instance: A. Cowell, *Baghdad Boasts of New Arms*. *International Herald Tribune*, 3 April 1990. pp. 1+7. D. Williams; N. B. Williams Jr., *Mideast Edges into Balance of Terror Mode*. *Los Angeles Times*, 4 April 1990. pp. A1+A8. Editorial, *A Crude Iraqi Threat*. *International Herald Tribune*, 5 April 1990. p. 4. A. M. Rosenthal, *Iraq's Threat Is as Clear as 'Mein Kampf'*. *International Herald Tribune*, 6 April 1990. p. 5. A. Cowell, *Iraq's Resurging Belligerence*. *International Herald Tribune*, 6 April 1990. p. 6. D. Raviv; Y. Melman, *Iraq's Arsenal of Horrors*. *The Washington Post*, 8 April 1990. pp. B1+B4. M. R. Gordon, *Greater Threats from Lesser Powers*. *New York Times*, 8 April 1990. pp. E1+E3. L. Thurgood, *Chemical Arms Threat by Iraq*. *The Guardian Weekly*, Vol. 142, n° 14, 8 April 1990. p. 9. N. Jaber, *The Iraq-West Confrontation: Background and Reactions*. *Middle East International*, n°373, 13 April 1990. p. 3. P. Hiett, *Falling into Line*. *Middle East International*, n°373, 13 April 1990. p. 5.

“... By God we will make fire eat up half of Israel if it tried (to strike?) against Iraq. We do not need an atomic bomb, we have the dual chemical. According to our information, only the United States and the Soviet Union have it ... it (the dual chemical) exists in Iraq.”

In Israel, certain opinions reinforced the imagery associated with ‘fire’. One commentary stated that the speech left “*no doubt that in a future conflagration with Israel, Iraq will try to attack Israel’s civilian population with toxic gases.*”⁵⁹

Although such interpretations might possess validity, stating that Iraq would attack Israel with chemical weapons was probably not the Iraqi president’s intention. The most direct clue comes from a speech delivered to delegations of workers participating in a meeting of the Central Council of the International Confederation of Arab Trade Unions on 18 April.⁶⁰ Again the main theme was the Arab’s inferiority in Western eyes. He only referred once to chemical weapons in the long address: because the West suddenly found “*that the Arabs, too, can deal with modern arms to an excellent degree and that they actually have managed this technology and given it a national and pan-Arab identity [...] they have created such a great uproar over the binary chemicals. They thought they could strike us. [...]*” The next passage dealt at some length with Iraq’s missile capability and production base. No reference at all is made to chemicals. Further on, he stated: “*I would like to explain the characteristics of the weapons we have so you will not see any Iraqi excuses. Our missiles can reach Israel, and our planes also can reach Israel. [...]*” The speech continued on human rights issues and Western hypocrisy. Again, no hint of potential strikes with CW agents against Israel.

Indirect substantiation of the conclusion comes from the reported diplomatic missions by Saudi ambassador to Washington, Prince Bandar bin Sultan.⁶¹ Called to Baghdad by the Saudi King Fahd to act as an intermediary between the Iraqi and American presidents, Saddam Hussein reportedly told the ambassador that he was shocked by the American overreaction to his speech of 1 April. He claimed that he had been misunderstood and that no offensive strike had been meant, justifying his rhetoric with the explanation that he was addressing a meeting where passions were running high and that “*it never hurt in the Arab world to attack Israel.*” He further explained that “*Israel was the natural lightning rod for creating a crisis atmosphere,*” which he deemed necessary because “*the Iraqi people were getting relaxed.*” He also sent his personal assurances to President Bush that he would not attack the Jewish state. Whether the answer was a genuine expression of anguish or a justification *post hoc*, the Iraqi president admitted to his populist appeal to the Iraqi

⁵⁹ R. Ben-Yishay, *op. cit.*, 3 April 1990.

⁶⁰ Iraqi News Agency, *Saddam Comments on Binary Chemicals, Missiles*. 19 April 1990. Translated from Arabic in FBIS-NES-90-076, 19 April 1990. pp. 23-25.

⁶¹ B. Woodward, *The Commanders*. Simon & Schuster, New York, 1991. pp. 199-204.

and Arab masses. This fits in with the analysis made earlier of his political motives for the invasion of Kuwait.

On the other hand, the speeches of 1 and 18 April contained a strong dose of deterrence rhetoric. The passages on Israel held conditional clauses: only if Israel or the West struck first would Iraq carry out its threat. President Hussein aimed his statement of deterrence at two distinct levels. The first had a direct bearing on a quick succession of incidents in March 1990. On 15 March, Iraq hanged the British journalist Bazoft on charges of spying for Israel in preparation of surgical strikes, leading to an outcry in the West. Seven days later, Gerald Bull, a Canadian scientist helping Iraq with long-range artillery development, was shot dead in Brussels, allegedly by the Israeli secret service. The murder received little public attention. That same month the United States drew international attention back to the chemical-weapons factory in Libya. On 29 March, finally, the electronic capacitors were intercepted at Heathrow. According to sources close to the Iraqi president, the combined events led him to believe that there existed a global conspiracy against him and that an Israeli raid comparable to the one in 1981 was imminent.⁶² On the 30th, it was reported in the American press that Iraq had constructed fixed Scud-launchers in the western part of the country, a move intelligence sources interpreted as “*a blunt statement by Iraq that it will retaliate against any Israeli attack on its chemical weapons or nuclear installations.*”⁶³ The characteristics of the launchers, fixed rather than mobile, may be seen as a statement of deterrence rather than escalating hostility on Iraq’s part. The next day, the Iraqi president delivered his diatribe. There is no direct confirmation from the speeches nor circumstantial evidence from other sources that Iraq intended chemical retaliation against an Israeli preemptive attack.

On the second level, chemical weapons played the central role. While denying the quest for an atomic bomb, Iraq signalled that with its claimed advanced chemical weapons it had achieved strategic parity with Israel and thus a new regional balance of power comparable to the one in the East-West context. After the declarations at the Paris and Canberra conferences the previous year, Saddam Hussein closed the circle of transforming his chemical arsenal from battlefield into political weapons. On this level, he received widespread support from Arab countries, which, in doing so, recognised Iraq’s leadership in this area. However, as stated before, this leadership role did not help him address his central concern.

⁶² N. Jaber, *op. cit.*, 13 April 1990. p. 3. P. Salinger; E. Laurent, *op. cit.*, 1991. p.32. The Iraqi president also expressed his fears of a world conspiracy against him to a visiting delegation of American senators on 12 April, to which the Republican Senator from Wyoming, Alan Simpson, replied that there was no problem between him and the American people, but that the problem lay with an arrogant American press. The delegation’s leader, Senator Robert Dole concurred and denounced a highly critical report of Iraq broadcast by *The Voice of America*. (*Ibidem*, p. 39.)

⁶³ M. R. Gordon, *Iraq Said to Construct Launchers for Missiles in Range of Tel Aviv*. The New York Times, 30 March 1990. p. A4.

Concluding remarks

In the present presentation, we have attempted to interpret the significance of Iraq's chemical threat in the context of the broader political and strategic rivalry in the Middle East. A decision-making pattern much more complex than usually presented has emerged. During the two years between the two Gulf wars, the Ba'ath regime's internal and external security concerns increasingly began to overlap as a consequence of the country's economic collapse. Iraq's proven chemical capability and known willingness to use it on the battlefield played an important role in limited areas on different levels of its overall scheme to obtain massive Arab economic aid. On the strategic level, chemical weapons supported Iraq's claim to Arab leadership because it was welcomed by other Arab states as a deterrent to Israel's presumed nuclear arms. This was concretised in the formal positions adopted at international conferences on chemical warfare. On the tactical level, Iraq achieved this aim by presenting itself as the victim of Western interference after harsh criticism for the chemical attacks against the Kurds in the late summer of 1988. The resulting unconditional support by other Arabs enabled Baghdad to transform its battlefield chemical weaponry into a political instrument, which in turn made its claims on the strategic level credible. Later, Saddam Hussein used the credibility of his threat against outside powers to rouse popular Arab support inside and outside Iraq, thus further constraining opposition by other Arab leaders to his bid for leadership. However, while accepting Iraq's role on the international scene, other Arab leaders did not accept Baghdad's dictate on intra-Arab affairs. Here, chemical weapons had no compelling influence at all. It may even be argued that the whole strategy of coercion failed because the central protagonists were playing by different rules.

Nonetheless, the two years had an important impact on the overall security perception in the Middle East in general and on the future role of chemical weapons in the region in particular:

1. The lack of response from the Western world in particular to the use of chemical weapons by Iraq during the first Gulf war, and more important, against the Kurds after the cease-fire, contributed significantly to legitimising these weapons.
2. The inconsistency of the criticism, especially that being voiced in September 1988 and afterwards, confused the Arab countries. They interpreted the attacks along the US-Israeli versus Arab cleavage. Arab countries started backing Iraq unconditionally, thus effectively deflecting all further criticism of chemical warfare and armament.

3. Within this context, Iraq was able to transform its chemical arsenal into a political weapon. In the statement to the Paris conference in January 1989, Iraq added *de facto* reservations to its adherence to the Geneva Protocol. They were in terms of threat to overall security and *not* to retaliation in kind. Iraq conveniently used Israel to retain Arab support while this transformation was in process.
4. Given Iraq's economic predicament after the first Gulf war, its reliance on external sources for weaponry as well as its inability to regenerate its military-technological base and the high maintenance and servicing costs of modern conventional weaponry, the country would increasingly have to rely on cheaper chemical - and later nuclear - weapons to preserve and perhaps enhance its stature. This reinforced Iraq's need to turn chemical weapons into a political weapon.
5. When the world at large became concerned about Iraq's arsenals it focused entirely on the narrow military/strategic threat. It missed the point that meanwhile these weapons served completely different goals in Iraq's domestic and geopolitical policies. Therefore, the motives for President Bush's renunciation of CW under all circumstances, namely the nature of the Allied victory against Iraq and the technological superiority of the conventional weaponry,⁶⁴ were precisely the wrong ones. Moreover, they encouraged developing countries to acquire sophisticated conventional weapon systems.
6. The failure to recognise the shift in the function of chemical weapons has created a completely different psychological and geopolitical situation in the Middle East. There now is a polarisation over nuclear and chemical weapons, which may entail negative consequences when the CWC will be opened for signing or when the Nuclear Non-Proliferation Treaty comes up for review in 1995.

⁶⁴ United States Information Service, *US Will Forswear CW Use Once Treaty Is in Force*. USIS Presidential Text, EUR102. Embassy of the United States of America, Brussels, 14 May 1991. Editorial, *All These Fearful Arms*. International Herald Tribune, 17 May 1991. p. 8.

Jean Pascal Zanders

André Dumoulin

The Non-Use of Chemical-Warfare Agents During Operation Desert Storm

6

The fundamental question puzzling many observers after Operation *Desert Storm* was why the Iraqi forces had not employed chemical weapons, all the more so as the military imbalance during the 43-day campaign could apparently have favoured the use of these so-called weapons of mass destruction. Before the conflict, Saddam Hussein was believed to have built up a considerable chemical arsenal.

Previous speakers in this symposium have, very pertinently, reminded us of their use in the Iran-Iraq war and during the Iraqi operations against the Kurdish people. After the adoption of United Nations Resolution 687 on 3 April 1991, all doubt as to the extent of the Iraqi army's chemical capacity, even residual, after six weeks of Allied bombardments, disappeared. Saddam Hussein's various threats to initiate chemical warfare also led coalition commanders and the public to believe that he would use these weapons during the second Gulf war. Baghdad could have done so during the allies' initial air offensive, during its own air and ballistic missile attacks against military and civilian targets in Saudi Arabia and Israel, or, finally, during the land offensive. Yet, this did not occur.

So why did Saddam Hussein not use chemical weapons? So far, there has been no official declaration to solve this question. We therefore have to fall back on suppositions, hypotheses and motivations that may, successively and jointly, either directly or indirectly, explain their non-use. The following constraints may be advanced:

1. The anti-Iraq coalition's adoption of a disarming counter-force strategy using avoidance, consisting of methodical aerial bombardments of the nerve centres, the military-industrial complex and NBC sites, and also logistics, for several weeks.
2. The optimisation of measures designed to blind and disorganize the Iraqi C³I intelligence resources, required to target sites for chemical attacks in Israel, on the Arabian-Persian peninsula and, if necessary, in Turkey.
3. The specific organization of the coalition forces with the stress on extreme mobility and dispersion to upset any Iraqi attempt to organize a chemical counterattack.

4. The prominence given to principles of active and passive deterrence against chemical attacks.
5. The geophysical and meteorological environment, which did not favour a recourse to chemical weapons.
6. The technical inability to use improved *Scud* missiles fitted with a chemical warhead.
7. Finally, and without claiming this list to be exhaustive, we may include Iraq's complete loss of international support, which was already waning considerably, if it were to use chemical weapons on the ground.

We will now develop these different hypotheses that may explain, wholly or in part, why Baghdad did not resort to chemical weapons during the second Gulf war.

1. In the operational field, weaknesses of Iraq's military capability contributed to the Allied routing of this Middle-Eastern army. These were accentuated when confronted with the lack of pauses in combat at night, and because of the vulnerability of the command, control and communications centres (C³), the redundancy and extreme effectiveness of US and Allied electronic warfare systems, and also of the very weak anti-air response to the interdiction, attrition and zone saturation strikes.

As such, the transfer of the remainder of the Iraqi air force to Iran was certainly a consequence of the almost total destruction of nerve centres for communications and aerial surveillance. As Iraq lacked the latest systems in combat optronics, visionics and electronics, as well as strategic surveillance carriers such as satellites and AWACS, it was vulnerable from the outset to counter-forces strikes targeting chemical-weapon systems, factories and storage sites. The multidirectional and crushing blows dealt by the anti-Iraqi coalition's air forces, which went on unabatedly over the entire territory, thus disorganized the armed forces in general and the economic and military system for developing and deploying chemical weapons in particular. The air strikes, with their very rapid rhythm and incessant sorties, were so powerful that a new word was coined to describe the Gulf war: *hyperwar*. We may therefore suppose that the consequences were disastrous for the Iraqi chemical potential targeted by the allied air force. The chain of command became completely disorganized, worn down and reduced to no more than a shadow of its former self.

At Samarra, 70 km west of Baghdad, the sixteen sites of the Muthanna plant were largely destroyed. This destruction affected all laboratories for research and development and the production of sarin, tabun and mustard gas agents, intermediary equipment workshops and the filling-zones for the various kinds of ammunition. It also, though only partly, affected the chemical ammunition for short-range missiles, bombs and rockets, the rest remaining partly intact under the rubble.

2. Under such circumstances organizing effective counterstrikes that would have included chemical weapons launched from aircraft, by artillery or missiles would

have been difficult for the Iraqi General Staff. Moreover, land-based and airborne delivery systems would have experienced enormous difficulties in surviving. They were certain to be detected by reconnaissance satellites and aeroplanes when firing their weapons from a safe distance, or, at worst, from the moment they started moving. The Iraqi aircraft were also powerless at night. Finally, the Allied onslaught destroyed 2,600 out of the 3,110 pieces listed before the war of Iraq's main delivery system for chemical ammunition, artillery.

Even if the Iraqi forces had retained part of their chemical capability, the technological weaknesses of their intelligence gathering made it impossible for them to have a real time overview of the situation at or behind a front that, after 17 January, never really existed.

According to information gathered during a UN mission to Samarra in June 1991, the Iraqis probably kept to the same procedures for using chemical weapons as during the Iran-Iraq war. These procedures required commanders of air and land units to order the chemical ammunition they required depending on their needs and the planned missions at Samarra. The unused surplus was then immediately returned to the central depot, and not dispersed or stocked near the battlefield. The complete disorganization of the C³ and the logistical channels, as well as the anti-Iraqi coalition's aerial supremacy from the start of the conflict, probably doomed any attempt by the local military headquarters to carry out this procedure.

3. Being blind and deaf, Baghdad was not even able to mark major military targets for a possible chemical strike. Moreover, Allied units were completely dispersed, while displaying an impressive tactical and strategic mobility, intended to avoid presenting the Iraqis with targets that might justify possible employment of chemical agents. Even so, their use under such conditions would have had negligible military effects in any case disproportionate to international diplomatic repercussions and military retaliation.

4. The imbalance was even more noticeable as the most modern of armed forces, which made up the anti-Iraq coalition, had sufficiently effective NBC equipment and uniforms to enable them to get out of any contaminated zones. In this regard, the American forces had already been trained in chemical decontamination in the autumn of 1990 at the National Training Center at Fort Irwin in the Mojave desert in California. Unlike during the first Gulf war, Baghdad was not facing the often static Iranian soldiers who had little protection. Instead, they opposed a highly mobile military force with antichemical warfare equipment.

Besides this important passive deterrent, the anti-Iraqi coalition created psychological conditions for a public debate on the appropriateness of chemical or maybe even tactical nuclear retaliation for CW-weapon employment by Baghdad. There were also some proposals on the nondiscriminatory use of conventional weapons in

case Iraq crossed the classic threshold. If the Iraqis had used chemical weapons, then the coalition would have deliberately tried to kill the president and the ruling circle in a so-called decapitation strategy.

Confronted with this NBC defence capability and the possibility that the anti-Iraqi coalition would resort to weapons of mass destruction - to which US ambassador Stephen Ledogar had already hinted at in an address to the Conference on Disarmament in Geneva on 6 August 1990 - the leaders of the Ba'ath party probably considered initialization of chemical warfare disproportionate and ill-advised. This decision was all the wiser as the Iraqi forces did not have modern NBC outfits and, given their poor mobility, they would have been extremely vulnerable to US chemical counterattacks.

During the Iran-Iraq war, Baghdad used its chemical weapons only when its forces were in a defensive position, invoking the absolute necessity of defending the fatherland or to send a political signal to Teheran to force Iran to sign the armistice. During the crisis leading up to the second Gulf war, however, Saddam Hussein spelled out the limits on the use of Baghdad's chemical potential. In April 1990, the Iraqi President declared that Iraq would destroy half of Israel if that country attacked it, and on 18 August 1990 the Iraqi Minister for Foreign Affairs, Tariq Aziz, said during an interview on American television that *"Iraq would not use chemical weapons unless the United States used nuclear weapons against it."*

5. We may also take into account the geographical factor that (often presenting a complete absence of plant cover) was not particularly favourable to the persistence of chemical agents, and the general weather conditions during the Gulf war, with sandstorms, torrential rain and the prevailing winds blowing mostly in a northerly direction from the start of the land offensive. It is worth remembering the extent to which the weather situation can influence the efficiency of chemical weapons and how long their effects last. At a briefing on 27 February, General Schwarzkopf himself underlined how much the Iraqi stocks of chemical weapons must have deteriorated in the desert, with adverse consequences for their level of lethality in case of use on the ground. Already at a speech given on 29 October 1990 in Saudi Arabia, the commander of the US Army Medical Research Institute on Chemical Defense estimated that more than 95% of the people affected by neurotoxic and mustard gases during the Iran-Iraq war had survived after the conflict and, according to Iraqi and Iranian doctors, of the 45,000 people affected by Iraqi mustard gases, the mortality rate had been 3%, compared with 5% for people affected by Iraqi tabun and sarin.

6. The level of deterioration depends in fact on weather conditions and on the degree of efficiency of logistics and maintenance, but also on the technological level of the chemical-weapon systems. Most of the chemical warfare agents were devel-

oped without undergoing any purification process, so that the product obtained had a limited life-span, with the added risk of overpressure on certain products in gaseous decomposition in containers or filled munitions.

We may also wonder at the non-use of chemical warheads on the *Al Hussein* improved *Scud* ballistic missiles aimed at the Israeli cities and certain targets on the Arabian peninsula.

Leaving out the couple of FROG firings, which may be dismissed as hardly significant, from the beginning of the *Desert Storm* operation on 17 January 1991 until the suspension of hostilities on 28 February, Iraq launched 81 missiles, including 43 improved *Scud* missiles, against targets in Saudi Arabia, Bahrain and Qatar. Twenty-nine are said to have been intercepted by *Patriots* while 14 others disintegrated in flight, falling in desert areas or outside the field of interception of the anti-missile missiles. In seven cases, fragments landed on the targeted urban zone. As for the 38 missiles fired against Israel, mainly on cities like Tel Aviv and Haifa (and fired blindly towards the Dimona nuclear plant): according to sources, the rate of interception would have been between 20 and 50%.

The firing of *Scud* missiles focused the anxiety of regional public opinion and the international community on the use of chemical carriers by Iraq. The fact remains that the *Scuds* launched against Israel and Saudi Arabia contained no chemical warheads, only conventional explosives. There are many reasons for this absence of chemical agents in the loading cone. In fact, Iraq did have chemical warheads for improved *Scud* missiles. This was officially confirmed on 18 April 1991, when Baghdad sent the UN secretariat and the president of the Security Council a letter containing a list of its chemical and biological weapons and its long-range missiles, as requested by the Security Council in Resolution. This list showed, among other items, the existence of 30 chemical warheads for *Al Hussein* missiles stocked at Dujayl.

In reality, the technology of these missiles, which were launched against Israel and Saudi Arabia, was not adequate for carrying over long distances chemical agents that, as we know today, would have been released on impact. For missiles with a longer range than the basic *Scud*, the Iraqi technicians had probably not yet overcome the difficulty of mastering the physical problems linked to the instability of the agent following the heat at launching and the brutal acceleration, such as pressure or kinetic force.

According to the special commission of UN observers who were in Iraq to check its NBC potential, the Iraqis most likely did not dare to use the chemical warheads because of the danger of the heads exploding during the launching phase.

This is one of the reasons why Iraq may have asked the USSR - in vain - to sell it chemical warheads for *Scud* missiles. From the military point of view, the improved *Scuds* were excellent psychological weapons, but they were “*technically primitive and militarily insignificant.*”

They were primitive to the point where the Iraqis used plywood in certain sections of the airframe of the modified *Scud* missiles to improve their range in a rudimentary manner. These attacker missiles, whose payload had been reduced to increase their ballistic range, in fact represented a danger only to the people who were in the immediate impact area of the missile and its fragments, not forgetting those of the *Patriot* interceptors. Thus, even if they had been armed with chemical warheads, the contamination zone resulting from the use of these missiles would have been uncertain and militarily insignificant.

7. The fact remains that - given the means and the political will - Baghdad could have chosen to use chemical weapons against Israel to drag the latter into the war and in the hope of thereby turning part of the international anti-Iraqi coalition to its own advantage. Nothing of the kind happened, and today the explanation for this failure to use them is still based on many technical, political and psychological factors.

With two strategies that never coincided, with the crushing blows of the first seventy-two hours disorganizing its entire command, deafening and blinding it, with its troops' morale reduced to zero, Iraq was no longer capable of using its chemical potential to even minimum advantage if it had wanted to do so. The side that loses the battle for control of combat management loses, irremediably, the effective use of its weapon systems. Iraqi brute military force was no match for the coalition's swiftness, precision and strategy of surprise. The Gulf war has thus, by a *reductio ad absurdum*, proved the tactical and operational weaknesses of chemical armaments when confronted with conventional air and land strategies based on a flexible doctrine, modern technology, a command of strategic intelligence and seasoned and well-trained military personnel. Now greatly devalued because of this war, chemical weapons - which were so often said to be the nuclear weapons of the poor - are in the last analysis not at all dissuasive in the context of a high-intensity conventional attack. They undoubtedly represent no more than an anti-insurrection weapon, the output of which varies in direct proportion to the defence capability of the targets. The second Gulf war has thus, in all probability, proved the military uselessness of these weapons and heralded their disappearance.

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Gerald M. Steinberg

The Iraqi Chemical Threat During the 2nd Gulf War: Israeli Perceptions and Reactions

7

Chemical weapons are not a new phenomenon in the Middle East, and Israel has faced the possibility of chemical attack for over two decades. However, the large-scale production of chemical weapons by Iraq and Libya, based on material and facilities purchased largely from European suppliers, pose an unprecedented threat. The use of these weapons by Iraq against Iran and the Kurds, and the continued large-scale production of chemical agents and warheads, increased the threat perception in Israel. Policy makers and analysts sought to determine the purpose of these weapons, and, in particular, whether they were designed primarily for offensive use, or for deterrence and defence. On this basis, strategies and options for response were developed.

Explicit Iraqi threats to use chemical weapons against Israel increased dramatically in April 1990, when Saddam Hussein boasted of the possession of binary chemical weapons and threatened that *“if Israel dares hit even one piece of steel on any industrial site we will make the fire consume half of Israel.”* The Iraqi invasion of Kuwait in August 1990, and the American military buildup further increased the possibility of a chemical attack on Israel. This led to intense and often public debate concerning the risks and benefits of distributing gas masks and other protective measures, and regarding the psychological impact on the public. In October, the Israeli government distributed gas masks to the entire civilian population, and ordered preparation of sealed rooms and other measures.

The major military threat from chemical attack came from ground-based artillery and heavy bombers. The geographical separation between Israel and Iraq prevented the use of the artillery and short range rockets. Had Iraqi forces entered Jordan and reached the Israeli border at the Jordan river, the threat of chemical attack would have increased significantly. In addition, once the war began, the early removal of the Iraqi air threat also decreased the ability of Iraq to launch a major chemical attack on Israeli civilian targets.

The missile threat remained, and for the six weeks of the war, 39 Iraqi Scud missiles were launched at Israeli targets, and many fell in heavily populated areas in the Tel Aviv and Haifa regions. Each missile salvo was considered a potential

chemical attack, and necessary precautions were taken. The public was instructed to stay in sealed rooms whenever an attack warning was sounded, even if the underground shelters provided better protection against the high-explosive warheads that the Iraqi missiles were actually carrying.

At the behest of the United States, and in order to maintain the anti-Iraqi coalition, the Israeli military did not take action to prevent the attacks or to retaliate. The deployment of the Patriot ballistic missile defence system, which the United States provided to protect Israeli cities, served as a psychological factor, but this system proved technically ineffective. The military and political leadership considered policies and options to deal with the continuing possibility of an Iraqi chemical attack. The risks and benefits of a military strike strengthened deterrence based on the threat of massive retaliation and various post-attack responses were examined in detail.

Based on the experience during the war, and the policies implemented then, a number of questions have been raised. Although the war ended without the use of chemical weapons, the Iraqis clearly had developed and stored chemical warheads for their Scud missiles and long range aircraft. The first set of questions concerns the issue of why Iraq did not use these weapons against Israel, and whether Israeli deterrence and the threat to retaliate on a massive scale were effective. It is also possible that the Iraqis were technically unable or not prepared to launch these chemical warheads, or that they were indeed intended primarily for deterrence against Israeli attack (particularly against Iraqi nuclear installations.) The evidence, however, seems to suggest that the threat of retaliation and massive destruction (including the nuclear) were the most important factors in preventing an Iraqi chemical attack during the war. At the same time, the war ended without a direct attack on Saddam Hussein himself and his regime retained power. It is conceivable that had the regime or Hussein himself been threatened, chemical weapons might still have been used. This would indicate that Israeli deterrence may be insufficient to prevent a 'last ditch' chemical attack.

The second set of questions deal with the impacts of this experience on Israeli society and policy. The psychological effects posed by the continued fear of chemical attack and the use of gas masks are significant and long-lasting. Although the policy of restraint was generally accepted by Israeli political leaders and public opinion, there is mounting evidence suggesting that restraint in the face of potential chemical attack would not be repeated. Despite the Israeli policy and American pledges, the war ended before the Iraqi missiles and unconventional weapons and related installations were destroyed. The United States did not have detailed information on the location and nature of chemical and other (including nuclear) facilities, leading Israel to increase its own intelligence activities in these areas. Some analysts also fear that the policy of inaction reduced the credibility of Israeli deterrence. In this context, the continued Syrian effort to acquire North Korean and

Chinese missiles (funded by Saudi Arabia), combined with the Syrian chemical warfare (CW) capability, are major causes for concern. These concerns have increased efforts to strengthen deterrence and to prepare preemptive options.

The war also increased the salience of arms control, and the Israeli government has expressed support for an effective ban of chemical weapons and other weapons of mass destruction in the region. These issues are also included in the agenda for the bilateral and regional peace talks following the Madrid Conference in October 1991 and the Moscow talks of January 1992. There is, however, a great deal of scepticism regarding the prospects for arms control, including chemical weapons bans, and the fear that any limitation agreements will continue to be violated by both suppliers and recipients. The large oil revenues available to the Arab states for purchasing the materials and technology, and the past inability or lack of interest on the part of many advanced industrial states and other suppliers of chemical weapons components to limit sales, provides a basis for this scepticism. If arms control is to be a viable option, supplier states, particularly in Europe, and the Arab and Islamic states in the region that have developed massive arsenals, will have to demonstrate major policy changes.

The Nature of the Chemical Threat to Israel

Chemical weapons were first used in the region by Egypt in its war in Yemen, and mustard and nerve gases were used on at least 30 occasions between 1963-1967.¹ During this period, the Egyptian military was equipped and trained by the Soviet Union, and chemical warfare was considered an integral part of the Soviet arsenal. Foreign Minister Golda Meir noted that the Egyptian use of chemical weapons against fellow Arabs signalled the absence of inhibitions in using them against Jews.² In response, the Israeli military developed various tactics and acquired equipment to fight in a chemical environment.

In May 1967, Syrian and Egyptian forces were mobilized in preparation for a two-front attack designed to destroy the Jewish state. The possibility of a chemical attack was considered likely, and protective equipment was distributed to the Israeli mili-

¹ S. Feldman, *Middle East Missile and CBW Proliferation: Patterns, Trends, Ramifications*, in J. Alpher (Ed.), *The Middle East Military Balance: 1989-90*, Westview Press, Boulder, 1990, pp. 37-38. See also statement by Israeli Chief of Staff Dan Shomron, cited by M. Eisenstadt, *Iraq's Strategic Weapons*, Washington Institute for Near East Policy, Washington D.C., 1990, p. 53; and M. Bar, *Strategic Lessons of Chemical War*, IDF Journal, Summer 1990, n°20, p. 49.

² M. Bar, *op.cit.*, p. 50.

tary.³ The war ended without the use of chemical weapons, as did the 1973 Yom Kippur war, which began with a large-scale attack by both Egyptian and Syrian forces. Soviet-made tanks captured from both Egypt and Syria, however, showed that these armies were equipped for fighting in a chemical warfare environment. Many Israeli analysts attribute the fact that Egypt and Syria chose not to use chemical weapons in these wars as the result of Israeli deterrence and the fear of a retaliatory attack.⁴

In the decade that followed this war, the chemical threat to Israel increased significantly. Syria was reported to have received assistance from the USSR (and perhaps East Germany), and was credited with having chemical warheads for aerial bombardment, and for its SS-21 and Scud-B missiles. Libya also embarked on an effort to produce mustard and nerve gas, and, with the aid of the West German firm of Imhausen Chemie, and numerous other firms from around the world, constructed a chemical-weapons production plant at Rabta. (Japanese firms provided construction material and a power station, and US firms sold computers.) There have been reports that Libya used chemical weapons in Chad and Somalia.⁵ With the acquisition of Soviet Su-24 long-range bombers, the Libyan chemical threat to Israel was also significant.

Iraq began its CW effort in the mid-1960s, including a broad programme to acquire the facilities, materials, and technology for large-scale production. These acquisition efforts were thinly disguised as pesticide and fertilizer production programmes, which allowed the companies that provided the materials with a 'cover' and allowed their governments to turn a blind-eye. A Belgian subsidiary of Phillips Petroleum delivered 500 tons of thiodiglycol to Iraq for making mustard gas,⁶ and the German firm Karl Kolb provided a pesticide plant used by Iraq to make nerve gas. Shipments of materials from US firms to Iraq were also intercepted, and British and Dutch firms sent precursors for nerve agents and mustard gas to Iraq.⁷

By the mid-1980s, Iraq had become the world's largest producer of chemical agents, with annual production estimated at more than 1000 tons.⁸ This is sufficient for hundreds of thousands of artillery rounds. Large facilities at Samarra, Falluja, Salman Pak were used for producing and testing these agents. A variety of delivery systems were also developed and produced, including artillery shells, chemical

³ Y. Rabin, *Pinkas Sherut* (Hebrew), Tel Aviv, Maariv, 1979.

⁴ M. Bar, *op. cit.*, p. 50.

⁵ J. P. Zanders, *Chemical Weapons Proliferation: Mechanisms Behind the Imhausen/Rabta Affair*, Vredesonderzoek, Vrije Universiteit Brussel, March 1990, pp. 31-32.

⁶ J. P. Zanders, *op. cit.*, p.11.

⁷ J. P. Zanders, *op. cit.*, p. 23.

⁸ S. Carus, *Chemical Warfare and the Persian Gulf Crisis*, September 10, 1990, in *Gulfwatch Anthology*, Washington Institute for Near East Policy, Washington, D.C., 1991, p. 9.

mines, bombs for aircraft, missile warheads, and super-guns believed capable of launching chemical shells from Iraq to Israel.⁹

Prior to the Gulf War, Iraq was known to be producing mustard gas (HD), and nerve agents (sarin and tabun). There were also unconfirmed reports regarding VX, chlorine gas, and cyanide. These agents can cause severe and permanent injury or death, particularly if the target population is not equipped with protective equipment. They are also difficult to detect, meaning that if the use of chemical agents is suspected, precautions must be taken until the absence of these agents is confirmed.

Iraqi use of chemical weapons against Iranian troops beginning in 1983, and the subsequent use of chemical agents against Kurdish civilians in 1988, had a major impact on Israeli perceptions and policy. Reports of Iranian casualties vary from 27,000 to 50,000 with estimates of deaths ranging from 300 to many thousands.¹⁰ The fact that Iraq launched hundreds of Scud missiles and carried out air raids against Iranian cities, including Teheran, but did not use chemical weapons in any of these attacks, was also noted. It was not clear whether this was the result of deliberate restraint, or simply evidence of a temporary absence of the necessary technology. (The development of an effective chemical warhead for a ballistic missile is considerably more complex and technically demanding than the production of a conventional warhead or chemical artillery shells.)

The information received under the cease-fire agreement, which followed the Gulf War and UN Resolution 687 of April 1991, revealed an Iraqi arsenal that included some 7000 120-mm missile warheads, 2500 Saqr-30 missile warheads, as well as 535 aerial bombs (335 of them binary-system) and 30 Scud warheads, all loaded with sarin. There were an additional 75 tons of this nerve gas in stock. Over 1000 aerial bombs and 105 155-mm artillery shells contained mustard gas, with an additional 280 tons in stock. (In November 1991, UN officials estimated that Iraq had produced 45,000 chemical weapons.) In addition, 650 tons of tabun nerve gas and precursors in various forms were declared.¹¹

As the UN report notes, Iraq did not declare all CW agents or weapons in its arsenal, such as the nerve agent GF, which is known to have been produced.¹² According to reports, Iraq had produced a total of 4000 tons of chemical warheads. The UN inspectors also noted that Iraq declared chemical weapons stored at the Samarra complex and at six airfields, but did not include ground-force bases or storage areas.

⁹ M. Eisenstadt lists munitions including 152mm, 130mm and 122mm artillery rounds, 122mm rockets, 90mm air-to-ground rockets, 81mm mortar rounds, and 45 kg bombs, as well as FROG-7 and Scud-B missile warheads. (*op. cit.*, p.7.)

¹⁰ S. Carus, *op. cit.*; M. Eisenstadt, *op. cit.*, p. 6.

¹¹ The UN Special Commission for the Disarmament of Iraq: *Structure and Duties*, Appendix B: *Iraqi Declaration of Proscribed Materials* and Appendix C: *Assessment of Iraqi Data Declaration*.

¹² *Ibid.*

It is also assumed that Iraq has, or can produce many more chemical warheads for its Scud missiles.

This arsenal, combined with the specific and continuing threats by Saddam Hussein to use these weapons against Israel, provided the basis for Israeli threat perception and response planning.

Chemicals As Strategic Weapons

The Iraqi use of chemical weapons against Iran was seen to have been militarily effective, particularly against human wave attacks of poorly protected Iranian Revolutionary Guards. At first, Iraq used mustard gas defensively to repel the Iranian human wave assaults. Although mortality rates were low, this weapon had a major military impact and ended the threat to the Iraqi positions.

Later in the Iran-Iraq war, nerve gas was used offensively to dislodge Iranian positions from Iraqi territory. The Iranian defences were unprepared for percutaneous (skin-penetrating) agents, and these were therefore quite effective in causing panic and collapse of the defensive positions.

In the case of Israel, the possible military application of Iraqi chemical weapons is limited by the fact that Iraq and Israel do not share a common border, and are separated by a distance of more than 600 kilometres. Direct ground clashes therefore were only likely in the event of an Iraqi deployment in Jordan, which could also mean the presence of Iraqi troops along the Jordan river at the border with Israel, and within striking distance of major Israeli bases and cities. (Significant numbers of Iraqi troops had taken positions in Jordan in 1948 and 1967, and in the latter case, this military presence continued for a number of years.) In 1989 and 1990, the extent of the Iraqi presence in Jordan increased. Joint air and ground exercises took place, Iraqi reconnaissance aircraft flew along the Jordan river to obtain intelligence on Israeli positions and deployments, and joint brigades of ground forces were planned. Had this pattern continued, direct military confrontations between Iraqi and Israeli ground forces could have occurred, raising the possibility of the use of chemical weapons. Had Iraqi ground forces been deployed in Jordan, and brought to the Israeli border at the Jordan river, this would have constituted a major increase in the strategic threat. Clearly, had Iraqi ground forces moved towards Jordan, the Israeli response would have been massive and very quick. (It is estimated that Iraq can move a division of troops to the Jordan river in less than 60 hours, and another division in the next 24 hours.)¹³

¹³ A. Shalev, *Kav Haganah Beyuhuda V'Shomron*, HaKibbutz Hameuchad and Center for Strategic

At the same time, the probability of air and missile-based chemical attacks on Israeli bases and civilian targets was deemed to be quite high. Israel relies on a system of reserves to provide a surge capacity for its ground forces. In the 1973 war, the reserve forces were the primary source of the successful Israeli counterattack against the initially successful Egyptian and Syrian forces. A chemical attack against reserve mobilization bases and supply centres could seriously disrupt this central element in the Israeli defence strategy. In addition, if a chemical attack could be used to disrupt or disable Israeli air bases, the primary arm of the Israeli Defense Forces (IDF) could be crippled, at least until decontamination procedures were completed. In other words, chemical weapons could conceivably threaten the ability of the Israeli military to insure the survival of the state.

Following the end of the Iran-Iraq war, Saddam Hussein and other Iraqi leaders began to discuss the possible use of chemical weapons against Israel. As noted, in April 1990, he declared that Iraq had developed a binary form of chemical weapons, and threatened to incinerate half of Israel. These threats were repeated frequently, and in many cases, seemed to indicate a deterrence posture. The threats to use chemical weapons strategically could have been interpreted as an effort to deter Israeli attacks on the Iraqi chemical-weapons facilities or Scud missile bases and launchers. Given the recent revelations about the extent of Saddam's nuclear-weapons programme, it is now possible to interpret these threats as an effort to deter another Israeli preemptive attack on the Iraqi nuclear-weapons facilities.

Statements of intentions, particularly when they are couched in bellicose language, and made by a political leader who has invaded neighbouring states (Iran and Kuwait), and used chemical weapons against his own citizens (the Kurds) are not deemed to be very reliable. The Iraqi leader repeatedly threatened to lead the Arab world into a 'holy war' to annihilate Israel, and these threats had to be taken seriously. From the Israeli perspective, Saddam's chemical weapons clearly posed a potential offensive threat. Israel could not rule out an Iraqi first strike, or the use of chemical weapons against civilians. The legacy of the Holocaust served to heighten the Israeli fears, and led to preparation of various policies to respond to the possible contingencies and scenarios.

The Israeli Dilemma: Deterrence Or Defence

The Israeli government first began to consider the possible responses to chemical warfare in the mid-1960s, in the wake of the Egyptian attacks in Yemen. In the 1970s, the rate of proliferation of this technology in the Arab states increased, (particularly Iraq) and the perceived threat to the Israeli civilian population grew.¹⁴ Throughout this period, and until the very beginning of the 1991 Gulf War, the Israeli government and military debated the effectiveness and implications of the available options.

Traditionally, Israeli policy has combined preemption with the threat of massive retaliation to prevent attacks on population centres and 'countervalue' targets. Although a national system of shelters (initially against the threat of conventional weapons) was constructed, these defensive preparations were always secondary in nature, and subject to relative neglect and underfunding. At best, critics noted, shelters can only reduce, but cannot eliminate risk. In other words, many Israel analysts saw passive defence as a psychological rather than military option.¹⁵

This left preemption and deterrence as the primary options. In 1967, responding to the Arab threat of a war of annihilation, the Israeli Air Force struck first at Arab offensive air capabilities to prevent attacks on Israeli cities. In 1973, although the Israeli Air Force was prevented from mounting such a preemptive attack (the US government warned Israel that a first strike could endanger American assistance), none of the Arab states launched a major effort to attack Israeli civilian targets. This restraint is usually attributed to the threat of massive Israeli retaliation. (Syria launched a small number of FROG-7 rockets at targets in northern Israel, and Israel responded with a massive bombing campaign against Damascus, destroying the Defence Ministry headquarters and other installations in the centre of the city.)

In general, the basic Israeli response to the threat of chemical weapons was to emphasize deterrence. Chief of Staff Dan Shomron sought to remind Saddam Hussein of past Israeli behaviour: "*Of course, in 1973, during the Yom Kippur war, the Arab countries possessed gas ... But they never used it, and there is a reason for this. This type of weapon invites [a] very harsh reaction.*"¹⁶ In an interview with the Israeli daily *Ha'aretz* on 22 June 1988, Defence Minister Rabin threatened Israeli

¹⁴ See U. Bialer, *Thinking the Unthinkable: The Possibilities and Implications of Strategic Bombing Against Israel in the Next War*, Journal of the Royal United Services Institute for Defence Studies, 122 (1977), pp. 65-71.

¹⁵ See, for example, Z. Lanier and Z. Shapira, *Analysis of Decisions Concerning the Defense in Rear Areas in Israel: A Case Study in Defense Decision Making*, in Z. Lanier (Ed.), *Israeli Security Planning in the 1980s*, Praeger, New York, 1983.

¹⁶ Israeli Army Radio (Galai Zahal), translated in FBIS-NEA, 10 March 1988, p. 37, cited by M. Eisenstadt, *op. cit.*, p. 54.

retaliation 'tenfold'. In a radio interview during same month, Rabin declared, "*One of our fears is that the Arab world and its leaders might be deluded to believe that the lack of international reaction to the use of missiles and gases gives them some kind of legitimization to use them. They know they should not be deluded to believe that, because it is a whole different ball game when it comes to us. If they are, God forbid, they should know we will hit them back 100 times harder.*"¹⁷

In the Israeli case, however, as in many similar situations, there is no guarantee that the combination of preemption and the threat of retaliation are understood or totally credible. Once chemical weapons have been produced, it is always possible that they will be used offensively. For military planners in any country, the attention is focused on capabilities, rather than attempting to ascertain intentions. Israeli policy makers considered various scenarios in which the Iraqi chemical arsenal would be used against civilian targets.

Saddam Hussein often appeared to act irrationally, or to miscalculate drastically, without considering the consequences of his actions or the costs for the Iraqi population. The invasion of Kuwait, the refusal to back down in the face of the American ultimatum, and the bellicose threats to drown his enemies in "*rivers of blood*" and to "*incinerate half of Israel*" with chemical weapons, provided additional evidence of this inherent irrationality or brinkmanship. Such a leader might also be prepared to use chemical weapons, regardless of the consequences. As a result, developing a defensive capability was also necessary, including both passive (gas masks, etc.) and active (ballistic missile defence) systems.

There is, however, an inherent tension and even contradiction between deterrence and defence. The credibility of the preemptive and retaliatory threats are inherently weakened by the availability of a defensive alternative. In other words, when Israel decided to devote greater resources to defence, this served a signal that in some conditions, the decision makers might be willing to absorb a chemical first-strike. (Similarly, during the 1960s and 1970s, while the United States emphasized a strategy of massive retaliation to deter a Soviet nuclear strike, resources devoted to civil defence were minimal. Strategic analysts argued that if civil defence was increased, it would weaken deterrence.) In preparing to absorb a chemical attack, Israel was also signalling a lower probability of launching a massive preemptive strike.

The tension between these two strategies - preemption and deterrence, on the one hand, and defence on the other - framed the Israeli debate on the response to the threat of chemical warfare. This debate reached its peak during the period immediately preceding the 1991 Gulf War.

¹⁷ Rabin in FBIS-NEA, 21 July 1988, pp. 28-9, cited by M. Eisenstadt, *op. cit.*, p. 54.

Passive Defence: Gas Masks and Sealed Rooms

Gas masks, protective gear, nerve gas antidotes, and other defence equipment have been available to the Israeli military for decades. Training for possible use of this equipment in a chemical attack is a routine part of military exercises. Over the years, preparations for distribution of similar equipment to the civilian population began. In April 1970, the government began collecting a tax (0.3% of annual income, reduced to 0.1% in 1980) to finance the purchase of gas masks. In early 1981, the Israeli civil defence authorities (Hagah) told journalists that gas masks for every citizen had been purchased. They were being stored in warehouses, and, according to the head of Hagah, could be distributed in 92 hours, if necessary. The IDF also announced that it was considering distributing masks to small 'test groups' to determine whether they would be stored properly during peace time.¹⁸ Two sites were subsequently selected and the residents received gas masks and instructions for storage.

Iraq's use of chemical weapons against Iran and the Kurds, and Syrian deployment of chemical weapons, increased concern in Israel. Chief of Staff Moshe Levi warned that the Syrians viewed chemical weapons as "*almost conventional*" and therefore would use them in the next war. Minister of Defence Rabin publicly warned that the Israeli sensitivity to casualties would be exploited by the Arabs, increasing the threat posed by a chemical attack.¹⁹

The possibilities and consequences of chemical attacks received increasing attention in public discussions. A lengthy article in the Israeli daily *Maariv* in February 1987 raised questions regarding the civil defence capability. The article noted that responsibility for civil defence was divided between the Ministry of Defence, the police, and Ministry of the Interior. This led to confusion and difficulties in responding quickly if necessary, despite the military's claim that it could distribute protective equipment quickly. In addition, the article warned that the bomb shelters that were built throughout Israel were not properly sealed for chemical attack.²⁰ The government controller warned that if a chemical attack occurred without warning, gas masks would not be available, and the population would be left without protection.²¹

In late 1987, civil defence officials cited the missile attacks against Iraqi and Iranian cities as a precedent, and publicly warned that the densely populated Tel

¹⁸ *Maariv*, 1 April 1981, p. 6.

¹⁹ *Maariv*, 6 February 1987, p. 10 (Sabbath supplement).

²⁰ *Maariv*, 6 February 1987.

²¹ Israel Government Controller, *Annual Report #41 for 1990, Special Volume on Protective Systems for the Civilian Population*, Jerusalem, 1991, p. 992.

Aviv area (in which 50% of the Israeli population lives in a very small area) could be a target for Arab attacks. (Efforts to predict casualties and effectiveness of equipment were based on simulations and exercises highly uncertain, and depended on a variety of factors, including the exact impact point, wind and atmospheric conditions, and post-attack treatment. According to published statements from Israeli officials, a single chemical warhead in Tel Aviv would cause “*several thousand casualties*,”²² but these estimates were later reduced to the level of hundreds of casualties.) In response to some public expressions of concern, officials again noted that protective equipment was stored in warehouses and could be distributed quickly if necessary.²³ A report of the Government Controller, however, warned that due to budget cutbacks, more than 1,350,000 effective gas masks were lacking.²⁴

Following the end of the Iran-Iraq war, Saddam Hussein turned his attention to Israel, in the effort to improve his political standing in Iraq in the Arab world. In early 1990, the Iraqi leader issued a series of explicit threats to use chemical weapons against Israel, and in a speech in April, warned that the Iraqi chemical arsenal could “*incinerate half of Israel*.” The debate in Israel intensified and the government considered the possibility of immediate distribution of gas masks.²⁵ Although the initial response was to strengthen deterrence (see the discussion below), civil defence exercises dealing with the chemical threat increased, and preparations for the distribution of gas masks were accelerated.

The debate reached its peak following the Iraqi invasion of Kuwait in August 1990. In response, the United States dispatched military forces to the region, and Saddam Hussein warned that any US attack on Iraq would result in an Iraqi missile attack against Israel. In a sense, the Israelis were being used as hostages by the Iraqis. Public demands for the distribution of gas masks increased dramatically. An Israeli lawyer, acting privately, petitioned the High Court of Justice to order the distribution of the gas masks. (The petition was dismissed.) Defence Minister Arens and Chief of Staff Shomron opposed a change in policy, apparently fearing that such a move was of questionable effectiveness, would cause panic, and, most important, would undermine the credibility of the Israeli deterrent.²⁶ (It should also be noted that while Israel had purchased two batteries of Patriot missiles, and Israeli crews were in training to operate these systems, no urgency was placed on the deployment of these systems. They were not considered very effective against ballistic missiles.)

²² Cited by M. Eisenstadt, *op. cit.*, p. 53.

²³ Ha'aretz, 27 November 1987, p. 3.

²⁴ See Israel Government Controller, *op. cit.*, p. 975.

²⁵ Al Hamishmar, 15 August 1990.

²⁶ Ha'aretz, 21 October 1991, p. 1 and 3.

These officials argued that the public debate itself, and the expressions of fear, were harmful to Israeli security.²⁷

Nevertheless, on 20 August 1990, Israeli Foreign Minister David Levi called on the government to order the immediate distribution of the protective equipment. Proponents argued that an atmosphere of panic already existed, and immediate distribution would diminish the sense of vulnerability. The Labor Party opposition charged the government with confusion and lack of clear leadership in a time of national crisis.²⁸ In response, the Ministerial Committee on Security, headed by Prime Minister Shamir, met to consider the issue and make a decision. The committee heard the different positions on the issue, and decided against immediate distribution, but the debate continued.

As tension increased, the policy changed, and the military began preparations for gas mask distribution to 4.7 million Israeli citizens. This process began at the beginning of October, and each family received a notice with the specific time and place where they were to receive their equipment. Beginning 15 October, family members were given protective kits, passive masks with filters for adults, smaller masks for children, masks with active air-circulation systems for smaller children and those with breathing problems, such as asthma, and plastic tents with air-filters for infants. Each kit also included an injector with atropine (a nerve gas antidote) and a powder to use to absorb mustard gas on skin surfaces. Each family was also given instructions for the use of this equipment. The kits were sealed and to be opened only following the explicit instructions of civil defence authorities.

The distribution of this equipment created a high level of anxiety and fear, and a large-scale education programme was begun to familiarize the public on the proper use of this kit. Television clips showed how each component was to be used. In school, classes were given repeated instruction in the use of the equipment (in many cases, the children were better prepared than their parents, and showed the parents how to wear and breath through the masks). Civil defence officials appeared on radio and television to answer questions. The public was also given instructions on the storage of food and water for use in case of chemical attack, and millions of dollars of bottled water and canned preservatives were sold. Each family was told to select a single room in the house, to be used as a sealed room to provide protection against chemical penetration. Sealing tape and large plastic sheets were purchased to close off these rooms. Each room was to be equipped with a battery-operated radio, drinking water, and other necessary supplies.

In late December and early January, as the prospects of war increased, Israeli preparations for responding to a chemical attack were accelerated. All hospitals were placed on alert status, with special medical teams for treating chemical warfare

²⁷ Ha'aretz, 22 October 1991.

²⁸ Ha'aretz, 21 October 1990, p. 3.

casualties on 24-hour standby duty. Special showers to wash off chemical agents were set up outside the hospitals, and exercises were held. School windows were sealed, and shelters prepared.

By 10 January, many parents stopped sending their children to schools, fearing the possibility of a chemical attack, and the schools were then closed, as were some businesses. Israeli Air Force planes were constantly in the air to defend against an Iraqi air attack, and, if necessary, to deliver the promised rapid and massive response. The threat of chemical attack was the primary focus of activity throughout the country.

On 15 January, the Israeli civil defence authorities ordered each family to place tape across windows and prepare to seal the selected room when the alarms were sounded. The following night, at 2 a.m., the war began and Israelis were ordered to open their protective kits, insert the filters, and practice donning the masks and breathing. (Several people reported to hospital emergency rooms with anxiety attacks, heart attacks, and other panic-related symptoms.) Twenty-four hours later, on the morning of 18 January, the first Iraqi missiles were fired at Israel, the sirens sounded, and the entire population was ordered to enter the sealed rooms, put on the gas masks, and place infants in the plastic tents.

This procedure continued for the six weeks of the war, on 18 separate instances in which Iraqi Scud missiles were fired at Israel. (There were also a few false alarms in the first weeks of the war.) Each missile attack was treated as a possible chemical attack, until civil defence teams located and determined the nature of the warheads. During this period, 39 missiles struck in or near Israel. After the initial attacks, the country was divided into six regions, and as soon as the impact area was determined, the other regions of the country were released from the sealed rooms and gas masks.

Although no daytime missile attacks took place (the earliest took place at dusk, and there was one early-morning attack), Israeli citizens were ordered to take their protective kits with them whenever they ventured outside the house. Couples on dates, and friends meeting for lunch all carried their gas masks, as did government officials and even foreign diplomats and journalists. Television programming featured this aspect of Israeli life, and jokes and comedy sketches were repeated frequently. Small children and their parents, however, were confined to the house during most of the six-week period, as they were only allowed to leave with their plastic tents, which were relatively large and heavy, and could not be carried very far. Small children often refused to enter the tents or wear the masks, increasing the level of anxiety. Although there was an effort to maintain normal activities, with schools closed, nightly missile attacks and gas-mask drills, and limited mobility, the effect of the Iraqi chemical threat was to reduce activity of all kinds in Israel greatly.

Towards the end of the war, as the frequency of missile attacks decreased, and no chemical warheads were used. It began to appear as if the danger had passed, either because Iraq did not have the technical capability or because Israeli deterrence had

succeeded, at least at this level. However, in mid-February, immediately before the beginning of the ground war, fears of an Iraqi chemical attack on Israel increased again. Political, civil defence and military officials, including the head of intelligence, General Amnon Shahak, repeated warnings and regulations regarding the need to carry gas masks, and procedures to be followed during a missile attack.

Throughout this period (extending from early January until the end of February), normal life in Israel was suspended. Economic activity was greatly reduced, and for much of this period, only essential services operated at normal capacity. Air and sea traffic was disrupted, as only Israel's national air and sea carriers (El Al and Zim) continued to arrive. The flow of imports and exports was greatly slowed, and economic losses were measured in terms of billions of dollars. (The Israeli annual GDP is around \$50 billion, or \$4 billion per month, which can be used as a rough estimate of the loss of productivity for this period.) A large percentage of the population of the greater Tel Aviv region, where most of the missiles landed, left, particularly in the night hours, and stayed in hotels or with family and friends in Jerusalem and the Southern city of Eilat. The mayor of Tel Aviv charged that these people were 'deserters'.

Determining the psychological impact of this trauma is still too early, but some preliminary research has been published. In the first few days of the attacks, a number of Israelis believed that a chemical attack had occurred, and injected themselves with atropine. According to survey data, during the war, some 22% of emergency room admissions were acute psychological reactions. Twice as many patients were admitted for acute anxiety as for injuries directly related to the missile explosions. These admissions increased significantly following each attack or false alarm.²⁹

Active Defence: Patriots and Arrows

Immediately following the outbreak of the war and the launching of the first Iraqi Scuds, the United States dispatched several Patriot missile batteries and crews to Israel. (Patriots were also deployed in Saudi Arabia to protect cities and US bases.) Israel had already purchased two missile batteries, and crews were training on these systems in the United States. During the war, additional batteries arrived and were deployed in Israel. The Patriot missile system was initially designed to intercept high

²⁹ E. Karsenty, et al, *Medical Aspects of the Iraqi Missile Attacks on Israel*, Israel Journal of Medical Science, 1991, Vol. 27, pp. 603-607.

altitude aircraft, but its range was extended to allow use as a missile defence system.³⁰

While there is some debate regarding the performance of the Patriot during the war, it appears that this system was largely ineffective. Although some missiles were intercepted, few warheads were actually destroyed.³¹ Had the warheads carried chemical weapons, designed to detonate in the atmosphere, it is unlikely that the Patriots would have prevented many casualties. In other words, the Patriots provided more of a psychological boost than a defensive measure.

The ineffectiveness of the Patriot was a major factor in the debate over the Arrow advanced ballistic missile defence system that Israel is developing. (Much of the funding for the research and development is provided by the United States as part of the Strategic Defense Initiative.) In contrast to the Patriot, which intercepts its targets within the atmosphere very close to the aim point, the Arrow is designed to destroy its targets at a much higher altitude, and at distances of 70-80 km. Missiles and warheads intercepted at this range are rendered ineffective. However, the high cost of this weapon, and the unfavourable cost-exchange ratio (the cost of each Arrow missile is likely to be much greater than the cost of offensive missiles such as the Scud) has raised questions in Israel regarding the desirability of this approach. As noted, Israeli strategy and doctrine have always been based on preemption and deterrence, and critics argue that the funds should be used to strengthen these capabilities rather than stressing defence.

The Long Term Impact of the War and the Chemical Threat

The preparations for chemical attack against civilians, and the extended period in which emergency procedures for dealing with such an attack were in place, provided Israel with a great deal of experience. On this basis, members of the IDF Medical Corps conclude that the dangers of chemical attack can be significantly reduced by providing “*collective and individual protective measures*,” training the population in the use of these measures, and early warning.³² Medical and rescue teams, CW detection units, decontamination teams, and hospital staff received

³⁰ See the detailed discussion of the Patriot missile in the Gulf War by M. Navias, *Saddam's Scud War and Ballistic Missile Proliferation*, London Defence Studies 1990-91, Number 6, Centre for Defence Studies, University of London, 1991.

³¹ R. Pedazur, Ha'aretz, 24 October 1991.

³² J. Shemer and Y. L. Danon, *Eighty Years of the Threat and Use of Chemical Warfare: The Medical-Organizational Challenge*, Israeli Journal of Medical Sciences, 1991, Vol. 27, pp. 608-612.

extensive training, and changes were instituted based on extensive drills and simulations.

At the same time, the threat of chemical war, and the series of missile attacks, each of which could potentially have carried chemical warheads, had a profound effect on Israeli political, psychological, and social structures and attitudes. As Dr. Avraham Bleich, et al note, “*There is no doubt that the Gulf War and the missile attacks caused extensive long-term stress in large segments of the Israeli population. ... There were a variety of somatic complaints, disquiet, difficulty in sleeping, and various symptoms of anxiety...*”³³

The period immediately before the war, and the war itself, with the constant threat of chemical attacks, had a profound psychological impact. Throughout this period, every Israeli, from newborns to senior citizens, carried a gas mask and protective equipment, was constantly on alert for the possibility of a chemical attack, and lived with the knowledge that such an attack could occur anytime. School children who were forced to carry and wear a gas mask, and to sit in sealed rooms in the middle of the night, and who heard the missile explosions, or were injured by them, will never forget this nightmare.

It is important to note that the impact of the chemical threat was magnified greatly by the memories of the Holocaust and the murder of more than six million Jews in the Nazi gas chambers. Israel is a nation of Holocaust survivors, or children of survivors. The sustained effect of the fear of gas attacks, (and the fact that the chemicals themselves as well as the improvements to the missiles were based on German technical assistance to Iraq), the showers outside hospitals to wash off chemical agents, and the entire set of images, on the Jewish population of Israel cannot be underestimated. Although there were few outward signs of panic, Israelis expressed their fears and deep anger at Iraq, its supporters in the Arab and Islamic world, and those countries, particularly in Europe, who had made this scenario possible. The Chief Rabbi of Tel Aviv, Rabbi Low, himself a Holocaust survivor, expressed a view that was typical when he said that although he had been threatened by gas before, at least this time, he was protected and had a gas mask.

The lack of a military response to the chemical threat, and the periodic nighttime missile attacks was and continues to be very controversial. The *raison d'être* of Israel is protecting the Jewish people from the pogroms and mass murder of the Diaspora. In newspaper articles and radio discussions, many Israelis, including prominent intellectuals and those associated with the political left, expressed anger at the absence of a military response. Although polls showed a majority that sup-

³³ A. Bleich, et al, *Israeli Psychological Casualties of the Persian Gulf War: Characteristics Therapy, and Selected Issues*, Israel Journal of Medical Sciences, 1991, Vol. 27, p. 673.

ported Shamir's policy of restraint, this was clearly a single exception and could never be repeated.³⁴

In the months that followed the war, political and public opinion reflected the view that the policy of restraint was, in retrospect, a mistake. American Deputy Secretary of State Lawrence Eagleburger visited Israel in early January to request Israeli restraint, and returned in the midst of the war to repeat this request. Although the US government pledged to destroy Iraq's strategic capability, the American and allied troops left Iraq immediately after the cease-fire was signed, and did not stay until these terms were enforced. Although the UN inspectors have found and destroyed Iraqi weapons and facilities, Saddam Hussein continues to hide hundreds of missiles, as well as chemical agents, and to pursue nuclear weapons.

At the same time, the strategic threat from Syria grew following the purchase of Scud-C missiles from North Korea, reinforcing the fears that Israeli deterrence posture was weakened by inaction during the war. In October 1991, the Israeli military undertook overflights of western Iraq, (from which the Scuds had been launched) reflecting the decision to obtain independent intelligence. These flights also had the effect of strengthening deterrence by demonstrating a capability to reach targets in these areas.

The Impact on Israeli Policy

Less than a year after the war, assessing the impact of these events on Israeli policy and society is difficult. Although there may be few outside signs, the effects are likely to be significant and important. As noted above, many Israeli policy makers have declared that the restraint exercised in the wake of the Iraqi threats will not be repeated, and the events since the war have provided evidence of this. The Israeli military has taken measures to obtain the intelligence information necessary to launch a preemptive attack on missile and chemical-weapons sites in the future, whether in Iraq, Syria, or perhaps more distant Arab or Islamic states.

³⁴ Israeli restraint has also been explained on the basis of military considerations, including the assumption that Israel would have had great difficulty locating and destroying the missiles and launchers, and that the allied air force activity would have prevented unilateral Israeli action. While both factors are important, neither would have been sufficient to block Israeli action throughout the war. Israeli air tactics based on low-level precision bombing could have had more success in locating real launchers (as distinct from decoys) and destroying them than the American high-altitude missions. Had Israel chosen to launch an air strike against the Iraqi missiles, the United States would have cleared a corridor, and taken measures to avoid combat with the Israeli aircraft. In other words, the political factor was indeed central in the Israeli decision.

During and following the war, Israeli civil defence policies and procedures were debated intensely. Although most residences have underground bomb shelters, missile attacks do not provide enough warning time, and many are not sealed against chemical weapons. Many 'sealed rooms' were makeshift and might not have proven effective if chemical warheads had been used. New housing codes now call for the construction of an inner 'sealed room' to be used in case of the threat of chemical attack. In November 1991, the government announced a programme to build large sealed rooms in schools to provide protection against chemical attack.

Questions were also raised regarding the efficacy of the gas masks and protective equipment. A report by the Government Controller pointed to evidence that one third of the gas masks distributed to the civilian population (those manufactured between 1972 and 1986) were less effective than the standard set by the military.³⁵ The report stated that while the military masks are designed to provide protection factor of 1000, and the civilian masks 100, many of these masks did not reach the lower level.³⁶ (US military specifications require a protective factor of 1667.) The adult masks were distributed in a single size, without regard to anatomical differences, which contributed to the degradation of protection, particularly among teenagers and the elderly. The protection systems for infants were also found to be problematic.

The civil defence authorities rejected these charges, and noted that the sealed rooms provided additional protection. Nevertheless, in November 1991, the military announced that it would begin a large-scale programme to replace many of these gas masks with new models similar to those provided to the military. In addition, filters and other equipment used in the war will be checked and, where necessary, replaced.³⁷

At the same time, the trauma which remains from the war will make it difficult for any Israeli government to order the population to carry and wear gas masks and other protective equipment and to enter sealed rooms for an extended period again. Although the Israeli population demonstrated a high degree of discipline during the missile attacks, following the war, as noted above, many argued that the government pursued the wrong policy in not attacking the missiles and chemical-weapons facilities. General Dan Shomron, who served as Chief of Staff during the war, and General Avihu Bin-Nun, who was head of the Air Force, revealed that Israeli forces were ready to attack Iraq during the war. Both also expressed reservations about the policy of restraint after they retired from active duty.

³⁵ Israel Government Controller, *op. cit.*

³⁶ Protective factors are measured in special chambers based on the ratio of paraffin-oil aerosol concentration inside the chamber to the concentration measured in the mask. See M. Arad, et al, *Principles of Respiratory Protection*, Israel Journal of Medical Sciences, 1991, Vol. 27, p. 608.

³⁷ Ha'aretz, 24 November 1991.

At the same time, the fact that Saddam Hussein did not use his chemical weapons against Israel is generally seen as an indication that in this sense, deterrence and the threat of massive retaliation was successful. In particular, some reports indicate that fear that Israel would respond to a chemical attack with nuclear weapons persuaded Saddam Hussein to refrain from using his chemical weapons against Israel.³⁸ Thus, the war tended to reinforce Israeli deterrence policies, and the role of nuclear deterrence in particular.

Arms Control Options

The intensity of the ethno-national-religious hostility that lies at the core the Arab-Israeli conflict and triggered Saddam Hussein's attacks against Israel make arms control seem very unlikely in the region. Although much effort has been devoted to arms control efforts in the Middle East, most such efforts have failed. Iraq is a member of the Board of Governors of the International Atomic Energy Agency, yet almost succeeded in developing nuclear weapons in violation of the NPT. Iraq was able to obtain and use chemical weapons without significant international response, in blatant violation of international norms and the 1925 Geneva Protocol in particular. Nevertheless, the international community was essentially silent. The large profits made in the sales of these materials were seen to have been a primary factor in the absence of an international response. Supplier-based restraints have little credibility in the Middle East.

Thus, the prospects for arms control have been and continue to be viewed with a high degree of scepticism. Even if international supervision and control could be imposed and maintained on Iraq, there are many other states in the Middle East with chemical weapons, and appropriate delivery systems, including Libya and Syria. Effective regional arms control would require the inclusion of these states, as well as Iran, Algeria, Sudan, etc.

In addition, no single component or weapon system can be treated in isolation. The Arab states claim that their chemical arsenals are necessary to counter Israeli nuclear capabilities, but the Israeli nuclear weapons were developed to counter the massive Arab conventional forces. In other words, all these systems are closely interconnected, and arms control must therefore ultimately include restraints in all areas.³⁹

³⁸ See, for example, S. Hersh, *The Samson Option*, New York, Random House, 1991.

³⁹ See G. Steinberg, *Arms Control in the Middle East*, in R. D. Burns (Ed.), *The Encyclopedia of Arms Control and Disarmament*, New York, Charles Scribner's Sons, 1992.

Nevertheless, restraints on chemical warfare provide the most promising area for beginning this process. Israel has adopted the guidelines of the Australia group, and has declared its support for a regional ban on chemical weapons.⁴⁰ Such a ban must include mutual inspection and full transparency, real-time safeguards, and international verification for any dual-use facilities capable of producing both civil materials and chemical warfare agents. Although such a ban will be difficult to achieve, direct discussion of this issue would be an important step in the right direction.

Concluding Observations

In the period since the end of World War II, Israel has been forced to become the first, and to date, the only country to develop a policy to protect its entire civilian population against a full-scale chemical attack. Although preparations for this policy began in the early 1970s, the immediate threat from Iraq beginning in the mid-1980s, and culminating in the period following the Iraqi invasion of Kuwait led to the large scale distribution of gas masks and protective equipment. The military and civil defence systems have established and used procedures for distributing this equipment to a large civilian population, and for instructing this population on the proper use of gas masks. Problems as well as weak points in this process can be studied and improved upon for the future.

The medical system has also been prepared for and drilled in treating a large civilian population exposed to chemical weapons. From the available evidence, this system was well prepared to respond to a chemical attack in a large city. This experience also provides the basis for future improvements on the current system.

In addition, the Israeli population has now had the experience of carrying and wearing a gas mask, preparing and sitting in sealed rooms during possible chemical attacks, and living under the threat of such an attack. Initial problems and failures have been studied in detail. Solutions and improvements have been recommended and are being implemented. The psychological impact of these experiences is difficult to measure, but these are likely to be significant. The associations of chemical warfare with the Holocaust will amplify the impact for the Jewish population. The war had a major effect on Israel, and it would be a mistake to underestimate or belittle this impact.

These factors indicate that although Israel will continue to be prepared for the threat of chemical attack for the foreseeable future, ordering the population to pre-

⁴⁰ Address by H. E. Mr. David Levy, Deputy Prime Minister and Minister of Foreign Affairs of Israel, to the 46th Session of the General Assembly of the United Nations, 2 October, 1991.

pare for another period of threat, such as the Gulf war, will be very difficult for any Israeli leadership. As a result, it is likely that passive protection will become, at best, a form of secondary protection for residual chemical weapons. The political result of the recent war point to the implementation of a policy based primarily on preemptive or preventive strikes and massive retaliation.

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Western Perceptions and Reactions

8

Analysis of Western chemical-warfare (CW) threat perceptions during the 2nd Gulf War suffers from various difficulties besides the normal practical and theoretical ones. First, the discussion about Iraq's chemical weapons appears to have been based on partly biased or unreliable information. Second, the allies directed and controlled the flow of information to a certain extent before and during the war.¹ Without access to internal documents and records, we can only analyse public statements by Western decision-makers and attempt to understand their thinking about chemical weapons. We will proceed in three steps, namely the analysis of official statements concerning (1) Iraq's CW capability, (2) the allies' war goals, and (3) specific Iraqi preparations for a deployment of chemical weapons. We will also place the analysis into the wider context of the debate about restructuring international relations and security. The following therefore also draws on postwar studies of Western diplomacy, war-goals and war-fighting. As the present paper deals specifically with Western perceptions, we will not appraise the actual menace posed by Iraq's chemical weaponry. This, however, does not suggest that such a threat did not exist.

Official Statements Regarding Iraq's CW Capability

The discussion of Iraq's CW capability dates back several years before the invasion of Kuwait. However, in the spring of 1990 a major shift in the debate occurred. Without going into the whole history, we submit that before that time, Iraq was not perceived as constituting a CW threat, despite its extensive use of chemical weapons against Iran and the Kurds.

One of the most visual factors leading to this change in the Western view was a statement by the Iraqi president in April 1990. About Western allegations after the

¹ On the role of the media, being 'victim' as well as 'perpetrator,' before and during the Second Gulf War see: R. Schlaga, *Die Wahrheit als erstes Kriegsoffer. Die Rolle der Medien im Golfkrieg*, in G. Stein (ed.), *Nachgedanken zum Golfkrieg*, Heidelberg, 1991, pp. 226 - 243.

seizure of high precision detonators at the Heathrow Airport in London, believed for an Iraqi nuclear bomb programme, and the open speculation in the United States about the need to destroy the Iraqi nuclear plants,² Saddam Hussein denied having a nuclear capability. He suggested that, instead, Iraq could rely on chemical weapons. Saddam stated:

By God, we will make fire eat up half of Israel if it tries against Iraq.

He added:

Yet everyone must know his limits. Thanks be to God, we know our limits and we will not attack anyone.³

This sentence, a direct threat against Israel, saw bitter reactions. Ever more, Iraq became regarded as a potentially dangerous threat to peace and stability in the Middle East and the Iraqi threat to use chemical weapons against Israel soon established in Western eyes the view of the “*butcher of Baghdad*,” the “*archetypal Third World tyrant*,”⁴ thus replacing General Noriega of Panama and Colonel Qaddafi of Libya as “*Public Enemy No. 1*.”⁵

Before Iraq invaded Kuwait, as the tensions rose between the two countries, the coverage of this crisis often referred to Iraq’s chemical-weapons use against Iran and the Kurds.⁶ The invasion of Kuwait then substantiated in Western eyes the view that Iraq was a danger to the stability of and peace in the region. Hardly any leading article on the invasion failed to mention Iraq’s use of chemical weapons during the First Gulf War and in Kurdistan to prove this point of view.⁷

As ever more US and allied troops were stationed in Saudi-Arabia the danger of a direct military confrontation rose. Within this context Iraqi possession of chemical weapons seemed especially dangerous, not the least because Iraq from time to time mentioned that chemical weapons might be used in case of an attack. Still, the conditions under which Iraq would consider chemical-weapons use remained unclear and even contradictory, as did Western statements on how to react if chemical weapons were employed against allied troops.⁸

² Die Zeit (Hamburg), 6 April 1990.

³ E. Karsh; I. Rautsi, *Why Saddam Hussein invaded Kuwait*, Survival, January/ February 1991, p. 24.

⁴ The Guardian Weekly, 29 April 1990.

⁵ Newsweek, 9 April 1990.

⁶ See for example: Frankfurter Allgemeine Zeitung, 27 July 1990; Der Spiegel (Hamburg), No. 31, 1990.

⁷ See for example: Frankfurter Allgemeine Zeitung, 3 August 1990; Die Tageszeitung (Berlin), 3 August 1990.

⁸ See especially the coverage of the events between August 1990 and March 1991 by the *Arms Control*

The Western line of argumentation was that the Iraqi chemical capability and its use against Iran and the Kurdish population in Iraq suggested that Baghdad was prepared to initiate chemical warfare against coalition forces. This basic line was not modified by taking into consideration any differences between a war against a Third World country like Iran and a war against highly industrialized countries like the United States, Great Britain, France and others. Only few of the commentators took the history of chemical weapons use into account. Although, for example, on a political level historical comparisons between Saddam Hussein and Adolf Hitler (and/or the situation in 1939 and in 1990) had been drawn,⁹ the same comparison was not made in the field of chemical weapons. The history of chemical warfare shows clearly that since the First World War these weapons have been used only against enemies lacking adequate CW defences or were unable to retaliate.¹⁰ Nonetheless it seems that allied military commanders reckoned with a chemical war and were surprised that it did not occur. Lt.-Gen. Neal, the US-Army spokesperson in Saudi-Arabia, for example, could not explain why his Iraqi counterparts did not resort to chemical warfare in the days of retreat.¹¹ Some of Neal's colleagues tried to explain Iraqi non-use by referring to the bad weather conditions or a breakdown of communications.¹² Only few analysts mentioned the (unproven and maybe unprovable) possibility that Iraq did not use chemical weapons for the simple reason that, on whatever grounds, it had chosen not to do so.

Official Statements about the War Goals

The opinion that Iraq would have used chemical weapons and had been hindered only by unforeseen circumstances (e.g. weather conditions or communication problems) was also reflected in the demands posed by the UN Security Council after the war. Resolution 687 demanded the destruction of Iraqi chemical-weapons stocks, dismantling of its production facilities and Iraq's renunciation of these weapons as part of a cease-fire. Resolution 687 was no surprise. Dismantling Iraq's chemical

Reporter and the Chemical Weapons Convention Bulletin.

⁹ On 8 August 1990, US President Bush described Iraq's invasion in Kuwait as a 'Blitzkrieg' and said that there should be no 'appeasement' against a dictator like during the thirties. *Süddeutsche Zeitung* (München), 9 August 1990.

¹⁰ R. Hecht, *Chemische Kriegführung*, in: *Österreichische Militärische Zeitschrift*, Nr. 4/1981, pp. 297

¹¹ *Chemical Weapons Convention Bulletin*, March 1991, p. 16.

¹² *Chemical Weapons Convention Bulletin*, June 1991, pp. 12.

weapons were on the agenda of the Anti-Iraq-Coalition long before March 1991. US-Vice-President Quayle, for example, said in late October 1990:¹³

A Saddam Hussein who has chemical capability, biological capability - would like to have nuclear capability - cannot continue to have that capability even if he withdraws from Kuwait.

Similar statements had been issued separately by CIA-Director Webster and two Democratic Senators in November 1990.¹⁴ These statements appeared to bear out speculations about US-American goals expressed as early as August and September 1990. As for example the conservative German newspaper 'Frankfurter Allgemeine Zeitung' wrote, US-American undeclared goals included Saddam Hussein's overthrow and the destruction of Iraq's military might to prevent any further attack involving chemical and perhaps nuclear weapons.¹⁵ Richard Perle, former Deputy Secretary of Defence in the Reagan administration, had similarly put forward the opinion that the United States should not only free Kuwait but also eliminate Iraq as a military and political factor in the Middle East.¹⁶

In December 1990 the 'Committee for Peace and Security in the Gulf,' a group of US politicians from the Democratic and the Republican parties, demanded that the elimination of Iraq's weapons of mass destruction be given high priority on the list of American war goals.¹⁷ President Bush then also stated that even if Iraq withdrew from Kuwait in accordance with the UN security council resolution 660, the United States and other allies would take steps to eliminate Iraq's chemical and nuclear capabilities.¹⁸ The British Prime Minister Major issued a similar statement in January 1991, saying that Iraq would have to dismantle its chemical-weapons capability as a part of a nonviolent resolution of the Kuwait crisis.¹⁹ After the Second Gulf War Israel, the United States and Great Britain repeated this demand²⁰ and gained acceptance for it by the UN Security Council.

This history shows that during the Kuwait crisis the destruction of Iraq's military power became ever more central within the political and military discussion of the West. The demand that Iraq's capability to produce weapons of mass destruction be

¹³ Current News, 1 November 1990, as in Chemical Weapons Convention Bulletin, December 1990, p. 11.

¹⁴ Arms Control Reporter, p. 704.E-2.12.

¹⁵ Frankfurter Allgemeine Zeitung, 29 August 1990.

¹⁶ N. Peach, *Die Vereinten Nationen und ihr Krieg. Vom Umgang mit dem Völkerrecht*, in: Werner Ruf (ed.): *Vom Kalten Krieg zur heißen Ordnung?* Münster/ Hamburg, 1991, pp. 62.

¹⁷ Chemical Weapons Convention Bulletin, March 1991, p. 8.

¹⁸ *Ibid.*, p. 9

¹⁹ *Ibid.*, p. 10.

²⁰ *Ibid.*, p. 16 & June 1991, p. 12; Frankfurter Allgemeine Zeitung, 21 March 1991.

destroyed, made by US Vice-President Quayle prior to UN-Security Council Resolution 678, which legitimized the use of military power against Iraq, is a first official indication.

Official Statements Concerning Specific Iraqi Preparations for A Deployment of Chemical Weapons

The third level of analysis focuses largely on official Western information about Iraq's chemical weapons during the crisis and the war. I will concentrate on two points that appear to provide the best insight: the discussion whether Iraq's Scud missiles could carry chemical weapons and published information about a chemical-weapons deployment in Kuwait and on the front-line. As we all saw during the war, with every Scud missile attack on Israel and Saudi-Arabia the population was advised to use gas-masks and seek shelter because of the possibility that chemical weapons could be employed. Fortunately the fear that Iraq would deploy chemical weapons on the Scud missiles did not become reality. On the other hand, information on the chemical capability of Iraq's missiles published during the crisis was very uncertain and contradictory.

Immediately after the invasion of Kuwait the Israeli Defence Minister, Moshe Arens, stated that the Iraqi Scud-missiles probably did not have gas-carrying warheads:²¹

As for gases, to the best of our knowledge [Saddam Hussein] does not have missiles with gas-carrying warheads. His missiles can carry explosives and are not effective.

By the end of August 1990 the London-based *Jane's Defence Weekly* reported that Iraq had deployed up to 800 Scud-B missiles in Kuwait.²² One day later the US Department of Defense stated that Iraq deployed chemically-capable Scud-B missiles in Kuwait, without referring to any numbers.²³ In September 1990, an unidentified "*leading Arab official*" reported that in a test "*monitored by Western intelligence*" the Iraqi military had already successfully fired a chemically loaded missile.²⁴ In the same month, however, the Washington Post reported that an unidentified US

²¹ Arms Control Reporter, p. 704.E-2.12; see also *Süddeutsche Zeitung*, 14 August 1990.

²² *Frankfurter Allgemeine Zeitung*, 22 August 1990.

²³ *Frankfurter Allgemeine Zeitung*, 23 August 1990.

²⁴ *Süddeutsche Zeitung*, 15 September 1990; Arms Control Reporter, 704.E-2.19.

official said that US intelligence did not have any indication that Iraq had tested a chemically or biologically-loaded Scud missile.²⁵ Also in September 1990 first reports said that Iraq had just begun to produce chemical and biological warheads for its Scud-missiles.²⁶ However, in November 1990 General Schwarzkopf said that he believed the Iraqi missiles could not carry a chemical warhead.²⁷

In February 1991 the German newspaper *Frankfurter Allgemeine Zeitung* issued a report stating that an Iraqi engineer who took part in the missile improvement program of Iraq before fleeing the country stated that there were huge technical problems to be solved before a chemically-loaded missile could be launched.²⁸ Further press reports showed this report to be correct, citing “*allied intelligence services*” and NATO Headquarters.²⁹ Yet within the same period unidentified Israeli and British officials are quoted saying that Iraq could now use chemical weapons with its missiles.³⁰

Iraq itself, in its report to the United Nations Security Council in March, said that it had chemical warheads for its ‘Al-Abbas’ missiles.³¹ However, Marius van Zelm, leading a group of UN specialists to destroy Iraqi chemical weapons in November 1991, stated that there were serious doubts whether these warheads were ready to be deployed.³²

All this suggests that an analysis of press reports cannot be used to establish whether Iraq could use its missiles to deploy chemical weapons. The uncertainty remains. Still, it seems reasonable to assume that Western intelligence services were better informed on the state of the missile program than the public had ever been. One may therefore speculate, that in part, the chemical threat posed by Iraqi missiles may have been used to influence public opinion, legitimizing military engagement and helping to create strong popular support for the war. This suspicion may be hardened by other evidence, for example, by reports indicating chemical-weapons deployment both in Kuwait and southern Iraq.

Immediately after the invasion of Kuwait the first reports on chemical weapons appeared. On 6 August, the *Washington Post* reported that US satellites photographed specially-equipped Iraqi troops unloading chemical weapons from stock-piles in Iraq.³³ Nevertheless, the Chairman of the US Joint Chief of Staff later admit

²⁵ Chemical Weapons Convention Bulletin, December 1990, p. 9.

²⁶ Süddeutsche Zeitung, 12 September 1990.

²⁷ Chemical Weapons Convention Bulletin, December 1990, p. 11.

²⁸ Frankfurter Allgemeine Zeitung, 4 February 1991.

²⁹ Frankfurter Allgemeine Zeitung, 26 February 1991.

³⁰ Chemical Weapons Convention Bulletin, March 1991, p. 16.

³¹ Arms Control Reporter, p. 453.D.4.

³² Der Tagesspiegel (Berlin), 10 November 1991.

³³ Süddeutsche Zeitung, 9 August 1990; Chemical Weapons Convention Bulletin, December 1990,

ted that this report had been “*somewhat ambiguous*.”³⁴ A few days later press reports said that the Iraqi troops were putting chemical weapons into Kuwait.³⁵ The allegation was to be made frequently during the crisis, for example by Italian Secretary of Defence Virginio Rognoni in August³⁶ and CIA Director Webster in December 1990.³⁷

In February 1991 an unidentified US official reported that Iraq was moving a special chemical brigade and its weapons systems into Kuwait.³⁸ A little later the press reported that Iraq had moved chemical weapons to southern Iraq.³⁹ These reports were confirmed by British authorities.⁴⁰

In the middle of February press reports said that Iraqi chemical-weapons depots in Kuwait had been destroyed⁴¹ and the US Marines found traces of chemical agents in the atmosphere along the Saudi-Kuwaiti border.⁴² On the other hand a high ranking British officer is reported to have said that the allied forces did not know exactly where Iraq had stored its chemical weapons in Kuwait.⁴³

In late February the Financial Times reported that a US Marine division encountered a chemically-loaded mine during an attack,⁴⁴ a report that seemed to be substantiated a little later by British authorities stating their troops had found chemically-loaded mines.⁴⁵

During February 1991 several press reports stated that Iraq’s President Saddam Hussein had ordered the employment of chemical weapons against coalition forces.⁴⁶

However, after the cease-fire the press spokesperson of the US Central Command, Richard Neal, stated that Iraqi troops in Kuwait had not been trained and equipped to wage a chemical war as predicted by the US military. In the same press confer-

p. 4.

³⁴ Frankfurter Allgemeine Zeitung 10 August 1990.

³⁵ Frankfurter Allgemeine Zeitung, 9 August 1990.

³⁶ Süddeutsche Zeitung, 13 August 1990.

³⁷ Chemical Weapons Convention Bulletin, March 1991, p. 9.

³⁸ Chemical Weapons Convention Bulletin, March 1991, p. 14.

³⁹ *Ibid.*

⁴⁰ *Ibid.*, p. 16.

⁴¹ Frankfurter Allgemeine Zeitung, 18 February 1991.

⁴² Frankfurter Rundschau, 25 February 1991.

⁴³ Chemical Weapons Convention Bulletin, March 1991, p. 16.

⁴⁴ *Ibid.*

⁴⁵ *Ibid.*

⁴⁶ Frankfurter Rundschau, 4 February 1991; Chemical Weapons Convention Bulletin, March 1991, p. 14.

ence he stated that US troops had found a chemical bunker in Kuwait, but he revealed no details.⁴⁷

Moreover, in the beginning of March 1991 the US military admitted that they had not found any chemical weapons in Kuwait or southern Iraq and that chemical weapons had not been transported from their depots north of the Euphrates River to the front line.⁴⁸ The commanding officer of the British troops stated the same before the UK House of Commons.⁴⁹ Furthermore press reports after the war stated that US intelligence never had substantiated information about the order by the Iraqi President Saddam Hussein to use chemical weapons.⁵⁰

Conclusions

It will take a long time to establish precisely to what extent the information about Iraqi chemical weapons was disinformation, ignorance or a mixture of the two. Yet there is evidence that this information had partly been used to promote political and strategic goals.

Analysis of the Second Gulf War seems to underline the thesis that the United States since August 1990 put through a policy that systematically denied any peaceful solution of the Kuwait crisis.⁵¹ Iraq's capability to produce weapons of mass destruction within American policy seems to have had a double function. On the one hand, possession of weapons of mass destruction by Third World countries is seen as a danger to Western interests. On the other, this possession had been used to prepare for the war by overstating Iraq's military power. Within this context, the public came to believe that the Iraqi military power was more dangerous than it was in reality. A report issued by the New York Times in November 1990, for example, indicated that the Saudi authorities first permitted the US troop mobilization into their country after the US passed intelligence information to them suggesting that Iraq had stationed chemical weapons in Kuwait.⁵² After the war this information turned out to be as incorrect as other information by US officials about troop strengths in Kuwait and

⁴⁷ Chemical Weapons Convention Bulletin, June 1991, p. 12.

⁴⁸ Arms Control Reporter, p. 704.E-2.31.

⁴⁹ Chemical Weapons Convention Bulletin, June 1991, p. 20.

⁵⁰ *Ibid.*, p. 13.

⁵¹ Noam Chomsky in an interview documented in *Frankfurter Rundschau* (Frankfurt), 30 February 1992; *Der Spiegel* (Hamburg), No. 3, 1992. A similar view of the events had also been expressed by the former French minister of defence, Chevènement. *Jordan Times* (Amman), 20 January 1992.

⁵² Chemical Weapons Convention Bulletin, December 1990, p. 6; see also *Frankfurter Allgemeine Zeitung*, 9 August 1990.

on the Saudi-Arabian boarder.⁵³ Several press reports showed that Iraqi troop strengths on the front were only around 200.000 soldiers. This would be less than half, and maybe only one third, of the US figures of 500.000 to 623.000 Iraqi troops.⁵⁴

The interpretation that the US had overstated Iraq's military power can be seen not only for chemical weapons but also in other areas.⁵⁵ For example the French military analyst Colonel Jean-Louis Dufour stated in February 1991 that the US intentionally overstated Iraqi military power.⁵⁶ Closer investigation would be needed to decide whether one can deduce from the above that the Second Gulf War was at least partly fought over the issue of the possession of weapons of mass destruction, as stated by Francis Fukuyama, former US State Department employee and now working for the Rand Cooperation in Washington:⁵⁷

[...] the Bush Administration attacked Iraq at least in part to eliminate the Iraqi nuclear and chemical threat.

The Second Gulf War has shown clearly the extent to which information about chemical weapons revealed to the public was contradictory. To deal rationally with issues of chemical weapons is complicated under these circumstances. Reliable information is the basis for appropriate analysis that itself is basic for the public debate on chemical weapons, their proliferation and their disarmament.

⁵³ Antimilitarismus Information (Berlin), Nr.10, 1991. This article cites press reports that indicates that the USA gave false information to Saudi-Arabia. Following these reports, the pictures obtained by commercial satellites did not show a strong buildup of forces by Iraq in Kuwait - but a strong buildup of forces by the USA in Saudi-Arabia.

⁵⁴ See for example: *Süddeutsche Zeitung* (München), 6 February 1992; *Der Spiegel* (Hamburg), No. 3, 1992; E. Schmähling: *Moralische und rechtliche Aspekte des Golfkrieges und Konsequenzen für die Bundesrepublik Deutschland*; in: Georg Stein (ed.): *Nachgedanken zum Golfkrieg*; Heidelberg, 1991, p. 78.

⁵⁵ This may also be the case with the example of the Army of Iraq: While Iraq had been named as the most capable Army in the Middle East in early August 1990 (*Die Tageszeitung*, 3 August 1990) within days Iraq had been said to have an Army ranking fourth worldwide (*Süddeutsche Zeitung*, 9 August 1990).

⁵⁶ *Frankfurter Rundschau*, 28 February 1991. Another example for an overestimation may be the so called 'Supergun'. It is known that British intelligence services and some members of the British parliament had been informed about this program at least since 1988, but no action had been taken prior to April 1990. (*Financial Times*, 16 January 1992; For details of the 'Supergun' program see: U. Albrecht; A. Wellmann: *Vom 'Englandgeschütz' zur irakischen 'Superkanone'*; *Frankfurter Rundschau*, 16 October 1991.)

⁵⁷ Francis Fukuyama, *Changed days for Ruritan's dictator*, *Jordan Times* (Amman), 26 April 1991.

Arend Wellmann

Julian P. Perry Robinson

The Chemical Weapons of Desert Storm Forces and the Wider Implications of Tear Gas and Other Incapacitants

9

The present theme is on the Kuwait-War chemical threat.¹ The ‘chemical threat’ I shall be talking about is one that reaches deeper into the future than the war itself did. I shall be dwelling on the longer term implications of one little noticed aspect of the Desert Storm force posture: tear gas. What I have to say links into tomorrow’s agenda, when we consider impacts of the war on the negotiation of the now-imminent Chemical Weapons Convention.

US policy on chemical-weapons employment during the Kuwait War

At the time of Iraq’s invasion of Kuwait, US policy on employment of chemical weapons was still just as President Nixon had enunciated it in November 1969. In the words of President Bush: “*We will never use chemical weapons first, but only in retaliation for their use against us.*”² Two weeks after the invasion, the world was reminded of this retaliatory-use option in basic US policy by Ambassador Stephen Ledogar, head of the United States delegation to the Conference on Disarmament. Referring to “*the sad developments of the last two weeks,*” he stated before the conference in plenary session: “*If we are attacked with chemical weapons, we must have a variety of response options, including the option to respond in kind so long*

¹ Rodney McElroy was originally invited to speak on this subject and we would have learnt much I had not had to take his place. On this subject, I would like to refer to the presentation he gave at the conference convened in Geneva by the International Commission of Health Professionals in 1989. See: Rodney J. McElroy, *Tear Gas and Herbicides: Their Use in Warfare and the Importance of Prohibiting Such Use*. In: International Commission of Health Professionals, *International Conference on Combatting the Use of Chemical and Biological Weapons ... Geneva, 24-27 May 1989*. (Geneva: ICPH, 1989), pp. 50-61.

² George Bush, *National Security Strategy of the United States: 1990-1991*, Brassey’s, 1990, p. 107.

as we still have some chemical weapons.”³ But whether the option would actually be exercised in the event of Iraqi resort to chemical weapons was left ambiguous. American leaders made a succession of public statements on the matter: President Bush, Vice-President Quayle, Secretary of State Baker, Defense Secretary Cheney, General Schwarzkopf, White House Chief of Staff Sununu. Sometimes the statements seemed contradictory, but the clear message they all conveyed was that the US response would be very heavy indeed. The actual form it would take was left unclear: maybe chemical, maybe not.

President Bush, in a televised address on 8 August, had said that Iraqi use of chemical weapons “*would be dealt with very, very severely.*”⁴ But on 14 August Defense Secretary Richard Cheney, asked at a press conference at Fort Stewart, Georgia, whether US forces were prepared to retaliate in kind against Iraqi CW attack, had said: “*I cannot conceive of a situation in which the United States would want to use chemical weapons. The president has a wide range of options available to him in terms of our military capability, and he would be the one who would ultimately make a decision about how to react.*”⁵ General Schwarzkopf told the press in Saudi Arabia on 31 August that, if Iraq uses chemical weapons, “*they will pay for it big time.*”⁶ Secretary of State James Baker put it somewhat differently on 29 October: “*Saddam Hussein must also realise that should he use chemical or biological weapons, there will be the most severe consequences.*”⁷ Speaking in Cairo on 23 December, Defense Secretary Cheney said: “*were Saddam Hussein foolish enough to use weapons of mass destruction the US response would be absolutely overwhelming and devastating,*” but he declined to speculate on the actual form of the response.⁸ But on 27 January, White House Chief of Staff John Sununu, asked during a television interview whether it was possible that the United States would respond with chemical weapons against Iraqi use of them, replied: “*No, it is not.*”⁹

³ Statement of Ambassador S .J. Ledogar (USA) at the CD in plenary session, 16 August 1990: CD/PV.574, pp. 18-21.

⁴ R Jeffrey Smith, *US warns of retaliation if Iraq uses poison gas.* Washington Post, 9 August 1990, p. A31.

⁵ Reuter from Fort Stewart, as in International Herald Tribune, 15 August 90, p. 4, *Cheney warns Iraq on chemical arms.*

⁶ Michael R Gordon (from Saudi Arabia), New York Times (West Coast edition), 1 September 1990, p. 6, *No war unless Iraq strikes, US Gulf commander says.*

⁷ James A Baker III, address to the Los Angeles World Affairs Council, 29 October 1990, as reported in: Thomas L Friedman (from Washington), New York Times (West Coast edition), 30 October 1990, p. A4, *Bush and Baker explicit in threat to use force.*

⁸ Deborah Pugh (from Cairo), Guardian (London), 24 December 1990, p. 1, *US nuclear warning to Saddam.*

⁹ John Sununu interviewed by George F. Will on ABC News This Week with David Brinkley, 27 January 1991, as transcribed by News Transcripts, Inc.

What US policy really was we may not know for some while yet. On the information currently available, a reasonable speculation is that a policy decision was in fact taken against retaliation in kind, and therefore against deployment of US nerve-gas weapons to the Gulf. If so, there would no doubt have been a deception plan of some sort to disguise the policy - a plan perhaps including public statements by American leaders designed to create maximum uncertainty about US chemical-warfare intentions by suggesting that even the more extreme of the retaliatory options, including use of nuclear weapons, were definite possibilities. And any such deception plan would presumably also have included a good bit of disinformation too: disinformation which perhaps lives on in today's popular perceptions of what actually happened.

I am alluding here to the various rumours about shipments of American nerve gas to the Gulf and about documents that had been circulating at Coalition command levels setting out guidelines for coalition use of chemical and nuclear weapons.¹⁰

Deception apart, the centrepiece of such a policy would have been the private communication to Saddam Hussein of a very clear threat, for example that his resort to poison gas would precipitate an unrestrained march on Baghdad. That particular retaliatory option, with its implicit direct threat to the person of Saddam Hussein himself, was given publicity by US officials during the days immediately preceding the Desert Storm offensive.¹¹ Without some such private communication, all those public declarations and rumours might have been viewed in Iraq merely as American vacillation and unwillingness to grasp the nettle.

Evidence that the United States had in fact adopted a no-use chemical-weapons policy comes from the announcement by President Bush on 13 May 1991 of major changes in the basic US policy on chemical weapons. In particular, he declared that the United States was "*formally forswearing the use of chemical weapons for any reason, including retaliation, against any state, effective when the [Chemical Weapons] Convention enters into force.*" Would a military option on which any form of reliance had been placed during the Kuwait War be discarded so soon afterwards?

In fact the abstention from chemical warfare during the Kuwait War may well have brought an even more widespread benefit: it may have created doubt in the minds of potential proliferators. It will surely have caused them to question whether possession of chemical weapons can in fact bring the benefits which Iraqi use during the Iran-Iraq War suggested they could, perhaps wrongly.

Yet it would be going altogether too far to conclude that the Kuwait-War experience finally demonstrated the low value of chemical weapons to high-tech belli-

¹⁰ Richard Norton-Taylor, *Guardian* (London), 28 September 1991, p. 8, *Gulf war allies had nuclear option, claims officer.*

¹¹ Melissa Healy (from Washington), *Los Angeles Times*, 21 February 1991, p. 17, *Chemical attack would escalate allied retaliation.*

gerents. For in fact US forces had express authorisation from President Bush to use one particular category of chemical weapon if they needed to, regardless of whether Iraq had done so first. The authorisation concerned what US authorities describe as ‘riot control agents’. In the context of *Desert Storm* this may seem a trivial matter. But, in the context of the projected chemical treaty regime, it most certainly is not.

The Presidential authorisation to use ‘riot control agents’

So it is important to form as clear an idea as we may of what exactly was authorised. The presidential directive itself is not yet public; only the following account of it released by the US Defense Department on 28 January 1991:

The President of the United States, through Executive Order 11850, has authorised US forces in the Gulf to use Riot Control Agents (RCA) under certain circumstances when their limited use could help save lives.... The category of most interest to us is search and rescue operations. In limited circumstances, using tear gas could make rescue operations easier. We are disturbed by Iraqi treatment of downed coalition pilots, and the use of tear gas could help improve the odds of successful rescue.... The use of RCAs is not prohibited by the [1925 Geneva] Protocol. However, as a matter of national policy, the US has renounced the first use of RCAs in wars except in defensive military modes to save lives.

There are several things about this language which need explaining or interpreting, especially the reference to the Geneva Protocol and the meaning of ‘riot control agents’.

The *Executive Order 11850* mentioned is key. It is a directive entitled *Renunciation of Certain Uses in War of Chemical Herbicides and Riot Control Agents* signed by President Ford on 8 April 1975. It requires prior Presidential approval for any US use of ‘riot control agents’ in war, and it prohibits all such use except in “*defensive military modes to save lives.*” It illustrates such modes with four examples, one of which includes “*rescue missions, in remotely isolated areas, of downed aircrews.*” Presumably the “*certain circumstances*” referred to by the Defense Department under which the use of RCAs was authorised fell within the Order’s “*defensive military modes to save lives.*” Pressed on the point, the Defense Department would say only; “*We don’t discuss rule[s] of engagement. But it would be used in limited circumstances, such as preventing civilian interference.*” The first time the scope of the Order was put to the test was a month after its promulgation, during the *Mayaguez* affair of May 1975: the seizure by the Cambodian navy of a US cargo vessel in the Gulf of Siam and its recovery by US Marines. In response to privately expressed

misgivings about the US use of ‘riot control agents’ during the affair, the US State Department said that there had been prior authorisation by the President. It said further:¹²

The USG considers the use of RCAs in the Mayaguez situation to be entirely consistent with the terms of the Executive Order [no 11850] as a use closely analogous to use in rescuing downed aircrews and passengers.

What, next, are ‘riot control agents’ in the sense of the authorisation? One might think that the term means “*tear gas identical to that used by police departments in the US.*” That is what the Defense Department had told the press on 25 January 1991 it was seeking authority to “*make limited use of*” - just as it had, it said, “*in past military engagements, such as Panama.*” Executive Order 11850 expressly applies to “*any not control agent,*” though without saying what that means. Describing the order in September 1975, the US Army had told the Congress that “*currently only CS and CN are classified and considered as riot control agents for military purposes.*” Agent CR was then under consideration as well, we now know.

These substances - chemical irritants - are valued for the severely disabling nature of their lachrymatory sternutatory and algogenic effects, for the rapidity of onset of these effects, and for the usually swift fading of effects once exposure ceases. Agents CN and CS are popularly, and misleadingly, known as ‘tear gases’.

But that 1975 Army statement continued: “*However, any agents which are accepted and used domestically for riot control and law enforcement purposes can be considered in this category in the implementation of this policy.*” US police departments in fact have at their disposal for law-enforcement purposes a wider range of physiologically active chemicals than the irritants CN and CS. The scope of the Order is thus unclear.

Finally, what about that reference to the 1925 Geneva Protocol? In the *Fiscal Year 1992 Arms Control Impact Statements* submitted to the US Congress shortly before the authorisation, the Administration had stated (much as it had done in earlier years):

The United States has consistently interpreted the [1925] Geneva Protocol [prohibiting the use in war of asphyxiating, poisonous or other gases] as not applying to riot control agents, herbicides, and defoliants because the United States does not consider them to be chemical weapons.

¹² US Embassy in London, Political Section, personal communication, 9 February 1976.

The problem of misinformation

At this point I would like to switch to a subject that is of particular concern to us in the Information Network on CBW: the problem of misinformation. I shall speak of this in relation to three topics: the status of chemical irritants under the laws of war; the euphemistic potential of the term ‘riot control agent’; and the bearing which these two matters may be having on the current negotiation in Geneva of the Chemical Weapons Convention.

Many people have come to suppose that the international laws of war do not apply to irritants such as the tear gases - that these toxic agents are not, within the meaning of international law, chemical weapons. One reason why they have come to suppose this may be that officials of the US administration have told them so - as in the Arms Control Impact Statement I just quoted: “*The United States has consistently interpreted the Geneva Protocol as not applying to riot control agents.*” They are misinformed. Far from “*consistently*” interpreting the laws of war as not applying to chemical irritants, it was not until the Vietnam War that the United States made any such claim. Previously, the US position - though occasionally questioned - had always been that irritants when used in war (as opposed to domestic police use) were no less a chemical weapon than the asphyxiants or the blister gases. This is clearly established from US state papers in the doctoral dissertation of Rodney McElroy. In holding to such an interpretation of international law, despite that occasional questioning, the United States was in line with the rest of the world.¹³

Yet is there not, one may ask, something perverse about prohibiting in war against enemies something which police forces are allowed to do to their own citizens? Only, it seems to me, if one wishes to make a debating point. The distinction has been put to the test many times in the past and found both acceptable and workable. For example, large supplies of tear gas were available to US forces during the Korean War, just as they had been during World War II, but were never used on the battlefield, despite requests from field commanders that such use be authorised. They were used, however, to control disturbances in a prisoner-of-war camp. The sense of threshold was very strong.

The Vietnam-driven claim that tear gas is not a chemical weapon was firmly rejected by the Committee on Foreign Relations of the United States Senate in 1971 when President Nixon sought to ratify the Geneva Protocol on such a basis. Later, in December 1974, President Ford compromised with the Senate in order to achieve ratification. This was the origin of Executive Order 11850. It is worth recalling here what the elements of the compromise were:

¹³ See, for example, Wil D. Verwey, *Riot Control Agents and Herbicides in War*, Sijthoff, Leyden, 1977.

- (a) No formal reservation by the United States of any right to use irritants in war.
- (b) A public statement of recognition by the US Senate that the executive branch had made plain its understanding that the Protocol did not extend to tear gases and herbicides.
- (c) The Presidential restrictions on use of tear gases and herbicides as set out in what would become Executive Order 11850. Examples were given of uses of ‘riot control agents’ that would be regarded as permitted under the restrictions. So were examples of forbidden uses. The examples of permitted uses are contained in Executive Order 11850. The examples of forbidden uses are to be found in Administration testimony to the Foreign Relations Committee “*Under this national policy riot control agents could not be used, for example, to support an assault of armed forces in heavily fortified positions or built-up areas... to attack the enemy concealed or entrenched in fortifications, bunkers, caves or tunnels... to replace combat units in blocking operations... to suppress small arms fire around helicopter landing zones... to suppress antiaircraft fire... to suppress [sic] the capture of prisoners for intelligence purposes... for reconnaissance by fire... to deny the use of a section of trail or roadnet... to deny the use of potential ambush sites... to deny use of food caches or food growing sites.*”¹⁴
- (d) A public statement of recognition by the Administration that the dominant understanding of the Protocol in the Senate is “*inextricably linked with the history of Senate consent to ratification of the Protocol with its consent dependent upon its observance.*” The statement was made in the response to a question put to the principal Administration spokesman on the matter (Dr Fred Iklé) during a hearing before the Senate Foreign Relations Committee:
Question: “*Assuming the Senate were to give its advice and consent to ratification, what legal impediment would there be to subsequent Presidential decisions broadening the permissible uses of herbicides and riot control agents?*”
Answer: “*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 upon 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 ratifica-*”

¹⁴ 93rd US Congress, 2nd session, Senate, Committee on Foreign Relations, hearing *Prohibition of Chemical and Biological Weapons*, 10 December 1974, p. 13.

tion, and could have extremely grave political repercussions and as a result is extremely unlikely to happen.”

I shall now speak about the euphemistic potential of the term ‘riot control agent’. Many of the chemical irritants that have found civilian application as not-control agents have also found military use as battlefield weapons, and vice versa. The physiological effects required of an effective crowd-control agent are also capable of forcing enemy soldiers to break cover or to evacuate tunnels, pillboxes or other fortified positions, thereby exposing themselves to lethal fire. Because they are chemically the same, such military ‘harassing agents’ can be referred to as ‘riot-control agents’, even though they are clearly being used for purposes utterly different.

Calling them ‘riot control agents’ can heighten the impression that battlefield use of chemical harassing agents either is not or ought not to be illegal. The euphemistic potential here is clear, and it has been exploited vigorously in the past. Maybe even unconsciously so - as in this memorable sentence, which comes from a description by the US Army of the decision announced by President Nixon on 11 August 1970 to limit further use of CS in the Vietnam War: “*The President directed that the use of riot control agents by US forces in war shall require Presidential approval except in cases of riot control...*”

In civil use, by properly trained police forces, CS and the like rarely kill. Hence the term ‘non-lethal agents’ that is sometimes also applied to them. Of course, like any other toxic chemical, they can kill if the amounts used are large enough, or if they are used in confined spaces, or if people exposed are especially sensitive because of age, for example, or illness. Under battlefield conditions the restraints which keep the lethality of tear gas low may often be absent.¹⁵

Applying the term ‘riot control agent’ or ‘non-lethal agent’ to military weapons conveys a sort of humanitarian overtone; an overtone that was not absent from the US Defense Department’s account of President Bush’s authorisation. So let us not forget what the Vietnam War taught us.¹⁶

We should recall, first, the words of US Secretary of State Dean Rusk when telling the Washington press corps, on 24 March 1965, about the initial use of agent CS during the war:

¹⁵ For detailed discussion of these technical matters, see J. P. Perry Robinson, *Some notes on the British Government’s decision that CS is beyond the scope of the Geneva Protocol*, British Pugwash Group, April 1970.

¹⁶ For a detailed overview of the use of ‘riot control agents’ during the Vietnam War, see SIPRI, *The Problem of Chemical and Biological Warfare* (6 vols, Stockholm, London and New York, 1971-75), at Volume 1, pp. 185-203. For a particularly cogent overall assessment, see Stewart Blumenfeld and Matthew Meselson, *The Military Value and Political Implications of the Use of Riot Control Agents in Warfare*, in Carnegie Endowment for International Peace, *The Control of Chemical and Biological Weapons*, Washington, 1971, pp 64-93.

Under the circumstances in which this gas was used in Vietnam, the desire was to use the minimum force required to deal with the situation to avoid death or injury to innocent people... We do not expect that gas will be used in ordinary military operations... The anticipation is, of course, that these weapons be used only in those situations involving riot control or situations analogous to riot control.

Such an image of intermingled combatants and noncombatants recurred often in official US commentaries.

In fact, whatever the intentions might have been initially, the 'riot control agents' soon came to be used primarily as an adjunct to firepower and manoeuvre, just as any other weapon. A typical use, for example, had Army helicopters spreading great quantities of CS dust over area targets immediately prior to B52 strikes. By 1971, 7800 tonnes of CS had been used in the war¹⁷ - enough to fill 624 million of the CS cartridges which British forces had by then begun to use in Northern Ireland. Some of the CS weapons in use in Vietnam were indeed riot-control-type cartridges and hand-grenades; but most of the consumption was via military weapon systems, including long-range artillery and strike aircraft armed with massive CS bombs or CS cluster-munitions.

A detailed postwar evaluation of CS employment showed that the intermingled situation - the initial justification for using CS - had in fact rarely been encountered.¹⁸ The humanitarian inch had become a battle-fighting ell: though the use of CS had seemed desirable initially in order to diminish violence, in practice it increased it. As a matter of organisational behaviour, and I am referring here to the United States military, this was probably inevitable. Hence the dismay, among those who remembered this aspect of the Vietnam War, at the announcement of the *Desert Storm* authorisation.

Have the negotiators in Geneva fallen victim to misinformation of the types I have been describing? I ask this because the way things seem to be going, the imminent Chemical Weapons Convention may end up exempting 'riot control agents' altogether from its strictures.

Agents CS and CR used to be listed, as markers for the whole category of chemical irritants, in Schedule 1 of the draft Convention - the control list of supertoxic chemical warfare agents - under the rubric "*to be discussed further.*"¹⁹ But during the 1989 work on Article VI which produced the first version of the *Annex on Chemicals*, the two agents were downgraded into a Schedule 2B footnote: "*A view was*

¹⁷ The present author's estimate. See SIPRI Chemical & Biological Warfare Studies, no 6, 1986, pp. 54-55.

¹⁸ Paul L Howard, *Technical report: operational aspects of agent CS*, Desert Test Center, April 1973 (AD 525499), p. 116.

¹⁹ CD/734 of 29 January 1987, Appendix I, p. 40.

expressed that CS and CR should be included in one of the Schedules."²⁰ A year later, even that footnote had disappeared.²¹ And the current draft convention, in its definition of chemical weapons in Article II, has a footnote registering the suggestion that the definition be formulated in such a way as to exclude "*irritants used for law enforcement and riot control.*"²²

The Chemical Weapons Convention is thus on the verge, it seems, of legitimising military use of 'riot control agents'. Following the change in US policy announced by President Bush on 13 May, Article I of the draft treaty now says:

Each State Party to this Convention undertakes never under any circumstances ... to use chemical weapons

Which is why this language has now appeared in Article II.1, fortunately still unattached to any particular subparagraph and enclosed within square brackets:

[The term 'Chemical Weapons' shall not apply to those chemicals which are not super-toxic lethal or other lethal chemicals and which are approved by the Conference of the States Parties for use by a Party for domestic law enforcement and domestic riot control purposes.]

Dangers of legitimising military use of 'riot control agents'

Why shouldn't the use of 'riot control agents' be permitted in war? Apart from the fact that it is illegal, I would identify three sets of reasons: escalation liability, assimilation liability, and easing treaty-noncompliance.

As to escalation liability, I would observe simply that irritants were the first chemical agents to be used during each of the five major manifestations of poison-gas warfare this century: French police-issue ethyl bromoacetate during World War I, in August 1914; Italian tear-gas grenades against Ethiopian troops in December 1935; Japanese CN in China in late 1937; Egyptian CN in the Yemen in June 1963; and Iraqi CS against Iranian forces in July 1982.

Effective battlefield use of chemical irritants demands much the same technical competences and special skills needed for effective use of other toxic agents. If practised, it will familiarize new generations of soldiers with operational intricacies that have hitherto tended to discourage widespread military attention to chemical weapons. It will get people used to the problems of fighting in protective masks. It

²⁰ CD/952 of 18 August 1989, p. 54.

²¹ CD/1033 of 10 August 1990, p. 64.

²² CD/1108 of 22 August 1991, p. 20.

will create experience in matching the meteorological behaviour of toxic aerosols and sprays to battlefield targets, experience in the use of chemical delivery systems, and experience in the complex relationships between toxic dosages, desired target response and munitions expenditure. Military forces will become that much better able to use all forms of chemical-warfare weaponry, and better able to assess the tactical advantages and disadvantages of doing so. The proliferation of poison gas will have been promoted.

Still more worrisome is this consideration. Legitimise the military use of 'riot control agents', and we have legitimised research and development work on their weaponization also. We have thus created ready cover for weaponization work on other categories of physiologically active substance. Camouflage, in other words, for violation of both the Chemical and the Biological Weapons Convention. This is by no means a theoretical possibility only. Here is an excerpt from testimony given to the US Congress in 1973 by the US Army.²³ It is about the development then in progress of new types of chemical weapon:

A new agent, EA 3834..., has been accepted for weaponization. The agent has essentially the dissemination properties of standard riot control agent CS, which will enable the weaponization of EA 3834 to piggyback on the technologies developed for the current family of tactical riot control agent munitions.

A factor which makes this danger particularly acute is that police and internal-security forces, in America and elsewhere, have come to state requirements, not only for short term incapacitants such as tear gas, but also for longer lasting incapacitants that can disable temporarily through mechanisms other than irritancy. Objectives have included immobilising weapons, for example, and crowd-sedating weapons.²⁴ The same toxic substances can also satisfy requirements for military incapacitating (as opposed to harassing) chemical weapons. These are weapons that can both generate enemy casualties and also, in so doing, impose a greater logistical burden on the enemy than other types of weapon would - by causing the casualties to be predominantly nonfatal, therefore requiring labour-intensive evacuation, care and attention. Incapacitating chemical weapons offer, also, a possible means for reducing the political costs of applying armed force. It is not hard to imagine attractions of these various types coming to seem greater, under certain circumstances, than those of continued compliance with an international disarmament regime.

The aforementioned EA 3834 (1-methyl-4-piperidyl isopropylmandelate) is one such military incapacitating agent - a percutaneously active anticholinergic glycolate

²³ SASC, FY74, 5:3880.

²⁴ John Bennett for Scripps Howard News Service, as in Washington Times, 6 Mar 1989, p. 6, *Chemical weapon sought for police*.

capable of disabling through dizziness, ataxia, mental confusion and sedation at dosages much the same as the nerve gases can cause casualties.

Some of the longer-term incapacitants that are under consideration for law-enforcement purposes are toxins within the meaning of the 1972 Biological and Toxin Weapons Convention or its domestic implementing legislation, such as the US *Biological Weapons Anti-Terrorism Act* of 1989. Thus, contained in that US legislation, is the following:

the term 'toxin' means, whatever its origin or method of production - (A) any poisonous substance produced by a living organism; or (B) any poisonous isomer, homolog, or derivative of such a substance.

A term, in other words, which would seem to include some of the opioids that have been studied for use in immobilizing weapons (with or without an alpha-2 agonist to reduce the dosage for anaesthesia and to increase the ratio of lethal to incapacitating dosage).

Let me recall, at this point, the US Army view of Executive Order 11850 that the order permitted war use, subject to prior Presidential approval, of *any* agent used domestically for law-enforcement purposes. And let us not forget, too, that states differ widely in the freedom of choice open to authorities in selecting weapons for law-enforcement purposes. In Iraq, for example, mustard and nerve gases have evidently been regarded as acceptable.

A remedy

What, in conclusion, should be the way forward? One is reminded of the dual uses that other categories of chemical-warfare agent can have. Agent CS can indeed be used for riot control, just as certain mustards can be used for cancer control and certain nerve gases for glaucoma control.

In fact many of the millions of different chemicals that fall within the scope of the Chemical Weapons Convention in its current draft have civilian applications as well as chemical-warfare ones. The treaty is being drafted so as to permit such civilian applications to continue: their use is to be regulated under the definition of "*purposes not prohibited under the Convention.*"

That regulation may or may not involve monitoring of civil production, trade and so on, for compliance-verification purposes. It depends, theoretically, on the degree of risk which the negotiators agree any particular chemical may present. An example of a dual-use chemical that, on the current draft, is to be subjected to monitoring

is arsenous chloride. This is a chemical from which the blister-gas lewisite can be made, and which is used to synthesize certain pharmaceuticals and insecticides, and in ceramics. Another example is phosgene, which was the principal killer gas of World War 1 but is also an extremely valuable intermediate in the chemical manufacturing industry. There is a myriad other such potentially dual-use chemicals which are not expressly subject to the treaty's verification provisions. One might cite as an example the candidate chemical-warfare agent to which the term 'nerve gas' was originally applied: tetraethyl lead, the petrol anti-knock additive. Under the Convention in its present draft, its control is to be left to the discretion of the National Authorities.

Clearly, the proper use of CS and the like for domestic law-enforcement purposes ought to fall within the "*purposes not prohibited under the Convention.*" There is already language to that effect in Article II.5(a) of the draft Convention. So why cannot these dual-use chemicals be treated just like any other, whether it be on the model of arsenous chloride, phosgene or tetraethyl lead?

Or, better, somewhere in between:

- a clear indication in the treaty that chemical irritants and chemical incapacitants are '*toxic chemicals*' within the meaning of Article II, meaning that they are therefore '*chemical weapons*' unless exempted by the general purpose criterion; and

- an express provision that the "*purposes not prohibited under the Convention*" includes, as the draft does at present, "*domestic law enforcement and riot control purposes,*" but subject to agreed restrictions as regards permissible types of agent and munitions used to disseminate them.

To exclude chemical irritants altogether from the treaty would be a real abdication of responsibility by the negotiators, whatever Desert Storm may have suggested to the contrary.

Julian P. Perry Robinson

Joachim Badelt

The German Involvement in Iraq's Chemical Warfare Production Programme and New Legislative Measures

10

In January 1991, on the eve of the Second Gulf War, a stream of reports was published about the involvement of Germany in the arming of Iraq. Accordingly, strong criticism of Germany's export policy was expressed by friendly governments, in particular by Israel and the United States.

The focus of international attention attracted the public to the fact that German companies have contributed to a considerable extent to the buildup of Iraq's most feared weaponry: its chemical-weapons arsenal.

Chemical weapons had already been deployed by the Iraqi army against Iranian soldiers during the First Gulf War and the government did not even hesitate to use these terrible means of killing against its own civilian population. Halabja, a small town in the Kurdish area, stands as a symbol for a crucial and ruthless warfare with chemical weapons against unprotected people. So the forces of the anti-Iraq-coalition had to assume that Iraq's threat to use chemical weapons was an imminent reality. The danger of a chemical-weapons attack against the Israeli civilian population was also growing from day to day.

Against this background, when the world regarded Saddam Hussein as public enemy No. 1, reports emerged indicating that German companies had been involved far more than those of any other nation in the arming of the dictator with chemical weapons. In particular much attention was paid to a special report, commissioned by the Simon Wiesenthal Center in Los Angeles, listing 86 German companies (out of a total of 207 worldwide) that have supplied Iraq's non-conventional weapons programme. 22 German companies (out of 55 worldwide) were named as having participated in the build up of the Iraqi chemical warfare capacity.¹ It cannot be discussed here how reliable reports of that kind are, but in any case they had a strong impact, on public opinion in the Western World, and in Germany in particular. Foreign and domestic pressure raised and compelled the Federal government again to tighten export controls.

¹ K. R. Timmerman, *The Poison Gas Connection*, A Special Report commissioned by the Simon Wiesenthal Center from Middle East Defense News (Mednews), Los Angeles and Paris, 1990.

This criticism of German export policy occurred two years after the Imhausen/Rabta case had become public and only two months after amendments to the Foreign Trade Act² passed German parliament, the *Bundestag*. The renewed criticism now forced the government to amend the law again that it had itself characterized shortly before as extraordinary well done and reliable.

German deliveries to Iraq

Considering all available information, German companies unquestionably played a decisive role in the buildup of the Iraqi chemical-weapons arsenal by supplying process equipment, precursors, and technical expertise. Not least, according to members of the United Nations Special Commission (UNSCOM), the chemical-weapons Muthanna production facility near Samarra was largely built with German technology.³

Cooperation between German companies and Iraqi State organizations goes back to the mid-seventies. Between 1975 and 1984 the firm Karl Kolb of Dreieich and its subsidiary Pilot Plant sold seven chemical plants to Iraq. The plants were declared as production facilities for pesticides. Yet according to an expert opinion of July 1990, they all were suitable for manufacturing chemical weapons.⁴ Another company, the Water Engineering Trading (W.E.T.) of Hamburg, sold a plant capable of producing phophortrichloride (a precursor of Tabun and Sarin). Furthermore, the firm delivered chemicals that could have been used for chemical weapons production. Pilot Plant and W.E.T. technicians even installed the equipment in Samarra.⁵

First public allegations were levelled against these companies in 1984, after a United Nations fact-finding commission came to the conclusion that Iraqi chemical weapons had been used against Iranian soldiers. After that, ever more details about illegal CW-related exports were uncovered. In 1987 investigations by the Darmstadt state prosecutor commenced. Still, it took until August 1990 to arrest six employees of the suspected companies.⁶ The trial finally started in April 1992, some eight years

² *Gesetz zur Verbesserung der Überwachung des Außenwirtschaftsverkehrs und zum Verbot von Atomwaffen, biologischen und chemischen Waffen* (BGBl. Teil I, 10 November 1990, pp. 2428-2431).

³ *The Independent* (London), 26 June 1991.

⁴ The expert opinion is excerpted in: H. Leyendecker, R. Rickelmann, *Exporteure des Todes: Deutsche Rüstungsskandale in Nahost*, Göttingen 1990, pp. 42-57.

⁵ A. Wellmann, *Wer hat den Irak aufgerüstet? Eine vorläufige Verursacher- und Schadensbilanz*, in: *Blätter für deutsche und internationale Politik*, No. 3/1991, p 367.

⁶ *'Serving mankind' - mit BRD-Giftgas?*, *Tageszeitung* (Berlin), 18 August 1990.

after the first allegations had been raised.⁷ A major question is the cause for the long delay before the state prosecutor could take action. According to the Federal German government, the “*unusually long preliminary proceedings are caused by the extent of the found of evidence and by the difficulties of finding experts to assess the technical documents.*”⁸ These may be some of the reasons for the slow process of the investigations. However, it seems more likely that the delay was mainly because exports of dual purpose goods were not adequately covered by German law.

To give an example: In 1984, after the first allegations concerning Iraq occurred, the German government changed the foreign trade law to cover equipment that could be used for the production of chemical-warfare agents. At the end of 1984, Pilot Plant applied for a licence to export another ‘pesticide’ facility to Iraq. When it was denied, the company took the case to court. Pilot Plant won and delivered the ‘pesticide’ plant to Samarra, a place today well known as the main Iraqi production site for chemical-warfare weapons.⁹

The arrest of some managers of Pilot Plant and other companies in 1990 was only because a Swiss professor, Dr. Richarz, stated explicitly in an expert opinion that some delivered ‘pesticide’ plants had been “*especially constructed*” for the production of arsenic, mustard gas, and tabun.¹⁰ According to Prof. Richarz, none of the plants had been designed or would have been suitable for the production of pesticides.¹¹ Maybe the German government should have consulted Prof. Richarz in 1984, as the Darmstadt prosecutor did in 1990.

Other German firms also allegedly provided Iraq with CW-related goods and equipment. According to an announcement of the Federal German Economics Ministry on 23 August 1990, 59 West German companies were under investigation for alleged offences concerning delivery of armament equipment, especially equipment for the production of chemical weapons.¹² The companies are identified in a confidential Ministry report only. Many companies had nevertheless already been named in the press. However, due to the lack of more qualified information assessing the

⁷ *Prozeß um Giftgas-Aufrüstung Iraks durch deutsche Firmen begann*, Frankfurter Rundschau, 28 April 1992.

⁸ Deutscher Bundestag, 12. Wahlperiode, Drucksache 12/487, 8 May 1991, *Bericht der Bundesregierung über legale und illegale Waffenexporte in den Irak und die Aufrüstung des Irak durch Firmen der Bundesrepublik Deutschland*, p. 6.

⁹ On 17 October 1991 the Federal Administrative Court (*Bundesverwaltungsgericht*, Berlin) in the final (second) appeal judged that the customs authorities acted according to the law when they denied the export license to Pilot Plant in August 1984 (BVerwG 3 C 45.90); *Zoll durfte Chemieanlagen-Export verhindern*, Süddeutsche Zeitung (München), 18 October 1991.

¹⁰ *Eindeutiger Schluß*, Der Spiegel (Hamburg), No. 34, 20 August 1990.

¹¹ H. Leyendecker, R. Rickelmann, *Exporteure des Todes: Deutsche Rüstungsskandale in Nahost*, Göttingen 1990, pp 42-57.

¹² *W. Germans take a close look at chemicals group*, Financial Times (London), 24 August 1990.

extent of their involvement in the Iraqi chemical-weapons programme is difficult. However, according to many sources there exists little doubt that German companies played a decisive role in arming Saddam Hussein with chemical weapons.

This raises the question why so many German companies participated, knowingly or unknowingly, in the Iraqi chemical-weapons programme. One cause may be the structure of the German export industry. Small and medium-sized firms expecting extraordinary profits from such orders or perhaps being unable to assess the true nature of such transactions have a comparatively large share in German industry. Another important reason lies in the fact that the German chemical industry and mechanical engineering enjoy a leading world position. Chemical expertise from Germany is in strong demand - and not only for civilian purposes. Finally, though the Federal government often emphasized that Germany has “*one of the most restrictive export laws*,”¹³ just comparing the provisions of the German foreign trade law with those of other countries is not sufficient. Rather, it has to be asked if the foreign trade law is adequate to hinder proliferation of highly advanced expertise and technologies with possible use for the production of weapons of mass destruction. The experience of the past few years has shown that the German foreign trade law was incapable of preventing the proliferation of chemical weapons.

Export policy of the Federal Government

In Germany exports are ‘free in principle’. Consequently, prohibitions or restrictions only apply to explicitly-named exceptions to this general rule. German export legislation is based on two pillars: The *Weapons of War Control Act* (Kriegswaffenkontrollgesetz)¹⁴ and the *Foreign Trade Act* (Außenwirtschaftsgesetz).¹⁵ The Weapons of War Control Act covers only weapons designed for use in war and to some extent components of weapons.

The Foreign Trade Act calls for licensing of other elements that could be used to build weapons. Under the latter act fall, for example, deliveries of weapon components not explicitly specified in the Weapons of War Control Act, and production facilities or equipment, as well as the transfer of blueprints or technical expertise.

¹³ Bundesministerium für Wirtschaft, *Die Reform von Außenwirtschaftsrecht und -kontrolle*, BMWi-Dokumentation No. 309, p 7.

¹⁴ Außenwirtschaftsgesetz of 28 April 1961 (AWG) (BGBl. I, pp 481, p 495 und pp 1555 (in der Fassung der Änderungen, Bundesministerium der Justiz-Fundstellennachweis A, Ausgabe Dezember 1988, p 210))

¹⁵ Gesetz über die Kontrolle von Kriegswaffen of 20 April 1961 (KWKG) (BGBl. 1916 I, pp 444-450).

The Foreign Trade Act is administered by the *Federal Economy Office* (Bundesamt für Wirtschaft) in Eschborn, near Frankfurt, where some 80,000 export license applications (out of 18 million export consignments) per year are reviewed. The export law is further controlled by the custom authorities and the *Customs Criminal Office* (Zollkriminalinstitut) in Cologne.

German export law has twice been subject to parliamentary review since 1989. The first review was triggered by the Imhausen/Rabta case. At the turn of the year 1988/89 the US administration leaked information to the press that West German companies were participating in the construction of a chemical-weapons plant in Rabta, Libya. After first rejecting the accusations, the Federal government was soon forced by accumulating evidence and by growing public pressure to announce measures to strengthen the legislation on foreign trade and a drastic tightening of export controls.

In September 1990 the German Bundestag passed legislation to strengthen the control authorities and the system of registration and data collection; to increase criminal sanctions and administrative fines, and to establish the possibility to punish Germans assisting in the production ABC-weapons abroad.¹⁶ The new laws finally entered into force in November 1990, about two years after the amendment of the Foreign Trade Act had been announced.¹⁷

Furthermore, a so-called 'country list H' was established in December 1990¹⁸ containing 54 states, most of them from the Third World. This approach to prevent proliferation has been criticized as discriminating against Third World countries. However, it has also been attacked as hindering the competitiveness of the German export industry. The new measures introduced in 1990 were also far from an effective instrument to prevent the export of goods that could be used for producing chemical weapons. What was announced as "*a comprehensive reform of the entire legal and administrative export control system*"¹⁹ turned out to be a dilution of the legislation measures initially promised by the government.

The criticism of the FRG's export policy voiced in connection with the Second Gulf War led in February 1991 to renewed draft amendments aimed yet again at

¹⁶ Deutscher Bundestag, 11. Wahlperiode, 225. Sitzung, 19 September 1990, official report (Stenographische Berichte), pp. 17786-17793; Deutscher Bundestag, 11. Wahlperiode, Drucksache 11/4609, 30 May 1989, *Gesetzentwurf der Bundesregierung: Entwurf eines Gesetzes zur Verbesserung der Überwachung des Außenwirtschaftsverkehrs und zum Verbot von Atomwaffen, biologischen und chemischen Waffen*.

¹⁷ *Gesetz zur Verbesserung der Überwachung des Außenwirtschaftsverkehrs und zum Verbot von Atomwaffen, biologischen und chemischen Waffen* (BGBl. Teil I, 10 November 1990, pp 2428).

¹⁸ 12th Ordinance for amending the Foreign Trade Ordinance (12. Verordnung zur Änderung der Außenwirtschaftsverordnung (AWV)), 12 December 1990.

¹⁹ Bundesministerium für Wirtschaft, *Die Reform von Außenwirtschaftsrecht und -kontrolle*, BMWi-Dokumentation No. 311, p 5.

strengthening the legislation. This shows that even the Federal government recognized that the so-called improvements to the export legislation were inadequate.

New amendments

In February 1991 the German government agreed on a draft amendment to the Foreign Trade Act and the Weapons of War Control Act that, *inter alia*, contained the following points:

1. Convictions under the amended law no longer depend on a statement of the Foreign Minister to the effect that the foreign relations of the Federal Republic have been endangered;
2. surreptitiously obtaining an export licence will always be treated as an offence, not as a disorder;
3. all profits from illegal business will be confiscated;
4. the export control list will be further extended;
5. an export licence for dual-use goods will be demanded in cases in which the exporter has knowledge about a military use of these goods;
6. an autonomous export control office will be established;
7. the Customs Criminal Institute will be authorized to tap telephones and intercept mail (although the secrecy of telephones and mail is a constitutionally-guaranteed right)
8. international cooperation towards export controls is to be increased.

These amendments²⁰ passed the German Bundestag with only minor changes after two months on 22. March 1991.²¹ It is noticeable that the amending of the foreign trade act was got through in the Bundestag in such an unusually short period of time. This was in contrast to the amendments passed after the Imhausen/Rabta case, when it took nearly two years to come to a result.

The main reason for this smooth passage was obviously only, as the Bundestag Committee on Economics declared, “*to act against the numerous international accusations and to overcome the uncertainties in the domestic area.*”²² The government failed to make German foreign trade law more stringent; rather, the amend-

²⁰ Deutscher Bundestag, 12. Wahlperiode, Drucksache 12/104, 19 February 1991, *Gesetzesentwurf der Fraktionen der CDU/CSU und FDP: Entwurf eines Gesetzes zur Änderung des Außenwirtschaftsgesetzes und der Strafprozeßordnung.*

²¹ *Bundestag erschwert den Rüstungsexport*, Frankfurter Rundschau, 23 March 1991.

²² Deutscher Bundestag, 12. Wahlperiode, Drucksache 12/289, 20 March 1991, *Beschlußempfehlung und Bericht des Ausschusses für Wirtschaft (9. Ausschuß)*, p 20.

ments merely represent a minor change to and classification of the existing legislation.

Before the law could come into force it required the consent of the second chamber, the Bundesrat, in which the SPD-governed länder hold the majority. They blocked passage of the legislation demanding the deletion of the article that would permit mail-tapping by the Customs Criminal Institute.²³ After no consent had been achieved until 7th June 1991 in the Mediation Committee (Vermittlungsausschuß)²⁴ the Federal Cabinet decided on 26 June 1991 a revised version of the amendments.²⁵ They remain substantially the same, but due to some 'technical' changes (concerning export restrictions of the European Community) the consent of the Bundesrat will no longer be necessary.

On 23 January 1992 the German Bundestag voted with the majority of the CDU/CSU and FDP coalition for the amendments.²⁶ The bill moved to the Bundesrat, where the SPD-majority of the länder expressed discomfort with the provisions empowering the Customs Criminal Institute to tap telephones and intercept mail. Since the bill did not require approval of the Bundesrat, the SPD-länder were not able to block the amendments.²⁷

The late passing of the amendments to the Foreign Trade Act means in practice, that the new legislative measures of the Federal Republic of Germany will soon be overtaken by the envisaged Internal Market of the European Community. By the end of 1992 the export laws of the Community members should be harmonized. Still, 'harmonization' will certainly only happen on a relatively low level. Since the export trade law of Germany, in the European context, is comparatively tight, a weakening of the export regulations would occur in any case. It is true that officials of the Ministry of Economics have declared that they could imagine a prolonged national 'restricted' control policy and practice after 1992. But how this intention would be translated into action is not clear right now.

So it seems that the question of how to prevent the spread of chemical weapons remains unresolved. It will not be resolved until the Federal government is willing to change its mainly technically-oriented approach to the proliferation problem.

²³ *Exportgesetze verzögert*, Frankfurter Allgemeine Zeitung, 20 April 1991.

²⁴ *Rüstungsexportgesetz gescheitert*, Frankfurter Rundschau, 8 June 1991.

²⁵ Deutscher Bundestag, Drucksache 12/899, 28 June 1991, *Gesetzentwurf der Fraktionen der CDU/CSU und FDP: Entwürfe eines Gesetzes zur Änderung des Außenwirtschaftsgesetzes, des Strafgesetzbuches und anderer Gesetze*.

²⁶ Deutscher Bundestag, 12. Wahlperiode, 73. Sitzung, 23 January 1992, official report (Stenographische Berichte), pp 6083-6106; *Bundestag bedroht illegale Rüstungsexporte mit hohen Haftstrafen und dem Einzug der Gewinne*, Süddeutsche Zeitung (München), 24 January 1992.

²⁷ Deutscher Bundesrat, 12. Wahlperiode, 639. Sitzung, 14 February 1992, official report (Stenographische Berichte), pp 30-34; Deutscher Bundesrat, Drucksache 42/92, 14 February 1992.

Germany's Responsibility

The Federal Republic of Germany bears a special responsibility for the chemical arms build up in Iraq.²⁸ Blaming only the firms involved for supplying Iraq would be too easy since most of them did not violate the letter of the export laws. On the contrary, the lack of control mechanisms suggested to them a tacit understanding that such exports were tolerated. Responding to these allegations, German officials stated that the goods concerned could only be exported by circumventing national export laws but failed to mention the ineffectiveness of the export control authorities. On the other hand official statements stress that strong efforts have been made to strengthen export regulations to prevent similar cases in the future. These somewhat contradictory arguments demonstrate that the government and the legislature are responsible for not having adopted stricter legislation as well as for failing to enforce existing laws.

The findings of the UN inspection teams leave no doubt as to the major involvement of German firms although they have not yet been made public. Anticipating international criticism, the government went ahead and explicitly assumed its responsibility for the embarrassing transfers. Thus the Deputy Minister in the Federal Ministry of Economics, Beckmann, stated before the German Bundestag on 11 October 1991 that German companies had participated to a great extent in the buildup of ABC-weapons in Iraq. He continued that regarding Germany "*all the details that have thus far become public from the individual UN-inspection visits in Iraq are shocking.*"²⁹

There is no doubt that other Western states also contributed to the Iraqi arsenals of weapons of mass destruction. Nevertheless, German policy towards chemical weapons and their proliferation should have been guided by a particular sensitivity. For the long history of German misuse of chemical compounds cannot easily be erased from the historical record. A history that started with Prof. Dr. Fritz Haber who supervised the first use of chemical weapons in Ypres and described it later as a "*higher form of killing.*" A history that continued with the invention of nerve gases by Gerhard Schrader, and that reached its terrible culmination with the gassing of millions of Jewish people in Nazi-Germany. A history that came back to German society in the days of the Gulf war. Still, what were the lessons that Germany learned

²⁸ See also: J. Badelt, E. Chauvistré, P. Lock, *Disposing of Chemical Weapons: A Common Heritage Calls for A Cooperative Approach*, in: Bulletin of Peace Proposals, 1 (March) 1992, pp. 43-50.

²⁹ Deutscher Bundestag, 12. Wahlperiode, official report (Stenographische Berichte), 11 October 1991, pp. 4004-4013.

from its history and from the renewed threat of a chemical-weapons arsenal built up with German help?

Conclusions

What was the impact of the Second Gulf War on Germany's antiproliferation policy? I am afraid that the answer is: little! As with the Imhausen/Rabta case, there was no political will for a substantial shift in the export philosophy of the Federal Republic of Germany. The export interests of industry will continue to receive priority over possible restrictions.

A shift of the relevant export control functions from the Economics Ministry to the Foreign Ministry did not occur. The projected new control authority, the *Federal Export Office* (Bundesausfuhramt), with the exclusive function of export controls was established on 1st April 1992.³⁰ However, it will not be sufficiently independent from the Economics Ministry. So the conflict of interests between the promotion of export-oriented industry and stricter controls will continue unresolved.

In February 1989, the Federal government admitted that the then-existing instruments of export control had "*proved inadequate*" in the field of chemical weapons. I would like to stress that the legislative measures that became law in November 1990 and the new amendments of 1992 are still far from adequate with respect to the control of dual-purpose goods.

Politicians again failed to strengthen the provisions of the foreign trade law enough to provide an effective instrument to prevent the export of CW-related goods and technologies. The government of the Federal Republic was evidently only concerned with fending off the accusations of friendly governments and with calming public opinion. Despite an active antiproliferation policy based in particular on a cooperative approach (Chemical Weapons Convention), the recent changes were again only a reaction to public protest, both in Germany and abroad.

The German government may have been motivated by its concern about damage to the international reputation of the Federal Republic that could harm its worldwide economic and political standing and its business relations. German politicians attempted to save the good standing of Germany, but they failed again to go a step further: to create new regulations that would have changed German export-philosophy in a way that serves global peace and security.

³⁰ *Das Bundesausfuhramt wird selbständige Behörde*, Frankfurter Allgemeine Zeitung, 2 April 1992.

Joachim Badelt

Pierre Dabezies

The French Approach to the Nonproliferation of Chemical Weapons

11

France, like everyone else, notes that in the beginning of the 1980s the number of States with military chemical capability was estimated at 3, 4 or 5, whereas now, ten years later, the number has risen to about twenty countries, most of which are found in areas of tension and are tempted to a greater or lesser degree by the arms race.

France also notes that the chemical threat has been brandished - notably in Iraq - and that its use has several times been alleged (Yemen, Vietnam, Kurdistan, etc.) and sometimes confirmed.

Finally, although recently the danger of a major attack from the USSR has lessened, we are bound to admit that, because of the disintegration of the Union, chemical weapons have become more than ever a matter for concern to us, even if they are not in the power stakes. In fact, while on the one hand we do not really know what may become of them in the present chaos, on the other, they are in danger of not getting all the attention they deserve from the Soviet authorities who, obviously, have plenty of other problems on their plate.

Despite a shift in policy between 1986 and 1988 (which we shall return to in a moment), the French approach to the chemical issue has been distinguished by a fair degree of continuity - favouring a general and verifiable ban on chemical weapons, rather than trying to set up a nonproliferation regime that would probably be seen by many as discriminatory and difficult to monitor.

The Gulf war has not greatly modified this approach, as the fundamental position adopted in relation to Baghdad's chemical threat consisted then in affirming that France for its part would confine itself - and considered that one should confine oneself - to a simple conventional response. This, in fact, was very controversial. In brief, France's aim is to arrive quickly at a total multilateral ban, while continuing to emphasize national control and encouraging improved international harmonization, including within the European Community.

So a certain shift in this policy took place in 1987/88, when the law on military programme planning announced that "*faced with the existence of many and varied chemical weapons that could be used by a possible aggressor, France cannot definitively give up categories of weapons that other nations consider they are entitled to possess.*" At the same time, the declarations of members of the government con-

firmed that Paris was thinking of equipping itself with an “*appropriate deterrent capability.*”

One may wonder about the reasons, if not for this change of position (because in 1985 Laurent Fabius was not very far from speaking in the same terms), at least of this hardening. Did France want to have a bargaining tool in the discussions at Geneva, which were at a standstill? Did it want to demonstrate its rejection of the monopoly in this field, which, in reality, the two Superpowers shared between them? Or did it really want to equip itself with chemical capability in retaliation for the Soviet capability, at a period when the only chemical weapons on the soil of Western Europe - the American stocks in Germany - were beginning to be withdrawn?

One factor seems relevant: ‘cohabitation’ and the fact that Jacques Chirac was Prime Minister. In contrast to the latent pacifism of the Left, Chirac adopted a more strong-arm attitude which *a priori* ruled out making any concessions and, *a fortiori*, giving up anything.

Also, we must not forget that at that time any talk of chemical weapons was in relation to the Iran-Iraq war and the war in Afghanistan. The military, who often tend to seize on any threat and exaggerate it, were making a big issue of chemical weapons and calling for responses to and protection from them.

The fact remains that this development of the French position reveals both a doctrinal shift and a potential contradiction:

- A doctrinal shift in that the official speeches echoed what was being written by some French strategists, such as General Copel, who, in relation to the use of chemicals, spoke of ‘stages’ or ‘appropriate response’. This was a curious, and indeed worrying confusion with ‘flexible response’. It was in total contradiction, as we know, to the strategic doctrine in general, and French strategic doctrine in particular, because the latter claims that nuclear weapons were to deter any chemical attack...

- So, a doctrinal shift, but also a potential contradiction, as France showed itself prepared to participate in proliferation, while it was engaged in negotiations to ban such weapons. Arming oneself while calling for disarmament does not look like the best way of urging countries tempted by chemical weapons to move beyond the Geneva Protocol, particularly when some no longer consider this agreement to be necessarily an obstacle to the possession of chemical weapons.

Finally, in 1988, as we know, President Mitterrand, reelected and at the helm again, spoke to the General Assembly of the United Nations in favour of giving up the so-called security stocks. He declared that France did not possess chemical weapons and would not manufacture any once the Convention came into force. Moreover, the 1989 law on programme planning had not a word to say on the subject.

This period of ambiguity having thus ended, the fact remains that the problem with eradicating of chemical weapons still lies primarily in the decision whether a

nonproliferation regime or a total ban on the manufacture, stockpiling and use of these weapons should be preferred.

France stresses the political and technical disadvantages of the first approach and, naturally, favours the second. In this respect, its reservations regarding the NPT are well known. It also takes into consideration the sensitivity of many Third World countries who are hostile to this treaty, much more so today as they feel they have been duped. The nonnuclear signatories to this treaty did, in fact, agree in 1968 to give up their sovereign right to acquire a weapon, probably in return for aid in the civilian nuclear field that they got, but also in return for a commitment from the great powers to nuclear disarmament that has not happened. France, therefore, considers it preferable to break with this kind of logic, which puts the rich against the “disarmed.”

Moreover, is the process of nuclear proliferation different from the process of chemical proliferation? The monitoring of transfers of nuclear material and technology is relatively easier than for the chemical equivalents, where the acquisition of military capability is based on an industrial sector that is very varied, to be found everywhere nowadays and plays an important role in development policies. This is without taking into account the fact that at a time when economic activity is based ever more on the circulation of scientific and technological knowledge - we could even say their ‘globalization’ - we may wonder if the monitoring required by nonproliferation is not growing more difficult by the day, and by the same token, becoming more problematic.

Thus while sometimes encouraging moves to strengthen nonproliferation, France has advocated, and continues to advocate, the signing - as quickly as possible - of a global, universal and effectively verifiable convention. Having been an initiator of the Paris conference and having presided over the special committee in Geneva, France proposes to relaunch negotiations by holding a ministerial session with a political resolve that would make it possible to settle the final points of disagreement.

In any case, considerable breakthroughs have been achieved: the global ban is, on the whole, accepted. The American-Soviet agreement on the destruction of stocks before the convention comes into force, with the United States giving up its residual security stocks and the right to retaliate, make it possible to find a solution to the problem of the order of destruction during a ten-year period (those most heavily armed countries first) and the problem of maintaining the security of the signatory states during this transitional phase. In this context, it is known that the United States has abandoned the requirement of holding a conference after eight years of the treaty entering into force to check if anyone with a chemical capability really had abided by the convention as a condition for the final destruction of the remaining stocks.

Differences of opinion remain, however, on the subject of verification and sanctions. As for verification, France firmly upholds the principle of inspection after

giving notice, or a challenge, rather than routine inspections, which are too easy to get around. It must, however, be ensured that the formalities surrounding this procedure do not rob it of all effectiveness, that the preliminaries are kept to a minimum, in short, that the procedure retains its dissuasiveness and makes it possible to detect in time any violation of military significance. In the same spirit, the investigations that are being expedited by the UN Secretary-General, following a French proposal, must be accompanied by better conditions of speed and efficiency.

Regarding the coordination of national regulations, France favours intergovernmental consultation such as the Australia group, but also of a harmonization among the twelve countries of the Community.

Only recently, French monitoring (in application, in fact, of a Community regulation) was based on an export permit obtained in advance for eight products considered dangerous. In addition, it relied on sensitizing industrial circles (sense of responsibility, reference to the administrative authorities in case of doubt). Nevertheless, this system has been significantly strengthened in the past few weeks since, in conformity with the Australia group, fifty precursor products will from now on be subjected to checks, and to this should be added the technology and equipment related to them.

So, at the end of the day, only the 'sanctions' aspect is unsatisfactory.

Eric Remacle

The Impact of the Second Gulf War on the Integration of the Security and Nonproliferation Policies of the European Community

12

Several times already, Europe's history has crossed the path of chemical weapons. The second Gulf war has again highlighted Europeans' extreme psychological sensitivity to this threat. The memory of the first world war is still alive in people's memories, as Belgium, and Flanders even more so, are only too well aware. The fear that the Israeli population might be gassed by weapons to which European firms had contributed was a cruel re-evocation of memories of the second world war, particularly in Germany, where this facet of the Gulf war was probably the most highly charged with emotion.

So it is not surprising that the crisis, and particularly the war itself, had such an impact on the Western desire to prevent any future export of toxic products that are precursors to chemical weapons. It is significant, nonetheless, that the industrialised countries, and foremost among them the countries of the European Community, waited for a push from outside before concerning themselves with monitoring such exports. What had happened in 1989 and 1990 with the Rabta controversy proved again to be the case. Furthermore, the difference in intensity between reactions to the gassing of Iranians and Kurds and to the danger for Israeli civilians or Western soldiers during the last war, reveals a certain order of priorities and values in the setting of a nonproliferation policy by the Twelve. Generally speaking, one is forced to conclude that even today the approach taken is still on a case-by-case basis, and not founded on a global and properly coordinated policy. This tendency is reinforced by the individuality of the nation-states and by the institutional imbroglio the Community finds itself in right now.

But first, we shall examine the facts and data that led the Twelve to concern themselves with chemical proliferation, then summarize the different initiatives taken by the main industrialized countries on this issue, and finally concentrate on the policy implemented specifically by the Community itself.

The revelations about the role of Europeans in Iraq's chemical capability

We all remember the plethora of extremely dense reports and revelations about deliveries of weapons, missile or supergun technology, nuclear material and chemical precursors to Iraq from 1989 on. This plethora, however, concealed three elements that cannot fail to interest scientists concerned for the accuracy of information. On the one hand, it was an accumulation of highly diverse data and facts, often unverified, of variable significance and sometimes incorrect. It presented the threat as global, imminent and extremely dangerous. Reliable information was rarely distinguished from the disinformation inherent in all wartime propaganda. The unprecedented mediatisation of the conflict exaggerated this tendency. On the other hand, the jumbled presentation of items relating to deliveries of extremely different materials reduced the perception of the threat in each of these areas by itself. Finally, old information dating back to the Iran-Iraq war was presented more than once to reinforce the - sometimes flimsier - information on deliveries made after 1988. Commonly, redundancy was a simple device for causing a cheap sensation.

Our aim here is not to indulge in a case-by-case examination of the allegations about proliferation to sort out fact from the fiction. We leave it to the communication and information specialists to address this some day. However, in the area that concerns us, namely that of the perception of the chemical threat and chemical proliferation, a few short examples will suffice to show the need for nuances, if not caution. Let there be no misunderstanding: these reflections are not designed to belittle the phenomenon of proliferation nor the legal (if not moral) responsibilities of the companies and governments involved. We aim instead to attempt as rigorous an evaluation as possible of this phenomenon and the responsibilities involved.

There is no escaping the fact that among the many allegations regarding the supply of military and nuclear material, chemical proliferation to Iraq looks weak if one excludes Germany's position.¹ In the latter case, out of the 87 German companies suspected by the US Senate Committee on External Relations of having delivered material to Iraq for military use, 44 were the subject of thorough investigations or legal proceedings and, from these, eight were suspected or accused of having been involved in the construction of chemical weapons factories or the supply of precursors.² They are the following firms:

- Heberger Bau (Schifferstadt), suspected of having participated illegally in the construction of chemical weapons factories;

¹ J. Badelt, *The German Involvement in Iraq's Chemical Warfare Production Programme and New Legislative Measures*, in the present volume.

² For an overview: M. Plugge, *The Iraqi Connection*. *International Defense Review*, June 1991, pp. 567-570. See also: L. Delattre; A. Thoraval, *L'Allemagne des marchands de gaz*. *Le Vif/L'Express*, Brussels, 8 February 1991, pp. 64-67.

- IBI (Frankfurt am Main), suspected of the same violation but not taken to court because of the escape and murder of its owner, Ishan Barbouti, previously known through the Imhausen-Rabta affair;³
- Rhein-Bayern Fahrzeugbau & Co (Kaufbeuren), suspected of having supplied a mobile toxicological laboratory, although the Munich regional taxation office found no illegal exports;
- Rotexchemie Internationale Handels & Co (Hamburg), who had legal proceedings taken against them for supplying sodium cyanide destined for the manufacture of hydrocyanic acid and tabun. This case goes back to January 1989;⁴
- the four firms in the “Karl Kolb connection”, accused of having delivered chemical weapons factories and precursors for neurotoxic gases for the factory at Samarra (Karl Kolb & Co, Dreieich-Buchsschlag; Pilot Plant, Dreieich; Preussag, Hannover; Water Engineering Trading, Hamburg).⁵

Twelve German citizens were thus accused of having assisted in the production of combat gas by Iraq.⁶ For nine other German firms, no proof was found: Degussa (Frankfurt am Main) and InfraPlan, accused of supplying equipment for a chemical-weapons factory; WC Heraus (Hanau), Labsco Laboratory Supply Co (Friedberg), Sartorius and Plato-Kühn (Neustand), suspected of having participated in arming Iraq with biological and poisonous weapons;⁷ IVECO Magirus (Ulm), which had received permission to export eight trailers suspected of having been used for toxicological laboratories; Sigma Chemie (Oberhaching), suspected of having delivered chemical and biological precursors; WTB (Augsburg), said to have built four factories for neurotoxins. Most of the suspicions against these 17 companies date from before 1989.

For the other Western countries, the accusations turn out to be very weak and mostly predate 1989. The report commissioned in 1990 from Kenneth R. Timmerman of the *Middle East Defense News*⁸ by the Simon Wiesenthal Centre - a report

³ J. P. Zanders, *La Belgique comme pays de transit dans l'affaire Imhausen-Rabta*. In: E. Remacle; J. P. Zanders (Eds.), *La prolifération des armes chimiques. Actes du colloque du 16 mars 1990*. GRIP, Dossier “Notes et documents” n° 145-146-147, July 1990, pp. 96-98.

⁴ *Ibidem*, p. 94.

⁵ According to *Der Spiegel* 33/1990, W.E.T. constructed production lines for tabun and sarin at Fallujah that were capable of manufacturing 17.6 tonnes of neurotoxins per day, i.e. over 5,000 tonnes a year! The estimate has never been corroborated. (Quoted in: K. R. Timmerman, *The Poison Gas Connection. Western Suppliers of Unconventional Weapons and Technologies to Iraq and Libya*. A special report commissioned by the Simon Wiesenthal Center, Middle East Defense News, Paris 1990, p. 7.)

⁶ *Germans Charge 12 in Iraq Gas Case*. International Herald Tribune, 13 March 1991.

⁷ According to *Der Spiegel* 33/1990, Plato-Kühn probably delivered small quantities of mycotoxins TH-2 and T-2. (Quoted in: K. R. Timmerman, *op. cit.*, p. 9.)

⁸ K. R. Timmerman, *op. cit.*

based exclusively on at times questionable press articles⁹ - lists the following cases of participation by European countries in the Iraqi chemical programme:

- the financial support of Western banks such as the Atlanta branch of the Banco Nazionale del Lavoro;¹⁰
- the involvement of Montedison and some of its sub-contractors (Italy), of KBS and Melchemie (the Netherlands) and Atochem (France) in the building of the first Iraqi mustard gas factory at Akashat in 1983;¹¹
- the sale of chemical precursors by the Swiss firm Companies Inc. and several Austrian firms;¹²
- the involvement of several French firms in the 'Karl Kolb connection' through contracts with Protec, a French company that had sold material and tabun precursors to the Samarra factory;¹³
- finally, the construction of a chemical-weapons factory by Sebata¹⁴, the Belgian firm discovered to have another name, Sybeta, and to have built an integrated complex for fertilizer production at Alkaim, a site that was operational thanks to phosphate extracted at Akashat, producing phosphoric acid, sulphuric acid and derived fluoride salts. The heads of this firm admitted that they could not check the use subsequently made of these different civilian-use production plants by Iraq,¹⁵ but because of the destruction of the Alkaim site during the war, corroborating these declarations will never be possible.

One last allegation deserves to be mentioned. This resulted from the presentation by the British Minister for Industry and Commerce, to a parliamentary commission investigating the Iraqi supergun, of the list of authorized exports of sensitive material between January 1987 and 5 August 1990, i.e. three days after the invasion of Kuwait. This list, published by *The Independent* on 27 July 1991, showed among other things that the British government probably authorized the export to Iraq of a dozen chemical precursors, including the equivalent of 300, 000 dollars' worth of

⁹ For example, *Forges de Zeebrugge* in Belgium, accused in this report of having supplied parts for the Iraqi supergun, proved that it did not have the tools for manufacturing such parts at the time. Similarly, the accusation that PRB had supplied Baghdad with missile fuel was refuted by the fact that the firm never produced such fuel. (D. Hamann, *Ces Belges qui ont aidé Saddam*. L'Instant, Brussels, 7 February 1991.)

¹⁰ K. R. Timmerman, *op. cit.*, p. 6.

¹¹ *Ibidem*, p. 9.

¹² *Ibidem*, p. 47 (from The New York Times, 31 January 1989).

¹³ *Nouvel Observateur*, 20 September 1990.

¹⁴ K. R. Timmerman, *op. cit.*, p. 47 (from The Washington Post, 25 August 1990).

¹⁵ A. de Bouyalsky, *Le complexe des Belges*. L'Instant, Brussels, 7 February 1991. The Belgian company Coppée Lavalin is also listed for its participation from 1989 on in the Alkaim phosphoric acid factory. (R. Jacquard, *Les cartes secrètes de la guerre du Golfe*, G. de Villiers, 1991, quoted by G. Dupont, *Les Belges et l'embargo*, La Dernière Heure, Brussels, 5 April 1991.)

thiodiglycol and thionyl chloride.¹⁶ The Minister for Industry and Commerce proved several days after these revelations that his original memorandum had been mistaken, that none of the precursors listed had been exported, but that £686 worth of another precursor, which was not on the list - sodium cyanide - had been exported by mistake in 1990.¹⁷

Thus, contrary to popular opinion (and still leaving out Germany as a special case), Europeans did relatively little to encourage chemical proliferation to Iraq after the end of the first Gulf war. This observation too must of course remain cautious, as new revelations are still possible, but we may presume that the very context of the war and its consequences would already have brought them to light if they existed. We may seriously wonder whether companies did not find the reflex in favour of nonproliferation as soon as the Iran-Iraq war ended, whereas the legal and legislative repercussions of this war would have come to fruition in the middle of the second Gulf war, giving the impression that they were linked to the latter, particularly as they were so important to the anti-Iraqi coalition and provided legitimization for it. If this hypothesis proves correct, it would mean that the importance given to nonproliferation by Western governments after the second Gulf war relates to the major political cohesion achieved during the war against Iraq - the famous 'new international order' - than with a reaction to an objective growth in the phenomenon of proliferation.

Steps towards chemical nonproliferation taken by the Western world

After the end of the Gulf war, several initiatives were taken in the Western world to limit arms transfers and proliferation. Significantly, these initiatives bring together, higgledy-piggledy, the problems relating to the export of conventional weapons, ballistic missile technology, nuclear non-proliferation and chemical disarmament. Thus, grouped together under the same heading are issues that show similarities, but call for specific responses: on the one hand the transfer of conventional weapons, and on the other the so-called weapons of mass destruction,¹⁸ which in-

¹⁶ C. R. Whitney, *UK Allowed Iraq Nuclear Materials*. International Herald Tribune, 29 July 1991. *Révélation sur des fournitures britanniques à Bagdad*, Le Soir, 29 July 1991. *La livraison à Bagdad de matières sensibles suscite une violente polémique en Grande-Bretagne*, Le Monde, 6 August 1991.

¹⁷ Chemical Weapons Convention Bulletin, n°13, September 1991, p. 16.

¹⁸ A description wide to criticism, and which adds to the confusion on this subject, as only nuclear weapons are real weapons of mass destruction and, unlike the nuclear and chemical nonproliferation regimes, the one for ballistic missiles concerns the technology of the carriers for these weapons systems.

clude nuclear and chemical weapons and missiles. For each category a distinct and asymmetrical regime exists:

- Non-Proliferation Treaty and International Atomic Energy Agency;
- Australia Group and Geneva negotiations for the signing of a convention on a complete ban;
- Missile Technology Control Regime.

In particular, in the chemical field, disarmament takes priority over export controls, which are seen as complementary and transitory, while for conventional and to a certain extent nuclear weapons, the opposite holds. This is an approach that Pierre Morel summarizes in a formula to which we also subscribe: "*Controls are necessary but not sufficient.*"¹⁹

Thus the 29 May Bush plan for arms control in the Middle East²⁰ repeats the American President's 13 May call for the signing of an international convention in 1992 and confirms the United States' readiness to renounce the use of chemical weapons and to destroy their stocks within ten years of the signing of the convention. In addition, he argued for a renunciation of biological weapons and a strengthening of the 1972 convention on biological weapons. François Mitterrand's general disarmament plan, launched on 3 June and presented as complementary to and more wide-ranging than the one by the American President,²¹ adds nothing of any significance in the chemical and biological fields. Referring to the 1989 Paris Conference, it proposes finishing the work of the Disarmament Conference at the end of that year and adopting a protocol on verification at the Third Review Conference on Biological Weapons Convention. It also suggests the strict application of these global regimes on a regional level, particularly in the Middle East, stressing that France considers that Security Council Resolution 687 forms a first stage in the process of setting up a zone free of weapons of mass destruction and all missiles in the Middle East, as well as a general ban on chemical weapons. It argues finally for a greater role for the Security Council, and in particular its five permanent members, whose task it should be "*to support and, if need be, harmonize these disarmament and non-proliferation policies.*"

Thus the Bush and Mitterrand plans do not touch at all on chemical nonproliferation, reducing it to the problem of disarmament. In Luxembourg on 28 and 29 June 1991, the European Council took the same line by adopting a declaration on nonproliferation and arms exports, in which the paragraph on chemical nonproliferation looked forward to "*the signing in the near future of a convention*

¹⁹ See above.

²⁰ H. Pierre, *Le président George Bush a annoncé un plan de contrôle des armements au Proche-Orient*. Le Monde, 31 May 1991.

²¹ C. Tréan, *Paris se défend de concurrencer Washington mais juge insuffisantes les propositions des Etats-Unis*. Le Monde, 4 June 1991, p. 3.

on chemical weapons and the strengthening of the convention on biological and bacteriological weapons.”²² Two major meetings in July 1991 made it possible to refine this approach by linking the global and regional aspects, the Bush and Mitterrand plans and disarmament and export controls.

These were the meeting of the five permanent members of the Security Council, held in Paris on 8 and 9 July²³ and the summit of the seven most industrialised countries held in London on 16 July.²⁴ On the subject of the transfer of conventional weapons, there was unanimous agreement to the setting up of an international register under the aegis of the UN Secretary-General, in other words, about the need for prioritizing transparency. As for nuclear, chemical and ballistic missiles, on the other hand, “they stressed that the real response to the threat of proliferation consists in verifiable disarmament and arms control accords between the parties concerned.”²⁵ From the regional point of view, the aim expressed was a zone free of weapons of mass destruction in the Middle East, involving “the commitment of all States in the region to sign the chemical-weapons convention as soon as this has been concluded in 1992.” Finally, another paragraph of the statement from the five powers concerns the problem of export controls, emphasizing that these powers would contribute towards the aim of disarmament “by developing and maintaining strict and, as far as possible, harmonized national controls to ensure that equipment and materials relating to weapons of mass destruction will only be transferred for authorized purposes and will not be diverted.”

The same goes for the declaration adopted in London on 16 July 1991 by the Summit of the Seven Most Industrialized Countries, which, it may be remembered, are no longer really seven but eight, as the European Community was represented there by the Dutch presidency of the European Council and the presidency of Commission. In this declaration, four articles relate to chemical non-proliferation. The first refers to the Biological Weapons Review Conference that was due to be held two months later.²⁶ The second article argues in favour of the rapid conclusion of the international convention and welcomes US declarations on the subject. The third paragraph invites a growing convergence of policies to control the export of precursors, particularly within the framework of the Australia Group. Finally, the possibility of strict sanctions against a State that used chemical weapons was raised.

²² Europe n°5524, Agence Europe, Brussels, 30 June 1991, p. 16.

²³ *Communiqué publié à l'issue de la réunion des Cinq sur les transferts d'armes et la non-prolifération*, Paris, 8-9 July 1991 (published in *Politique étrangère de la France. Textes et Documents*. Ministère français des Affaires étrangères, Paris, July 1991, pp. 10-11.

²⁴ *Sommet des sept pays les plus industrialisés. Déclaration sur les transferts d'armes conventionnelles et sur la non-prolifération des armes nucléaires, bactériologiques et chimiques*. *Ibidem*, pp. 30-31.

²⁵ See note 17.

²⁶ See N. A. Sims, *Allegations of Iraq's Possession of Biological Weapons and Measures for Strengthening the Biological Disarmament Regime*, in the present volume.

In addition, the reference to the regional approach, a compromise between the Bush and Mitterrand plans, was a veiled indication that the most crucial stakes were indeed in the Middle East and that Security Council Resolution 687 was a clear reflection of the disarmament policy the industrialized countries wished for this region. We note also that Resolution 687 represented not just a measure of disarmament, but also of nonproliferation, in that it averts the export by Iraq of ready-to-use chemical munitions, which Jean Pascal Zanders has called third generation proliferation.²⁷ Obviously, no one can tell whether, before 17 January 1991, Iraq transferred part of its chemical stocks to friendly countries like Libya or Mauritania.

In conclusion, Western non-proliferation initiatives following the second Gulf war appear first and foremost as clear and coherent political messages from the ten main exporters of technology and strategic products (United States, ex-USSR, France, United Kingdom, China, EEC, Germany, Italy, Canada and Japan). Concretely, this political cohesion really showed itself in two ways:

- Resolution 687 and, more generally, the promotion of disarmament in the Middle East;

- the intensification of the existing nonproliferation regimes: in the chemical field, the Australia Group, which decided at its meeting from 21 to 23 May 1991 that before the end of the year all Member States would apply export controls to the 50 products and not just those on the core list. A meeting in December was to examine the issue.²⁸

One may certainly regret the fact that the idea of regional disarmament advocated by the industrialized countries was not accompanied by an explicit proposal for negotiations with the States concerned. This is even more regrettable as nations like Egypt indicated their interest in this.²⁹ But it is true that the Madrid Conference on the Middle East could provide a multilateral and quite operational framework in which this could happen.

Moreover, no reference is made anywhere to the concerns of Third World industrialising countries or to proposals for multilateral discussions on this subject. The concept of nonproliferation seems to have been devised exclusively for the unilateral use of supply countries in the name of anticipated self-defence. In other words, a disarmament strategy dictated by the strong to the weak. This conception, which is illustrated by the US proposal to reorientate COCOM towards a limitation of strategic technology transfers to the Third World,³⁰ must unfortunately appear narrow and

²⁷ J. P. Zanders, *op. cit.*, p. 107.

²⁸ Chemical Weapons Convention Bulletin, n°13, September 1991, pp. 6-7.

²⁹ See Mubarak's proposal in July 1991. Chemical Weapons Convention Bulletin, n°13, September 1991, pp.13 and 15.

³⁰ This proposal was, however, not accepted in these terms by the Europeans, particularly the French, who were concerned precisely to avoid a North-South split. (A. Kahn, *Comment contrôler les exportations*

ill-adapted to a dynamic and cooperative approach to the new world order and common security.

Measures taken within the European Community: intergovernmental coordination versus communitisation

It will be remembered that on 20 February 1989 the Twelve adopted a regulation that made the export of eight precursors subject to advance export authorization, it being understood that this would not be issued “*if there is reason to believe that the products in question will be used for the development or manufacture of chemical weapons or might be delivered directly or indirectly to countries at war or to zones with serious international tension.*”³¹ This regulation, which was considered minimalist, was overtaken by events as the twelve Member States strengthened their own regulations to conform to the directives adopted in the framework of the Australia Group. All the EEC Member States require a licence for the export of far more than the eight chemical products provided in the 1989 regulation.³² In addition, they increased their coordination in the field of political cooperation, the Twelve’s intergovernmental structure. One may question, therefore, the usefulness of Community regulations in a field where national regulations respect directives drawn up within the Australia Group. This would be to attach little importance to four fundamental institutional elements within the Community:

1. keeping such issues within the framework of States could slow the development of a common foreign policy as this is emerging with the adoption of the Maastricht Treaty on European Union;
2. it would also mean that the European Commission would have no power to take initiatives, although it is best placed to judge how well national regulations conform with those of the Community;
3. it would prevent any intervention by the Community’s Court of Justice, which can sentence a company or a State only in cases where a Community regulation, rule or directive has been violated;
4. finally, the reference to article 113 of the Treaty of Rome (on trade policy) in the preamble to the 1989 regulation enables the regulation to be modified not

stratégiques? Un casse-tête technique. Le Monde, 30 April 1991.)

³¹ (EEC) Council Regulation N° 428/89 of 20 February 1989 regarding the export of certain chemical products. Official Journal of the European Community, 22 February 1989, pp. L 50/1-2.

³² For Germany and Belgium: J. Badelt, *Le changement de la législation allemande sur le commerce extérieur après l’affaire Imhausen-Rabta*. In: E. Remacle; J. P. Zanders (Eds.), *op. cit.*, pp. 44-54. J. P. Zanders, *La Belgique comme pays de transit dans l’affaire Imhausen-Rabta*, *ibidem*, pp. 93-112.

by unanimity, as before, but by a qualified majority, which could make it possible to develop a real common policy and prevent blocks from being created by one or two countries.

At our previous symposium, in March 1990, Bernard Adam referred to the existence of a Commission proposal for a new regulation, but doubted that a political injunction would enable it to be adopted by the Council of Ministers.³³ This prediction proved to be correct since, twenty-one months later, the proposal has still not been examined. A significant difference is apparent between this and the situation in 1989. At the time, the Rabta affair had forced Germany to put pressure on its European partners and the decision-making process took only 20 days. Today, the revelations about the deliveries to Iraq made an impact exclusively on the governmental and intergovernmental levels, not at Community level. This observation is all the less palatable as the Commission's proposal aimed only to add a ninth product to the preceding list and, above all, to force Member States to send the Commission fuller information more quickly, which was the only way the Commission could act in time. So, in this field, the tendency of the Member States is to confine themselves to some kind of intergovernmental coordination, such as political cooperation, and to refuse a real communitisation that would involve the Commission, the Court of Justice and Parliament. This tendency was also evident in the Maastricht accord on a common foreign and security policy.

Prospects for a nonproliferation policy in the framework of a common foreign and security policy

In reality there are two different views of the concept of a common policy. The first is basically intergovernmental and advocates a continuous strengthening of cooperation between Member States, such as political cooperation. This is the British view.³⁴ It must be admitted that it has produced results, particularly regarding problems like nonproliferation. This is the framework within which all Member States agreed on the Nuclear Suppliers' Guidelines. Belgium, the Netherlands and Italy suggested a comparative study of Member States' policies on nuclear and chemical weapons, with a view to harmonizing them.³⁵ On the other hand, the States

³³ B. Adam, *Initiatives politiques de la Communauté européenne pour prévenir la prolifération des armes chimiques*. In: E. Remacle; J. P. Zanders (Eds.), *op. cit.*, p. 117.

³⁴ In particular, see D. Hurd, *European Defence and Security in the 1990s*. Berlin Press Conference, 10 December 1990. D. Hurd, *The Churchill Memorial Lecture*, Luxembourg, 19 February 1991.

³⁵ De Standaard, Brussels, 1 July 1991.

favouring strong Community integration argue for an integrated foreign and security policy along Community lines, giving power to common institutions, especially the Commission and Parliament. The Maastricht compromise could very well create an intermediate institutional structure for common foreign and security policy. It is not certain that this new structure would prove more suitable for strengthening nonproliferation measures.

The Treaty on European Union envisages three types of action in the field of common foreign and security policy:³⁶

- *concerted action*³⁷ which can lead to the definition of common positions, based on a unanimous vote and an intergovernmental structure similar to the former political cooperation but strengthened and integrated into Community administration;³⁸
- *joint action* on certain matters defined by the European Council, decided on unanimously by the latter but may be the subject of implementation procedures decided on by a qualified majority,³⁹ which makes them more integrated;
- *decisions and actions that have defence implications* for which voting by unanimity is required, and will be developed and implemented with the help of the Western European Union.⁴⁰

A first question concerns the type of action chemical nonproliferation belongs to. The European Council's declaration identified four possible areas for joint action:⁴¹

- the CSCE process;
- disarmament and arms control policy in Europe, including confidence-building measures:
- questions related to nuclear nonproliferation;
- the economic aspects of security, particularly the control of transfers of military technology to third countries and the control of arms exports.

So apparently the Twelve's position on chemical and biological disarmament will not be the subject of joint actions, as only disarmament *in Europe* would belong to

³⁶ Treaty on European Union, Maastricht, 10 December 1991.

³⁷ Article J.2 of the *Provisions relating to common foreign and security policy*.

³⁸ The political cooperation secretariat, composed at present of half a dozen people, will in fact be integrated into the General Secretariat of the Council of Ministers and renamed 'Political Secretariat'. Staff is due to increase to about thirty.

³⁹ Article J.3 of the *Provisions relating to common foreign and security policy*.

⁴⁰ Article J.4 of the *Provisions relating to common foreign and security policy*.

⁴¹ Annex III of the Treaty.

one of these areas.⁴² Consultation on European positions on the subject will thus take place as in the past, on the intergovernmental level.

On the other hand, chemical nonproliferation will presumably be included in the 'economic aspects of security' for which a vote by qualified majority on implementation procedures will probably be envisaged. Yet this latter point is not sure, as the Council of Ministers must decide itself in each case if voting should be unanimous or by a qualified majority - a labourious procedure and one fraught with uncertainty. Voting by a qualified majority may be limited to a few cases, particularly those connected to the single market, but there is no indication that it will apply to export controls.

Finally, the natural tendency one may expect to see in such a context is that all the issues which have an impact on security will be examined in the institutional framework of the common foreign and security policy. There the Commission will have a more marginal role than in the Community framework proper, while the Court of Justice will be unable to intervene. If the problem of chemical disarmament were to be completely included in this decision-making process, this would be a step backwards in relation to the regulation of 20 February 1989 as this, referring to article 113 of the Treaty of Rome, fitted into the Community's trade policy.

Finally, unlike war materials in the strict sense, which are excluded from the Treaty of Rome by article 223⁴³, chemical agents represent a typical case of a dual-use (civilian and military) product, which enables the Community to regulate and control their export. It would be regrettable if an attempt were made to take their role in this field away from the Community authorities, particularly the Commission and Court, saving it for the less-integrated framework of the common foreign and security policy.

This evolution would represent not just a step backwards in relation to the process of integration, but also in relation to the pragmatism necessary for facing the single market in 1993. The Commission was moreover mandated to prepare, for arms exports, a common administrative and technical system to replace the old controls at national borders by a control that could only be made at Community borders or at the place of production of the weapons and other strategic products. According to some experts, setting up such a unified export control system without accelerating the harmonization of policies and regulations is not possible.⁴⁴ This is

⁴² From this angle, the list annexed to the Treaty is a step backwards from the draft treaty submitted the Luxembourg presidency, which envisaged nine areas and did not limit disarmament to Europe nor nuclear proliferation. (*Projet de traité sur l'union*, 'Europe Documents' n° 1722/1723, Agence Europe, Brussels, 5 July 1991, p. 26.)

⁴³ No State proposed to abolish this when the Treaty on European Union was being drawn up, which shows the strong nationalist tendency among Member States in relation to arms exports.

⁴⁴ B. Adam, P. De Vestel, A. Zaks, *Perspectives d'harmonisation des réglementations et politiques d'exportations d'armes au sein de la Communauté européenne*. Study prepared for Ms. A.M. Lizin,

particularly the point of view expressed publicly by the Commission's vice-president, Martin Bangemann: "*In theory, it is conceivable that French or Greek customs officials could deal with German arms exports subject to the provisions of German legislation, and vice versa. In practice, however, faced with twelve different sets of national regulations on arms exports, the customs officials responsible for border controls would tear their hair out in despair! This amply justifies the urgency of common rules on arms exports to third countries.*"⁴⁵ This line of argument obviously applies even more to dual-use products, which are not excluded from the area of application of the Treaty of Rome. It is thus impossible not to support Mr Bangemann's proposals, adopted by the Commission on 29 May last, to abolish border controls within the Community and standardize control procedures. A report on this subject is due to be submitted shortly by the Commission.

So, on the one hand, the single market in 1993 shows more and more clearly the need for standardizing regulations and controls. On the other, the debate on institutions is a tight intergovernmental constraint. It does allow for good cooperation, but only slowly, and without integrated policies. Chemical precursors and other dual-use products are at the centre of this contradiction. Because of their industrial nature, they belong under economic policy and prospects for the single market, but the possibility of their being diverted for military use places them right in the heart of issues of national sovereignty.

Again, the paths of chemical weapons cross those of Europe.

Secretary of State for Europe 1992, GRIP, Brussels, 5 June 1991, p. 134. See also the proposals by H. Bauer; M. Brzoska; W. Karl, *Coordination and Control of Arms Exports from EC Member States and the Development of a Common Arms Export Policy*. Working Paper, n°54, Institut für politische Wissenschaft, Hamburg, 1991. Also: G. Ford, *Document de travail sur le rôle de la Communauté dans le contrôle des exportations d'armes et de l'industrie des armements*. European Parliament, Political Commission, Sub-commission 'Security and Disarmament', 3 December 1991.

⁴⁵ M. Bangemann, *Un contrôle européen des ventes d'armes s'impose*. Les Echos, Paris, 8 March 1991.

Eric Remacle

Nicholas A. Sims

Allegations of Iraq's Possession of Biological Weapons and Measures for Strengthening the Biological Disarmament Regime

13

I will examine the tenuous relationship between two things: on the one hand, the allegations against Iraq culminating in the imposition of a uniquely intrusive verification regime under United Nations Security Council Resolution 687; on the other, the adoption of measures for strengthening the global disarmament regime which flows from the 1972 Convention on Biological and Toxin Weapons (BTW).

I call it a tenuous relationship, which it has been up to now. But it is potentially a relationship of the greatest importance.

Section A

In this first section I shall briefly summarise allegations of BTW possession made against Iraq and I shall assess their legal significance in terms of the Convention. There is little point in our trying to decide which, if any, of these allegations were justified, for one simple reason: because, uniquely, the scope and scale and state of development of any BTW programme in Iraq will be made known by the UN Special Commission when it has completed its series of inspections of suspect sites and facilities. It is making vigorous use of possibilities not open (or rather, not *yet* open) to the international community in any other case where BTW allegations have been made against a state. So far two BTW inspections have been completed, on 7 August and 3 October 1991.¹ A further, joint biological and chemical inspection is taking place now. It is too early, I suggest, to make definitive statements confirming or

¹ The inspections of 2-7 August 1991 (UNSCOM 7) and 20 September - 3 October 1991 (UNSCOM 15) are reported in the *Chemical Weapons Convention Bulletin* (hereinafter *CWCB*), Quarterly Journal of the Harvard-Sussex Program on CBW Armament and Arms Limitation, no.14 (December 1991). *The Disarmament Bulletin*, a review of Canada's arms control and disarmament activities issued by the Canadian Government, no.17 (Fall 1991) and other governmental and United Nations reports have also been consulted.

disconfirming particular allegations. For that purpose, we must await the final report of the Special Commission.

Iraq was most commonly alleged to have a BTW military programme, or a BTW capability. These are not necessarily the same as possession. *Programmes* and *capabilities* are notoriously imprecise terms in a military context, whether used of chemical or of biological weapons; and it may be significant that they are not terms in which the Convention constrains BTW activities. Those constrained activities are development, production, stockpiling, acquisition and retention.

On 11 June 1990 US Defense Secretary Dick Cheney named Iraq as among ten countries which “*have or may have BW programmes.*”² Six weeks earlier, on 24 April 1990, his Office of the Secretary for Defense had told the US Congress: “*We know of at least ten countries with biological warfare programmes.*”³ On other occasions that year a BW capability was the term preferred by US officials. During the build-up to ‘Desert Storm’ US and other coalition troops were given prophylaxis against anthrax, on the assumption that Iraq would, or might, be sufficiently advanced in its BW programme or capability to be able to inflict anthrax on coalition troops in the event of war.

Now let us assess the significance of allegations against Iraq in terms of the 1972 Convention. Iraq signed the Convention on 10 April 1972, together with many other original signatories, but it left its signature unratified for 19 years. During that time the Convention entered into force (26 March 1975), underwent two reviews (1980 and 1986), elaborated a regime of confidence-building measures (more particularly from 1987), and attracted over 110 States Parties by ratification, accession or succession, while 23 further signatory-only states had yet to ratify.

A signatory-only state has certain minimal obligations, from when it has signed a treaty until such time as it makes clear its intention not to proceed to ratification. These obligations are defined in Article 18 of the 1969 Vienna Convention on the Law of Treaties as follows:

to refrain from acts which would defeat the object and purpose of a treaty.

So long as some signatory-only states remain (and Iraq’s ratification on 8 April 1991 only reduced their number from 23 to 22)⁴ it would be helpful if a future Review

² *CWCB* 9 (September 1990) p 12.

³ *CWCB* 8 (June 1990) p 16.

⁴ Malaysia ratified later in 1991, shortly before the Third Review Conference. The remaining twenty-one signatory states which at that point had yet to ratify comprised eleven of the original signatories (Burundi, Central African Republic, Egypt, El Salvador, Gabon, Haiti, Liberia, Malawi, Mali, Myanmar, Nepal), nine which signed later in 1972 (Côte d’Ivoire, the Gambia, Indonesia, Madagascar, Morocco, Somalia, Syrian Arab Republic, United Arab Emirates, United Republic of Tanzania) and one which

Conference were to declare that the minimal obligations incumbent on a signatory extend *at the very least* to compliance with Article I of the 1972 Convention.

A state which develops, produces, stockpiles, or otherwise acquires or retains, BTW as defined in Article I is quite clearly acting in such a way as to defeat the object and purpose of the Convention. But that is just *my* assertion; it has yet to be given authoritative expression, so far as I know, in any international forum.

Iraq was accused of developing a BW programme or capability (each of which as we have noted is a slippery term falling short of possession as such). Would this have been a breach of the Convention? Only if

- (a) the scope of signatory obligation proposed above is accepted; *and*
- (b) Iraq had moved from research into development; *and*
- (c) agents or toxins were developed of types and in quantities which had no justification for prophylactic, protective or other purposes.

Protective or prophylactic development would not have brought Iraq into conflict with the Convention. Neither would research, however ‘offensive’ its intent, and however military its context, because research is not even mentioned, let alone constrained or controlled, in this Convention. The criterion “*of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes*” applies to development, production, stockpiling, acquisition and retention of BTW. It does not apply to research. So the question of Iraq’s compliance with the Convention over the 19-year period between signature and ratification is perhaps more complicated than may sometimes be assumed.⁵

Section B

In this section I shall examine the provisions of Resolution 687 relevant to Iraq’s alleged BTW preparations, the role and composition of the Special Commission, and the programme of inspections and future compliance supervision in this sector of the Special Commission’s responsibilities.

United Nations Security Council Resolution 687 was adopted on 3 April 1991. In Section C of this Resolution, Iraq was required unconditionally to accept the destruction, removal or rendering harmless, under international supervision, of certain items, which we can very loosely call ‘weapons of mass destruction’. These included all long-range ballistic missiles, nuclear, chemical and biological weapons. More

signed in 1973 (Guyana).

⁵ The summary of the 2-7 August 1991 inspection report released by the UN Secretary-General on 14 August 1991 illustrates the problem (see text at reference 10 below). Does “working on” agents amount to *research* or *development*? Where in the Iraqi “*admissions*” is the distinction made between (a) research and development, and (b) permitted development, in terms of the 4-P criterion, and prohibited development?

precisely, in the biological sector (as in the chemical) the items covered by Resolution 687 were

all biological weapons and all stocks of agents, all related subsystems and components, and all research, development, support and manufacturing facilities.

Iraq was required to submit, within 15 days, full declarations of the locations, quantities and types of all such items. It was further required to accept international on-site inspection at any time thereafter for the purpose of verifying the accuracy of these declarations and supervising the full implementation of this section of Resolution 687.

Moreover, Iraq was required to ratify the Convention, which it had signed in 1972; and to respect fully its obligations under the Geneva Protocol of 1925, to which it had acceded in 1931. As regards the Convention, Iraq deposited its instrument of ratification, as required, in Moscow on 8 April 1991. It thereby became a full State Party to the Convention.

Over the next four weeks Iraq started to make the declarations required under Resolution 687. On biological weapons, it simply stated that “*Iraq does not possess any biological weapons or related items.*”⁶ This was a quite different declaration from the one made by Iraq at the same time (18 April) in respect of chemical weapons and related activities.

The United Nations Special Commission was established on 19 April 1991 under the same Resolution 687. It consisted of the Swedish Ambassador Rolf Ekéus as Executive Chairman and 20 other commissioners. On 17 May the Special Commission submitted its implementation plan, through the Secretary-General, to the Security Council in UN Doc S/22614. This plan took into account the Iraqi declarations of 18 April, 28 April and 4 May, as well as the need to check the accuracy of those declarations and the right to inspect any locations whether declared or not. Three stages of implementation were recommended, in paragraph 5 of S/22614:

- (1) gathering and assessment of information;
- (2) disposal of weapons and facilities and all other items specified in Resolution 687;
- (3) monitoring and verification of Iraq’s compliance in the future.

The internal organisation of the Special Commission corresponded to this three-stage plan. The biological expertise, like the chemical expertise, within the Special Commission was distributed between the seven-member Working Group concerned with stages one and two in respect of chemical and biological weapons, and the four-member Working Group concerned with stage three (future compliance), whose

⁶ *CWCB* 12 (June 1991) p 19.

detailed proposals were eventually to be approved unanimously by the Security Council in its Resolution 715 on 11 October 1991. These Working Groups were coordinated by the Australian and German commissioners respectively, John Gee and Peter von Butler.⁷

In S/22614 of 17 May 1991 the Special Commission envisaged the following special procedures in respect of biological weapons. In paragraph 22:

Biological weapons can be destroyed through either standard laboratory equipment or special mobile units.

In paragraph 21:

The Special Commission is seeking to determine whether Iraq possesses any biological weapons-related items that should be disposed of (pursuant to the Resolution) and whether there remains in Iraq a capability to produce such weapons that would also be subject to disposal. In this context, the Special Commission has brought to the attention of the Government of Iraq the report of the Ad Hoc Meeting of Scientific and Technical Experts from States Parties to the Biological Weapons Convention held at Geneva in 1987...and has requested the information called for in Section II of that report.⁸

Note that the point of reference was the confidence-building measures (CBM) regime already adopted, as it existed up to September 1991 (when it was enhanced and expanded). The categories of information requested from Iraq for the first stage of implementation were not *limited* to this CBM regime. But it was the point of reference chosen by the Special Commission. (It may be of interest that Rolf Ekéus, now its Executive Chairman, had been Sweden's disarmament ambassador in the Conference on Disarmament, twice Chairman of its Ad Hoc Committee on Chemical Weapons, and leader of the Swedish delegation to the 1972 Convention's Second Review Conference at the time that the CBM regime was being negotiated, in outline in 1986 and in detail, also under Swedish chairmanship, in 1987.) This raises the question: if the *CBM regime* imposed on Iraq in 1991 was to be based on the one accepted voluntarily by the other States Parties in 1986-87, should not the *verification regime* imposed on Iraq be extended in due course to the other States Parties?

⁷ *CWCB* 12 (June 1991) p 20.

⁸ BWC/CONF.II/EX/2 (15 April 1987). The information called for in Section II of that report comprised the original set of confidence-building measures (CBMs): initial declarations not later than 15 October 1987, and annual declarations not later than 15 April 1988 and every 15 April thereafter to cover the previous calendar year, in respect of data on (a) research centres and laboratories with high containment facilities, (b) unusual outbreaks of disease, (c) publication and application of results of biological research directly related to the Convention, and (d) active promotion of contacts between scientists engaged in biological research directly related to the Convention and exchanges for joint research.

That question, as we shall see, looms over the future of the whole disarmament treaty regime flowing from the Convention. I shall return to it in Section F.

To complete Section B, it should be added that the Special Commission established a Field Office in Bahrain, with laboratories for analysis, in addition to its Headquarters Office in New York and its Support Office in Baghdad. Potential members of biological weapons inspection teams were recruited, through the governments of UN member-states and through the World Health Organisation, which was given a major and quite unprecedented operational role by the Secretary-General of the United Nations in liaison with the Director-General of the World Health Organisation. These potential inspectors had to be immunised against anthrax and given all possible protection, in addition to all the logistic planning and acquisition of the necessary equipment. So it is very much to the credit of all concerned that the first biological weapons inspection team was made ready as early as 2 August 1991, exactly one year after Iraq had invaded Kuwait.

That first inspection lasted until 7 August, and was confined to the Salman Pak installation. Salman Pak was judged to have the “*capability to research, test and store biological warfare agents. Fermentation, production, aerosol testing and storage existed at that site. However, no evidence of biological weapons per se was obtained and no facility for filling weapons was determined.*”⁹ The site had been extensively damaged by aerial bombardment in February 1991, and inspection activity was made even more difficult by subsequent Iraqi action in levelling buildings and covering the area with a layer of earth.

During that first biological weapons inspection, Iraq made a significant alteration to its earlier declaration. It now declared for the first time a military biological weapons research programme which had been conducted from 1986 to 1990 at Salman Pak - *only* at Salman Pak and *only* undertaking research and *only* research on three agents:

- (1) *bacillus anthracis*, the causative agent of anthrax;
- (2) *clostridium botulinum*, the causative agent of botulism; and
- (3) *clostridium perfringens*, the causative agent of gas gangrene.

Iraq did not declare any other locations, or any activity going beyond research, or any research on the causative agents of other diseases, such as (for example) tularaemia or brucellosis, although its position on these last two was ambiguous.¹⁰ Whether

⁹ CWCB 14 (December 1991) pp 6-7, quoting the UN Secretary-General’s press release of 14 August 1991.

¹⁰ “*On the first day of the inspection Iraq declared that biological research activities for military purposes were initiated in Iraq in mid-1986 on the Salman site. Research was stated to be undertaken on Clostridium botulinum, Clostridium perfringens, and Bacillus anthracis. Military research was later explained to comprise research which could be used for both defensive and offensive purposes... Iraq admitted to have worked on the following biological warfare agents: anthrax and botulinum toxin. At the last day, before departure, Iraq handed over a collection of biological materials which could be developed*

it *ought* to have declared any of these things remained to be established by subsequent inspections.

The second biological weapons inspection, of ten further locations in Iraq, was arranged to take place from 20 September to 3 October 1991. That was the situation when the Third Review Conference of States Parties to the Convention opened on 9 September.

Section C

This section of my paper turns to the BTW disarmament regime and the vicissitudes of the 1972 Convention. Particular attention is paid to the Third Review Conference and the measures it adopted in order to strengthen this disarmament treaty regime.

To summarise a most complex history,¹¹ we may safely state the generalisation that since it entered into force, on 26 March 1975, the Convention has had a precarious existence. It suffered a particularly severe erosion of confidence in the years 1979-86, when accusations of non-compliance hung in the air, neither substantiated nor resolved. Then, its friends had a hard time arguing the case for cherishing the Convention, rescuing it from its debilitated condition and strengthening its operation so that future compliance concerns could be better handled. The contrary view, that this treaty was “*a unilateral give-away by the Western democracies*” which “*actually diminishes international security,*”¹² or even a snare into which the West had been lured by Soviet duplicity,¹³ nearly prevailed in the United States. Fortunately, Washington never quite abandoned the Convention as hopeless. Wiser counsels prevailed, and the United States went along with proposals designed to rebuild the Convention’s credibility instead. The idea was to encourage a constructive evolution of those provisions in the treaty text which, by offering a substitute for direct verification, held latent potential for reinforcing the ban’s effectiveness. The main occasions for doing this have been the Review Conferences.

as biological warfare agents. This material included brucellosis and tularaemia. At the same time, Iraq stated that it would cease developing biological warfare agents.” (From the same press release quoted in *CWCB* 14 at p 7.)

¹¹ For the period 1975-85, see N. A. Sims, *The Diplomacy of Biological Disarmament: Vicissitudes of a Treaty in Force, 1975-85* (London: MacMillan; New York: St Martin’s Press; 1988). For the period since 1985, see references 14-16 below.

¹² M. C. Storella, *Poisoning Arms Control: The Soviet Union and Chemical/Biological Weapons*, IFPA Special Report (Cambridge, Mass. & Washington, D.C.: Institute for Foreign Policy Analysis, 1984) p. 13.

¹³ A. N. Shevchenko, *Breaking with Moscow* (New York: Knopf, 1985) p 179. Shevchenko’s testimony and other sources for this view are usefully, if uncritically, brought together in J. D. Douglass, Jr, *Why the Soviets Violate Arms Control Treaties* (Washington, D.C.: Pergamon-Brassey’s International Defense Publishers, Inc., 1988) pp 67-70.

Following reviews in 1980 and 1986, the Third Review Conference took place from 9 to 27 September 1991 amid hopes for significant reinforcement of this treaty regime. Even in the glacial depths of the 'second cold war' the 1980 review had managed to agree some modest clarifications of the Convention, by which information indicative of compliance could be exchanged and a consultative mechanism was defined in order to help manage compliance disputes.¹⁴ The 1986 review had built on these foundations and, as noted above, added a new CBM regime under which parties would annually declare high-containment facilities for handling dangerous pathogens (whether these facilities were for military, medical, veterinary or agricultural research), unusual outbreaks of disease, scientific contacts and publications in fields relevant to the Convention. These regular information exchanges would, it was hoped, reduce the incidence of ambiguities generating fresh suspicions of non-compliance.¹⁵

If the first two reviews had succeeded in agreeing these commitments, why should not even more be achieved in the warmer international climate of 1991? Delegates had the advantage of unprecedented prior consultation among governments, non-governmental organisations (NGOs) and international networks of scientists and scholars, all determined to strengthen this treaty safeguard against the threat of BTW. Several lists of recommendations for treaty reinforcement were on the agenda, with individual proposals more thoroughly worked out and more widely canvassed in advance than in 1980 or even 1986.¹⁶ Yet this Third Review Confer

¹⁴ The Final Declaration of the First Review Conference was adopted on 21 March 1980 as BWC/CONF.I/10. A full account of the Conference, its preparations and its clarifications, is in Sims, *op.cit.* (reference 11). Assessments of the state of the treaty regime in the years following, prepared in advance of the 1986 review, include E. Geissler (ed), for SIPRI, *Biological and Toxin Weapons Today* (Oxford: Oxford University Press, 1986); P. Gizewski, *Biological Weapons Control*, Issue Brief No 5 (Ottawa: Canadian Centre for Arms Control and Disarmament, 1986); N. A. Sims, *Biological and Toxin Weapons: Issues in the 1986 Review*, Faraday Discussion Paper No 7 (London: Council for Arms Control, 1986).

¹⁵ The Final Declaration of the Second Review Conference was adopted on 26 September 1986 as BWC/CONF.II/13/II. Its President has written a perceptive analysis of the Conference as a negotiating process: W. Lang, 'The Second Review Conference of the 1972 Biological Weapons Convention', in J. Kaufmann (ed), *Effective Negotiation: Case Studies in Conference Diplomacy* (Dordrecht: Martinus Nijhoff and the United Nations Institute for Training and Research, 1989) pp 191-203. Accounts of the Conference include E. J. McFadden, 'The Second Review Conference of the Biological Weapons Convention: one step forward, many more to go', *Stanford Journal of International Law*, 24: 85-109 (1987); B. Hatch Rosenberg, 'Updating the biological weapons ban', *Bulletin of the Atomic Scientists*, 43: 40-43 (1987); N. A. Sims, 'The Second Review Conference on the Biological Weapons Convention', in S. Wright (ed), *Preventing a Biological Arms Race* (Cambridge, Mass.: The MIT Press, 1990) pp. 267-288.

¹⁶ Prominent in this literature were, in approximate date order of publication:

E. Geissler (ed), *Strengthening the Biological Weapons Convention by Confidence-Building Measures*, SIPRI Chemical & Biological Warfare Studies No 10 (Oxford: Oxford University Press, 1990).

S. Wright (ed), *Preventing a Biological Arms Race* (Cambridge, Mass.: The MIT Press, 1990).

M. I. Chevrier, 'Verifying the unverifiable: lessons from the Biological Weapons Convention', *Politics*

ence disappointed NGOs and scientists in attendance, as well as many delegates from developed countries, because it was held back by Third World obstruction on some issues and American on others. For the South, the Convention held unfulfilled promise in its Article X of closing what the final conference declaration called “*the increasing gap between the developed and the developing countries in the field of biotechnology, genetic engineering, microbiology and other related areas.*”¹⁷ Accordingly, until it yielded tangible benefits through transfer of industrial technology, its strengthening in other respects would be resisted. From the perspective of developed countries, however, the implied *quid pro quo* was unclear and the treaty obligation in Article X to co-operate in the peaceful applications of microbiology was understood in more traditional terms of extended CBMs, medical research and assistance for child immunisation programmes.

American obstruction mainly concerned verification. It arose from the conviction, expressed with some vigour by US representatives before and during the conference, that the Convention could not be effectively verified, and that an ineffective verification procedure would be worse than useless because of the false confidence it might engender. The US had accordingly to be eased by its allies into somewhat grudging

and the Life Sciences, vol.9 no.1 (August 1990), pp 93-105.

Federation of American Scientists, *Proposals for the Third Review Conference of the Biological Weapons Convention*, Report of the FAS Working Group on Biological and Toxin Weapons Verification (Washington, D.C.: Federation of American Scientists, October 1990).

‘Statement of the Pugwash Council for the Third Review Conference of the Biological Weapons Convention of 1972’, *Pugwash Newsletter*, vol.28 no.2 (October 1990), pp 99-101.

Federation of American Scientists, *Implementation of the Proposals for a Verification Protocol to the Biological Weapons Convention*, Further Report of the FAS Working Group on Biological and Toxin Weapons Verification (Washington, D.C.: Federation of American Scientists, February 1991).

E. Geissler & R. H. Haynes (Eds), *Prevention of a Biological and Toxin Arms Race and the Responsibility of Scientists* (Berlin: Akademie Verlag, 1991).

N. A. Sims, *Reinforcing Biological Disarmament: Issues in the 1991 Review*, Faraday Discussion Paper No 16 (London: Council for Arms Control, 1991).

J. Goldblat & T. Bernauer, *The Third Review of the Biological Weapons Convention: Issues and Proposals*, United Nations Institute for Disarmament Research (UNIDIR), Research Paper No 9 (New York: United Nations, 1991).

‘Statement for the Third Review Conference of the Biological Weapons Convention by the Council for Responsible Genetics, Committee on the Military Use of Biological Research’, April 1991.

B. Hatch Rosenberg, ‘The next step: a biological verification regime’, and articles by other experts, *Disarmament*, vol.14 no.2 (1991).

M. Meselson, ‘Implementing the Biological Weapons Convention of 1972’, and articles by other experts, in *Biological Weapons: Research Projects and Publications*, *UNIDIR Newsletter*, vol.4 no.2 (June 1991).

S. J. Lundin (ed), *Views on Possible Verification Measures for the Biological Weapons Convention*, SIPRI Chemical & Biological Warfare Studies No 12 (Oxford: Oxford University Press, 1991).

B. ter Haar, *The Future of Biological Weapons*, The Washington Papers No 151 (New York: Praeger, 1991).

¹⁷ BWC/CONF.III/22/Add.2 (27 September 1991).

acceptance of an expert study. NGOs which had put the adoption of verification procedures at the top of their agenda were particularly disappointed that none were adopted, and blamed US obstruction for their disappointment.

The resulting deadlocks and defeats at Geneva were no less regrettable for having been predicted. Yet, if overall the conference only half-rose to the challenge of rising expectations, its achievements were nevertheless far from negligible. It was, as it turned out, on CBMs that the Third Review Conference did best. Governments agreed to sharpen the focus of the 1986 batch, so that information of greater relevance to treaty compliance would be exchanged under the existing CBMs, such as any past or present R&D (and other activities) undertaken in the name of BTW defence. Greater transparency in permitted activities would, it was hoped, dispel unnecessary suspicions and also show up in sharper relief anything that did require closer scrutiny. The Conference also considerably expanded the range of CBMs. Governments agreed in future to declare also any facilities for vaccine production, export controls against BTW proliferation, import controls against pathogenic micro-organisms, national legislation to give domestic effect to the Convention's obligations, and the history of any military BTW programmes, going right back to 1 January 1946. This last CBM embraces not only defensive programmes but also those offensive in character (until they became illegal). Genuinely informative declarations made under *this* CBM should answer many of the Convention's most persistent questioners and reveal, not only *what* BTW stockpiles have existed in the past, but also *when* and *how* they were destroyed. We could all do with transparency in this regard.

The Conference was more cautious on verification, in the sense of intrusive, "*anytime, anywhere*" inspections at short notice. The US delegate stated, three times in one speech, that the Convention was not effectively verifiable.¹⁸ Other, mainly Western, states came to the Conference with a more open mind on the subject, and were broadly content to leave the argument to a future group of governmental experts. They concentrated their efforts accordingly on persuading the US to allow such a group to be set up, albeit (in deference to US reservations) with no mandate to produce proposals for a verification protocol but only to examine the feasibility of different verification measures from a scientific and technical viewpoint. The group will meet on 30 March 1992, for two weeks, and thereafter (US policy permitting) will work through 1992-93, reporting "*preferably*" by the end of 1993. A special conference to examine its report could take place in 1994 (or even late 1993 if Canada has its way) if a majority of states parties to the Convention so decides. It seems likely, then, that a decision for or against grafting verification provisions

¹⁸ Statement by Ambassador Ronald F Lehman, II, Head of US Delegation to the Third Review Conference (10 September 1991): text issued by the US Mission to International Organizations, Geneva. The most specific statements to this effect are on p. 5, p. 12 and p. 13.

on to the Convention will be taken well before the Fourth Review Conference foregathers in 1996.

The feasibility study may well conclude that some of the prohibitions in the 1972 Convention are more directly verifiable than others (perhaps at the point of BTW weaponisation?), while some (for example, small-scale development of microbial agents or toxins for hostile purposes) may be hardly verifiable at all. What is decided in 1993 or 1994 will undoubtedly be influenced, not only by the experts' report on feasibility of verification in the BTW case, but equally by the perceived utility of the CBM regime in its post-1991 expansion as a satisfactory means of demonstrating compliance; and by whatever verification provisions may by that time have been concluded in the Chemical Weapons Convention.

On Article X the Conference agreed to encourage (with prudent acknowledgement, elsewhere in its final declaration, of the danger that assistance may unwittingly be given to BTW proliferators if the intended use of exported materials is uncertain) *"international co-operation and exchange in the peaceful uses of biotechnology."* It urged *"the developed countries possessing advanced biotechnology to adopt positive measures to promote technological transfer and international co-operation on an equal and non-discriminatory basis, in particular with the developing countries, for the benefit of all mankind."*

The Conference also made useful progress in interpreting the terms of the basic prohibition, so as to close possible loopholes arising from genetically-modified organisms and resolve other uncertainties in the interests of assuring comprehensive coverage. (*"Toxins, whatever their origin or method of production"* now bears the gloss *"naturally or artificially created or altered."*) It elaborated further than in 1986 procedures for the consultative mechanism, defined in 1980 but still untried, in order to encourage resort to it for handling compliance disputes. Other new paragraphs in its final declaration addressed fresh concerns so as to render the Convention more robust and irreversible. All this accorded well with the responsibility of the Third Review Conference, like its predecessors, to give the treaty regime flowing from the Convention a thorough check-up, diagnose its problems and prescribe appropriate remedies.

Section D

The most clear-cut failure of this Review Conference was the blocking, on spurious grounds of cost (which would have been minimal) and more understandable disagreements over composition, of all proposals for supportive institutions to underpin the treaty regime. Proposals for a standing or interim committee, to facilitate the operation of the Convention and in particular its CBMs, received much support from

governments and NGOs alike.¹⁹ But in the end there was insuperable Third World opposition to the concept under any of its suggested titles (even the innocuous-sounding “*intersessional group*”), and likewise to proposals for a small CBM-processing unit within the UN Secretariat with staff and office budgets specially funded by the parties to the Convention.

This failure is a setback but not a total one. There are points in the final declaration of the Review Conference which can be developed between now and 1996, when the adequacy of organisational arrangements for the Convention will be reconsidered. Many governments, which had said nothing about underpinning institutions in 1980 or 1986, openly backed them (in one form or another) in 1991. The remainder need to be persuaded that until there is continuous oversight or at least a coordinating mechanism in the service of all parties to the Convention, it remains a fragile safeguard, damagingly dependent upon Review Conferences alone to promote its implementation. To meet together only once every five years, and then for a mere three weeks, may come increasingly to be seen as an irresponsible lack of care.

Those governments which act as if under the illusion that they can have BTW disarmament at no cost are putting at risk a unique achievement which has weathered twenty years’ vicissitudes. The challenge of the next five years is to convince them that diplomatically acceptable (and financially modest) solutions exist which will endow the Convention with a necessary minimum of supportive institutions at last.

The Fourth Review Conference in 1996 should then be able to create, by consensus, and on an interim basis (because as appendices to that Conference their mandates would extend only to the Fifth Review Conference), the following: a Committee of Oversight, a Legal Advisory Panel, a Scientific Advisory Panel and a small Secretariat in the common service of the States Parties to the Convention.²⁰ Whether supportive institutions, to facilitate implementation of the Convention and underpin its effective operation, are created in precisely this form or not, the important thing is that the States Parties should act as a collectivity to remedy the institutional weakness of their BTW disarmament regime. Their failure to take action even on the most modest institutional proposals advanced in 1991 is deplorable, not only because it reflects an apparent lack of commitment (or a failure of imagination?) on the part of

¹⁹ The origins of these proposals are to be found in N. A. Sims, *The Diplomacy of Biological Disarmament: Vicissitudes of a Treaty in Force, 1975-85* (London: MacMillan; New York: St Martin’s Press; 1988), pp 298-306; and an important adaptation in C. C. Flowerree, ‘On tending arms control treaties’, *The Washington Quarterly*, 13: 199-214 (Winter 1990).

²⁰ The case for these four supportive institutions is made in N. A. Sims, ‘Organisational aspects with regard to possible verification tasks under the BWC’, in S. J. Lundin (ed), *Views on Possible Verification Measures for the Biological Weapons Convention*, SIPRI Chemical and Biological Warfare Studies No 12 (Oxford: Oxford University Press, 1991). See also reference 27 below.

all too many of the States Parties, but also because this continuing void at the heart of the treaty regime is likely to slow down the endogenous development of that regime between 1991 and 1996. A modest central capability would, at the very least, have ensured that CBMs would be actively pursued, recalcitrant governments encouraged repeatedly to submit their required declarations, and the resulting data presented more accessibly and intelligibly to the world at large, with consequent benefits to the Convention in terms of transparency, credibility and reputation.

Section E

In this section I enquire into the reasons why the impact of the Second Gulf War, and even of the Special Commission's investigatory role in Iraq, on the Third Review Conference was so slight as to be almost imperceptible. Four negative and three positive reasons are advanced.

The Third Review Conference achieved some success in endowing its BTW disarmament regime with endogenously-derived measures of reinforcement, but the impact on this process of the allegations against Iraq was almost imperceptible. True, Iraq was present for the first time as a full party to the Convention, having been ordered to ratify, an order it obeyed on 8 April. (It had been represented in 1980 and 1986 as a signatory-only state.) True, the World Health Organisation sent an observer, something it had been unwilling to do in 1980 or 1986²¹ but which now followed naturally enough from its involvement in the work of the UN Special Commission. It is also possible that the Second Gulf War sharpened apprehensions in the United States concerning a world, and more specifically a Third World, proliferating with BTW, and that this may have rendered the US less obstructive to the process of regime reinforcement than it would otherwise have been. However, US-led anxieties over BTW proliferation were already, as we have seen, strongly in evidence in the *first* half of 1990.²² US distaste (never total) for the Convention had already been converted into cautious and critical support between 1986 and 1990. So even before the invasion of Kuwait the Convention was already being viewed, in Washington where scepticism had been strongest in 1980-1986, as a vehicle (along with supplier-side co-ordination of export controls, on the precedent of the anti-CW-proliferation Australia Group, and other measures) for resisting the Third World proliferation of BTW capabilities.

The non-use of BTW in the Second Gulf War left anxieties and uncertainties over the allegations of proliferation precisely where they were on 2 August 1990. Nothing

²¹ The WHO did, however, send an observer (Dr K. Uemura) to the *Ad Hoc Meeting of Scientific and Technical Experts* on CBM modalities in April 1987, which constituted an appendix to the 1986 (Second) Review Conference.

²² See references 2 and 3 above.

had been proved or disproved about any of the ten ‘suspect’ states; not even Iraq. The disquieting ambiguities remained just that: ambiguous and unsettling. The mystery had not been dispelled. But one thing *had* changed. Under Resolution 687, it was now going to be possible, with the full authority of the UN Security Council, to try out intrusive on-site inspection as a verification technique and thereby resolve once and for all (it was hoped) the allegations laid against Iraq. One might have expected *this* to have an impact, if nothing else could. How could it fail to influence the deliberations of the Third Review Conference on proposals for strengthening the means of demonstrating compliance, including its debates on CBMs and on verification? And yet it did fail.

There are, I suggest, four negative and three positive reasons which can be advanced to explain this.

Negatively,

- (1) The Special Commission had accorded priority, in launching inspection teams into Iraq, to nuclear, chemical and missile inspections. It was true that Salman Pak had been inspected, 2-7 August 1991; but the inspection of ten other sites would only begin on 20 September, and an assessment of Iraq’s belatedly declared BTW military research programme (as well as of everything which had been suspected but not declared) could not yet be made.
- (2) The Special Commission was keeping its inspection teams’ findings fairly much to itself. It saw its responsibility as being first and foremost to the Security Council which had brought it into being and entrusted it with a particularly tough mandate. It did not envisage a responsibility to the Third Review Conference as such. After the first six months of its life it did produce an interim report, as an openly available document of the Security Council;²³ but this was some weeks after the Conference had ended.
- (3) Even if the Special Commission *had* been minded to divulge its inspectors’ findings to the Conference, the US Government would not have allowed it. Washington took a strong line against any suggestion of possible linkage between the work of the Special Commission and the work of the Conference. It made this explicit even before the Conference opened, in remarks to the effect that the BTW inspections in Iraq were part of the punitive treatment of a defeated aggressor, and had nothing to do with the arrangements which States Parties assembled in a Review Conference might voluntarily conclude among themselves. Michael Moodie, Assistant Director for Multilateral Affairs of the US Arms Control and Disarmament Agency and US

²³ *CWCB* 14 (December 1991) p 16. According to this report (UN Doc S/23165) of 25 October 1991, the Special Commission’s assessment at that date was that “*Conclusive evidence that Iraq was engaged in an advanced military biological research programme has been collected. No evidence of actual weaponisation has been found, but the inspections have provided a sound data base for future monitoring of biological capabilities in Iraq.*”

Alternate Representative to the Third Review Conference, made this very clear.²⁴ The US Government opposed even the informal briefing of Conference delegates by anyone from the Special Commission, for fear of giving ground on the relationship - which it absolutely denied could exist - between the unique case of Iraq and the issue of BTW disarmament verification in general.

- (4) The US insistence that the Convention could not be effectively verified (and that ineffective verification would be worse than none at all, because it would engender false confidence) proved a major area of controversy throughout the Conference. It particularly preoccupied Western delegations, keen to establish an *Ad Hoc Group of Governmental Experts on Verification* and to resist US pressures if these would narrow that group's mandate so far as to render the exercise pointless. In this situation, to press the issue of linkage with the experience of Special Commission inspections in Iraq would have been diplomatically foolish to say the least. That being said, it remains none the less plausible to suppose that part of the vigour with which the US maintained its basic position on verification had to do with Iraq. It both derived from, I suggest, and at the same time reinforced, the US determination to distance both the Convention *and* the strengthened treaty regime developing out of it from the partly punitive treatment of a defeated aggressor (involving highly intrusive investigation of sites, whether declared or undeclared, by an international inspectorate with full Security Council authority); treatment which, in its view, was possible only in Iraq, proper only for Iraq, and never to be extended to States Parties to the Convention as a whole.

Positively,

- (1) The Third Review Conference already had a large and relatively well-prepared agenda, with a full menu of proposals for endogenous reinforcement of its treaty regime in the general areas of transparency, confidence-building and compliance demonstration. Many dated from 1986 or even earlier.²⁵ By 2 August 1990 the process of developing them into elements of a 1991 consensus, ready for inclusion in the final declaration of the Third Review Conference, was already well advanced.
- (2) Such time as the conference could spare from CBM, verification and institutional proposals (discussed in Sections C and D above) was largely taken up

²⁴ *Daily Bulletin* of the US Mission to International Organizations, Geneva, September 1991.

²⁵ A particularly fruitful source of such proposals, to which full credit should be given, was the paper by R. P. Mikulak, 'Possible improvements in the Biological Weapons Convention', delivered to the Symposium on Biological Research and Military Policy at the Annual Meeting of the American Association for the Advancement of Science, 26 May 1984.

with the complaints of the South that the biotechnology gap was widening, transfer of technology for industrial development was not happening, and Article X was not being fulfilled. Ideas for a global biotechnology database, for new vaccine programmes tied in to the Convention, and for UN system-wide analysis of the problems identified, were negotiated and found their way into the final declaration.²⁶ This whole area of the agenda had, it is probably fair to say, been less thoroughly prepared. The Conference did quite well, then, to agree on as many points in relation to Article X as it did.

- (3) Underlying both of these points, the evolution of the disarmament (or disarmament and co-operation) treaty regime flowing from the 1972 Convention was already going forward with some vigour. The process of regime reinforcement was underway, States Parties having chosen (whether they were always conscious of having chosen it or not) the endogenous method²⁷ of exploring and elaborating each Article of the Convention as it stood, in order to maximise the latent potential of each one. The review of 1991 would have built on the review of 1986 (which in turn had built on foundations laid by the review of 1980) even without the stimulus of the Second Gulf War.

Section F

In this final section of my paper I look to the future and the likely interaction of the Convention's treaty regime, already in full and constructive evolution, with the enforced BTW disarmament of Iraq. Key concepts in this relationship, as it becomes inexorably less tenuous and more controversial, will be verifiability, acceptability and equitability.

Whether the United States government likes it or not, other Western states which have a more open mind on the susceptibility of the Convention's BTW prohibitions to verification are going to draw lessons from the experience of Special Commission inspections in Iraq. By the time the *Ad Hoc Group of Governmental Experts on Verification* meets for the first time (30 March - 10 April 1992) they are likely to have a better idea than they could possibly have had in September 1991 of the possibilities and limitations of on-site inspection for verifying compliance with the obligations flowing from the Convention. Can it distinguish development from research? Can it distinguish development for permitted purposes (prophylactic, protective,

²⁶ BWC/CONF.III/22/Add.2 (27 September 1991).

²⁷ On "*the endogenous method*," see N. A. Sims, 'Endogenous development of the multilateral treaty regime flowing from the BWC: proposals for special conferences and for a continuous central capability', in E. Geissler & R. H. Haynes (Eds), *Prevention of a Biological and Toxin Arms Race and the Responsibility of Scientists* (Berlin: Akademie Verlag, 1991).

peaceful) from offensive development? Can it identify clandestine activities in undeclared locations, or traces of work with specific agents or toxins other than those declared?

How does verification mesh in with the CBM/transparency approach in a single *régime de conformité* or compliance regime?²⁸ The Special Commission based its first request for data to Iraq on the 1987 CBM forms; and it is at least arguable that a sufficiently enhanced CBM regime could diminish, if not abolish, the need for verification as an additional element in the demonstration of compliance. The Iraqi experience may yet, however, prove otherwise.

Iraq is now a State Party and we may expect it to become an increasingly vocal State Party in the diplomacy of BTW control. There are two conditions on which I see it becoming not only increasingly vocal but potentially disruptive to the treaty regime. One is that it succeeds in engaging the sympathies of other Third World parties to the Convention by presenting itself, however disingenuously, as a champion of egalitarian and anti-discriminatory international relations, against industrialised states which want to widen the biotechnology gap and use the pretext of verifying compliance with the Convention, like the pretext of inhibiting BTW proliferation, to hold back the industrial development of the South and keep it at a commercial and technological disadvantage. I do not suggest that this is a fair portrayal of the industrialised states' motives, merely a way in which they might - however unfairly - come to be portrayed. The other condition is that Iraq remains under a unique, and uniquely intrusive, BTW *verification* regime while furnishing much the same *CBM* information as other States Parties. This is a potentially hazardous disjunction, and it should be addressed sooner rather than later if it is not to derail the Convention.

The use of Iraq as a source of experience and lessons valuable to the disarmament process as a whole would be less open to the objection that it treats Iraq as an involuntary testing-ground if the intrusion imposed upon it by Resolution 687 were to become a benchmark, upon which all other States Parties to the 1972 Convention would standardise their own, eventual, voluntary acceptance of on-site inspection. In the same way the permanent denial to Iraq of 'weapons of mass destruction' becomes a great deal more equitable and acceptable, in an international society based on the principle of sovereign equality, if others disarm too. And the permanent openness of Iraq to international inspection under the plans of the Special Commission's Working Group on Future Compliance, embodied in Security Council Resolution 715, becomes a great deal more equitable and acceptable if it applies to all of us equally without discrimination.

²⁸ The term *régime de conformité* (compliance regime) was favoured by Ambassador Peggy Mason of Canada and taken up by Ambassador Gérard Errera of France in their opening statements to the Third Review Conference (10 September 1991 and 12 September 1991 respectively).

A global *régime de conformité*, with a uniform degree of intrusive verification, would be a long way from the uniquely punitive treatment of a defeated aggressor. But it would *not* be a long way from that concept of general and complete disarmament, under strict and effective international control, which has been the proclaimed goal of the United Nations at least since 1959 and was strongly reaffirmed by its member-states in 1978.

Verifiability is a key concept, as well as acceptability and equitability. We must not assume *a priori* that every element in the Convention is equally susceptible to verification. The verifiability of each of its constituent prohibitions must first be ascertained; this should be the aim of the experts' exercise through 1992-93, with the Special Commission's experience in Iraq taken as fully as possible into account. A major issue of principle will then remain to be addressed by Iraq's fellow States Parties to the 1972 Convention. Are they going to perpetuate the uniquely intrusive treatment of Iraq as a defeated aggressor? Or are they going to be sufficiently far-sighted to adapt their global regime to the lessons learned in Iraq and standardise their acceptance of such international verification as may be practically feasible (including on-site inspection wherever applicable) on benchmarks established in Iraq by the Special Commission? There are echoes here of the 1920s and of the lost opportunity for global disarmament, when the enforced disarmament of Germany was not followed up by others disarming under similar controls. Let us not repeat the mistakes of those years.

To conclude, I suggest that this conference should consider the longer-term implications of what is happening in Iraq. A major issue of principle challenges the international community, and perhaps especially the militarily victorious member-states of the 'Desert Storm' coalition. If intrusive on-site inspection proves an effective means of verifying compliance with some or all BTW disarmament obligations under the 1972 Convention, then let it be accepted among all States Parties. Then the valuable experience and personal courage of the brave United Nations inspectors in Iraq, as well as the unprecedented co-operation over the last eight months between the Special Commission, the United Nations, the World Health Organisation, national governments and the scientific community, can be applied and developed on a global scale, in the interest of strengthening universal safeguards against the threat of biological and toxin weapons and promoting the great international enterprise of disarmament.

Postscript

The first combined CW-BW inspection undertaken by the UN Special Commission in Iraq (UNSCOM 21) was still in progress when the Third Brussels Conference on Chemical Warfare took place. UNSCOM 21 lasted from 17 to 30 November 1991. It concentrated on certain suspect sites which Iraq had not declared to the UN.

On 4 December 1991 Ambassador Rolf Ekéus, as Executive Chairman of the Special Commission, supplemented his report of 25 October on its first six months (UN Doc S/23165) with a second report covering the period from 15 October to 4 December (UN Doc S/23268). In this second report he noted that UNSCOM 21 inspectors visited “*at very short notice, a number of sites designated by the Special Commission as being of potential CW and/or BW interest in addition to revisiting the original site at Salman Pak*” (paragraph 10). “*Some thirteen sites were inspected*” (paragraph 15) and, while the full official report of the inspection was not yet available, field reporting had indicated “*that no chemical-or-biological-weapons-related activities were associated with any of the designated sites*” (paragraph 16).

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Serge Sur

The Geneva Protocol and the Two Gulf Wars

14

The 1925 *Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare* represents one of the oldest arms limitation documents. It is one of the rare texts in this field that succeeded in being adopted between the two world wars. It contrasts, both in its precision and in the clarity of its commitment, with the much vaguer and more general character of preceding documents.¹ Unlike many others, it has on the whole been respected since its adop-

tion. Various instances of the use of chemical, or indeed bacteriological weapons, may be pointed to in the last sixty years, but such use has either been relatively limited or impossible to prove conclusively.²

In addition, the Protocol has undergone, or appears about to undergo, normative developments that radicalize its effects: the 1972 *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction* on the one hand; and the Convention on the elimination of and complete ban on chemical weapons, which is the main focus of the work of the Disarmament Conference in Geneva. Attention should be paid above all to the problems raised by chemical weapons and the prospects for their use. They are at the heart of the Protocol, which was conceived as a reaction to their massive use during the first world war. Only these weapons are kept, officially or otherwise, and in variable quantities, by certain States. The 1972 Convention also symbolizes a complete rejection of biological weapons, which show little prospect of actually being used in the foreseeable future.

Despite its relative age, the international community's attachment to it, recently demonstrated once again³ and, on the whole, its positive implementation, the Protocol remains a fragile instrument.

¹ For example, the St Petersburg Declaration of 11 December 1868; the Brussels Declaration of 1874; and the Hague Convention of 1907 on the Laws and Customs of War on Land (Convention N°. IV of 18 October 1907).

² We note, however, the use of chemical weapons by Italy in the Ethiopian conflict in 1935-1936, and Japan's alleged use against China during the same period. For recent allegations of use, see below, note 5.

³ Notably the Paris Conference in January 1989 and Security Council Resolution 687 (3 April 1991); see below.

This fragility is intrinsic in several ways. The Protocol is an instrument of humanitarian law, or the laws of war, and not the law of disarmament. It therefore has the same precariousness as the rules governing armed conflict, which are subject to the risks of military advantage and the tendency to shed any constraint or restriction on the use of violence in warfare. The rules of disarmament law apply in peacetime, even more so as they represent instruments of a state's security. The laws of war, on the other hand, which tend to limit methods and effects, are necessarily subject to fierce tensions when the time comes to apply them, as they impede the spontaneous movement to extremes of violence. In addition, the Protocol does not envisage the disappearance of chemical weapons, their possession, production and stockpiling remaining legal. The existence of many reservations that either makes it possible to use them in retaliation against first use, or authorize their use against States that have not signed the Protocol, provides a *raison d'être* for keeping stocks or even anticipating their use. Finally, the Protocol, which claims to be the declaratory instrument of a rule in principle, is extremely short and includes no verification mechanisms, still less any implementation measures that might envisage an organized reaction in case of violation. Largely, the reservations regarding reprisals serve this purpose. This is why, in trying to explain the non-use of chemical weapons during the second world war, particularly by Germany, far more reference is made to the risk run than to strength of conviction or to the rule as an obligation in itself. Nevertheless, the object of retaliation is less to ensure the survival of the Protocol itself than to safeguard the rights and methods of warfare at the disposal of any possible victims, and in their sole interest.⁴

This internal fragility is then heightened by the consequences for the Protocol itself of any adverse use of chemical weapons. If retaliation is carried out, where does that leave the principle of the ban? If, on the other hand, it is not carried out, but there is no effective collective reaction, the Protocol's credibility and durability are seriously threatened. This is exactly what happened during the first Gulf war,⁵ during which Iraq's use of these weapons against Iran was selective, certainly, and to a certain extent measured, but was also very nearly official, and almost conspicuous. Beyond the immediate military advantage, which is usually defensive, Iraq wanted to demonstrate the extent of both its resources and its determination. It also probably wanted to force the intervention of third parties to have the conflict settled and to cut short a struggle that was becoming ever more difficult to sustain. It is quite clear that the cautious and even timid reactions by the international community

⁴ On this distinction between protecting the treaty as a whole and safeguarding the individual interests of the parties involved, see S. Sur, *Une approche juridique de la vérification en matière de désarmement ou de limitation des armements*, UNIDIR, Research paper No. 1, 1988.

⁵ See T. Bernauer, *The Projected Chemical Weapons Convention: A Guide to the Negotiations in the Conference on Disarmament*, UNIDIR, Research Guide, 1990, pp. 33-36.

led to a distinct weakening of the Protocol. Simultaneously, this influenced the prospects for a successful conclusion to the negotiations on the elimination of chemical weapons. After all, were these weapons not to some extent effective? So was it not better to wait and see, and reevaluate their role in a positive way? Did not the special sensitivity that surrounded them, the fears they seemed to inspire and the political dimension to their use, all make them a weapon comparable to nuclear ones and, as the popular saying went, the poor man's atom bomb? So why then should they be banned, if nuclear weapons were still authorized?

This question, which was partly left unresolved and shrouded in ambiguity after the first Gulf conflict, was raised again by the threat of these weapons being used following the occupation and annexation of Kuwait. Yet now it was raised in an entirely different context. On the one hand, Iraq's open threats did not lead to actual use. On the other, the reaction to these threats and the tangible prospect of actual use was far stronger. This was above all a collective and authoritarian response since, as we know, in Resolution 687 of 3 April 1991, the Security Council ordered the destruction of all of Iraq's chemical weapons and also the plants to manufacture them and their precursors.

Our aim here is not to analyse, in political or strategic terms, the reasons and justifications that produced this change, nor to calculate the consequences of it. We aim instead to show how the international reaction became progressively more organized and tougher. This was channelled largely through the United Nations, utilising the instrument, its competencies and its procedures. We should also underline that, while there is no denying that the Protocol was strengthened as a result, it still remains conditional and has to be relayed by more ordinary and consensual means. This strengthening is even more desirable as the Protocol has the advantage of dealing with chemical weapons, particularly both as an inhumane weapon and as a weapon of terror. By thus stressing its detestable particularity, it prevents any blurring into assimilations that are fallacious and dangerous for the effective banning of these weapons.

Involving the United Nations in the defence of the Geneva Protocol

Nothing in its Charter either obliges or predisposes the United Nations to intervene to enforce a treaty, even if it is as closely linked to international security as this one. The UN has no authority to act as an organ executing treaties, but only to ensure respect for its own Charter and decisions taken based on it. It is when - and only when - a failure to implement a treaty and, more generally, an international commitment or obligation calls into question the Charter itself, and its provisions relating

to peace and security on which the whole construction is based in particular, that the Organization can act and is called to do so. The result is that the United Nations' involvement in this particular case is based, if not on slightly biased mechanisms, then at least on a legal construction. Such behaviour is frequent in practice,⁶ which shows the flexibility and adaptability of the procedures to unforeseen situations and has underlined the UN's capacity to use its competencies and powers in a fundamentally political spirit. This is its special genius, and not a sign of weakness or laxity. However, this need to build the elements for intervention explains why the latter is late and indirect, although effective in the long run. Simultaneously, gradually and empirically, the intervention procedures link the coordination of UN bodies and cooperation between Member States.

Features of UN involvement

a) To begin with, it was relatively *late*. Despite the existence of precedents regarding enquiries into cases of alleged use of chemical weapons, which had been conducted by the Secretary-General in comparable circumstances,⁷ and despite the existence of a resolution in principle by the General Assembly (Resolution 37/98 of 13 December 1982),⁸ the enquiries carried out during the first Gulf war were conducted on an uncertain basis. What happened was that the legality of this Resolution under the Charter was contested. The Secretary-General found himself in a difficult position when it came to implementing it in the face of opposition from at least one permanent member of the Council.⁹ In addition, even if the result of these enquiries was conclusive (which had not been the case for the enquiries previously carried out in relation to Cambodia and Afghanistan), initially its only result was the publication of reports. Judging by what followed, growing international public awareness had little effect despite the confirmation that Iraq was using a means of combat that was

⁶ See, for example, J. P. Cot and A. Pellet, *La Charte des Nations Unies. Commentaire article par article*. Economica-Bruylant, 1st ed. 1985, who give many examples.

⁷ Regarding alleged use in Afghanistan, Cambodia and Laos at the end of the 1970s, the General Assembly asked the Secretary-General to conduct enquiries (Res. 35/144 C (1980), 36/96 C (1981)). The investigators were unable to visit the areas in question and their observations were not conclusive (Doc. A/36/259).

⁸ This Resolution was entitled "*provisional procedures designed to uphold the authority of the protocol signed in Geneva in 1925*" and adopted at the instigation of France by 86 votes in favour, 19 against and 33 abstentions. See S. Sur, *La Résolution A/37/98 D du 13 décembre 1982 et les procédures d'enquête en cas d'usage allégué d'armes chimiques...* AFDI 1984 (CNRS), pp. 93-109.

⁹ The USSR was firmly opposed both to the principle and to the implementation of the Resolution in its original form.

violating its commitments, since Iraq, like Iran, was bound by the Protocol. In a way, Iraq could even have derived a certain advantage from it, as it stressed both the extent of its resources and the strength of its determination. This could provide an incentive to bring the conflict to a swift end, as Iraq wished. Before the Security Council made its presence felt - and even then cautiously¹⁰ - repeated use had to be made of this weapon and new investigations carried out, with renewed conclusions. Ultimately, it was the Paris Conference, held in January 1989, and external to the United Nations, which represented the final point of the reaction.¹¹ Yet this avoided all explicit condemnation of Iraq. The real condemnation came *a posteriori* with Security Council Resolution 687. This was in a different context, namely that of the second Gulf war, in which chemical weapons were ultimately not used.

b) The UN involvement was also *indirect*, from two points of view. First, the UN always takes a lateral stand in relation to its main aim, which is the maintenance or restoration of peace. In this, the United Nations remains faithful to its essential calling, but this leads it to adapt its intervention to the intensity of the threat or breach of the peace. An exception here is the way in which enquiries are carried out. In a way, they are more a matter of investigative measures and do not in any way prejudge the taking of a stand on the situation. To establish use on an independent basis is not to make a judgement but to concentrate on establishing a fact. The appraisal of consequences is left to the parties concerned, the largest circle consisting of the signatories to the Geneva Protocol. Yet when, much later, the Security Council decided on the destruction of all of Iraq's chemical weapons and the means of producing them, it did so because of Iraq's dangerousness as demonstrated by its occupation and annexation of Kuwait.

This observation may however be expanded. The second Gulf war was not fought, nor Resolution 687 adopted to eliminate Iraq's chemical weapons, nuclear or biological preparations, or ballistic missiles. The Council took various coercive measures against Iraq to restore and maintain peace, by eradicating the means for any fresh attack or threat. The Machiavellian theories one comes across here and there, which would have it that the United States deliberately allowed the invasion to happen to crush a regional power that was threatening the established order and regimes, seem

¹⁰ See, for example, the declaration by the President of the Security Council on 30 March 1984 (S/16454), following on the report from a group of experts which put forward the anxiety felt by Members of the Council and their strong condemnation of the use of chemical weapons, without indicating who was responsible. Subsequently, and after fresh investigations, the Council adopted Resolutions 612 and 620 (May and August 1988) in which it condemned the violations of the Protocol and, in the event of further use, envisaged resorting to the mechanisms provided in Chapter VII of the Charter.

¹¹ The Conference, held from 7 to 11 January 1989, brought together 149 States, both Parties to the Protocol and other states interested in the elimination of chemical weapons. It expressed a renewed condemnation in principle and gave its support to the investigations carried out by the Secretary-General.

to be based on assumptions and to lack any serious foundation, at least as far as one can tell from the information available right now.

Next, as previously mentioned, the United Nations is not responsible for upholding the Geneva Protocol any more than any other treaty. This is the responsibility of all signatories. It is true that they are constrained by the Protocol's brevity such as the absence of mechanisms for verification or sanctions. The investigations may of course provide an objective basis for common action, but they concern only the establishment of fact. They do not establish a violation of the Protocol, which would go beyond the competencies of the UN. At the 1989 Paris Conference the Signatories could have decided otherwise, but opted instead for a diplomatic approach, aiming at a positive relaunching of the Disarmament Conference negotiations rather than a legal or denunciatory approach, which would have run the risk of remaining merely declaratory.

It could be maintained that the rules contained in the Protocol have a customary character, and that Resolution 37/98 D refers thus not only to the Protocol but also to the customary rules.¹² It does so, however, in a rather general way, and, even assuming a customary ban on the use of chemical weapons in war does exist, it seems to apply only to first use. The numerous reservations, which allow of chemical reprisals, in practice rule out the theory of a customary ban on chemical weapons in all circumstances.

So, during the first Gulf war, the United Nations confined itself to establishing facts and adopting condemnations in principle, recalling the international rules currently in force. This was a symbolic reaction, and an unfortunate reminder of the repeated declarations and condemnations by the Security Council, which was unable to exercise any real control over events.

The situation changed dramatically with the second Gulf war, where both the determination shown and the range of measures taken in the face of a threat that never materialised, contrasted strongly with the earlier weakness in the face of the actual use of chemical weapons.

c) In the last analysis, the UN's involvement was an *effective* reaction. While they do not mention the existence of customary rules, the terms of Resolution 687 refer explicitly to the Protocol, demanding particularly that Iraq should "*reaffirm unconditionally its obligations under the Geneva Protocol.*"¹³ This invitation represents the first element in the set of extremely restrictive provisions formulated under point C, which envisages forced and monitored disarmament of Iraq, especially in the field

¹² Paragraph 4 of Resolution 37/98 D asks the Secretary-General to investigate "[...] *les activités pouvant constituer une violation du Protocole ou des règles du droit coutumier international applicables en l'espèce [...]*." ("... the activities which might constitute a violation of the Protocol or the rules of international customary law applicable in the case ...") Text in *AFDI* 1984, *op. cit.*, p. 108.

¹³ Point C, paragraph 7 of Resolution 687.

of chemical weapons. In this respect the Resolution, which is at the base of its own obligations, goes beyond the Protocol itself. However, in starting by recalling its terms, it places the UN action in its proper context. We shall see later, however, that it fits into a different logic - that of chemical disarmament. To a certain extent it represents an isolated and anticipated application of the future Chemical Convention (see below).

Modes of involvement

The indirect and progressive nature of the United Nations action to enforce observance of the Protocol was based on an empirical construction that involved successive adjustments. It did not become fully effective until the problem of chemical weapons was embraced and outstripped by the general reaction to Iraq's attitude. Yet if one were to try to describe it, this action was marked by an effort at coordination by the UN organs, which was finally achieved by the Security Council, and by the cooperation between Member States.

a) Coordination between organs: this was achieved with some difficulty. Though the General Assembly and the Secretary-General, and later the Security Council and the specialized institutions were involved, this first came about in a disorganized fashion, with caution and reservations, and then ever more powerfully. Even then, the timidity shown in the face of the use of weapons in the Iran-Iraq conflict contrasted with the energy displayed in the face of the threat in the second conflict, which was far more of a direct challenge to the United Nations itself.

1. The *General Assembly* first made its presence felt, indirectly, with the adoption, on 13 December 1982, of Resolution 37/98 D on the investigations to be carried out in case of alleged use of chemical or biological weapons. Couched in abstract terms, this Resolution was not directed against Iraq, as these weapons had not yet been used at that point. It rather concerned the legitimization of investigations to be carried out by the Secretary-General at the request of the Assembly. This followed allegations of the use of chemical or biological weapons in Cambodia and Afghanistan.¹⁴ It provided that the Secretary-General would in principle be authorized to investigate acts that might constitute a violation of the Geneva Protocol at the request of a Member State. For the time being it asked him to draw up the necessary procedures. These were completed by a group of experts in 1983 and 1984.¹⁵

¹⁴ See note 7.

¹⁵ Doc. A/39/488 of 2 October 1984, Appendix II. General Assembly Resolution 39/65 E, which "notes" the Secretary-General's report.

However, a legal difficulty was raised by the socialist countries, led by the USSR. They felt very keenly the political implication of this Resolution, which, in the context of that time, seemed aimed particularly at them. So not only did they vote against the Resolution, the adoption of which caused great controversy, they went even further and vigorously contested its legality. Without entering into a detailed discussion on this,¹⁶ it is enough to recall that they advanced two arguments. On the one hand, Resolution 37/98 D added a verification procedure to the Protocol and thus ended up revising this document in contradiction to the established rules of the law of treaties that presuppose the consent of the Parties. On the other, by entrusting to the Secretary-General a mission not within his competence, the Assembly was violating the Charter. The Resolution should therefore be considered invalid. It was easy to reply that, in the first place, the Resolution did not envisage a verification procedure under the Protocol but simply a fact-finding mechanism without the Assembly taking the authority to pronounce itself on any possible violation of this treaty. So there was no question of revising the Protocol. Next, the Assembly may, for example, on the basis of article 14,¹⁷ propose to Member States optional procedures likely to ensure the peaceful resolution of any situation, whatever its origin, which it considers liable to damage the common good. As for the Secretary-General, he must carry out any mission entrusted to him by the Assembly based on article 98.¹⁸

The controversy led, however, to a practice somewhat different from what was planned. The investigations requested by Iran were indeed carried out, several times, and with conclusive results. However, they did not take place on the basis of Resolution 37/98 D. By referring to humanitarian considerations, the Secretary-General chose a more diplomatic route, acceptable to all, but one with a less certain legal foundation.¹⁹ In practice, the procedures drawn up under the Resolution were used nonetheless.

Finally, in a third phase, but in a sense after the battle was over, the investigations were consolidated by a Soviet reversal. The USSR did actually agree to this mechanism and a new Resolution, 42/73 C, was adopted by consensus. New procedures

¹⁶ On this point, see S. Sur, *AFDI* 1984, *ibidem*, pp. 95-98.

¹⁷ The Assembly may "...recommend measures for the peaceful adjustment of any situation, regardless of origin, which it deems likely to impair the general welfare or friendly relations among nations, including situations resulting from a violation of the provisions of the present Charter setting forth the aims Purposes and Principles of the United Nations..."

¹⁸ The Secretary-General "...shall perform such other functions as are entrusted to him by [the General Assembly and the Security Council]."

¹⁹ In a note on 26 March 1984 (S/16433), the Secretary-General referred both to Security Council Resolution 540 and to "humanitarian principles enshrined in the Charter" as well as to the "moral responsibilities associated with his functions," in considering that it was his duty "to establish the facts."

then clarified previous ones.²⁰ This turnaround was as much due to the general evolution in the Soviet attitude to the United Nations as to the concrete demonstration of the usefulness of the investigations. All the same, it resulted in the Organization's being endowed with a permanent investigatory mechanism, under the direction of the Secretary-General.

2. The *Secretary-General* and Secretariat were first of all required to carry through the investigations and did so successfully with few resources and the indispensable assistance of the Member States (see below). Many concrete problems - technical, administrative and logistical - had to be solved, and the procedures examine these in detail. In particular, the issues of the experts' safety, the collection of pieces of evidence, their transport and analysis and the conditions for drawing up the report were raised. These represent a considerable contribution to the general problem of on-site inspections.²¹

Next, and on a different scale, the Secretary-General was required by the Security Council to implement Resolution 687, notably regarding Iraq's chemical disarmament. He had to draw up plans, collect information, submit reports and work in liaison with the Special Commission that had been set up.²² This takes matters even farther outside the remit of the Protocol, as it involves the elimination of weapons, not their use. Furthermore, the Secretary-General intervened in the context of a coercive action and had far wider powers at his disposal, as well as measures that were incomparably more powerful. Yet between these two types of operation, there is not only a discontinuity. There is also a shift, with a dynamic based on the growing involvement of the Security Council, which is gradually substituting the General Assembly.

3. The *Security Council* substituted for the Assembly first of all to provide a framework for the investigations into the alleged use of chemical weapons during the first Gulf war. There was a legal reason for this: it had been officially informed of the situation and, under article 12 of the Charter,²³ the Assembly had to refrain from making any recommendation in the matter. By extension, it may be considered that the implementation of previous relevant resolutions of the Assembly is suspended from the moment the Council is dealing with an issue. These resolutions are

²⁰ These procedures, prepared by a group of government experts, were the subject of two reports, in 1988 (A/43/690) and 1989 (A/44/561).

²¹ See reports A/39/488, A/43/690 and A/44/561, already quoted.

²² Resolution 687, point C, paragraphs 8 and 9.

²³ Article 12, paragraph 1: "*While the Security Council is exercising in respect of any dispute or situation the functions assigned to it in the present Charter, the General Assembly shall not make any recommendation with regard to that dispute or situation unless the Security Council so requests...*"

then only applicable as far as the Council gives them authority, for example, by referring to them. This underlines the extent to which the law of the Security Council is a law of exceptions, which has more in common with policing than with the ordinary implementation of instruments drawn up by the other organs. The Council governs all other organs, and not just in the context of Chapter VII, but in the context of exercising all these functions.

Added to this is a political reason. The Council, which was controlled by the major powers, was more reassuring for them and guaranteed them that there would be no slippage regarding investigations, which might have become an instrument in the service of the Assembly. The USSR in particular saw in the Council a means of channelling and restricting this procedure. It could also refer to precise provisions in the Charter that gave the Council the power to investigate (article 34).²⁴ This transition contributed greatly to the legitimization of investigation procedures and favoured the adoption of Resolution 42/73 C by consensus.

However, the Council's reactions to the investigations that established the use of chemical weapons by Iraq²⁵ lacked firmness. They initially remained confidential, with the President's declarations, and then declaratory, with reaffirmations of the principle of a ban on use and warnings to users. As already mentioned, the same caution was evident in the January 1989 Declaration adopted at the Paris Conference. It was not until the second Gulf war and Resolution 687 that there were restrictive measures, going well beyond the Protocol and aiming at the complete chemical disarmament of Iraq. To put this operation into effect, specially created subsidiary bodies were mainly called upon, in particular the Special Commission of the Council,²⁶ as well as outside organs like the Secretary-General and specialized institutions.

4. The *specialized institutions*, and especially the WHO,²⁷ were targeted in the Assembly's Resolution 37/98 D. It was asked to assist in the envisaged mechanism, but in practice this request remained a dead letter because of the theoretical and political difficulties initially raised by this Resolution. Much more solidly, the Security Council asked the Director-General of the WHO to be at the disposal of the

²⁴ "The Security Council may investigate any dispute or any situation... in order to determine whether the continuance of the dispute or situation is likely to endanger the maintenance of international peace and security."

²⁵ See T. Bernauer, *op. cit.*

²⁶ Resolution 687, C, paragraph 9 b, i. The Commission is composed of 22 members. Few non-aligned countries insisted on being on the board. It operates under the authority of the Security Council and coordinates the actions of the Secretary and the Specialized Institutions, and with a functional specialisation of its members.

²⁷ The WHO had previously shown its interest in chemical weapons in 1970 by adopting a report on "public health and chemical and biological weapons."

Secretary-General for consultations regarding the plan for the inspections and elimination of Iraq's biological and chemical capabilities.²⁸ Nevertheless, it was the IAEA that was most solicited in another field, namely that of nuclear weapons.

b) Voluntary cooperation between Member States: this procedure must be stressed. As we know, the Council may require and impose the cooperation of Member States within the framework of its mission of maintaining peace. The Assembly, on the other hand, has no direct means of doing this. Here, both the Council and the Assembly (for whom the cooperation of their members is indispensable) had to tolerate this constraint. Members' action was at least channelled and in a way instrumentalized by the UN.

We encounter this in the matter of investigations. These in fact are not binding and are based on a purely optional interpretation, which is proposed to but not imposed on Member States. This cooperation manifests itself in different areas: first in the request for an investigation, as these rely on an allegation by a State, together with evidence presented; then in an agreement to the investigation by the States involved - the State whose territory is concerned and neighbouring States where indications or evidence, whether direct or indirect, may be collected. Next, States provide investigators, enabling the Secretary-General to draw up a list of experts and keep it up to date. States also make laboratories available for analysing the samples taken and finally, the results of the investigation are taken into consideration, if necessary, a position is adopted on its conclusions.²⁹

Thus it is obvious how this entirely optional mechanism must operate discreetly when it is contested. In particular, it may not entail excessive expenditure for the UN, for fear of relaunching the discussion at the stage of the adoption of the budget and the payment of contributions. Here, the consensus obtained by Resolution 42/73 C reinforces it considerably. Without altering its optional aspect, it gives it far greater visibility and by that increases the credibility of its effective implementation.

The voluntary aspect resurfaces in many Security Council resolutions, including Resolution 687. They thus do not compel any State to participate in the Special Commission, which it set up, nor to offer it active assistance during its work. In the same way that Resolution 678 authorized Member States to take all necessary means to liberate Kuwait, Resolution 687 relies on the active and voluntary assistance of those States willing to provide human, technical and logistical resources. It may even be said that, as far as respect for the Geneva Protocol in the strict sense goes, no compulsory measure is envisaged. Even Iraq was simply *invited* to reaffirm unconditionally that it would respect the Protocol.³⁰ Here again we find this idea that the

²⁸ Resolution 687, C, paragraph 9, *b*.

²⁹ *AFDI* 1984, *op. cit.*.

³⁰ Resolution 687, C, paragraph 7.

Council, as a body designed to maintain peace, is only indirectly an executory body of treaties.

The conditional reinforcement of the Geneva Protocol

Despite all the foregoing, which underlines the limits - first institutional, then political - of United Nations involvement, the Protocol emerged indisputably strengthened from the second Gulf war and its consequences. Still, this strengthening was neither total nor definitive, and can only become irreversible if the context in which the Protocol is carried out is, in one way or another, transformed.

Reinforcement

First, there is an obvious observation: the severity of the constraints imposed on Iraq, the breadth of the disarmament measures to which it is subjected, particularly in the field of chemical and biological weapons, are linked to the violations of the Protocol. Next, it may be observed that, beneath the surface, like a counterpoint, the prospect of chemical reprisals in case of first use emerged weakened from this experience. Thus an alternative route becomes apparent, one that has yet to be given concrete shape but would be more in keeping with the spirit of the Protocol rather than the idea of reprisals.

a) Condemnation of violations of the Protocol: replacing the measured tone or oriental wisdom that had characterized the Council's previous action - hear no evil, see no evil, speak no evil - Resolution 687 is very assertive. Its Preamble includes a paragraph specially devoted to this problem: "*Conscious also of the statements by Iraq threatening to use weapons in violation of its obligations under the Geneva Protocol... signed at Geneva on 17 June 1925, and of its prior use of chemical weapons and affirming that grave consequences would follow any further use by Iraq of such weapons...*"

This declaration, which is balanced and complex, calls for several comments.

- First, the Council acknowledges in the clearest possible way that Iraq has resorted to chemical weapons "*in the past,*" that is, during the first Gulf war. In this regard, the measures taken against Iraq had a retrospective or retroactive character. Iraq is publicly criticized not just because of the threats, which are mentioned too, but also because of its attitude in the past, which, moreover, lent increased credibility to its threats to use these weapons.

- Next, the aim of this text is not simply to provide grounds for the concrete measures contained in the provision. It also contains a warning that is direct, though expressed in imprecise terms: what serious consequences could be meant? What more could be imposed on Iraq? Different hypotheses could be envisaged, ranging from a renewal of military operations to eliminate the Iraqi regime, to criminal proceedings against those responsible (such criminal proceedings may not be envisaged for the time being).
- Then too, the reference is not directly to the Protocol, but to the use of chemical weapons, which is broader. Indeed, the Protocol confines the ban to war, thereby excluding from its area of application use in operations of internal repression. However, Iraq was accused precisely of having used these weapons against Kurdish elements of its own population. The latter remain under a permanent threat, which was very real at the time Resolution 687 was adopted. By this very wide-ranging wording, the Council appears to encompass the possibility of internal use, and thus appears to be phrasing its warning to include any employment, including internal use, of chemical weapons.
- Finally, there is the Preamble's ambiguity in relation to threats, which correspond to Iraq's behaviour in the second Gulf conflict - threats that were not subsequently carried out. The Council's formula ("*Iraq has threatened to use weapons in violation... (of the) Protocol...*") may be interpreted in two different ways. Either the Council considered that the threat was a violation of the Protocol, and is calling it such; or it is only use that would have constituted a violation, and the Council was confining itself to recalling that in a declaratory fashion. In this case it falls into a hypothetical or potential category, but does not refer directly to the threat.

The first interpretation raises several difficulties. Generally speaking, under certain conditions a threat may be equalled to the intention to commit an act. It is not identical to the act itself. Admittedly, penal systems do generally repress attempts to commit crimes. However, this presupposes a certain material element, the beginning of an attempt to commit the crime, to which the statement could be linked without any abuse of language. The threat could sometimes, perhaps, constitute an autonomous offence, specifically defined, and be repressed. However, the Geneva Protocol concerns only use and not the threat of use.

It is true that article 2, paragraph 4 of the United Nations Charter³¹ also condemns the threat and the use of force. Yet precisely by formulating these two hypotheses, it distinguishes between them and gives each a particular status. If it had wished, the Council could have condemned the threat in itself, and referred, for example, to

³¹ "*All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.*"

article 2, paragraph 4. It did not, for reasons we can only suppose. As we know, peace by deterrence, and not just nuclear deterrence, depends on the existence of a general and diffuse threat, legitimized by the right to self defence. So it may be taken that the Council did not directly condemn the threat as a violation of the Protocol, but simply sent Iraq a warning in the context of its policing mission and not in a quasi-jurisdictional context.

Additionally, as the Council always mentions the *use* of chemical weapons, without formally recognizing the violation of the Protocol, it is tempting to conclude definitively that the Council neither established nor condemned a concrete violation of the Protocol by Iraq. Such a rigorous conclusion would, in our opinion, be fallacious. Behind the subtleties of the legal analysis and of rather equivocal wording, the thrust of this declaration really does constitute support for the Protocol, a consolidation of the Council's interest in it and a reaffirmation of its authority.

b) Weakening the prospect of chemical reprisals: in this respect, there are three elements in the lessons and consequences of the two Gulf wars. First, and contrary perhaps to what the initiators of this mechanism had foreseen, investigations are a greater deterrent to reprisals than to first use; secondly, the second Gulf war showed how difficult envisaging resorting to reprisals in practice was; and finally, there appears to be the beginning of a move to withdraw the reserves that make these reprisals possible.

1. The initial function of the *investigations* was to deter first use by allowing any use to be referred to the international authorities, the community of States and public opinion and thereby show up the user, inflicting on him political and moral damage that would be difficult to withstand in conflicts played out as much on a political as a military level. In practice, the results were different. By stressing the scandal of resorting to this weapon as such, reprisals were affected as much as first use. Above all, the possibility of these investigations provided an alternative to reprisals: the victimised State could submit the matter to the United Nations, display its goodwill and obtain the assistance and support of the entire international community. This is what happened in the first Gulf war, when Iran emphasized its situation as the attacked party and sought numerous investigations. This attitude was hardly compatible with having recourse to chemical reprisals, and at the very least slowed down this option in advance.

It could even be maintained that, on the contrary, first use was actually encouraged under certain conditions. It is a way of highlighting the resolve of the country in question, its determination; an attempt to achieve an internationalization of the conflict that would make it possible to speed a settlement. Iraq used chemical weapons politically in this way. A military evaluation of their role in the conflict remains the subject of controversy. It was probably not decisive. Yet it did underline the need

to bring to a rapid end to a war, which had as such had been pushed to the limits and involved serious risks that the lack of international action would legitimise chemical warfare.

2. The *renunciation of chemical reprisals in practice* was evident during the second Gulf conflict. Even if the United States maintained a partial ambiguity, France had indicated, through its President, that these “*barbaric*” weapons would not be used under any circumstances.³² Clearly, armies fighting in a coalition claiming to be in the service of the Law and the Resolutions of the United Nations were in a delicate position to have recourse to these means. Legally there would have been no obstacle, and very rigorous and destructive procedures were put into operation, but the symbolism of using chemical weapons was rather special. There too, it ran the risk of contributing to the legitimization of chemical warfare.

3. Announcements of the “*withdrawal of reservations concerning the Protocol*” logically followed, especially on the part of the United States.³³ An obstacle to the conclusion of the Convention to eliminate chemical weapons was thus removed. Many states, particularly the Non-Aligned ones, considered retaining them to be incompatible with the aim and purpose of the Convention, since the possibility of reprisals presupposes the maintenance of a production capacity, or even of stocks of chemical weapons.³⁴ This type of argument is not necessarily convincing, but the experience of the second Gulf conflict shows how difficult reprisals are to be put into practice.

It should be stressed, however, that the withdrawal of reservations remains conditional: to be effective, it presupposes the entry into force of the Convention eliminating chemical weapons. An alternative regime to reprisals thus emerges, one that will undoubtedly reinforce the Protocol but remains conditional.

Conditional reinforcement

a) The Convention on banning chemical weapons - an alternative regime: if, in fact, the Convention is signed on the one hand and is universally - or nearly uni-

³² See declaration by President Mitterrand on 7 February 1991 (*Le Monde*, 9 February 1991). It should be noted that this position of circumstance is not the equivalent of the withdrawal of the French reservation regarding the Protocol, even if it seems logical to prepare for it.

³³ See declaration of 13 May 1991 by President Bush (CD/1077, 23 May 1991); see also declaration by the British government of 27 September 1991 at the 3rd Review Conference of the Biological Weapons Convention (BWC/Conf. III/SR.8 of 1 October 1991), withdrawing the reservation in so far as it concerns biological weapons.

³⁴ See T. Bernauer, *op. cit.*, pp. 196-197.

versally - accepted on the other, it will be based on a different kind of logic that will radically transform the conditions of effectiveness of the Protocol. The latter, without being in any way modified, will be placed in a completely different context. On the one hand, the reaffirmed ban on use will be consolidated by the physical disappearance of weapons, stocks and precursors. On the other, if there is a violation there will be organized, collective reactions, no longer based on individual measures for self-protection. So a qualitative change will be introduced, as was the case previously with the 1972 Biological Weapons Convention. Effectiveness, however, would be enhanced because of the verification and implementation measures that are absent in the Convention on biological weapons.

b) The necessity for an absolute renunciation of the use of chemical weapons: the problem would not be completely solved, however, simply by the withdrawal of the reservations. In fact, without having to be expressed, the possibility of countermeasures in the face of illegal conduct could reintroduce, even tacitly, the prospect of chemical reprisals. Formally speaking, the existence of reservations is not indispensable for carrying out reprisals for first use. It is a legal security, a warning and also a legitimization of the maintenance of a chemical capability, but the application of the general rules of international law on self-defence and countermeasures serves the same purpose. To obtain an effective guarantee of non-use, States must make a positive commitment not to resort to chemical weapons under any circumstances and thus forbid themselves absolutely any use of this mode of warfare.³⁵

c) The inadequacy of non-proliferation mechanisms: if the Convention is not signed, or enters into force only after a long delay, it is conceivable that a regime of non-proliferation and controls on the transfer of technology and materials would be set up or strengthened on a semi-consensual and semi-authoritarian basis. Such a formula - which could function in parallel with the Convention, and in any case during the intermediate phase between the time it is signed and the time it comes into force - would be more imperfect. It would run the risk of justifying the option - however theoretical - of reprisals and the retention of the capacity to implement them, if only for deterrence.

Thus the combined effect of the Gulf wars and the Geneva negotiations makes it possible to envisage an alternative regime to reprisals, which would make it possible both to strengthen the Protocol and to do so on a basis more compatible with its fundamental spirit. Furthermore, such a regime would have the advantage - still in

³⁵ As did the American government with its above-quoted declaration; see also J. Goldblat and T. Bernauer, *The Third Review of the Biological Weapons Convention: Issues and Proposals*, UNIDIR, Research paper No. 9, 1991, p. 23.

the spirit of the Geneva Protocol - of highlighting the unique nature of chemical weapons, which can be compared with no other.

Return to the Geneva Protocol: The uniqueness of chemical weapons

It is no accident that chemical weapons - whatever the technical problems they may raise when it comes to defining and delimiting them precisely - have been singularised while banning certain methods of combat and of disarmament. The Geneva Protocol and the negotiations aiming at their total elimination complement one another and contribute to both the outlawing and the rejection in practice of this type of weapon. These weapons are thus being dealt with in a unique way, in that biological weapons, which are also covered by the Protocol and by a convention on their total elimination, have not been used³⁶ and do not form part of the arsenals. The measures they called for were preventive and therefore easier to take.

The uniqueness of chemical weapons, which is apparent in the specific nature of the bans relating to them, nevertheless comes up against a formidable obstacle. For these weapons are usually categorised as weapons of mass destruction, with precisely biological and nuclear weapons. Different treaties refer to this traditional classification, which remains one of the most important in the field of disarmament. In reality, it distinguishes them from classical weapons, rather than on a precise definition. However, this enables them to be assimilated with other methods of destruction, particularly nuclear weapons - an assimilation that is both inaccurate and dangerous.

Chemical and nuclear weapons: temptation and perversity of assimilation

The incorporation of chemical weapons into this category favours - or accompanies - a double slippage that is a double blurring and leads to a misinterpretation of their nature and of their potential usefulness.

a) Chemical weapons and weapons of mass destruction: when these weapons are thought of in this way, they are linked first of all to nuclear weapons. In both cases there is an attempt to see particularly formidable and destructive weapons, which appeared in the 20th century and were used in world conflicts that corresponded to paroxysms of the violence. The assimilation occurred after the second

³⁶ For allegations of use, *ibidem*, p. 135.

world war with the atomic bomb as its legacy, just as the first one had made chemical warfare commonplace. It should be noted that, then, the theory of nuclear deterrence - i.e. of a peace strategy based on the non-use of nuclear weapons, which yet threatened any aggressor - had not yet been born. In addition, the recent examples of their use in Hiroshima and Nagasaki made very concrete the perception of the enormous risk they represented and the danger of their proliferation. The attempt to rationalize nuclear weapons, which were to dominate the following decades, did not yet exist. Their inclusion with chemical weapons in the category of weapons of mass destruction was in itself a condemnation in principle and a call for their elimination. Thus, in a first movement, the condemnation of chemical weapons was extended to cover nuclear weapons.

b) Chemical weapons and weapons of deterrence: a second shift, operating in the opposite direction, prolonged the effects of assimilation. Nuclear weapons were rapidly rationalized by the theory of deterrence and, to a certain extent, legitimized by policies of arms control, based on the acceptance and possession of nuclear weapons. Why then should not chemical weapons - associated with nuclear weapons in a number of arms control treaties - be recognized as an instrument of deterrence? A weapon that was even more interesting in this respect as it could be produced fairly easily and at limited cost. The notions of 'the poor man's nuclear weapon', or 'poor man's deterrent', appeared very quickly.

It has a double significance, namely in the field of strategy and that of disarmament. In the first, it gives the impression that countries without nuclear weapons could partly compensate this lack with chemical weapons; that they could certainly multiply their military capability in relation to States also lacking nuclear weapons. Regarding disarmament, it gives nonnuclear powers the ability to play a certain role by making their renunciation of chemical weapons conditional on a relaunching of negotiations or some compensation in the nuclear field. Not to be marginalized at the strategic level, to carry some weight in the negotiations between or with the nuclear powers - that would be the double advantage of this second slippage. In reality, this is as inaccurate as it is dangerous.

Inaccuracy and supersession of assimilation

Assimilation, in fact, does not stand up to scrutiny. Consequently, it tends to be superseded.

a) Inaccuracy: this may be observed on two complementary levels.

1. On the one hand, the *effects of chemical weapons* could not possibly be compared with those of nuclear weapons, even when used tactically. The expression

‘weapons of mass destruction’ is undoubtedly fallacious when referring to them. There are many constraints on their use, because of climatic conditions, because protection against them is relatively easy and because their immediate effects and lethal consequences are, in the last analysis, fairly limited. The losses incurred by their use - although this was widespread during the first world war - cannot be compared, either in scope or in kind, to those which result from the use of nuclear weapons. In reality, they can be said to be inhumane weapons, weapons of terror, which add to the horror of combat without representing a break with traditional conflicts. This is why the approach to banning them, with the Protocol, is closer to humanitarian law, banning methods of warfare considered inhumane and unjust. It does not involve the break which was previously brought about with the advent of nuclear weapons. This event led to a complete rethinking about the process of disarmament - but also (and this is a second difference) about the bases of peace strategies such as the preservation of peace.

2. On the other hand, the appearance of chemical weapons did not in fact lead to the development of any coherent *doctrine of use*, or one that was likely to modify the classic conditions of combat. In this respect, the disappearance of these weapons from array of instruments of war used during the second world war is very significant. No comparison exists with the upheavals that occurred with the qualitative break introduced by nuclear weapons. On a purely military level, chemical weapons largely seem ineffective and irrational.

b) Supersession:

1. This has not been fully achieved, but it may be considered under way. The signing of the Convention on the total elimination of chemical weapons should soon seal its completion. Already, it is striking that the January 1989 Paris Conference avoided this mistaken idea and strongly stressed the uniqueness of chemical weapons and justified the special treatment that they were receiving.

At this level, one can only regret certain statements or analyses during the second Gulf war that tactical nuclear weapons might have formed a just reprisal for a first use of chemical weapons by Iraq. If these had been repeated and orchestrated, they would have renewed the assimilation argument while weakening the rationale for nuclear weapons, which is based essentially on their non-use. The hypothesis of resorting to nuclear weapons can only be justified in the event of massive, major and inescapable danger, and thus on the impossibility of an alternative defence.

Without attempting to draw a clear conclusion from this, it may also be noted that assimilation could well introduce the temptation to move from one type of weapon to the other, as with Iraq. At the same time, it enables chemical weapons to be used as a sort of decoy, facilitating the concealment of nuclear efforts behind a chemical diversion. In this way Iraq, openly developing its chemical capability and attracting attention because of this, could simultaneously undertake a much more discreet

programme to develop nuclear weapons, the extent of which was revealed only after the second Gulf war. By overestimating in this way the usefulness of chemical weapons and their real capacity to do damage, one runs the risk of focusing too much on a danger that, while not illusory, is exaggerated and latches onto symbols rather than to reality.

2. More generally, the necessary supersession of an assimilation that is both false and dangerous is an invitation to rethink the usual classification of weapons. This classification, which is based on a distinction between conventional weapons and weapons of mass destruction, is both rudimentary and archaic. It corresponds neither to contemporary military data nor the needs of the process of disarmament, and it actually produces more confusion than clarity. This is no doubt one area in which research on disarmament and arms limitation has an exploratory role to fulfill.

Herbert C. De Bisschop

The Role of Anti-Chemical Protection in Deterrence and the Need for Protection after a Global Chemical Convention

15

Antichemical protection, in a general sense, means preventing a chemical agent from entering the body. However, it also includes material aspects, such as alarm and monitoring systems, decontamination of equipment and hazardous areas, and medical treatment. Adequate equipment is an important material requirement for protection, but equally important are procedures based on solid knowledge of chemical agent behaviour and intensive training. Combat effectiveness can decrease considerably when troops have to don full protective gear to protect themselves from persistent chemicals. Moreover, deficient protective equipment or the failure of the troops to maintain protective discipline will increase casualty rates. For instance, in World War I the Russian army suffered a mortality rate¹ of 11.7 % of the total number of gas casualties, which is attributed to poor gasmasks and bad gas discipline.²

Gas achieved but local success, nothing decisive; it made war uncomfortable to no purpose; it was not used in 1939-1945.³

Nonetheless, the amount of chemical agent used increased continuously towards the end of the war. In 1918 the German army spent 61% of its total amount of gas

¹ Compare with the mortality rate of 4.3% of the British Expeditionary Forces (A.M. Prentiss, *Chemicals in War*, McGraw Hill, New York, 1937, p.653).

² D. Kneeland Clark, *Effectiveness of chemical weapons in WW1*, Staff paper ORO-SP-88, Operations Research Office, The John Hopkins University, November 1959, p.108.

³ This conclusion of the British official History of the Great War, is often cited as an argument against chemical warfare (*History of the Great War - military operations in France and Belgium - volume V - 1918 - London, 1947, p. 606*): in the last chapter (retrospect) the conclusion on gas warfare is briefly discussed in a footnote; furthermore it is erroneously mentioned that the only chemicals, used by the Germans from April 1915 until may 1916, were tear gases, and that the first German attack with lethal gas occurred as late as may 1916 near Verdun; even data on British use of gas are incorrect. Throughout the work the use of gas is noted without any further evaluation.

used during the war, the French army 57% and the British 54%;⁴ in addition, the planning program forecast a British chemical agent production of 4,000 tons per month, the AEF chemical warfare recommended 14,900 tons.⁵ Such figures show that gas warfare not only had been accepted - at least then - by the allied powers of the Western front, but also that its decisive role on the battlefield was assumed. When in February 1918 the International Red Cross Committee appealed to both parties to stop the use of chemical weapons, the Germans replied that the use of gas by both parties showed its usefulness as a tactical weapon and that only those countries unable to employ gas in an adequate way were seeking its prohibition.⁶

At the end of the war, when things were reduced to their normal proportions, some tactical characteristics were attributed to chemical weapons⁷: Gas was considered a versatile weapon, which served *à la carte*, persistent or non-persistent, lethal or harassing, and with immediate or delayed effect. The logistic burden, however, was considered enormous, because of the high tonnage needed for maintaining an effective concentration (some 12 tonnes of Green Cross per square kilometre and about the same amount of Yellow Cross for effective contamination); nonetheless, high munition expenditure was not unique to gas. The individual and collective protection posed severe problems; the general experience was that operating in full protective outfit in a toxic environment results in significant physiological stress. Moreover, the psychological aspects could not be neglected; it was (and still is) quite normal that soldiers were frightened at the prospect of contact with chemicals; among fatigued troops in strenuous tactical situations gas proved to cause also severe morale problems and sometimes even panic: an evaluation of the effectiveness of chemical warfare was based not solely on casualty figures.⁸

The importance of the psychological effects of chemical warfare were stressed by, I. F. Haber, since he experienced them on himself, during a trial, as he and a collaborator inadvertently came into a gas cloud without appropriate protection; he wrote in 1924:

“Wo es riecht hört bei den meisten die Tapferkeit auf.”⁹

A. Prentiss, Jr., in an attempt to convince the military to adopt chemical weapons as a valid and useful way of warfare, wrote in 1939:

⁴ D. Kneeland Clark, *op. cit.*, p. 18.

⁵ F. J. Brown, *Chemical Warfare - a study in restraints*, 1968, p.31.

⁶ R. Hanslian, *Der Chemische Krieg - Militärischer Teil*, 1937, p. 254.

⁷ F. J. Brown, *op. cit.* p.33.

⁸ F. J. Brown, *op. cit.* p.36.

⁹ “Where the smell (of chemical weapons) begins, courage usually disappears” cited in: R. Hanslian, *op. cit.*, p.251.

“Gas is insidious; it often causes casualties without any previous warning effects. ... Gas exerts a tremendous moral effect, especially upon untrained troops. Uncertainty as to when and where gas is present, and how it will act are demoralising even to troops of high discipline. Nothing will break a soldier’s will to fight so quickly as being gassed, even slightly. His imagination magnifies his real injury a hundredfold.”¹⁰

Since then modern technology greatly solved the problem of knowing when and where gas is present: the existing gas monitoring devices allow the detection of ‘hot spots’ and also zones that are virtually free from chemical agent contamination, where a soldier can temporarily take off the mask and recover for a while. Ignorance about chemical agents and their effect will indeed lead to increased casualties. The higher chemical casualty percentage of the American Expeditionary Force in World War I compared with that of the French and British troops in the same year (1918) is attributed to the low level of antigas training, the inexperience of the chemical officers and the ignorance about the chemical problem in general.¹¹ Sound knowledge, however, should not be restricted to chemicals and their behaviour; a soldier who knows how his body will react under extreme physiological heat stress from operating in full protective gear, and what he can do about it will get an increased confidence in his protective equipment; accordingly, the use of chemicals will affect his morale to a lesser extent. In this respect, Hanslian noted:

“From the moment the soldier feels that his protective equipment is satisfactory, the psychological effects of gas disappear.”¹²

After the armistice, gas warfare had become to public opinion the *bête noire* of the first world war, a symbol of the inhumanity of modern war, causing unnecessary suffering. However, already in 1922 during the Conference of Washington, both British and French delegations noted that compliance with an agreement on the non-use of gas in future wars could only be ensured by national readiness; initially this was seen as the development of protective measures only, also because gas was not readily assimilated by the military for warfare; to the professional military chemical warfare - poisoning soldiers like insects - was a violation of the customs of war and a degradation of the military honour.¹³ Gradually, however, readiness was also translated as the acquisition of a retaliatory capacity. At the beginning of the second world war every military significant power not only had adopted the necessary means of antichemical protection, but was also producing an offensive capacity.

¹⁰ Cited in: F. J. Brown, *op. cit.*, p.153.

¹¹ F. J. Brown, *op. cit.*, p.

¹² Cited in: R. Hanslian, *Der chemische Krieg*

¹³ F. J. Brown, *op. cit.* p.41.

Nonetheless, chemical weapons were not used in world war two except by the Japanese in China;¹⁴ it is important to note that the Chinese lacked every means of protection and were unable to retaliate as well.

The toxicity of chemical weapons is by design selective for humans but this apparently attractive property also shows an interesting drawback: protection against their toxic effects is possible; the validity of this statement can be inferred from previous experiences in armed conflicts where chemical weapons were used or not used, despite their availability. This has always to be studied in the light of the specific nature of conflicts such as the two World Wars or the Iran-Iraq War. Moreover any reconstruction of the decision, to employ or not to employ chemical weapons, may not be free from speculations; therefore, no absolute rules can be deduced from past conflicts. However, at least one general characteristic shows up in each of the studied conflicts: chemical warfare was always initiated against those armies that were unable, either by their own means or through their allies, to respond in kind **and** that lacked adequate protection. Still, if one takes the first sentence individually, it sounds as a clear argument in favour of a retaliatory chemical warfare capability; in the same way the second clause on its own could be interpreted in the sense that adequate protective measures will avoid initiation of chemical warfare. Both conclusions separately may be correct; the historical arguments, however, only refer to the combination of both. Therefore it is a difficult task to perceive the real deterrent value of chemical protection, if is not backed up by a retaliatory capability.

The first massive use of the lethal chlorine gas, on 22 April 1915, against fully unprotected and unprepared troops could have led to a successful breakthrough, if the Germans had fully exploited this gas attack; such an occasion never occurred again during the war. An attacker using chemical weapons against well-protected and trained troops can - on historical grounds - not expect a decisive tactical success. In other words, protection raises the threshold for the use of chemicals in combat; the higher the protection level is, the less interesting it is for an attacker to use them. In addition it shall be emphasised that chemical weapons nowadays are only a part of a complex weaponry system; thus, the decision to use chemicals has to be seen in the light of **all** retaliatory means available to the opponent. As such, chemical weapons are only one step in the escalation towards more powerful classical or even nuclear means.

Under the Chemical Weapons Convention, currently negotiated by the Conference on Disarmament, no restrictions are put on antichemical protection; in the draft article I the activities related to protection are explicitly mentioned as being for "*purposes not prohibited under the Convention.*" While the negotiating parties thus unanimously accept the usefulness of protective measures, less agreement exists on

¹⁴ In the mid-thirties, the Italians used chemical warfare in Ethiopia, which had no protection and no means of retaliation.

the contents of article X on “*Assistance and Protection against Chemical Weapons.*” Should assistance be restricted to those countries attacked with chemical agents, or should it also be provided to those countries facing a chemical threat? And how will assistance be funded and organized? Some form of agreement will - no doubt - be reached under the projected Convention. However, some States give the impression that “*assistance is a package that one only has to drop in the area of concern to make the threat of chemical weapons disappear.*” This is untrue, as well for the military, but especially for the civilian population. Two examples can be taken from the Second Gulf War. Even those troops of the Allied Forces, based in Germany, that had been prepared for years against a well-defined chemical threat, appeared not to be ready for a chemical combat in the desert; operating in this environment urged some procedures to be adapted. The problems encountered by Israel to protect the population against chemical missiles during the operations Desert Shield and Desert Storm illustrate the difficult problem of protecting a civilian population.¹⁵

What will be the role of antichemical protection after the Convention has come into effect? This will largely depend upon the trust in the Convention. As long as the Treaty is not universal, or while large stocks have not yet been destroyed, the general protection effort may not be abandoned or even lowered; decreasing or abandoning one of the dissuasive means facing a still existing menace. As confidence grows and the Convention becomes more universal, some aspects of the antichemical protection may disappear. However, it would be unwise to ultimately give up the cornerstone of antichemical protection, the gasmask. To abandon this basic item, which, by the way, is also needed for nuclear and biological protection, would lead to a situation similar to that before 1915; this could be an incentive to (successfully) employ toxic chemicals, largely used in the peaceful chemical industry, as chemical weapons against fully unprotected people.

¹⁵ G. Bar Sela, *Protection of Civilians*, communication at the 18th Pugwash Workshop on Chemical Weapons, El Escorial, Spain, 5-7 August 1991.

Herbert C. De Bisschop

Peter Herby

The Impact of the Two Gulf Wars on the Geneva Chemical Disarmament Negotiations: Developments since the 1989 Paris Conference

16

The use of chemical weapons (CW) in the first Gulf War and the threat of their use in the second has clearly been the main political and moral backdrop to chemical disarmament negotiations over the last decade. What sense of urgency there has been in the negotiations, not always obvious given their pace, has been based on the knowledge that chemical warfare is not only a remnant of the past but a dark cloud over the present; a cloud that casts an ominous shadow over hopes for a less militarized world order.

In this paper I will suggest ways in which the anticipated use and eventual non-use of CW in the second Gulf War have added fresh impetus to the chemical disarmament enterprise at the Conference on Disarmament (CD) in Geneva. Possible reasons for, and evidence of, this new situation will be discussed later. For the moment, suffice it to say that the post-1991 Gulf War political environment has provided a 'window of opportunity' for completing the global ban on chemical weapons that has now been under negotiation in Geneva for two decades. Never before have the negotiations been as close to fruition - with an official goal of completion of the Convention in 1992 now unanimously accepted by all 39 negotiating delegations.

The First Gulf War and The Paris Conference

The repeated and documented use of chemical weapons in the first Gulf War had its main impact on the Geneva negotiations only after the Iran-Iraq cease-fire of August 1988. Even then the impact was indirect and of a long-term nature. The most obvious response was the Paris Conference, initiated by Presidents Mitterrand and

Bush, which brought together 80 foreign ministers and other high-level representatives of 149 states in January 1989. Although this international response to documented use of CW was both late in coming and, in retrospect, insufficient to bring about a change of negotiating positions, it did reflect widespread revulsion at recent CW use and a desire to prevent further erosion of the authority of the 1925 Geneva Protocol prohibiting the use of poison gas in warfare.

In relation to negotiations at the CD the 149 states gathered in Paris, while solemnly reaffirming their non-use commitments under the Geneva Protocol, declared their determination to prevent future use of chemical weapons “*by completely eliminating them*”¹ and called on the CD to redouble its efforts to “*conclude the Convention at the earliest date.*” The Paris Conference also called on all states to contribute to the Geneva negotiations, affirmed the right of all states to have access to the CD’s deliberations and called upon states to become parties to the CW Convention “*as soon as it is concluded.*”

While achieving a consensus on a final declaration, the Paris conference also provided the occasion for Arab states, in conference speeches and at a subsequent Ministerial level meeting of the League of Arab States, to formalize a position linking chemical disarmament in the Middle East with parallel movement in the field of regional nuclear disarmament. Though this position did not find its way directly into the Paris Declaration, Arab Ministers felt their position was reflected in the Paris Declaration’s final paragraph which notes the continued relevance of the Final Document of the United Nations First Special Session on Disarmament of 1978 that placed nuclear disarmament higher in its list of priorities than chemical disarmament.

In the remainder of this paper I will attempt to highlight the major developments in the CW negotiations since the Paris conference and to point out possible links between developments in the *negotiations* on the one hand and the Paris conference and second Gulf War on the other. While events in the negotiations can be rather well documented, the relationship between the negotiations and outside events remains a speculative, inductive and risky business. It is even more difficult to pinpoint the *causes* of changes in the negotiating positions of particular states, most of whose internal decision-making processes are well hidden from view. Nonetheless it does seem useful to place the CW negotiations in a wider context and to consider how the negotiations may have been affected by such traumatic events as the second Gulf War.

¹ *Final Declaration of the Paris Conference* as in Conference on Disarmament document CD/880.

Negotiations between the Paris Conference and the Second Gulf War

The most notable and immediate effect of the Paris Conference was a dramatic increase in the number of states not a member of the Conference on Disarmament that chose to participate in its ad hoc Committee on Chemical Weapons. The number of non-CD members in the negotiations rose from 12 in 1988 to 26 in 1989, 36 in 1990 and 37² in 1991. With the addition of new nonmembers to the current 39 CD member states the chemical negotiations now involve all states in the Middle East region except for Bahrain, Lebanon, Saudi Arabia and the Yemen.

Under the rules of the CD nonmember states can, and sometimes do, play as active a role as members. They may speak in Committee meetings, circulate documents and proposals and receive full documentation. The only right they do not have is to block consensus on the *rolling text* of the CW Convention or other decisions made by consensus of members. In practice, few of the new nonmember participants have gone beyond keeping a 'watching brief' on the CW negotiations, despite regular efforts by various CW Committee chairmen to encourage more active involvement by nonmembers. While the presence of non-CD members clearly indicates increased interest in the CW negotiations there is little evidence to indicate that active consideration of the CW Convention by decision-makers in capitals of the new nonmember CD states (those whose participation began after the Paris Conference) is occurring.

By April 1989 disappointment was evident at the inability of CD delegations to convert their governments' Paris commitment to a speedy conclusion of the Chemical Weapons Convention (CWC) into increased flexibility on key issues such as challenge inspection, a total prohibition on CW use under the future convention, the nature of inspections for civilian industry and sanctions for violators of the convention. The Swedish delegation questioned "*whether there exists a gap between declared intent and real commitment*"³ while the then socialist group found it "*deplorable that no noticeable progress has been made on the outstanding key problems.*"⁴

By late August 1989 when the CD concluded its annual report to the General Assembly little progress could be reported other than on the handling of confidential information, the lists of chemicals to be controlled under the convention and the

² Angola, Austria, Bangladesh, Cameroon, Chile, Columbia, Costa Rica, Democratic People's Republic of Korea, Denmark, Finland, Ghana, Greece, Holy See, Iraq, Ireland, Israel, Jordan, Kuwait, Libyan Arab Jamahiriya, Malaysia, Malta, New Zealand, Norway, Oman, Portugal, Qatar, Republic of Korea, Senegal, Spain, Syrian Arab Republic, Switzerland, Tunisia, Turkey, United Arab Emirates, Uruguay, Vietnam and Zimbabwe.

³ Conference on Disarmament, PV.506.

⁴ CD, PV.507.

mandate for the Preparatory Committee that is to function between the time the CWC is signed and its entry into force.

In September 1989 the Australian government hosted a Government-Industry Conference against Chemical Weapons intended to build on the momentum of the Paris Conference. The Canberra meeting succeeded in bringing representatives of 66 countries and of 95% of the world's chemical industrial capacity together in a commitment to promote the conclusion of the CWC and to begin preparations for its entry into force.

Despite the optimistic sounds from Canberra, 1989 ended with the emergence of further complications that were to stymie CW negotiators for all of 1990 and the first half of 1991. In a speech to the United Nations General Assembly US President Bush proposed the reduction of US and Soviet CW stockpiles to 20% of the current US stockpile prior to the conclusion of the CWC - a welcome development. However, the President also proposed retention of 2% of the US stockpile even under the CWC until, eight years into the destruction process, a conference of states party to the Convention could assure itself that all 'CW-capable' states had joined the Convention. Previously declared CW possessor states would in effect have a veto power in the proposed conference and on the final destruction of their CW stocks.

This proposed US 'security stockpile' was intended to promote universal adherence to the CWC but was widely criticized as potentially having the opposite effect. States, it was argued, would be reluctant to sign a treaty whose ultimate fulfilment remained in doubt and would be encouraged by the importance the US placed on 2% of its stockpile to obtain their own stocks of at least equivalent size. The Bush initiative was also interpreted by US officials as permitting the continued production of binary CW after entry into force of the CWC.

By March 1990 US Congressman Martin Lancaster, returning from a visit to the Geneva negotiations, was to report to colleagues in the House of Representatives that "*The consensus among the [CD] ambassadors was that our insistence on maintaining a stock of 2 percent of existing stocks...remains the major stumbling block to the negotiations.*"⁵ This issue, together with US insistence on maintaining a right of retaliatory CW use under the future Convention plagued the negotiations throughout 1990 and was considered an indication by most delegations that the US was not prepared to conclude negotiations soon. Although many other issues remained unresolved, the so called '2% solution' distracted attention and allowed delegations with other objections to the draft Convention to escape serious scrutiny of their positions.

At the Washington Summit of June 1990 the Soviet Union agreed to cosponsor the US proposals on destruction of US and Soviet CW stocks *and* on retention of the

⁵ Congressional Records, 13 March 1990, p. H739 as reported in Chemical Weapons Convention Bulletin, Issue 8, June 1990.

equivalent of 2% of the US stockpile. What they achieved in exchange was US agreement permanently to end the production of chemical weapons, including the new US binary weapons. The US and Soviets jointly presented proposals on these matters to the CD in late June 1990. The proposals were soon met with sharp criticism from neutral and non-aligned states that claimed that they “*put conditions and postpone the decision for the total elimination of chemical weapons, give rights to States based on the possession of chemical weapons and create a situation of legal uncertainty about the scope and implementation of the multilateral convention.*”⁶

Earlier in 1990 chemical weapons had taken on a high profile in the Middle East. On 1 April Saddam Hussein had publicly announced Iraq’s possession of binary chemical weapons and threatened to use them in response to an Israeli attack upon his country. Egyptian President Mubarak, in an apparent effort to take the diplomatic highroad, proposed a week later the establishment of a Middle East regional zone “*free from all types of weapons of mass destruction.*”⁷ The Mubarak plan was later presented as a formal proposal to the UN Secretary General and to the CD.

By the end of the CD’s 1990 summer session the Iraq-Kuwait crisis had begun, with profound but as yet unknown implications for the chemical disarmament enterprise. Exaggerated reporting on the level of CW threat and its likely effects on coalition forces in the impending war seemed to increase the attractiveness of the CW option. Perceptions of the effective use of CW, if war came, could have long term effects on the willingness of states to forgo the CW option. Its non-use or ineffective use might speed efforts to eliminate CW permanently from national arsenals.

In the uncertain and highly politicized environment of late 1990 and early 1991 the CD could do little more than report modest gains on technical issues achieved during its 1990 session. Advances in the rolling text (i.e. draft convention) could be noted regarding the verification of alleged use of CW, the order of destruction of CW stocks (resulting from long-awaited US-Soviet agreement on the issue), treaty amendment procedures and mechanisms for the settlement of disputes that might arise under the convention.

CW Policy During the Second Gulf War

During the Gulf crisis and war US officials offered contradictory statements on the possibility of retaliatory CW use, either indicating the beginning of an eventual policy change or simply confusion among US agencies about current policy. In

⁶ CD PV.567.

⁷ CD/989.

response to a reporter's question about retaliatory use Defence Secretary Cheney stated on 14 August 1990: "*I cannot conceive of a situation in which the United States would want to use chemical weapons.*"⁸ Two days later US CD Ambassador Ledogar, probably finding himself 'out on a limb' because of Cheney's statement, defended the traditional US position in referring to the Iraqi CW threat to US troops: "*If we are attacked by chemical weapons, we must have a variety of response options, including the option to respond in kind...*"⁹ Ledogar's remarks were widely misreported as a US threat to use CW in the case of armed conflict in the Gulf. By January 1991 White House Chief of Staff Sununu flatly denied that the US had a retaliatory CW policy in the Gulf.¹⁰

Meanwhile, France, which had previously declared that it does not possess CW, stated through its Defence Minister on 31 January 1991 that it would not respond in kind to a CW attack. This position was reaffirmed by President Mitterrand a week later in a statement in which he also encouraged restraint on retaliatory CW use by other coalition forces.¹¹

Various explanations have been given for the non-use of CW by Iraq. Some reports have spoken of clearly stated threats to launch a massive attack against the Iraqi leadership should it employ CW. Such messages were reportedly passed privately from Washington to Baghdad. In a television broadcast on 8 August, President Bush seemed to reflect this intention in stating that Iraqi CW use "*would be dealt with very, very severely.*"¹² Saudi Commander Lieutenant General Prince Bin-Sultan reflected a similar tone in an interview on 28 August. Speaking of the Iraqi CW threat he stated: "*he [Saddam Hussein] knows full well...that should he use [chemicals] it would cause the total destruction of Iraq.*"¹³

Other reasons given for Iraq's failure to use CW centre on technical problems including (1) the absence of an effective chemical warhead for Iraqi Scud missiles, (2) the destruction early in the war of Iraqi CW production facilities, (3) the short lifespan of Iraqi CW agents once loaded into munitions, (4) the interruption of the internal transport system and (5) failure to disperse CW-filled munitions early enough in the war.

⁸ International Herald Tribune, 15 August 1990.

⁹ CD PV.574.

¹⁰ This Week With David Brinkley, ABC News, as reported in CWC Bulletin, No.11, March 1991.

¹¹ French radio & television interviews, as reported in CWC Bulletin, No.11, March 1991.

¹² Washington Post, 9 August 1991.

¹³ Riyadh Television, as reported in CWC Bulletin, No. 10, December 1990.

Post-War CW Negotiations

The spring 1991 session of the CD ended on 28 March with visible relief that CW had not been used by any party to the Gulf conflict. A sense of urgency and optimism that the negotiation could now enter a final stage prevailed and a new mood of flexibility began to emerge.

The most significant change in the fortunes of CD negotiators, since the Soviets accepted the principle of mandatory on-site inspections in 1987, came in a US Presidential speech of 13 May in which Mr. Bush announced major revisions to the US negotiating position:

1. The US was now willing to forswear retaliatory use of chemical weapons upon entry into force of the CWC. The US thus signalled its willingness unconditionally to abandon the CW option under a future convention.
2. The option of retaining 2% of the US stockpile was dropped. The US was now willing to destroy all of its CW stocks within 10 years of entry into force.
3. As an alternative means of promoting adherence, the US proposed that trade in CW-related materials should be prohibited between members and nonmembers of the CWC; as a further incentive members should gain trade benefits, presumably through the lifting of existing trade restrictions.
4. A target date for completing the CWC was proposed. Subsequent to the President's speech a target of May 1992 was suggested by the White House.

For the first time within the long and tortuous history of CW negotiations it appeared that the 'endgame' had begun. Five weeks later the CD had revised the CW Committee's mandate calling on it to "*achieve final agreement on the Convention in 1992*" and to prepare a convention that flatly prohibits use of CW. During the summer session key disputed portions of the *rolling text* were revised and dissenting footnotes removed, reflecting a consensus on non-use and a continuous 10 year CW destruction process.

Although not stated formally it appears that the dramatic changes in the US negotiating position resulted from a high level decision not to engage in retaliatory use of CW during the Gulf War. Such a proposition is reinforced by the informal statements, referred to above, excluding such use. Thus, it would appear that, for a combination of military and political reasons the US effectively decided through the experience of the Gulf War that its CW arsenal was superfluous. If in-kind deterrence was unnecessary in a war against an opponent as well equipped with CW as Iraq one could conclude that, at least for the US, it was not likely to be required in any conflict in the foreseeable future.

Hopes for an easy 'sprint to the finish line' were quickly dashed in mid-July by yet another reversal of US policy. In a working paper (CD/CW/WP.352) for which it was able to gain the support of only three of its western allies (Australia, Japan and

the UK) the US abandoned its commitment to ‘anytime, anywhere’ challenge inspections to clarify doubts about treaty compliance, as originally proposed by then Vice-President George Bush in 1984. The new position on challenge inspection, while rhetorically putting the burden to prove compliance upon the challenged state, allows for extended negotiations with the challenged state on the area to be inspected, permits a delay of up to a week before an inspection proceeds and eventually leaves disputed issues of access to the political environment of the CW Organization’s Executive Council to sort out.

The new proposals on challenge inspection apparently resulted from serious concerns on the part of US intelligence agencies about inspections of their most sensitive facilities and technologies. Sympathetic negotiators portrayed the proposals as a step towards the kind of verification which key developing states would be willing to accept, and therefore a step towards achieving a consensus in the CD. Pakistan and China, states with a history of concern about overly intrusive inspections seem to bear out this interpretation. While China was reported privately to have welcomed the US challenge inspection proposals, Pakistan greeted them in a public statement of 1 August as “*a brave and positive attempt to break the deadlock on this issue.*”¹⁴

Meanwhile, UN inspectors in Iraq were having difficulty determining the size of that country’s CW stockpile despite unprecedentedly intrusive access to Iraqi sites and material records. Critics of the US’s unintrusive challenge inspection regime (said to include France, the Soviet Union, many western states, at least one major Middle East state and the Soviet Union) believe the measures envisaged would dangerously weaken the CW regime by undermining confidence in compliance. Some point out that the proposed challenge regime for suspect sites would be less intrusive than inspections being considered for declared chemical industry facilities - a factor, which may lead to an unravelling of the consensus on the industrial element of the CWC inspections. In August France submitted amendments to the US proposals that would reintroduce mandatory and more intrusive challenge inspections.

The continuing concerns of many Middle Eastern states about the Convention, though not always articulated publicly, are partially reflected among the broader concerns of developing countries:

1. to ensure that, if they join the Convention, they will not continue to be subject to export controls by industrialized states
2. to prevent the misuse of routine or challenge inspections in a manner that would interfere with the global competitiveness of their emerging chemical industries

¹⁴ CD PV.600.

3. to ensure that effective assistance will be available, on a reliable basis, in the case of the threat or use of CW against them, and
4. to ensure effective sanctions against states violating the convention.

Significant progress was achieved this year on all of the above items. For the first time the ‘rolling text’ addresses the above issues in some detail. However, disputes remain on whether the assistance to be provided to states should be of a voluntary nature and whether the treaty should require the abolition of export controls among state parties.

The only notable development regarding the ‘linkage’ made by Arab states between the CWC and regional nuclear disarmament was in a speech by Egyptian CD Ambassador Elaraby on 8 August in which he presented President Mubarak’s proposal for a zone free of weapons of mass destruction not as a package but as a “*framework for engaging states in the region in a process that would **ultimately facilitate** the establishment of such a zone in the Middle East*”¹⁵ [emphasis added]. The statement hints at an element of flexibility as regards the timing of the nuclear, chemical and biological disarmament elements of such a zone, while emphasizing that all states must from the beginning be firmly committed to the ultimate goal or ‘framework’ of the zone.

The Post-War Middle East Context

Participation of militarily significant states in the Middle East will be crucial to the CWC’s success as a global convention. To date, despite a high degree of international concern about CW in the Middle East, relatively little attention has been given to how adherence to the CW Convention by states in the region might be achieved. Detailed analysis of the relationship between the CWC and a broader process of confidence-building and regional arms control is clearly called for. Such analysis needs to concentrate not only on the advantages outside powers attribute to Middle East regional chemical disarmament as part of a global Treaty but also on the perceptions of key actors in the region. Careful consideration will need to be given to the modalities for verification between parties that do not have diplomatic relations. Additional complications will arise from the lack of Israeli confidence in the role of international organizations in safeguarding its security.

Clearly the readiness of Middle Eastern states to consider adherence to the CWC will be influenced fundamentally by the progress, or lack thereof, in the Middle East Peace Conference recently convened in Madrid and the parallel regional security

¹⁵ CD PV.601.

negotiations proposed for Moscow. It is likely that adherence to a CWC would occur as part of a second-generation of regional measures in the field of confidence and security building, once more modest steps have a chance to take hold. Nonetheless there are a number of steps that states in the region could take anytime to improve confidence in the CW field and to help lay the groundwork for the CWC. These include:

1. Declarations to the CD of possession or non-possession of CW.
2. Declaration by each state of its chemical industrial facilities producing or capable of producing chemicals listed in the draft CW Convention. (Johan Molander of the Swedish CD delegation has further suggested that regional states could invite friendly outside states to visit declared facilities to verify declarations.)
3. The conduct of national trial inspections along the lines anticipated in the Convention, to familiarize military and/or industry with such inspections and remove unwarranted fears.
4. Participation by regional officials and/or academics in meetings to consider the provisions and implications of the CWC. Such meetings have played a useful role among Asia/Pacific states that have participated in two regional CWC workshops hosted by Australia and among Latin-American states that met in Mexico in July under UN auspices. My organization, the Quakers, has hosted similar but less formal meetings for participants from the Middle East region.
5. Regular participation of senior officials from capitals in the CW negotiations, especially by states that do not maintain disarmament staff in Geneva. Such visits could serve as an occasion for states that have not already done so to make explicit their views on the CWC, declare relevant chemical capabilities and state their position on future adherence to the Convention.

In conclusion, rather than trying to predict the future on the basis of a necessarily sketchy view of the recent past, I would like to sound a warning about the 'endgame' we seem to be entering. It is becoming increasingly clear that a convention banning chemical weapons is on the horizon. The crucial questions now are: What sort of a Convention will it be and who will sign it?

There is a clear danger that in attempting to conclude a Convention in 1992 politicians, career-minded diplomats and government bureaucracies may attempt to avoid the difficult choices the CWC may pose between short-term national interests and enlightened international and long-term interests. This is especially true in the field of verification. Politically expedient compromises may be pursued which serve

neither the cause of disarmament nor of security. The unfortunate history of the Biological Weapons Convention, where ambitious verification proposals were pushed aside in the rush for completion, should be instructive. Nineteen years later negotiators are still trying to make up the ground lost, the BW Convention's credibility has suffered and the landscape is still littered with unresolved accusations of noncompliance.

Finally, the Chemical Weapons Convention, which has been negotiated globally, must now be made to fit regionally. Unless friends of the convention, both governmental and non-governmental, are willing to address the perceptions of chemical arms and of the Chemical Weapons Convention in each region of the globe, particularly those rife with conflict, adherence to the Convention may be disappointing. The job is one of education, interpreting the CWC in regional terms and listening. There may be light at the end of the tunnel, but where there is light there is often heat as well. One hopes the CWC can take the heat. The last phase of ensuring a truly global ban on chemical arms has barely begun.

Peter Herby

Willy Claes
Minister of Foreign Affairs
Belgium

Closing Speech

17

Ladies and Gentlemen,¹

The study of international conflicts and the technical development of the means to wage them appears at the end of the 20th century more than ever necessary to preserve the human values that make up our common heritage.

This is the reason I have accepted your invitation to address this Third Conference on chemical weapons, which brought together talented researchers and scientists, responsible diplomats and humanists, coming from horizons much larger than our borders to discuss all facets of chemical armament and disarmament in an international environment.

I am convinced that your work will make an important contribution to the elimination of the threat posed by the use of chemical weapons or even by their mere existence that hangs over humanity.

For almost a century Belgium has adopted and maintained an active attitude, often in the first line, regarding the rejection of the use of chemical weapons.

Indeed, Belgium immediately adhered to the Hague Declaration of 29 July 1899, according to which “*The Contracting Powers agree to abstain from the use of projectiles the object of which is the diffusion of asphyxiating or deleterious gases.*”

This engagement was reiterated after the first world war by our country’s adhesion to the “*Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare,*” signed in Geneva on 17 June 1925.

In 1979 Belgium also became a party to the “*Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction,*” signed in London, Moscow and Washington on 10 April 1972.

Finally, as a member to the Geneva Conference on Disarmament, our country participates in the establishment of a total and verifiable interdiction of chemical weapons at an international level.

¹ Translated from French and Dutch.

Belgium's constant conduct regarding proliferation and the use of chemicals was recently restated in a report completed in 1989 by the Parliamentary Commission investigating deliveries of weapons and munition produced in Belgium to the belligerents in the first Gulf war between Iran and Iraq.

In its conclusions, the Commission stated that, and I quote, "*our country, where we saw for the first time the horrible effects of the use of war gases in the course of the war of 1914-1918, must play a pioneering role in the fight against the trade in chemical weapons and their components.*" The Commission also underscored that "*Belgium can under no circumstances participate in the production, the export and transit of chemical weapons.*"

The Commission similarly insisted on the rapid conclusion of an international agreement on the matter within the framework of the Conference on Disarmament in Geneva.

The Commission's concerns are very close to those of the Head of States and Governments of the European Community, who, during the Luxembourg meeting of the European Council, made an important declaration regarding nonproliferation and the exports of arms, thus expressing their will to find multilateral and global solutions.

In this declaration, the European Council expressed in its wishes, and I quote: "*the rapid conclusion of a convention on chemical weapons and a strengthening of the convention on biological and bacteriological weapons.*" End of quotation.

The goals of international conventions, however, can only be achieved if the number of signatories is sufficient and if each one of them, at the national level, takes all necessary measures and applies effective controls.

In this respect, I wish to underscore that Belgium has just adopted, by means of the Act of 5 August 1991 regarding the importation, exportation and transit of weapons, munition and equipment with specific military application and related technologies, specific legislation regarding the international trade in arms and munition in a broad context, as well as the means to controls these activities and penalties in case of violations.

The royal decree implementing this law was approved by the Council of Ministers on 20 September 1991 and has been submitted to the Council of State for its appraisal.

Regarding chemical and biological weapons, as well as the equipment and technology for their production, exportation and transit are simply forbidden.

The act enumerates and specifies in particular the chemical compounds currently provisionally agreed upon at the Geneva Conference on Disarmament as having no other known utility but for chemical armament. Moreover, to allow strict control, a ministerial decree of 15 October 1991, published in *Moniteur Belge / Belgisch Staatsblad* on 14 November 1991, clarifies for the customs the nomenclature of the

chemical compounds submitted to an export or transit license for their potential in chemical armaments.

Yet all this does not suffice to suppress the menace of chemical warfare. We also have to face up to countries that wish to acquire chemical arms at all cost, whether through fraud and the rerouting of traffic or by establishing a domestic production base using basic products.

This second category of proliferation risks emerged during the eighties. Conscious of the danger, some industrialised countries met informally on Australia's initiative to agree to export controls on compounds called key precursors. This group met for the first time in Brussels in June 1985, and has identified some fifty compounds, which may find application in the production of chemical weapons, including the fourteen of the core list that allow rapid access to chemical weapons in one or two stages of synthesising. They are currently the object of export controls in the twenty members of the so-called 'Australia Group'. For the thirty-six other chemical compounds that make up the 'warning list' the Group's member states have not yet established an export control system, but undoubtedly this will soon be the case.

In Belgium, the Netherlands and Luxembourg, the fifty products on the so-called Australian list are all subject to licensing and the same controls are applied to the thirty-six of the warning list and the fourteen of the core list.

A control regime for all key precursors has thus been put into place to counter the risks of diverging traffic. The abolition of the European Community's internal borders on 1 January 1993 requires the erection of an effective common barrier against the exportation to third-party states. The twelve countries of the Community are members of the Australia Group, and hence already apply the necessary controls.

A third aspect of the threats linked to chemical and biological weapons is that of the use of missiles by belligerents to deliver chemical or biological payloads.

Initially, the missiles and their launchers polarised attention within the framework of nuclear nonproliferation. However, at present the development of weapon systems leads us to believe that chemical and biological loads may also be delivered by missiles.

To counter this threat several industrialised countries consulted informally in 1988 to exert control on missile exports and related technologies. The MTCR or Missile Technology Control Regime lists elaborated by experts cover equipment and technologies submitted to controls.

Belgium and its Benelux partners joined the MTCR in June 1990. At present seventeen industrialised countries are parties and new adhesions are expected.

Both Gulf wars have reinvigorated and freshened consciousness about the real dimension and gravity of the risks linked to the use of chemical weapons.

The ideas are on the march and international consultation has led to effective realisations.

At the Geneva Conference on Disarmament, discussions on chemical weapons indicate a real possibility to achieve an agreement on the contents of a Convention in that area next year.

Amongst all the contributions necessary to succeed, the participation of scientists and researchers is essential, the work you do, the knowledge that results from your research constitutes important and appreciated information for the political decision makers.

Ladies and Gentlemen,

The subject you have discussed here yesterday and today requires a very careful approach. The use of a specialised terminology is imperative for success in negotiations, the establishment of violations and inventorying of dangers. A disciplined and systematic approach of the sociological phenomenon war, for which this Centre for Polemology stands, requires a special kind of motivation, because it takes some distance from beliefs and emotions that may accompany it.

The organisers of this Third Conference had asked me to hold a presentation on the laws and treaties, rules and policy options. I want to tell you in all honesty that, despite the realisation that such facts could be useful to you, I had some difficulties with the first part of my account. It leaves me so little space to express the horror and revulsion, which rise inside me even when I just begin to concentrate my thoughts on the subject.

The ultimate fear of the invisible, unexpected and inescapable death from the chemical weapon is probably the lowest result of human inventiveness. Seven centuries ago the crossbow was declared unchristian because a harness did not offer any protection against it. When Alfred Nobel invented dynamite, he thought that there would be no more wars because the explosion was terribly powerful.

For more than thirty years we have had to live under the alternating sharp and opaque terror of weapons of mass destruction that could make us disappear from the face of this Earth from one moment to the other. For a very long time the clock stood still at two minutes to midnight, but fortunately since a couple of years the hands have been turned back. It is now, as I have recently heard, seventeen to midnight and we live in a sea of time. Would after all this senseless power, wisdom receive its chance? Will inventiveness succeed where it failed earlier? Paradoxically, there exists a direct link between the arms race and the emergence of a new moral consciousness. Space flight was the result of a military programme, and the use of orbital space made many early debates on inspections and verification obsolete. The real revolution of the twentieth century is probably not the nuclear weapon, but indeed the communication satellite.

The direct reporting of the war in Iraq, and its consequences in particular, has, despite the many restrictions of military censorship, done more for global conscious-

ness than thousands of books or magazines. Almost all communication is now instantaneous. The dictators of this world have seen that sparks can no longer be extinguished but, on the contrary, spread. The unthinkable happened more than once: *“rien ne sera plus jamais comme avant.”*

Ladies and Gentlemen,

Now that the world has become so much smaller, and the danger of a global all-destroying confrontation has receded a long way, a new morality must emerge. A morality that does not only declare the most horrible weapons illegal or eliminates them, but will also investigate the structural causes of armed conflicts. Poverty, hunger, infant mortality, ignorance and social injustice are some of the many elements that can drive people to despair. In the twentieth century we have had to learn to reign in weapons and to dismantle the equilibrium of mutual deterrence gradually. In the twenty-first century we will have assist the establishment of global balances, so that the hope for a better life may enlighten the peoples of the southern hemisphere and make them live in peace.

You all, Ladies and Gentlemen, have a role to play.

It is my honour to congratulate you and the organisers of this Conference for this.

Willy Claes, Minister of Foreign Affairs



Biographies

Bernard Adam

Né à Châtelet (Belgique) le 19 mai 1950.

Licencié en Sciences économiques (Université Catholique de Louvain).

Fondateur en 1979 et actuellement directeur du GRIP (Groupe de recherche et d'Information sur la Paix) à Bruxelles.

Editeur du Mémento défense-désarmement.

Responsable au sein du GRIP de l'Observatoire sur l'économie de défense en Europe. Auteur de plusieurs études sur les dépenses militaires, la production et les exportations d'armements, dont:

- *Les exportations d'armes de la Belgique*, GRIP, dossier "notes et documents" n° 127, Bruxelles, novembre 1988.

- *L'Europe des armes. Trafics et exportations vers le tiers monde*, GRIP, Bruxelles, 1989.

- *L'industrie d'armements en Belgique. Difficultés, crise et tentatives de diversification*, Bureau international du travail, Genève, novembre 1989.

- *Perspectives d'harmonisation des réglementations et politiques d'exportations d'armes au sein de la Communauté européenne*, GRIP, dossier "notes et documents" n° 157-158, Bruxelles, mai/juin 1991.

- *"European Community Policy Initiatives for the Prevention of Chemical Weapons Proliferation"*, dans Jean Pascal ZANDERS; Eric REMACLE (eds), Chemical

Weapons Proliferation. Policy Issues Pending an International Treaty, VUB GRIP, mai 1991.

Joachim Badelt

Born 1954, B.A. business administration, M.A. political science, research associate at the research unit on proliferation at the Berghof Institute for Peace and Conflict Research; Ph.D. candidate at the Free University, Berlin.

Pierre Dabezies

Pierre Dabezies a fait sa première carrière dans l'armée. Il a participé à la résistance avant d'être parachutiste en Angleterre et a successivement servi en Allemagne, Indochine, Corée, Madagascar, Algérie, enfin aux Etats-Unis où il a suivi les cours de l'Ecole de guerre américaine avant de suivre ceux de l'Ecole de guerre française. Ancien commandant du II^o Choc, il est colonel (CR) et grand officier de la Légion d'Honneur.

Devenu agrégé de droit public, il fait ensuite une carrière universitaire qui l'amène à contribuer de près au développement des études de stratégie et de sociologie militaire qu'il enseigne à la Sorbonne, à Science Po et à l'ENA. Après avoir été directeur du département de Science politique de Paris I, il y dirige aujourd'hui le DEA de Relations internationales.

Conseiller de Paris d'un temps député, avant de partir comme Ambassadeur au Gabon (1982-1987), il a été depuis son retour membre du Conseil supérieur de la Magistrature. Il est président de la Fondation pour les études de défense nationale depuis juillet 1989.

Pierre Dabezies est l'auteur de nombreux travaux et articles portant sur la Science politique, les problèmes d'outre-mer, la stratégie, les conflits et la sociologie militaire.

Herbert De Bisschop

Born in 1947, studies in engineering (Royal Military Academy, Brussels), in chemistry (Vrije Universiteit, Brussels), in medical science (at the Katholieke Universiteit, Leuven), Phd (Catholic University Nijmegen, The Netherlands).

Lieutenant-Colonel (res.).

Former Head of Laboratory (Dept. for NBC Protection).

Associate Professor at the Royal Military Academy (Dept. for General and Military Chemistry).

Technical consultant for chemical disarmament matters and control of non-proliferation (Foreign Affairs State Department).

Experimental work in the detection and identification of chemical warfare agents, in biological chemistry of nerve agents, and analytical chemistry of pesticides.

André Dumoulin

Né le 28 juin 1956 à Verviers (Belgique).

Agrégé en histoire.

Attaché de recherche au GRIP - (Bruxelles).

Military Affairs Consultant to Avianews Group of Aerospace Publications (Bruxelles).

Membre de la commission militaire et de la commission sécurité européenne du parti socialiste francophone en Belgique.

Collaborateur a plusieurs hebdomadaires et quotidiens belges pour les rubriques de défense.

Auteur de plusieurs études sur le rapport de forces, les aspects technologiques des armements, les systèmes nucléaires, la posture de forces en Europe et les doctrines de défense dont:

- *Eléments modérateurs dans l'évaluation du rapport des forces et dans la perception de la menace nucléaire*, dans Ares 1987, annuaire du CEDSI, Université des sciences sociales de Grenoble, 1987.

- *L'effet de la course à l'espace sur les forces nucléaires secondaires*, Actes du colloque international sur la militarisation de l'espace extra-atmosphérique, Centre de droit international de l'Institut de sociologie de l'ULB, éd. Bruylant, Bruxelles, 1988.

- *Le concept de suffisance*, dans Cosmopolitiques, n° 10, Paris, avril 1989.

- *Surenchère à la menace conventionnelle: le blindage réactif, un nouveau gap militaire?*, dans Etudes internationales, Centre québécois de relations internationales, Université Laval, Québec, 1989.

- *Les négociations de Vienne sur les forces conventionnelles en Europe (CFE)*, coll. Sécurité et Stratégie, Centre d'Études de Défense, Bruxelles, novembre 1990 (coauteur avec Eric Remacle).

- *Les accidents d'avions de combat en Belgique*, dossier "notes et documents", n° 109-110, GRIP, Bruxelles, mai/juin 1987.

- *La modernisation des F-16 européens*, dans Avianews international, Bruxelles, juillet-août 1991.

- *Les forces multinationales*, dans Défense nationale, Paris, août-septembre 1991.

Alastair Hay

He is the Chairman of the UK Working Party on Chemical and Biological Warfare for 6 years.

Author of 1 book, *The Chemical Scythe: Lessons of 2,3,5-T and dioxins*, Plenum Press, N.Y., 1982.

Co-author with Seán Murphy and Steven Rose of *No Fire, No Thunder; The Threat of Chemical and Biological warfare*, Pluto Press, London, 1984 and co-author with Peter Hurst and Nigel Dudley of *The Pesticide Handbook*, Journeymen Press, London, 1991.

Peter Herby

Currently on study/research leave from the Quaker United Nations Office-Geneva. Engaged in research on the *CW Convention and Middle East Security* at Darwin College, Cambridge, UK.

1983-present Associate Quaker Representative Quaker United Nations Office, Geneva

1982-83 Consultant on Peace Education, Catholic Diocese of Richmond, Virginia, USA

1981-82 Disarmament Staff Person, International Fellowship of Reconciliation, Alkmaar, the Netherlands

1978-80 Founding director Ploughshare Peace Education Centre, Roanoke, Virginia, USA

1977-78 Master of Arts in Peace Studies, School of Peace Studies, University of Bradford, UK.

Johan Niezing

He is a sociologist by training and since 1971 professor in Polemology (Peace Research) at the Free University of Brussels. He is also director of the Centre for Polemology. He is the author of many publications in Dutch, English and German, most of them in the field of political sociology and peace research. He has also contributed many papers and articles on social defence. In 1987, he published a major book on the subject, *Sociale verdediging als logisch alternatief. Van utopie naar optie* (Social defence as a logical alternative. From Utopia to Option).

Julian P. Perry Robinson

J.P. Perry Robinson is a chemist and lawyer by training, senior fellow of the Science Policy Research Unit, University of Sussex, England, where he heads the Military Technology & Arms Limitation research group. He had previously held research appointments at the Stockholm International Peace Research Institute (SIPRI), the Free University of Berlin, and the Center for International Affairs at Harvard University. At SIPRI during 1968-71 he wrote much of the 6-volume study *The Problem of Chemical and Biological Warfare*, and during 1982-86 was the founding editor of the series *SIPRI Chemical and Biological Warfare Studies*. He has served as an advisor or consultant to a variety of national and international organisations, governmental and nongovernmental, including the World Health

Organisation, other agencies of the United Nations, and the International Committee of the Red Cross. With Matthew Meselson of Harvard University, he directs the Harvard-Sussex Program on CBW Armament and Arms Limitation, co-editing the program's journal, *Chemical Weapons Convention Bulletin*, published quarterly in Washington.

Eric Remacle

Né le 30 juillet 1960 à Bruxelles (Belgique).

Maître en politique internationale de l'Université libre de Bruxelles.

Attaché de recherche au GRIP (Bruxelles).

Boursier à l'Institut d'Etudes de Sécurité de l'Union de l'Europe occidentale (Paris).

Secrétaire scientifique et co-éditeur avec Jean-Pascal Zanders des Actes du 2e colloque annuel sur la guerre chimique: *"La prolifération des armes chimiques. Questions politiques dans l'attente d'un traité international"* (16 mars 1990).

Auteur de plusieurs études sur la sécurité européenne dont:

- *Esquisse pour un nouveau paysage européen*, UNIDIR, Genève, octobre 1990.

- *Les négociations de Vienne sur les forces conventionnelles en Europe (CFE)*, coll. Sécurité et Stratégie, Centre d'Etudes de Défense, Bruxelles, novembre 1990 (co-auteur avec André Dumoulin).

- *Les négociations sur la politique étrangère et de sécurité commune de la Communauté européenne*, dossier "notes et documents" n° 156, GRIP, Bruxelles, avril 1991.

Nicholas Sims

Senior Lecturer in International Relations at the London School of Economics and Political Science (University of London), where he has taught since 1968. He specialises on disarmament and arms control diplomacy, and on international organisation in the Commonwealth and United Nations systems.

In 1976 he was appointed to the Chemical Weapons Sub-Group of the Minister of State's Advisory Panel on Arms Control and Disarmament at the UK Foreign and Commonwealth Office, and in 1980 to the British Delegation at the First Review Conference of the Biological and Toxin Weapons Convention. He has observed the Second and Third Review Conferences in a non-governmental capacity, and has also visited Geneva regularly for discussions with UN and Conference on Disarmament delegates involved in the Chemical Weapons Convention (CWC) negotiations. In 1989, as a member of a UN Panel of Experts on international organisation aspects of the CWC, he presented a paper on the future Secretariat to the Ad Hoc Committee on Chemical Weapons of the Conference on Disarmament.

Since 1967 Nicholas Sims has written frequently on multilateral negotiations and treaty reviews at Geneva. His publications include three Faraday Discussion Papers for the Council for Arms Control; *Reinforcing Biological Disarmament: Issues in the 1991 Review is the most recent*. His books include *The Diplomacy of Biological Disarmament: Vicissitudes of a Treaty in Force, 1975-85* (Macmillan, 1988), and he has contributed to three recent *Chemical and Biological Warfare Studies* issued by SIPRI as well as writing the monograph *International Organization for Chemical Disarmament* (Oxford, 1987) in that series.

Gerald M. Steinberg

Gerald M. Steinberg is a Senior Lecturer in Political Science and Research Director of the Centre for Strategic Studies at Bar Ilan University, Ramat Gan, Israel. He specializes in strategic issues and arms control, with a particular emphasis on the links between the technological and political aspects of these issues.

He received his BA and MS degrees in physics from the University of California, and completed his doctoral degree in International Relations at Cornell University in New York. His dissertation on the political and technical aspects of satellite reconnaissance was completed in 1981 and published by Praeger. Dr. Steinberg has also worked as a consultant for the United States Arms Control and Disarmament Agency and Department of Energy on issues of arms control and proliferation. He has also been a research fellow at the Centre for International Studies at MIT and the Institute for Global Conflict and Cooperation (IGCC) at the University of California, where he directed a study of the politics and technology of the strategic defense initiative (SDI). (*Lost in Space: The Domestic Politics of the Strategic Defense Initiative*, Lexington, 1987)

Dr. Steinberg moved to Israel in 1982, and has been at Bar Ilan University since that time. His current research has focused on strategy and arms control in the Middle East, the Israeli defense industry, and the proliferation of non-conventional weapons in the region. His most recent articles include *Towards Real Arms Control in the Middle East*, *The Middle East in the Missile Age* and *Israeli Strategic Options for the 1990s*.

Serge Sur

Serge Sur (1944) est Directeur adjoint à l'UNIDIR (octobre 1986). Il est agrégé des Facultés de Droit (Droit public, 1976) et Professeur à l'Université Panthéon-As-sas (Paris-II). Il a été maître de Conférences à l'Institut d'études politiques de Paris ainsi qu'à l'École Nationale d'Administration, et a effectué diverses missions d'enseignement hors de France. n a été expert consultant auprès du Secrétaire général des Nations Unies pour l'élaboration des procédures d'enquête en cas d'usage allégué d'armes chimiques ou biologiques (1983-84).

Il est notamment l'auteur d'ouvrages de droit international: *L'interprétation en droit international public*, LGDJ, 1974; *Droit international public*, Précis Domat, 5ème édition, 1986, en coopération avec H. Thierry, J. Combacau et Ch. Vallée; *La coutume internationale*, LITEC, 1990, et d'articles en droit ou relations internationales: *Les affaires des essais nucléaires* (CIJ, arrêts du 20 décembre 1974)", RGDIP, 1975; *L'état de la pensée stratégique française*, Administration, 1983; *La rés. A/37/98 D du 13 décembre 1982 et les procédures d'enquête en cas d'usage allégué d'armes chimiques et bactériologiques (biologiques)*, Annuaire Français de Droit International, 1984; *La défense européenne*, Universalis, 1985; Article *Nations Unies*, Encyclopaedia Universalis, 1987; *Les Asat et le droit de l'espace extra-atmosphérique*, dans *La guerre des satellites: enjeux pour la communauté internationale*, Travaux et recherches de l'IFRI, Economica, 1987; *Une approche juridique de la vérification en matière de désarmement ou de limitation des armements*, UNIDIR, Travaux de recherche, n°1, 1988, également disponible en anglais; *Problèmes de vérification du Traite de Washington du 8 décembre 1987 sur l'élimination des missiles à portée intermédiaire*, UNIDIR, Travaux de recherche, n°2, 1988 également disponible en anglais; *Peut-on définir un "standard minimum de vérification" dans le domaine du désarmement ou de la limitation des armements?* ARES, 1989; *Droit international et désarmement*, Stratégique, 1990.

Il a dirigé depuis 1987 la plupart des projets de recherche de l'UNIDIR, et notamment les publications suivantes: *Disarmament: Problems Related to Outer Space*, UNIDIR, 1987 existe également en français; *Problems and Perspectives of Conventional Disarmament in Europe*, Conférence UNIDIR, Genève, 23-25 janvier 1989, Taylor & Francis, Londres et New York 1990 existe également en français (Masson, 1990); *Verification of Current Disarmament and Arms Limitation Agreements: Ways, Means and Practices*, Dartmouth 1991 existe également en français (Nations Unies); *Disarmament Agreements and Negotiations: The Economic Dimension*, Dartmouth 1991 a paraître également en Français.

Arend Wellmann

Born 1961, M.A. political science, research associate at the research unit on proliferation at the Berghof Institute for Peace and Conflict Research; Ph.D. candidate at the Free University, Berlin.

Jan Willems

Medical studies and training in physiology, pharmacology and clinical toxicology at the universities of Ghent and Leuven.

Medical Officer, previously head of the Department of Nuclear, Biological and Chemical Defence of the Technical Division of the Belgian Army, now commanding the Royal School of the Medical Services of the Belgian Armed Forces.

Academic Consultant and Lecturer in Medical Toxicology at the Heymans Institute of Pharmacology, University of Ghent Medical School. Chairman of the Special Commission for Pesticides for Agricultural Use of the Ministry of Health.

Senior medical Advisor of the Mission of the United Nations Special Commission, inspecting in June 1991 the chemical warfare production and storage capabilities of Iraq.

Jean Pascal Zanders

Research fellow at the Centre for Polemology at the Free University of Brussels since 1989. Since 1986, he has been working on the issue of chemical warfare and disarmament. In March 1989, he organised the First Annual Conference on Chemical Warfare, which dealt with Belgian policy making. He has written several studies on the subject, amongst which *Chemical Weapons: Beyond Emotional Concerns* (Bulletin of Peace Proposals, March 1990), *Chemical Weapons Proliferation*, published by the Centre for Polemology (March 1990), *Le programme américain d'armes chimiques binaires* by the Groupe de Recherche et d'Information sur la Paix (GRIP - Brussels, April 1990) and *De chemische bedreiging in de 90-er jaren* (The Chemical Threat in the Nineties) by the Defence Study Centre of the Royal Higher Institute for Defence (Brussels, October 1990).

In March 1990, the Centre for Polemology and the GRIP organised the Second Annual Conference on chemical weapons proliferation. He co-edited with Eric Remacle of GRIP the proceedings of the Second Annual Conference on Chemical Warfare, *Chemical Weapons Proliferation: Policy Issues Pending an International Treaty*, published by the Centre for Polemology (June 1991). The GRIP published the French edition.