

Societal verification: wave of the future?

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SOCIETAL VERIFICATION has been discussed for decades under different names, like ‘citizens’ reporting’, ‘inspection by the people’ and ‘social monitoring’. Although there is no agreed legal definition, societal verification connotes the involvement of civil society in monitoring national compliance with, and overall implementation of, international treaties or agreements. One important element is citizens’ reporting of violations or attempted violations of agreements by their own government or others in their own country. This encompasses the monitoring of implementation of national legislation or regulations designed to facilitate treaty compliance. A more recent development is civil society monitoring of global compliance with international agreements. In contrast to official verification organisations employing professional experts, societal verification may involve the whole of society or groups within it.

Whistleblowing is a specific type of citizens’ reporting. It relies on violations or attempted violations of an international accord being detected directly by employees, such as scientists and technologists, working in relevant industries.¹ Compared with normal citizens, employees are in a special situation because they owe their employer a certain loyalty and, by law, are normally not allowed to disclose internal or confidential information. Whistleblowers, therefore, need protection if they make a disclosure in good faith and on the basis of reliable evidence.

Societal verification may be applied to a wide variety of international agreements (and corresponding national regulations), including those pertaining to the environment, human rights, trade, labour, arms control and disarmament. But the requirements for, and problems of, societal verification in these areas are different. As a result, it is hard to develop a general model of societal verification and its implementation. To begin with, there are discrete actors to be monitored, including:

- commercial and non-commercial companies;
- government departments and agencies;
- various parts of the 'military/industrial complex';
- public and private laboratories;
- public and private research and development centres;
- police and security forces;
- national governments; and
- international organisations.

There are also diverse aggregations of interest, influence and power to be handled. Consequently, the implementation of societal verification in disparate areas requires different types of coalition-building and separate forms of regulation and organisation. Varying degrees of transparency and assorted types of whistleblower protection are also necessary.

A short history of societal verification

The first concepts of societal verification were products of the Cold War, when scientists advocated arms control, disarmament and transparency as alternatives to the danger of nuclear deterrence. In the late 1950s, Lewis Bohn² and Seymour Melman³ proposed the idea of 'Inspection by the people'. Their belief was that, in addition to monitoring by the official inspectorate of an international disarmament agreement, it would be useful to have an informal network based on public involvement. This could reinforce the work of the inspectorate and help undercut evasion efforts. Since illicit production of banned weapons would require substantial organisations and production systems the chances were that someone would eventually 'blow the whistle'.

Bohn and Melman argued that disarmament agreements should make it an explicit obligation of citizens to report violations to the international inspectorate. Members of the inspectorate would have the chance to participate in the work of universities and similar institutions of the host country. Additionally, special agreements to guarantee the security of those who co-operated with the inspectorate should be reached (such as facilitating political asylum and temporary local security). Lewis Bohn called specifically for a provision in arms control agreements requiring all participating governments to make it a crime to violate provisions of the accord or to keep secret from the international verification agency any information about such a contravention.⁴ These provisions should be publicised by each government

and failure to support them by such publicity (or in other ways) would be a major violation of the treaty.

In the early 1960s, Grenville Clark and Louis Sohn mentioned the concept of 'inspection by the people' in their classic book, *World Peace Through World Law*.⁵ They proposed a revision of the UN Charter to establish a UN Inspection Service. An Annex dealing with citizens' reporting would read:⁶

. . . Any person having any information concerning any violation of this Annex or any law or regulation enacted thereunder shall immediately report all such information to the United Nations Inspection Service. The General Assembly shall enact regulations governing the granting of rewards to persons supplying the Inspection Service with such information, and the provision of asylum to them and their families . . . No nation shall penalise directly or indirectly any person or public or private organisation supplying information to the United Nations with respect to any violation of this Annex . . .

Leo Szilard⁷ considered the concept of 'inspection by the people' in his quixotic story *The Voice of the Dolphins*, published in 1961. He incorporated elements of the proposals of Bohn and Melman and suggested an award of one million dollars, tax free, to be paid by the government accused of a violation. This would be returnable if the information later turned out to be incorrect.

These early concepts of 'inspection by the people' had a double function. First, they were clearly aimed at reducing opposition to arms control and general and complete disarmament by showing that it was possible to verify such agreements through non-official means. Second, they tried to show that, from a democratic point of view, security matters were too important to leave to politicians and military commanders and their staffs alone. These concepts were raised in public debate and were, in turn, influenced by it. They also reflected the technological possibilities of the period. Proponents had to defend themselves against the criticism that 'inspection by the people' would increase the danger of espionage and that such ideas were utopian, since the countries on the other side of the 'Iron Curtain' would never comply with them.

In the 1990s, Joseph Rotblat, in particular, took up these old ideas and applied them to the concept of a treaty on the complete elimination of nuclear weapons.⁸ He suggested that the duty of the citizen to supply information about any violation should be an integral part of the accord. Disclosing data about sensitive national

security matters to an international body in regard to a treaty violation would, therefore, no longer be considered a crime or an act of treason, but be sanctioned by domestic law. Rotblat pointed out that apart from relying on their *ad hoc* observations, scientists and technologists could establish organisations to act as compliance watchdogs, monitoring the activities of individuals likely to become involved in an illegal project. Such monitoring could be done, without appearing to spy on one's colleagues, by keeping a register of scientists and technologists and noting changes in their place of work or pattern of publications (or their absence). Other signs of attempted clandestine activities would include: the commencement of new projects at academic institutions without proper justification; the recruitment of young scientists and engineers in numbers not warranted by the declared purpose of the project; or the large-scale procurement of certain types of apparatus, materials and equipment.

All establishments dealing with nuclear facilities, such as those processing and storing spent fuel elements from nuclear reactors or enrichment plants, should be subject not only to monitoring by the International Atomic Energy Agency (IAEA), but also by watchdog organisations.⁹

Challenges facing societal verification

There is a widespread view that in non-democratic countries with little respect for individual human liberties and rights, citizens' reporting and whistleblowing are likely to be ineffective. Yet, reporting by civil rights groups and other non-governmental organisations (like Amnesty International, Human Rights Watch and the Bellona Foundation¹⁰) has for many years played an important role in strengthening compliance with international agreements even in non-democratic states, especially in the areas of human rights and the environment. Amnesty International's reports are an important resource for anyone monitoring state behaviour with respect to human rights. Even in a non-democratic system, a government cannot be absolutely sure that persons with knowledge of clandestine activities will not transmit the information to the international community. Examples include the son-in-law of Iraqi President Saddam Hussein, General Hussein Kamal Hassan, who, in 1991, disclosed Iraq's calutron purchases and other clandestine nuclear and biological weapon activities, first to the US, and, later, to the UN Special Commission (UNSCOM).¹¹ Another case is that of Russian chemist Vil Mirzajanow, who reported on the secret chemical weapon activities of the former Soviet Union.¹²

A treaty for which societal verification could be particularly powerful is the 1972 Biological Weapons Convention (BWC). Although the BWC bans the acquisition and use of biological weapons, it does not prohibit scientists from conducting research on substances that, although useful for peaceful purposes, are also potentially relevant to the development of biological weapons.¹³ Indeed, it is difficult to draw an exact line between research and development of biological and toxin weapons and activities with peaceful motives. There is little doubt that a small group of people, even in government, could produce biological weapons without being detected.¹⁴ Citizens' reporting and, especially, whistleblowing could have an important role to play, as demonstrated by Russian defector Kanathan Alibekow (alias Ken Alibek¹⁵), who, in 1992, revealed the existence of Biopreparat, the network of clandestine Russian biological weapon research centres.¹⁶

The same is true for the arms trade and exports of embargoed 'dual use' technology. Illicit transfers of nuclear, chemical and additional materials to Iraq from the UK and other countries between 1980 and 1990, in violation of the UN arms embargo, are illustrative. In one case, an employee of the British company, Matrix Churchill, wrote to the UK Foreign Secretary warning that equipment was being exported illegally to Iraq. Although his letter was ignored by civil servants for a number of years, it was ultimately the fear that he would contact the press that caused the UK Deputy Prime Minister to reveal that the government had been aware of the exports.¹⁷

Whistleblowers like Alibekow and Mirzajanow are part of a long tradition. One of the most famous examples is that of the German Nobel Peace Prize Laureate, Carl von Ossietzky, a journalist and writer in the 1920s and 1930s. In his periodical *Die Weltbühne*,¹⁸ he disclosed secret military co-operation between the German army and the Soviet authorities, which violated the international agreements concerning disarmament measures in the 1919 Versailles Peace Treaty. He was convicted of treason and espionage and imprisoned.¹⁹

Some observers assert that societal verification smacks too much of the mythical 'Big Brother' society, wherein citizens watch each other and the state watches citizens. Societal verification, however, aims, by definition and design, for openness and the free flow of ideas. It can substantially extend the information base of official verification efforts and contribute to the protection of democratic rights.

One of the most difficult aspects of societal verification and its special form of whistleblowing is that it implies disloyalty, the stigma of spying on one's

colleagues. The tension between an organisation's concern to control its own affairs and the public's interest in knowing of developments which violate international agreements is often mirrored in a tension of loyalties among its professional employees. Professionals working in large organisations often make early assessments of the adverse impact of science and technology on society. But such organisations are generally eager to avoid the 'premature' disclosure of concerns that may later be unsubstantiated. Management often sees dissenting employees as challenging the legitimacy of its authority, while whistleblowing is viewed as a challenge to the credibility of the organisation as a whole. Dissent may, therefore, cause confrontation between the individual expert and management. For many employees this is too intimidating a prospect. The stigma of disloyalty would be reduced, however, if these activities were protected and positively sanctioned by international and domestic law.

The suppression of professional dissent can itself have damaging effects on an organisation by straining the loyalty, morale and creativity of employees and the credibility and reputation of the organisation. Dissent is often an early sign of problems that may escalate into serious and expensive crises if not dealt with early and effectively.

First steps towards societal verification

In recent years several encouraging steps have been taken in the direction of societal verification at the international and national levels, but much remains to be done.

Societal verification provisions of the Model Nuclear Weapons Convention

In 1997, an international consortium of lawyers, scientists and disarmament specialists—co-ordinated by the US Lawyers' Committee on Nuclear Policy—drafted a Model Nuclear Weapons Convention (Model nwc).²⁰ At the request of Costa Rica, it was circulated as a UN document. Article viiB states that 'persons shall report any violation of this Convention to the Verification Agency established by the Convention'. This responsibility takes precedence over any obligation not to disclose information that may exist under national security laws or employment contracts. Data received by the Agency will be held in confidence, except to the extent necessary for investigative purposes, until formal charges are lodged.

Article viiC deals with both intrastate and interstate protection. It proposes the following intra-state provisions:

- ‘Any person reporting a suspected violation of this Convention, either by a person or a State, shall be guaranteed full civil and political rights including the right to liberty and security of person’;
- states parties ‘shall take all necessary steps to ensure that no person reporting a suspected violation of this Convention shall have any rights diminished or privileges withdrawn as a result’;
- any individual who, in good faith, ‘provides the Agency or a National Authority with information regarding a known or suspected violation of this Convention cannot be arrested, prosecuted or tried on account thereof’;
- ‘It shall be an unlawful employment practice for an employer to discriminate against any employee or applicant for employment because such person has opposed any practice as a suspected violation of this Convention, reported such violation to the Agency or a National Authority, or testified, assisted, or participated in any manner in an investigation or proceeding under this Convention’; and
- ‘Any person against whom a national decision is rendered on account of information furnished by such person to the Agency about a suspected violation of this Convention may appeal such decision to the Agency within . . . months of being notified of such decision. The decision of the Agency in the matter shall be final.’

The interstate section includes a provision that, ‘any person reporting a violation of this Convention to the Agency shall be afforded protection by the Agency and by all States Parties, including, in the case of natural persons, the right of asylum in all other States Parties if their safety or security is endangered in the State Party in which they permanently reside’.

Other provisions state that the Executive Council established by the Convention ‘may decide to award monetary compensation to persons providing important information to the Agency concerning violations of this Convention’. In addition, ‘Any person who voluntarily admits to the Agency having committed a violation of this Convention, prior to the receipt by the Agency of information concerning such violation from another source, may be exempt from punishment. In deciding whether to grant such exemption, the Agency shall consider the gravity of the violation involved as well as whether its consequences have not yet occurred or can be reversed as a result of the admission made’.

Civil society 'second track' monitoring: Landmine Monitor

The 1997 Landmine Convention does not have a standing verification mechanism.²¹ In September 1998, however, non-governmental organisations (NGOs) involved in the International Campaign to Ban Landmines (ICBL) set up Landmine Monitor, a civil society-based reporting network for monitoring state compliance.²² For many years, NGOs and research centres, like the Stockholm International Peace Research Institute (SIPRI), have monitored compliance with international treaties informally and individually. But Landmine Monitor is the first attempt to create a systematic, global non-governmental monitoring network. Although Landmine Monitor has no official status under the treaty, its reports cover every aspect of implementation and compliance by all countries, as well as thematic issues. The first report was presented to the First Meeting of States Parties in Maputo, Mozambique, in May 1999, while the second was presented to the Second Meeting of States Parties in Geneva, Switzerland, in September 2000.²³

US whistleblower protection

The Federal Whistleblower Protection Act (5 USC sec. 1201), which became effective on 9 July 1989, gives federal employees protection by forbidding government agencies from acting against any employee for declining to engage in illegal activity.²⁴ The Act also covers activities banned by international (self-executing²⁵) treaties to which the US is a party. Under Article VI of the US Constitution, a treaty that has been adopted with the consent of two-thirds of the Senate and does not require legislation to implement its provisions domestically, automatically becomes national law. The Act must be seen in the light of the US Government Employees' Code of Ethics, which states that it is the duty of any person in government service to:

'Put loyalty to the highest moral principles and to country above loyalty to persons, party or Government department' and 'Uphold the Constitution, laws, and regulations of the United States and of all governments therein and never be a party to their evasion'.

The Whistleblower Protection Act did not always live up to its promise. The principal reason was the lack of sufficient evidence connecting the employee's whistleblowing and reprisals by employers.²⁶ A 1993 survey found that, by a 60–23 margin, federal employees did not believe their rights would be protected. The rate of retaliation by superiors for whistleblowing was 37 percent; 45 percent reported

that acting on their rights landed them in more trouble.²⁷ Agencies and agency bodies responsible for the Act's implementation were unwilling to enforce it.

The Act was amended in 1994, offering significant improvements.²⁸ Federal employees covered by collective bargaining agreements now receive state-of-the-art administrative law protection through arbitration hearings. They can seek immediate relief through legal action to stop temporarily the adverse personnel action and can sue managers who attempt reprisals. Employees can prove the connection between whistleblowing and reprisal simply by demonstrating, for instance, a short time lapse between the whistleblowing and the employee's next performance appraisal. The whistleblower will only have to prove that dissent was a contributing factor in the job action; once this is established, the burden of proof shifts to the agency to prove by 'clear and convincing evidence' that it would have taken the same action anyway on independent grounds. In addition, the amendments require the Merit Systems Protection Board to refer managers for disciplinary investigations whenever there is a finding that reprisal was a contributing factor in action taken against personnel.

In contrast to the US federal public sector, there is no comprehensive law that prohibits employers in the private sector from retaliating against whistleblowers. But some states have adopted common law remedies under the 'public policy exception to the termination at will doctrine'. Today, 42 states and the District of Columbia offer protection to employees who suffer discrimination for blowing the whistle on an issue of importance to the public, such as health or safety. But there are no general or specific provisions that protect whistleblowers who make disclosures concerning breaches of an international treaty.

Russia: a right of disclosure?

In recent years there have been many prosecutions of Russian whistleblowers accused of divulging state secrets or even treason or espionage by handing over real or potential state secrets to the public and/or foreign organisations. Examples include the cases of Alexandr Nikitin²⁹ and Grigorij Pescov.³⁰

The Russian Federal Law on State Secrets (no. 5485-1), adopted on 21 July 1993, provides in Article 5 a 'List of information considered as state secrets'. This list was significantly expanded by an amendment adopted on 9 October 1997. It mainly includes military-related information, such as the contents of strategic or operational plans, plans for the Russian armed forces and details of the production of nuclear

and other special armaments. Nevertheless, Article 7, which was not significantly changed on 9 October 1997, expressly determines a category of information that cannot be kept secret: 'information on extraordinary events and catastrophes that threaten the safety and health of the population, and the consequences of such events'. The same applies to 'information on the ecological situation'. It is still not clear if, and how, the Russian authorities, especially the criminal and administrative courts, will handle these provisions, which contain elements necessary for the protection of whistleblowers. It will be of great interest to observe further developments in this area in Russia.

The UK Public Interest Disclosure Act

The UK Public Interest Disclosure Act, which came into force on 2 July 1999, protects employees from dismissal and victimisation if they make a 'qualifying disclosure'.³¹ The legislation applies to people at work raising genuine concerns about crime, illegality, miscarriage of justice, danger to health and safety or the environment and the covering up of any of these matters. It applies whether or not the information is confidential and extends to malpractice occurring outside the UK (§43B section 2).

A whistleblower who feels victimised can bring a claim before an employment tribunal for compensation; additionally, if the employee is sacked, he or she may apply for an interim order to keep their job. 'Gagging' clauses in employment contracts and severance agreements are void insofar as they conflict with the Act.

The Act makes provision for the following five types of disclosure:

- internal disclosures—made in good faith, to a manager or the employer, if the whistleblower has reasonable suspicion that malpractice has occurred, is occurring or is likely to occur;
- disclosures in government-appointed bodies—if employees report their concerns in good faith directly to the sponsoring department, rather than to their employer;
- regulatory disclosures—made in good faith to regulatory bodies specified under the Act, such as the Health and Safety Executive, Inland Revenue, Customs and Excise, and the Financial Services Authority, if the whistleblower reasonably believes that the information and any allegation in it are substantially true;
- wider disclosures—for instance to the police, the media, Members of Parliament, pressure groups, and non-prescribed regulators. These disclosures are protected, if, in addition to the tests for regulatory disclosures, they are reasonable in the

circumstances. But they are not protected if made for personal gain. Furthermore, one of the following tests must be met: the whistleblower reasonably believed that they would be victimised if they raised the matter internally or with a prescribed regulator; they reasonably believed that a cover-up was likely and there was no prescribed regulator; or they had already raised the matter internally or with a prescribed regulator;

- disclosures in exceptionally serious matters—a disclosure will be protected if the concern is exceptionally serious, if it meets the test for regulatory disclosures, and if it is not made for personal gain. The disclosure must also be reasonable, having particular regard for the identity of the person it was made to.

Employees who, for instance, warn a Member of Parliament or the media that munitions are likely to be exported in violation of an arms embargo or an international agreement incorporated into the law of the land, would be able to seek the Act's protection under its 'wider disclosure' or 'disclosure of an exceptionally serious nature' provisions. Only in those cases where a whistleblower was or would have been guilty of breaching the Official Secrets Act or of another secrecy offence by making an external disclosure would the Public Interest Disclosure Act's protection not apply. Overall, though, by setting out a relatively clear framework for raising genuine concerns about crime and illegality and by guaranteeing legal protection to employees who raise such issues, the Act could be an important step in creating a culture favourable to societal verification in the UK.

France: civil society involvement in implementation of Landmine Convention

In France, one example of officially sanctioned citizens' reporting is NGO involvement in the process of implementing the Landmine Convention. The French Act concerning the Abolition of Anti-Personnel Landmines establishes in Article 9 a National Committee to participate in monitoring implementation of the country's obligations under the treaty.³² Membership of the Committee, besides representatives of the French government and Parliament, will include NGO representatives. Article 10 of the Act states that the National Committee will provide for effective implementation of the Convention and the international activities of the French Republic concerning de-mining and help for victims of anti-personnel landmines. The French government is obliged to report annually to Parliament on the implementation of the Act. While these provisions provide for only limited participation by representatives of civil society in a public body involved in a

verification process, the French initiative can be seen as a significant precedent in making societal verification more acceptable and likely.

Future possibilities

To make social verification more likely, the following steps would be helpful:

- the legal right of all citizens and citizen groups to engage in societal verification needs to be guaranteed by each international agreement and by the legal system of each state party;
- explicit legal protection against discrimination and criminal prosecution should be established for all (natural and legal) persons reporting violations or attempted violations of an international agreement;
- the right to raise funds for citizens' verification purposes, within and outside the country, must be guaranteed so that citizen groups obtain financial resources for their work; and
- regulations concerning freedom of information and openness in science should be promulgated.

Freedom of information means that records in the possession of public agencies and departments of the executive branch are accessible to citizens. Those seeking information should no longer be required to prove that they are entitled to obtain the data and have a special need for it. Instead, the 'need to know' standard must be replaced by a 'right to know' doctrine. The government or head of the relevant public agency must be required to justify the legally protected need for secrecy (for instance, properly classified documents, internal personal rules and practices, confidential business data, internal government communications, personal privacy and law enforcement). But it should be established, by law, that international and domestic legislation must not protect illegal 'state secrets'. Information on violations of international or domestic law by state officials cannot be kept confidential.

Whistleblowing

Since any serious attempt to violate an international treaty or corresponding national legislation would require the involvement of technologists, scientists and other employees, societal verification is nearly impossible without special protection for those who 'blow the whistle'. Possible initiatives to achieve this include:

- legal protection against discrimination and criminal prosecution for whistle-

blowers should be established by international treaties and domestic law. Due process protection for dissenting employees should be established by state legislation. It should include the right of all professionals and employees to inform, in good faith, appropriate bodies, or, if necessary, the public, of plans, projects and measures in their workplace or outside their workplace which violate national or international law or principles of professional ethics, and to refuse to work on such projects;

- exemption from punishment in case of self-disclosure (revelation of one's own involvement in forbidden activities) should be guaranteed; and
- international and domestic law should guarantee that a whistleblower can rely on legal protection in foreign countries in case of discrimination or criminalisation by their own state (that is, the right to asylum).

To encourage citizens to 'blow the whistle' as an important element of societal verification, it would also be necessary to establish loyalty to a much larger group than one's own organisation and nation. Universal loyalty to humankind must be developed and strengthened, an important task for the education system and mass media. The responsibility of scientists, technologists and other employees could be developed through training to identify activities that may be prohibited or ethically questionable. Scientists in universities and academies could develop special programmes and curricula for teaching and learning, such as: awareness of ethical problems in research and development; ethically responsible behaviour as a professional and employee; and management of ethical conflicts. It could become an obligatory part of student examinations to scrutinise the possible ethical consequences of scientific and technological proposals, inventions and developments.

Organisations and enterprises could develop due process procedures for dealing with dissent and dissenters in a fair and responsive manner. Initiatives could include: devising a Code of Ethics and Professional Conduct which guarantees that nobody is discriminated against or sanctioned if they make a protected disclosure to a specified internal or external person or body; appointing an ombudsman within the organisation (concerned with ethical behaviour); and establishing a hotline for complaints (anonymous or otherwise).

Additionally, organisations of scientists, technologists and other employees could support and encourage potential and actual whistleblowers, and monitor the activities of individuals and groups likely to become involved in projects contravening international accords, domestic law or standards of professional ethics. They could:

develop a Model Code of Ethics and Professional Conduct for their membership; publicise appropriate whistleblower cases and ethical conflicts; publish details of the cases and names of employers who have discriminated against responsible professionals or other ethical employees; offer professional advice in actual conflicts; organise acts of solidarity with whistleblowers; establish ethical support funds; award whistleblowers; and lobby for better legal protection of whistleblowers.

As to the international arena, an amendment to the UN Charter, as proposed by Clark and Sohn, would only be feasible in exceptional historical circumstances, which have not yet arrived. The idea of including protective clauses for citizens' reporting and whistleblowing in international treaties should prove easier, although it will still be difficult for citizens' groups and other NGOs to achieve.

The technological revolution, meanwhile, especially in the field of communication systems, like the Internet, will facilitate societal verification. But the Internet and other technologies will not remove the need for legislative protection. Employees and other citizens who whistleblow in good faith must still be protected against all forms of pressure, discrimination and retaliation in their workplace and personal and professional environment, and against criminal prosecution by their authorities.

It will likely take many years to establish effective measures of societal verification in international agreements, because there seems to be little enthusiasm among political decision-makers to develop such tools. Nevertheless, the need for societal verification will increase nationally and internationally. Growing national and international networks of public interest groups,³³ lawyers, legislators, journalists and former whistleblowers are available to assist employees in disclosing irregularities. The movement is also achieving success in its drive to force accountability on governments and industries, since they are coming to see whistleblowers as useful bell-wethers of emerging problems. In many countries, whistleblower protection, conforming largely to the UK and US models, will probably continue to be enacted within the next few years. Because of the significant contributions that citizens' reporting and whistleblowing can make, such developments should be encouraged.

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Endnotes

- ¹ Joseph Rotblat, 'Societal Verification', in Joseph Rotblat, Jack Steinberger and Bhalchandra Udgaonkar (eds.), *A Nuclear-Weapon-Free World: Desirable? Feasible?*, Westview Press, Boulder, Colorado, 1998, p. 112.
- ² Lewis Bohn, Memorandum of 12 January 1956 to the RAND Corporation (not published); reproduced in Lewis Bohn, 'Tecniche d'ispezione non materiale', in: Donald G. Brennan (ed.), *Controlli degli armamenti, disarmo e sicurezza nazionale*, New York/Milan 1961, p. 466.
- ³ Seymour Melman, 'General Report', in Seymour Melmon (ed.), *Inspection for Disarmament*, Columbia University Press, New York, 1958, p. 38.
- ⁴ Lewis Bohn, 'Non-Physical Inspection Techniques', in Donald G. Brennan (ed.), *Arms Control, Disarmament, and National Security*, Braziller, New York, 1961.
- ⁵ Greenville Clark and Louis Sohn (eds.), *World Peace Through World Law*, Harvard University Press, Cambridge Massachusetts, 2nd ed., 1962, p. 264.
- ⁶ Clark and Sohn, p. 267.
- ⁷ Leo Szilard, *The Voice of Dolphins*, Simon and Schuster, New York, 1961. In 1946, Szilard organised a campaign of scientists against a US government plan (May-Johnson Bill) to subject all nuclear research to a special agency.
- ⁸ Rotblat, p. 107.
- ⁹ Rotblat, p. 114.
- ¹⁰ For instance, see the case of Alexander Nikitin, former captain of the Soviet navy, who reported on the Russian Northern Fleet and the sources of radioactive contamination in 1995 and 1996. See his study, *Sources of Radioactive Pollution in the Murmansk and Archangelsk Regions*, and his special Bellona Report.
- ¹¹ See Tim Trevan, *Saddam's Secrets*, Harper Collins, London, 1999.
- ¹² See Vil Mirzayanow, 'It's time to release my mentor', speech to the 'Democracy, Human Rights and Mordechai Vanunu' international conference, Tel Aviv, Israel, 14-15 October 1996 (unpublished). For further information, see 'A poisoned policy', *Moscow News Weekly*, no. 39/1992, s. 9; Frank von Hippel, 'Russian Whistleblower Faces Jail', *Bulletin of the Atomic Scientists*, March 1993, p. 7; *New Times International*, 45/1992, p. 22; Reiner Braun, Angeklagt wegen 'Geheimnisverrats', in *Wissenschaft und Frieden*, 1/1994, pp. 71-72.
- ¹³ See the chapter by Robert J. Mathews in this volume.
- ¹⁴ See Wolfgang Fischer (Research Centre Jülich), 'Learning from Other Regimes: Social Monitoring as a Contribution to Effective Safeguards?', in *Proceedings of the Seminar on Modern Verification Regimes: Similarities, Synergies and Challenges*, Helsinki, 12-14 May 1998, p. 119.
- ¹⁵ *Frankfurter Allgemeine Zeitung*, 3 November 1999.
- ¹⁶ Ken Alibek with Stephen Handelman, *Biohazard*, Random House, New York, 1999; Judith Miller, 'Aid is Diverted to Germ Warfare, Russian Scientists Say', *New York Times*, 25 January 2000, available at www.nytimes.com.
- ¹⁷ Guy Dehn, 'Project Whistleblowing—The UK experience', working paper, Public Concern at Work, London, 2000, p. 14.
- ¹⁸ Published on 12 March 1931 in the *Weltbühne* ('Windiges aus der deutschen Luftfahrt').
- ¹⁹ For further information, see Ingo Müller, *Der Weltbühnenprozess von 1931*, in Carl von Ossietzky, p. 227. *Tage im Gefängnis. Luchterhand Literatur Verlag*, Darmstadt, 1988, p. 13.
- ²⁰ UN Document A/C.1/52/7, 17 November 1997. For additional information, see *Security and Survival: The Case for a Nuclear Weapons Convention*, International Association of Lawyers Against Nuclear Arms/International Network of Engineers and Scientists Against Proliferation/International Physicians for the Prevention of Nuclear War, Cambridge, Massachusetts, 1999. The Model nwc can be downloaded from www.ippnw.org.
- ²¹ The Treaty does, however, require annual reports by states parties on their compliance and outlines the means by which compliance problems could be resolved; these annual reports are published by the UN Secretariat. Additionally, the Treaty provides for annual meetings of states parties to assess its effectiveness.
- ²² See Trevor Findlay, 'Landmine Monitor: Pioneering 'Track Two' Verification', *Trust & Verify*, no. 83, November 1998, p. 1.
- ²³ The 1999 and 2000 Landmine Monitor reports may be found at www.icbl.org.

²⁴ See Tom Devine, *The Whistleblower's Survival Guide*, Government Accountability Project, Washington, DC, 1997, p. 124. More information on the Government Accountability Project and links to other resources on whistleblowing can be found at www.whistleblower.org.

²⁵ A self-executing treaty becomes internal law in the US immediately upon entry into force internationally; non-self-executing treaties require legislation to implement them domestically. For further information, see Thomas Buergenthal and Harold Maier, *Public International Law*, second edition, West Publishing Company, St. Paul, Minnesota, 1990, p. 204.

²⁶ See General Accounting Office, 'Determining Whether Reprisal Occurred Remains Difficult', GGD-93-3, 27 October 1992, Washington, DC, cited in Gerald Caiden and Judith Truelson, 'An Update on Strengthening the Protection of Whistleblowers', *Australian Journal of Public Administration*, vol. 53, 1994, p. 575.

²⁷ See Devine, p. 128; Caiden and Truelson, p. 579.

²⁸ See Devine, p. 129; Dieter Deiseroth, *Berufsethische Verantwortung in der Forschung. Möglichkeiten und Grenzen des Rechts*, LIT-Verlag, Münster, 1997, pp. 233 ff.

²⁹ Alexandr Nikitin (St. Petersburg), a former Soviet navy captain, has been prosecuted for high treason and divulging state secrets. He contributed to various studies and publications on potential risks of radioactive pollution in the Murmansk and Archangelsk regions. For further information, see Dieter Deiseroth and Dietmar Göttling (eds.), *Der Fall Nikitin/The Nikitin Case*, G.Emde-Verlag, Pittenhart, 2000.

³⁰ Grigory Pasko, a Russian naval officer and military journalist ('Bojewaja Wachta'), sent controversial reports to Japanese television and newspapers, accusing the Russian navy of spilling nuclear waste into the Sea of Japan. He was arrested in 1997 on his return from Japan and charged with selling state secrets abroad. See *Die Zeit*, no. 8, 1999, p. 33.

³¹ For further information, see Public Concern at Work (ed.), *Current Law Statutes. Public Interest Disclosure Act 1998*. Annotations by Guy Dehn, Legal Information Resources, Sweet & Maxwell, London, 1999.

³² 'Tendant à l'élimination des mines antipersonnel', *Journal Officiel de la République Française*, 9 July 1998, p. 10456.

³³ One example is the International Network of Whistleblower Protection Organizations. For further information, see www.whistleblower.org.