REVUE BELGE DE DROIT INTERNATIONAL
1993/1 — Éditions BRUYLANT, Bruxelles

# CHEMICAL-WEAPONS DEPROLIFERATION AND THE CHEMICAL-WEAPONS CONVENTION

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## INTRODUCTION

Chemical-warfare weapons (CWW) (1) proliferation is described as a dangerous phenomenon occurring at ever increasing speed. Ever more developing countries are interested in acquiring such weaponry to offset the nuclear arsenals of some technologically more advanced nations or as an intermediate step toward a biological-weapons capability. Especially in combination with ballistic missiles, developing countries would gain a strategie capacity to deter or compel potential adversaries. On the other hand, it is feared that the spread of such capabilities would introduce a high degree of crisis instability into regions where armed conflict is a distinct possibility. Moreover, missiles give certain developing countries the capability of hitting heartlands of the industrialised West, a threat perception that has grown since the end of the Cold War and in particular since the 2nd Gulf war over Kuwait.

It is an intriguing question indeed why proliferation issues have suddenly emerged as the major threat of the nineties. There are a couple of objective explanations. The international community had already recognised the nefarious consequences of too many countries possessing nuclear arms by

(1) The military lexicons of some countries include weapons that work through toxicity as well as items such as smoke and incendiaries under the heading chemical weapons. Chemical-warfare weapons refer only to weapons that work through toxicity, thus including the anti-personnel poison-agent weapons, harassing agents (e.g. tear gas), and anti-crop agents (e.g. herbicides). [After J.P. PERRY ROBINSON, *Chemical-Weapons Proliferation in the Middle East.* In : E. Karsh ; M.S. Navias ; P. Sabin (Eds.), *Non-Conventional-Weapons Proliferation in the Middle East. Tackling the Spread of Nuclear, Chemical, and Biological Capabilities,* Clarendon Press, Oxford, 1993, p. 69.]

adopting the Nonproliferation Treaty (NPT) in 1968. Iraq's widespread use of chemical weaponry during the 1st Gulf war against Iran and its Kurdish minority made Western governments realise that chemical warfare (CW) might pose an acuter threat in the developing world. It led to the establishment of the Australia Group, an informal consultative organ to coordinate export controls amongst its members and draw up lists of CW-related items that are to be subjected to these export controls. Missiles also became the focus of increased concern following Iran's and Iraq's numerous attacks on each other's capital. The Missile Technology Control Regime (MTCR) sought to address the issue, but suffers from weak membership and its inability to impose certain rules. The end of the East-West confrontation as an ideological conflict allowed greater attention for developments in other regions. The breakup of the Soviet Union, however, has suddenly increased the number of states with nuclear arms. Moreover, as a consequence of the rapidly deteriorating economic and social conditions, concern grew over the possibility that Third World regimes may entice former Soviet scientists to work in their armament programmes. Some — thus far unconfirmed — reports also surfaced claiming that ex-Soviet military were offering nuclear artillery shells for sale.

The sudden rise in concern also followed from the discoveries by the United Nations Special Commission (UNSCOM) in Iraq after Kuwait's liberation. Iraq had a multitrack nuclear armaments programme, a rather sophisticated CWW production programme, and many indicators revealed an interest in a biological-warfare (BW) capability. The regime was also developing several types of ballistic missiles. Although there already existed widespread suspicion about large-scale involvement of Western companies in Iraq's armament programmes, the extent of their involvement nonetheless caused consternation. In addition, many governments were directly implicated by supporting and even encouraging the export drive to Iraq during the 1st Gulf war and in the period before the Kuwait invasion. The Federal Republic of Germany has probably gained the worst reputation. Public inquiries in the United States and the United Kingdom demonstrate that both countries were eagerly competing for their share in Iraq's lucrative armaments business and companies were at least receiving tacit backing from their governments. Both states were at the same time decrying other countries' involvement in the proliferation of unconventional weapons. France too has been deeply immersed in Middle Eastern armament projects with full governmental backing, even aiding fledgling nuclear research programmes in countries as diverse as Israel and Iraq. Finally, as the negotiations on a treaty banning chemical weapons gained momentum after the 2nd Gulf war, new concern was raised about the BW threat and attention drawn to their steady spread throughout the developing world.

The notion 'proliferation' clearly does not refer to the spread of all types of weaponry but is reserved for what is generally — but wrongly — called 'weapons of mass destruction'. A better term is 'unconventional weapons'. For instance, chemical weapons are highly specialised battlefield weapons that can never achieve the destructiveness or casualty rates of nuclear arms. Today, some modern conventional weapons accomplish similar specialised tasks much more efficiently or possess far greater destructive power, but would not necessarily be included in the proliferation debate. Missiles, on the other hand, are vectors for both conventional and unconventional warheads, yet are the object of special nonproliferation measures. Aircraft with similar capabilities are not, they are part of the arms trade. If the term 'proliferation' is accepted to apply to four major categories of weapons only, it strongly suggests that analogous nonproliferation measures may be the answer to stem the processes. Such policy-making is actually occurring. The Australia Group, for example, has added BW-related matters to its agenda. President Clinton announced a framework for US counterproliferation efforts before the UN General Assembly on 27 September 1993, based on a nonproliferation policy directive covering missiles, chemical, biological and nuclear weapons (2). In other words, there exists a strong belief that for each class of unconventional weaponry the processes involved are similar and can therefore be remedied with comparable measures.

## From arms trade to proliferation

During the 1st world war, CW capabilities spread rapidly among the belligerents after Germany's first large-scale attack in April 1915. France and the United Kingdom exchanged production capabilities in their early efforts to retaliate. Smaller countries, such as Belgium, bought chemical munition from those countries during the last two years of the war and incorporated captured German stocks. Except Turkey, all warring nations were in one way or another engaged in CW.

CWW proliferation as a political and security issue has existed since at least the Armistice in 1918. Articles 170 and 171 of the 1919 Versailles Treaty forbade Germany both the importation and exportation or arms, munitions and war material of every kind, and of chemical weapons in particular. The treaty, of course, did not envisage a nonproliferation regime. Rather, it laid down conditions on the vanquished which did not affect the victors. Some European Allied powers may have promoted CWW proliferation among allies and neutral countries as part of a European security

(2) *Chemical Weapons Convention Bulletin*, n° 22, December 1993, lemmata 10 September 1993 and 27 September 1993.

framework. Balancing the CW threat rather than dispensing with it was a major motive underlying the 1925 Geneva Protocol. When it became apparent that the League of Nations' conference « *for the supervision of the international trade in arms and ammunition and in implements of war* » was heading for failure, a US proposal to prohibit all international trade in toxic weapons was rejected on grounds that it would discriminate against states unable to manufacture toxic weapons of their own (3). The conference ultimately compromised over a ban on their use. Interestingly, during these negotiations in the late spring of 1925 France was aiding Spain's CW effort in its Moroccan war. Both countries were participants at the League of Nations' conference and eventually signed the Geneva Protocol (4). The formal argument in favour of proliferation may therefore have legitimised an ongoing process or safeguarded particular economic interests. However, recent research revealed that during the thirties several European second-tier powers maintained limited offensive CW programmes. In some cases, they obtained the precursors through official trade dealings between governments.

After the 2nd world war nuclear weapons became the major instrument of global geopolitics. In the wake of the signing of the NPT, US use of so-called nonlethal chemical agents in Indochina raised the spectre of chemical-weapons proliferation. In the United States, the polemic carried on through the seventies as part of the debate to have the 1925 Geneva Protocol ratified. Proponents as well as opponents of US chemical rearmament later added proliferation to their respective array of arguments. The confirmation of CW in the Iran-Iraq war in 1984 removed much of the debate's academic quality : the issue had become a reality. Immediately afterwards, evidence emerged that Western companies were directly implicated in Iraq's CW effort.

These discoveries prompted Western governments to introduce export controls on CW agents and some of their precursors. It was soon clear that private companies were acting as suppliers of chemicals, equipment, technology, and expertise. Before the enactment of export-control legislation, most of the transactions were not illegal. Afterwards, the companies involved established complex international networks to conceal the true nature of the transactions and circumvent the export controls. On the one hand, supplying companies subcontracted other firms for specific parts of the project thus hiding their true purpose and set up false companies abroad as shipping addresses to mislead customs. On the other, the

(3) J.P. Perry Robinson, *Origins of the Chemical Weapons Convention.* In : B. Morel ; K. Olson (Eds.), *Shadows and Substance : The Chemical Weapons Convention,* Westview Press, Boulder, 1993, p. 39.

(4) R. Kunz, R.D. Müller, *Giftgas gegen Abd el Krim. Deutschland, Spanien und der Gaskrieg in Spanisch-Marokko 1922-1927.* Einzelschriften zur Militärgeschichte, n° 34, Verlag Rombach, Freiburg, 1990, pp. 23+59.

proliferating country placed its orders with companies in different countries to limit the number of people fully aware of the regime's true intent. Reconstruction of the network Libya had set up for building its factory at Rabta showed that it sought expertise and technology from firms all over the world (5).

The introduction of export controls was the onset of incremental policy-making. Indeed, the notions and concepts of the NPT were transposed to the CWW proliferation debate without much critical appraisal whether the two processes were comparable. Consequently, the early export restrictions on some key chemical compounds were gradually expanded to include other agents and precursors and later extended to dual-use technologies and most recently to materials required for BW programmes.

## The limits to an export control regime

During and after the 1st world war, governments were directly and consciously involved in the dealings. The spread of chemical weaponry must therefore be considered as an integral part of their foreign and security policy. The patterns uncovered after the first confirmation of Iraq's use of CW agents showed that the supplying actors are no longer governments pursuing security or other national interests but private companies seeking particular economic benefit. Export controls are more or less the only means by which a government can regain some degree of control over transactions that affect its general foreign policy goals. However, one can surmise that to enforce restrictions going against a domestic agenda of job creation and a fundamental ideology of free trading, a government must define a serious threat to the country's national security interests. Reviewing the Imhausen-Rabta case, one can postulate that a right-wing administration advocating market economics must emphasise threat perceptions to legitimise controls, whereas a left-of-centre government favouring more direct state intervention in economic policies can claim moral grounds for such restrictions. Similarly, countries with a global role and an interventionist tradition, such as the USA or the United Kingdom, will be more receptive to arguments about direct external threats, than countries that only see a limited overseas military role for themselves, such as the Federal Republic of Germany.

In the FRG, for example, the export-oriented climate and high unemployment statistics during the first half of the eighties increased pressure on the Federal Government to ease up on arms export restrictions. Budget

(5) For detailed analysis, see J.P. Zanders, *Belgium as a Transiting Country in the Imhausen-Rabta Affair*. In J.P. Zanders ; E. Remacle (Eds.), *Chemical Weapons Proliferation. Policy Issues Pending an International Treaty*. Proceedings of the 2nd Annual Conference on Chemical Warfare. Centrum voor Polemologie, Vrije Universiteit Brussel, 1991. pp. 111-138.

constraints also led to a sharp decline of domestic orders for weaponry. The strict interpretation of the regulations under Chancellor Brandt during the seventies was abandoned near the end of Schmidt's tenure in 1982 (6). The German arms industry, which became closely interconnected and thus more powerful and competitive after a series of takeovers, forced Chancellor Kohl into relaxing export controls even further. It mainly argued the preservation of jobs and technological progress in key military areas. Members of the Federal Government nevertheless still considered these laws to be very restrictive and in the interest of the West German economy.

If export controls are but a means for a government to regain some control over a security development that negatively affects other foreign policy goals then competing domestic priorities, as well as the limited number of countries enforcing such regulations, will ensure their ultimately failure. Many developing countries acquire growing levels of autonomous knowledge, expertise and technology as part of their legitimate industrialisation programmes. This implies that if such countries also wish to acquire a CW capability they are able to start their development and production processes at increasingly lower levels of specialisation. As a direct consequence, the industrialised states will have to submit a growing number of materials and technology to an export licensing system if they wish to retain an equal effect, which in the long term will prove untenable.

The major question asked today is whether current antiproliferation measures — mostly national export control legislation — suffice to stem the threat. However, the policy concept defines much of the problem and suggests a remedy to the exclusion of other insights and options. Export controls consist of restrictions on supply, but do not address demand. Consequently, a whole area of research and insight is being ignored. Yet, most policy-makers and analysts agree that supply-side antiproliferation measures only buy temporary relief and will ultimately fail. Implicitly, they accept that the lateral spread of CWW is continuous and believe that the Australia Group or a similar body will never be able to found an antiproliferation regime.

The Chemical Weapons Convention (CWC) is therefore often seen as a panacea. The global disarmament regime commits states to destroy and not to acquire CWW stocks. The new atmosphere of confidence will allow the industrialised world to lift the burdensome export restrictions and industrialising states parties will gain virtually unlimited access to chemical compounds and technologies. However, the CWC is not an antiproliferation treaty and there are certain aspects of CWW proliferation it does not explicitly address or ignores completely.

(6) M. Brzoska, « Behind the German Export Scandals », *Bulletin of the Atomic Scientists*, Vol. 45, n° 6, July 1989, p. 33.

## Defining CWW proliferation

One of the most uncomprehensible things of the whole proliferation debate is the virtual absence of any definition in the large body of literature. Without a clear definition of CWW proliferation, the manifestation of some characteristics could suggest some erroneous conclusions about weaknesses in the convention.

Most of the debate about CWW proliferation conjures up a continuum starting with transfers from industrialized countries to the proliferator, and ending with the latter's acquisition of a CW capability. A formal reference is sometimes made to a political decision by the proliferating state or the security circumstances in which such a decision has been taken. In the absence of any study in depth of the domestic decision process, the political environment remains static, a condition not normally associated with decision-making. Consequently, no opinion is expressed about the nature of the political environment in which the process evolves. The implication is that once the initial decision has been taken CWW acquisition proceeds along a linear course towards its predetermined end, namely probable — or at least possible — use. Underlying it is an impression of automatism which, of course, enhances any threat perception already present. Analysis of the US binary weapons programme and the little information available regarding Iraq, however, strongly suggest a far more complex process. The path towards a CWW capability is phased and consequently the outcome of sets of decisions. The question is rather whether these decisions create the political environment or whether they are the result of a reaction to it.

The exclusion of the environment reduces the discussion to fixing the point on the continuum beyond which a state becomes CW capable. Different criteria result in different lists of suspect countries. By projecting proliferation as a continuum, the debate ignores that the recipient country's quest for a CW capability is but an armament dynamic. In the absence of a domestic industrial base, obtaining chemicals, technology and knowledge from abroad is the second best option short of directly buying chemical ammunition. Viewed as such, the importation of these commodities is but one — albeit possibly the fastest — way of structuring the domestic armament dynamic. Proliferation thus deals less with the transfer of these commodities than with the organisation of the domestic political and military decision processes and their implementation. We therefore propose the following definition :

*CWW proliferation occurs when a political entity decides to acquire a CW capability where such a capability does not yet exist provided this decision is followed by a CWW armament dynamic.*

*CWW deproliferation occurs as soon as the political commitment to that decision ceases to be renewed or if that political entity explicitly reverses that decision.*

The armament dynamic within the proliferating country is the central part of the definition. This opens the way to apply the broad body of theoretical analysis developed over the past decades to the phenomenon. Although the different schools must still provide a satisfactory overall explanation of the armament process, approaching proliferation in this way has at least two advantages. First, it demystifies the phenomenon as an entirely novel security threat. Although it possesses specific characteristics, it shares many more with armament and decision-making patterns studied in the industrialised world. Second, it breaks with the automatism between the initial decision to acquire a CW capability and the actual deployment or use of such munitions. By introducing 'deproliferation', it allows for reversals of decisions at any stage in the armament process. Dissenting views and opposing forces always play a role in decision-making. Indeed, insight into the political culture of a nation already goes a long way towards explaining some characteristics central in the current proliferation debate (7).

## The CWC as a deproliferation regime

In terms of the proposed definition, the CWC undeniably aims at deproliferation. Accession and ratification constitute an unequivocal decision by a state party possessing or in the process of acquiring chemical weapons to abandon any intent of using, or further developing, producing, and stocking such weapons. Moreover, the fresh international norm the Convention will establish — if successful — may contribute to the deproliferation in non-state parties by weakening political commitments to CW armament programmes. The treaty also proscribes rules of conduct for states parties regarding non-states parties which — amongst other things — forbid any assistance in a CW armament programme. On the other hand, the CWC wishes to abolish any inequalities inherent in export control systems between member states and to enhance their economic and technological development without any discrimination. It therefore comes as little surprise that the treaty contains many references directly or indirectly related to CWW proliferation.

(7) The definition will be difficult to make operational from a policy analyst's point of view. It cannot answer a question like 'who has taken the decision when'. However, it is meant as an instrument to gain deeper understanding of a process and not as one for bean-counting countries in the developing world. Nevertheless, future research applying the results of theoretical analysis of armament dynamics may allow for greater differentiation.

The CWC's confidence in the deproliferation regime is great. By firmly rejecting any hampering of economic and technological development of states parties as well as supporting international cooperation in the field of chemical activities, it stimulates the reproduction of the scientific, technological and industrial preconditions for CW armament programmes. The convention, therefore, does *not* consider the mere presence of the preconditions in a particular country as (part of) a threat to international security. This is the logical outcome of the clear policy decision states parties have made when acceding to the treaty. It is also a prerequisite for treating countries equal with respect to their economic interests under the CWC regime.

The convention nevertheless includes some antiproliferation measures. Article I's general purpose criterion sets the general context. Each state party is expressly forbidden to transfer chemical weapons, directly or indirectly, to other states parties, non-states parties, or subnational entities (§ 1.a) under any circumstances. It further disallows any activity that would amount to assisting, encouraging or inducing anyone to engage in any undertaking that contravenes the Convention (§ 1.d). Certain sections of Article VII « *National implementation measures* » aim at preventing reproliferation in states parties. Specific penal legislation must prevent any natural or legal person to undertake any activity prohibited under the treaty nor can it permit illegal activities on its territory. It also introduces the legal concept of extraterritoriality regarding the activities of a state party's citizens anywhere, even for countries that do not know it in their penal legislation. The formulation is such that it also comprises undertakings in non-states parties.

Regarding trade relations, the CWC makes a very sharp distinction between states parties and other countries. Article XI « *Economic and technological development* » grants states parties overall rights regarding permitted chemical activities and international cooperation among them. By implication, other countries cannot fully enjoy such rights. As an attempt to avoid the resentment generated by the NPT, the approach must be seen as an incentive for hesitating governments to join the treaty to make it as universal as possible. Article XI adds more specifically that the states parties should review their national trade regulations and make them consistent with the object and purpose of the CWC.

The treaty itself, however, imposes a strict set of export regulations based on the three schedules of chemicals it defines as part of the verification regime. Regarding the transfer of scheduled chemicals the so-called Verification Annex lays down some fundamental prohibitions and conditions. Schedule 1 chemicals can be transferred between any two States Parties for no other purposes than research, medicine, pharmaceutics or protection and in quantities defined under the General Provisions of Part VI of

the Verification Annex. These chemicals cannot be retransferred to a third state. Both state parties involved must notify the Technical Secretariat not less than 30 days before any such transfer. Moreover, all states parties have to submit detailed annual reports regarding the transfer of Schedule 1 chemicals to the Technical Secretariat. Three years after the CWC's entry into force, states parties will be allowed to transfer Schedule 2 chemicals only among themselves (Verification Annex, Part VII, C). These transactions, however, are not subjected to stringent quantitative conditions or reporting requirements similar to those for Schedule 1 chemicals. During those three years, states parties may still transfer such chemicals to nonparties if they obtain an end-use certificate specifying *inter alia* the conditions laid down in the article. The transfer of Schedule 3 chemicals is only discussed in relation to non-states parties : there are no quantitative limits, but the exporting state party must ensure that they will not be used for purposes prohibited by the convention and will require an end-use certificate of which the treaty imposes the minimum stipulations. Five years after the CWC's entry into force the Conference of the states parties will consider the need to establish other measures regarding the transfer of Schedule 3 chemicals to nonparties.

The convention thus distinguishes between chemicals listed in the schedules and those that are not (8). While Article I lays down the general purpose criterion, actual declarations and subsequent verification procedures rest on the schedule system. Thus, new chemicals which might violate the intent and purpose of the treaty but have been discovered since the conclusion of the negotiations or whose details were withheld during the talks cannot be further researched, developed, produced or deployed under Article I, but do not have to be declared, and are therefore not subject to verification until they are included in one of the schedules. Even if a state party acts in such good faith and reports the existence of this new chemical, still none of the treaty's verification procedures can be applied. The question became acute after Russian scientists Mirzayanov and Fyodorov revealed that Moscow was developing a new nerve gas, codenamed *novichok* [newcomer] and reportedly ten times as poisonous as VX. There is still much speculation about the agent's chemical structure. According to Mirzayanov, the precursors are not included in the CWC schedules, nor did President Yeltsin add them to the list of compounds requiring export licenses (9).

(8) The Australia Group list of CWW precursors and the CWC schedules of chemicals differ in content and purpose which may cause confusion in implementing export controls. For a discussion : R.J. MATHEWS, « Comparison of the Australia Group List of Chemical Weapons Precursors and the CWC Schedules of Chemicals, *Chemical Weapons Convention Bulletin*, n° 21, September 1993.

(9) For a summary of disclosures : Arms Control Reporter, October 1992, p. 704.E-2.67 and May 1993, p. 704.E-2.86.

The intersection of both conditions, namely scheduled or unscheduled chemical and the general purpose criterion applying to both, has an important bearing on the proliferation debate, and more specifically on the way states parties have to review their existing trade regulations. (See Table I)

TABLE 1
**The CWC : Can national export controls be applied ?**

| | *Scheduled* | *Unscheduled* | |
|---|---|---|---|
| Narrow interpretation | NO/YES | YES/NO | Verifiability |
| General purpose criterion | NO/YES | NO/NO | |

There are two possible interpretations regarding the application of export controls under the CWC. Either the general purpose criterion is applied to all chemicals that pose a risk to the treaty regime, whether scheduled or not, or a restricted interpretation of the treaty provisions is maintained according to which the transfer of scheduled chemicals is regulated by the relevant verification annex articles and all unscheduled chemicals may be subjected to supplementary national export regulations. Scheduled chemicals pose few problems as the treaty prescribes the transfer modes and allows direct or indirect monitoring or verification of the transactions. The application of the general purpose criterion to unscheduled chemicals is never in doubt. Export controls can add nothing to the scope of the states parties' commitment never to aid CW armament programmes in other countries. However, the position raises several practical issues. The availability or the transaction of the chemical cannot be verified. Yet, one of the basic aims of the verification regime is *« the control of chemicals deemed to pose a significant risk to the convention »* (10). On the other hand, in the highly competitive world of chemical industry, the general purpose criterion could be applied generically for protectionist reasons, thus defeating the purpose of Article XI and leading to complaints from developing countries similar to those regarding the NPT. An alternate approach could consist of a narrow interpretation by which the treaty-imposed restrictions on the transfers only apply to the scheduled chemicals. This leaves states parties the option to submit these new chemicals to national export controls. However, trying to establish a strong antiproliferation regime to supplement the CWC will encounter its own set of problems. There is the question of enforcement from a legal point of view and the issue of its applicability in concrete situations. Indeed, if a government objects to illegal transactions, it will intervene with national legal measures. If,

(10) J.P. Perry Robinson, T. Stock, R.G. Sutherland, « The Chemical Weapons Convention : The Success of Chemical Disarmament Negotiations », In : *SIPRI Yearbook*, 1993, p. 726.

however, a government is involved in the proliferation process of another state, then the international community can only ascertain itself of the true nature of the transaction by demanding an inspection. It is not clear which piece of international legislation may justify such a step. Measures can be enforced among nations willing to subscribe to such an international non-proliferation regime, for example within regional organisations such as the European Union or a framework such as a strengthened Australia Group, but are virtually useless outside them.

The example of the Russian *novichok* makes the issue of unscheduled chemicals less academic. Unless further deliberations on procedures within the competent CWC bodies can close the holes, there exists a theoretical possibility that technological developments may erode the treaty regime. Although the placement of new chemicals on a schedule may seriously affect the commercial edge of companies in a highly competitive world, a smooth procedure should be envisaged to amend the schedules at regular intervals. The problem must nevertheless be brought into some perspective. On the one hand, only the leading industrial states now possess the scientific and technology base to conduct sustained advanced research into new toxic compounds. This would suggest that national export legislation, which is far easier to amend than an international treaty, may still have a useful role to play. Coordination within an expanded international framework of supplier states, such as the Australia Group, would enhance the general effect. However, this can only be a temporary solution to reduce time pressure on finding a long-term settlement under the CWC and for which the Australia Group can make its expertise available. On the other hand, the CWC's deproliferation regime will affect the willingness of governments to invest heavily in such research and risk international embarrassment and condemnation if found out. Chances are, therefore, that in future new potential CW agents may be discovered by coincidence rather than as the outcome of years of dedicated investigation. In such a case, national objections to adding that chemical to a schedule may be a lot weaker.

Another indication of the CWC's confidence in the deproliferation regime is its encouragement of the proliferation of various aspects of CW defence. As such, it touches a controversial point of many years. Indeed, it was a standard feature in polemics on the legitimisation of CW armament programmes that research in defence automatically entails research in offense. Therefore, a country aiming for a CW capability may shroud its intentions in an outwardly legitimate programme of CW defence and thus obtain essential knowledge and technology. The question is not clear-cut. Here too, the political commitment of states parties to the deproliferation regime is the single most important reason why the CWC can bypass the ambiguity. CWW are relatively easy to protect against because they work indirectly by polluting the environment of the target. Shielding humans

from the effects of CW agents, for example by means of gas masks, special garments, or collective shelters, is relatively easy. Environmental mediation also renders the efficacy of CW agents highly unpredictable, placing a high burden on the attacker's $C^3I$ assets. Consequently, the costs for an attacker with CWW against a protected target in terms of amount of agent required, logistical burden, and preparations, may be both broad and unacceptably high (11). This relative advantage of defence over offense is one characteristic of CW that had become apparent during WW1. A corollary is of course that CW agents will prove most effective against unprotected troops and populations, a condition most likely to be encountered in poorer developing countries. Encouraging the proliferation of CW defences, either as direct aid or as access to relevant knowledge or technology to stimulate domestic production, may therefore raise the military opportunity costs sufficiently to render CW unattractive. Article X, §§ 1, 2, and 3 of the CWC envisage such arrangements. CW defences are viewed as an essential component of the treaty for three reasons :

— Verification will become much easier because the stocks necessary to overcome the defences will have to be much larger if an important chemical attack is planned.
— The knowledge that chemical defences decrease the effectiveness of a chemical attack significantly will reduce an incentive to violate the treaty provisions.
— Chemical defences will always limit the damage in case the treaty-imposed constraints break down (12).

Despite the article's undeniable contribution to globalising the CWC's confidence and security building regime, the provisions may generate an undesired side-effect. The treaty's successful implementation will reduce the CW threat markedly. Consequently, governments may perceive a declining necessity to appropriate budgetary resources to research, development, and manufacture of CW defences. Such a development will run counter to the institutional interests of certain agencies or establishments specialised in CBW-related matters. As the prospects for a speedy conclusion of the chemical disarmament negotiations were growing after the 2nd Gulf war, organisational changes reflected the shift away from formal research into offensive CW. In October 1992, for example, the US Army provi-

(11) J.P. Perry Robinson, *Chemical-Weapons Proliferation in the Middle East. Op. cit.*, p. 77. According to the US Army Field Manual FM 3-10 « Employment of Chemical and Biological Agents » [March 1966], chemical munition requirements for the same tactical task may vary by a factor of ten and under some circumstances even by a factor of twenty as a consequence of environmental factors. (Quoted in : J. Krause, *The Military Utility of Chemical Weapons in Current Warfare*. Lecture given at the Instituto Affari Internazionali, Rome, 17 May 1990, p. 5.)

(12) C. Moss Helms, M. Meselson, B. Roberts, *Chemical Weapons and Security in the Middle East*. Proceedings from a Congressional Briefing, Program on Science and International Security, American Association for the Advancement of Science, Washington, 11 September 1990. Comments by M. Meselson at p. 24 and B. Roberts at p. 25.

sionally created the Chemical and Biological Defense Agency with responsibility for research, development and acquisition of all CBW defence within the Department of the Army. Early in 1993 the US Army established the Chemical and Biological Defense Command which is believed to have taken over from the Chemical and Biological Defense Agency. It embraces many agencies and units from the Department of Defense (13). The British institution at Porton Down also emphasised the defensive aspects when it changed its name to Chemical and Biological Defence Establishment in 1991. Apart from its major role in implementing the CWC's verification provisions and maximising the effectiveness of export controls, the CBDE also makes a strong « *case for maintaining effective chemical and biological defence as an adjunct to arms control, in order to provide a deterrent to any aggressor contemplating the chemical or biological warfare option* » (14). These reorganisations are somewhat reminiscent of the post-world war 1 years when shifts to CW defences helped to save the US Chemical Warfare Service and the research establishment at Porton Down from oblivion. Both institutions then managed to expand their role in changed political and security environments.

It is a remarkable feature of CWW armament programmes that at least the final production stages of CW agents have virtually always remained in the hands of the military or governmental agencies irrespective of a country's economic and social order (15). Especially in democracies, this — as well as other factors — has hampered the institutionalisation of links with interest groups outside the armed forces. However, the manufacture of anti-CW equipment has in many countries moved from governmental establishments to private enterprises that market their goods worldwide (16). The CWC's encouragement of the proliferation of CW defences may further the blending of institutional and economic interests of organisations and industry. Signs of such an approach are already present. On 19-20 May 1993 the US Army hosted an industry day at Fort Sill, Oklahoma to inform defence firms of its future needs. A prepared paper dealt amongst other topics with the inadequacies in current antichemical capabilities, ranging from degradation of combat effectiveness from existing decontamination capabilities, an inadequate ability to detect NBC hazards, to a requirement for improved individual and collective NBC protection equipment (17). The rational for such an extensive research and development, and potential acquisition programme has to be founded on an

(13) Sussex-Harvard Information Bank on chemical/biological warfare armament and arms limitation, lemmata 1 October 1992 and May 1993.

(14) G.B. CARTER, *Porton Down. 75 Years of Chemical and Biological Research.* HMSO, London, 1992, p. 95.

(15) The major exception confirming the rule of course being nazi-Germany.

(16) See, for instance, the *Jane's NBC Protection Equipment* yearbooks published since 1988.

(17) *Chemical Weapons Convention Bulletin*, n° 21, September 1993, p. 13.

unwavering threat perception. With the passage of time the CWC's security and confidence regime, if successful, will inevitably undermine that rational, possibly leading to armed forces adopting lower levels of anti-CW preparedness. To preserve their institutional or economic interests, the parties concerned may begin launching warnings that by reducing priority levels governments will place their country more at risk from a breakdown of treaty-imposed constraints. Similarly, if some governments do keep up a strong anti-CW programme years after the convention entered into force, they may get into a cloud of suspicion regarding their true intentions.

Whereas CWW proliferation always originates with the demand side, that is with the regime seeking an offensive CW capability, here governments may be subjected to supply-led pressures to maintain a high standard of CW defence capability. The CWC's recommendation to allow states parties broad access to anti-CW equipment, technology and knowledge may thus create an environment in which a combination of institutional and economic interests is best served with an enhanced threat awareness. Protagonists can take advantage of the vaguely defined semantic field for the term 'proliferation'. US intentions to develop a generic counterproliferation policy for nuclear, biological and chemical weapons and also ballistic missiles as an adjunct to arms control will further blur the notion and obscure specific characteristics of each process. Lesser threats, like the one posed by the poor man's atomic bomb, will be inflated by mere juxtaposition. A counterproliferation policy too can only be justified in the face of a declared threat. Such positions are contradictory to the CWC's aim of establishing a global confidence and security order and years of creeping agenda setting may erode it seriously.

## Concluding remarks

CWW proliferation as it is discussed today may refer to different processes and security policies depending on the context. National antiproliferation measures, whether coordinated in an international framework or not, address only these parts of the issue which are readily visible to governments in the industrialised countries, namely the transfer of goods, technology and information to regimes in the developing world. However, increased global access to them and the trivialisation of technology, as well as competing domestic agendas in the developed world, ensure the failure of such policies.

Self-imposed supply-side restrictions to stem the spread of chemical weaponry are but the outcome of incremental policy-making modelled after the NPT regime. The solution has an important impact on the way the problem is viewed and leads to bean-counting exercises, a prerequisite for legitimising the export controls in an environment of free trade ideology.

The most important consequence is the disregard of motives of certain regimes to acquire chemical weaponry.

The CWC, as a treaty aiming at deproliferation, holds the best promises for reducing chemical threats worldwide by building an environment of confidence and security. Some of the instruments it will employ, apart from verification, are aid and assistance in the area of CW defences and in case of an attack, and equal access to dual-use chemicals and technologies for all states parties. In that sense, the CWC will influence the demand-side with positive incentives.