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IF ONLY WISHING MADE IT SO

In the foreseeable future, the United States might prove unable to halt and roll back nuclear proliferation. A state that had succeeded in acquiring nuclear weapons might not be deterred from challenging serious US interests. Confronting this challenge, the US might be unable to deter the challenger's use of nuclear weapons, and it might not be confident that it could preempt their use or intercept them on the way to their targets. The obvious consequence is that *the US could have to fight a nuclear war*.

The US is trying to avert this possibility. It seeks to end the nuclear weapons programs of Iran and North Korea and advocates strengthening the non-proliferation regime. It is careful to maintain its "escalation dominance:" overwhelming military superiority at any level of conflict. And it is working to develop missile defenses and strike capabilities designed to eliminate a challenger's nuclear forces.

Still, few would deny that all of these measures could fail. It is not a matter of trying harder: the success of each depends substantially on factors that the US cannot control or predict with confidence. And yet one is hard-pressed to find any acknowledgement of the consequence of their failure. It is as though there is a vague hope, that if this consequence is not spoken of, then it will never come to pass.

Certainly the probability of such a war occurring is low. But the US interests at stake would be vital, and the dangers involved would be great. The consequences, were it to occur, are of such magnitude that the US cannot afford to ignore the possibility, however unlikely. Continuing to do so would risk both foregoing opportunities to make nuclear war even less likely and making terrible mistakes if it does happen.

It is time to think again about the origins, conduct, and termination of nuclear wars. This essay is intended as a modest contribution, drawn from past research on nuclear strategy and more recent advances in the study of wars. We will argue that even a rational foreign leader might believe that using nuclear weapons in a war against the US would be profitable. And we will show that responding to such use by retaliating massively or by attempting to preempt further use could prove a costly mistake. A more restrained strategy, involving calculated retaliation and offers of settlements, promises a better resolution to the war. After discussing some of the ramifications of fighting a war in this way, we will conclude by trying to preempt some anticipated criticisms of our thinking.

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A CHALLENGER'S THEORY OF VICTORY

It is hard to imagine a greater gamble for a state than the use of a nuclear weapon against the United States, its allies, or its forces. A challenger could never completely discount the overwhelming capabilities of the US military and the will to use them that such an act might arouse. Its leaders would be placing their lives, their regime, indeed the future of their nation in mortal danger.

Even the most reckless leader would find it easier to gamble if there were some reason to believe in the possibility of victory—and any sane one would require this. He would seek a *theory of victory*: a strategy for parrying US advantages and playing to the challenger's, and a plausible scenario in which this strategy would lead to a net gain.

We can think of only one general strategy that might be seen as viable against the US. Wars are won on some combination of capability, luck, and resolve. Given the size and sophistication of US forces, no foreseeable challenger could expect to win on capability, and for most, the military imbalance is so large that no plausible amount of luck could overcome it. To have any chance, a challenger must shift the war from a hopeless competition in capability to a contest in resolve, which it might hope to win by outlasting the US will to continue the war.

In the past, guerrilla warfare has been employed to do this. Ho Chi Minh used it to force the US out of Vietnam, and the Taliban is pursuing it now in Afghanistan. But guerilla warfare suffers from a problem. It can take a long time to inflict enough costs to drive the US out using only hit-and-run attacks and terrorism. Moreover, US military superiority has progressed to the point where surviving long enough for the strategy to work is difficult. Saddam Hussein learned this the hard way.

Nuclear weapons are a more potent tool for turning a war into a contest of resolve. They enable their possessor to counter US military superiority directly, by trying to destroy rather than elude US forces. A challenger could thereby avoid being overrun and retain some control over its territory, from which it could potentially inflict immense costs on the US. Nuclear weapons allow it to hold the most vital US interests at risk in a way no guerilla war could.

For these reasons, we will assume that a challenger's nuclear escalation would be aimed at turning a war against the US into a contest in resolve. To believe that this strategy would work, a challenger would need to convince itself of three things. First, that it would have time to play the strategy out in the face of US attempts to preempt its attacks. Second, that it could inflict enough costs on the US to compel it to end the war with concessions to the challenger. And third, that the costs the US would impose in return would not outweigh the challenger's gains. We will elaborate on these requirements in the course of describing how the challenger might hope that such a war would go.

A war might be fought over a challenger's desire to secure external gains, perhaps by coercing or conquering a neighbor, whether out of simple greed, ideological zeal, or a need to quell internal strife. Or it might revolve around US demands for disarmament or domestic reform, and the imposition of sanctions or limited strikes to further these objectives.

However it started, the challenger would expect that the US would do its best to win the conventional fight, despite any dire warnings from the challenger of the perils of opposing it. The US could not be expected to back down in the face of the mere possibility of nuclear escalation. Whether the US limited itself to reversing the challenger's gains or instead elected to pursue regime change, the challenger would have to act quickly, before its forces were overwhelmed.

A challenger's first use of a nuclear weapon might be high above its own territory, to signal its seriousness to the US by breaking the nuclear taboo and ignoring any US warnings about the consequences. If this did not cause the US to back down, it could be followed by a detonation high over US forces, intended to disable them with electromagnetic pulse. If that didn't work, and the challenger were resolved to press on, it could strike US intervention forces directly, and after that their regional bases. Should both the US and the challenger elect to continue, this could be followed by strikes on bases in the US, and finally by attacks on allied and US cities.

Given the overwhelming capabilities of the US, the challenger might not have much time to use its weapons before they were neutralized. It could try to buy more: by attacking US ground forces to stop invasion, or hitting regional bases to stop strikes on the challenger's nuclear forces or strategic command sites. Still, some US capabilities might be elusive or out of reach, so the progression of escalation might have to be sped up. The challenger could warn the US against trying to preempt its forces, and threaten to respond to any such attempt with accelerated escalation. But ultimately, the challenger would be counting on at least some of its forces—and its leadership—to survive long enough.

Each new attack by the challenger would credibly signal that it still had the will to fight, and to tolerate the next expected US retaliation. And with each escalation, the US estimate of the challenger's resolve would have to rise. If the challenger persisted long enough, the US might become convinced that it could not be defeated at acceptable cost, and would then come to the negotiating table ready to make concessions. The challenger must believe that the damage its arsenal could inflict would be sufficient to cause the US to accede to a favorable settlement.

However, in thinking through this scenario, the challenger could not possibly escape the fact that the US would be capable of imposing massive costs in retaliation for its strikes, sufficient to overwhelm any gains it could make. To have any hope of a favorable outcome, the challenger must convince itself that the US would be restrained in its responses. How might it become convinced?

There are several concerns that might be seen as constraints on US retaliation. The US would feel moral qualms about inflicting mass casualties on a population that bore little responsibility for the challenger's belligerence. It might worry about the subsequent costs of reconstruction that it would likely bear if it defeated the challenger, and about the collateral damage that large retaliation might impose on neighboring countries, especially allies. And it would wish to maintain its reputation as a responsible guarantor of international security by acting proportionately. The challenger might hope that these interests would be compelling, at least in the case of its early strikes, which would cause few, or only military, casualties.

Of course, these concerns might pale in comparison to the challenger's provocation.

Ultimately, and especially if the US persisted and the challenger had to resort to more severe escalation, the challenger would have to rely on the threat of further strikes to deter the US from massive retaliation. Thus, it is not enough that the challenger believe that its nuclear forces could impose costs sufficient to extract concessions from the US. It must also believe that it has enough capability in reserve to deter intolerable retaliation.

These requirements are difficult to meet, and it would be even harder for a challenger to be sure that it had done so. Nonetheless, a challenger, equipped with a modest nuclear arsenal and inclined to accept substantial risks in pursuit of interests it considered vital, could conclude that this theory of victory was viable. Still, its success is predicated on a fundamental assumption about the US: that it would prove restrained in its responses to escalation. Would it?

RESTRAINED NUCLEAR WAR

We do not know what course the US leadership would take. The chance of further strikes might instill caution in US leaders, leading to restrained retaliation for the challenger's nuclear attacks. Or, this unprecedented provocation might instead arouse a fury sufficient to overwhelm all caution, and a conviction that those responsible must be prevented from ever using nuclear weapons again, leading to an all-out attempt to disarm the challenger and remove its leaders. Here, we will discuss how a restrained nuclear war might be conducted and ended, but first we will explain its potential merits relative to an all-out war.

Others writing in these pages have argued that the all-out strategy is best. And it obviously would be, if US defensive and preemptive capabilities were leak-proof, so that the challenger's nuclear forces would be completely neutralized. This would enable the US to bring the full weight of its military advantages to bear, and to impose whatever resolution of the war it preferred, without fear of suffering nuclear strikes.

But what if these capabilities were not so exquisite? Even if they were, the US might not be confident of it. If at some point the US achieved this confidence, it would be very hard to maintain it in the face of the challenger's efforts to undermine it. And even if, at the crucial moment when strikes were imminent, the US *was* confident, it should still be prepared for the possibility that some weapons unexpectedly survive preemptive strikes or penetrate defenses.

Attempting this all-out strategy without confidently exquisite capabilities could be extremely dangerous. The challenger might accelerate its escalation in an attempt to extract concessions before preemption was complete, using larger strikes if necessary to overwhelm defenses. If it believed that all its nuclear weapons would soon be neutralized, it might strike hard in revenge for its anticipated defeat. Or, it might simply wait and see, hoping for US leniency upon its defeat. The US can no more safely assume this latter choice than the challenger can safely assume the US would be lenient once its weapons were gone.

Of course, if the US pressed on, then eventually all of the challenger's weapons would be used or neutralized, allowing the US to impose its most preferred resolution to the war on the disarmed challenger. Though it would have its way in the end, the US, its allies, and possibly the challenger's people might have paid a terrible price for it.

There is an alternative: the US could fight a restrained nuclear war. We will argue that, although this strategy is unlikely to lead to complete victory for the US, it will result in a still-acceptable settlement to the war at potentially much lower cost, and so will sometimes lead to better overall outcomes than the all-out strategy. But it can only do so provided that the US has prepared to fight in this manner.

This restrained strategy requires that the US think hard about the possibilities for compromise and the value it places on potential settlements. It has to carefully estimate the challenger's objectives and how much the latter would pay to achieve them, and update these estimates as the conflict progresses. And it must know when to offer a settlement, and how to size and target its retaliations. We will offer some observations about each of these problems.

There are many ways the war could end that don't involve complete defeat for either side. The most important elements of the war's resolution would be the future viability of the challenger's regime, the disposition of its nuclear weapons, and the acceptance or reversal of any gains it had made. Clearly, the two sides would have opposing interests over all of these. The US would prefer that the challenger lose any gains it had made, its weapons, and its regime, while the challenger would like to keep all three.

In deciding whether to accept a particular settlement, each would have to evaluate how much damage it would be willing to suffer in order to avoid the compromise of its interests embodied by that settlement. How much would the US be willing to pay—in nuclear strikes on its forces, allies, or homeland—to replace the challenger's regime as opposed to only disarming it? How much would the challenger be willing to pay to keep its regime in place? These are hard questions, but each side's leadership might be forced to answer them during the war.

As difficult as it might be for a side to set its own values for settlements, it would have an even harder time assessing the values of the other side. Each side would probably declare its interests at stake to be absolutely vital, attempting to convince the other of its superior resolve. But because each side has an incentive to do this whether its interests are vital or not, the other cannot tell whether it is bluffing, and this creates uncertainty about its true values. In other words, the US couldn't be sure how much the challenger would pay to keep any gains it might initially make, and it wouldn't trust the challenger's claims that these gains were vital to it. The challenger would face the same problem in judging US resolve.

This uncertainty about the values the two sides place on their opposing interests can lead to war. If each side's values were known, then they could identify a compromise that reflected the balance of resolve and agree to it peacefully. Neither would see any point in going to war, because doing so would be costly and, given the known balance of resolve, would be expected to end in a settlement close to the one they had identified. But since each side only knows its own values, it must estimate the other's values as best it can and somehow demonstrate its own to the other.

War allows each side to credibly signal its values and to test those of its opponent. As the war progresses, each side inflicts and suffers more costs. If the challenger were not willing to pay much to avoid a compromise, it would quickly press for a ceasefire and offer concessions rather than continue to pay the costs of war. But if it placed great value on the interests at stake, it would keep fighting. Thus, every time the challenger elected to stay in

the war rather than sue for peace, the US should raise its estimates of the challenger's values; the challenger would be raising its estimates of the US so long as it continued to fight. The longer the war lasted, the more convinced each side would be that the other's values were high—war dispels the uncertainty about values.

If the challenger's arsenal were capable enough, and its values high enough, there could come a point in the war at which the challenger had suffered enough damage to convince the US that the challenger's values were much higher than its own. The US would then presumably withdraw rather than take any more damage. Though it might have sustained considerable damage before arriving at this point, continuing to fight would appear unlikely to wring enough concessions from the challenger to be worth the additional costs. Withdrawing would acknowledge that the challenger had demonstrated greater resolve.

Long before its threshold for withdrawal was reached, the US should have begun offering settlements in an effort to end the war and avoid further strikes. At the start of the war, the US would be very uncertain about the balance of resolve and might be unwilling to concede anything to the challenger, hoping that it would fold in the face of US persistence. However, as the war progressed and its estimates of the challenger's values rose, the balance of resolve as perceived by the US would shift in the challenger's favor. Similarly, the challenger's perception of the balance of resolve would be simultaneously shifting in favor of the US. Thus, over the course of the war, each side should become willing to agree to more conciliatory settlements, in tacit recognition of the other's demonstrated resolve.

It is in the interest of both sides to offer such settlements. They give each side a chance to avoid more damage by making concessions that might satisfy the other. Their size and character can be chosen to balance the risk of continued fighting due to a too-stingy offer to a resolute opponent against the cost of ending the war with an offer that was unnecessarily generous. This balance ensures that neither ends up paying its full value in damage for the final settlement, because this settlement would be offered and accepted before this level of damage was reached.

Eventually, the two sides would converge on a settlement that reflected the demonstrated balance of resolve. Neither would have any reason to continue fighting beyond this point: extracting further concessions from the other side would not be worth the cost it would be expected to charge. A progression of offers by each side is thus essential to ending the war short of the damage that would result if both sides refused to make any concessions and instead fought until one side could no longer continue. Both sides should prefer the outcome of this restrained war to that of an all-out war.

How long the war lasts, and how much damage is inflicted and suffered before the war ends, depends on how the two sides respond to each other's strikes. Responding more strongly, in the sense of striking more or more valuable targets with each new attack, would more quickly dispel the uncertainty about the balance of resolve and result in a quicker end to the war. But it risks paying too much, because a smaller strike—with a correspondingly less costly response from the other side—might be enough to precipitate a mutually acceptable end to the war. Thus attacks must be designed to balance the cost of a longer war against the risk of an unnecessarily damaging exchange.

Whatever the rate of escalation, responding to damage with damage until a settlement is agreed is essential to ending the war quickly and lowering the chances of more such wars.

Escalation cannot be free, and the US in particular cannot allow this challenger or any potential successor to believe that escalation is cheap. It should capitalize on the fact that its forces, both nuclear and non-nuclear, are so much larger and more capable. Still, it must be careful not to incite the challenger to accelerate its own strikes in order to “keep up.”

The problems we have discussed merit further, detailed analysis, but for now we can identify some simple things that would help the US in such a war. If nuclear war is a contest in resolve, then the most valuable intelligence, both before and during a war, will be on the challenger’s settlement values and thresholds for making or accepting offers. Less uncertainty about these values means arriving more quickly and cheaply at a mutually acceptable settlement. It would also be useful to understand how the challenger would assess the costs of US strikes. This minimizes the risks of misperception, in which US responses might be taken as either weak or excessive, and of imprecision, wherein US responses inflict costs on the challenger that are either lower or higher than intended. The maintenance of reliable communication with the challenger’s leadership would also lessen the chance of misperception, in addition to ensuring that the two sides can readily exchange settlement offers.

Clearly, determining the best strategy for fighting a restrained nuclear war is a difficult endeavor. Thinking about it now lessens the chance of making costly mistakes if war comes.

EVERY WAR MUST END

Fighting a nuclear war as well as possible poses many problems for the US leadership beyond the immediate issue of obtaining an acceptable settlement at the least possible cost. The first such war especially would have serious consequences for the likelihood and nature of future wars. Allies and adversaries alike would draw conclusions about the resolve, reliability, and restraint of the US from its behavior during and after the war. And closer to home, the American public would be judging its leaders on how they fought and ended the war. Not all of these concerns are unique to nuclear war, but all would be especially pressing in such a war.

Potential adversaries—and our supposed challenger—would form their expectations about a future nuclear challenge to the US based in large part on what happened in this war. From US conduct of the war, they would learn the cost of escalation, the value the US placed on protecting its allies and standing up to nuclear coercion, and, most importantly, whether the US would be restrained in responding to nuclear escalation. From the war’s resolution, they would assess any gains the challenger might have made and the price it had paid for them. And from its aftermath, they would see how tough the US was in enforcing the terms on which the war was ended. Anticipation of the lessons that future enemies might learn from this war would encourage the US to set higher values for concessions, respond more strongly to escalation, and implement the final settlement more rigorously, in order to deter future challenges.

US allies would also be watching closely. They would learn about the price the US would charge an adversary for attacking allied interests and what it was willing to pay to defend those interests. They would also observe the degree to which the US coordinated its choices of strikes, settlement offers, and implementation of the final settlement with involved allies. More generally, the respect the US evinced for allied interests, especially when these

conflicted with its own, would be of special concern. Allies would be drawing conclusions about the wisdom of their reliance on US security guarantees and its nuclear umbrella. These effects of the war might also argue for tougher US behavior.

The most difficult audience for the US leadership's choices would be domestic. The US rarely loses wars, and it seems likely the public would want their leaders to pursue victory, but the public has never faced suffering of the kind it might endure in a nuclear war. After the war would come a reckoning for the wartime administration. It would need to convince the public that it had done the best it could, and to defend any ugly compromises it had made to end the war. The better the final settlement, the easier this would be, and the damage suffered would be easiest to justify if the US had achieved something close to victory. These considerations, too, should strengthen US resolve.

US leaders' decisions during the war should undoubtedly be influenced by these considerations, all of which point to a willingness to suffer and inflict more damage to achieve a more favorable settlement. These are an inevitable consequence of the unique role the US plays in preserving international security, and potential challengers would do well to consider these factors in assessing whether they had a realistic prospect of success.

Finally, US leaders might also be tempted to "chase victory": to continue to fight well past the point where the US should have made serious concessions, gambling that the challenger would do so first and vindicate US perseverance. However, the future consequences of these decisions must be balanced against the need to end the war and stop the suffering. Not just the postwar political fortunes, but also the historical legacy of the wartime US administration, would hang on this balance, and US leaders would have to consider how their choices would be judged later, in calmer times.

THINKING IS CHEAP

Many of the problems we raise are not new, but research on these problems has lapsed since the end of the Cold War, despite recent progress in the study of wars more generally that could fruitfully be applied to questions of nuclear strategy. We expect that the arguments advanced in this essay will elicit criticism, and we welcome it: debate and further research on the problems of fighting and ending nuclear wars will contribute to sounder decisions and less devastation, should a war occur.

The principal critique is that, in thinking about restraining nuclear war and its merits, we may undermine deterrence by encouraging a challenger to discount the possibility of an all-out US response to nuclear escalation. However, the present situation, in which nuclear war is discussed rarely, and then only to issue vague, ominous warnings, runs a different risk. Without a serious defense of the credibility of these evidently self-serving warnings, a challenger might conclude that the US is simply bluffing. If mere talk suffices to undermine these warnings, just how credible are they?

Our view is that both the all-out and the restrained responses are plausible. If this is right, then the US should prepare for both; we focus on the latter because of its apparent neglect. Moreover, the best declaratory policy for deterrence is one in which serious arguments are made for why an all-out response is plausible, and why the vital US interests involved in any nuclear confrontation imply that even a restrained response would be very strong.

It might also be argued that our thinking increases the plausibility of limiting a nuclear war, and hence lowers the threshold for US nuclear use. But the US does not want to fight *any* nuclear war, limited or otherwise, and it would gladly ignore the possibility of limited nuclear war if all other states did so as well. Since some are reportedly studying how they might use their expensive, hard-won weapons, it would seem to be in all sides' best interest that the US do the same.

Another version of this critique has it that any US preparation for restrained nuclear war will undermine non-proliferation, by acknowledging the possible gains from possessing nuclear weapons. However, these possibilities would exist whether we talked about them openly or not. Merely *discussing* the problem seems unlikely to prejudice the outcome of US and international efforts to prevent and reverse proliferation, or to create a self-fulfilling prophecy.

A very different kind of critic will accuse us of alarmism, arguing that nuclear war is so unlikely that preparing for it is a needless distraction from more pressing problems like terrorism and failed states. Nuclear war does seem unlikely—and thinking about it seems likely to make it even more so. But the consequences of such a black swan, were it to occur, could be much worse if the US is not prepared for it. Moreover, calculations about what would happen in a nuclear war may affect peacetime negotiations and attempts at coercion. A better understanding of nuclear war might thus enable the US to be more confident in its bargaining with potential challengers.

There is one criticism we find compelling: the prospect of nuclear war is simply awful. Ronald Reagan expressed this sentiment when he said that “a nuclear war cannot be won, and must never be fought.” Unfortunately, other nuclear states might not see it that way. We must stop ignoring the unthinkable.

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