

NUCLEAR DETERRENCE

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GLOSSARY

Deontology Moral theory in which considerations other than the consequences of actions are relevant to the determination of the rightness or wrongness of those actions.

Deterrence Announced sanctions for certain courses of action designed to reduce the likelihood of those actions taking place.

Game Theory The formalized study of rational action in interactive and strategic settings where one actor's welfare is determined in part by the actions of other actors.

Just War Theory A historically significant part of Scholastic philosophy and political theory addressing the boundaries for a morally acceptable use of military force.

Nuclear Deterrence A strategy of nations possessing significant nuclear arsenals for deterring military actions, particularly the initiation of nuclear war, on the part of other nations.

Nuclear War The massive use of nuclear weapons for military purposes.

Utilitarianism Moral theory in which no considerations other than the consequences of actions are relevant to the determination of the rightness or wrongness of those actions.

Nuclear Deterrence is a strategy of nations possessing significant nuclear arsenals for influencing the behavior of other nations, usually also possessing nuclear arsenals. More specifically it is a strategy of putting in place incentives for other nations not to engage in certain kinds of military actions, in particular not initiating a nuclear war. These incentives are negative sanctions which are announced, and intended to be taken seriously. Basically, nuclear deterrence is a strategy of promising to retaliate against another nation for some military action with the use of nuclear weapons. The clearest case is a simple threat -- if you use nuclear weapons against me, then I will retaliate and use them against you. The hope, of course, is that by clearly issuing this threat in a credible manner, you will come to the conclusion that it is not in your best interest to use nuclear weapons against me. Thus, I will have succeeded in deterring you from such a course of action.

Contemporary moral philosophy has shown much concern with nuclear war and nuclear deterrence. This is hardly surprising, given that everyone considers a full scale nuclear war just about the worst thing that could ever happen. What may be surprising, however, is how complicated and contentious the normative analysis of the strategy of nuclear deterrence has proven to be.

I. WAR, NUCLEAR WAR, & NUCLEAR DETERRENCE

For the purposes of this discussion, we should accept the fact that armed conflict

between sovereign nations is both a historical, and contemporary, fact of the international scene. As regrettable as it may be, there is no reason to believe that things will change in the foreseeable future. War, therefore, will not be the subject of moral assessment, but a presupposed context for a normative analysis of war, and strategies for avoiding war, within the contemporary nuclear context. None of this should diminish the importance of, nor the intellectual interest in, moral defenses and condemnations of any sort violence inflicted by one nation upon another. Complete pacifism, though very interesting, has always been an extreme minority position. We will assume, therefore, that some sort of moral justification for war, in the abstract, is theoretically possible.

Nuclear war, however, is very different. Indeed, it is tempting to argue that the moral presupposition is in exactly the opposite direction. For the purpose of this discussion let us understand by the expression 'nuclear war, the *massive* use of nuclear weapons for a clearly military purpose. This definition would rule out World War II as a nuclear war. I think it is important to do this, not for the purposes of excusing the decision makers for their choice to use atomic weapons against Japan, but because the level of destruction was on the same scale as that caused by conventional weapons. When moral philosophers, or Defense Department strategists, debate nuclear war they have in mind the use of thousands of these devices. The numbers -- of warheads, of the dead and injured, of the economic loss -- all quickly become so large that few, if any, can really comprehend them. One very modest Pentagon estimate from the early 1980s gives at least some sense of the relative destructive stakes at issue -- 100 nuclear warheads, delivered to the Soviet Russia, could immediately kill 37 million and

destroy 59% of Soviet industrial capacity.

It is very hard to see how an adequate moral defense of nuclear war could be mounted. We need not become distracted imagining such an argument, however, since everyone -- hawks and doves, enemies or allies -- agrees that nuclear war is so undesirable that it must be an absolute priority to avoid it. The key question to be addressed is not about the normative status of nuclear war, which is pretty terrible, but the moral acceptability of the predominant strategy for avoiding nuclear war -- nuclear deterrence.

Occasionally, the concept of nuclear deterrence is expanded to include threats to use nuclear weapons to deter other sorts of military action. We will spend little time discussing the wider understanding, since any sort of moral condemnation of the more narrow strategy will surely apply to the wider, and any judgment of the moral permissibility of narrow deterrence must be presupposed for discussion of the moral status of the wider strategy.

Several things are presupposed in a strategy of nuclear deterrence. I must really possess such an arsenal, or I must be very good at deceiving you that I do. I must also possess the technical capability of making good on my promise to retaliate, or I must fool you into thinking that I do. Finally, if my threat is to be at all credible, I must really intend to retaliate in the circumstance where my threat has failed to deter you, or, once again, I must bluff you into believing that I do.

Normative questions abound within a context of nuclear deterrence. The building and maintenance of nuclear arsenals is incredibly expensive. Moral philosophers and policy makers, alike, may well query whether this is the best, or most

efficient, use of limited national resources. By all accounts, the continued existence of these arsenals, along with the technical capability to make use of them, significantly increases the risk that there will be a nuclear war. Given the horrors of nuclear war, it is reasonable to ask whether the strategy is worth the increased risk, from either a normative or a policy standpoint. There is a certain sense in which both of these concerns are empirical in nature. This, of course, in no way diminishes their importance, but it does suggest that behavioral perspectives like operations research, benefit/cost analysis, and the whole arena of contemporary social scientific research may have as much to say about these questions as traditional moral philosophy.

Particularly confusing from a moral perspective is the forming of intentions, or perhaps conditional intentions, to do something terrible in retaliation. My threat was to retaliate by using my nuclear weapons against you, if you used yours against me. I am asking you to believe that I am willing to carry through on this declaration. But the massive use of nuclear weapons against you is horrible, and probably immoral. Is it morally justifiable, therefore, for me to issue such a threat, set in place a mechanism to carry through with such a threat, and be willing to use nuclear weapons, should the threats fail to deter you from using your weapons against me?

There are a number of answers to these questions in the contemporary literature on the moral status of nuclear deterrence. I think it's fair to say, however, that there is little consensus as to the correct answer. This is hardly surprising, but it is disquieting. Fortunately, there is at least a growing consensus about the parameters for a normative assessment of nuclear deterrence.

II. DETERRENCE, RATIONALITY, AND GAME THEORY

Deterrence presupposes rationality. If you are completely irrational, then my deterrent strategy will succeed only by accident. Economists understand rationality in terms of personal (some would say selfish) utility maximization. Mathematical decision theory is useful, therefore, in assessing the rationality deterrence as a strategy. Appreciating the dynamics of nuclear deterrence is further complicated by the fact that both you and I possess nuclear weapons, and each of us seeks to influence each other's behavior. My decisions seek to react to your decisions, while at the same time, seeking to influence your decisions. This sort of interactive strategy is helpfully modeled in contemporary game theory.

Consider the game of Chicken illustrated in the payoff matrix in Figure 1, where my payoff is indicated before yours.

		YOU	
		COOPERATE	DEFECT
ME	COOPERATE	3, 3	1, 5
	DEFECT	5, 1	0, 0

Clearly, from my selfish perspective, I desire that you not play DEFECT, since this results in the worst, and next worst, payoffs for me. It is in my best interest, therefore, to deter you from playing DEFECT. The obvious way for me to do this is to promise you (threaten you) with a conditional response -- if you play DEFECT, then I will play

DEFECT. Since both of our playing DEFECT results in the single worst payoff for you, it is rational for you (assuming that you believe my threat) not to play DEFECT. If my threat is credible, it will deter you because you are rational and clearly see that playing COOPERATE gives you the best payoff you can hope for.

You, of course, are faced with a mirror image problem. The payoffs give you exactly the same incentives to engage in strategy designed to deter me from playing DEFECT. You issue your articulation of the very same threat to me, and hope that I will take it seriously, and come to the rational conclusion that it is in my best interest to play COOPERATE.

Two very different factors complicate the analysis just given. The first has to do with the single best payoff for each of us. Your single best outcome results in playing DEFECT, while getting me to play COOPERATE. You have the incentive, therefore, to play COOPERATE only as long as you take my deterrent threat seriously, otherwise playing DEFECT will maximize your utility. The same considerations apply to me -- my preferred outcome is a DEFECT play while you play COOPERATE. If either of us can get away with playing DEFECT, while the other plays COOPERATE, there is rational incentive to do this. Indeed, both of us knew this all along in formulating our original deterrent strategies. If I did not worry that you had some rational incentive to play DEFECT in the first place, I would not have been nearly as concerned with deterring you from this move.

Much more disturbing, however, is a very plausible argument that seems to demonstrate that deterrence strategy is so fundamentally flawed that it is irrational, or even incoherent. In a world of perfect information, each of us has equal access to the

payoff matrix in Figure 1. It can be argued that you would never take my deterrent threat seriously. After all, suppose you do play DEFECT, despite my best attempts to deter you. What is the rational play for me now? My best alternative is to not retaliate. Playing COOPERATE after your play of DEFECT is not a particularly happy move for me -- it results in my next worst payoff -- but it is clearly better than playing DEFECT, which would doom to me to my worst payoff. It seems, therefore, that the strictly rational move is always to let you get away with playing DEFECT. And since you know this just as well as I do, why would you ever take my threats seriously? Once again, the same reasoning forces me to put little stock in your retaliatory threats. It now seems that assumptions of ideal rationality and perfect information guarantee that deterrent strategies will always fail.

Such a result has struck some as downright paradoxical. Defenders of the rationality of deterrence, as might be expected, have a number of responses. You will take my threat much more seriously, if I can convince you that extra-rational considerations like pride and honor will influence my behavior -- "Better dead than Red." Also, my announced intention to retaliate has greater credibility in a world where institutional complexity, or response time, make my responding with DEFECT more automatic, than freely chosen. Finally, some have argued that when "expected outcomes" are considered, and we calculate not just the payoffs, but also their probability of occurring, then a pure deterrent strategy can be rational.

Rational, or not, in this perhaps overly technical sense, deterrence is clearly puzzling. The strategy seems to depend on a stated willingness to undertake actions to bring about an objectively awful state of affairs, or more accurately, to make awful ones

worse. Furthermore, most would agree that these actions are immoral. And, if this was not bad enough, the proposed actions seem at best futile, and more likely counter-productive. It is no surprise, therefore, that nuclear deterrence has attracted so much recent attention from moral philosophers.

III. Just War Theory

A useful beginning point for discussing the morality of nuclear deterrence is an ancient part of Scholastic theology, moral philosophy, and political theory, called *just war theory*. When the Catholic Church began to be a player in secular and political affairs there was a pressing need to square theological views with the realities of the international scene. Everyone realized that wars had always been fought, were being fought, and would continue to be fought. Western theism traditionally taught, however, that the taking of human life was wrong. The tension between the tacitly recognized right of nations to fight wars that were in their genuine interests, particularly the right of nations to defend themselves, and moral and theological teachings about the wrongness of killing, required some sort of theoretical compromise. The doctrines that emerged out of the natural law perspective have continued to exert great normative, legal, and political influence.

Classical just war theory distinguishes the conditions for justifiable recourse to war -- *jus ad bellum* -- from the conditions for the justifiable conduct during war -- *jus in bello*. Both kinds of considerations have direct bearing on the moral assessment of nuclear deterrence.

Just war theorists typically insist on a number of preconditions for entering into a just war. First of all the war, or war-like action, must be authorized in a politically

appropriate manner. A nation's "leadership" must have decided to undertake military action against another nation, and historically they were required to *declare* this intention. Much more important to our discussion, however, is the *jus ad bellum* requirement that just wars be fought only for just causes. The central notion in the just cause prerequisite is the principle of proportionality. Not any old national interest can justify military action. Since wars result in tremendous amounts of loss, they can only be justified in those circumstances where the national interests are so important that they outweigh, on some kind of normative scale, these losses. The purposes for engaging in war must be proportional to evil that will result from the war.

The principle of proportionality is, as one should expect, a central consideration in discussions of nuclear war and nuclear deterrence. The estimated affects of full-scale nuclear war are so horrible, that the compensating national interest would have to be very significant, indeed. The principle of proportionality is one of the reasons why most contributors to this literature simply assume that the actual use of nuclear weapons is immoral -- they simply cannot imagine, nor can this author imagine, considerations of national interest that could possibly outweigh the death and devastation that would result from nuclear war.

If we assume that just war theory covers, not just the conduct of actual wars, but military and defense strategy, as well, then nuclear deterrence raises some very interesting questions. The strategy of nuclear deterrence is expensive, dangerous, and seems to commit us to forming conditional intentions to perform immoral actions. Thus the principle of proportionality requires that the national interest that justifies undertaking such a military strategy be pretty important. But, of course, it is. The end

that defenders of nuclear deterrence would argue justifies the highly problematic means, is the avoidance of nuclear war. Thus, the normative weighing that is required in assessing nuclear deterrence in terms of the principle of proportionality is subtle and interesting.

The principle of proportion reappears in *jus in bello* considerations. Just war theorists insist that we must weigh, not just the national purpose for engaging in war, as a whole, against all the terrible effects, but also the military objective of some proposed action, an action or military strategy, against the loss that will result. Once again, the relevance to a nuclear context is obvious. Indeed, this application of just war theory and this narrow application of the principle of proportionality is the theoretical basis for the sustained moral debate about history's one use of atomic weapons.

An additional *jus in bello* principle covers the moral status of innocent citizens and bystanders. The principle of discrimination prohibits attacks intentionally directed against noncombatants and non-military targets. The destructive capabilities of modern conventional warfare have complicated the application, and to some degree the relevance, of this principle. Nuclear war raises even tougher questions. Nevertheless, the moral status of citizens, including children, of the nation against whom the deterrent threat is issued continues to occupy the attention of moral philosophers. Equally troubling, perhaps more so, is the moral status of citizens of non-belligerent nations, who would certainly be affected by a full scale exchange of nuclear weapons.

The principle of discrimination has particular relevance to debates about the strategy on nuclear deterrence. Intentions to retaliate are conditional, and inevitably refer to an uncertain future. Modern nuclear deterrence, nevertheless, requires that

some decisions and actions be made and acted on in the present. They are not conditional intentions, but actual ones, with actual effects. Military decisions about the level of response to non-deterred aggressive actions must, to some degree, be made now. Choices about potential nuclear targets must be made in the present. Such actual decision making occupies the time and attention of defense strategists as full-time careers. Debates between national strategies of "mutually assured destruction," "countervalue," and "counterforce" are, at least to some degree, influenced by the traditional just war considerations like the principle of discrimination.

IV. DEONTOLOGICAL ARGUMENTS

A deontological perspective in moral philosophy commits a theorist to there being circumstances in which "the ends do not justify the means." Deontological arguments assert that other considerations besides a "simple" calculation of the consequences of some action or decision are morally relevant to its rightness or wrongness. Deontologists claim that objective values like duty, God's commands, or justice, must be taken very seriously in making and justifying normative assessments. Most deontologists do not deny that consequences have considerable moral significance. They do insist, however, other considerations including the "intrinsic wrongness" of certain courses of action be given equal, or at least some, consideration in our moral decision making.

The first deontological principle that we need to review is in many respects the most important. It focuses on a right that is either collectively possessed, or more accurately that is in the possession of a purely abstract entity. It is widely acknowledged that sovereign nations have a right defend themselves with the use of

military force. An explicit analogy is often drawn with the right of individuals to use deadly force in cases of self-defense. When people have good reason to believe that their physical safety and lives are in jeopardy because of the actions of an assailant they are granted permission to protect themselves through the use of physical violence. Very similar arguments have been used at the level of national defense.

Discussions of self-defense within the nuclear context often fail to distinguish the two very different senses in which sovereign nations might justify strategy of nuclear deterrence by appeal to the above principle. Successful deterrence may save millions of innocent lives. We will examine this defense in a greater detail below. But, as significant as this consideration may be, the more common deontological appeal to national self-defense focuses on the continued existence of the abstract political entity - the nation-state -- itself. Here the focus is on political and economic systems, culture and ways of life. Classical just war theory always implicitly acknowledged this right of sovereign nations. Indeed, it seems presupposed in the entire discussion.

If a nation comes to a considered judgment that their existence is placed in real jeopardy by a rival nuclear power, if they have reason to believe that this enemy may desire to launch an attack and kill millions of their innocent citizens, if they believe this adversary will use the threat to attack to "blackmail" the nation into courses of action that are counter to its vital nation interests, many would say this nation has the right to defend itself. If, in its judgment a strategy of nuclear deterrence is the best means of protecting itself, such a normative defense of the strategy will always carry some significant argumentative force.

Moral opponents of nuclear deterrence have recourse to a number of

deontological principles that point in an opposite direction. The first comes directly out of just war theory. The principle of discrimination requires that military actions be directed away from non-combatants. It is plausibly argued, however, that the massive use of nuclear weapons will always have devastating effects on innocent people. Even if only military targets are considered, this will still include many large cities that function as military command posts. Basically, the use of nuclear weapons, even in a purely retaliatory context, would result in death and injury for innocent civilians on an unimaginable scale. Thus, this argument goes, since killing innocents is intrinsically wrong, and since nuclear deterrence commits a nation to these actions should all else fail, nuclear deterrence is intrinsically wrong.

Proponents of the strategy have at their disposal a very interesting response. They can argue that the whole purpose of nuclear deterrence is the avoidance of the death and destruction that innocent people would experience in a nuclear war. The deaths, everyone hopes, would not be actual deaths, but conditional deaths. No one dies from the use of nuclear weapons, *if* the strategy achieves its desired outcome.

The use of nuclear weapons in retaliation, and the death and destruction that would result, may only exist in our nightmares, and the world of subjunctive conditionals. The policy of nuclear deterrence has some actual effects, here and now. Many believe that both you and I having massive arsenals, planning national defense in a context of suspicion and distrust, and other obvious features of the contemporary nuclear scene, make it more likely that at some point in the future nuclear weapons will be used. This may come about because of mistaken calculations of strategic advantage, anger or irrational behavior on the part of national leaders, or by simple

mistake. In any case, having such destructive power sitting there, armed with a hair trigger, seems by itself to make it frighteningly likely that the worst will eventually happen.

We consider it intrinsically wrong to put others, particularly innocent others, at great risk. It is wrong of me to drive my car in a state of intoxication, even if I am lucky enough to always get away with it. Negligent, or overly risky behavior, is wrong, and must be normatively condemned, whether or not it results in disastrous consequences. Since my engaging in a strategy of nuclear deterrence puts others, innocents in both of our nations, as well as innocents in non-belligerent nations, at great risk, it is wrong. It is wrong, here and now, non-conditionally.

This argument is plausible, but once again it admits to a plausible response. Enthusiasts of nuclear deterrence can start by pointing out that society accepts high levels of risk, if they perceive that the benefit is great enough. We actively invest in, and make routine use of, national systems of highway and air travel. Clearly, driving the interstate, or flying in an airliner, is very risky business. Convenience, economic efficiency, and modern culture, simply force us to accept the risk of terrible accidents. We do not judge these risks as immoral, or even unreasonable. Nuclear deterrence does impose great risk, but its goal -- avoiding nuclear war -- is at least as important as ease of travel. Further, a world without nuclear deterrence might be even riskier. You still retain your nuclear weapons. If I do not make it in your best interest not to use them through a policy of nuclear deterrence, my decision not to undertake this strategy, or to abandon it, may actually impose greater risk on innocents at home and abroad.

The final deontological consideration we will examine has received the most attention in the contemporary philosophical literature. It focuses on a controversial thesis in moral psychology. Let us grant that using nuclear weapons is wrong, on deontological grounds, and on a strict utilitarian calculation of positive and negative consequences. Many have taken it to be self-evident that if some action is wrong, it is intrinsically wrong to intend it. If I intend to murder you, indeed set my plan in motion, and you conveniently die before I can carry it out, most would agree that I am guilty of a significant moral wrong, though intuitions vary as to whether I am as wrong as if I'd carried out the murder plan.

Let us assume that it would be wrong for me to retaliate against you for your use of nuclear weapons against me by using my nuclear weapons against you. It was very wrong of you, of course, to use them against me, but, since, "two wrongs don't make a right," the wrongness of your action in no way justifies my action against you. Let us further assume that the wrongness of my using these weapons against you depends on deontological principles like the principle of proportionality -- no possible military or political gain would outweigh the addition death and destruction -- and the principle of discrimination -- my retaliatory strike will inevitably target innocent non-combatants in your nation, as well as others. Is it wrong of me to say that I intend to use them against you, if you use them against me, if my whole purpose in issuing the threat is to ensure that neither of us ever use them in the first place? One way I might be excused from the charge of having wrongful intentions is if I am lying to you. Perhaps I am only bluffing, and have no intention to actually retaliate. Normative worries about truth telling aside, there is a huge problem with this strategy. In a world

of international intelligence, public debate, and democratic decision-making, my bluff is almost certainly guaranteed to be exposed. Suppose, therefore, that I steel myself to really mean what I say -- I systematically form the real intention to use my nuclear weapons in the worst case where deterrence has failed. Am I acting wrongly? Is it wrong to form a robust intention to carry through with something that is wrong, even if the purpose is to avoid the wrong act?

It seems plausible to this author to argue that knowingly forming, and continuing to hold, an intention to conditionally do something wrong in the future, is itself wrong. This judgment is something of a discovery that has come out of the contemporary literature on the morality of nuclear deterrence. I am willing to grant, therefore, that my entire deterrent strategy violates a general deontological principle that sanctions the holding of wrongful intentions, even conditionally. This moral evaluation does not settle the question of whether I should discontinue my policy of nuclear deterrence, however. It can be argued, again with disturbing plausibility, that it would be even more wrong, to abandon the strategy.

One very widely accepted moral principle tells us that we should attempt to minimize evil. I have promised to go to the party with you, it's very important to you, and I know this; my promise was neither casual, nor trivial. It would be wrong to stand you up. Unfortunately, my best friend just called and is feeling down to the point of being suicidal. I need to be with him, it would be wrong not to do so. I can't keep my promise to go to the party with you, and at the same time fulfill my duty to my friend. I am stuck with doing something wrong, and the best I can hope for is that I will do the least normative damage. Perhaps forming the intention to retaliate with nuclear

weapons is, indeed, wrong. It still may be argued that my duty to protect my national sovereignty, as well as my duty to take reasonable steps to prevent your using nuclear weapons, outweighs my duty not to form immoral intentions.

There is a common structure to the discussion above. Deontological theorizing seems to force us to a kind of moral balancing. Maybe in a world that is as complicated as this one we are not granted the luxury of formulating a morally acceptable nuclear defense strategy; maybe the best we can hope for is whatever policy minimizes the actual and possible evil.

V. UTILITARIAN ARGUMENTS

Talk by moral philosophers about balancing is more at home in the utilitarian tradition in moral theory. Utilitarians believe that whatever action will have the overall best consequences is morally correct. If, rather than abstract principles, it is the costs and benefits of possible courses of action that is measured and debated, we see the difficulty of the nuclear deterrence debate in its starkest terms.

When we carefully examine the books for nuclear deterrence, there are three huge entries on the debit side. The first is financial. A huge percentage of my gross domestic product, my resources, must be used for maintaining a credible nuclear threat. This is money that could be used for health care and other social services, for buying down the national debt, or for lower taxes. Almost everyone agrees that there is something disturbing about making huge national investments in a class of things the whole purpose of which is to never be used. The context of our discussion has placed such heavy emphasis in future states of affairs, ones that can only be known in probabilistic or subjunctive terms. It is relevant to point out the obvious, therefore.

These significant financial considerations are real costs, here and now, that make real differences in a nation's quality of life.

A second cost of nuclear deterrence, that is also very real, is psychological. Living in a world where national defense posture is predicated on strategies of a "balance of terror" must inevitably take its toll on ordinary citizens, and national leaders, as well. There is no reliable measure of how great a cost this really is, but it is safe to assume that everyone who lived through the 50s, 60s, and 70s would agree that it is tangible.

The third cost, of course, is much more difficult to measure. It only becomes actual in a subjunctive future where deterrence has failed. You use your nuclear weapons against me, and I retaliate and use mine against you. Everyone agrees that this is the worst imaginable state of affairs possible. What is the cost of placing the world at increased risk of this "lose-lose" possibility? Many have argued that any situation would be better -- even if this meant accepting increased risk of nuclear blackmail, or even the loss of national sovereignty. Without resolving these questions of detailed utilitarian balancing, we can all agree the international dynamics of nuclear deterrence create a very dangerous world, and that this increased danger is one consequence of the strategy that must be taken into account.

The other side of the ledger book for nuclear deterrence basically contains a single entry. The strategy has worked. The recent history seems clear. Humanity has possessed full-scale nuclear capability for over forty years without these weapons ever being used. For most of this period there was announced political and military hostility between the world's two "super powers," without any kind of direct military conflict,

conventional or nuclear. Judgments of causal efficacy will vary, of course. It can be argued that this was more blind luck than the stabilizing effects of nuclear deterrence. But proponents of the strategy can still point out how unlikely such a stretch of relative international stability has been in the last hundred years of international history.

A strictly utilitarian assessment of nuclear deterrence leaves us pretty much in the same place we were with the deontological approach. Both opponents and defenders of nuclear deterrence can point to consequences that are clearly relevant.

Once again, unfortunately, intuitions vary wildly as to whether the strategy results in the greatest net balance of good consequences, or more likely in this case, the least net balance of bad consequences.

VI. SOME PUZZLES FOR THE FUTURE

Consider, once again, the game of Chicken represented in Figure 1. What if the payoffs are changed so that any cell other than mutual cooperation results in payoffs of negative infinity for both players? In 1983 a group of close to one hundred distinguished scientists issued published reports of a conference synthesizing empirical and theoretical estimates of the effects of even a "modest" use of nuclear weapons. The conclusions were quite startling, even for those who had long been concerned affects of nuclear war.

There is a real danger of the extinction of humanity. A threshold exists at which climatic catastrophe could be triggered, very roughly around 500-2,000 strategic warheads. A major first strike may be an act of national suicide, even if no retaliation occurs. . . . No national or ideological

confrontation justifies putting the species at risk. [Sagan, p. 159]

Discussions of nuclear war, nuclear deterrence, disarmament, and the like, take on a very different tone when the real possibility of the extinction of our species must be entered into the moral equation. It is, of course, true that some dismiss the above estimates as empirically unsound, and alarmist in nature. Few, if any, of us possess the scientific competence to make the judgment, one way or another, as to how realistic the risk of species extinction is. One thing for sure, however, it is a morally relevant consideration. It will be interesting to see how the normative debate plays out in light of the "nuclear winter" hypothesis.

To conclude this discussion, suppose that my nation, due to economic and political instabilities, simply collapses. My nuclear weapons still exist, though successor nations that come to possess them make a commitment to dismantling them, or at least greatly reducing their number. Suppose that in everyone's considered judgment the chances of these weapons being used in a systematic first strike is significantly reduced. You have much less incentive to engage in a strategy of nuclear deterrence. What are the moral implications of your military and defense options with respect to your nuclear weapons? Obviously, in the judgment of many, we are living through just such a unique period of contemporary history. Assuming that this correctly describes international reality, and further assuming that this state of affairs persists, the agenda for the next generation of moral theorists concerned with nuclear war and nuclear deterrence seems clear. What will be a morally acceptable stance for nations possessing nuclear arsenals in a post cold war international scene?

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