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Matthew Lippman

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# The Strategic Defense Initiative and the Militarization of Space: Scientific Responsibility and Citizen Resistance

Matthew Lippman\*

## I. Introduction

The moderating of international tensions between the superpowers, the slowing of the nuclear arms race and the promise of a peace dividend have all contributed to a lessened popular concern over issues of national defense.<sup>1</sup> The diversion of attention from war and peace has resulted in little scholarly attention being paid to the ominous potential growth in third-generation high-technology weapons.<sup>2</sup>

These automated weapons systems are being designed primarily to operate in outer space where, despite claims to the contrary, they will be used to enhance the United States' ability to launch a first strike nuclear attack.<sup>3</sup> The technological and strategic foundation of this revolution in weaponry is the Strategic Defense Initiative (SDI). SDI is central to neutralizing any retaliatory response to an American nuclear first strike; and the technology spawned by the SDI program is being adapted to offensive space weapons.<sup>4</sup>

Scientists have an obligation to avoid the type of tragic involvement they had in the development of the atomic and hydrogen bombs and to refuse to participate in the SDI program. Those who

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\* Associate Professor, University of Illinois at Chicago; LL.M., Harvard Law School; J.D., American University School of Law; Ph.D., Northwestern University.

This article is dedicated with abiding devotion to the memory of Lidia Janus. May she continue to inspire us to live with humanity and love.

This article develops many of the themes discussed in *The Right of Civil Resistance Under International Law and the Domestic Necessity Defense*, 8 DICK. J. INT'L L. 349 (1990).

1. See Deudney, *Unlocking Space, Foreign Spending Cuts*, N.Y. Times, Mar. 29, 1990, at A1, col. 1.

2. The atomic and hydrogen bombs comprise the first two generations. Weapons relying on contemporary, high-technology are third-generation weapons. See generally Klare, *The Conventional Weapons Fallacy*, 26 THE NATION, 417-53 (1983) (special issue on The New Arms Technology And What It Means).

3. See generally R. ALDRIDGE, *FIRST STRIKE! THE PENTAGON'S STRATEGY FOR NUCLEAR WAR* (1983). See also S. RITCHIE, *SPACE WAR* (1982).

4. See Deudney, *Unlocking Space*, FOREIGN POL'Y, Winter 1983-84, at 91. For 1990 Congress allocated \$3.9 billion to SDI research. In 1991, the appropriation was cut to \$2.9 billion. Barnes, *Brilliant Pebbles*, THE NEW REPUBLIC, Apr. 1, 1991, at 10. The success of the Patriot missile during the Gulf War is thought to have made deployment of SDI a virtual certainty. *Id.* at 11.

research, design, develop and test these third generation military weapons may incur international criminal liability. These scientists have an internationally recognized moral responsibility to devote their talents to peaceful concerns.<sup>5</sup> Citizens must act to halt this new threat to the common heritage of outer space and are privileged to undertake a citizen's arrest of scientists involved in the SDI program.

## II. The International Legal Regulation of Weapons Systems Based Upon New Technologies: The 1922 Washington Conference Debate on the Prohibition of Submarines

The challenge of controlling weapon systems which utilize new and innovative technology has confronted global society on numerous occasions. One conspicuous example was the unsuccessful British effort in 1922 to persuade the governmental representatives to the Washington Conference On The Limitation Of Armament to prohibit the military deployment of submarines.<sup>6</sup>

The Conference debated and passed an American-sponsored resolution which provided that the international law of naval warfare pertaining to the search, seizure and destruction of merchant vessels applied to submarines as well as to surface ships.<sup>7</sup> The resolution also provided that those who violated these rules would be subject to criminal punishment.<sup>8</sup>

This multilateral declaration was a direct refutation of the German claim during World War I that submarines were not bound by the customary rules of naval intercourse. The Germans contended that, if forced to surface, their submarines would be vulnerable to attack and the small size of the submarines prevented the evacuation of the crew of the merchant vessel.<sup>9</sup> Therefore, submarines were entitled to sink merchant ships without first surfacing, seizing and searching the ship for prohibited munitions and supplies and evacuating the crew.<sup>10</sup>

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5. An interesting example of scientific responsibility is the decision of two chemical firms to refuse to sell to the United States government an ingredient necessary for continued production of poison gas artillery shells. See *Suppliers Reject Poison Gas Program: U.S. May Act*, Wash. Post, Mar. 27, 1990, at A5, col. 1.

6. CONFERENCE ON THE LIMITATION OF ARMAMENT, Washington D.C., 478 (November 12, 1921-February 6, 1922) (remarks of Lord Lee, Great Britain) [hereinafter LIMITATION OF ARMAMENT].

7. *Id.* at 266.

8. *Id.* See generally Treaty Relating to the Use of Submarines and Noxious Gases in Warfare, Feb. 6, 1922, reprinted in 2 INTERNATIONAL LEGISLATION: A COLLECTION OF THE TEXTS OF MULTIPARTITE INTERNATIONAL INSTRUMENTS OF GENERAL INTEREST 794 (M.O. Hudson ed. 1922-24) [Did not enter into force].

9. LIMITATION OF ARMAMENT, *supra* note 6, at 644 (remarks of Mr. Balfour, Great Britain).

10. *Id.*

During the debate on the American resolution, Great Britain proposed that the maintenance, construction and deployment of submarines should be prohibited rather than merely regulated under the law of naval warfare.<sup>11</sup> The British proposal was premised on the view that the submarine was not, as claimed, primarily a defensive weapon to protect territorial waters, but was solely suited to offensive ocean warfare against poorly armed merchant vessels.<sup>12</sup> Such attacks, according to the British, inevitably led to "acts which are inconsistent with the laws of war and the dictates of humanity."<sup>13</sup> The British also noted that while submarines were relatively inexpensive to construct, anti-submarine warfare required a country to build a vast number of costly surface ships-escalating the military budgets of coastal and island nations.<sup>14</sup>

Lord Lee argued that the submarine was a "weapon of murder and piracy, involving the drowning of noncombatants. It had been used to sink passenger ships, cargo ships and even hospital ships."<sup>15</sup> Technically, the submarine was constructed so that "it could not be utilized to rescue even women and children from sinking ships."<sup>16</sup> He pointed out that during World War I, roughly twelve million tons of shipping, possessing a value of 1.1 billion dollars exclusive of its cargo had been sunk;<sup>17</sup> and that over 20,000 noncombatants had been drowned in violation of the laws of war.<sup>18</sup> He concluded that it was "only by means of abolition that menace to the mercantile marine of the world could be got rid of."<sup>19</sup>

Mr. Balfour of Great Britain conceded that the submarine served a useful intelligence function and often performed a valid role in naval warfare.<sup>20</sup> However, he questioned whether there was "any man who doubt[ed] that if they [were] once let loose to deal with merchantmen, their powers [would] not in the stress of war be abused in the future as they [had] been so grossly abused in the past?"<sup>21</sup> He concluded that if the "progress of invention"<sup>22</sup> in developing new methods of warfare cannot be halted, at least "we should do something to make it more humane."<sup>23</sup>

France opposed both the prohibition and any limitation on sub-

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11. *Id.* at 478 (remarks of Lord Lee, Great Britain).

12. *Id.* at 476-78.

13. *Id.* at 554 (remarks of Mr. Balfour, Great Britain).

14. *Id.* at 482 (remarks of Lord Lee, Great Britain).

15. *Id.* at 484.

16. *Id.*

17. *Id.* at 478-80.

18. *Id.* at 480.

19. *Id.*

20. *Id.* at 520.

21. *Id.*

22. *Id.* at 526.

23. *Id.*

marines.<sup>24</sup> It argued that criticism should be directed against the German Navy rather than against "the instrument that they made use of."<sup>25</sup> To a great extent, the destructive impact of the submarine in the past was due to the fact that anti-submarine warfare had not been perfected to its present level and these underwater weapons no longer posed the same threat to surface vessels.<sup>26</sup>

More importantly, the French emphasized that the submarine was a relatively inexpensive weapon which could be produced in large numbers by countries which could not afford large surface navies.<sup>27</sup> It served as a defensive weapon to protect coastal waters, to resist and to escape naval blockades and to maintain lines of communication during wartime.<sup>28</sup> The French suggested that, in the future, the submarine might prove effective against airships which were able to "spread gas over a considerable area of the sea, paralyzing large ships, possibly squadrons."<sup>29</sup>

Thus, France opposed any limitation on the "progress of submarine science."<sup>30</sup> It argued that by unilaterally pledging to abolish submarines, the conferees would place themselves at a disadvantage as compared to countries which determined to continue to deploy submarines.<sup>31</sup> Underlying the refusal to prohibit the deployment of submarines during warfare was a faith in and a willingness to rely upon technological developments to provide an impenetrable defense.<sup>32</sup> Admiral De Bon of France extolled the submarine as "an entirely new weapon of which no one of us can foresee the possible transformation and growth, perhaps in the near future."<sup>33</sup>

Even those who supported the submarine conceded that the submarine "can never be kept from bursting through the moral barrier which ought to limit its activities and that it will always yield to the temptation to make unrestricted use of all its power."<sup>34</sup> This dire prediction proved to be correct. During World War II Germany, once again, claimed that its submarines were exempt from the constraints of international law<sup>35</sup> and engaged in a pattern of unrestrained, illegal attack against allied and neutral merchant ship-

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24. *Id.* at 486 (remarks of Mr. Sarruat, France).

25. *Id.* at 508 (remarks of Admiral De Bon, France).

26. *Id.* at 514.

27. *Id.* at 512.

28. *Id.* at 272 (remarks of Senator Schanzer, Italy).

29. *Id.* at 516 (remarks of Admiral De Bon, France).

30. *Id.* at 518.

31. *Id.* at 538 (remarks of Mr. Sarruat, France).

32. *Id.* at 518 (remarks of Admiral De Bon, France).

33. *Id.*

34. *Id.* at 512.

35. 22 THE INTERNATIONAL MILITARY TRIBUNAL, TRIAL OF THE MAJOR WAR CRIMINALS BEFORE THE INTERNATIONAL MILITARY TRIBUNAL 559 (1948) [hereinafter TRIAL OF THE MAJOR WAR CRIMINALS].

ping.<sup>36</sup> These tactics, at times also were adopted by Allied submarines.<sup>37</sup>

Today, nuclear submarines, with their vulnerable communication systems, pose one of the most unstable and threatening components of the contemporary arms race. These billion dollar weapon systems, each capable of delivering the equivalent of 1,500 Hiroshima bombs,<sup>38</sup> have transformed the oceans into a primary flashpoint for nuclear war.<sup>39</sup> There is also the risk of a nuclear exchange or accident at sea and no effective defensive tactics have been developed to counteract these silent, submerged killing machines.<sup>40</sup>

In sum, the Washington Conference refused to prohibit the construction, maintenance and deployment of submarines based upon the fact that the vessel was a rather inexpensive, defensive weapons system. The conference concluded that the Germans had deployed submarines in an inhumane fashion against merchant ships, but determined that there was nothing inherently destabilizing or cruel about using submarines as tools of war. However, during World War II, the Nazi regime and, at times, the Allies, were unwilling to confine the submarine to defensive purposes and could not resist deploying the vessels in an illegal fashion against merchant traffic.

Today, the submarine's full offensive potential has been realized. It is nuclear powered and equipped and is now a primary component of the nuclear triad, capable of penetrating sufficiently close to its targets to fire missiles with deadly accuracy.

Having failed to demilitarize the ocean floor, the community of nations today faces the similar challenge of preventing the militarization of space. The allegedly defensive space weapons systems which presently are being proposed may, in the future, be transformed into central components of a potent offensive weapon system.

### III. The Strategic Defense Initiative: Better a Shield Than a Sword

#### A. *The SDI Program*

In a recent book,<sup>41</sup> famed atomic scientist Edward Teller advocates the abandonment of an international political system in which

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36. *Id.* at 557-60, 563.

37. *Id.* at 559.

38. See P. HAYES, L. ZARSKY & W. BELLO, *AMERICAN LAKE: NUCLEAR PERIL IN THE PACIFIC* 216 (1986).

39. See Carothers, *Loose Cannons: The Nuclear Navies And The Next War*, *GREENPEACE* Oct.-Dec. 1987, at 6. See generally Arkin & Handler, *Nuclear disasters at sea, then and now*, *BULL. ATOMIC SCIENTISTS*, July/Aug. 1989, at 20.

40. See *id.*

41. E. TELLER, *BETTER A SHIELD THAN A SWORD, PERSPECTIVES ON DEFENSE AND TECHNOLOGY* (1987).

peace and stability between the superpowers is premised upon the threat of nuclear annihilation. In its stead, Teller advocates the adoption of a regime based upon defensive systems capable of intercepting incoming missiles.<sup>42</sup> The potential development of this defensive system, according to Teller, rests upon the development of laser or directed energy weapons.<sup>43</sup> These weapons might be orbited in space, launched from the ground and reflected off mirrors mounted on space platforms, or, upon notice of an attack, launched into space from submarines based near enemy territory.<sup>44</sup>

Teller also notes the potential of ground-based interceptor missiles and confidently predicts that while incoming missiles are being intercepted, "the defended population could probably sleep through an effective defense, even if small nuclear explosives are used."<sup>45</sup>

Teller seemingly has an unlimited faith in the potential of technology,<sup>46</sup> and that the "genie that produced the sword of modern times can also produce the shield. If we can make the shield more effective than the sword, we shall have made the decisive step that eventually will render the sword obsolete."<sup>47</sup>

Teller reportedly had a significant impact on the thinking of candidate, and later President Ronald Reagan.<sup>48</sup> On March 23, 1983, President Reagan announced plans for a strategic defense initiative,<sup>49</sup> an announcement which apparently had not been cleared or fully discussed with his civilian or military advisers.<sup>50</sup> In his nationwide address, President Reagan observed that while the superpowers had maintained peace and security based upon the threat of mutually-assured nuclear destruction,<sup>51</sup> he was "deeply convinced that the human spirit must be capable of rising above dealing with other nations and human beings by threatening their existence."<sup>52</sup> The President stated that current technology offered the possibility that security, rather than being based upon the threat of instant American retaliation to deter a Soviet attack, could rest upon the ability to "intercept and destroy strategic ballistic missiles before they reached

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42. *Id.* at 7, 11, 21-22.

43. *Id.* at 8.

44. *Id.*

45. *Id.* at 28.

46. *Id.* at 29.

47. *Id.* at 22.

48. See R. SCHEER, WITH ENOUGH SHOVELS: REAGAN, BUSH AND NUCLEAR WAR 286-88 (1983).

49. Address by President Ronald Reagan, *Peace and National Security*, Washington, D.C. (Mar. 23, 1980), reprinted in DEPT. STATE BULL., Apr. 1983, at 8 [hereinafter Reagan]. See *Defending Military Budget, Bush Calls for Cautious Response to Soviet Shifts*, Wash. Post, Feb. 8, 1990, at A30, col. 1.

50. R. SCHEER, *supra* note 48, at 284, 287.

51. Reagan, *supra* note 49, at 13.

52. *Id.* at 14.

our own soil or that of our allies."<sup>53</sup> He called upon the scientific community which developed nuclear weapons to devote their "great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete."<sup>54</sup> In order to implement his vision, President Reagan announced that he was initiating a "comprehensive and intensive effort to define a long-term research and development program to begin to achieve our ultimate goal of eliminating the threat posed by strategic nuclear missiles."<sup>55</sup>

President Reagan's SDI program reflected a fundamental distrust of arms control agreements with the Soviet Union.<sup>56</sup> Rather than relying upon the Soviet's good faith compliance with the terms of such agreements,<sup>57</sup> SDI promised to provide a technologically guaranteed shield against nuclear attack.<sup>58</sup> In order to maintain the strategic balance by providing security from a nuclear attack to the Soviet Union, as well as to the United States, President Reagan later offered to share SDI technology with the Soviet Union.<sup>59</sup>

A 1985 White House pamphlet elaborated President Reagan's plans for SDI<sup>60</sup> and stated that the purpose of the program was to identify those recent technological advances which might be utilized in designing an effective antiballistic weapons system.<sup>61</sup> These technologies, according to the White House, may offer the possibility of a layered defense which utilizes various technologies to destroy attacking missiles during each phase of their flight.<sup>62</sup>

The White House pamphlet explained that technology previously had limited antiballistic defense to attacking nuclear warheads during the terminal phase of their flight using nuclear-tipped interceptor missiles.<sup>63</sup> Contemporary technologies, however, appeared to offer non-nuclear options for destroying offensive missiles and warheads in all phases of flight.<sup>64</sup> These technologies, as enumerated in the White House document, may provide sensors for identifying and tracking missiles and nuclear warheads, advanced group and spaceborne interceptors and directed energy weapons to destroy both

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53. *Id.*

54. *Id.*

55. *Id.* In an ominous remark, the President observed that if "paired with offensive systems" defensive systems can be viewed as "fostering an aggressive policy." *Id.*

56. Remarks of President Ronald Reagan, *SDI: Progress and Promise*, White House Briefing (Aug. 6, 1986), reprinted in DEPT. STATE BULL. Oct. 1986, at 1.

57. *Id.*

58. *Id.*

59. *Id.*

60. *The President's Strategic Defense Initiative*, (text of a pamphlet released by the White House in January 1985) DEPT. STATE BULL., Mar. 1985, at 65.

61. *Id.* at 66.

62. *Id.*

63. *Id.*

64. *Id.*



missiles and nuclear warheads in all phases of flight, and the technology required to coordinate and operate a layered defense.<sup>65</sup>

Despite skepticism concerning the possibility of an SDI system, the White House concluded that the history of the development of technology "argues strongly against those who make flat statements that something is technologically impossible."<sup>66</sup>

### B. SDI Technology

Critics have observed that SDI rests more on a faith in prospective technologies than on a decision to apply existing technologies to antiballistic defenses.<sup>67</sup> The successful development of SDI will not only require multiple scientific breakthroughs, but will then require that these technologies function flawlessly during an enemy nuclear attack involving unanticipated strategies and techniques.<sup>68</sup>

Various scientific studies have expressed skepticism concerning the feasibility of SDI based upon existing technical limitations and the capacity of offense to counter defensive technologies.<sup>69</sup> Ashton C.

65. *Id.* at 67. The pamphlet appeared to retreat from President Reagan's vision of an impenetrable system to protect the population. The pamphlet suggested that SDI might merely provide a defense for a sufficient number of missiles to insure that the United States maintained an effective retaliatory threat. *Id.* at 67.

66. SDI had pragmatic political rationales. It was a counter to attempts to reduce or to freeze the United States' nuclear arsenal; shifted the arms race to a new arena in which the United States perceived it could assert technological superiority; and served to bolster a faltering defense industry. See generally J.E. NOLAN, GUARDIANS OF THE ARSENAL: THE POLITICS OF NUCLEAR STRATEGY 147-82 (1989). Others speculate that it reflects a psychological desire to create an invulnerable, isolationist America. See generally J. CHACE & C. CARR, AMERICA INVULNERABLE: THE QUEST FOR ABSOLUTE SECURITY FROM 1812 TO STAR WARS (1988).

67. S. LAKOFF & H.F. YORK, A SHIELD IN SPACE? TECHNOLOGY, POLITICS AND THE STRATEGIC DEFENSE INITIATIVE 84 (1989).

68. See OFFICE OF TECHNOLOGY ASSESSMENT, DIRECTED ENERGY MISSILE DEFENSES IN SPACE—A BACKGROUND PAPER 239-40 (1984)(prepared by A.C. Carter) [hereinafter DIRECTED ENERGY MISSILE DEFENSES IN SPACE].

69. See Gottfried, *The Physicists Size Up SDI*, ARMS CONTROL TODAY, July-Aug. 1987, at 28. See also Sweet, *Scientists shoot down Star Wars*, BULL. ATOMIC SCIENTISTS, July/Aug. 1987, at 7.

One of the most promising technologies is space-based kinetic kill vehicles (SBKVs). These vehicles are planned to be relatively small missiles capable of accelerating up to velocities of several kilometers per second. They are to be equipped with homing vehicles capable of directing the projectile into an offensive missile. Multiple SBKVs would be mounted on a satellite which tracks targets and directs SBKVs. See S. LAKOFF & H.F. YORK, *supra* note 67, at 95.

Another possible technology is directed-energy weapons, including chemically and electrically driven optical lasers, the free electron laser and the X-ray laser. These devices produce tight beams of coherent light or other forms of electromagnetic radiation that can be focused into a tight beam as it travels great distances at the speed of light. *Id.* at 96-97.

A third technology is particle beams. Beams of charged particles, such as protons and electrons are accelerated to velocities approaching the speed of light in particle accelerators. The beams are directed at a target. See R. BOWMAN, STAR WARS: A DEFENSE INSIDERS CASE AGAINST THE STRATEGIC DEFENSE INITIATIVE 28-29 (1986).

Various modes of deployment are under consideration. In some schemes, the laser or other technology is mounted on a battle station which aims the device at the target. Alternatively, a laser might be mounted on the ground and the laser produced may be reflected off of a series of space-based mirrors which relay the beam to the target. S. LAKOFF & H.F. YORK, *supra*

Carter, in his study of SDI undertaken for the Office of Technology Assessment, concludes that "direct-energy weapons and other devices with the specification needed for intercept of ICBMs have not yet been built in the laboratory, much less in a form suitable for incorporation in a complete defense system."<sup>70</sup>

Despite this skepticism, as previously noted, SDI proponents envision that SDI will combine various technologies in a layered defense against ballistic missiles. They anticipate that each layer will eliminate a portion of the offensive missiles and relatively few missiles will remain to be eliminated in the last phase.<sup>71</sup> The flight of a land-based intercontinental ballistic missile (ICBM) launched from the Soviet Union would follow a twenty-five to thirty minute trajectory over the Arctic and cover roughly 10,000 kilometers.<sup>72</sup> These missiles generally would be equipped with Multiple Independently-targetable Reentry Vehicles (MIRVs) and have four phases of flight: a boost phase during which rocket boosters accelerate missiles to velocities of up to seven kilometers per second; a power-boost phase during which missiles traverse space and position themselves to release their warheads and decoys; a mid-course phase during which the warheads and decoys are released into space and follow a trajectory towards the target; and a terminal phase during which the warheads and decoys reenter the atmosphere and are directed towards the target.<sup>73</sup>

The boost phase is the crucial stage of missile flight for defensive purposes. Offensive missiles generally are equipped with multiple warheads and the elimination of these missiles during the boost phase before the MIRVs are released can significantly reduce the number of incoming warheads.<sup>74</sup> Offensive missiles are also particularly vulnerable to attack during this boost phase. The missiles have not yet accelerated and the boosters emit intense infrared radiation which is easily detected by satellite, permitting the precise tracking and attacking of the missile.<sup>75</sup> The boosters consist of light fuel tanks which are easily punctured during this initial launch phase.<sup>76</sup>

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note 67, at 97.

The X-ray laser is a potentially powerful device which is powered by a nuclear explosion. The explosion is used to energize a lasing medium which creates a laser beam consisting of relatively soft X-rays. In order to protect the X-ray laser from enemy attack, it is proposed that it be launched (or "popped up") from a submarine into space upon warning of an enemy attack. *Id.* at 99.

70. DIRECTED ENERGY MISSILE DEFENSES IN SPACE, *supra* note 68, at 253.

71. See *supra* note 65 and accompanying text.

72. Bethe, Boutwell & Garwin, *BMD Technologies and Concepts in the 1980s*, 114 DAEDALUS 53, 55 (1985). Sea launched ballistic missiles can be given a flat trajectory and be launched from the ocean in close proximity to the target. *Id.*

73. *Id.*

74. S. LAKOFF & H.F. YORK, *supra* note 67, at 94.

75. *Id.* at 94-95.

76. *Id.* at 94.

The attack technologies, however, are easily combatted by fast-burn boosters which quickly accelerate their payload at a low altitude within the earth's atmosphere.<sup>77</sup> Virtually all SDI technologies experience difficulties in operating in the atmosphere.<sup>78</sup> A shorter boost phase also means that attack vehicles must be accurately fired at a rapid rate and reach their target within a relatively brief period of time.<sup>79</sup> Space-based defensive systems, of course, are themselves susceptible to attack and disruption by enemy anti-satellite weapons.<sup>80</sup>

In the two to five minute post-boost phase, a post-boost vehicle (a bus) directs the various reentry vehicles along varying trajectories to their intended target.<sup>81</sup> The engines of the bus emit a relatively low level of energy, so the detection sensors must be extremely sensitive in order to detect the bus.<sup>82</sup> Even when located, the bus is difficult to incapacitate because it is smaller, less visible and tougher than the booster.<sup>83</sup>

The midcourse phase lasts between fifteen and twenty minutes.<sup>84</sup> During this phase the individual reentry vehicles are released and coalesce into an incoming swarm.<sup>85</sup> Detection and targeting is difficult since each vehicle emits a low level of infrared radiation and is roughly the same size and temperature as a human being.<sup>86</sup> The defense also must be sufficiently sophisticated to locate and separate nuclear warheads from unarmed decoy warheads which may emit infrared radiation and quantities of chaff and clouds of infrared-emitting aerosols.<sup>87</sup> The Union of Concerned Scientists is skeptical concerning target identification during this stage and concludes that this is the most challenging portion of missile defense.<sup>88</sup>

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77. *Id.* at 100.

78. *Id.*

79. *Id.*

80. *Id.* In order to counter directed-energy weapons, the booster may be spun about its axis so as to spread out the incoming laser energy; lightweight protective coatings also may be added to further enhance protection against incoming lasers. *Id.*

81. *Id.* at 102. The difficulties of detection and attack could be complicated by incorporating an independent guidance system into each warhead, eliminating the need for a post-boost phase bus. *Id.* A bus also could confound the defense by dispersing either a vast number of metallic objects (chaff) or a light multi-layered balloon of metallized plastic film, both of which are designed to confuse the defense. UNION OF CONCERNED SCIENTISTS, *THE FALLACY OF STAR WARS* 60 (1984).

82. S. LAKOFF & H.F. YORK, *supra* note 67, at 102.

83. *Id.*

84. *Id.*

85. *Id.*

86. *Id.*

87. Bethe, Boutwell & Garwin, *supra* note 72, at 57-58.

88. UNION OF CONCERNED SCIENTISTS, *supra* note 81, at 61. Certain delivery systems are able to evade SDI. Low trajectory submarine launched ballistic missiles situated proximate to their target and low-flying cruise missiles are able to circumvent SDI. In addition, nuclear devices can be smuggled into and detonated inside a country's territorial boundaries. *Id.* at 63-64.

As the reentry vehicles enter their terminal phase, most of the decoys either will have been incinerated or will have slowed down and fallen away from the swarm of attack missiles.<sup>89</sup> In order to counter SDI during this terminal phase, warheads can be equipped with "salvage fusing" in which the warhead automatically detonates on contact or when it detects an approaching interceptor vehicle or device.<sup>90</sup> Even the detonation of a few nuclear weapons high above cities will cause significant damage to the population.<sup>91</sup> In addition, the offense may deploy maneuvering warheads (MaRVs) which are able to evade defensive interceptor missiles.<sup>92</sup>

This complex layered SDI defense requires a sophisticated battle-management computer system. A reliable computer system must be designed which is able to alert and direct the defense systems, distinguish false from true alerts, track targets, discriminate between warheads and decoys, assess whether targets have been "killed" or whether additional targeting is required, and coordinate the transition between the various layers of the defense system.<sup>93</sup> According to the Union of Concerned Scientists, all of this would require a computer with the capacity to carry out "hundreds of millions, if not billions, of arithmetic operations per second."<sup>94</sup> The necessary software program would involve ten million or more lines of code.<sup>95</sup> Such a complex system has not yet been constructed and any such system likely would be subject to undetectable and untestable errors which may prove fatal during a nuclear attack.<sup>96</sup>

In sum, the technical challenges presented by the development of SDI technology, when combined with the uncertainty created by offensive countermeasures, make the development of SDI an expensive and uncertain venture. The Union of Concerned Scientists note that SDI would create "a defense of stupefying complexity under the total control of a computer program whose proportions defy description, and whose performance would remain a deep mystery until the tragic moment when it would be called into action."<sup>97</sup> A failure to intercept five percent of incoming Soviet ballistic warheads would

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89. S. LAKOFF & H.F. YORK, *supra* note 67, at 103.

90. Bethe, Boutwell & Garwin, *supra* note 72, at 58-60.

91. *Id.*

92. *Id.*

93. S. LAKOFF & H.F. YORK, *supra* note 63, at 104-06.

94. UNION OF CONCERNED SCIENTISTS, *supra* note 81, at 146.

95. S. LAKOFF & H.F. YORK, *supra* note 67, at 106.

96. *Id.* at 105-06. The response time for defense systems in the boost phase may be a matter of minutes which may necessitate that the SDI system respond automatically or require that the decision whether to initiate an attack be made by a military officer. There will be pressure to respond at the first indication of a possible attack since a defensive strike during the boost phase will eliminate multiple offensive nuclear warheads and reduce the number of attacking nuclear warheads during the terminal phase of defense. *Id.* at 105.

97. UNION OF CONCERNED SCIENTISTS, *supra* note 81, at 44.

result in the immediate destruction of up to half of the United States urban population and result in countless other indirect deaths.<sup>98</sup> In April of 1987, the Council of the American Physical Society released a statement summarizing its opposition to SDI:<sup>99</sup>

1. Even a very small percentage of nuclear weapons penetrating a defensive system would cause human suffering and death far beyond that ever before seen on this planet.

2. It is likely to be decades, if ever, before an effective, reliable, and survivable defensive system could be deployed.

3. Development of prototypes or development of SDI components in a state of technological uncertainty risks enormous waste of financial and human resources.<sup>100</sup>

The statement concluded that the SDI program "should not be a controlling factor in U.S. security planning and the process of arms control."<sup>101</sup> In the "judgement"<sup>102</sup> of the American Physical Society "there should be no early deployment of SDI components."<sup>103</sup>

### C. *SDI And A Nuclear First Strike*

Physicists Michio Kaku and Daniel Axelrod query why the United States is spending one trillion dollars on a weapons system that "can't work."<sup>104</sup> They conclude that SDI is not a defensive system, but is designed to increase the offensive capability of the United States nuclear arsenal: "By pairing an offensive capability to disarm the enemy with the defensive capability to absorb a retaliatory attack, the Star Wars system provides the missing link in a first strike capability."<sup>105</sup>

The mathematics of the Star Wars strategy is quite clear. Although SDI is of limited utility against a full-scale attack, it may be quite effective against a limited retaliatory strike launched by a nation which has absorbed a nuclear strike. Dr. Robert M. Bowman, head of the Institute for Space and Security Studies and former Director of Advanced Space Programs and Development for the Pentagon argues that if a United States nuclear attack destroys ninety-five percent of enemy missiles, "then the job of boost phase intercept would be greatly simplified, and the task of each succeeding layer

98. *Id.* at 163.

99. American Physical Society, *APS Council Statement on SDI*, ARMS CONTROL TODAY, Jul./Aug. 1987, at 32.

100. *Id.*

101. *Id.*

102. *Id.*

103. *Id.*

104. M. KAKU & D. AXELROD, TO WIN A NUCLEAR WAR: THE PENTAGON'S SECRET WAR PLANS 241 (1987).

105. *Id.* at 258.

made more manageable."<sup>106</sup> Bowman concludes: "You may protest that this is nothing but a disarming first strike backed up by a 'Star Wars' shield and therefore abhorrent to us Americans. And of course that's exactly what is is."<sup>107</sup>

The Union of Concerned Scientists points out that various factors dictate that Star Wars be utilized as a first strike weapon. The Union observes that SDI is a technologically precarious system that would be highly vulnerable to enemy attack and to malfunction and would be of "questionable utility against a full-scale attack, but may be quite effective against a retaliatory strike."<sup>108</sup> SDI technology is also well-suited to offensive deployment against an adversary's space-based communication and early-warning system, seriously impeding the adversary's ability to track incoming first-strike missiles and to coordinate a retaliatory response.<sup>109</sup> A first strike would also permit a deliberate and calculated deployment and targeting of SDI and help to minimize command errors and system malfunctioning.<sup>110</sup>

Thus, while the United States government publicly portrays SDI as a defensive weapons system, in fact, it is part of a first-strike strategy.<sup>111</sup> In addition, the emphasis in SDI research has been towards exploring the system's offensive capabilities in space.<sup>112</sup> Jane Nolan, in her history of SDI, notes that while the public has accepted SDI on the basis that it will serve as a defense against nuclear weapons,"the actual objectives of the SDI moved programmatically and, to all intents and purposes, strategically into a research and potential deployment effort aimed at developing ways to improve the capabilities of offensive nuclear forces."<sup>113</sup>

Democratic Congressman George E. Brown of California writes that the United States is determined to militarily control space and that the future of space, as viewed by the United States, is "one where exotic weapons are deployed in massive numbers. The path to that future is being forged by the Strategic Defense Initiative (SDI)."<sup>114</sup> Experts anticipate that American dominance of space will enable the United States to dominate potential aggressors and to eliminate perceived threats to its national security.<sup>115</sup> Historian E.P.

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106. R. BOWMAN, *supra* note 69, at 45.

107. *Id.*

108. UNION OF CONCERNED SCIENTISTS, *supra* note 81, at 161.

109. *Id.*

110. *Id.*

111. J.E. NOLAN, *supra* note 66, at 21.

112. This argument is developed by Nolan. See generally *id.* at 4, 21, 25, 29, 32-33.

113. *Id.* at 21. Nolan argues that few decision-makers in the executive branch ever viewed SDI as anything more than a political device to gain public support for a program which could be used, *inter alia*, to militarize space. *Id.*

114. Brown, *Pentagon usurps civilian space program*, BULL. ATOMIC SCIENTIST, Nov. 1987, at 26, 28.

115. See CONGRESSIONAL RESEARCH SERVICE, MILITARY SPACE FORCES THE NEXT

Thompson suggests that space-based "death rays"<sup>116</sup> might be utilized to burn out grain fields, oil storage tanks and other targets and to reduce an industrial country to the eighteenth century in thirty minutes.<sup>117</sup> Analyst Dietrich Fischer writes that an optical laser with sufficient power to attack hardened intercontinental ballistic missile (ICBM) boosters could be used "to start mass urban fires that would be potentially larger and more intense than those fires created by the incendiary raids on Hamburg and Dresden in World War II."<sup>118</sup> He argues that space-based laser weapons may pose an even greater threat than today's nuclear arsenals due to their "greater speed and precision."<sup>119</sup> Laser beams, when perfected, may be capable of hitting a target at the speed of light, providing the enemy with little, if any opportunity to prepare for or to respond to an attack.<sup>120</sup> In addition, there may be minimal hesitancy to use such weapons since, unlike nuclear arms, they are able to selectively attack targets and do not create uncontrollable radioactive fallout.<sup>121</sup> Daniel Deudney concludes that instead of "removing the tightening nuclear noose, space weapons promise to bring humanity to the edge of cybernetically initiated annihilation."<sup>122</sup>

#### IV. The Legality Of SDI

##### A. SDI And A Nuclear First Strike

A nuclear first strike would be illegal. Article 2(3) of the United Nations Charter states that "[a]ll Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered."<sup>123</sup> Furthermore, article 2(4) states that "[a]ll Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations."<sup>124</sup>

The United Nations Charter establishes three exceptions to the

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FIFTY YEARS 49-51 (1989). Possible space-based weapons include interceptor rockets; space mines; railguns which transmit electronic currents and rapidly fire projectiles; and optical laser weapons. *Id.* at 112-16.

116. Thompson, *Folley's Comet*, in STAR WARS 93, 131 (E.P. Thompson ed. 1985).

117. *Id.*

118. Fischer, *The Strategic Defense Initiative As A Cause Of Crisis Instability*, 15 J. LEG. 139, 142 (1989).

119. *Id.*

120. *See generally id.*

121. *Id. See generally* CONGRESSIONAL RESEARCH SERVICE, POTENTIAL OFFENSIVE CAPABILITIES OF SDI SPACE WEAPONS (1987).

122. Deudney, *supra* note 4, at 104.

123. U.N. CHARTER art. 2, para. 3.

124. *Id.* art. 2, para. 4.

prohibition against "the threat or use of force."<sup>125</sup> Article 51 recognizes the "inherent right of individual or collective self-defense if an attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security."<sup>126</sup> Article 52 recognizes the existence of regional arrangements or agencies for addressing matters relating to the maintenance of international peace and security.<sup>127</sup> Finally, the Security Council shall determine and take action against "the existence of any threat to the peace, or act of aggression and shall make recommendations, or decide what measures shall be taken."<sup>128</sup>

In meeting a threat to the peace, the Security Council may decide "what measures not involving the use of force are to be employed,"<sup>129</sup> or it "may take such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security."<sup>130</sup> Article 103 states that in the event of a conflict between the obligations of the Member States of the United Nations "under the present Charter and their obligations under any other international agreement, their obligations under the United Nations Charter shall prevail."<sup>131</sup>

Thus, under the United Nations Charter, the independent exercise of armed force by a nation-state is limited to acts of self-defense and collective self-defense. According to U.S. Secretary of State Daniel Webster's well-known formulation in the *Caroline* case,<sup>132</sup> a government invoking the right of self-defense must demonstrate a "necessity of self-defense, instant, overwhelming, and leaving no choice of means, and no moment for deliberation."<sup>133</sup> Thus, when defensive action is "greatly in excess of the provocation, as measured by relative casualties or scale of weaponry, international opinion will more readily condemn such defense as illegally disproportionate."<sup>134</sup>

The initiation of an American nuclear strike which does not constitute an act of self-defense, would clearly violate the United Nations Charter. The United Nations Resolution on the Definition of Aggression in article 1 states that "[a]ggression is the use of

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125. *Id.*

126. *Id.* art. 51.

127. *Id.* art. 52, para. 1.

128. *Id.* art. 39.

129. *Id.* art. 41.

130. *Id.* art. 41.

131. *Id.* art. 103.

132. 2 B. Moore, *The Caroline Case*, in DIGEST OF INTERNATIONAL LAW 409, 412 (1906).

133. *Id.* See also 29 BRI. AND FOREIGN ST. PAPERS 1129, 1138 (1840-41) (letter from Mr. Webster to Mr. Fox, April 24, 1841) quoted in Zedalis, *Preliminary Thoughts on some Unresolved Questions Involving the Law of Anticipatory Self-Defense*, 19 CASE W. RES. J. INT'L L. 129 (1987).

134. Schachter, *The Right of States to Use Armed Force*, 82 MICH. L. REV. 1620, 1637 (1984).



armed force by another State, or in any manner inconsistent with the Charter of the United Nations . . ."<sup>135</sup> Article 2 emphasizes that the "first use of armed force by a State in contravention of the Charter shall constitute prima facie evidence of an act of aggression."<sup>136</sup> No consideration of whatever nature, whether "political, economic, military or otherwise"<sup>137</sup> may serve as a justification for aggression.<sup>138</sup> A war of aggression under article 5(2) "is a crime against international peace. Aggression gives rise to international responsibility."<sup>139</sup>

A nuclear strike, even one involving theater or limited nuclear weapons, launched in retaliation for a conventional attack on the United States or its allies, "would be totally disproportionate to the threat presented and therefore constitute an impermissible act of self-defense . . ."<sup>140</sup>

A countervalue attack "would constitute a gross violation of the cardinal principal of proportionality."<sup>141</sup> Professor Burns Weston asks, "where is the military necessity in incinerating entire urban populations, defiling the territory of neighboring and distant neutral countries, and ravaging the natural environment for generations to come simply for the purpose of containing or repelling a conventional force?"<sup>142</sup> Such a countervalue attack would appear to serve a retributive rather than a defensive purpose and would violate article 51(6) of the 1977 Protocol to the Geneva Conventions, which provides that, "[a]ttacks against the civilian population or civilians by way of reprisals are prohibited."<sup>143</sup> A countervalue attack would also violate the spirit of the Genocide Convention of 1948 which makes the destruction of groups on the grounds of race, religion, ethnicity or nationality an international crime.<sup>144</sup>

In practice, there is little distinction between the impact of a countervalue and counterforce nuclear attack. The clustering of military targets adjacent to population centers, the inaccuracy of nuclear

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135. Resolution on the Definition of Aggression, G.A. Res. 3314 (XXXIX), 29 U.N. GAOR Supp.(No. 31) at 143, U.N. Doc. A/9631 (1974) [Nonbinding].

136. *Id.* art. 2.

137. *Id.* art. 5, para. 1.

138. *Id.*

139. *Id.* art. 5, para. 2.

140. Boyle, *The Relevance of International Law to the 'Paradox' of Nuclear Deterrence*, 80 NW. U.L. REV. 1407, 1441 (1986).

141. Weston, *Nuclear Weapons Versus International Law: A Contextual Reassessment*, 28 MCGILL L.J. 542, 578 (1983). "Countervalue targeting" refers to a nuclear attack directed against an adversary's cities and industries. "Counterforce targeting" refers to a nuclear attack directed against an adversary's armed forces. *Id.* at 545.

142. *Id.* at 578.

143. Protocol Respecting the Protection of Victims of International Armed Conflicts, June 8, 1977, Protocol 1, art. 51, para. 6, U.N. Doc. A/32/144, Annex 1, reprinted in 16 I.L.M. 1391, 1413 (1977) [hereinafter Protocol Additional to the Geneva Conventions].

144. Lawyers Committee On Nuclear Policy, *Statement on the Illegality of Nuclear Weapons*, in A SEARCH FOR ALTERNATIVES 146-49 (B. Weston ed. 1984).

weapons and the cumulative blast and fallout effects would result in little practical difference in impact between attacks directed against civilian and military targets.<sup>145</sup>

Thus, an unprovoked nuclear attack would be illegal under the United Nations Charter. In addition, the initiation of a nuclear strike in retaliation for a conventional attack, whether based upon countervalue or counterforce targeting, would result in indiscriminate suffering and would violate the principles of unnecessary suffering and proportionality.

Similarly, the doctrine of anticipatory self-defense, or an act directed to deter an anticipated enemy strike, is not recognized under international law. Professor Anthony D'Amato notes that a recognition of the right of anticipatory self-defense would render article 51 of the United Nations Charter "meaningless and in fact open the door to aggression."<sup>146</sup> A nation might employ the doctrine of anticipatory self-defense as a pretext for aggression.<sup>147</sup> There is also a risk that a unilateral determination that a nation is the target of an imminent attack may be based upon inaccurate or unreliable information.<sup>148</sup>

In sum, a nuclear first strike violates the standards governing the legitimate use of force. SDI would be a central component of any United States first strike policy and its deployment for this strategic purpose would violate international law. To the extent that SDI is conceived of, designed and deployed as part of a first strike strategy, it is per se illegal under international law. The development of SDI thus would appear to violate article 36 of the 1977 Protocol Additional to the Geneva Conventions which mandates that:

In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.<sup>149</sup>

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145. See Falk, *Toward a Legal Regime for Nuclear Weapons*, 28 MCGILL L.J. 519, 528 (1983).

146. D'Amato, *Israel's Air Strike Upon the Iraqi Nuclear Reactor*, 77 AM. J. INT'L L. 584, 588 (1983).

147. Corwin, *The Illegality of Nuclear Arms Under International Law*, 5 DICK. J. INT'L L. 271, 286 (1987). It should be noted that article 51 explicitly limits the right of self-defense to instances of armed attack. *Id.* at 285.

148. *Id.*

149. Protocol Additional to the Geneva Conventions, *supra* note 143, art. 36 reprinted in 16 I.L.M. at 1409.

### B. *The Outer Space Treaty*

The 1967 Outer Space Treaty (Treaty) is the instrument which sets forth the rights and duties of nation-states in space and on celestial bodies.<sup>150</sup> Space-based weapons systems such as SDI are violative of the Treaty.

Article I declares that the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for "the benefit and the interests of all countries,"<sup>151</sup> and shall be "the province of all mankind."<sup>152</sup>

Article II affirms the international interest in the exploration and use of space by specifying that outer space, including the moon and other celestial bodies, is not subject to "national appropriation"<sup>153</sup> by claim of sovereignty by means of use or occupation, or by any other means.<sup>154</sup>

Article III extends international law principles to outer space and to the moon and other celestial bodies. It stipulates that State Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, "in accordance with international law, including the Charter of the United Nations."<sup>155</sup> Article III also stresses that this legal regime is established in the interest of "maintaining peace and security and promoting international co-operation and understanding."<sup>156</sup>

Thus, the first three articles of the Outer Space Treaty firmly establish an international regime of cooperation and international law designed to promote peace and international cooperation in space. Article IV regulates weaponry in outer space, controls the stationing of weapons on the moon and on other celestial bodies and is

150. 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 *Space Treaty*]. There is no precise and accepted definition of space. Most definitions locate space somewhere between 80 and 140 kilometers above the earth's surface. See Comment, "*Star Wars*" Versus *Star Laws*: Does SDI Conform To Outer Space Law? 15 J. LEG. 251, 257 (1989). See also Comment, *The Treaty On Outer Space: An Evaluation Of The Arms Control Provisions*, 7 COLUM. J. TRANSNAT'L L. 259, 270-71 (1968).

151. *Space Treaty*, supra note 150, art. I.

152. *Id.* Additional language in article I reinforces the common global interest in the use and exploration of outer space, the moon and other celestial bodies:

Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigation.

*Id.*

153. *Id.* art. II.

154. *Id.*

155. *Id.* art. III.

156. *Id.*

the article over which debate on the legality of SDI is centered.

Article IV specifies that State Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, not to install such weapons on celestial bodies, or station such weapons in outer space in any other manner.<sup>157</sup>

In addition to the absolute prohibition on nuclear weapons and weapons of mass destruction in space or on the moon or on other celestial bodies, the Treaty also specifies that the moon and other celestial bodies shall be used "exclusively for peaceful purposes."<sup>158</sup> It specifically prohibits the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on the moon and other celestial bodies.<sup>159</sup> However, the use of military personnel for scientific research or for any other peaceful purpose is not prohibited.<sup>160</sup> In addition, the use of any equipment or facility necessary for peaceful exploration of the moon and other celestial bodies is permitted.<sup>161</sup>

Thus, there appear to be separate requirements for outer space, where the orbiting or stationing of nuclear weapons is specifically prohibited,<sup>162</sup> and for the moon and other celestial bodies, on which nuclear and other weapons of mass destruction are banned.<sup>163</sup> In addition, the moon and other celestial bodies are to be used "exclusively for peaceful purposes."<sup>164</sup> The "peaceful purposes" provision should be interpreted to require a complete demilitarization of the moon and other celestial bodies as well as outer space. This conclusion is dictated by the general purpose of the Outer Space Treaty and prior application of the phrase "peaceful purposes."

The general intent of the Outer Space Treaty, as stated in article I, is to insure that the exploration and use of outer space and the celestial bodies is undertaken for "the benefit and in the interests of all countries"<sup>165</sup> and that as "the province of all mankind"<sup>166</sup> outer space and the celestial bodies remain "free for exploration and use

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157. *Id.* art. IV. This extends the nuclear test ban treaty which, *inter alia*, prohibits nuclear explosions in outer space but which does not address the stationing of weapons. See Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, Aug. 5, 1963, art. 1(1)(a), 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43.

158. *Id.*

159. *Id.*

160. *Id.*

161. *Id.*

162. *Id.*

163. *Id.*

164. *Id.* The moon appears to be a celestial body based upon the second paragraph in article IV which stipulates that the "moon and other celestial bodies" shall be used "exclusively for peaceful purposes." *Id.*

165. *Id.* art. I.

166. *Id.*

by all States.”<sup>167</sup>

The intent that outer space and the celestial bodies be used and explored for the benefit of the global community is reinforced by the language of the preamble which is central in establishing the intent, purpose and context of the Treaty.<sup>168</sup> The preamble emphasizes that entry into space results in “great prospects opening up before mankind”,<sup>169</sup> stresses the “common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes”,<sup>170</sup> and proclaims that “the exploration and use of outer space should be carried out for the benefit of all peoples.”<sup>171</sup>

The global interest in the use and exploration of outer space and the celestial bodies is also stressed in article IX which, *inter alia*, declares that State Parties shall be guided by the principle of “cooperation and mutual assistance”<sup>172</sup> and shall conduct their activities in outer space, on the moon and on other celestial bodies, with “due regard to the corresponding interests of all other State Parties to the Treaty.”<sup>173</sup>

Articles X, XI and XII reinforce the multilateral interest in the use and exploration of outer space, the moon and other celestial bodies. These articles respectively require that States Parties shall be afforded an opportunity to observe the flight of objects launched in space;<sup>174</sup> that the nature, conduct, location and results of space activity are disseminated to the greatest extent possible;<sup>175</sup> and that stations, installations, equipment and space vehicles on the moon and other celestial bodies should be open to inspection by all States Parties on the basis of reciprocity.<sup>176</sup> Article IX further provides for appropriate international cooperation where there is reason to believe that activity will cause “potentially harmful interference”<sup>177</sup> with the peaceful exploration of outer space, the moon and other celestial bodies.<sup>178</sup> The international interest in the use and exploration of outer space also is emphasized in article V which requires State Parties to render astronauts all possible assistance based upon their status as the “envoys of mankind.”<sup>179</sup>

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167. *Id.*

168. See Vienna Convention on the Law of Treaties, art. 31(c), U.N. Doc. A/CONF. 39/27, at 289 (1969) (done at Vienna, May 22, 1969; open for signature, May 23, 1969). The context of a treaty shall be based upon the text, preamble and annexes. *Id.*

169. Space Treaty, *supra* note 150, at Preamble.

170. *Id.*

171. *Id.*

172. *Id.* art. IX.

173. *Id.*

174. *Id.* art. X.

175. *Id.* art. XI.

176. *Id.* art. XII.

177. *Id.* art. IX.

178. *Id.*

179. *Id.* art. V.

It would be inconsistent with the peaceful and cooperative intent of the latter provisions and the international character of outer space and the celestial bodies to interpret the "peaceful purposes" discussed in article IV as contemplating even the defensive militarization of the moon and other celestial bodies. Strict interpretation of the term "peaceful purposes" requiring demilitarization of space is also consistent with the use of the term in the Antarctic Treaty.<sup>180</sup> Ben Cheng, a leading expert on space law, concludes that three points emerge from an analysis of the Antarctic Treaty which *mutatis mutandis* appear fully applicable to article IV of the 1967 Outer Space Treaty:

- (a) "Peaceful" means non-military.
- (b) References to military installations, military manoeuvres and so forth in the provision are exemplificative and not exhaustive.
- (c) The possibility of using military personnel and equipment for scientific research or other peaceful purposes in no way invalidates point (a) above.<sup>181</sup>

In conclusion, the term "peaceful purposes" in article IV requires the complete demilitarization of the moon and other celestial bodies. This conclusion rests upon the general peaceful and cooperative intent and context of the 1967 Outer Space Treaty and the prior interpretation given to the term "peaceful purposes" in the Antarctic Treaty as connoting complete demilitarization. This conclusion is also compelled by the common sense interpretation of "peaceful purposes" as connoting non-military purposes.<sup>182</sup>

What is the relationship between the demilitarized "peaceful purposes" regime of the moon and other celestial bodies and the regime in outer space where only nuclear and other weapons of mass destruction are expressly prohibited?<sup>183</sup> The demilitarized regime arguably extends beyond the moon and other celestial bodies to encom-

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180. Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71.

1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, *inter alia*, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons.

2. The present Treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.

*Id.* art. I.

181. Cheng, *The Legal Status Of Outer Space And Relevant Issues: Delimitation Of Outer Space And Definition Of Peaceful Use*, 11 J. SPACE LAW 89, 102 (1983). See also Statute of the International Atomic Energy Agency, Oct. 26, 1956, art. 2, 8 U.S.T. 1093, T.I.A.S. No. 3873, 276 U.N.T.S. 3 cited in Zedalis & Wade, *Anti-Satellite Weapons And The Outer Space Treaty Of 1967*, 8 CAL. W. INT'L L.J. 454, 474 n. 75 (1978).

182. Markoff, *Disarmament And "Peaceful Purposes" Provisions In The 1967 Outer Space Treaty*, 4 J. SPACE L. 3, 7 (1976).

183. Outer Space Treaty, *supra* note 150, art. IV.

pass outer space.

The first paragraph of article IV explicitly prohibits the placing in orbit around the Earth or the installation in outer space of objects carrying nuclear weapons or other weapons of mass destruction.<sup>184</sup> The prohibition on nuclear weapons likely would be interpreted to prevent the use of X-ray laser weapons in space which utilize a small nuclear explosion to send intense pulses of X-rays at enemy missiles.<sup>185</sup>

What of the deployment in space of offensive or defensive weapons systems which are not expressly prohibited under article IV? The United Nations Charter prohibits the deployment of any weapons which are intended for aggressive purposes. This would preclude putting in orbit or in space weapons which, like SDI, are a component of a first-strike nuclear strategy.<sup>186</sup> However, even conventional weapons systems which are not intended to be used as part of an aggressive military strategy are prohibited under the Outer Space Treaty. It would be illogical for those drafting the Treaty to permit outer space to become militarized while purporting to maintain the moon and other celestial bodies as demilitarized zones devoted to "peaceful purposes."<sup>187</sup>

The Outer Space Treaty also must be interpreted in light of its general peaceful and cooperative intent and any single article must be interpreted "in light of the preceding and subsequent articles."<sup>188</sup> Professor Marko G. Markoff of the University of Fribourg in Switzerland argues that the "common interests" principle contained in article I of the Treaty

implies a fixed contractual obligation to refrain from any activity that would not be in the interests of all states. In our divided world, any military activities including defensive or "non-aggressive activity", cannot be beneficial for all countries and thus cannot satisfy the fundamental requirements of the key provision of Space law.<sup>189</sup>

Professor Markoff concludes that the disarmament of outer space is "a binding legal obligation resulting from a generally accepted mul-

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184. *Id.* art. IV. Weapons of mass destruction generally are considered to be nuclear, chemical and biological weapons which result in the indiscriminate killing of a large number of people in an expansive area. The success of most space-based weapons systems depends, however, upon their ability to discriminate between targets. See Smith, *Legal Implications Of A Space-Based Ballistic Missile System*, 15 CAL. W. INT'L L.J. 52: 70 (1965).

185. Smith, *supra* note 184, at 70-71. Some expansively interpret the prohibition on nuclear weapons and other weapons of mass destruction to encompass a wide-range of space-based weapons systems. See, Goldman, *The Strategic Defense Initiative: Star Wars And Star Wars*, 9 HOUSTON J. INT'L L. 111, 117-18 (1986).

186. Smith, *supra* note 184, at 72.

187. Zedalis & Wade, *supra* note 181, at 477.

188. B.A. HURWITZ, *THE LEGALITY OF SPACE MILITARIZATION* 62 (1986).

189. Markoff, *supra* note 182, at 21.

tilateral agreement under international law. It is not merely a political issue, as the disarmament of the Earth still is."<sup>190</sup>

Central to the vision of a demilitarized spatial environment is the notion that space remains the heritage of all peoples which may not be despoiled by military weaponry.<sup>191</sup> In 1981, the United Nations General Assembly passed resolution 36/97C which urged all States, particularly those with major space capabilities, to "contribute actively to the goal of preventing an arms race in space."<sup>192</sup> In resolution 37/83 the United Nations General Assembly affirmed that it is the "will of all States that outer space shall be used exclusively for peaceful purposes and that it shall not become an arena for an arms race."<sup>193</sup>

It is clear that the consensus of the global community is that outer space and the moon and other celestial bodies should remain free from militarization. This consensus lends support to the contention that SDI and other space-based weapons are prohibited under international law.<sup>194</sup> In analyzing SDI, the late Professor Martin Feinrider concludes that it would be "disingenuous to pretend that a multi-billion dollar central element of the U.S. strategic military posture, which put the Soviet Union at a severe strategic nuclear disadvantage, is consistent with the U.S. obligation to . . . restrict itself to peaceful uses of space. SDI, which has as its goal the ability to render harmless Soviet nuclear-armed missiles, . . . hardly qualifies as 'peaceful,' . . ."<sup>195</sup>

### C. *The Anti-Ballistic Missile Treaty*

The United States' deployment of a space-based SDI system thus would violate the 1967 Outer Space Treaty. The development, testing or deployment of allegedly defensive space-based systems would also violate the 1972 Anti-Ballistic Missile Treaty [ABM Treaty] between the United States and the Soviet Union.<sup>196</sup>

The ABM Treaty is based upon the doctrine of mutually as-

190. *Id.* at 22. See also Zedalis & Wade, *supra* note 181, at 479.

191. Zedalis & Wade, *supra* note 181, at 459.

192. G.A. Res. 36/97C (XXXVI), 36 U.N. GAOR, Supp. (No. 51) at 71, U.N. Doc. A/36/756 (1981). See also G.A. Res. 36/99 (XXXVI), 36 U.N. GAOR, Supp. (No. 51) at 76, U.N. Doc. A/36/758 (1958).

193. G.A. Res. 37/83 (XXXVII), 37 U.N. GAOR, Supp. (No. 51) at 290, U.N. Doc. A/37/669 (1982).

194. The so-called Martens Clause provides that the law of war, *inter alia*, is defined by the "laws of humanity, and the dictates of public conscience." See Hague Convention (no. IV) Respecting the Laws and Customs of War on Land, 18 October 1907, 36 Stat. 2277, T.S. No. 539, 1 Bevans 631, at Preamble.

195. Feinrider, *The Strategic Defense Initiative And International Law*, 10 FLETCHER FORUM 19, 24 (1986).

196. Treaty on the Limitation of Anti-Ballistic Missile Systems, May 26, 1972, United States-U.S.S.R., 23 U.S.T. 3435, T.I.A.S. No. 7503 [hereinafter ABM Treaty].



sured destruction. The United States and the Soviet Union feared that the establishment of defensive systems might induce a technologically advanced superpower, confident in its ability to penetrate the enemy defense and defend against a retaliatory strike, to launch a first strike. Defense systems might also compel the United States and the Soviet Union to upgrade their offensive systems in an effort to overcome the other side's antiballistic missile defenses and thus lead to an escalating cycle of technological improvements. The superpowers also anticipated that the limiting of ABM systems would contribute to the creation of favorable conditions for further negotiations on the limitation of strategic arms.<sup>197</sup>

In article I(2), each Signatory undertakes not to deploy ABM systems for the defense of its territory except as provided under the Treaty.<sup>198</sup> While generally prohibiting a territorial ABM system, according to the Treaty, each Party may deploy two ABM systems.<sup>199</sup> This was later changed to a single-limited system in a 1974 Protocol.<sup>200</sup> This system is limited to a deployment area of one hundred fifty kilometers containing one hundred ABM launchers and no more than one hundred ABM interceptor missiles at launch sites.<sup>201</sup>

In article V(1) of the Treaty, each Party undertakes not to develop, test or deploy ABM systems or components which are "sea-based, air-based, space-based, or mobile land-based."<sup>202</sup> Thus, in order to insure that ABM systems possess maximum vulnerability and are of limited technological sophistication, only fixed land-based systems are permitted.<sup>203</sup>

For the purpose of the Treaty, an ABM system "is a system to counter strategic ballistic missiles or their elements in flight trajectory, currently consisting of: (a) ABM interceptor missiles, . . . (b) ABM launchers, . . . ; and (c) ABM radars, . . ." <sup>204</sup> Article II(1), by using the phrase "currently consisting of" (interceptor missiles, launchers and radars) adopts a broad functional approach to ABM

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197. *Id.* at Preamble.

198. *Id.* art. I(2).

199. *Id.* art. III.

200. Protocol to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems, July 3, 1974, art. 1, 27 U.S.T. 1645, T.I.A.S. No. 8276.

201. ABM Treaty, *supra* note 196, art. III(a). Each Party undertakes not to transfer ABM systems to other States and not to deploy such systems outside its national territory. *Id.* art. IX. Missiles, launchers or radars, other than those in the ABM system, are not to be given ABM capabilities to counter strategic ballistic missiles and are not to be tested in an "ABM mode." *Id.* art. VI(a). The ABM radars for early warning of strategic ballistic missile attack is to be deployed along the periphery of the national territory and oriented outward. *Id.* art. VI(b).

202. *Id.* art. V(1).

203. *Id.*

204. *Id.* art. II(1).

systems which does not limit the definition to existing components.<sup>205</sup> Modernization and replacement of ABM systems or their components<sup>206</sup> thus would remain subject to all the limitations of the Treaty, including article V's prohibition on sea, air or mobile land-based systems. Modern ABM systems would still be required to be deployed in a fixed land-based mode.<sup>207</sup>

Agreed Statement D applies to ABM systems utilizing technologies which did not exist at the time of the signing of the Treaty in 1972.<sup>208</sup> It addresses the deployment of new land-based, technological systems "based on other physical principles"<sup>209</sup> capable of substituting for existing ABM interceptor missiles, launchers or radars which may be "created in the future."<sup>210</sup> In order to insure that such systems are deployed "as provided in [A]rticle 11 of the Treaty,"<sup>211</sup> such systems are subject to "specific limitations"<sup>212</sup> and their deployment in a land-based mode is subject to "discussion."<sup>213</sup> Thus, agreed Statement D stipulates that where systems are deployed which employ technologies which did not exist in 1972 that: such systems must be land-based; are not to be deployed prior to discussions between the Parties concerning the appropriate limitations on such systems; and their deployment presumably would require an amendment to the Treaty.<sup>214</sup>

Article V's prohibition on the development, testing and deployment of space-based systems is thus equally applicable to current (1972) and future technologies. This conclusion is not only dictated by the plain language of the Treaty, but is also supported by the legislative history. The Chayes' note that there "is not a single positive statement in the legislative history interpreting article V as limited to current technology."<sup>215</sup> They go on to conclude that the "ban

205. Chayes & Chayes, *Testing And Development Of "Exotic" Systems Under The ABM Treaty: The Great Reinterpretation Caper*, 99 HARVARD L. REV. 1956, 1958 (1986).

206. ABM Treaty, *supra* note 196, art. VII.

207. Chayes & Chayes, *supra* note 205, at 1959.

208. ABM Treaty, *supra* note 196, at Agreed Statement D.

In order to insure fulfillment of the obligation not to deploy ABM systems and their components except as provided in [A]rticle II of the Treaty, the Parties agree that in the event ABM systems based on other physical principles and including components capable of substituting for ABM interceptor missiles, ABM launchers, or ABM radars are created in the future, specific limitations on such systems and their components would be subject to discussion in accordance with [A]rticle XIII and agreement in accordance with [A]rticle XIV of the Treaty. *Id.*

209. *Id.*

210. *Id.*

211. *Id.*

212. *Id.*

213. *Id.*

214. See Gross, *Negotiated Treaty Amendment: The Solution to the SDI-ABM Treaty Conflict*, 28 HARVARD J. INT'L L. 31, 36 (1987).

215. Chayes & Chayes, *supra* note 205, at 1961.

on development and testing in article V apply comprehensively to all space-based ABM systems whether composed of 1972-type components or using other physical principles."<sup>216</sup> Indeed, it would be illogical for the Treaty to permit space-based technologies to be developed or deployed given that the entire thrust of the Treaty is to attempt to limit and to restrain strategic arms and weapons development.<sup>217</sup> Permitting the development or testing of such space-based systems would create the risk that a Party might perfect such a system, withdraw from or unilaterally repudiate the Treaty and leave the other Party vulnerable to a first strike attack.<sup>218</sup> Such a situation would hardly be conducive to a stable superpower relationship.

The accepted interpretation is that the ABM Treaty does not limit laboratory research of ABM technologies, even those which might be deployed in space.<sup>219</sup> This interpretation appears to be based upon the fact that such activity cannot be verified without unacceptably intrusive measures.<sup>220</sup> However, the United States has quietly extended its research of space-based ABM technologies beyond the laboratory by labelling such activities as preliminary testing<sup>221</sup> or as technological demonstrations.<sup>222</sup> The United States has also argued that the testing has involved adjuncts (so-called lesser elements of the ABM system) rather than components<sup>223</sup> — the testing of which is prohibited under article V.<sup>224</sup> In other cases, the testing of space-based ABM components has been undertaken under the guise of developing allegedly legal weapons systems such as space-based, anti-satellite armaments.<sup>225</sup>

Gross has observed that twisting "agreed language toward improbable meanings, for reasons of expediency, belittles the efforts of negotiators who seek clear legal language to express principles of policy."<sup>226</sup> The general attempt by the United States to interpret the

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216. *Id.*

217. ABM Treaty, *supra* note 196, art. XI. See Chayes & Chayes, *supra* note 188, at 1965.

218. Chayes & Chayes, *supra* note 205, at 1964. A Party may withdraw from the Treaty upon six months notice based upon extraordinary events related to the Treaty which a Party considers to have jeopardized its supreme interests. ABM Treaty, *supra* note 179, art. XV(2).

219. Smith, *supra* note 184, at 67.

220. Goldman, *supra* note 185, at 122.

221. *Id.*

222. Smith, *supra* note 184, at 67.

223. Goldman, *supra* note 185, at 122.

224. ABM Treaty, *supra* note 196, art. V(1).

225. Goldman, *supra* note 185, at 122-23. The most comprehensive review of the issues involved in ABM testing is contained in Chayes, Chayes & Spitzer, *Space Weapons: The Legal Context*, 114 DAEDALUS 193, 203-10 (1985).

226. Gross, *supra* note 214, at 51. See generally Scheffer, *Nouveau Law and Foreign Policy*, 76 FOREIGN POL'Y 44 (1989). The United States purportedly has accepted a restrictive approach to interpreting the ABM Treaty. See *Excerpts From Speech by Schultz At North Atlantic Assembly Meeting*, N.Y. TIMES, Oct. 15, 1985, at A6, col. 1.

ABM Treaty to permit the development, testing and deployment of space-based ABM systems has been characterized by one of the Treaty negotiators as "sloppy, cursory, unprofessional, and unsubstantiated by the text or the negotiating record of the treaty."<sup>227</sup> He concludes that the United States' interpretative effort has accorded priority to the "policy interest over the law."<sup>228</sup>

In sum, the proposed defensive SDI system is, in fact, an illegal first strike weapon which violates the United Nations Charter as well as the Outer Space Treaty. The development, testing or deployment of a space-based SDI system is also in violation of the 1972 ABM Treaty. Even laboratory work on ABM systems, which is purportedly permitted under the ABM Treaty, would constitute an illegal effort to violate the United Nations Charter and the Outer Space Treaty. While pragmatists may dismiss these conclusions as "soft law graffiti,"<sup>229</sup> Professor Feinrider notes that the suggestion that "law is irrelevant in the face of nuclear might is nothing more than a claim by the powerful to be above the rule of law, a claim that cannot coexist with any pretense of civility and order."<sup>230</sup>

The importance of halting SDI and other space-based weaponry is part of a larger challenge to control destructive technology and to subordinate it to the service of humanity. In 1970, Yale law professor Charles A. Reich published his underground classic, *The Greening Of America*.<sup>231</sup> Although perhaps overly-sanguine concerning the future of American society, Professor Reich's admonition concerning technology still rings true:

Beyond the industrial era lies a new age of man. The essence of that age must be the end of the subjugation of man, the end of his subordination to the machine, and the beginning of the subjugation of the machine — the use of technology to create a still higher level of life, but one based upon values beyond the machine. The politics of controlling man becomes unimportant, the politics of controlling machines and organizations become the new concern of government . . . .<sup>232</sup>

## V. Scientific Responsibility and SDI

The history of military weaponry parallels the evolution of scientific knowledge.<sup>233</sup> Scientists have not only responded to requests

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227. R.L. GARTHOFF, POLICY VERSUS LAW THE REINTERPRETATION OF THE ABM TREATY 103 (1987).

228. *Id.* at 104.

229. Feinrider, *supra* note 195, at 23.

230. *Id.*

231. C.A. REICH, THE GREENING OF AMERICA (1970).

232. *Id.* at 386.

233. B. BRODIE & F.M. BRODIE, FROM CROSSBOW TO H-BOMB (1973).

by the military and politicians for improved and novel weapons, but, at times, they have taken the initiative in pointing out the military potentialities of scientific developments. One of the most well-known examples of scientific initiative in proposing and developing weapons was Albert Einstein's August 1939 letter to President Franklin Delano Roosevelt which led to the establishment of the Manhattan Project and the development of the atomic bomb.<sup>234</sup>

Scientists traditionally have been viewed as neutral technicians and their involvement in military research and development has been viewed as raising few moral issues or dilemmas.<sup>235</sup> Following World War II, for instance, the Allied Powers were quick to recruit high-level German scientists, many of whom were Nazis, into their own space and weapons programs.<sup>236</sup>

Few scientists are willing to risk the opprobrium of their colleagues and question the propriety of their actions. Those who dissent are often ostracized and professionally sanctioned. In 1949, Robert Oppenheimer, scientific director of the Manhattan Project and Chair of the Atomic Energy Commission's General Advisory Committee, was among a group of scientists who opposed the development of the hydrogen bomb.<sup>237</sup> Partly in retribution for his opposition, Oppenheimer's security clearance was revoked and he was purged from the Atomic Energy Commission on the grounds he posed a risk to national security.<sup>238</sup> This crippling blow to the career of a prominent scientist such as Oppenheimer, made clear that it would be considered unpatriotic and unprofessional to question nuclear weapons policy.<sup>239</sup>

Another example of scientific dissent against advanced weaponry occurred in 1957 when Nobel Prize winning scientist Linnus Pauling organized professional opposition to the atmospheric testing of atomic weapons.<sup>240</sup> In response to Pauling's activities, he was labelled as a communist and summoned before the House Un-American Activities Committee.<sup>241</sup> Although no evidence was produced that Pauling was part of a subversive conspiracy, he was denied fed-

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234. See H.C. HILGARTNER, R.C. BELL & R. O'CONNOR, *NUKESPEAK* 22-23 (1982). See generally R. RHODES, *THE MAKING OF THE ATOMIC BOMB* (1986).

235. See generally R. PROCTOR, *RACIAL HYGIENE MEDICINE UNDER THE NAZIS* (1988). See also R. LIFTON, *THE NAZI DOCTORS MEDICAL KILLING AND THE PSYCHOLOGY OF GENOCIDE* (1986). The process of rationalization of immoral behavior is explored in S. MILGRAM, *OBEDIENCE TO AUTHORITY* (1969).

236. See T. BOWER, *THE PAPERCLIP CONSPIRACY THE HUNT FOR NAZI SCIENTISTS* (1987).

237. H. WASSERMAN & N. SOLOMON, *KILLING OUR OWN, THE DISASTER OF AMERICA'S EXPERIENCE WITH ATOMIC RADIATION* 52-53 (1982).

238. *Id.* at 84.

239. *Id.* at 93.

240. *Id.* at 98.

241. *Id.*

eral funds to support his research for nearly two decades.<sup>242</sup> Ironically, he later was awarded the Nobel Peace Prize for his efforts to halt nuclear testing.<sup>243</sup>

Over the course of the last few decades, it has become increasingly recognized that the responsibility for ending the arms race should be extended to the scientific community as well as to nation-states.<sup>244</sup> It has been observed that the global "arms culture"<sup>245</sup> which employs half a million scientists and accounts for half of all research and development expenditures is a perversion of the scientific mission.<sup>246</sup> World-wide, military research and development is growing at twice the rate of military spending as a whole; while total military spending exceeds the total combined spending for items such as new energy sources, the improvement of human health, raising agricultural productivity and controlling pollution.<sup>247</sup>

In 1981, Pope John Paul II commented on the responsibility of scientists in an address at the United Nations University in Hiroshima Japan.<sup>248</sup> Pope John Paul II praised scholars and research workers who "express the anxiety of the scientific world in the face of an irresponsible use of science, which too often does grievous damage to the balance of nature or brings with it the ruin and oppression of man by man."<sup>249</sup>

The Pope concluded that the application of science is not "neutral"<sup>250</sup> and "the time has come for our society and especially for the world of science to realize that the future of humanity depends on our collective moral choices."<sup>251</sup> The Pope called for the placing of all scientific resources "at the service of peace"<sup>252</sup> and towards the building of a new society which will eliminate the causes of "fratricidal wars by generously pursuing the total progress of each individual and of all humanity."<sup>253</sup>

Various non-binding international proclamations and instru-

242. *Id.*

243. *Id.*

244. See generally INDEPENDENT COMMISSION ON INTERNATIONAL HUMANITARIAN ISSUES, WINNING THE HUMAN RACE 22 (1988) (an independent group of eminent persons reporting to the United Nations on the New International Humanitarian Order).

245. WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 298 (1987) (a United Nations Commission requested to formulate a long-term environmental strategy).

246. *Id.*

247. *Id.*

248. Address by Pope John Paul II, *Moral Choices for the Future*, United Nations University, Hiroshima, Japan (Feb. 25, 1981), reprinted in NUCLEAR DISARMAMENT KEY STATEMENTS OF POPES, BISHOPS, COUNCILS AND CHURCHES 55 (P. Heyer ed. 1982).

249. *Id.* at 57.

250. *Id.*

251. *Id.*

252. *Id.* at 58.

253. *Id.*

ments emphasize that science and technology must turn away from militarism and address humanitarian concerns. Principle 18 of the Stockholm Declaration of the United Nations Conference on the Human Environment<sup>254</sup> states that science and technology must be applied for the solution of environmental problems and for the "common good of mankind."<sup>255</sup>

The Cocoyoc Declaration adopted by a 1974 United Nations environmental and trade conference observes there is a "reservoir of underutilized creative energy in the whole scientific community of the world, and that it should be more focused on research for the satisfaction of fundamental needs."<sup>256</sup>

Perhaps the most forceful denunciation of the application of contemporary science and technology to the development and refinement of weapons systems is the 1978 Poona Indictment adopted by the participants at the meeting of the World Order Models Project in Poona, India.<sup>257</sup> (Indictment) The Indictment concludes that in no area has the perversion of science and technology reached "higher levels of obscenity than in the technology of mass destruction and repression."<sup>258</sup> The Poona Indictment concludes that the "scientific enterprise must henceforth be directed especially towards the needs, skills and knowledge of the majority of the underprivileged peoples of the world, especially those in the Third World."<sup>259</sup>

The most authoritative document on scientific responsibility is the 1975 Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind.<sup>260</sup> Although addressed to States, the Declaration impliedly imposes a duty upon scientists to insure that States comply with its provisions. Paragraph 1 proclaims that States shall promote international cooperation to ensure that "the results of scientific and technological developments are used in the interests of strengthening international

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254. *The Stockholm Declaration of the United Nations Conference on the Human Environment*, (Done at Stockholm, June 16, 1972)(Report of the United Nations Conference on the Human Environment, Stockholm, June 5-16, 1972) U.N. Doc. A/CONF. 48/14 (1972) reprinted in 11 I.L.M. 1416 (1972).

255. *Id.* at Principle 18.

256. The Cocoyoc Declaration (Adopted by the participants in the United Nations Environmental Program, United Nations Conference on Trade and Development Symposium on Pattern of Resource Use, Environment and Development Strategies, Cocoyoc, Mexico, Oct. 8-12, 1974), reprinted in BASIC DOCUMENTS IN INTERNATIONAL LAW AND WORLD ORDER 415, 420 (B.H. Weston, R.A. Falk & A.A. D'Amato eds. 1980) [hereinafter BASIC DOCUMENTS]. See also, Declaration on the Third World and the Human Environment (Oi Committee Declaration) (Adopted by the participants in the Conference on Problems of the Third World and the Human Environment, Stockholm, June 1972) reprinted in *id.* at 427, 431.

257. The Perversion of Science and Technology: An Indictment (Poona Indictment) (Adopted by the participants in the fourteenth meeting of the World Order Models Project held in Poona, India, July 2-10, 1978) reprinted in BASIC DOCUMENTS, *supra* note 256, at 421.

258. *Id.* at 423.

259. *Id.* at 424.

260. G.A. Res. 3384 (XXX) Supp. (No. 1) at 86, U.N. Doc A/1033 (1975).

peace and security, freedom and independence, and also for the purpose of the economic and social development of peoples and the realization of human rights and freedoms in accordance with the Charter of the United Nations."<sup>261</sup>

Paragraph 4 stipulates that States shall refrain, *inter alia*, from the use of scientific and technological achievements for the purpose of violating the sovereignty and territorial integrity of other States, interfering in their internal affairs or waging aggressive wars.<sup>262</sup> Such acts are not only a "flagrant violation of the Charter of the United Nations and principles of international law, but constitute an inadmissible distortion of the purposes that should guide scientific and technological developments for the benefit of mankind."<sup>263</sup>

At times, these indictments of scientific complicity in the development of weapons have gone beyond moral and ethical condemnation. The 1978 Dehli Declaration adopted by the participants in an international workshop on disarmament concluded that scientists have a special responsibility and a crucial role in disarmament and that the involvement of scientists in perpetuating an unjust world order "amounts to complicity in crimes against humanity."<sup>264</sup>

While there is arguably an international consensus, as reflected in these documents, against scientific involvement in weapons development- particularly weapons of mass destruction- there are significant incentives for scientists to continue their involvement in such activity. SDI presents significant funding opportunities and "could be the leading area of growth for the national military contractors in the 1990s."<sup>265</sup> SDI research also offers the challenge of professional competition, recognition and the opportunity to serve one's country.<sup>266</sup>

Some scientists who have criticized or who have refused to participate in SDI research have been labelled as security risks and either terminated from their positions or denied research grants.<sup>267</sup> Nevertheless, in order to demonstrate the depth of opposition to the "Star Wars" program, a group of scientists at the University of Illi-

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261. *Id.* para. 1.

262. *Id.* para. 4.

263. *Id.*

264. Disarmament For A Just World: Declaration Of Principles, Proposal For A Treaty, And Call For Action (Dehli Declaration) (Adopted by the participants in the International Workshop on Disarmament, New Delhi, March 27-31, 1978) *reprinted in* BASIC DOCUMENTS, *supra* note 256, at 406, 409.

265. Hartung, *Star Wars pork barrel*, BULL. ATOMIC SCIENTIST, Jan. 1986, at 20. *See also* Vandercook, *SDI show hits the road*, BULL. ATOMIC SCIENTISTS, Oct. 1986, at 16.

266. *See generally* W.J. BROAD, STAR WARRIORS A PENETRATING LOOK INTO THE LIVES OF THE YOUNG SCIENTISTS BEHIND OUR SPACE AGE WEAPONS (1985).

267. *See* Gurman, *Walking away from Star Wars*, BULL. ATOMIC SCIENTISTS, April 1988, at 6. *See also* Gollon, *SDI funds costly for scientists*, BULL. ATOMIC SCIENTISTS, Jan. 1986, at 24.



nois at Urbana-Champaign pledged to refuse to work on SDI research programs.<sup>268</sup> As of January 1986 the pledge had been signed by 2,100 science and engineering faculty and other senior researchers as well as by roughly 1,600 graduate students and junior research staff.<sup>269</sup> By November 1985, fifty-six percent of the faculty at the nation's fourteen top-ranked physics departments had signed the pledge.<sup>270</sup>

The pledge was based upon both technical and strategic objections to SDI and concluded that SDI is a step toward the type of weapon and strategy likely "to trigger a nuclear holocaust."<sup>271</sup> Signatories pledged neither to "solicit nor accept SDI funds"<sup>272</sup> and encouraged "others to join us in this refusal."<sup>273</sup>

Two of the drafters of the pledge, in describing their motivation, explained that they entered science "to advance knowledge- not to make a living by selling quack nostrums, particularly lethal ones, to a frightful public."<sup>274</sup> By disseminating the pledge they hoped to "hold back the Star Wars program and stir up enough debate to stop it before its dependent constituency grows beyond the point of no return."<sup>275</sup>

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268. See Kogut & Weissman, *Taking the pledge against Star Wars*, BULL. ATOMIC SCIENTISTS, Jan. 1986, at 27.

269. *Id.* at 28.

270. *Id.* at 30. As of June 1986, 3,700 faculty members and 2,800 graduate students in the physical sciences and engineering, including the majority of faculty in fifty-nine leading physics departments, had signed the pledge. Sweet, *Scientists shoot down Star Wars*, BULL. ATOMIC SCIENTISTS, July/Aug. 1987, at 7. The pledge stated:

We the undersigned scientists and engineers, believe that the Strategic Defense Initiative (SDI) program (commonly known as Star Wars) is ill-conceived and dangerous. Anti-ballistic-missile defense of sufficient reliability to defend the population of the United States against a Soviet attack is not technically feasible. A system of more limited capability will only serve to escalate the nuclear arms race by encouraging the development of both additional offensive overkill and an all-out competition in anti-ballistic-missile weapons. The program will jeopardize existing arms control agreements and make arms control negotiation even more difficult than it is at present. The program is a step toward the type of weapons and strategy likely to trigger a nuclear holocaust. For these reasons, we believe that the SDI program represents, not an advance toward genuine security, but rather a major step backwards.

Accordingly, as working scientists and engineers, we pledge neither to solicit nor accept SDI funds, and we encourage others to join us in this refusal. We hope together to persuade the public and Congress not to support this deeply misguided and dangerous program.

Kogut & Weissman, *supra* note 268, at 28.

271. Kogut & Weissman, *supra* note 268, at 28. *Anti-SDI Pledge, quoted in Kogut & Weissman, supra* note 245, at 28.

272. *Id.*

273. *Id.* SDI was described in the pledge as increasing the trend towards the militarization of science; accelerating the arms race; blocking arms control, wasting resources and increasing the possibility of a nuclear first strike. *Id.*

274. *Id.* at 30.

275. *Id.* Those signing the pledge hoped their refusal to accept SDI research funds would lend moral weight to their opposition; serve to insult them from personal complicity in what they viewed as a dangerous and misguided research program; and called into question the claim that the scientific community overwhelmingly endorsed SDI. *Id.* at 28.

Scientists, as suggested by those who signed the pledge against SDI, have a moral as well as a possible international legal responsibility to refrain from voluntary involvement in the development of weapon systems, such as SDI, which are intended to form part of an illegal first strike strategy or which are violative of international treaties. Professor G.C. Weermantry of Monash University in Australia concludes that when scientists anticipate that their research will be used for "dangerous and destructive purposes:"<sup>276</sup>

it is naive for them to plead that they exercised their freedom of research in the expectation that this knowledge would be left unused despite its great commercial or military value. They bear the same responsibilities that would normally attach to any person who foresees the reasonable probability of damage from his action but who nevertheless chooses to act in the manner productive of such probable harm.<sup>277</sup>

## VI. Scientific Responsibility and the Nuremberg Principles

### A. *The Liability of Upper Echelon Officials*

Following World War II, the Allied Powers resolved to prosecute the major Nazi war criminals before a multinational tribunal.<sup>278</sup> During the drafting of the Nuremberg Charter at the London Conference of 1945 [Charter], United States Supreme Court Justice Robert H. Jackson stated that the Allies intended to prosecute "the planners, the zealots who put this thing across . . . the emphasis should be on the planning level rather than on the mere fact that at some point one . . . participated in carrying it out."<sup>279</sup>

Twenty-two defendants were prosecuted at Nuremberg and were variously indicted and convicted for Crimes against Peace (waging aggressive wars),<sup>280</sup> War Crimes<sup>281</sup> and Crimes against Hu-

276. G.C. WEERMANTRY, *NUCLEAR WEAPONS AND SCIENTIFIC RESPONSIBILITY* 153 (1987).

277. *Id.*

278. *Minutes of Conference Session of July 16, 1945* (Document XXX) in REPORT OF ROBERT H. JACKSON, UNITED STATES REPRESENTATIVE TO THE INTERNATIONAL CONFERENCE ON MILITARY TRIALS 246, 250-51 [hereinafter REPORT OF ROBERT H. JACKSON].

279. *Minutes of Conference Session of July 24, 1945* (Document XLVII) in REPORT OF ROBERT H. JACKSON at 360, 363.

280. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 35, at 461-68 (1948). Article 6(a) of the Nuremberg Charter defined Crimes against Peace:

(a) Crimes against peace: Namely, planning, preparation, initiation or waging of a war of aggression, or a war in violation of international treaties, agreements or assurances, or participation in a common plan or conspiracy for the accomplishment of any of the foregoing.

Agreement for the Prosecution and Punishment of the Major War Criminals of the European Axis, 59 Stat. 1544, E.A.S. No. 472, 82 U.N.T.S. 284, *reprinted in* 39 AM. J. INT'L L. 258 (Supp. 1945) art 6(a) [hereinafter Nuremberg Charter].

281. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 35, at 496-98. Article 6(b) of the Nuremberg Charter defined War Crimes:

manity.<sup>282</sup> In retrospect, perhaps the most significant aspect of the Nuremberg judgment is that it established individual liability for acts violative of international law.<sup>283</sup>

The Nuremberg Tribunal stated that violations of international law "are committed by men, not by abstract entities, and only by punishing individuals who commit such crimes can the provisions of international law be enforced."<sup>284</sup> Individuals cannot obtain immunity from liability based upon the fact that they are government leaders or that they are acting pursuant to obligations imposed by domestic law.<sup>285</sup> The Tribunal observed that "the very essence of the Charter is that individuals have international duties which transcend the national obligations of obedience imposed by the individual state."<sup>286</sup> An individual "cannot obtain immunity while acting in pursuance of the authority of the state, if the state in authorizing action moves outside its competence under international law."<sup>287</sup> The Tribunal also rejected the "superior orders" defense for crimes under the Charter, ruling that superior orders could only be considered "in mitigation of punishment."<sup>288</sup>

The Tribunal thus extended international criminal liability to individuals, narrowed the "superior orders" defense and rejected the "act of state" defense which provided international criminal immunity to State officials. This far-reaching extension of individual liability, however, is in stark contrast to the Tribunal's narrow definition of the scope of individual liability for substantive offenses under the Charter which had the effect of limiting criminal liability to a narrowly circumscribed leadership cadre.<sup>289</sup>

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(b) War crimes: Namely, violations of the laws or customs of wars. Such violations shall include, but not be limited to, murder, ill-treatment or deportation to slave labor or for any other purpose of civilian population of or in occupied territory, murder or ill-treatment of prisoners of war or persons on the seas, killing of hostages, plunder of public or private property, wanton destruction of cities, towns or villages, or devastation not justified by military necessity.

Nuremberg Charter, *supra* note 280, art. 6(b).

282. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 33, at 498. Article 6(c) of the Nuremberg Charter defined Crimes against Humanity:

(c) Crimes against humanity: Namely, murder, extermination, enslavement, deportation, and other inhumane acts committed against any civilian population, before or during the war, or persecutions on political, racial or religious grounds in execution of or in connection with any crime within the jurisdiction of the Tribunal, whether or not in violation of the domestic law of the country where perpetrated.

Nuremberg Charter, *supra* note 257, art. 6(c).

283. T. TAYLOR, NUREMBERG AND VIETNAM: AN AMERICAN TRAGEDY 82 (1970).

284. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 35, at 466.

285. *Id.*

286. *Id.*

287. *Id.*

288. *Id.* The Tribunal also ruled that the test for superior orders is not the existence of an order, but whether a "moral choice was in fact possible." *Id.*

289. See generally *infra* notes 290-317 and accompanying text.

Count One charged the defendants with involvement in a common plan or conspiracy to wage an aggressive war.<sup>290</sup> The Tribunal adopted a narrow definition of conspiracy which limited liability to those high echelon officials who were present at planning sessions for wars of aggression.<sup>291</sup> The conspiracy must be "clearly outlined in its criminal purpose,"<sup>292</sup> it "must not be too far removed from the time of decision and of action,"<sup>293</sup> and a "concrete plan"<sup>294</sup> to wage war must have existed.<sup>295</sup>

Count Three punished war crimes.<sup>296</sup> In order to sustain a conviction under this count, the Tribunal appears to have required that the evidence "sufficiently connect[ed]"<sup>297</sup> a defendant with the planning, ordering, inciting or commission of war crimes.<sup>298</sup> Mere knowledge or communication of orders or the proposal of discriminatory laws was not considered to be sufficient to support a conviction.<sup>299</sup> The Tribunal was also reluctant to impose criminal liability on Germans for acts which also had been engaged in by Allied Powers.<sup>300</sup>

The Tribunal did not distinguish in its judgment between those acts which comprised War Crimes and those which constituted Crimes against Humanity and the verdicts on Counts Three and Four were identical.<sup>301</sup> It narrowed the scope of Crimes against Humanity by limiting its jurisdiction over such crimes to those which had occurred from 1939 onwards.<sup>302</sup> Although "ruthlessly carried out,"<sup>303</sup> the repression of German civilians prior to 1939 was not carried out in "execution of, or in connection with"<sup>304</sup> either a Crime against Peace or a War Crime and thus did not constitute Crimes against Peace.<sup>305</sup> Thus, acts committed prior to 1939 were outside

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290. *Id.* at 467-69.

291. *Id.* at 467-68.

292. *Id.* at 467.

293. *Id.*

294. *Id.* at 468.

295. *Id.* Count Two, participation in the planning, preparation, initiation and waging of an aggressive war served to convict some of the defendants acquitted on the narrowly-drawn conspiracy charge who had helped to formulate and direct Nazi military tactics and occupation plans. *Id.* at 544-76. Those acquitted on Count One who were convicted on Count Two included Frick, *Id.* at 544-47; Funk, *Id.* at 549-52; Donitz, *Id.* at 556-60; and Seyss-Inquart, *Id.* at 574-76.

296. *Id.* at 469-96.

297. *Id.* at 529.

298. *Id.*

299. *Id.*

300. *Id.* at 558-59 (acquittal of Dönitz of the war crimes charge of waging unrestricted submarine warfare).

301. *See generally id.* at 496-98, 524-87.

302. *Id.* at 498.

303. *Id.*

304. *Id.*

305. *Id.*

the Tribunal's jurisdiction.<sup>306</sup>

Article Nine of the Nuremberg Charter declared that the Tribunal had the discretion to declare (in connection with any act of which an individual may be convicted) that a group or organization of which an individual was a member was a criminal organization.<sup>307</sup> Article Ten permitted the competent national authority of any Signatory to bring individuals to trial before national military or occupation courts for the crime of membership in a criminal organization.<sup>308</sup> The Tribunal determined that a criminal organization under the Nuremberg Charter must be bound together for a common purpose and must have been formed or used in connection with crimes punished under the Nuremberg Charter.<sup>309</sup> Membership alone was not sufficient to constitute criminality.<sup>310</sup> The Tribunal limited liability to those voluntary members who had knowledge of the criminal purposes or acts of the organization and to those conscripted members who were personally implicated in the commission of criminal acts under the Charter.<sup>311</sup> In its final judgment, the Tribunal thus narrowed its declarations of criminality to those coherent organizations whose members were directly and consistently involved in the commission of crimes under the Charter.<sup>312</sup> The Tribunal was reluctant to issue declarations of organizational criminality, explaining that criminal guilt is personal and that mass punishment should be avoided.<sup>313</sup>

Thus, the Tribunal generally limited the scope of liability under the Charter to high echelon officials who directly planned, ordered and carried out criminal acts. Nazi atrocities and aggression thus were implicitly portrayed as the acts of those with "brains and authority"<sup>314</sup> and of "station and rank"<sup>315</sup> who did not soil their "hands with blood."<sup>316</sup> They "were men who knew how to use lesser folks as tools . . . the planners and designers, the inciters and leaders without whose evil architecture the world would not have been for so

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306. *Id.*

307. Nuremberg Charter, *supra* note 280, art. 9.

308. *Id.* art. 10.

309. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 35, at 500.

310. *Id.*

311. *Id.*

312. Declarations of criminality were issued against the Leadership Corps (administrative branch) of the Nazi Party, the Gestapo (internal political police), the SD (intelligence agency of the security police), and the SS (internal security police). *Id.* at 501-17. The Tribunal declined to issue such declarations against the SA (Nazi party militia), the Reich Cabinet, and the General Staff and High Command. *Id.* at 517-23.

313. *Id.* at 500.

314. 2 THE INTERNATIONAL MILITARY TRIBUNAL. TRIAL OF THE MAJOR WAR CRIMINALS BEFORE THE INTERNATIONAL MILITARY TRIBUNAL 104 (1947) (opening argument of Justice Jackson) [hereinafter 2 TRIAL OF THE MAJOR WAR CRIMINALS].

315. *Id.* at 105.

316. *Id.*

long scourged with the violence and lawlessness and wracked with the agonies and convulsions of this terrible war."<sup>317</sup>

*B. The Liability of Low Echelon Officials and Private Individuals*

The Nuremberg Tribunal did not directly address the criminal liability of those below the policy level. In the *Flick* case,<sup>318</sup> however, a United States Military Tribunal rejected the argument that international law "is a matter wholly outside the work, interest and knowledge of private individuals."<sup>319</sup> The Tribunal ruled that:

International law, as such, binds every citizen just as does ordinary municipal law. Acts adjudged criminal when done by an officer of the Government are criminal also when done by a private individual. The guilt differs only in magnitude, not in quality. The offender in either case is charged with personal wrong and punishment falls on the offender in *propria persona*. The application of international law to individuals is no novelty . . . . There is no justification for a limitation of responsibility to public officials.<sup>320</sup>

However, despite the general acceptance of the fact that Hitler relied upon others to execute his plans,<sup>321</sup> and that "the guilt of Germany will not be erased for the people of Germany share it in large measure . . .,"<sup>322</sup> post-Nuremberg war crimes tribunals were reluctant to extend criminal liability for Crimes against Peace below the policy-making level. In 1948, an American tribunal in the *I.G. Farben* case<sup>323</sup> observed that, of necessity, the great majority of Germans supported the waging of war in some degree;<sup>324</sup> but that the International Military Tribunal at Nuremberg had limited liability "high among those who lead their country into war."<sup>325</sup> The Tribunal noted that an extension of liability below the policy-making level "would lead far afield."<sup>326</sup> There could be no "practical limitation on criminal responsibility that would not include, on principle

317. *Id.*

318. Trial of Friedrich Flick and Five Others, 9 L. REP. TRIALS WAR CRIM 1 (U.N. War Crimes Comm'n, American Mil. Trib., Nuremberg, Germany 1947) [hereinafter The Flick Trial].

319. *Id.* at 18.

320. *Id.*

321. 19 THE INTERNATIONAL MILITARY TRIBUNAL TRIAL OF THE MAJOR WAR CRIMINALS BEFORE THE INTERNATIONAL MILITARY TRIBUNAL, *supra* note 35, at 430 (closing argument of Justice Jackson) [hereinafter 19 TRIAL OF THE MAJOR WAR CRIMINALS].

322. *Id.* at 434 (closing argument of Sir Hartley Shawcross, Chief Prosecutor of the United Kingdom).

323. The I.G. Farben Trial, 10 L. REP. TRIALS WAR CRIM. 1 (U.N. War Crimes Comm'n, American Mil. Trib., Nuremberg, Germany 1948) [hereinafter The I.G. Farben Trial].

324. *Id.* at 38.

325. *Id.* at 39.

326. *Id.* at 38.

the private soldier on the battlefield, the farmer who increased his production of foodstuffs to sustain the armed forces, or the housewife who conserved fats for the making of munitions."<sup>327</sup> Under these circumstances, "the entire manpower of Germany could, at the uncontrolled discretion of the indicting authorities, be held to answer for waging wars of aggression. That would, indeed result in the possibility of mass punishment."<sup>328</sup>

As Judge Anderson observed in the *Krupp* trial,<sup>329</sup> this would lead to the morally and legally "obnoxious"<sup>330</sup> and unprecedented application of mass punishment.<sup>331</sup> Judge Anderson observed that this would mean that, in the future, citizens would be obliged to determine at their peril, whether the war in which they were required to participate was legally justified.<sup>332</sup> It would also require the private citizen, under the heat of the moment, to weigh the relevant facts and law and to make the unhappy choice between loyalty to their country and adherence to international law.<sup>333</sup> This was viewed as imposing a particularly heavy burden on citizens, given the ambiguity of the pertinent legal standards.<sup>334</sup>

Underlying this refusal to extend liability beyond the policy level was the belief that the German people had been exposed to Nazi propaganda and had no knowledge of the criminal activities of the totalitarian Third Reich.<sup>335</sup> Those who did protest were subject to repression and there was thought to be no possibility for independent criticism or expression.<sup>336</sup> In addition, there was the pragmatic realization that wide-spread trials would create animosity and destabilize German society; and that the Allies required a strong Germany which would serve as a bulwark against Soviet expansionism.<sup>337</sup> Many lower-level Nazis possessed valuable skills, had demonstrated anti-Soviet credentials and were viewed as more reliable than the left-wing opponents of the Third Reich.<sup>338</sup>

The acquittal of Albert Speer at the Nuremberg trial established principles which were relied upon as precedents for the acquittal of various individuals in the private sector in later war crimes

327. *Id.*

328. *Id.*

329. The *Krupp* Trial, 10 L. REP. TRIALS WAR CRIM. 69, 109 (U.N. War Crimes Comm'n, American Mil. Trib., Nuremberg, Germany 1948) (concurring opinion of Presiding Judge H.C. Anderson) [hereinafter *The Krupp Trial*].

330. *Id.* at 128.

331. *Id.*

332. *Id.*

333. The I.G. Farben Trial, *supra* note 323, at 39.

334. The *Krupp* Trial, *supra* note 329, at 128 (Anderson J.).

335. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 35, at 423.

336. *Id.*

337. See generally Lippman, *The Denaturalization Of Nazi War Criminals In The United States: Is Justice Being Served?* 7 HOUS. J. INT'L L. 169, 173-77 (1985).

338. *Id.*

trials.<sup>339</sup> In 1942, Speer was appointed Minister for Armaments and Munitions and later served as Plenipotentiary General for Armaments and was a member of the Central Planning Board.<sup>340</sup> He also served in the Reichstag from 1941 until the end of the war.<sup>341</sup>

The Nuremberg Tribunal noted that Speer became head of the armament industry "well after all of the wars had been commenced and were under way"<sup>342</sup> and thus had no role in or knowledge of the planning session for wars of aggression.<sup>343</sup> In addition to his acquittal under Count One of engaging in a common plan to wage wars of aggression, he was acquitted under Count Two of waging an aggressive war.<sup>344</sup> The Tribunal noted that Speer's "activities in charge of German armament production were in aid of the war effort in the same way that other productive enterprises aid in the waging of war . . . ."<sup>345</sup> The Tribunal concluded that it was "not prepared to find that such activities involve engaging in the common plan to wage aggressive war as charged under Count One, or waging aggressive war as charged under Count Two."<sup>346</sup>

The *Speer* decision thus established that the production of armaments did not *per se* constitute criminal involvement in a common plan to initiate, plan or prepare a war of aggression; or the waging of such a war.<sup>347</sup> There was, however, a suggestion that knowledge of aggressive war plans combined with responsibility for the industrial production or distribution of armaments would be sufficient to constitute involvement in a common plan to wage an aggressive war.<sup>348</sup>

### C. *The Prosecution of Industrialists and the International Legal Liability of Scientists*

The Allied military tribunals convened following the International Military Tribunal at Nuremberg generally adhered to the

339. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 35, at 576-79.

340. *Id.*

341. *Id.*

342. *Id.*

343. *Id.*

344. *Id.*

345. *Id.*

346. *Id.*

347. *Id.*

348. *Id.* at 552-56 (judgment per Schacht). In the case of Schacht, who until 1943 was a major figure in Germany's rearmament program, the Nuremberg Tribunal observed that "rearmament of itself is not criminal under the Charter." *Id.* at 554. To constitute a Crime against Peace, the Tribunal ruled that it must be demonstrated that Schacht "carried out this rearmament as part of the Nazi plans to wage aggressive wars." *Id.* The Tribunal ruled that it could not determine beyond a reasonable doubt whether "Schacht did in fact know of the Nazi aggressive plans." *Id.* at 555. The Tribunal, however, did note that Schacht, "with his intimate knowledge of German finance, was in a particularly good position to understand the true significance of Hitler's frantic rearmament and to realize that the economic policy adopted was consistent only with war as its object." *Id.* at 555.



Speer precedent in acquitting industrialists of war crimes.<sup>349</sup>

The *Krupp Case*<sup>350</sup> involved the prosecution of officials of the principal German manufacturer of armaments and warships.<sup>351</sup> Judge Anderson noted that Speer, who was head of the industrial program for the production of armaments, had been acquitted.<sup>352</sup> Under these circumstances, Judge Anderson argued that it would be

unprecedented to hold that the activities of private citizens in the production of armament constituted waging of war when those of the official supervising those activities did not constitute that offence. So far as I am able to perceive, there is no reasonable basis for making such a distinction . . . ."<sup>353</sup>

Allied war crime tribunals also acquitted industrialists on charges of involvement in a common plan to wage an aggressive war based upon their lack of formal involvement in and specific or general knowledge of Nazi war plans.<sup>354</sup> In the *I.G. Farben* trial,<sup>355</sup> a United States military tribunal acquitted Nazi Karl Krauch, a major figure within the chemical manufacturer I.G. Farben and Plenipotentiary General for Special Questions of Chemical Production, of conspiracy to commit a Crime against Peace.<sup>356</sup> The Tribunal concluded that Krauch had not participated in the planning of aggressive wars and had no specific or general knowledge of such plans.<sup>357</sup> The plans for war, according to the Tribunal, "were made by and within a closely guarded circle and the accused Krauch was excluded from membership in that circle."<sup>358</sup>

Although the Tribunal noted that Krauch may have been "alarmed at the accelerated pace that armament was taking,"<sup>359</sup> it concluded that Krauch did not realize that, in addition to strengthening Germany, he was participating "in making the nation ready for a planned attack of an aggressive nature."<sup>360</sup> Thus, the Tribunal concluded that Krauch

349. See Zeck, *Nuremberg: Proceedings Subsequent To Goering Et. Al.*, 26 N.C. L. REV. 350 (1948).

350. The Krupp Trial, *supra* note 329.

351. *Id.* at 76-81.

352. *Id.* at 127.

353. *Id.* Judge Anderson noted that the defendants' activities in connection with the war consisted primarily in the performance of their duties as employees engaged in the manufacture and sale of armaments and in their membership in economic associations organized to assist the war effort. He concluded that to hold that such activities constitute waging an aggressive war would constitute an *ex post facto* law. *Id.*

354. The I.G. Farben Trial, *supra* note 323, at 17.

355. *Id.* at 1.

356. *Id.* at 36.

357. *Id.* at 17-18.

358. *Id.* at 17.

359. *Id.* at 18.

360. *Id.*

contributed his efforts in much the same manner and measure as thousands of other Germans who occupied positions of importance below the level of Nazi civil and military leaders who were tried and condemned by the International Military Tribunal.<sup>361</sup>

In sum, the post-war Allied military tribunals were reluctant to imply knowledge to private industrialists of German aggressive war plans and acquitted them of war crimes charges. They determined that such individuals lacked both specific and general knowledge of German war plans and did not imply any such knowledge based upon the volume or nature of German arms production or the individuals' economic or political responsibilities.<sup>362</sup>

Private industrialists, however, were not insulated from international criminal liability in those instances in which they knowingly and voluntarily cooperated in illegal governmental activities or in the provision of toxic substances used to inflict harm. In the *Zyklon B* case,<sup>363</sup> two of the defendants were convicted and executed for providing poison gas to concentration camps.<sup>364</sup> The British military court accepted the prosecution's theory that "knowingly to supply a commodity to a branch of the State which was using that commodity for the mass extermination of Allied civilian nationals was a war crime, and that the people who did it were war criminals for putting the means to commit the crime into the hands of those who actually carried it out."<sup>365</sup> The Court concluded that the defendants were aware that the vast quantity of poison gas they were supplying was not being used exclusively for delousing clothing or for the purpose

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361. *Id.* The Tribunal conceded that German rearmament was in excess of that required for defensive purposes. However, it observed that Krauch and other defendants were not military experts and they thus were not equipped to evaluate the significance of German rearmament. *Id.* at 36-37. In addition, the Tribunal determined there was no "common knowledge in Germany that would apprise any of the defendants of the existence of Hitler's plans or ultimate purpose." *Id.* at 36. In the *Krupp* decision, Judge Anderson noted that the defendants were not able to distinguish whether rearmament was for offensive or defensive purposes. The mere fact they manufactured offensive weapons was not viewed as determinative since offensive warfare and aggressive war "is not the same thing. Offensive weapons may be, and frequently are, employed by a nation in conducting a justifiable war." The *Krupp* Trial, *supra* note 329.

362. An extreme example of reluctance to imply knowledge involved the sale of *Zyklon B* gas used to exterminate those detained in concentration camps. A United States military tribunal refused to imply knowledge to those who sold the gas to the German government:

But neither the volume of production, nor the fact that large quantities were destined to concentration camps was in itself sufficient to impute criminal responsibility, as it was established by the evidence that there existed a great demand for insecticides wherever large numbers of displaced persons, brought in from widely scattered regions, were confined in congested quarters lacking adequate sanitary facilities.

The I.G. Farben Trial, *supra* note 323, at 24.

363. The *Zyklon B* Case, 1 L. REP. TRIALS WAR CRIM. 93 (U.N. War Crimes Comm'n, Brit. Mil. Ct., Hamburg, Germany 1946).

364. *Id.* at 102.

365. *Id.* at 94.

of disinfecting buildings, but was being used to kill human beings.<sup>366</sup> It ruled that "any civilian who is an accessory to a violation of the laws and customs of war is himself also liable as a war criminal."<sup>367</sup>

Once obtaining knowledge of illegal activities, a manufacturer appears to have a duty to terminate their involvement in the illegal activity. In the *I.G. Farben* case, the defendants were acquitted of providing drugs and vaccines to doctors who were allegedly using the drugs to conduct experiments on the typhus virus using the inmates of concentration camps.<sup>368</sup> The Tribunal pointed out that Farben "had stopped the forwarding of drugs to these physicians as soon as their improper conduct was suspected."<sup>369</sup> Failure to take action to terminate complicity in illegal activity may be excused, however, on the grounds of necessity — a threat of imminent and severe physical harm inflicted by officials of the Third Reich.<sup>370</sup>

Thus, post-Nuremberg military courts were reluctant to imply knowledge of aggressive German war plans and war crimes to industrialists involved in the production of armaments. However, where a knowing and voluntary involvement by industrialists in the preparation for aggressive war was demonstrated, the tribunals were unwilling to permit such individuals to avoid legal liability by "putting on the symbolic silk hat and claiming privileged status."<sup>371</sup>

#### D. *Scientists and the Right To Peace*

American scientists, unlike most of the German industrialists prosecuted following World War II, are not merely manufacturing weapons. Instead, they are designing, researching, testing and, in some cases, initiating a new generation of high-technology weapons systems. Some of these weapons systems, such as SDI, are uniquely appropriate to and designed as part of an aggressive nuclear first strike.<sup>372</sup> The end result will be the militarization of the common heritage of outer space. Unlike the alleged secret Nazi military plans, the illegal American nuclear first strike strategy is well-publicized and well-known.<sup>373</sup> Those American scientists involved in the SDI program are thus voluntarily and knowingly providing the ille-

366. *Id.* at 101.

367. *Id.* at 103.

368. The *I.G. Farben* Trial, *supra* note 323, at 25.

369. *Id.*

370. The Flick Trial, *supra* note 318, at 20-21.

371. The Krupp Trial, *supra* note 329, at 172. The acquittal of various industrialists appears ingenuous given the defendants' sophistication and involvement in the military preparation of the Third Reich. See The Flick Trial, *supra* note 318, at 17.

372. See *supra* notes 104-122 and accompanying text.

373. See generally Lippman, *Nuclear Weapons and International Law: Towards a Declaration on the Prevention and Punishment of the Crime of Nuclear Humancide*, 8 *LOY. L.A. INT'L & COMP. L.J.* 183 (1986).

gal instrumentalities which may be used in furtherance of a criminal war of aggression.

Scientists, as previously indicated, have an internationally recognized moral responsibility to devote their talents to peaceful purposes;<sup>374</sup> a knowing breach of this duty, under post-World War II precedents, may result in the imposition of international criminal liability.<sup>375</sup> Under such circumstances, a scientist must know what he is doing is "wrong and so far from it being unjust to punish him, it would be unjust if his wrong were allowed to go unpunished."<sup>376</sup> As Professor Weermantry commented, knowingly being "party to the construction of weaponry without which a crime cannot be committed is equivalent to complicity in the crime."<sup>377</sup>

The destructive potential of the extension of the arms race into space and of a nuclear first strike are so devastating that an application of the principles established in post-World War II war crimes cases to contemporary scientists is required if civilization is to be protected and preserved. Although the Nuremberg trials were formerly initiated by the Allied Powers, as in the case of the militarization of space, the "real complaining party at . . . bar is Civilization."<sup>378</sup> Justice Jackson noted that the hope of those whose interests are counter to the most noble aspirations of the peoples of the world is that international law will "lag so far behind the moral sense of mankind that conduct which is crime in the moral sense must be regarded as innocent in law."<sup>379</sup>

Justice Jackson made it clear that the principles which were being applied to the Germans at Nuremberg, would, in the future, bind and be applied to the citizens and leaders of the Allied governments.<sup>380</sup> The privilege of the peoples of the world to enforce these principles and to halt the development of space weapons systems is implicit in the 1978 Declaration on the Preparation of Societies for Life in Peace which formally recognized the collective human right to peace.<sup>381</sup> The first operative paragraph of the 1978 Declaration proclaims that every nation and human being has the "inherent right

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374. See *supra* notes 233-77 and accompanying text.

375. See generally *In Re Yamashita*, 327 U.S. 1, 14-15 (1946).

376. 22 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 35, at 462.

377. G.C. WEERMANTRY, *supra* note 276, at 150.

378. 2 TRIAL OF THE MAJOR WAR CRIMINALS, *supra* note 314, at 155 (opening statement of Justice Jackson).

379. *Id.*

380. *Id.* at 154. It should be noted that the Army manual of land warfare, *inter alia*, punishes the inchoate offenses of conspiracy, direct incitement and complicity in the commission of Crimes against Peace, War Crimes and Crimes Against Humanity. See DEP'T OF THE ARMY, FIELD MANUAL 27-10: THE LAW OF LAND WARFARE para. 500 (1956), cited in Boyle, *Determining U.S. Responsibility for Contra Operations Under International Law*, 81 AM. J. INT'L L. 86, 89 (1987).

381. G.A. Res. 33/73 (XXXIII) 33 U.N. GAOR Supp. (No. 45) at 55, U.N. Doc. A/33/486 (1978).

to peace."<sup>382</sup> The second paragraph reiterates the Nuremberg rule that the planning, preparation or initiation of a war of aggression is a crime against peace which is prohibited under international law.<sup>383</sup>

The 1984 Declaration on the Right of Peoples to Peace<sup>384</sup> proclaims that life without war serves as the primary international prerequisite for the material well-being and development of countries and for the provision of fundamental human rights.<sup>385</sup> In the nuclear age, the preservation of peace is considered to be central to the preservation of human civilization.<sup>386</sup> The Preamble concludes that "the maintenance of a peaceful life for peoples is the sacred duty of each state."<sup>387</sup> Paragraph 1 proclaims that "the peoples of our planet have a sacred right to peace."<sup>388</sup> Paragraph 2 declares that each state has a fundamental obligation to preserve and to promote "the right of peoples to peace."<sup>389</sup> Paragraph 4 appeals to all states and international organizations to assist in implementing the right to peace through the adoption of appropriate measures at both the national and international levels.<sup>390</sup> These steps, as enumerated in paragraph 3, should be directed towards the elimination of the threat of conventional and nuclear war, the renunciation of the use of force in international relations and the settlement of international disputes by peaceful means.<sup>391</sup>

Reviewing the activities of the United Nations, Professor Ved Nanda concludes that the right to peace now has been established as a fundamental, collective human right.<sup>392</sup> States, in Nanda's view, have the duty to refrain from the threat or use of armed force, are obligated to resolve international disputes by peaceful means and should strive to lessen domestic and international tensions through the promotion of human rights and economic development.<sup>393</sup> As a corollary to the duty of states to promote peace, Nanda argues that individuals have the right to participate in decision-making on issues of war and peace, to promote peaceful governmental policies and "to object to, challenge and oppose those policies an individual perceives to be threatening or inviting the use of force."<sup>394</sup> Included in the

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382. *Id.* section 1, para. 1.

383. *Id.* section 1, para. 2.

384. G.A. Res. 39/11 (XXXIX) 39 U.N. GAOR Supp. (No. 51) at 220, U.N. Doc. A/39/L.14 (1984).

385. *Id.* at Preamble.

386. *Id.*

387. *Id.*

388. *Id.* para. 1.

389. *Id.* para. 2.

390. *Id.* para 4.

391. *Id.* para. 3.

392. Nanda, *Nuclear Weapons And The Right To Peace Under International Law*, 9 BROOKLYN J. INT'L L. 283, 289 (1983).

393. *Id.* at 293.

394. *Id.*

latter, is the privilege of challenging and preventing the development of SDI and space-based weapons.

## VII. International Law and American Domestic Law

The United States Supreme Court has recognized that "[i]nternational law is part of our law, and must be ascertained and administered by the courts of justice of appropriate jurisdictions, as often as questions of right depending upon it are duly presented for their determination."<sup>395</sup> International law, according to the Supreme Court, "may be ascertained by consulting the works of jurists, writings professedly on public law; or by the general usage and practice of nations; or by judicial decisions recognizing and enforcing that law."<sup>396</sup> Where there are no controlling executive or legislative acts or judicial decisions, international law may be determined by the "customs and usages of civilized nations."<sup>397</sup> A recognized custom and usage must have the general assent of civilized nations in order to insure that domestic courts will not "impose idiosyncratic legal rules . . . in the name of applying international law."<sup>398</sup> In particular, the Supreme Court has recognized that American domestic courts traditionally have applied the international law of war, including that part which regulates the conduct of war and the rights and duties of combatants and civilians.<sup>399</sup>

Attempts to interpose claims based upon international law to halt weapons development, testing or deployment or to challenge United States foreign policy have been rejected by courts on the grounds that the defendants lack standing or that their claim involves a political question. In *Pauling v. McElroy*,<sup>400</sup> the plaintiffs sought an injunction prohibiting the detonation of any nuclear weapons which might produce radiation or radioactive atomic nuclei, requested a declaratory judgment that nuclear weapons tests are illegal and sued for damages on behalf of those who sustained injuries as a result of such tests.<sup>401</sup> The defendants were denied standing on the grounds they did not

allege a specific threatened injury to themselves, apart from

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395. *The Paquete Habana*, 175 U.S. 677, 700 (1900).

396. *United States v. Smith*, 18 U.S.(5 Wheat.) 153, 160-61 (1820); *Lopes v. Schroeder*, 225 F. Supp. 292, 295 (E.D. Pa. 1963).

397. *The Paquete Habana*, 175 U.S. at 700. See generally Statute of the International Court of Justice, June 26, 1945, article 38(1)(b), 59 Stat. 1031 T.S. no. 993, 1976 U.N.Y.B. 1052, U.N. Sales No. E.78.I.1 (entered into force for the United States, Oct. 24, 1945).

398. *Filartiga v. Pena-Irala*, 630 F.2d 876, 881 (2d Cir. 1980) (citing the *Paquete Habana*, 175 U.S. at 694).

399. *Ex Parte Quirin*, 317 U.S. 17, 27-28 (1942).

400. *Pauling v. McElroy*, 278 F.2d 252 (D.C. App. 1960) cert. denied, 364 U.S. 835 (1960).

401. *Id.* at 253.

others, but rather set themselves up as protestants, on behalf of all mankind, against the risks of nuclear contamination in common with people generally. Standing to sue, even as to the citizen of the United States, does not arise out of such general and indefinite allegations of injury.<sup>402</sup>

In *United States v. May*,<sup>403</sup> the defendants were denied standing to raise the legality of the Trident Missile on the grounds that they were unable to demonstrate any direct injury to themselves.<sup>404</sup> The Court explained that the judiciary did not

sit to render judgements upon the legality of the conduct of the government at the request of any person who asks us to because he happens to think that what the government is doing is wrong. He must be able to show some direct harm to himself, not a theoretical future harm to all of us that may or may not occur.<sup>405</sup>

In other cases, federal courts have ruled that the political question doctrine prevents the judiciary from inquiring into the legality under international law of foreign policy and defense matters.<sup>406</sup> In *United States v. Berrigan*,<sup>407</sup> the District Court observed that the recognition of a belligerency abroad and the measures necessary to protect national security are "uniquely an executive and legislative responsibility."<sup>408</sup> The Court went on to note that:

Whether the actions by the executive and the legislative branches in utilizing our armed forces are in accord with international law is a question which necessarily must be left to the elected representatives of the people and not to the judiciary. This is so even if the government's actions are contrary to the valid treaties to which the government is a signatory.<sup>409</sup>

In the words of then Circuit Court Judge Warren E. Burger, judges are not "Guardian Elders ordained to review the political judgments of elected representatives of the people."<sup>410</sup> Burger went

402. *Id.* at 254. Defendants who have challenged policies on the grounds of Nuremberg have had their claims rejected on the grounds that they themselves have not been ordered or required to engage in war crimes. See generally *United States v. Berrigan*, 283 F. Supp. 336, 341 (D. Md. 1968), *aff'd sub nom* *United States v. Eberhardt*, 417 F.2d 1009 (4th Cir. 1969), *cert. denied* 397 U.S. 909 (1970). See also *United States v. Kabat*, 797 F.2d 580, 590 (8th Cir. 1986).

403. *United States v. May*, 622 F.2d 1000 (9th Cir. 1980).

404. *Id.* at 1009.

405. *Id.*

406. See *Davi v. Laird*, 318 F. Supp. 478, 484 (W.D. Va. 1970).

407. *United States v. Berrigan*, 283 F. Supp. 336 (D. Md. 1968).

408. *Id.* at 342.

409. *Id.* The court also noted that "Congress may constitutionally override treaties by later enactment of an inconsistent statute, even though the subsequent statute is in violation of international law." *Id.*

410. *Pauling v. McNamara*, 331 F.2d 796, 799 (D.C. Cir. 1963), *cert. denied*, 377 U.S.

on to observe that judges are

neither gods nor godlike, but judicial officers with narrow and limited authority. Our entire System of Government would suffer incalculable mischief should judges attempt to interpose the judicial will above that of the Congress and President, even were we so bold as to assume that we can make better decisions on such issues.<sup>411</sup>

Frustrated by their inability to obtain judicial review of their international law claims, various individuals have claimed the right under international law to engage in criminal acts of civil resistance in an attempt to conform domestic law to international law. Courts have rejected such arguments and have concluded that the blocking of streets or sidewalks "under the aegis of international law would foment an anarchical result."<sup>412</sup> Courts have found no precedent for the proposition that

a free and democratic society must excuse violation of its laws by those seeking to conform their country's policies to international law. Compliance with international law must be sought through the ballot box, or, where appropriate by joint action. Illegal conduct designed to influence policies cannot be considered "necessary" where such lawful avenues are available.<sup>413</sup>

Thus, courts have relied upon the standing and political question doctrines to avoid the litigation of international law challenges to United States' foreign and defense policies. They also have denied individuals standing in criminal cases

to mount a similar attack through the back door, by using it as a defense to a charge that they deliberately brought on themselves, one that bears no genuine relationship to the government program that they seek to attack. The approach is different, but the result must be the same.<sup>414</sup>

One available remedy to compel United States courts to enforce international law and to take a step towards halting SDI and the militarization of space is for people to invoke the privilege of citizen's arrest and to bring those scientists involved in such research before the bar of justice.

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933 (1964).

411. *Id.*

412. *People v. Weber*, 162 Cal.App. 3d Supp. 1, 6, 208 Cal. Rptr. 719, 722 (1984).

413. *In Re Weller*, 164 Cal. App. 3d 44, 49, 210 Cal. Rptr. 130, 133 (1985). *See also* *United States v. Allen*, 760 F.2d 447, 453 (2d Cir. 1985).

414. *United States v. May*, 622 F.2d 1000, 1009-10 (9th Cir. 1980).



### VIII. Citizen's Arrest and the Violation of International Law

Prior to the formation of formal police organizations, the primary burden of law enforcement was vested in the citizenry. During the first four to five hundred years of the development of the common law, private persons and local sheriffs and constables possessed equal powers of arrest.<sup>415</sup>

England's Ordinance of 1195 commanded all men to arrest outlaws, robbers, thieves and those who assisted such criminals;<sup>416</sup> and in 1233 a system of night watchmen was established in which the watchmen were directed to arrest those armed individuals who entered the village at night.<sup>417</sup> The Statute of Winchester of 1285 was the "great legislative landmark"<sup>418</sup> which embodied existing rules and practices.<sup>419</sup> In addition to requiring the appointment of a specified number of night watchmen for every city and borough,<sup>420</sup> the Statute formally established a system of local citizen-based law enforcement.<sup>421</sup> The so-called "hue and cry" required all men between fifteen and sixty to respond to an alarm by seizing their weapons and aiding in the pursuit of an offender.<sup>422</sup> Whenever a crime was committed, local inhabitants were responsible for apprehending robbers and felons within forty days; a failure to do so resulted in the imposition of liability upon the village inhabitants.<sup>423</sup> A fourth mechanism, *posse comitatus*, empowered local law enforcement officials to call upon ordinary citizens to assist in the arrest of suspected wrongdoers.<sup>424</sup>

Thus, "until quite modern times police duties were the duty of every man"<sup>425</sup> and law and order depended upon "a web of related, interlocking activities and organizations, that enlisted the service of a great majority of the men in the realm . . ."<sup>426</sup> In 1829, a formal system of professional police was introduced in England<sup>427</sup> in order to better provide for law and order in the new urban and industrial environments.<sup>428</sup> The arrest powers of the newly formed police or

415. *Stevenson v. State*, 287 Md. 504, 517, 413 A.2d 1340, 1347 (1980).

416. Wilgus, *Arrest Without A Warrant*, 22 MICH. L. REV. 541, 547 (1924).

417. *Id.*

418. Hall, *Legal And Social Aspects Of Arrest Without A Warrant*, 49 HARVARD L. REV. 566, 579 (1936).

419. *Id.*

420. *Id.*

421. *Id.* at 580.

422. Warner, *Investigating The Law Of Arrest*, 31 J. CRIM. L. & CRIMINOLOGY & POLICE SCI. 111, 112 (1940). See also Hall, *supra* note 393, at 580.

423. *Stevenson v. State*, 287 Md. 504, 517 n.6, 413 A.2d 1340, 1347 n.6 (1980).

424. Warner, *supra* note 422, at 112.

425. Hall, *supra* note 418, at 579.

426. *Id.*

427. *Id.* at 583.

428. *Id.* at 585.

"bobbies" generally were identical with those which continued to be vested in ordinary citizens.<sup>429</sup>

The common law right of citizen arrest was transported to the United States.<sup>430</sup> Section 22 of the American Law Institute's Model Code of Criminal Procedure sets forth the prevailing rule for arrests by private persons.<sup>431</sup> A private person may make an arrest:

(a) When the person to be arrested has in his presence committed a misdemeanor, amounting to a breach of the peace, or a felony.

(b) When a felony has been in fact committed and he has reasonable ground to believe that the person to be arrested has committed it.<sup>432</sup>

According to this formulation, a private individual may arrest an individual who commits, in their presence, a misdemeanor, which constitutes a breach of the peace, or a felony.<sup>433</sup> Individuals also are privileged to conduct a warrantless arrest of an individual who is suspected of having committed a felony, not in their presence, when: a felony, in fact, has been committed and there are reasonable grounds to believe the person has actually committed the felony.<sup>434</sup>

Section 26 states that the private individual making the arrest shall inform the person to be arrested of the intention and grounds of the arrest.<sup>435</sup> Such information need not be provided if the offender is engaged in the commission of an offense; or is being pursued immediately following the commission of the offense.<sup>436</sup> The private citizen also need not inform the offender of the arrest if the offender flees or forcibly resists before the private citizen has had the opportunity to inform them of the arrest.<sup>437</sup>

Following an arrest, an individual only may be detained for a

429. Warner *supra* note 422, at 112. A police officer was justified in arresting an individual upon a reasonable belief that a felony had been committed. A private individual was entitled to arrest an individual if there was a reasonable belief that a crime had been committed *and* the individual, in fact, had committed the felony. *Id.* at 112, n.4.

430. See generally M.C. BASSIOUNI, CITIZEN'S ARREST THE LAW OF ARREST, SEARCH AND SEIZURE FOR PRIVATE CITIZENS AND PRIVATE POLICE (1977).

431. CODE OF CRIMINAL PROCEDURE sec. 22 (Official Draft 1930) [hereinafter CODE OF CRIMINAL PROCEDURE].

432. *Id.*

433. *Id.* sec. 22 commentary, at 238.

434. *Id.* at 239-40.

435. CODE OF CRIMINAL PROCEDURE, *supra* note 430, sec. 26.

A private person when making an arrest shall inform the person to be arrested of the intention to arrest him and the cause of the arrest, unless he is then engaged in the commission of an offense, or is pursued immediately after its commission or after an escape, or flees or forcibly resists before the person making the arrest has opportunity so to inform him, or when the giving of such information will imperil the arrest.

*Id.*

436. *Id.*

437. *Id.*

reasonable period and in a reasonable manner prior to their being turned over to the authorities.<sup>438</sup> Likewise, the permissible amount of force is adjudged on a reasonableness standard;<sup>439</sup> and the offender has a duty to cooperate and not to resist the arrest.<sup>440</sup>

In *Stevenson v. State*,<sup>441</sup> the Maryland Court of Appeals rejected the contention that in modern times the judicial approval and the utilization of citizen's arrest would lead to social disruption and chaos.<sup>442</sup> The Court pointed out that most people would not choose to exercise the right of citizen's arrest and that citizens exercising this right would not exercise it in an arbitrary fashion since they would be required to justify the arrest before a judicial forum.<sup>443</sup> Most importantly, the court concluded that "placing greater obstacles in the path of citizens who wish to aid society may, in the end, prove to be detrimental to the maintenance of peace and good order in the community."<sup>444</sup> As observed in *Brooks v. Commonwealth*:<sup>445</sup>

It is also said that arrest by a private person is contrary to the genius of our institutions, and is the relic of a barbarous age. But the reverse is the case in a republic, where the people themselves represent its security. The felon is an enemy to the sovereignty and security, forfeits his liberty, and cannot complain that the hand of his fellowman arrests his flight and returns him to justice. What title has he to immunity from the law which he has violated, and to be permitted to escape its penalties because the officer of justice is not at hand to seize him? He has broken the bond of society; he has dealt a blow at its welfare and security, and he has placed himself in open hostility to all its faithful members, whose duty it becomes to bring him to justice.<sup>446</sup>

The power of citizen's arrest developed due to the lack of organized state law enforcement authorities and as a reflection of the philosophical belief that local communities should participate in the policing and defining of the security needs of their own communities.<sup>447</sup> In the international arena, there is a similar lack of law enforcement authority and a new realization that individuals must act in a morally responsible fashion in order to preserve the habitability of the

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438. M.C. BASSIOUNI, *supra* note 429, at 49-50.

439. *Id.* at 50-51.

440. *Id.* at 56-57. For a discussion of civil liability for a "false" citizen's arrest *see id.* at 60-64.

441. *Stevenson v. State*, 287 Md. 504, 413 A.2d 1340 (1980).

442. 287 Md. at 520, 413 A.2d at 1349.

443. *Id.*

444. *Id.*

445. *Brooks v. Commonwealth*, 61 Pa. 352, 359 (1869) *quoted in* 287 Md. at 520-21, 413 A.2d at 1349.

446. *Id.*

447. *See generally supra* notes 416, 393, 397.

planet.<sup>448</sup> As with domestic offenses, when international crimes pose a threat to individual safety, the community is legally empowered to protect itself. Where the threat is to collective safety and is sponsored by governmental authorities, the imperative to act is even greater than in the case of the isolated "common criminal."

Individual citizens arguably have a compelling responsibility to arrest scientists engaged in SDI and other space-based weapons research. Such scientists are knowingly and voluntarily developing weapons systems which are prohibited by the Outer Space<sup>449</sup> and ABM Treaties<sup>450</sup> which are intended to be used as part of an illegal nuclear first strike in violation of the United Nations Charter.<sup>451</sup> Scientists not only have an international moral responsibility to devote themselves to peaceful pursuits,<sup>452</sup> but are guilty of waging an aggressive war under the principles established in post-World War II war crimes trials.<sup>453</sup> The citizen's arrest is a mechanism which may force the judiciary to enforce, rather than continuing to evade, their responsibility to enforce international law principles and to ensure the collective right to peace.<sup>454</sup>

The State will find itself in the position of prosecuting either the scientist who is arrested or those who conducted the allegedly "false arrest." In either case, international law is central and cannot be easily dismissed as irrelevant to the adjudication of the case. It is determinative both on the question of the reasonableness of the arrest and as to whether an international crime has been committed.<sup>455</sup>

By placing the morality and legality of scientific conduct and space weaponry on trial, the mechanism of citizen's arrest permits a judicial "town meeting" to be conducted on these issues. In this sense, the citizen's arrest is a device to expand democratic discussion and decision-making. If governmental authorities refuse to act, the trial should be conducted by a citizens' tribunal. Scientists who are convicted should be requested to devote their energies to peaceful humane projects. Two critics argue for open debate of political issues in the courtroom

so that deep matters of justice are not settled on shallow

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448. See generally, Aldridge & Stark, *Citizen Intervention and the Necessity Defense*, 26 SANTA CLARA L. REV. 299 (1986).

449. See generally *supra* notes 136-78 and accompanying text.

450. See generally *supra* notes 179-215 and accompanying text.

451. See generally *supra* notes 110-35 and accompanying text.

452. See generally *supra* notes 216-54 and accompanying text.

453. See generally *supra* notes 255-369 and accompanying text.

454. See generally *supra* notes 370-89 and accompanying text.

455. A citizen's arrest does not have to be based upon direct personal knowledge. See *United States v. Gowen*, 40 F. 593, 596 (2d Cir. 1930). State statutes authorizing citizen's arrests permit arrests for federal offenses. See *United States v. Swarovski*, 557 F.2d 40, 47-49 (2d Cir. 1977). For a summary of relevant state citizen's arrest statutes see BASSIOUNI, *supra* note 429, at 87-95 (Appendix A).

grounds of technical law (concealing substantive prejudice), and so that human values, beyond simple acceptance of authority, can begin to determine the decisions of judges and juries. In this way, the developing political education of the American people can begin to be reflected in the courtroom. If democracy involves a truly free marketplace of ideas, then it should allow a movement of our country towards that democracy promised in the Declaration of Independence and struggled for over the centuries by a generation of citizens.<sup>456</sup>

### IX. Some Concluding Observations

This essay has argued that SDI is an illegal weapons system which is a harbinger of a new generation of high technology space weapons which threaten to transform the still relatively pristine environment of outer space into a militarized zone of superpower competition.

Scientists, according to various international documents, have a moral responsibility and duty to utilize their skills for peaceful, rather than for militaristic purposes. Scientific involvement in the first strike SDI program also may result in international liability under the principles established at Nuremberg and the associated post-World War II war crimes trials. Domestic courts generally have been unreceptive to appeals to international law, creating a situation in which individuals arguably are justified and compelled to resort to the common law mechanism of citizen's arrest in an attempt to halt the development of SDI and other space-based weapons systems. Individuals conducting such arrests would be acting as representatives of the global community who desire to create a safe, ecologically pristine planetary environment.

Although this appears to be advocacy of a utopian and quixotic, if not absurd, course of action, therapist R.D. Laing in his classic volume *The Politics Of Experience*,<sup>457</sup> reminds us that the psychologically perfectly adjusted bomber pilot poses a greater threat to the survival of the species than does the allegedly maladjusted and hospitalized schizophrenic.<sup>458</sup> Laing notes that so-called normal men have been responsible for the death of perhaps 100,000,000 of their fellow human beings in the twentieth century.<sup>459</sup> It must then be queried which is more threatening — the advocacy of the citizen's arrest of scientists involved in space-weapons research or the vision

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456. Zin & Stewart, *Ideology in the Courtroom*, 21 NEW ENG. L. REV. 711, 724 (1985-86).

457. R.D. LAING, *THE POLITICS OF EXPERIENCE* (1967).

458. *Id.* at 120.

459. *Id.* at 28.

of those who design and develop such weaponry and who ultimately may destroy our planet. As Professor Francis Boyle observes, no civilized state would permit a gang of criminal conspirators to pervert its domestic legal order in the same fashion in which a small group of nation-states have been permitted to aggressively dominate and threaten the integrity of the international legal system and the future of the globe.<sup>460</sup>

This advocacy of citizen's arrest to enforce international norms of behavior is part of what Arthur Kaufman, in an essay translated from German, has termed "a right to resist on a small scale."<sup>461</sup> Kaufman argues that the right to resist, rather than being viewed as an often futile, and violent act directed against tyrannical authority, should be perceived as a limited, non-violent act designed to combat deviations from democratic norms.<sup>462</sup> This "petty"<sup>463</sup> resistance, in Kaufman's view, will help make "grand"<sup>464</sup> resistance unnecessary. Advocacy of petty resistance is a recognition that, as historian turned lawyer Staughton Lynd writes, in the nuclear age, "nation-states are chronic criminals far more dangerous than the solitary practitioner of nonviolent civil disobedience."<sup>465</sup> Lynd goes on to contend that it is the resister who hopefully will be the catalyst who is able "to recall authority to common sense."<sup>466</sup>

In 1970, Supreme Court Justice William O. Douglas complained in his book, *Points Of Rebellion*,<sup>467</sup> that the "pressures of the military-industrial complex seem always to suffocate the pleas of those who want to be done with war and create a cooperative world pattern for the solution of international problems."<sup>468</sup> Justice Douglas went on to raise the question whether the pursuit of justice would continue to be subordinated to what government leaders considered to be more pragmatic concerns.<sup>469</sup> He concluded, in language which still rings true, that "today's Establishment is the new George III. Whether it will continue to adhere to his tactics, we do not know. If it does, the redress, honored in tradition, is also revolution."<sup>470</sup>

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460. Boyle, *Citizen Initiatives Under International Law: The Criminality of Nuclear Weapons*, 8 SCANDANAVIAN J. DEV. ALTERNATIVES 37, 40 (1989).

461. Kaufman, *Small Scale Right to Resist*, 21 NEW ENG. L. REV. 571, 576 (1985-86).

462. *Id.* at 574-76.

463. *Id.* at 576.

464. *Id.*

465. Lynd, *Civil Disobedience In Wartime*, 19 ME. L. REV. 49, 54 (1967).

466. *Id.*

467. W.O. DOUGLAS, *POINTS OF REBELLION* (1970).

468. *Id.* at 65.

469. *Id.*

470. *Id.* at 95.

