# NUCLEAR WEAPONS FREE ZONES: TOWARD AN INTERNATIONAL FRAMEWORK

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"War, a contest of men, through these acts, is made a struggle of demons."

Albericio Gentili
*De Jure Belli Libri Tres*
(1612)

## INTRODUCTION

A pervasive theme in contemporary society is the need for the two "nuclear superpowers" to pursue disarmament agreements and other accords that will reduce the danger of nuclear conflagration. While the importance of such negotiations cannot be underestimated it is also essential that society strive to avoid nuclear proliferation and the dangers of nuclear confrontation among the other nations of the world.

While there are currently only five States which are certified members of the "nuclear club,"[1] the number of States that may possess such weapons at the present time, or may soon possess them, is ominous. Nations which may fall into this latter category include Israel;[2] India;[3] Argentina;[4] Brazil;[5] Iraq;[6] Pakistan;[7] and South Africa.[8] One recent study estimated that as many as twenty nations

1. These five States include the United States, the Soviet Union, France, China, and England.

2. "There is broad consensus among experts in the field that Israel possesses the capability to deploy 10-20 nuclear weapons." L. SPECTOR, NUCLEAR PROLIFERATION TODAY 142 (1984); *see also* Glenn, *Nuclear Proliferation—Law and Policy*, 76 AM. SOC'Y INT'L L. PROC. 78 (1982).

3. One study projects that within several years India may have the capability to produce 6-20 nuclear weapons annually. SPECTOR, *supra* note 2, at 55-56; *see also*, Scheinman, *An Evaluation of Non-Proliferation Policies: Retrospect and Prospect*, 4 N.Y.L. SCH. J. INT'L & COMP. L. 362 (1983); *Fast Breeder Reactor Starts*, N.Y. TIMES, Oct. 21, 1985, at 23, col. 6.

4. Nye, *NPT: The Logic of Inequality*, 59 FOREIGN POL'Y 126 (1985); *see also* Poneman, *Nuclear Proliferation Prospects for Argentina*, 27 ORBIS 876 (1984).

5. Myers, *Brazil: Reluctant Pursuit of the Nuclear Option*, 27 ORBIS 906 (1984); *see also* Nye, *supra* note 4, at 126.

6. Israel's destruction of Iraq's Osirak reactor in 1981 was a substantial blow to Iraq's suspected effort to obtain a nuclear weapons capability. However, there is good evidence in the last few years that Iraq's nuclear development is on track again. For example, Iraq has recently obtained 12.5 kilograms of highly enriched uranium from France. SPECTOR, *supra* note 2, at 188.

7. Pakistan probably has the ability to produce three nuclear warheads per year with its indigenously developed uranium enrichment process. This capability is likely to expand substantially in the next five years. Kumar, *Nuclear Nexus Between Peking and Islamabad: An Overview of Some Significant Developments*, 21 ISSUES AND STUDIES 143 (1985); *see also* Kapur, *Nuclear Proliferation: A False Threat?*, 10 INT'L PERSP. 9 (1984).

8. "With its own uranium enrichment plants, South Africa may now have the capability

 

may have a nuclear weapons capability by 1995.[9]

The threat of nuclear escalation seems most likely to arise in a conflict between inveterate regional enemies. Unfortunately, these nations have threatened to substantially raise the stakes by developing nuclear weapons and each threat has been followed by a counter-threat. This pattern is most obvious in the conflicts between Brazil and Argentina,[10] Israel and Iraq,[11] and India and Pakistan.[12] This nuclear thrust and parry may have a profoundly destabilizing impact because a nation developing a nuclear capability before an opponent may find it "judicious" to launch a first strike before the other nation establishes symmetry.[13]

A regional conflict involving nuclear weapons could also ensnare superpower-allies of the nations involved, triggering a nuclear exchange of holocaustic proportions.[14] Even a "limited" regional exchange would be devastating:

> A handful of nuclear weapons could destroy any country in the Middle East, as a national entity, cause hundreds of thousands of casualties in the densely populated cities of India or Pakistan, or if used against the Persian oil fields, undermine the economies of the West.[15]

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to produce 15-25 devices, soon maybe 40, the same size as the U.S. arsenal in 1948." SPECTOR, *supra* note 2, at 304-05; *see also* Kapur, *supra* note 7, at 7-8.

9. Sakamoto, *Reversing Militarized Proliferation in the Asia-Pacific Region*, 2 NON-ALIGNED WORLD 400 (1984).

10. Myers, *supra* note 5, at 881.

11. *See* Note, *The Sun Sets on Tamuz I: The Israeli Raid on Iraq's Nuclear Reactor*, 13 CAL. W. INT'L L.J. 86, 97-100 (1983); Note, *Tensions Between International Law and Strategic Security: Implications of Israel's Preemptive Raid on Iraq's Nuclear Reactor*, 24 VA. J. INT'L L. 459 (1984) [hereinafter cited as *Tensions*].

12. SPECTOR, *supra* note 2, at 23. Future dangers include Nigeria's threat to develop nuclear weapons as protection against South Africa's nuclear program. Okolo, *Nuclearization of Nigeria*, 5 COMP. STRATEGY 133 (1985).

13. *See, e.g.*, De Mesquita & Riker, *An Assessment of the Merits of Selective Proliferation*, 26 J. CONFLICT RESOLUTION 301 (1982). Even if symmetry can be established, the hope of security through mutual deterrence may be chimerical. As Epstein observes:

> The emergence of an additional number of nuclear powers, who might not have a second strike-retaliatory capability but only an unstable first strike capability would not lead to a situation of wider mutual deterrence or greater stability . . . it would greatly multiply the risks of nuclear war by accident, miscalculation, desperation, failure of communications or by deliberate intent.

W. EPSTEIN, THE PREVENTION OF NUCLEAR WAR 110 (1984).

14. Spector gives the conflict between Israel and Egypt in 1973 as an example. "It is sobering, for example, to reflect on how the superpowers might have responded if Israel had used nuclear weapons against Soviet-backed forces in the 1973 Middle East War, a course Israel reportedly considered." SPECTOR, *supra* note 2, at 1; *see also* Bandman & Cordova, *The Soviet Nuclear Threats Towards the Close of the Yom Kippur War*, 5 JERUSALEM J. INT'L REL. 94 (1980).

15. SPECTOR, *supra* note 2, at 1.

Further, as the number of nations with nuclear capabilities increases, the opportunities for terrorists to steal nuclear materials, or actual weapons, will increase. The inadequate procedures for guarding nuclear installations in many of these nations makes this scenario even more credible.[16]

The concept of regional nuclear weapons free zones (NWFZ's), by which nations agree to refrain from deploying nuclear weapons, presents great potential for avoiding nuclear confrontation.[17] The idea of NWFZ's originated with the 1957 Rapacki Plan in which Poland (and subsequently Czechoslovakia) agreed to remain nuclear free if the two Germanies would also accede to the arrangement.[18] In recent years support of the concept of NWFZ's has been growing.[19] Yet as of May 1986, the nations in only two regions have entered into formal agreements to establish NWFZ's. In Latin America, the Treaty of Tlatelolco has entered into force in the re-

16. *See* Nye, *supra* note 4, at 127; *see also* Murphy, *Future Threats*, 7 TERRORISM 376-79 (1985).

17. Antonio Gonzales de Leon, the Mexican delegate to the U.N. Conference of the Committee on Disarmament in 1975 provides a good general definition of nuclear weapons free zones:

> A "nuclear-weapon-free zone" shall be deemed to be any zone, recognized as such by the United Nations General Assembly, which any group of States, in the free exercise of their sovereignty, has established by virtue of a treaty; or agreement whereby:
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> a) The status of total absence of nuclear weapons to which the zone shall be subject is defined; and
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> b) An international system of verification and control is established to guarantee compliance with the obligations deriving from that status.

Comprehensive Study of the Question of Nuclear Weapons Free Zones in All Its Aspects: Special Report of the Conference of the Committee on Disarmament, U.N. Doc. A/10027/Add. 1 (Sales No. E.76.1.7) (1976).

18. Sakamoto, *supra* note 9, at 411. The Rapacki Plan was probably doomed from the outset as Epstein concluded:

> The plan was unacceptable to the Western powers, who regarded it as an attempt to weaken their military and political position in Central Europe, since it contained no limitations on conventional arms and forces would, in effect, amount to a form of recognition of East Germany, which the Western powers were not willing to give at that time, as they were pressing for a unified Germany.

EPSTEIN, *supra* note 13, at 209.

19. This support has been expressed primarily in U.N. General Assembly resolutions. While U.N. resolutions are not legally binding they may establish a foundation for unilateral declarations or treaty agreements. Additionally, these resolutions can contribute to the emergence of a consensus that may evolve into a principle of customary international law. H. MOSLER, INTERNATIONAL SOCIETY AS A LEGAL COMMUNITY 90 (1980). For a discussion of the International Court of Justice's use of General Assembly resolutions in its decisions see, T. FRANCK & M. MANANSANGU, THE NEW INTERNATIONAL ORDER: INTERNATIONAL LAW IN THE MAKING? 11 (1982).

Substantial support for nuclear free zones has been expressed in the following U.N. General Assembly resolutions: G.A. Res. 34/76A, 34 U.N. GAOR Supp (No 46.), U.N. Doc. A/34/46 (1979) (calling for a nuclear free zone in Africa); G.A. Res. 34/78, 34 U.N. GAOR Supp (No 46.), U.N. Doc. A/34/46 (1979) (calling for a nuclear free zone in Southern Asia);

gion.[20] In the South Pacific, eight of the thirteen nations of the South Pacific Forum have signed a NWFZ agreement. However, the treaty will not enter into force until at least eight nations have actually ratified the agreement. Additionally, five nations in the region have still not assented to the NWFZ plan.[21]

It could be argued that the vision of NWFZ's has simply run into the formidable barrier of *realpolitik*. However, it is just as likely that most of the resistance to NWFZ's is a manifestation of uncertainty about how such zones would operate as legal regimes.[22] This Article seeks to address some of the difficult legal questions that may stand in the way of regional NWFZ's. Among the most imposing issues are:

1) Can a large majority of nations in a region declare their region to be "nuclear free" despite the opposition of one or more nations in that region?

2) Is there a principled foundation in international law to enforce the decision of the majority against regional dissenters?

3) Can a nation that has entered into a NWFZ agreement subsequently decide to renounce the agreement and develop its own nuclear weapons capability?

4) What international legal principles, if any, can be invoked to prevent a nation outside the NWFZ from either: a) introducing nuclear weapons into the region; or b) threatening to use nuclear weapons against nations in the NWFZ?

These issues, and the ancillary questions they raise, suggest the framework for this Article's analysis. The first section of the Article

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G.A. Res. 34/77, 34 U.N. GAOR Supp (No 46.), U.N. Doc. A/34/46 (1979) (supporting a nuclear free zone in the Middle East).

Furthermore, international treaty law prohibits the deployment or use of nuclear weapons in Antarctica (The Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71); in earth orbit, outer space or on celestial bodies, (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 [hereinafter cited as Outer Space Treaty]); and on the seabed (Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and Ocean Floor, Feb. 11, 1971, 23 U.S.T. 701, T.I.A.S. No. 7337, 995 U.N.T.S. 115 [hereinafter cited as Seabed Treaty]).

20. The Treaty for the Prohibition of Nuclear Weapons in Latin America, Feb. 14, 1967, 22 U.S.T. 754, T.I.A.S. No. 7137, 634 U.N.T.S. 281 [hereinafter cited as Treaty of Tlatelolco]. Notable nonsignatories to the Treaty of Tlatelolco include Argentina and Cuba.

21. *South Pacific Countries Sign an Antinuclear Pact*, N.Y. TIMES, Aug. 7, 1985, at A4, col.1; *see also* Comment, *The South Pacific Nuclear-Weapon-Free-Zone, the Law of the Sea, and the ANZUS Alliance: An Exploration of Conflicts, A Step Toward World Peace*, 16 CAL. W. INT'L L.J. 138 (1986).

22. Lodgaard, *Nuclear Disengagement in Europe: Problems of Nuclear Weapon Free Zones*, 14 BULL. PEACE PROPOSALS 209, 217 (1983).

will therefore be devoted to establishing a proposed framework for a NWFZ treaty. The second section presents two potential scenarios, one reflecting universal consensus in favor of a regional NWFZ, and the other reflecting less than a universal consensus. The third section of this Article will then be devoted to establishing a proposed framework in international law for a NWFZ treaty. Finally, in the fourth section, some additional policy options that may enhance the potential for viable NWFZ's will be outlined.

## I. OVERVIEW: SYSTEMIC REQUIREMENTS FOR A VIABLE NWFZ

At the outset it is important to engage in some prescriptive analysis by proposing a framework for NWFZ agreements. Holst provides an excellent starting point by outlining seven operational elements that should be included in a NWFZ agreement.[23]

1) Prohibition against the *production* or acquisition of nuclear weapons by the States in the NWFZ.

2) Prohibition against the *testing* of nuclear devices in the NWFZ or participation by the States involved in such testing elsewhere.

3) Prohibition against the *deployment* and stockpiling of nuclear weapons on the territories of the States in the NWFZ.

4) Prohibition against the *training* of troops in the use of nuclear weapons.

5) Prohibition against the *visit* and transit of military vessels and aircraft with nuclear weapons aboard.[24]

6) Prohibition against the *use* or *threat* to use nuclear weapons against any area within the NWFZ.

7) Prohibition against the *use* or *threat* to use nuclear weapons from areas within the NWFZ.[25]

In addition to these components, the author would also incorporate three other elements into a NWFZ agreement.

8) A special monitoring agreement.

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23. Holst, *A Nuclear Weapon-Free Zone in the Nordic Area: Conditions and Options-A Norwegian View*, 14 BULL. PEACE PROPOSALS 232 (1983). While Holst's proposal was in the context of a Nordic NWFZ, it is flexible enough to apply to any proposed regional agreement.

24. Several nations, including Argentina during the Falkland's crisis, have contended that if a ship or submarine has a nuclear propulsion system it cannot enter another nation's territorial waters without contravening an agreement not to "introduce" nuclear weapons into an area. Poneman, *supra* note 4, at 876. This position should not be incorporated into a NWFZ agreement because the purpose of any NWFZ treaty should be to prevent the potential use of *nuclear weapons*. Given that a ship or submarine propelled into an area by nuclear power does not pose that same threat, it should not be placed under the rubric of nuclear "weapons" that are to be excluded in a NWFZ treaty.

25. Holst, *supra* note 23, at 232.

9) Dispute resolution through mandatory International Court of Justice jurisdiction.

10) Standards governing renunciation of NWFZ treaties.

The governing body of a NWFZ should be imbued with sufficient legal personality to be able to enter into a special monitoring agreement with the International Atomic Energy Agency (IAEA). The agreement should include provisions for periodic and unannounced spot checks of a nation's nuclear facilities, civilian power plants, and any other facility that is either utilizing nuclear technology, or conducting research related to nuclear technology.[26] Additional means of monitoring should be mandated if deemed necessary and may include the establishment of an International Satellite Monitoring Agency under the auspices of the IAEA.[27] Any party to a NWFZ agreement that suspects that another NWFZ signatory is violating the agreement by surreptitiously developing a nuclear weapons capability should be able to request a spot inspection of the suspected nation's facilities by the IAEA. Such requests should be based on good faith and a reasonable suspicion of activities in contravention of the NWFZ agreement.

The parties to a NWFZ agreement should agree in advance to submit any dispute related to the agreement to the International

26. This proposal would require an expansion of the authority of IAEA inspectors. Currently, the agency must give advance notice of anywhere from 24 hours to one week before inspecting a nation's nuclear facilities. Additionally, a nation may restrict access to specific facilities, or portions of a facility, obviating the inspectors' ability to detect the diversion of nuclear materials for weapons research and development. Herron, *Nuclear Proliferation-Law and Policy*, 76 AM. SOC'Y INT'L L. PROC. 93-94 (1982); *see also* Edwards, *International Legal Aspects of Safeguards and the Non Proliferation of Nuclear Weapons*, 1984 INT'L & COMP. L.Q. 1.

Enhanced IAEA inspection authority would, of course, constitute a greater intrusion on national sovereignty. However, it is essential that all nations entering a NWFZ agreement be assured at the outset that no nation in the zone will be able to surreptitiously develop a nuclear capability. Insecurity could be fatal to any NWFZ agreement. The inadequacy of current IAEA procedures to detect potential diversion of nuclear materials was one of Israel's primary justifications for launching its preemptive strike on Iraq's Osirak reactor. *See Tensions*, *supra* note 11, at 461; *see also Israeli Attack on Iraqi Nuclear Facilities: Hearings Before the Subcommittees on International Security and Scientific Affairs on Europe and the Middle East and on International Economic Policy and Trade of the Committee on Foreign Affairs House of Representatives*, 97th Cong., 1st Sess. 16-21 (1981) (statement of Hon. Nicholas Veliotes, Assistant Secretary, Bureau of Near Eastern & South Asian Affairs, Dep't of State).

27. This proposal has been advocated by several analysts including Arbess of the Lawyer's Committee on Nuclear Policy. Arbess, *International Law Revisited: Meeting the Legal Challenge of Nuclear Weapons*, 16 BULL. PEACE PROPOSALS 113 (1985). Additionally, the government of France has officially proposed the establishment of an International Satellite Monitoring Agency. Smail, *Reciprocal Hostage Exchange: A Non Violent and Confidence Building Approach to Deterrence in the Nuclear Age*, 10 PEACE RESEARCH REVIEWS 62 (1984).

Court of Justice for resolution. NWFZ nations should also expressly agree to accept International Court of Justice decisions as binding in all such cases.

Any NWFZ agreement should contain language that ensures stability in the region by making unilateral renunciation feasible only in very extreme circumstances. The following language is suggested:

> This agreement is of a permanent nature and shall remain in force indefinitely. A nation that is a party to this agreement (inside or outside the region) that wishes to renounce this agreement must petition the International Court of Justice for approval. The contracting parties agree that such approval should only be given if a fundamental change in circumstances would justify the renunciation.[28]

## II. NWFZ SCENARIOS

### *A. Scenario One: Initial Universal Assent*

Under this scenario, all nations inside and outside of the region[29] accede to the NWFZ. Under these ideal, some would say utopian, circumstances only two primary issues are presented: 1) What form should such an agreement take? Should a series of unilateral declarations of a State's intent be relied on, or should a draft treaty open for ratification by all nations be formulated? 2) Under principles of international law governing treaties, can a party who has entered into a NWFZ agreement subsequently renounce the agreement and develop nuclear weapons, or threaten to use nuclear weapons, against a NWFZ nation?

1. *Form of NWFZ Agreement.* There are two basic methods that nations could employ to create a NWFZ: 1) all nations inside and outside of the proposed NWFZ region could unilaterally declare their intent to respect a regional NWFZ; or 2) a draft NWFZ treaty

28. NWFZ nations must be provided with a mechanism by which disputes can be resolved peacefully. Submission to the mandatory jurisdiction of the International Court of Justice, *without reservations*, may provide this security. For the consequences of allowing a nation to unilaterally define what issues are "justiciable" by the International Court of Justice see the arguments of the United States in Nicaragua v. United States, 1984 I.C.J. 392; *see also* D'Amato, *Icy Day at the ICJ*, 79 AM. J. INT'L L. 379 (1985). The legal issues related to treaty renunciation are discussed *infra* at notes 34-39 and accompanying text.

29. The scope of a "region" will necessarily be defined by the number of nations in any given geographical area of the world that perceive it to be in their common interest to establish a NWFZ. Of course, this may also encompass a few nations in geographical proximity that oppose the concept.

could be established for each region, with nations entering into the NWFZ agreement through ratification.

Although the International Court of Justice has held that unilateral declarations by nations are binding,[30] it would be more effective if NWFZ's take the form of multilateral treaty agreements for several reasons. First, unified language would minimize conflicts between NWFZ parties. There are intrinsic dangers in sanctioning the establishment of potentially over 150 unilateral declarations addressed to a regional NWFZ. The result would likely be a bewildering crazy quilt of interpretations of the NWFZ. While unified treaty language would, of course, also be subject to diverse interpretations, the International Court of Justice would be called on to interpret the ambiguities of only one document, a document originally ratified by all nations.[31]

Second, NWFZ's embodied in multilateral treaties would avoid the problems of agency. A recurring issue in the domestic law of many nations concerns who has the authority to act as an "agent" for a "principal" in any given contractual situation.[32] In the international context, the issue becomes: who within a government has the authority to speak for that nation on issues with international ramifications? In the context of NWFZ's the danger is that a nation that has "unilaterally supported" such a zone may later claim that the individuals making the declaration were without authority, thus rendering the purported assent *ultra vires*. A multilateral treaty would avoid this danger by requiring formal ratification, binding nations by international treaty law.[33]

Third, NWFZ's embodied in a multilateral treaty would be a symbolic affirmation of the desire to end nuclear proliferation. The symbolic value of the nations of the world agreeing on a common plan should not be underestimated. Such accords may have a unifying effect far greater than that of a series of discrete unilateral declarations.

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30. Nuclear Test Cases, (Austl. v. Fr., N.Z. v. Fr.), 1974 I.C.J. 253, 457.

31. Multilateral treaties are also recognized in the contemporary world as "the primary instruments of the development of international law." C.G. FENWICK, INTERNATIONAL LAW 96 (4th ed. 1965). Thus, an agreement in this form may be imbued with the most legitimacy at the outset.

32. *See, e.g.*, King v. Loessin, 572 S.W.2d 87 (Tex. Civ. App. 1978); Jones v. Indianapolis Power & Light Co., 158 Ind. App. 676, 304 N.E.2d 337 (1974); Keitz v. National Paving & Contracting Co., 214 Md. 479, 134 A.2d 296 (1957). The scope of the agent's authority is also frequently contested.

33. H. LAUTERPACHT, OPPENHEIM'S INTERNATIONAL LAW 28-30 (1955); *see also* Rao, *Soviet Approach to the Law of Treaties*, 14 INDIAN J. INT'L L. 435 (1974).

2. *Subsequent Renunciation Through a Balanced Framework.* A very important issue under either scenario is whether a NWFZ treaty signatory, either inside the region or outside, could subsequently withdraw from the agreement. The Treaty of Tlatelolco, establishing a NWFZ in Latin America, provides for renunciation of the treaty if:

> [I]n the opinion of the denouncing state there have arisen or may arise circumstances connected with the content of this treaty . . . which affect its supreme interests or the peace and security of one or more Contracting Parties.[34]

While the Treaty of Tlatelolco is a laudable first step in the development of viable NWFZ's, the Treaty's renunciation clause may vitiate any real security that the Treaty was intended to provide. First, the clause allows the renouncing party to decide the issue solely from the perspective of that nation's interests. Second, the criterion upon which the nation is supposed to base its decision is so vague as to be rendered nugatory. What events will affect a nation's "supreme interests?" What are these "supreme interests?" What kind of events affect a nations's "peace and security?" (Query if virtually any event would not fit under this rubric.) Finally, the renouncing State's decision is not subject to review and thus no matter what motives may be involved in a State's decision, it is still allowed to withdraw from the agreement.

Open-ended treaty obligations such as those in the Treaty of Tlatelolco are likely to undermine the establishment of a successful NWFZ. Because nations are provided with an easy "out" from their treaty obligations it is less likely that any other nation in the region can rely on the agreement to keep the area nuclear free.

Fortunately, there are well recognized principles of international law which can aid us in structuring a renunciation clause that will maximize the security of all NWFZ parties. The proposed renunciation clause differs in two ways from its counterpart in the Treaty of Tlatelolco. First, it requires a judicial determination that renunciation should be permitted. Second, it establishes a strong presumption against renunciation, requiring a "fundamental change in circumstances" to justify such a decision. Admittedly, the standard is very stringent. However, nations are not likely to support a NWFZ in earnest unless they are protected against sudden and arbitrary renunciations by other nations. Nations would most likely be persuaded to

34. Treaty of Tlatelolco, *supra* note 20, at art. 30.

accede to the rules proposed for renunciation because they conform to two generally recognized international legal principles.

One of the most widely recognized and respected mandates of international law is the principle of *pacta sunt servanda*, requiring that treaty obligations be performed in good faith.[35] The Vienna Convention on the Law of Treaties (Vienna Convention) expressly incorporates this mandate.[36] Furthermore, it was held in the *Sapphire* arbitral award that "[i]t is a fundamental principle of law, which is constantly being proclaimed by international courts, that contractual undertakings must be respected. The rule *pacta sunt servanda* is the basis of every contractual relationship."[37]

The rule of *pacta sunt servanda*, as incorporated into the proposed renunciation clause, would obligate a party to a NWFZ treaty "to refrain from acts which would defeat the object and purpose of [the] treaty."[38] *Pacta sunt servanda* in this context would serve the salutary purpose of ensuring against precipitous unilateral withdrawal from treaty obligations.

The "good faith" requirement of *pacta sunt servanda* would require a NWFZ party continue to meet its treaty obligations unless a fundamental change in circumstances occurred. This requirement is embodied in the principle of *rebus sic stantibus*.[39] The Vienna Convention provides a useful set of standards for determining when *rebus sic stantibus* may be invoked:

> A fundamental change of circumstances which has occurred with regard to those existing at the time of the conclusion of a treaty and which was not forseen by the parties may not be invoked as a ground for terminating or withdrawing from the treaty unless:
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> a) the existence of those circumstances constituted an essential basis of the consent of the parties to be bound by the treaty; and
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> b) the effect of the change is radically to transform the extent

35. Rao, *supra* note 33, at 400; *see generally* A. VAMVOUKOS, TERMINATION OF TREATIES IN INTERNATIONAL LAW: THE DOCTRINE OF REBUS SIC STANTIBUS AND DESUETUDE (1985).

36. Vienna Convention on the Law of Treaties, *opened for signature* May 23, 1969, art. 26, U.N. Doc. A/Conf. 39/27, *reprinted* in 8 INT'L LEGAL MATERIALS 289 [hereinafter cited as Vienna Convention].

37. Sapphire-N.I.O.C. Arbitration, 35 INT'L L. REV. 136, 181 (1963); *see also* Texaco Overseas Petroleum Co. v. Libya, 17 INT'L LEGAL MATERIALS 1 (1977) (the maxim *pacta sunt servanda* should be viewed as a fundamental principle of international law).

38. Vienna Convention, *supra* note 36, at art. 18.

39. VAMVOUKOS, *supra* note 35; *see also* J. SWEENEY, C. OLIVER, & N. LEECH, THE INTERNATIONAL LEGAL SYSTEM 1010-76 (2d ed. 1981); *Fisheries Jurisdiction Case* (U.K. v. Ice.) 1973 I.C.J. 18.

of obligations still to be performed under the treaty.[40]

The Vienna Convention standards, incorporating principles of *rebus sic stantibus*, may provide the assurances necessary to prevent mercurial withdrawals from a NWFZ.[41]

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40. Vienna Convention, *supra* note 36, at art. 62.

41. This conclusion can be confirmed by applying the Vienna Convention standards to three hypotheticals. *Hypothetical* #1: State *X* and State *Y* are regional members of a NWFZ agreement. Five months after both parties have ratified the NWFZ treaty State *X* becomes bellicose, threatening aggressive actions against *Y*. State *Y* seeks to abrogate its NWFZ commitments, declaring it essential either to develop nuclear weapons to protect itself, or at least essential to retain the right to develop such weapons in the future.

*Result*: Under the proposed renunciation clause and Article 62 of the Vienna Convention, the International Court of Justice would likely deny the request to withdraw. In the absence of any proof of duress it can be presumed that nation *Y* originally entered the treaty in exchange for a reciprocal promise by other nations in the region. The rationale for the agreement would have been that the *sui generis* destructive effects of nuclear weapons justified forbearing the right to develop nuclear weapons. The threat of aggression by *X*, with conventional weapons, would likely not be found to be a fundamental change in circumstances but, rather, only the kind of threat that a State must always anticipate. Additionally, the obligations imposed on State *Y* under the treaty are not affected by *X*'s threat. Of course a closer question would be presented if *X*'s threat involved a new kind of conventional weaponry with a much greater potential for destruction.

*Hypothetical #2*: *X* and *Y* are parties to a NWFZ treaty. State *Y* is within the region. State *X* is outside the region. As in Hypothetical #1, State *X* suddenly threatens aggression against State *Y*, utilizing conventional weaponry. State *Y* seeks to abrogate the NWFZ agreement for the reasons outlined in Hypothetical #1.

*Result*: Same as #1 above. The threat of aggression with conventional weapons was forseeable at the time the treaty was entered. The actual threat by State *X* is thus not fundamentally different from what could have been contemplated at the time the treaty was entered into and therefore the request for withdrawal would not be granted.

*Hypothetical #3*: States *X* and *Y* are parties to a NWFZ treaty. State *Y* is located within the NWFZ area. State *X*, for the purposes of this hypothetical, may be inside or outside of the region. State *X* suddenly announces its intention to develop a nuclear weapons capability, and threatens to use this capability against State *Y*. State *Y* seeks to abrogate its obligations under the NWFZ treaty.

*Result*: The International Court of Justice might allow *Y* to renounce a NWFZ treaty under this scenario. The locus of analysis in this situation cannot be the forseeability of the deployment of nuclear weapons by State *X* but rather the reasonableness of allowing *X* to develop a nuclear capability while concomitantly threatening *Y* with a nuclear attack. Such a threat might be held to obviate the *raison d'etre* of the agreement, constituting a "fundamental change in circumstances" that would justify renunciation. A much closer question would be presented if *X* were to develop a nuclear weapons capability but continued to pledge not to use this capability against State *Y* or any other NWFZ nation in the region. The International Court of Justice then would be called upon to determine the saliency of the increased threat that *Y*'s deployment would create.

The three hypotheticals outlined are not exhaustive, countless permutations could be, and most likely would be, generated by actual State practice. However, in a general sense the analysis here indicates that renunciation would contravene international law under most circumstances, ensuring the security for NWFZ nations that is absolutely essential.

### *B. Scenario Two: Regional or Extra-Regional Dissenters*

The more difficult issues are presented if: 1) a majority of the nations in a region ratify a NWFZ agreement, however, one or more nations in that region refuse to accept the agreement, either announcing their intention to develop a nuclear capability, or at least the intent to keep the option open; 2) all of the nations in a region ratify a NWFZ agreement, however, one or more nations outside of the region refuse to enter the agreement, announcing their intention to develop a nuclear weapons capability, or at least the intent to keep the option open; 3) a small combination of nations both inside and outside the region take the actions described above.[42]

Under the principle of *pacta tertiis nec nocent prosunt* a treaty is binding only on its signatories, neither rights nor duties arise for third party States that have not entered into the treaty.[43] Thus, if third party dissenters are to be bound by a NWFZ agreement an independent source of authority in international law must be found. This Article will now assay some of these possible sources. The objective will be to determine if any of them provide a principled basis under international law to bind nonsignatories.

## III. INTERNATIONAL LAW AND NUCLEAR WEAPONS

### *A.* Jus Cogens *and Nuclear Weapons*

1. *Characteristics and Application of* Jus Cogens. *Jus cogens*, or peremptory norms of international law, are those rules "accepted and recognized by the international community of States as a whole as [norms] from which no derogation is permitted and which can be modified only by a subsequent norm of general international law having the same character."[44]

Several commentators have suggested that the use, or possession, of nuclear weapons would violate principles of *jus cogens*, thus making the decision of any nation to deploy such armaments illegal under international law.[45] An application of the essential elements of *jus cogens* to nuclear weapons supports the position of these scholars.

42. This analysis eschews the probably impossible task of determining "how large" the majority must be to legally bind all nations in the region. From the standpoint of "real world" power politics it is unlikely that a NWFZ would ever be viable in a region where a large number of nations opposed the concept. Thus, this scenario assumes substantial regional support for a NWFZ, with only one, or at the most only a few, nations dissenting.

43. LAUTERPACHT, *supra* note 33, at 925-26; *see also* I. BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 619-20 (3d ed. 1979).

44. Vienna Convention, *supra* note 36, at art. 53.

45. *See* Note, *The Jus Cogens Dimensions of Nuclear Technology*, 13 CORNELL INT'L. L.J.

To establish an international legal principle as *jus cogens*, four requirements are commonly cited. The principle must: 1) have a foundation in morality; 2) be important to international peace and order; 3) be generally accepted in the international community; and 4) serve global interests rather than those of individual States.[46] Applying these criteria to nuclear weapons, a strong case can be made that such weapons are illegal because they contravene *jus cogens* norms.

The first criterion to establish an international legal principle as *jus cogens* is that it has a foundation in morality. *Jus cogens* rules are grounded in morality, reflecting elementary considerations of humanity, fundamental human rights, and the dignity and worth of the human person.[47] Nuclear weapons violate these fundamental principles of humanity because they are antithetical to any conception of human dignity. The UN General Assembly recognized the inhumanity of nuclear armaments in 1961 when it declared that the use of nuclear weapons would constitute a crime against mankind.[48] Nuclear weapons are intrinsically immoral because they deny the values upon which society has been built. A nuclear war, even between "smaller" nuclear States, would devastate the social, political and economic institutions of these nations. Thus, the first criterion for a *jus cogens* norm is met because prohibiting nuclear proliferation is based solidly on moral principles.

The second criterion is the norm's importance to international peace and order. Nuclear weapons are an inherently destabilizing force because the threatened development of a nuclear weapons capability by one nation in a region inexorably leads to countervailing efforts by regional opponents.[49] A nuclear exchange, even between nations with small nuclear capabilities, could destroy the economic, social, and political fabric of an entire region. Thus, nuclear nonproliferation meets the second criterion for a *jus cogens* norm because stopping the spread of nuclear weapons is important, perhaps even crucial, to international peace and world order.

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63 (1980); Whiteman, *Jus Cogens in International Law, With a Projected List*, 7 GA. J. INT'L. & COMP. L. 609 (1977).

46. Note, *supra* note 45, at 74-77.

47. Verdross, *Jus Dispositivum and Jus Cogens in International Law*, 60 AM. J. INT'L L. 55, 59 (1966); *see also* Lukashuk, *Morality and International Law*, 14 INDIAN J. INT'L L. 321 (1974).

48. Declaration on the Prohibition of the Use of Nuclear and Thermonuclear Weapons, G.A. Res. 1653, 16 U.N. GAOR Supp. (No. 17) at 5, U.N. Doc. A/4942 Add. 3 (1961).

49. *See supra* notes 1-13 and accompanying text.

The third criterion is general acceptance in the world community. Despite the constant threat of nuclear proliferation there has been growing international support for efforts to stop the spread of nuclear weapons. Nations have expressed this sentiment in many different forums. As of 1985, 121 nations had ratified the 1968 Non-Proliferation Treaty.[50] There is also evidence that most of the nations that have not yet ratified the Treaty adhere to the principles of the accord but have chosen not to sign it because they feel it is discriminatory, or a piecemeal approach to disarmament.[51] Support for non-proliferation has also been expressed through multilateral treaties, such as the Nuclear Test Ban Treaty;[52] the Outer Space Treaty;[53] the Seabed Treaty;[54] and the Antarctic Treaty.[55] Many nations have supported the numerous UN resolutions over the last twenty years calling for an end to nuclear proliferation.[56] Finally, it is significant that no nation has ever sold a nuclear weapon to another nation, despite the existence of many willing buyers over the years.[57] This consistent support for the principles of non-proliferation satisfies the third criterion for a *jus cogens* norm.

The final criterion for a principle of *jus cogens* requires that the norm serve the interests of the international community, rather than those of any individual nation. Non-proliferation meets this criterion because it is in the interests of all nations of the world to stop the spread of weapons that could exterminate millions. The quest to avert further proliferation may be the most global issue of our times.

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50. Treaty on the Non-Proliferation of Nuclear Weapons, July 1, 1968, 21 U.S.T. 483, T.I.A.S. No. 6839, 729 U.N.T.S. 161 [hereinafter cited as Non-Proliferation Treaty].

51. *See* Note, *supra* note 45, at 81; S. WILLIAMS, THE U.S., INDIA AND THE BOMB 46-47 (1969).

52. Treaty Banning Nuclear Weapons Tests in the Atmosphere, In Outer Space, and Under Water, Aug. 5, 1963, 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43 [hereinafter cited as Test Ban Treaty].

53. Outer Space Treaty, *supra* note 19. The signatories agreed not to "place in orbit around the Earth any objects carrying nuclear weapons . . . install such weapons on celestial bodies, or station such weapons in outer space in any other manner." *Id.* at art. IV.

54. Seabed Treaty, *supra* note 19.

55. Antarctic Treaty, *supra* note 19.

56. *See* G.A. Res. 1649, 16 U.N. GAOR Supp. (No. 17) at 4 (1961); G.A. Res. S-10/2, 33 U.N. GAOR Supp. (No. 4), U.N. Doc. A/Res/S-10/2, July 13, 1978, *reprinted in* 17 INT'L LEGAL MATERIALS 1016 (1978).

57. Note, *supra* note 45, at 83. It has been reported that Egypt unsuccessfully sought to purchase nuclear weapons from the Soviet Union in 1965. N.Y.TIMES, Feb. 4, 1966, at A1, col.1. Libya also attempted to purchase a nuclear device from the Peoples Republic of China but was rebuffed. H. HYKED, NEW OUTLOOK 39 (1974).

2. *Objections to* Jus Cogens *Principles and Applications.* Although nuclear weapons proliferation contravenes principles of *jus cogens*, if NWFZ signatories seek to use this legal construct against dissenters several objections could be asserted. First, not all legal scholars or State actors acknowedge the existence of *jus cogens* principles in the international legal framework.[58] Opponents have argued that there is no "source" from which to derive such a principle. Additionally, many scholars assert that adherence to the *jus cogens* doctrine would contravene the intrinsic right of parties to freely enter agreements to govern their conduct.[59] Finally, some writers and State actors acknowledge the viability of *jus cogens* in theory but maintain that no principles of international law have yet risen to that level.[60]

These arguments can be countered in several ways. First, in terms of finding a "source" from which *jus cogens* norms can be derived, it may be argued that *jus cogens* is a *meta*-legal concept, embodying principles essential to the operation of any legal system. The international system can be characterized as the transnational interaction of States in pursuit of political, social, and economic objectives. In order to ensure the *very existence* of this system certain peremptory norms must be recognized.[61]

Applying this standard, nuclear non-proliferation can be seen as a quintessential example of a *jus cogens* principle. Given the potentially devastating effects of nuclear conflict on political, social and economic institutions, it can be argued that non-proliferation is necessary to ensure the very life of the international system.

Opponents of *jus cogens* also argue that sovereign nations must be free to deviate from general international legal principles through specific agreements. Gaja argues, however, that treaty rights should be divided into those that only affect the rights of the parties to the treaty, and those with direct and exogenous effects on other nations.[62] In terms of the former, parties are given *carte blanche* to

58. *See, e.g.*, G. SCHWARZENBERGER, INTERNATIONAL LAW AND ORDER 29 (1971); Verdross, *supra* note 47, at 55-56.

59. See the arguments summarized in Alexidze, *Legal Nature of Jus Cogens In Contemporary International Law*, 1981 RECUEIL DES COURS 244-45.

60. J. SINCLAIR, VIENNA CONVENTION ON THE LAW OF TREATIES 139 (1973); *see also* C. ROUSSEAU, DROIT INTERNATIONAL PUBLIC 150-51 (1970).

61. Rao, *Jus Cogens and the Vienna Convention on the Law of Treaties*, 14 INDIAN J. INT'L L. 378 (1974); *see also* Riesenfeld, *Jus Dispositivum and Jus Cogens in International Law: In the Light of a Recent Decision of the German Supreme Constitutional Court*, 60 AM. J. INT'L L. 511, 513 (1966).

62. Gaja, *Jus Cogens Beyond the Vienna Convention*, 1981 RECUEIL DES COURS (III) 280.

formulate specific agreements, however, treaties falling into the latter category are subject to limitations because of their exogenous effects.

If the right of sovereign nations to control their own affairs is a paramount value,[63] it is obvious that a bilateral agreement that adversely affects the interests of a third party would contravene that third party's sovereign rights. Thus, it must be presumed that even the proponents of this *laissez faire* theory of treaties would have to admit that when this right conflicts with the rights of third party States, or perhaps also the overarching needs of the world community, the rights of the latter must control. Protecting innocent third party States, and the world community as a whole, from nuclear war constitutes one of those interests from which derogation should not be allowed.

A second problem with utilizing *jus cogens* in the context of nuclear weapons is that some analysts assert that nuclear weapons cannot be considered illegal *per se*. Proponents of this position argue that while certain uses, such as a first strike of nuclear weapons, might violate *jus cogens*, mere possession would not.[64] To sanction such a distinction could sound a death knell for the viability of NWFZ's. If nations were allowed to develop nuclear weapons in the future, based on their right to "possession," the danger of use, intentionally or accidentally, would remain.

There have been two primary arguments advanced in favor of the legality of the possession of nuclear weapons. First, it has been asserted that mere possession of nuclear weapons would not produce the horrors associated with use, and thus possession in itself is not a delict.[65] However, given the ever present potential that these weapons could be used, there should be a presumption against even possession.

The more persuasive argument advanced in favor of the legality of possession is that a nuclear first strike by one nation would justify a nuclear response, usually denominated as the right of proportional self defense.[66] This argument has usually been applied in the context of the nuclear superpowers, and therefore the validity of this reason-

63. I. BROWNLIE, *supra* note 43, at 210.

64. *See* Rubin, *Nuclear Weapons and International Law*, FLETCHER FORUM 50 (1984); Weston, *Nuclear Weapons Versus International Law: A Contextual Reassessment*, 28 MCGILL L. REV. 542, 587-88 (1983); SCHWARZENBERGER, *supra* note 58, at 207; N. SINGH, NUCLEAR WEAPONS AND INTERNATIONAL LAW 135 (1959).

65. *See, e.g.*, Rubin, *supra* note 64, at 49.

66. *See* Weston, *supra* note 64, at 577-78; Rostow, *Strategic Deterrence and Nuclear War*, 76 AM. SOC'Y INT'L L. PROC. 26 (1982).

ing when applied to many of the proposed NWFZ's is questionable. If the nations in a region do not develop a nuclear capability, the occasion to use such weapons in self defense against a regional opponent can, by definition, never arise. Employing such weapons in self defense against a conventional attack would violate the international legal principle of proportionality.[67]

It is also asserted that possession can be justified as a defense against the possible use by a current nuclear power. Several responses to this argument can be proffered. First, it is extremely unlikely that the United States, the Soviet Union or China would use nuclear weapons against a nation without a nuclear capability. It is not likely that one of the smaller nuclear powers, such as Britain or France, would exercise this option either.[68] It could be argued that the real danger exists in terms of the "latent" or "emerging" nuclear powers, who have not clearly established their own rules for the use of such weapons. If such nations ratify a NWFZ treaty that prohibits the use, or threatened use, of such weapons against States in the region the self defense rationale will be rendered nugatory.

### *B. Nuclear Weapons and Customary International Law*

1. *Standards for Finding a Principle of Customary International Law.* A principle of customary international law "is based upon the common consent of nations extending over a period of time of sufficient duration to cause it to become crystallized into a rule of conduct."[69] In seeking to determine what principles are recognized as international "rules of conduct" one must not only examine specific treaty commitments but also "pronouncements of foreign offices, statements by writers, and decisions of international tribunals and those of prize courts and other domestic courts purporting to be expressive of the law of nations."[70]

In perhaps the most comprehensive discussion of customary international law to date, the International Court of Justice in the *North Sea Continental Shelf Cases*[71] established two primary requirements. The first requirement is quantitative in nature. In order for a

67. Badr, *The Exculpatory Effect of Self Defense in State Responsibility*, 10 GA. J. INT'L & COMP. L. 27 (1980); *see also*, R. Falk, *Toward a Legal Regime for Nuclear Weapons*, NUCLEAR WEAPONS AND LAW (A. Miller & M. Feinrider eds. 1984).

68. In support of this point, witness Britain's self-restraint in the Falkland's war with Argentina, a war that many felt placed Britain's very credibility as a major power on the line.

69. 1 G. HACKWORTH, DIGEST OF INTERNATIONAL LAW 1 (1940).

70. *Id.*

71. 1969 I.C.J. 3.

principle to attain the status of a conventional rule of international law, "State practice, including that of States whose interests are specially affected, should have been both extensive and virtually uniform in the sense of the provision invoked."[72]

The Court has not precisely defined the number of States that must participate in the practice before a rule of customary law can be formed. However, in the context of the *North Sea Continental Shelf Case*, and other decisions, it can be ascertained that the practice should be accepted by a large majority of the nations of the world.[73]

In addition to the quantitative requirement, the Court in the *North Sea Continental Shelf Case* stressed the need to prove the subjective element of *opinio juris*:

> Not only must the acts concerned amount to a settled practice, but they must also be such, or be carried out in such a way as to be evidence of a belief that this practice is rendered obligatory by the existence of a rule of law requiring it. The States concerned must therefore feel that they are conforming to what amounts to a legal obligation.[74]

The *opinio juris* requirement serves "to distinguish legal obligations from obligations derived from considerations of morality, courtesy or comity."[75] The precise demonstration required to establish *opinio juris*, however, remains ambiguous. Singh, for example, argues that a nation can be bound by an evolving principle of custom-

72. *North Sea Continental Shelf Case* 1969 I.C.J. 3. *See also, Fisheries Jurisdiction Case* (U.K. v. Ice.) 1974 I.C.J. 91-92 (separate opinion of Judge de Castro).

73. Most legal scholars also agree that State practice need not be universal. Waldock, in analyzing Article 38 of the Statute of the International Court of Justice, which outlines the "sources" of international law, concluded that the article's reference to "general practice" means that a principle need not be universally accepted to constitute customary international law. Waldock, *General Course on Public International Law*, 1962 RECUEIL DES COURS (II) 44. Akehurst's analytical approach is slightly different, but concordant with this position. He argues that the number of States necessary to create a rule of customary law varies according to the amount of practice which conflicts with the rule. Akehurst, *Custom as a Source of International Law*, 47 BRIT. Y.B. INT'L L. 16 (1977). Akehurst's test ultimately requires proof of a substantial consensus on any principle before it can be said to constitute customary international law. The author would also accept the position that the prospective principle of customary international law should be recognized by a large cross section of States in both the socialist and capitalist spheres of influence. Additionally, support from Third World nations should be required because many do not consider themselves to be members of either of these ideological camps. *See* Alexandrowicz, *Empirical and Doctrinal Positivism in International Law*, 47 BRIT. Y.B. INT'L L. 286-89 (1977).

74. 1969 I.C.J. 73-74; *see also* the PCIJ's opinion in *The Lotus Case*, P.C.I.J., Ser. A. No. 10 (1927) (*opinio juris* can be found only if a State is *conscious* of a duty to follow an international principle).

75. Akehurst, *supra* note 73, at 34.

ary international law by acquiescence.[76] Akehurst believes that *opinio juris* can be derived not only from the belief by a State that a principle is obligatory under law, but also under extra-legal norms such as moral or social constructs.[77] This position is supported by many other commentators, particularly French scholars.[78] It is clear that, at the minimum, some kind of evidence of subjective commitment is required to fulfill the *opinio juris* requirement.

Evidence of a principle of customary international law can be derived from various sources, such as treaties, practices of international organs, state legislation and national judicial decisions.[79] This discussion will now focus on some of the evidence that may support the argument that nuclear proliferation violates customary international law.

2. *The Non-Proliferation Treaty as Customary International Law.* The Non-Proliferation Treaty may be construed as an embodiment of customary international law. Under the principle of *pacta tertiis nocent nec prosunt*, treaties only bind signatories, however, a treaty may ripen into a principle of customary international law in two ways. First, a treaty can serve as a declaration of customary international law. In such cases:

> [The Treaty] can be quoted as evidence of customary international law even against a state which is not a party to the treaty. Such a state is not bound by the treaty, but by customary international law, therefore if it can produce other evidence to show that the treaty misrepresents customary law, it can disregard the rule stated in the treaty.[80]

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76. "When a rule of customary international law results from the common practice of States, it would not be incorrect to state that consent is latent in the mutual tolerations that allow the practice to grow at all." SINGH, *supra* note 64, at 48-49; *see also* H. LAUTERPACHT, THE DEVELOPMENT OF INTERNATIONAL LAW BY THE INTERNATIONAL COURT 380 (1958); L. GUGGENHEIM, TRAIT DE DROIT INTERNATIONAL PUBLIC 103-05 (2d ed. 1967). D'Amato's theory of "articulation" is also consistent with this position.

> The articulation of a rule of international law . . ., in advance of or concurrently with a positive act (or omission) of a State, gives the State notice that its action or decision will have legal implications. In other words, given such notice, statesmen will be able freely to decide whether or not to pursue various policies, knowing that their acts may create or modify international law.

L. D'AMATO, THE CONCEPT OF CUSTOM IN INTERNATIONAL LAW 75 (1971); *contra* Suganami, *A.V. Love on General Rules of International Law*, 10 REV. INT'L STUD. 177 (1984).

77. Akehurst, *supra* note 73, at 34.

78. *See generally* Le Fur, *Règles Générales Du Droit De La Paix*, 54 RECUEIL DES COURS (IV) 5 (1935).

79. BROWNLIE, *supra* note 43, at 5.

80. M. AKEHURST, A MODERN INTRODUCTION TO INTERNATIONAL LAW 26-27 (1982).

Second, a treaty may have a generative effect by crystallizing an evolving principle of customary international law:

> [Another] possibility is that the provision in the treaty constitutes the first textual statement of a custom which had not previously reached full maturity, but was what the Court has called an emerging rule, a rule *in statu nascendi*. As a consequence of being embodied in a treaty adopted at a Conference of the character already indicated that rule *in statu nascendi* . . . crystallizes as a rule of law.[81]

Under these standards the Non-Proliferation Treaty may be a new source of customary international law, binding both signatories and third parties. In terms of the requirement of extensive State practice, 121 States have ratified the Non-Proliferation Treaty, with broad representation of Western States, Communist States, and Third World nations.[82] The *opinio juris* requirement is substantially met by the language of the Non-Proliferation Treaty itself which states "that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war."[83] This conscious affirmation of the threat posed by nuclear proliferation goes beyond merely promising not to develop nuclear weapons. The signatories clearly declared that such weapons cannot be developed, thus meeting the requirements of *opinio juris*.

The language of the Non-Proliferation Treaty serves as a declaration of a principle of customary international law. The Non-Proliferation Treaty's Preamble "urg(es) the cooperation of all States in the attainment of this objective."[84] This point is pressed further by equating Non-Proliferation Treaty mandates with those found in the Charter of the UN relating to the use of force, mandates that are binding on all UN members, and perhaps even non-members.[85]

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Perhaps the best examples to demonstrate this principle are the Hague Conventions concerning rules of land warfare, and certain provisions of the Vienna Convention on the Law of Treaties.

81. Archega, *International Law in the Past Third of a Century*, 1978 RECUEIL DES COURS (I) 14-15, *see also Namibia Advisory Opinion*, 1972 I.C.J. 67.

82. Nye, *supra* note 4, at 125.

83. Non-Proliferation Treaty, *supra* note 50, at Preamble.

84. *Id.*

85. The United States, along with many other nations, has also argued that the U.N. Charter provisions bearing on the use of force are themselves reflective of preexisting customary international law. *The Legality of U.S. Participation in the Defense of Viet Nam*, 54 DEP'T ST. BULL. 474, *reprinted in* 60 AM. J. INT'L L. 565, 569 (1966). In terms of those few States that are not members of the U.N., Article 2(6) of the Charter provides that "The Organization shall ensure that states which are not Members of the United Nations act in accordance with these Principles so far as may be necessary for the maintenance of international peace and security."

The Treaty can also be conceived of as a culmination of international agreements intended to prevent proliferation in the last twenty years, including the Test Ban Treaty, the Outer Space Treaty, the Sea Bed Treaty, and the Antarctic Treaty. This view of the Non-Proliferation Treaty as the embodiment of a new principle of customary international law is corroborated by the fact that, "no new country has declared itself to be a nuclear power for more than 20 years and none is known to have detonated a first nuclear test for over a decade."[86]

3. *Customary Laws of War.* A second source of customary international law which may prohibit nuclear proliferation is embodied in the international laws of war. These laws have historically occupied an important place in international law because they are recognized by virtually all nations as essential to the preservation of certain human values.[87] The governments of the world recently reaffirmed the binding nature of these laws by a unanimous vote.[88]

An analysis of several of the principles of the laws of war, as embodied in multilateral treaties and conventions, serves to confirm the illegality of using nuclear weapons. It should be noted that, while most of these sources do not specifically address the issue of nuclear weapons, the "Martens Clause" of the Hague Convention (IV) of 1907 provides for interstitial incorporation of new technologies.[89] The binding nature of the Martens Clause was reaffirmed in both the Geneva Convention of 1949, and Protocol I of the Geneva Convention in 1977.[90]

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86. Spector, *Silent Spread*, 58 FOREIGN POL'Y 53 (1985).

87. Falk, Meyrowitz & Sanderson, *Nuclear Weapons and International Law*, 20 INDIAN J. INT'L L. 559 (1981).

88. Protocol of Diplomatic Conference on Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflict, U.N. Doc.A/32/144, Aug. 15, 1977, *reprinted in* 16 INT'L LEGAL MATERIALS (1977).

89. Until a more suitable code of the laws of war can be drawn up, the high contracting parties deem it expedient to declare that in cases not covered by the rules adopted by them, the inhabitants and the belligerents remain under the protection and governance of the general principles of the laws of nations derived from usages established among civilized peoples, from the laws of humanity, and from the dictates of the public conscience.

Law and Customs of War on Land (Hague, IV) Oct. 18, 1907, 36 Stat. 2277, T.S. No. 539, 1 Bevans 631. For analysis of the significance of the Martens Clause, *see* FALK, MEYROWITZ & SANDERSON, NUCLEAR WEAPONS AND INTERNATIONAL LAW, (Princeton World Order Studies Program, Occasional Paper No. 10, 1980).

90. Roling, *International Law, Nuclear Weapons Arms Control and Disarmanent* in Miller & Feinrider, *supra* note 67, at 184; *see also* the judgment of the U.S. Nuremberg War Crimes Tribunal in the Krupp Case, July 31, 1948, IX TRIALS OF WAR CRIMINALS BEFORE THE NUREMBERG MILITARY TRIBUNALS 1343 (1950):

*a. Declaration of St. Petersburg and Hague Convention (IV).* Military officers at an 1868 conference formulated rules of warfare that are still recognized today. The Declaration of St. Petersburg[91] established the principle that war must have limits and weapons that cause excessive pain and suffering should be forbidden.[92] The provisions of the declaration were important enough to be incorporated into the Hague Convention (IV) of 1907 which provides that "the right of belligerents to adopt means of injuring the enemy is not unlimited,"[93] and goes on to prohibit the use of "arms, projectiles or material calculated to cause unnecessary suffering."[94]

Traditional laws of war, perhaps dating back to the 10th Century Peace of God Proclamation mandate that "victory" in war is to be obtained only by the defeat or surrender of the enemy's armed forces.[95] As a concomitant obligation, civilians are never to be made an object of war.[96] Thus, a weapon that is not, or cannot be, limited to weakening the military forces of the opponent would contravene both the Declaration of St. Petersburg and the Hague Convention (IV).

Nuclear weapons are antithetical to these principles. Intrinsically, nuclear weapons are incapable of discriminating between combatants and civilians. One report concluded that if a force of 80,000 combatants were attacked with nuclear weapons over 180,000 people would be killed from immediate effects and fallout. The report also

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The Martens Clause is much more than a pious declaration. It is a general clause, making the usages established among civilized nations, the laws of humanity, and the dictates of the public conscience into the legal yardstick to be applied if and when the specific provisions of the (Hague) Convention IV and the Regulations attached to it do not cover specific cases occuring (sic) in warfare, or concomitant to warfare.

*Id.*

91. Declaration of St. Petersburg, Nov. 29-Dec. 11, 1868, *reprinted in* 1 AM. J. INT'L L. 95 (Supp., 1907).

92. The Preamble provides:

Considering that the progress of civilization should have the effect of alleviating as much as possible the calamities of war: That the only legitimate object which States should endeavor to accomplish during war is to weaken the military forces of the enemy;

That for this purpose it is sufficient to disable the greatest number of men;

That this object would be exceeded by the employment of arms which uselessly aggravate the sufferings of disabled men, or render their death inevitable;

That the employment of such arms would therefore be contrary to the laws of humanity.

*Id.*

93. Hague Convention, *supra* note 89, at art. 22. The Declaration was incorporated in the Regulations annexed to the Convention.

94. *Id.* at art. 23(e).

95. L. FLYNN, MY COUNTRY RIGHT OR WRONG? 41-42 (1985).

96. SCHWARZENBERGER, *supra* note 58; *see also* E. CASTERN, THE PRESENT LAW OF WAR AND NEUTRALITY 200 (1954).

speculated that the civilian death toll could be far worse in developing nations where suboptimally constructed buildings and inadequate supplies of medical personnel would substantially increase the number of casualties.[97] Even worse, national decisionmakers might choose a countervalue targeting strategy, intentionally striking at civilian population centers and massively increasing the civilian carnage.[98]

Some may argue that "tactical" nuclear weapons could still be legal under the Declaration of St. Petersburg and the Hague Convention (IV) because they limit the amount of devastation. Even assuming such mutual restraint between belligerants, tactical nuclear weapons can only be considered "limited" when compared to strategic nuclear forces.[99] Thus, even the use of tactical nuclear weapons would violate the principles of the Declaration of St. Petersburg and the Hague Convention (IV) by inevitably producing unnecessary suffering and devastation among combatants and civilians.[100]

The Hague Convention (IV) prohibits nations from employing "poison or poisoned weapons" in war.[101] Singh makes an excellent case for the proposition that the forces unleashed by a nuclear weapon would be "poisonous:"

> Initial or immediate nuclear radiation consists of gamma rays, neutrons, beta particles and a small proportion of alpha particles, that is to say, of penetrating particles (neutrons) and gamma rays which are directly harmful to human beings. Further, nuclear radiation, or ionizing radiation, disrupts the complex combinations of these elements (the atoms in the body) and thus changes the proteins, enzymes and other substances that make up our cells and bodies. As a result, the cells are injured or killed and bodily functions can be affected; if enough cells are damaged or killed, the

97. Report of the Secretary General of the United Nations, NUCLEAR WEAPONS 72 (1980); *see also* Arkin, von Hippel & Levi, *The Consequences of Limited Nuclear War in East and West Germany*, 11 AMBIO 163-73 (1982).

98. Weston, *supra* note 64, at 687.

99. For example, the M110 self propelled howitzer can be used to fire "nuclear artillery." However, the term "artillery" is deceptive. These nuclear shells are in the twelve kiloton range, approaching the devastation of the bombs dropped on Hiroshima and Nagasaki in World War II. Lauterpacht, *The Problem of the Revision of the Law of War*, 29 BRIT. Y.B. INT'L L. 369 (1952).

100. I T. COCHRAN, W. ARKIN & M. HOENIG, NUCLEAR WEAPONS DATABOOK 306-07 (1984).

101. Hague Convention, *supra* note 89, at art. 23(a). Black's Law Dictionary defines the term poison as "any substance having an inherent deleterious property which renders it when taken into the system capable of destroying life, a substance which on being applied to the human body internally or externally is capable of destroying the action of the vital functions . . . ." BLACK'S LAW DICTIONARY 1041 (5th ed. 1979).

person becomes seriously ill or dies.[102]

Thus, the radioactive toxins released by nuclear weapons would necessarily violate prohibitions against warfare by poisoning.

The Geneva Gas Protocol of 1925 adds the prohibition of "asphyxiating, poisonous or other gases, and of all analogous liquids, materials, or devices" in warfare.[103] Under two different interpretations of the Protocol the use of nuclear weapons would contravene its mandates. First, while radioactive fallout consists of particulates, and not gases, Singh points out that fissionable products could fall within the meaning of "gas" just as mustard gas, clearly within the strictures of the Protocol, begins as a liquid but is converted into gas.[104]

Second, the Protocol prohibits not only the use of dangerous gases but also all analogous liquids, materials or devices.[105] The inclusion of this broad language in the Protocol indicates that the drafters contemplated technologies that might be developed in the future that would produce commensurate physical effects. Thus, the characteristics of the weapon determine whether it is proscribed by the Protocol.[106] Under this analysis, nuclear weapons are also illegal. As demonstrated in the preceding section, the use of nuclear weapons would produce symptoms and physical manifestations indistinguishable from the effects of poison. Thus, under the Geneva Protocol nuclear weapons would be "analogous" to other poisonous weapons.

*b. Geneva Conventions of 1949 and 1977 Protocols.* The four Geneva Conventions of 1949[107] enumerate various categories of people and institutions that are to be protected or cared for during

102. SINGH, *supra* note 64, at 26.

103. Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, June 17, 1925, 26 U.S.T. 571, T.I.A.S. 8061, 94 L.N.T.S. 65 [hereinafter cited as Protocol]; *see also* Convention on the Prohibition, the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, Apr. 10, 1972, 26 U.S.T. 585, T.I.A.S. 8062, 1015 U.N.T.S. 163.

104. SINGH, *supra* note 64, at 162-64.

105. Protocol, *supra* note 103.

106. Falk, Meyrowritz & Sanderson, *supra* note 87, at 563. This technique is often used in treaties as a mechanism to control analogous weapons that might be developed in the future.

107. Geneva Convention (No. I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, Aug. 12, 1949, 6 U.S.T. 3114, T.I.A.S. 3362, 75 U.N.T.S. 31; Geneva Convention (No. II) for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of the Armed Forces at Sea, Aug. 12, 1949, 6 U.S.T. 3217, T.I.A.S. 3363, 75 U.N.T.S. 85; Geneva Convention (No. III) Relative to the Treatment of Prisoners of War, Aug. 12, 1949, 6 U.S.T. 3217, T.I.A.S. 3364, 75 U.N.T.S. 135; Geneva Convention (No. IV) Relative to the Protection of Civilian Persons in Time of War, Aug. 12, 1949, 6 U.S.T. 3516, T.I.A.S. 3365, 75 U.N.T.S. 287.

war.[108] The 1977 Protocols (I & II) to the Geneva Convention[109] amplify these mandates by providing more specific protections for combatants and medical units.[110] The Protocols also provide for the protection of civilian populations by prohibiting "indiscriminate attacks" which include:

> 4. . . . (b) those which employ a method or means of combat which cannot be directed at a specific military objective.
> (c) those which employ a method or means of combat the effects of which cannot be limited as required by the Protocol.
> 5. . . . (b) an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.[111]

The Protocols also prohibit attacks on objects deemed "indispensable to the survival" of the civilian population, such as foodstuffs, agricultural lands used to produce foodstuffs, crops, livestock and drinking water installations.[112]

A nuclear exchange between medium sized nations would most likely result in the immediate deaths of hundreds of thousands. Of those who survived hundreds of thousands or millions would be seriously ill. Acute doses from immediate radioactive fallout and intermediate-timescale fallout, along with internal doses from food and drink, would threaten a massive "second wave" of deaths from radiation sickness.[113] Even assuming that adequate medical personnel would exist to cope with a disaster of these proportions, it is likely that fallout would prevent them from helping those most in need of such help.[114] Thus, nuclear weapons violate the mandate that medi-

108. The Convention (I) provides for protection of medical personnel such as doctors, nurses and the Red Cross who seek to care for the sick and wounded on the battlefield. The Convention (II) provides similar protections for medical personnel at sea. The Convention (III) protects prisoners of wars, medical personnel who attend to their injuries and chaplains who seek to comfort them. The Convention (IV) prohibits the terrorizing or coercing of civilians in the hands of an occupying force. *See* Falk, Meyrowitz & Sanderson, *supra* note 87, at 570.

109. Diplomatic Conference on Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflict: Protocols I & II to the Geneva Convention, June 8, 1977, *reprinted in* 16 INT'L LEGAL MATERIALS 1391 (1977).

110. *Id.* at arts. 10-34.

111. *Id.* at art. 51.

112. *Id.* at art. 54.

113. Sagan, *Nuclear War and Climatic Catastrophe: Some Policy Implications*, 62 FOREIGN AFF. 271 (1984); *see also* Feld, *Physical Effects of Nuclear War*, 4 N.Y.L. SCH. J. INT'L & COMP. L. 401 (1983).

114. Fried, *International Law Prohibits the First Use of Nuclear Weapons*, 16 REVUE BELGE DE DROIT I 40 (1981); *see also* Castren, *The Illegality of Nuclear Weapons*, 1971 U.

cal personnel be protected while they attend to the needs of the injured by creating an environment in which they would always be in peril. It should also be noted that the Geneva Convention (IV) requires that civilian hospitals be protected from attack during war.[115] Because nuclear weapons would cause indiscriminate destruction this mandate also could never be met.

Given the hazards of radiation, the use of nuclear weapons in warfare would make immediate occupation of the losing nation, assuming that a "victor" emerged, impossible. Thus, under most scenarios there would not be "prisoners of war" in this devasted world. Assuming, however, that a nation's forces could occupy the defeated nation, it is obvious that they could not comply with the Geneva mandate that prisoners of war be protected from further harm. "[A]s a result of the devastation and contamination . . . there would be few, if any, locations sufficiently safe for a prisoner of war camp."[116]

The Geneva-mandated protection of civilian objects, such as foodstuffs, crops, and water supplies would also be rendered impossible if nuclear weapons were employed. In the short term the use of nuclear weapons would also devastate basic commodities, "people would die of starvation, dehydration, and exposure to the elements."[117] The tremendous fires attendant to a nuclear conflagration, and subsequent runoff of topsoil, could devastate croplands for years after the war.[118] This diminution in food supply, combined with the effects of radiation, would also substantially deplete the ranks of livestock animals.[119] Water supplies would also be contaminated by radiation and the destruction of water purification systems would further exacerbate the crisis.

*c. Genocide Convention of 1948.* The use of nuclear weapons would violate the principles of the Genocide Convention.[120] Genocide is termed "a crime under international law,"[121] and is defined as an intent to destroy a "national, ethnical, racial or religious group by

TOL. L. REV. 97 ("treatment of the sick and wounded . . . would become impossible to carry out").

115. Geneva Convention (No. IV), *supra* note 107, at art. 18.

116. Meyrowitz, Falk & Sanderson, *supra* note 87, at 570.

117. Kerzner, *Medical Consequences of Nuclear War* in Miller & Feinrider, *supra* note 67, at 396.

118. Sagan, *supra* note 113, at 271.

119. *Id.*

120. Convention on the Prevention and Punishment of the Crime of Genocide, Dec. 9, 1948, 78 U.N.T.S. 277.

121. *Id.* at art. I.

a) killing members of the group; b) causing serious bodily or mental harm to members of the group; [or] c) deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part."[122]

It has been estimated, for example, that even a "limited" tactical nuclear war would result in "five to six million immediate civilian casualties."[123] An attack involving a single 100 kiloton nuclear warhead would kill all people and destroy structures in a fifteen square mile radius.[124] A nuclear exchange could result in the mass execution of hundreds of thousands, perhaps millions, of innocent human beings; a clearer act of genocide is hard to conceive.[125]

4. *U.N. Resolutions and Customary International Law.* General Assembly Resolution 1653 (XXVI) was adopted in 1961, declaring that "any state using nuclear and thermonuclear weapons is to be considered as violating the Charter of the United Nations, as acting contrary to the laws of humanity, and as committing a crime against mankind and civilization."[126] This resolution has been subsequently reaffirmed by even larger majorities in the General Assembly.[127]

UN resolutions are not an independent source of customary international law.[128] Article 10 of the UN Charter itself states that the General Assembly only issues "recommendations." However, UN resolutions can be seen as a supplementary means to establish the existence of customary principles, or to contribute to the generation of such principles. These resolutions, when supported by substantial majorities of States, constitute "evidence of the opinions of govern-

122. *Id.* at art. II.

123. Arbess, *supra* note 27, at 108.

124. *Id.*

125. It might be argued that in many scenarios the use of nuclear weapons would not constitute an *intent* to commit genocide, as required in Article II of the Convention, rather only a tragic, but unavoidable, result of the use of nuclear weapons. However, as Malone has argued, "[the] proof of the consequences that may be reasonably anticipated from a party's actions could be viewed as circumstantial evidence of a party's actual intent." Malone, *The Kahan Report, Ariel Sharon and the Sabra-Shatilla Massacres in Lebanon: Responsibility Under International Law for Massacres of Civilian Populations*, 1985 UTAH L. REV. 373, 431. Additionally, Article II(C) prohibits "deliberate" acts, a less stringent *mens rea* standard.

126. Declaration on the Prohibition of the Use of Nuclear and Thermonuclear Weapons, G.A. Res. 1653, 15 U.N. GAOR Supp. (No. 17), at 4, U.N. Doc. A/5100 (1961).

127. *See* Non-Use of Nuclear Weapons and Prevention of Nuclear War, G.A. Res. 33/71-g, 33 U.N. GAOR Supp. (No. 45), at 48, U.N. Doc. 2/33/45 (1978); *see also* G.A. Res. 35/152-0, 35 U.N. GAOR Supp. (No. 48), at 69, U.N. Doc. A/35/48 (1980).

128. *See Texaco Overseas Petroleum*, *supra* note 37, at 18. *See also* Johnson, *The Effects of Resolutions of the General Assembly of the United Nations*, 32 BRIT. Y.B. INT'L L. 97 (1955); *but see* Akehurst, *supra* note 73, at 6.

ments in the widest forum for the expression of such opinions. Even when they are framed as general principles, resolutions of this kind provide a basis for the progressive development of law and the speedy consolidation of customary rules."[129] UN resolutions are particularly powerful evidence of customary international law when they claim to be declaratory of existing international law.[130] UN Resolution 1653 can be said to be such a declaratory document because it states that nuclear weapons are contrary to the "laws of humanity," and the UN Charter.[131]

Overall then, the possession and/or use of nuclear weapons can be said to violate customary international law. This would provide the foundation in law for NWFZ signatories to enforce the agreement against dissenters.

## IV. ANCILLARY POLICY OPTIONS

Any effort to establish NWFZ's cannot operate in a political or social vacuum. In addition to the quest for NWFZ agreements, there are several other options that should be pursued. These alternatives would operate synergistically with NWFZ proposals, strengthening the potential for world peace.

### *A. Nuclear Weapon States Policy Options*

The escalation of nuclear weapons development by the United States and the Soviet Union adversely affects the prospects for stemming nuclear proliferation, and concomitantly, the prospect for NWFZ's in two ways. First, a disdain for arms control by the superpowers only accentuates the claim of many nations that the superpowers seek to maintain nuclear "hegemony."[132] Second, emphasis on "the nuclear card" in superpower strategies may encourage other nations to acquire this option.[133]

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129. BROWNLIE, *supra* note 43, at 14.

130. Akehurst, *supra* note 73, at 6.

131. Brownlie found Resolution 1653 to be an example of an important lawmaking resolution, BROWNLIE, *supra* note 43, at 14.

132. Keohane, *Hegemony and Nuclear Non-Proliferation*, 1981 YRBK. WLD. AFF. 10. The comments of former Indian Defense Minister Swaran Singh exemplify this position: "We can never agree to sign a non-proliferation treaty . . . which does not take note of vertical proliferation and which does not take us even a step further towards stopping the mad race of increasing a nuclear arsenal of the superpowers and those who belong to the nuclear club." S. SINGH, LOK SABHA DEBATES, 4th Series, Vol. XXXVII, (Mar. 11, 1970).

133. As Nye concluded, "[n]uclear doctrines and deployments that stress the military usefulness of weapons tend to make nuclear weapons look more attractive to others. If states that have deliberately eschewed nuclear weapons see them treated increasingly like conventional

Recognizing the continuing nature of this instability, it would be advantageous to extract a pledge from the present nuclear nations that they will never use nuclear weapons against nations not possessing such weapons.[134] Such a pledge would have the salutary effect of negating the one arguably viable rationale that a nation might claim for possessing nuclear weapons: self defense against a potential nuclear attack. As argued, the use of nuclear weapons against a non-nuclear State would violate international legal norms related to the proportionality of an attack.[135] A "no use" pledge would codify this important international legal principle.

### *B. Removing Incentives to Proliferate*

The rapidly escalating prices and eventual prospect of depletion of non-nuclear energy resources, such as oil, natural gas, and coal, have provided a substantial impetus to many nations to develop civilian nuclear power programs. As a result, it is estimated that by the end of the twentieth century more than half of all energy production will be in the form of electricity, a high percentage of this generated by nuclear power reactors.[136] Unfortunately, the development of nuclear energy brings with it a concomitant threat of weapons development because the technology used in nuclear power plants may be diverted for the production of weapons quickly and inexpensively.[137] The threat will always exist that even those nations which did not originally plan to develop nuclear weapons might be tempted one day in desperation to change their minds.

The threat of proliferation as an outgrowth of civilian programs poses an agonizing dilemma for supplier nations of nuclear technology. On one hand, the Non-Proliferation Treaty recognizes the "inalienable rights of all parties to the treaty to develop research, production and the use of nuclear energy for peaceful purposes with-

defense weapons, they may one day reconsider their decisions." Nye, *supra* note 4, at 128; *see also* R. FALK, MINIMUM WORLD ORDER 190 (1983).

134. Such a plan was proposed in 1979 as part of Protocol III to the Non-Proliferation Treaty, but was never acted upon. *See* STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE, POSTURES FOR NON-PROLIFERATION 139 (1979) [hereinafter cited as POSTURES FOR NON-PROLIFERATION].

135. *See* supra notes 67-68 and acompanying text.

136. Edwards, *International Legal Aspects of Safeguards and the Non Proliferation of Nuclear Weapons*, 33 INT'L & COMP. L. Q. 1 (1984).

137. Kincade and Bertram recently estimated that a nation with an enrichment or reprocessing facility might assemble a nuclear bomb from materials diverted from a nuclear power plant "in anywhere from a few hours to a few days." W. KINCADE & C. BERTRAM, NUCLEAR PROLIFERATION IN THE 1980'S 161 (1982); *see also* Taylor, NUCLEAR PROLIFERATION AND NEAR NUCLEAR COUNTRIES 117 (O. Marvah & A. Schultz eds. 1975).

out discrimination."[138] Indeed, the Treaty strongly encourages the nuclear technology "haves" to share peaceful technology with the "have nots."[139]

Unfortunately, providing sensitive nuclear technology to many nations poses the threat of materials diversion and weapons development. Several proposals have been presented to avoid this dilemma. The three approaches to slowing nuclear proliferation are technological denial, dissuasion and regulated transfer.[140] Technological denial would preclude transfer of facilities that require weapons-grade materials for their operation, and would also deny enrichment and reprocessing technologies. Dissuasion would provide non-nuclear States with alternatives to indigenous development of reprocessing and enrichment technologies, thereby reducing the desire of States to acquire these technologies. Regulated transfer would permit the transfer of nuclear technology, but only when accompanied by international safeguards and pledges not to divert nuclear materials for weapons developments.

It has been suggested that only the second alternative, dissuasion, is viable. The first alternative of technological denial is an obsolete policy option. Unlike the early years of nuclear reactor technology, when the United States had a virtual monopoly, willing suppliers have now become abundant.[141] Additionally, enrichment and reprocessing technology is already possessed by a large number of nations which have the capability to develop enriched "carmel" uranium and/or extract weapons-grade plutonium from spent fuels.[142]

The third alternative of regulated transfer also relies on a frail reed. IAEA safeguards for detecting diversion of nuclear materials and nuclear technology have proven inadequate. While the knotty questions of effectively monitoring and inspecting nuclear facilities arguably do not seriously denude State sovereignty, they remain un-

138. Non-Proliferation Treaty, *supra* note 83, at art. 4.

139. *Id.* This requirement has been construed as a reciprocal pledge for those nations who agree to renounce the development of nuclear weapons. *See* Grieg, *The Interpretation of Treaties and Article IV.2 of the Nuclear Non Proliferation Treaty*, 1980 AUST. YRBK. INT'L L. 78.

140. These three approaches are suggested by T. GREENWOOD, H. FEIVESON & T. TAYLOR, NUCLEAR PROLIFERATION 82-83 (1977).

141. Experience has shown that many of these nations are unreceptive to the idea of denying nuclear technology to nations that are willing to pay for it, or that are political allies. France is perhaps the best example of a nation that chafes at any restriction which they feel would deny them the "sovereign right" to transfer advanced nuclear technologies.

142. GREENWOOD, FEIVESON & TAYLOR, *supra* note 140, at 86; *see also Fast Breeder Reactor Starts*, N.Y. Times, Oct. 21, 1985 at 23 (India's 40 megawatt breader reactor).

answered.[143] Therefore, the strategy of dissuasion may be the only effective middle-ground solution between total denial of nuclear technology, and free transfer. The hope of dissuasion is embodied in providing desirable alternatives to indigenous development of nuclear technologies and processes.

Several analysts have proposed the establishment of Regional or International Fuel Cycle Centers.[144] These centers would provide a group of facilities and services, including reprocessing plants, enrichment services, fabrication plants for mixed oxides, and waste management facilities.[145] Joint ownership of such facilities by suppliers and recipients of peaceful nuclear technology might provide further economic and political benefits to the recipient nations, fostering cooperation and commitment to the plan.

The establishment of regional centers for the storage of plutonium is another meritorious proposal. Under this plan recovered plutonium would be stored at well-guarded facilities, perhaps jointly owned by suppliers and recipients. Plutonium would then be shipped in small quantities as needed, avoiding the risk of plutonium stockpiling that could be used for quick diversion to nuclear weapons.[146]

Each of these proposals could help meet the exigency of aiding nations that genuinely wish only to develop a peaceful nuclear technology in the most inexpensive and efficient manner possible. Concomitantly, it would prevent nations that wish to covertly develop nuclear weapons from using the inadequacy of regional or international alternatives as a pretext to develop indigenous technologies.

## CONCLUSION

The ultimate question that must be asked is whether it is possible to really stop the spread of nuclear weapons by finding them illegal and establishing NWFZ's to enforce this determination. One less than charitable colleague has suggested that this proposed framework is utopian, and that instead we should heed the words of Sophocles: "What you cannot enforce, do not command."[147]

However, public discussion and debate about the legal aspects of nuclear weapons, nuclear proliferation and NWFZ's can have an im-

143. *See* R. EHRLICH, WAGING NUCLEAR PEACE 339 (1985); Edwards, *supra* note 136, at 20.

144. ARMS CONTROL ASSOCIATION, NUCLEAR PROLIFERATION TREATY: PARADOXES AND PROBLEMS 14 (1975).

145. Edwards, *supra* note 136, at 19.

146. *Id.*

147. SOPHOCLES, OEDIPUS AT COLUNNUS.

pact on the policy choices of nations. If States believe that nuclear weapons are illegal, and that NWFZ's present a hope for world peace, cultural norms will gradually develop into legal norms against nuclear armaments. One analyst has provided a dramatic historical example of how such norm generation has influenced national policy:

> Over time, the Geneva Protocol has substantially changed attitudes, expectations and behaviour concerning chemical and biological weapons. By rendering such weapons politically illegitimate, the Geneva Protocol has minimized the number of States which explicitly rely upon them to achieve various military security and political prestige objectives.[148]

In a similar manner it is possible we may be able to convince national leaders, and the citizens of these nations, that nuclear weapons are repugnant to the international legal standards of the world community. While the process may be slow, it is possible to create norms that will eventually sound the death knell for nuclear weapons. As one scholar has argued:

> [T]he survival of states is first and foremost the precise function of international law: establishing a framework of community norms in which the legitimate rights of each state are protected. This framework should not step aside once a crisis occurs. International law should not be discarded at the very moment it is most needed . . . .[149]

148. POSTURES FOR NON-PROLIFERATION, *supra* note 134, at 47.

149. *Tensions*, *supra* note 11, at 490.