

Chapter 5. Conclusion

The verification of arms control agreements raises many subtle and complex problems. Some of these problems are technical and can therefore be solved by suitable technical innovation or economic investment. But the most complex and subtle problems are political and psychological and therefore much more dependent for their solution on the creation of an appropriate atmosphere within which the compliance process can function.

At the root of most of the problems faced by verification are the deeply contradictory attempts by two powerful states to negotiate arms control agreements even as they work diligently to maintain or enhance the credibility of their military threats against each other. This military competition will inevitably be the primary determinant of the political/psychological atmosphere, and while verification and intelligence systems will produce vast amounts of detailed evidence on the military activities of the parties, it is far more likely that the meaning of the evidence will be influenced by the context than that the context will be changed by the evidence. Any verification system will have to confront the psychological phenomenon common to both states and individuals: the tendency to use evidence to reinforce existing attitudes rather than to challenge them.

The complexity and essential subjectivity of verification militate against any attempt to draw neat conclusions about the role verification can play in promoting disarmament. There are no general answers to the questions of how much verification is enough or what forms of verification are most effective. Such questions must always be answered by negotiation in the context of specific agreements. At the same time it is possible to extract from the evidence and analyses of chapters 1–4 the following propositions which can serve as guidelines to help the reader form his or her own judgements on specific questions about verification.

1. Verification has two fundamental purposes: to deter violations by posing a credible threat of discovery and to build confidence in a treaty by demonstrating compliance. These two functions overlap to some extent, defining an area within which any verification system should be designed to operate. However, the two purposes can also conflict with each other. Too much

emphasis on guaranteeing detection of violations will cause the system to see too much and become overloaded with ambiguities and suspicions, thereby undermining the confidence-building function. On the other hand too much emphasis on confidence building can lead to complacency and even temptations to exploit the latitude allowed for stretching the limits of the treaty.

There is no formula which can produce the correct balance between these two imperatives, and any balance which is achieved can be all too easily upset by changes in the political atmosphere. This is well illustrated by the fate of SALT which received excellent compliance reports from the Nixon, Ford and Carter Administrations and has on the basis of the same evidence been emphatically rejected by the Reagan Administration. It is very difficult to imagine a verification system which would not be vulnerable to such political shifts, and while the tendency to look for certainty in higher and higher degrees of intrusiveness is a natural one, it will become self-defeating if pushed too far.

2. Arguments about verification are very often surrogates for more fundamental disagreements about military doctrine and the appropriateness of arms control. Concepts of 'adequacy' of verification which evolved in the 1960s and 1970s were closely tied to the doctrine which held that marginal changes in a military balance already at high levels are militarily, and by implication politically, insignificant. Present US concepts of 'effectiveness' of verification are connected to a much more activist military-political doctrine which sees continued value in either the reality or the perception of marginal military superiority.

The evidence of almost 40 years of arms control experience supports the conclusion that the only standard of adequacy capable of maintaining a workable verification system is the ability to detect *militarily significant* violations in time to make an appropriate response. A standard which sees all possible violations as of equal importance or which is based on a legalistic 'contract' approach to arms control cannot survive the political tensions it helps to exacerbate. Acceptance of this conclusion should shift the political debate to an area where it more properly belongs, to the problem of military doctrine, not verification.

Based on a standard of adequacy defined by military significance it is clear that the SALT I and II Treaties are more than adequately verifiable, and that even more comprehensive and significant treaties would pass the same test (see proposition 7 below).

3. Verification will always involve a substantial degree of secrecy. This arises from two causes: first, the intimate connection between verification and intelligence gathering and, second, the added deterrent effect on a potential violator of uncertainty as to the capabilities of those watching him. But it is also essential that considerably more solid information on the scope and capabilities of verification as well as the workings of the compliance process be made available to the public. Granted that the balance between secrecy and credibility is a difficult one to maintain, it is still clear that the emphasis in the

past has been much too heavily on secrecy. This has left the concerned public with little more than leaks and guesswork on which to form a judgement on verification and compliance. Considering the damage done to the credibility of the verification system in the past few years it will take a concerted effort at public information and education to regain a public consensus in the United States on the possibility of adequately verifying future arms control treaties.

4. Verification does have an important deterrent effect against militarily significant clandestine violations, and in fact the demands on such a system in the present military stand-off are not great. Verification does *not* have a significant deterrent effect against unilateral interpretations of ambiguous treaty provisions or the minor stretching of limits to test the response of the other side. The military competition is a vast and complex web, and the job of any given verification system is to watch only a narrow region of this web and somehow to ignore the rest. Because this is often impossible to do, the verification system is always under stress and needs substantial help in the form of restraint by both parties in stretching the limits of treaties and in responding to incidents of limit-stretching. Using the verification system to 'demonstrate resolve' or to 'enhance credibility' in the usual senses of these terms will ultimately destroy the system.

5. Verification is a co-operative process, it is in no sense a unilateral process. Co-operation can be passive in the form of the restraint mentioned in the previous proposition as well as in the agreement not to interfere with or impede the legitimate verification activities of other parties. Co-operation can also be active in the form of exchanges of relevant information and the allowance of certain forms of physical intrusion such as 'black boxes', control posts, observers or inspectors.

Perhaps the most important form of co-operation is a continuing process of consultation among the parties, institutionalized in a consultative commission made up of highly qualified experts. The purpose of such a commission must be entirely on the side of preserving agreements and building confidence by dealing promptly and objectively with any ambiguities, misunderstandings or technical violations which arise. Only after this process has been given its full play should charges of violations be entertained. Once such charges have been made the issue will have passed beyond the competence of a consultative commission and will have to be dealt with diplomatically or even possibly militarily.

6. On-site inspection has been vastly overrated in the history of arms control. It has an important role to play in certain cases as one of the co-operative measures just mentioned, but it is also inherently limited in what it can achieve. The limitations are in some cases technical but in most cases political. In particular, those forms of on-site inspection which demand that states relinquish significant aspects of national sovereignty must still be classified as Utopian. It can be taken as axiomatic that no state will ever knowingly permit the discovery of a treaty violation on its territory by foreigners.

The most promising role for on-site inspection is the routine or continuous monitoring of declared facilities, for production, testing, deployment or destruction of materials or weapons under international auspices. A willingness to declare such facilities and accept inspectors or observers into them is an excellent sign of a state's intention to comply with a treaty. But even these applications will be slow in coming and must be carefully designed to allay fears of military or industrial espionage as well as interference with the effective operation of commercial facilities.

7. There is no necessary connection between the amount or type of verification required and the levels of armaments retained by parties to a treaty. The historical evidence suggests that there is a close correlation between the amount of distrust and suspicion and the levels of armaments. This implies that armaments will not be reduced unless suspicions are reduced and vice versa. But it is not at all clear what role verification can play in sustaining such a reduction process. It seems most likely that if a disarmament 'spiral' were in fact underway, verification demands would at worst stay constant and could very well decrease. But, verification itself cannot be the instigator of such a downward spiral. This can only be an act of political will based on an understanding of common interest in disarmament. The very existence of such an understanding would make fundamental changes in the role of verification, eliminating the present demand that it serve as a substitute for trust and allowing it to act as a true confidence-building measure.

8. From the standpoint of verification, treaties that totally ban specified activities or weapons are preferable to treaties that set quantitative or qualitative limits on them. But it must be kept in mind that verifiability is only one measure of the value of a treaty and that the achievement of other values may require compromise on this issue. On the other hand, there seems to be no reason to believe that broad, comprehensive treaties are easier to verify than narrowly constructed ones. For example, a treaty could be constructed entirely from detailed provisions chosen entirely for their ease of verification. The SALT agreements are a good example of this type of treaty. While such a treaty would obviously be highly verifiable there is no guarantee that it would have beneficial effects in reducing suspicion or slowing the arms race. On the other hand, a more comprehensive treaty might contain provisions of lower verifiability but represent a major step in arms limitation or reduction. The latter type of treaty seems more desirable, but if it contains poorly verified provisions it will be highly vulnerable to shifts in the political winds.

The nuclear freeze proposal is a good example of both of these principles. If the freeze were a *total* ban on the production, testing and deployment of nuclear weapon systems it would be highly verifiable with present national technical means and no more extensive co-operative measures than have already been accepted in other treaties. But such a complete freeze would in fact represent a commitment to nuclear disarmament, since it would eliminate replacement or modernization of defective, obsolete and deteriorating

weapons. The nuclear arsenals of all parties to such a freeze would gradually lose their reliability, and pressures would be strong on all parties to seek mutual reductions to prevent the development of dangerous asymmetries resulting from unequal rates of decay.

However desirable it may be, such a freeze is unfortunately unlikely. A less unlikely 'freeze' would be one that allowed for replacement and modernization of weapons, keeping their numbers constant. In this case production and testing facilities would continue to function and new weapons would be deployed. Under such conditions the potential for ambiguous activities and the resistance to significant co-operative verification measures would increase, putting far greater pressure on the verification system. In fact, once exceptions to the freeze begin to be allowed, its susceptibility to verification becomes no more favourable than other proposals to limit activities rather than eliminate them.

9. The technology of verification has made and continues to make rapid improvements in sensitivity, resolution, reliability and comprehensiveness. Some technologies are already at or very near their theoretical limits of performance. These include satellite and aerial photography, seismology, phased-array radars, radiation detectors and communications-monitoring antennas. Another group of technologies are still some distance from their theoretical limits but are the objects of intense research and development efforts and promise to improve rapidly in the near future. In this group are infra-red sensors, image and data processing techniques and synthetic-aperture radar. There is also one group of technologies which is far short of its potential and which could benefit from more attention than it is getting. This group includes the various containment and surveillance devices to be applied under IAEA safeguards. As the world nuclear industry grows the job of applying safeguards will expand with it. This means that it will inevitably be necessary to rely more on technological safeguards methods than on human inspectors, who are already finding it difficult to give adequate attention to all safeguarded facilities. Any effort to extend the current safeguards system to the monitoring of a ban on the production of fissionable materials would require an even greater effort at technological development.

10. The advanced state of the art in many verification technologies implies that if verification were the only concern a number of significant treaties could be signed and ratified immediately. A comprehensive nuclear test ban treaty, a ban on testing of anti-satellite weapons, and a freeze or reduction in deployments of land-based intercontinental and intermediate-range ballistic missiles would all be eminently verifiable. Other treaties such as a chemical weapons ban and a mutual force reduction in Europe require some further convergence in views on the role of on-site inspection, but given a pragmatic approach to this problem by all sides it could be quickly resolved. The signing of all of these treaties would by no means end the arms race, but it would at least signal a badly needed improvement in the political atmosphere.

11. Despite the remarkable achievements and steady growth of monitoring, data processing and analytical capabilities there are trends in weapon system development which if allowed to continue will outrun the ability of technology to monitor them. Incessant military demands for more mobile, flexible, controllable and survivable weapons are leading to new weapons which will be smaller, more mobile, less recognizable and capable of carrying out a variety of missions. Most threatening in this regard are cruise missiles, direct ascent anti-satellite weapons fired from fighter aircraft, binary chemical weapons and all so-called dual-purpose delivery vehicles.

In many cases the most effective way to control such weapons is to ban their testing during research and development. An important historical example was the development of multiple independently targetable re-entry vehicles in the 1960s, and two current examples are the development of anti-satellite weapons and small, mobile ICBMs. In all three cases the verification of a test ban would have been, or would be, a simple matter, while verification of deployment after development becomes extremely difficult, if not impossible.

12. The internationalization of verification will continue to be a slow and frustrating process for a long time to come. The two great powers who control the vast majority of the militarily useful monitoring technologies are no more interested in giving up their monopoly interest in this field than they are in giving up their dominance in nuclear weapons. Any initiatives to create, for example, an International Satellite Monitoring Agency will have to be taken by other states, and these efforts will be limited by lack of economic and technical resources as well as by political pressures from the USA and USSR.

All of the easy international arms control treaties have been signed and now stand as symbols of the shallowness of the *détente* that characterized the relationship of the USA and USSR in the 1970s. Future international treaties will be much more difficult to achieve and will depend heavily on superpower co-operation to achieve them. Until the bilateral arms race can be brought to a halt and reversed the prospects for international arms control and verification will not be bright unless, like the Non-Proliferation Treaty and its accompanying safeguards, they suit superpower interests.

If a genuine *détente* can be established and progress made in bilateral disarmament, then it is inevitable that the problems of disarmament and its verification will eventually become international in scope. One is entitled to hope that once the process had proceeded that far the ultimate goal of genuine international disarmament verified by international means would be within reach.

Verification has a relationship to intelligence gathering which is in many ways analogous to the relationship between arms control and the arms race. Both arms control and military planning require information, and in many cases it is precisely the same information, gathered and analysed by the same devices and techniques. It follows that any attempt to define precisely the

boundary between verification and espionage is inevitably artificial and political as opposed to rigorous and technical. And this same essential arbitrariness and negotiability applies to any attempt to define a standard of adequacy for verification.

Historically the Soviet Union has been associated with challenges to legitimacy and the United States with questions about adequacy. While there are legitimate technical and political reasons for these attitudes, there has also been far too great a tendency for each side to exaggerate its concerns as a convenient means of influencing public opinion or rationalizing failure to reach agreements. It will not be easy for the two major powers to break this behaviour pattern. Only when negotiations are based on the mutually shared premise that the military competition has outlived its usefulness and must be ended can the political compromises be made which will establish the foundation for a successful verification system. And both states will have to devote considerable efforts to building the domestic political consensus necessary to support these compromises.

This book has devoted a great deal of space to the difficulties of verification. Such difficulties are real and must be faced honestly. Yet the overwhelming weight of the evidence and analysis presented in this book supports the conclusion that the opportunity exists for the USA and the USSR to make a significant beginning towards meaningful disarmament with agreements that are adequately verifiable. Both states possess elaborate and sophisticated means of gathering and analysing intelligence, and while this does not by any means eliminate uncertainty in their assessments of each other's capabilities and intentions, it does make it virtually impossible that either side could attempt to gain a significant military advantage over the other without incurring a high risk of discovery.

There was evidence that this reality was coming to be understood by both sides as SALT and other negotiations progressed through the 1970s. But the rapid deterioration of the political climate which began in the late 1970s went a long way towards destroying most of the progress that had been made. Quiet diplomacy and technical discussion of ambiguous behaviour were replaced by loud public accusations of bad faith and a renewal of the kind of posturing and provocation around issues of verification that characterized the political climate of the 1940s and 1950s. Verification again became a convenient whipping boy for many whose real purpose was to challenge the entire concept of arms control as it had evolved during the period of *détente*.

Verification is too fragile to serve as the foundation for disarmament in such a political atmosphere. The most that verification can ever be is a tool to aid in the implementation of a process whose foundation is a mutually shared recognition of the futility and danger of the arms race and the will to act politically on this recognition. No amount of verification can substitute for this act of political will or make it easy to take. And too much emphasis on

verification, with its implicit message of distrust, can only make the process more difficult.

As these conclusions are being written the USA and USSR have resumed arms control negotiations after more than a year of abstention. This resumption of talks has been accompanied by a noticeable toning down of hostile political rhetoric and a somewhat reduced emphasis on charges of violations of previous agreements. However, it remains to be seen whether these changes are genuine, and even if they are genuine whether the will exists to repair the damage done to arms control in recent years. The manner in which the issues of verification and compliance are dealt with by both sides will be an excellent gauge of the seriousness with which they are approaching these new negotiations.

