

Realism at the Limits: Post-Cold War Realism and Nuclear Rollback

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Thought does exist, both beyond and underneath systems and edifices of discourse. It is something that is often hidden but always drives everyday behaviors. There is always a little thought occurring even in the most stupid institutions; there is always thought even in silent habits. Criticism consists in uncovering that thought and trying to change it: showing that things are not as obvious as people believe, making it so that what is taken for granted is no longer taken for granted. To practice criticism is to make harder those acts which are now too easy . . . [A]s soon as people begin to no longer be able to think things the way they have been thinking them, transformation becomes at the same time very urgent, very difficult and entirely possible.¹

Nuclear weapons have been understood as an element of state security. In this sense, the acquisition of nuclear capabilities is within the expectations of realist predictions of a state's security policy.² The forfeiting of nuclear weapons, however, appears to be counter to the realist logic, which has been the dominant paradigm to strategy throughout the Cold War.³ Realists have been peculiarly shy in coming up with an explanation for nuclear rollback. Explanations that build on cultural, institutional, and economic variables have provided useful explanations, but not realist scholars.

This article explores the connection between a state's decision for or against nuclear disarmament through a defensive realist perspective. By following the tenets of defensive realism, it follows the assumption that states are rational decision-makers. I argue that in certain strategic environments the insecurity caused by possessing nuclear weapons outweighs the security provided by nuclear weapons against rivals in an uncertain future. The theory advanced here should be taken as a complimentary study to the already existing powerful explanations of nuclear disarmament that rely on economic, cultural, and domestic variables.

This article has three objectives. First, to offer a realist argument of nuclear disarmament that will contribute to better appreciation of disarmament prospects. Second, it evaluates the explanatory power of offensive and defensive realist theories on disarmament. Finally, the article offers tentative implications for Iranian and North Korean nuclear programmes. Fulfilling the first two objectives requires one to unite the theoretical discussions in the realist paradigm and the rich empirical details of the disarmament literature. In doing so, this essay provides a platform for both realist proponents and critics on this pressing research question.

The central argument is that anarchy, and the uncertainty associated with it, compels states to protect their security, even if they do not face current existential threats. For some states the security provided by nuclear weapons against possible threats in the future is outweighed by the insecurity caused by possessing nuclear weapons in the present. It is these states that are expected to disarm. In advancing such an argument, two hypotheses are advanced: the absence of an existential threat is a necessary condition of nuclear disarmament, and the absence of a secure second-strike capability is a necessary condition of nuclear disarmament as well. Each hypothesis, on its own, predicts that certain states with certain capabilities and strategic environments will hold on to their nuclear weapons. Each hypothesis, on its own, presents the necessary conditions for disarmament, but they do not provide a sufficient explanation of nuclear disarmament. The combination of these two hypotheses provides an explanation of nuclear disarmament that corresponds to existing data. If a state does not face an existential threat, and if it does not have a secure second-strike capability, then the systemic effects of anarchy provide powerful incentives for disarmament.

Limitations and Scope

In order to address nuclear disarmament from a realist perspective, the essay narrows its scope on two issues. First, this essay is only interested in states that possessed nuclear weapons. It does not explain why states abandon projects to obtain a nuclear weapon; instead, it seeks an explanation for why a state would ever give up nuclear weapons once it obtains them. Second, in order to advance a security-based explanation, economic and prestige consideration are omitted.⁴ Several studies already provide powerful explanations of nuclear disarmament by analysing the effect of such variables. What is lacking in the literature, and what this article aims to accomplish, is to provide an account of nuclear disarmament that is parsimonious and adheres solely to security-based variables, in line with realist theories of international politics.

Although this essay sheds light on disarmament from a realist perspective, it also opens new questions and avenues for realist scholarship on disarmament that remained to be answered. Understanding the conditions under which nuclear disarmament takes place is crucial for scholars, activists, and policy-makers who want to combat proliferation and take steps for a nuclear-free state system. I do not mean to boldly assert that the explanation provided in this paper undermines all other explanations, but instead offer an interpretation of what a realist analysis of nuclear disarmament would look like.

The more general purpose of this essay is to encourage an intellectual exchange among scholars of international politics as well as inform a policy prescription receptive audience of the shortcomings and possibilities of international relations literature. Looking back, we acknowledge today that much of the thinking of Cold War policy-makers and the proliferation literature has roots in a more general realist discourse, which has shaped and formed policy-maker opinion. An engagement with the blind-spot of post-Cold War realism is long overdue. The aim of this essay is to make

realism true to its own assumptions and premises, and through this show how a plausible realist argument can be advanced. The essay strictly follows the implicit and explicit assumptions of realist theorizing; as a result, the shortcomings of the hypotheses are in part due to the failure of the assumptions and epistemological shortcomings of political realism. In advancing such an argument, non-security variables are going to be jettisoned in favour of the sort of variables that realism embraces. Though this author is personally more receptive of non-realist explanations, an intellectual engagement with realism is required to be fair with the historical legacy of this discourse.⁵ The essay could also be read as a call to realist minds and critics; a call that 'whacks away at the bungs of Realist barrels in IR in hope that some serious thinking might get out'.⁶ As the opening quote to this essay hints to, such serious and demanding engagement with realism is overdue.⁷

Theories on Disarmament

Due to realists' neglect of disarmament, realism has generally been invoked to show its inability to explain nuclear rollback.⁸ Disarmament scholars, such as William Long and Suzette Grillot, have presented realism as a straw figure; 'states secure their survival by accumulating military force . . . and nuclear weapons contribute to national power'. This, according to them, means that the denuclearization of several states displays the inadequacy of realism.⁹ Citing Benjamin Frankel, who predicted that nuclear proliferation will increase in the post-Cold War era, Long and Grillot argue that realism has failed the test. This is a particularly simplistic consideration of realism with respect to disarmament. Proliferation and nuclear rollback are different developments and therefore must be analytically separated. Most of the realist literature has focused on proliferation, and the structural incentives for nuclear weapons acquisition, whereas the foregoing of nuclear weapons is a different issue because there are various intervening variables in nuclear decision-making. The dismissal of realism would not have been justified had there been a coherent realist theorizing on disarmament that is in accordance with the empirics and consistent with the logic and pillars of realist understanding of international relations.

There have been several explanations of disarmament, which range from domestic regime change to 'international norms' that make nuclear weapons not as useful as they were during the Cold War.¹⁰ Many scholarly arguments include a brief discussion of realism's inability to account for such cases. Such discussions display two strategies. First, they treat the realist school as a whole, disregarding the fact that there are many nuances within it such as offensive and defensive realism. From this posture, they argue that realism fails, even though a careful analysis would reveal that there are varying predictions of state behaviour such as: classical, offensive structural, defensive structural, offensive neo-classical and defensive neo-classical realism. Second, the arguments against realism do not thoroughly test realist theories. The following is representative of many such arguments: 'First, South Africa had few, if any, targets for nuclear weapons . . . Long distances and lack of suitable delivery systems precluded use outside the region.'¹¹ Although Long and Grillot argue that this is a good reason to dismiss a structurally derived,

security interest-based explanation, a careful analysis of strategic relations would suggest that this actually works in favour of a defensive realist theory – as developed in the following pages. Overall, the discussions on realism are accurate in one respect, that realists in general have not generated thorough hypotheses to address the cases of nuclear disarmament.

According to Mitchell Reiss, there are several factors pointed out in the literature on nuclear rollback: ‘new thinking’ about nuclear weapons in the post-Cold War era, ‘dollar diplomacy’, American non-proliferation efforts, quality of political leadership, and non-proliferation regimes. Whilst the ‘devaluation of nuclear weapons’ has constructivist traits, other variables are clearly in the neo-liberal institutionalist genre. The fact that such explanations are readily accepted by many in the non-proliferation literature means that is important to give a realist analysis of them.

Many scholars point to the role played by international institutions and foreign pressure on Belarus, Kazakhstan, South Africa and Ukraine as the most important factor on their decisions to give up nuclear weapons. Reiss argues that ‘South Africa’s international isolation influenced every element of its nuclear program’.¹² Empirically, it would be wrong to deny such effects on nuclear decision-making. Any scholar that theorizes on nuclear disarmament must be able to ask whether the variables that are introduced to account for some denuclearized states also have the same effect on those states that do not give up nuclear weapons as well.¹³ If one is to arrive at a consistent theory of nuclear disarmament one has to ask the question why such factors (international institutions, isolation) did not have the same effect on other countries such as North Korea. Although one can argue that there has been a ‘new thinking’ in the international realm about the value of possessing nuclear weapons, this does not refute the fact that Pakistan and North Korea have acquired nuclear capabilities. In this sense while ‘new thinking’ may be true for some states, it is not for others. International isolation, both its reality and the threat of it, has been a tool used by great powers to force three post-Soviet states as well as North Korea to give up their nuclear weapons, yet the latter responded differently.

Alternative explanations of disarmament claim that South African and Ukrainian leaders believed that in order to be a part of the Western community South Africa and Ukraine had to give up nuclear weapons and join the Nuclear Non-Proliferation Treaty. They argue that Ukraine’s decision to forego nuclear weapons was due to ‘the beliefs and ideas about itself as a member of the Western, liberal community of states and about democracy and the peaceful resolution of conflict’.¹⁴ This borderline Constructivist argument presupposes that being a Western country means having an essential preference for peace and a dislike of nuclear weapons. This implies that Ukrainian and South African decision-makers were blind to the fact that the majority of nuclear weapons were possessed by Western states, and that it would be wiser to rely on the Western state’s nuclear weapons than to rely on their own. Such a cultural explanation also neglects the fact that many Western countries continue to rely on nuclear weapons. From a realist stand point, ‘being’ or ‘wanting to become’ a Western state, cannot explain this variance.

Another alternative explanation of nuclear rollback is that states with ‘good leadership’ will forego nuclear weapons in order to ‘help make their states more

prosperous. Poor leaders, on the other hand, bring adversity and hardship.¹⁵ Setting aside that this claim is parochial, displaying tones of a 'Washington-centred world', the core of the explanation sounds reminiscent of the classic interwar period idealists. Such an argument supposes that good leaders get rid of nuclear weapons and bad leaders hold on to them. In this sense Reiss goes on to identify the South African leaders as good and North Korean leaders as bad. For one thing such analysis presupposes that giving up nuclear weapons is a sign of good statesmanship. One is then led to deduce, according to this logic, that the heads of nuclear Western states are 'bad leaders'. Furthermore, such an analysis is a post-hoc explanation without any predictive value: only after a state gives up its nuclear weapons do we know that it had good leaders.

Levite argues that the United States has had an important role in the nuclear rollback through non-proliferation initiatives. The same can be said about the United States initiated 'dollar diplomacy' where certain countries are offered economic incentives to forego their nuclear weapons. Whilst Belarus, Kazakhstan and Ukraine received considerable assistance from Russia and from the United States (via the Nunn-Lugar initiative) economic aid did not work to the same effect in North Korea. What goes for financial assistance holds true for financial punishment as well. The freeze on American aid to Pakistan did not stop Islamabad from continuing its nuclear programme. This means that, as a realist would expect, national security concerns trump economic interests for a state. In a related argument, institutional theories advance that international regimes can change the interests and decisions of states. However, in a realist view international regimes are tools of great powers that attempt to use regimes in order to further their national interests. Realists have continuously argued that 'regimes are products of existing power relationships, and they change along with the balance of bargaining power among the states that negotiate them'.¹⁶ In this sense it is no hypocrisy, from a realist point of view, that the strongest backers of the non-proliferation regime are those states that continue to possess nuclear weapons. Furthermore, some depictions as that of Levite overstress the role of the United States in nuclear rollback. Such an emphasis on the role of Washington makes the world seem as if it is hierarchically organized where a single capital drives the policies of other capitals. From a realist standpoint, this neglects the fact that the international system is anarchical and states ultimately answer to no higher call than their own interests. Therefore most arguments that stress American leadership in nuclear rollback overlook the fact that it is ultimately in other states' decision to keep or forego nuclear weapons and not a policy that is determined by Washington's carrots.

Others, as Peter Lieberman, argue that 'increased sensitivity to the economic and diplomatic liabilities of the program' led South Africa to de-nuclearize.¹⁷ This is a line of argument that rests on the works of Etel Solingen, where she analyses the domestic coalitions and their relative openness to liberal economic policies. According to Etel Solingen, if the 'liberalizing' coalition triumphs over the 'nationalistic' coalition then a state is more likely to give up their weapons programme.¹⁸ This explanation, however, does not hold strong when one considers the cases of Israel and India, both

of which having adopted more market-oriented measures, continue with their nuclear programmes.

Setting these aside, there is some appreciation of realist thinking. For example, the 'threat removal' explanation, according to Maria Babbage, 'argues that, with the collapse of the Soviet Union and the end of the Cold War, the security threat that had caused South Africa to build a nuclear arsenal had disappeared, thereby removing the main impetus behind the nuclear program'.¹⁹ These arguments do not take into account the fundamental principle of realist theorizing; namely, how the anarchic structure of the system compels states to prepare for future uncertainties. States understand that the disappearance of today's threat does not necessarily mean that tomorrow will be a merry day. Therefore, the 'threat removal' explanation, as detailed below, is underdeveloped. Suffice to say is that the disarmament literature seems to lack rigorous realist scholarship, as could be understood by Lieberman's telling acknowledgment that 'while security theories predict that threats cause arming, they only weakly predict disarmament when threats evaporate'.²⁰ The absence of consistent realist theorizing has not gone unnoticed.

Realists on Disarmament

Many scholars of international relations have argued that realism has become obsolete with the collapse of the Soviet Union and the developments taking place in the aftermath.²¹ Realists Kenneth Waltz and Benjamin Frankel have argued that realism remains as a valuable school, and that the transition from bipolarity to multipolarity will likely speed up the nuclear proliferation process.²² It may seem that some events support above mentioned realists' arguments such as Pakistan's nuclear tests and North Korea's recent declaration of its possession of nuclear weapons. John Mearsheimer has also gone far enough to make specific predictions on nuclear proliferation and has stated that 'the Ukraine is likely to keep its nuclear weapons, regardless of what other states say and do'.²³ It took just a few years to prove Mearsheimer wrong on this point.²⁴ The Intermediate-Range Nuclear Forces (INF) Treaty, START I and II Treaties, the 1993 unilateral decisions to suspend nuclear testing along with the first steps in Latin America toward a nuclear-free zone via the 'quadripartite agreement' seem to indicate that there has been a pace toward non-proliferation. Against such an empirical background, however, there is little acknowledgement of disarmament in the realist literature.

There are two main branches within realism: defensive and offensive realism.²⁵ Where the former stresses that under the anarchic ordering principle a state's primary objective is to strive for security, the latter stresses that since 'there is no 911 to dial' in an anarchic system, states will attempt to maximize their relative capabilities and strive to acquire as much power as they can.²⁶ Offensive realism stresses the objective of a state should be to increase its relative capabilities in the system due to the anarchic nature of the system.²⁷

On the other hand, defensive realists maintain that more power does not necessarily mean that a state will be more secure.²⁸ A good summary comes from Charles Glaser who notes that there are systemic feedback effects, such as the security

dilemma, that show how more power does not necessarily contribute to more security.²⁹ A defensive, security-maximizing approach such as the one taken in this article is open to various types of state behaviour. Both defensive and offensive realist approaches, however, see states striving to keep their relative capabilities, and try to maintain their position in the system.³⁰

Following defensive logic, this article assumes that nuclear strategies originate in their relative capabilities, and sometimes compel states to give up their nuclear weapons to ensure survival. If a state does not possess a secure second-strike capability then it would be rational for that state to give up its nuclear assets. This builds upon classical deterrence theorists that the dominant factor is 'reciprocal fear of surprise attack'.³¹ If in defensive realism 'states can be usefully thought as unitary rational actors acting strategically under anarchy' then we explain why it is rational for a state to take steps to survive without maximizing power.³² States that had a programme to build nuclear weapons, but chose not to continue, like Argentina and Brazil, are not considered here.³³ The more challenging question for realism is why a state would ever give up the bomb having already obtained it.

Hypothesis 1. Absence of Existential Threat is Necessary but not Sufficient for Nuclear Disarmament

It would be easy to explain the proliferation of nuclear weapons in the aftermath of Second World War according to balance of threat theory. If a state faces an adversary with strong conventional forces, or a nuclear arsenal, then balance of threat theory would argue that a state will attempt to acquire weapons or allies to counter that threat.³⁴ Balance of threat theory is very powerful in explaining other cases, such as those states that have the nuclear technology and material resources to produce nuclear weapons but prefer not to. Nearly 30 such states exist in the world, but none has a policy aimed at developing nuclear weapons. When one looks at such states, it seems that they prefer not to acquire nuclear weapons because they do not face a danger that threatens the state's survival. Balance of threat theory can further explain the acquisition of nuclear weapons of those states that perceive an existential threat, especially North Korea, Israel and Pakistan.

Although one can explain the proliferation of nuclear weapons by balance of threat theory, one might encounter difficulties in applying the theory to nuclear disarmament.³⁵ Even though this theory predicts that states will balance against a threatening state, it would require some careful analysis to jump to the conclusion that a state would unbalance (disarm) once that threat has been abolished. This is a point where the vast majority of literature that employs realist variables fails to seriously take into account the theoretical implications and nuances. Take for example Scott Sagan, who considers nuclear disarmament within a realist framework and compares it with constructivist and liberal explanations of nuclear rollback.³⁶ In his evaluation of realism, he is in theoretical error where he argues that the reason why some states gave up nuclear weapons is because other states did not pose a threat to them.³⁷ One should be critical of this causal logic that equates a lack of threat with nuclear disarmament. This is a misinterpretation of balance of threat theory, when applied to a

foreign policy of a nuclear state; a misinterpretation that is consistent throughout the literature. At first sight the argument is straightforward and logical: states give up nuclear weapons since there is no threat around. However, basic realist principles remind us that because the structure remains anarchic, and the future is sure to be a system of self-help the absence of an imminent or short-term threat is not a factor that should lead to the decision of nuclear disarmament. According to realist logic, all states live in an anarchic system. Due to the fact that 'today's ally could be tomorrow's foe', the abandoning of nuclear weapons cannot be explained by only using balance of threat theory. This has been a major fallacy that many fall into without considering background realist theorizing.

All this is not to say that we should jettison balance of threat theory. Rather, we should carefully construct it in order to explain nuclear rollback. The first hypothesis is that that a state should not have a standing existential threat for it to consider giving up nuclear weapons. In other words, if a state faces an existential threat it will stick to its nuclear weapons.

Operationalizing Threat

The threat in consideration in this study is a dyadic *existential threat* to the survival of the state. Although 'threat' has been used as rhetoric by political elites in order to maintain domestic order, one would want to distinguish between such usage from the threat that is formulated in the realist literature. By carefully conceptualizing the realist understanding of threat, one would avoid the subjective and rhetorical utterances of 'threat', in favour of a more analytic formulation. This article relies on Walt's and Mistry's conceptualization of threat.³⁸ Borrowing from them, existential threat is operationalized as:

1. *Power*: There is a more powerful state in the region.
2. *Proximity*: The nearer a powerful threatening state, the higher threat it constitutes.
3. *Intentions*: Aggressive intentions toward the state. This is coded as malign or benign intentions.
4. *Violent territorial disputes*: The presence of a significant territorial dispute with a neighbour.
5. *Isolation/allies*: The state faces international and territorial isolation or lacks a powerful ally.

TABLE 1
HYPOTHESIS 1: ABSENCE OF AN EXISTENTIAL THREAT IS NECESSARY FOR NUCLEAR DISARMAMENT

	Existential threats high	Existential threats low
States that gave up nuclear weapons	A. No examples	B. Belarus, Kazakhstan South Africa, Ukraine
States that keep nuclear weapons	C. China, India, Israel, North Korea, Pakistan	D. France, Russia, United Kingdom, United States

Theoretical and Empirical Challenges to 'Balance of Threat'

The presence of at least four of the five indicators above is an indicator of existential threat. This essay argues that the absence of threat is a partial factor in the denuclearization process, but it is not the only contributing factor. From a realist standpoint, states are never completely secure in the condition of anarchy. The international system is dynamic and states acquire or lose power over time; therefore, as long as anarchy is constant there is always a possible future threat that may rise. States do not forego their capabilities once a threat is gone.

Although a short-term to intermediate-term threat may be absent the logic of anarchy suggests that a state will take into consideration long-term possibilities and keep its nuclear arsenal. One can legitimately argue that it is precisely for this reason that states listed in Table 1, Cell D, did not give up their weapons at the end of the Cold War, though they have symbolically reduced the size of their arsenals. Why didn't the logic of anarchy compel Belarus, Kazakhstan, South Africa, and Ukraine to keep their nuclear capabilities? The security costs of holding on to nuclear weapons outweighed any advantage of keeping them in those countries. On the other hand, China, India, Israel, North Korea and Pakistan score positive for existential threats, and they hold on to their nuclear weapons.

Balance of threat theory falls short in explaining those states that, at present, do not face an immediate existential threat yet keep their nuclear weapons such as France and the United Kingdom (Table 1, Cell D). Balance of threat theory applied in reverse terms (absence of threat leads to giving up nuclear weapons) only partially explains nuclear rollback, as shown in Table 1, Cell B. One needs a second hypothesis that does not conflict with the findings of the first:

Hypothesis 2. Absence of a Secure Second-Strike Capability is a Necessary but not Sufficient Condition for Nuclear Disarmament

The second variable introduced in this article is the presence of a second-strike capability for any given state, that is, the ability to retaliate after a nuclear attack. The importance of such capabilities has been stressed by virtually every classical deterrence theorist. Oskar Morgenstern, for example, stated that 'In order to create a nuclear stalemate under conditions of nuclear plenty it is necessary for both sides to possess invulnerable retaliatory forces'.³⁹ This was the realist logic during much of the Cold War. As Freedman's analysis of the evolution of American nuclear strategy shows, ever since first Soviet nuclear test, each defence secretary, from Robert Lovett to James Schlesinger, strove to maintain a second-strike capability against the Soviet Union.⁴⁰

Operationalizing Secure Second-Strike Capability

The literature points to several factors that constitute a *secure second-strike capability* (SSSC).⁴¹ Determining which states have a reliable SSSC would only be possible through a horrifying nuclear war. However, states do prepare for such circumstances and devise strategies based on the assumption of their rival's SSSC

capabilities, or lack thereof. One can only advance arguments if certain assumptions are made on SSSC. Such assumptions are legitimate especially if they are the sort of assumptions that decision-makers themselves make. Relying on the literature, SSSC is operationalized here according to whether the state has sustainable command, control, and communication systems, as well as launching capabilities such as hardened silos or naval vessels.⁴²

A state that has a secure second-strike capability must have the ability to absorb another state's nuclear first-strike and then launch its own nuclear weapons at the attacking state. In order to have a SSSC, a state must have either a large territory with dispersed nuclear silos that are invulnerable to the first-strike, or mobile missiles such as submarines that are capable of launching nuclear missiles.⁴³ Submarine-launched ballistic missiles (SLBMs) were a vital part of the nuclear triad of the former Soviet Union and the United States. Lawrence Freedman notes that 'The sea-based deterrent was considered to be a model of second-strike force-invulnerable to a first strike . . . In terms of stability this was exemplary.'⁴⁴ As this quote illustrates, the possession of SLBM capable submarines means a positive score for a secure second-strike. A state must also have reliable command and control systems, which means a reliable and secure network between top decision-makers and field personnel in the nuclear chain of command. China, France, Russia, the United Kingdom and United States are coded as having a SSSC. South Africa lacked a SSSC, and it is hard to imagine that South African leaders could have used nuclear weapons against Soviet forces and allies in the region for fear of a Soviet second-strike.

A legitimate question for this hypothesis is 'why don't states pursue a secure second-strike capability rather than give up their nuclear weapons'. There are two reasons. First, building a SSSC is far more costly than simply building the bomb. It requires advanced command and control systems as well as expensive intelligence and reconnaissance capabilities. As Freedman has shown in his well-documented work, building a secure-strike capability is very costly.⁴⁵ Second, building a SSSC cannot be accomplished as secretly as the building of a bomb can. Expanding command, control, and intelligence capabilities, or acquiring nuclear capable submarines cannot be accomplished covertly. Thus, building a SSSC sends threatening signals to other states, which invites a first-strike on their territory. In this sense, foregoing nuclear weapons is not only the cost-effective option, but it is also a strategy that is less threatening to other states.

If a state lacks a secure second-strike capability, then nuclear decision-making will resemble a scenario, which Stephen Van Evera refers to as 'winning only requires striking early'.⁴⁶ According to a game theoretical model a state that launches a surprise first-strike can win a war because the target state will be virtually incapable of retaliating.⁴⁷ This comes close to Schelling's rational behind 'the reciprocal fear of surprise attack'. If states are rational and they calculate and strategize in order to ensure survival, then states come to the conclusion that if they do not possess a SSSC they are in danger. In a self-help world, where intentions are unclear a state that possesses a SSSC (*State A*) is still in danger from a state (*State B*) that has nuclear capabilities but lacks SSSC. In such a scenario it is possible that *State A*

may launch a preventive first-strike, since it will be more secure by eliminating State B. In this strategic interaction State B cannot deter A's preventive strike. State B has the choice of launching a pre-emptive strike on A. However, State B is well aware that State A will retaliate with a second-strike, which deters B from launching a pre-emptive war. In this situation it would be the rational choice for State B to give up their nuclear weapons so as to ensure that its population will not be a target of a strike by State A. The absence of retaliatory forces means an invitation for first-strikes. Freedman has gone to great length in detailing how the nuclear strategists of the United States and the Soviet Union during the Cold War operated according to such logic.⁴⁸ The billions spent to diversify nuclear launch capabilities by ICBMs, SLBMs and bombers, show the important need for a retaliatory capability.

Theoretical and Empirical Challenges to the Secure Second-Strike Hypothesis

It is a necessary condition that a state lacks a secure second-strike capability for it to give up nuclear weapons. However, as seen in Table 2 this is not a sufficient condition for that state to give up its arsenal. Asserting the contra-positive hypothesis would be intuitive.⁴⁹ The contra-positive version of this hypothesis would argue that states with a SSSC would not give up their arsenal. The causal logic that makes this hypothesis work in a realist world is that, in a self-help system, a state would never know whether it would need a nuclear capability in the future. The cases in Cell C confirm this contra-positive, that a state would not give up its nuclear arsenal. In Table 2 one observes that the China, France, Russia, the United Kingdom and the United States have SSSCs.

In Cell A my hypothesis that no state will give up its nuclear arsenal if it has a second-strike capability, is confirmed. Belarus, Kazakhstan, South Africa and Ukraine confirm the hypothesis that states give up nuclear weapons (if they lack a retaliatory capability, they invite a first-strike). However, Cell D stands out as an anomaly to this hypothesis. North Korea, Israel, Pakistan, and India lack the capability of absorbing a first-strike and projecting their retaliatory forces, but they still continue to possess nuclear bombs.⁵⁰ For this reason this hypothesis is a necessary but not sufficient condition; it is a necessary condition that an absence of SSSC to give up nuclear weapons but not a sufficient condition.

The argument of this essay is that there is another variable that contributes to nuclear rollback, which is the absence of an existential threat. It is important to

TABLE 2
HYPOTHESIS 2: ABSENCE OF A SECURE SECOND STRIKE CAPABILITY IS NECESSARY FOR NUCLEAR DISARMAMENT

	Presence of SSSC	Absence of SSSC
States that gave up nuclear weapons	A. No examples	B. Belarus, Kazakhstan, South Africa, Ukraine,
States that keep nuclear weapons	C. China, France, Russia, United Kingdom, United States	D. Israel, North Korea, Pakistan, India

note that the threat posed to states that do not have a SSSC is analytically separate and distinguishable from the type of existential threat advanced in the first hypothesis. States that do not have a SSSC can eliminate the type of threat due to preventive strikes by giving up nuclear weapons. On the other hand, states that already face an existential threat and possess a nuclear capability without a SSSC cannot get rid of the existential threat posed to them by giving up their nuclear capabilities.

The presence of states with secure second-strike capabilities along with states lacking such capabilities is, in realist thinking, dangerous for the latter. An important point to keep in mind is that Belarus, Kazakhstan, South Africa and Ukraine faced a threat because of the *presence* of nuclear weapons. Unlike the type of dyadic threat operationalized in the previous section, the threat countries without secure second-strike capability face is *because of their possession of nuclear weapons*.

The implications of second-strike capabilities in different strategic situations are summarized in Table 3. Hypotheses 1 and 2 are merged in Table 3 in relation to the cases.

- *Cell A:* (i) There is no existential threat to state survival. Does this mean the state should give up nuclear weapons? Many scholars, discussed above, fall into this trap and would say yes. However, in a realist analysis, this does not automatically mean that the state should give up nuclear weapons. Since the system remains anarchic and 'today's friend could be tomorrow's foe', there is a benefit to holding on to nuclear capabilities due to long-run possibilities in an anarchic environment. (ii) The state possesses a secure second-strike capability. In the system, no other state can pose a threat that might originate from the state's possession of nuclear arsenal (systemic and/or dyadic interactions). It is best for the state to keep holding on to this safe status of having a SSSC. Expected nuclear strategy: *state holds on to its nuclear weapons*.
- *Cell B:* (i) There is no existential threat to state survival. As indicated above, there is a long-run benefit to hold on to nuclear weapons if the state has a SSSC. (ii) There is a significant risk of not having a secure second-strike capability, (systemic and/or dyadic interactions) that forces the state to take measures to denuclearize. The only danger for a state is the possession of nuclear weapons without a second-strike capability. There is no threat but the possession of the state's nuclear arsenal since it invites first-strikes. Expected nuclear strategy: *state gives up its nuclear arsenal*.

TABLE 3
TESTING THE DEFENSIVE REALIST NUCLEAR DISARMAMENT THEORY

Theory and empirics	Presence of SSSC	Absence of SSSC
Existential threat <i>absent</i>	A. States hold on to nuclear weapons: France, Russia, United Kingdom, United States	B. States give up nuclear weapons: Belarus, Kazakhstan, South Africa, Ukraine
Existential threat <i>present</i>	C. States hold on to nuclear weapons: China	D. States hold onto nuclear weapons: India, Israel, North Korea, Pakistan

- *Cell C:* (i) There is a threat (dyadic existential) to the state, and assuming that the state wants to survive, the state will hold on to what it has in order to defend itself and deter attacks from a threatening state. Since there is a threatening state in the neighbourhood, this state will hold on to its arsenal. (ii) The state possesses a secure second-strike capability. In the system, no other state can pose a threat that might originate from the state's possession of nuclear arsenal (systemic and/or dyadic interactions). It is safe for the state to keep on holding to this safe status of having a SSSC. Expected nuclear strategy: *state holds on to its nuclear weapons.*
- *Cell D:* (i) There is a threat (dyadic existential) to the state, and assuming that states want to survive, the state will hold on to what it has in order to defend itself and deter attacks from a threatening state. (ii) There is a significant risk of not having a secure second-strike capability (systemic and/or dyadic interactions) that forces the state to denuclearize. The immediate threat trumps the threat that is posed by not having a SSSC. This is so because the threat posed to the state is not because it possesses nuclear weapons; and giving up nuclear weapons does not solve the issue, because the state is still in existential danger. In other words, even if the state gives up nuclear weapons, it still faces an existential threat. Expected nuclear strategy: *state holds on to its nuclear weapons (existential deterrence).*

Cases

Mature or established nuclear powers have the capability to deter each other from attacking each other. With the logic of MAD at work in the interaction amongst all these states, realist explanations suffice. Instead, this section scrutinizes states that have given up their arsenals – Belarus, Kazakhstan, South Africa and Ukraine – the apparent puzzle for realism. I also analyse Israel and North Korea to see if the approach developed here can account for their distinctiveness. These two examples show why states that lack second-strike capabilities have retained their nuclear capabilities against existential threats.

South Africa

On 24 March 1993, South African President de Klerk declared that his country had built and destroyed six nuclear weapons, each roughly equal in terms of destructive force to the atomic bomb dropped on Hiroshima. The agreement in 1988 on the withdrawal of Cuban forces from Namibia reduced the threat posed to South Africa from Russia, which had contributed to South Africa's decision to acquire nuclear weapons.⁵¹ By the end of the decade and after the fall of the Berlin wall there were no serious neighbouring threats to South African security.⁵²

Many scholars argue that the absence of a threat is the primary realist reason for South Africa's rollback.⁵³ But, if a secure external environment is the necessary and sufficient condition for nuclear rollback, one would have to ask why such an argument does not hold true for states that continue to hold on to nuclear weapons. Soviet spy Deiter Gerhardt confessed that the Soviets asked Washington to cooperate

in a pre-emptive strike on South Africa's enrichment facility.⁵⁴ This would be a supporting argument for the fact that a lack of second-strike capability invites attacks on a country. In the 1970s, 'Moscow may have may have sounded out Washington on the preemptive destruction of South Africa's uranium enrichment plant'.⁵⁵ Had it been the case that South Africa was able to retaliate against the Soviet Union in the form of threatening Russian cities, it would have been almost inconceivable for Moscow to consider such an attempt.⁵⁶ Furthermore, South African nuclear programme expert Renfrew Christie argued that 'the growing prospect that the African National Congress would take power in South Africa' after De Klerk's election caused the United States to treat South Africa as a 'hostile nation' if it failed to disarm.⁵⁷ South Africa did not have a global second-strike capability, not with only six air-dropped bombs, without intercontinental missiles or nuclear-armed submarines. Why didn't South Africa, lacking a global SSSC throughout the 1980s, destroy its arsenal in the early 1990s? Only after the security environment of South Africa seemed to improve did the country decide to give up its nuclear weapons. It is legitimate to infer that both variables introduced in this article are necessary and neither one is by itself sufficient for nuclear rollback: the absence of a secure second-strike capability and absence of an existential threat were jointly necessary for South Africa's rollback.

In January 1990, the 'U.S., U.K. and Israel issued a "hostile nation warning" to the De Klerk government, which demanded that South Africa end the nuclear weapons program immediately or face hostile actions'.⁵⁸ Although the specific concern of those countries was the proliferation of nuclear material to Qadhafi and Castro, they could not have issued such a warning to another power (say China or Russia) with a tone demanding 'immediate disarmament'. The threat that South Africa faced was the result of its possession of nuclear weapons. It is the lack of a South African second-strike capability that invites such behaviour. An official in the South African Foreign ministry stated that:

Had South Africa exercised its nuclear option in a military crisis it might have invited a combined opposition from Washington and Moscow . . . which would increase the chances of a strategic defeat of South Africa, an outcome the nuclear strategy was intended to avoid.⁵⁹

After the warning, the South African government revised its national security strategy by removing nuclear material from devices. The 'hardware and data regarding designs were destroyed, nuclear material was recast in a form unsuitable for nuclear devices . . . [t]wo test shafts at the Vastrap test range were permanently sealed off and . . . [i]nspectors from the International Atomic Energy Agency were called for inspection at every site'.⁶⁰ By July 1990, South Africa ceased to have nuclear weapons.

Belarus, Kazakhstan, and Ukraine

Some may argue that since these states inherited nuclear weapons, they should not be treated as states who voluntarily gave them up. Regardless of their weapons' origins, these countries had the 'resources and know-how that would have allowed them the maintenance of their independent nuclear arsenals'.⁶¹ Ukraine, for example, 'held a

large pool of nuclear scientists, had the capability to make nuclear and missile components, and possessed the industrial infrastructure to maintain a small nuclear force'.⁶² Each state used the nuclear card, in varying degrees, for national security purposes and international prestige. Thus, from a realist perspective there is no reason why inheritance should be an intervening variable for their eventual disarmament.⁶³ Ukraine emerged as the third biggest nuclear power in numbers of tactical nuclear weapons (approximately 2,500) and strategic missiles (1,656). All three countries, however, lacked the command and control systems necessary for a secure second-strike capability.

The security policy of Ukraine was hotly debated in its administrative, military, and legislative institutions. The debates, from a security perspective, focused on three aspects. First, whether Ukraine should keep its nuclear weapons as a deterrent against Russia, which had claims on Crimea, Donbas, and other territories. Second, the logic of the security dilemma played a part as well, since 'Russian nuclear supremacy was a grave threat to Ukraine, and delayed Ukraine to give up its arsenal'.⁶⁴ The final aspect was that the Ukraine wished to achieve security by forging alliances with Western powers, such as joining NATO (which turned out to be a failure) and acquiring security guarantees from Russia and the United States. Davis argues that the 'Ukraine has demanded security guarantees and economic assistance as its price for giving up nuclear weapons'.⁶⁵ Such security guarantees were also sought by Kazakhstan and Belarus.⁶⁶ The presence of guarantees provided by Russia and the United States assured these countries that they would not be threatened by a Russian invasion, and thus one could say that they did not face an existential threat confirming the first hypothesis.

Security guarantees in the forms of agreements are eventually unreliable due to the conditions of anarchy. In realist logic, one would think that the Ukraine should continue its nuclear status, which Mearsheimer originally predicted. Although nuclear weapons were thought to provide reliable deterrence in the case of these states 'where a survivable weapons system does not exist',⁶⁷ the possession of nuclear arms without a second-strike capability invites first-strikes in the form of a preventive war.⁶⁸ Facing such first-strikes, Ukraine lacked 'the independent reconnaissance capabilities necessary to provide reassurance against surprise attack'.⁶⁹ As Blank puts it, 'without an adequate command and control system or second strike capability' Ukraine was the target of a first-strike according to Russia's defence doctrine.⁷⁰

Belarus and Kazakhstan had even fewer nuclear weapons than the Ukraine, 81 in the former and 1,410 in the latter, and were even more vulnerable to nuclear threats. 'The fear of a possible military reaction by Russia . . . made them aware that by retaining nuclear forces, they could themselves become targets.'⁷¹ On 23 May 1992, the leaders of Russia, Kazakhstan, Ukraine, and Belarus came together in Lisbon and agreed to give their nuclear arsenal to Russia over the course of seven years. President Kuchma of the Ukraine declared on 1 June 1996 that Ukraine had shipped all its nuclear weapons to Russia and was nuclear-free.⁷² According to Russian officials all nuclear warheads in Kazakhstan had been removed by early May 1995.⁷³ Belarusian and Russian officials declared that Belarus was a nuclear-free state in late November 1996.⁷⁴ From a security-based framework security guarantees that improved Ukraine's,

Belarus' and Kazakhstan's security environment and their absence of a second-strike capability were jointly necessary for their nuclear decisions.⁷⁵

States that Hold on to Nuclear Weapons

Israel

Israel experienced three wars against the coalition of Egyptian, Syrian and Iraqi armies, which at the time seemed to outweigh Israel's military balance. By the 1967 Arab–Israeli war, Israeli statesmen had already come to think that a nuclear deterrent would be the best means of survival. 'By 1968', writes Kenneth Waltz, 'the CIA had informed President Johnson of the existence of Israeli nuclear weapons, and in July of 1970, Richard Helms, director of CIA gave this information to the Senate Foreign Relations Committee'.⁷⁶

By the year 2001 'Israel is believed to have a nuclear capability with up to 100 warheads. Delivery means include aircraft (F-15), *Jericho I* missiles (range up to 500 km.) and *Jericho II* missiles (estimated range 1500–2000 km)'.⁷⁷ The range of its ballistic missiles combines well with the Israel's strategy of concealing its nuclear capability. This policy of ambiguous nuclear status is said to 'produce deterrence through ambiguity'.⁷⁸ Therefore, other states 'are not sure that Israel does not have nuclear weapons, which deters them from taking undesirable action because of their uncertainty that such action would not elicit an Israeli nuclear response'.⁷⁹ Israel does not have a global SSSC; it does not have a vast territory that can home hardened and dispersed silos, nor does it have nuclear powered and nuclear launch capable submarines. Recently, Israel has been seeking to purchase three nuclear-launch capable submarines that it will station in the Red sea and the Persian Gulf. In doing so it will effectively acquire a regional secure-second-strike capability against its neighbours, but it will be an effort short of a global secure second-strike capability.⁸⁰ In any case, there are existential threats to Israel's survival, and therefore, according to realist logic, it should not be expected to give up its nuclear arsenal.

North Korea

North Korea, especially after the Cold War, is a very isolated country that has potentially threatening neighbours.⁸¹ North Korea has faced several direct threats to its existence. As one observer puts it, 'No country has been the target of more American nuclear threats than North Korea—at least seven threats since 1945 . . . U.S. military presence posed an existential nuclear threat'.⁸² The United States had deployed nuclear weapons in South Korea and has conducted nuclear military exercises.⁸³ It is for such reasons that 'North Korea wants the military capability that nuclear weapons afford because it feels weak, isolated, and threatened'.⁸⁴

As Leon Sigal put it:

If North Korea had nuclear arms or enough plutonium to make them, U.S. intelligence had no idea where they were, and air strikes could not target what could be found . . . That left the option of conquering North Korea, but for good

reason, neither the United States nor South Korea wanted to take that risk, especially with a potentially nuclear armed North.⁸⁵

These statements are strong evidence of the hypotheses introduced in this article. North Korea, until recently, refuses to permit IAEA inspections and negotiates with international powers by using the ambiguity surrounding its nuclear capabilities.⁸⁶ Besides tactics that would resemble a neo-liberal institutionalist framework, such as building international regimes and coalitions of non-proliferation, the United States has also considered using force as a counter-proliferation measure. However, the nuclear capability of North Korea and the risks that may unravel in such a strike, that is, the possibility that North Korea may use the bomb, have worked well enough as a deterrent.⁸⁷ An Asian security expert, and a consultant to US Air Force and Council of Foreign Relations, says 'U.S. consideration (and ultimate rejection) of air strikes against North Korea in 1994 suggests that counter-force attacks are a high-risk option with very limited applicability, not a tool that can be regularly or reliably employed'.⁸⁸

The examples of North Korea and Israel hint that states strategically calculate and adopt policies in order to ensure their survival. The cases of North Korea and Israel further illustrate how an existential threat compels states to keep nuclear weapons regardless of their secure second-strike capability.

Conclusion

There have been numerous explanations for nuclear disarmament, ranging from bureaucratic organization to the role of international institutions, and the role of democracy. In an attempt to hold realism true to its premises, the argument advanced in this essay should be regarded as an attempt to answer those who argue that security-based explanations for disarmament are ill-equipped or underdeveloped. The theory advanced in this essay passes the congruence test in providing a realist argument of nuclear disarmament. The explanation that is offered ought not be seen as a rival explanation that disproves other explanations, but a complementary explanation of disarmament. In this sense the amelioration of the external security environment of a state, along with the strategic interaction with other nuclear powers, could be understood as the background condition for policy-makers' decision to give up nuclear weapons, where also liberal and constructivist variables comes into the equation.

The essay has also hinted the relative strength of competing realist traditions of international security. Giving up nuclear weapons presents an empirical anomaly for the offensive realist school. If survival is the goal, which offensive realism accepts, then states may pursue policies exactly the opposite of offensive realist expectations, namely decreasing one's military capabilities. Defensive realism can account for such behaviour, as 'security maximization' is the main concern. The defensive realist hypotheses that is advanced in this essay not only accounts for those states that gave up their arsenal but also accounts for those states that continue to keep their nuclear weapons, which is methodologically important to keep in mind

in any future discussion of disarmament. In short, offensive realism fails the test of providing a plausible argument for disarmament. While post-Cold War offensive realism, as advanced by Mearsheimer, is content with an explanation of the expansion of great powers, his book keeps the issue of disarmament at an arm length.

The argument advanced in this article should not be considered as the conclusive explanation for the realist school; it does open avenues for serious thinking about disarmament. The hypotheses advanced in this study to explain these apparent anomalies could be thought as a Lakatosian progressive problem shift that improves the defensive realist research programme.⁸⁹ Further research is necessary in order to explain the foregoing of biological and chemical weapons, and those states that have reduced their conventional military capabilities.

Four important realist questions still cannot be fully accounted by the hypotheses developed here. First, there is no clear realist explanation for why near-nuclear states give up their efforts to obtain nuclear weapons. Second, what is the effect of having chemical and biological weapons in the process? Third, what is the relative cost-benefit to obtain a secure second-strike capability once a state acquires nuclear weapons? Fourth, all states that have nuclear weapons began their nuclear programmes without a second-strike capability, but none of them gave up their nuclear weapons. These are serious questions requiring much thought; they are critical questions that the careful reader would readily point out. Realists need to answer these questions if they are to wake up from the post-Cold War syndrome and provide a reasonable prognosis for nuclear disarmament.

Five policy prescriptions follow from this analysis. First, once a secure second-strike capability is achieved it is unlikely that a state will give up its nuclear weapons. Realists would argue that efforts to force any such state to give up its nuclear weapons would be unrewarding. Second, the great powers in the system ought not to take aggressive measures against other states in an attempt to force them to give up their nuclear weapons, as this would contribute to a perception of increased threat. Aggressive measures that would be taken against states such as North Korea would only make them feel more threatened and further embrace nuclear weapons. Confidence building measures must be pursued that will soothe the perception of the external environment of such states. Third, the United States and its allies must also make clear to North Korea and Iran the full implications of America's second-strike capability. Occasional threats to 'wipe out the West' by leaders of North Korea and Iran are not based in concrete material capabilities, as they know well. Such wild language is not a reliable indicator of material capabilities. Rather, it is wiser to treat such language as domestic political rhetoric.

Fourth, pressing for a regime change in a 'rogue' state is futile. Furthermore, external pressures in the form of blockade or sanctions will prove futile against those states that continue to hold on to nuclear weapons. Such policies would likely increase the perceived threat. For example, North Korea, which already perceives that it is surrounded by dangerous adversaries would be on increased alert. The unsuccessful non-proliferation sanctions against India and Pakistan prove the point that, once a state is determined, external interference would not put that country on the non-proliferation track.

Five, if policy-makers want to limit the proliferation of nuclear weapons and compel states that already have them to disarm, the realist hypotheses advanced in this essay would have to suggest that dialogue instead of confrontation is necessary. This is a suggestion that many neo-liberals and constructivists have long argued for. Any attempt to further isolate regimes such as North Korea or Iran, which are understandably different cases, would only exacerbate their perception that they are endangered by outside threats. Such a policy would have the reverse effect by leading such states to continue their nuclear programmes. The multilateral efforts to negotiate with North Korea in this sense may yield fruitful results. The agenda of this dialogue should include potential limited military and economic assistance, as well as efforts to integrate these two states within the international community. Possible economic assistance would decrease the perceived threat of these states and might lead them to rethink their nuclear option. Nuclear weapons are acquired to increase the security of a state. If Iran and North Korea come to think that nuclear weapons are detrimental to their security they would rethink the utility of the nuclear option. Replacing their costly, and technologically backward, nuclear equipment with conventional military weapons coupled with economic assistance and energy supplies would strengthen their perception of their security. Such efforts would be substantial steps to integrate these countries into the global political and economic community, which would ideally normalize their foreign policies.

This essay has advanced plausible realist hypotheses while holding true to the premises of realist thinking. As has been pointed out, a realist explanation of nuclear disarmament has its unmistakable shortcomings, but also certain strengths. By clarifying both, this essay tries to give the disarmament literature and international relations theory a more accurate realist target to engage. Constructivists (who show the power of norms) and neo-liberal institutionalists (who show the power of institutions) are now equipped with a more accurate target.

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NOTES

1. Michel Foucault, 'So is it Important to Think?', in James Faubion (ed.), *Power* (New York: New Press, 2000), p. 160.
2. Among several arguments on why states seek to acquire nuclear weapons see: Scott Sagan, 'Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb', *International Security*, Vol. 21 (Winter 1996/1997), pp. 54–86; Zachary Davis and Benjamin Frankel (eds), *The Proliferation Puzzle: Why Nuclear Weapons Spread (and What Results)* (Portland, OR: Frank Cass, 1993).
3. Attempts for a realist disarmament theory have been made, but I argue that they are inconsistent with fundamental realist principles: Mitchell Reiss, *Without the Bomb: The Politics of Nuclear*

- Nonproliferation* (New York: Columbia University Press, 1988); T.V. Paul, *Power versus Prudence: Why Nations Forgo Nuclear Weapons* (Montreal: McGill-Queen's University Press, 2000); Barry R. Schneider and William L. Dowdy (eds), *Pulling Back from the Nuclear Brink: Reducing and Countering Nuclear Threats* (London: Frank Cass, 1998); Ariel Rot, 'Sticking to their Guns: The Role of Nuclear Weapons in the Intra-Realist Debate', Paper presented at the Annual ISA Conference, 18 March 2004.
4. By omitting other variables such as culture and bureaucratic arrangements, a realist view would state that that external forces (consequences of anarchy, security dilemma, and self-help) trump internal variables in the decision-making of states when it comes to matters of national security. States are likely to respond similarly to similar pressures, in this case the liability of possessing nuclear weapons in an anarchic environment. When stressing the importance of external/structural effects on state strategy, Arnold Wolfers once neatly put it: 'When the house is on fire everybody runs to the exit.' For further justification, see Arnold Wolfers, *Discord and Collaboration: Essays on International Relations* (Baltimore, MD: Johns Hopkins University Press, 1962), p. 15.
 5. While I am advancing a realist theory in this article, I am by no means a subscriber to realism's ontology and epistemology. See my previous work: Halit Mustafa Tagma, 'Homo Sacer vs. Homo Soccer Mom: Reading Agamben and Foucault in the War on Terror', *Alternatives: Global, Local, Political*, Vol. 34 (2009), pp. 407–36.
 6. Paraphrased from Richard K. Ashley, 'The Poverty of NeoRealism', *International Organization*, Vol. 38 (Spring 1984), pp. 225–86.
 7. This essay may be misapprehended as being involved in too much realist logic and theory – as if it is an exercise in international relations (IR) theory coming from an ivory tower perspective. On the other hand, as the opening quote to this essay suggests, I strongly agree that there is always theory involved in thinking about empirical realities: that the way we think and conceive the world shapes our understanding of reporting the 'facts'. Whether it is the prescription offered in a policy journal, or whether a 'fact' is stated in a regional journal's report on, say, North Korea, theory always informs our way of reading these facts. The very utterance of a concept like security dilemma, balance of power, or thirst for power, in policy prescription articles hints that a certain mode of thinking already informs the way we interpret facts on the ground. It is wrong to assume that there is a theoretical world separate from an empirical world. Like Foucault, and constructivists, I would suggest that there is always a 'mode of thinking' involved even in things that are taken for granted. With respect to the disarmament literature, there is always a certain theory that informs the understanding of how facts are read. Therefore, the reader would want to keep in mind that this is not just an engagement with IR theory but an engagement with the language and logic that informs our everyday thinking about arms control. Since realism has been the most dominant mode of thinking that has informed our understanding of contemporary security policies, it is all too necessary to engage with the language and logic of this theory. Field researchers who have conducted in-depth analysis of the disarmament dynamics of these countries might disagree with some findings. However, I'd like to point out that the main thrust of the paper is to provide a theoretical framework consistent with the language and logic of realism that has governed and limited IR discourse for decades.
 8. For a discussion on why realism is incapable of explaining nuclear disarmament see William J. Long and Suzette R. Grillot, 'Ideas, Beliefs, and Nuclear Policies: The Cases of South Africa and Ukraine', *The Nonproliferation Review*, Vol. 7 (Spring 2000), pp. 24–40; Tanya Ogilvie-White, 'Is There a Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate', *The Nonproliferation Review*, Vol. 3 (Fall 1996), pp. 43–60; John Mearscheimer, 'Back to the Future: Instability in Europe After the Cold War', *International Security*, Vol. 15 (Summer 1990), pp. 5–56.
 9. Long and Grillot, 'Ideas, Beliefs, and Nuclear Policies' (note 8), p. 25.
 10. Ariel E. Levite, 'Never Say Never Again: Nuclear Reversal Revisited', *International Security*, Vol. 27 (Winter 2002/2003), pp. 59–88. For further explanations see T.V. Paul, *Power versus Prudence: Why Nations Forgo Nuclear Weapons* (Montreal: McGill-Queen's University Press, 2000); Davis and Frankel, *The Proliferation Puzzle* (note 2); Mitchell Reiss, *Bridled Ambition: Why States Constrain Their Nuclear Capability* (Washington, DC: Woodrow Wilson Center Press, 1995); Mitchell Reiss, *Without the Bomb* (note 3); Sagan, 'Why do States Build Nuclear Weapons?' (note 2).
 11. Their treatment of realism in the case of Ukraine is similar. Long and Grillot 'Ideas, Beliefs, and Nuclear Policies' (note 8), p. 28.
 12. Reiss, *Bridled Ambition* (note 10), p. 28.
 13. In this line Mill's method of difference and agreement is a classic methodological tool.
 14. Long and Grillot, 'Ideas Beliefs, and Nuclear Policies' (note 8), p. 36.
 15. Reiss, *Bridled Ambition* (note 10), p. 13.

16. This is a standard realist critique of the neo-liberal institutionalist school. See another one in Paul, *Power versus Prudence* (note 3), p. 7.
17. Peter Lieberman, 'The Rise and Fall of the South African Bomb', *International Security*, Vol. 26 (Fall 2001), pp. 45–86.
18. Etel Solingen, 'The Political Economy of Nuclear Restraint', *International Security*, Vol. 19 (Fall 1994), pp. 126–69; Helen Purkitt and Stephen F. Burgess, with Peter Lieberman, 'Correspondence: South Africa's Nuclear Decisions', *International Security*, Vol. 21 (Summer 2002), pp. 186–94; Lieberman, 'The Rise and Fall of the South African Bomb' (note 17).
19. Maria Babbage, 'White Elephants: Why South Africa Gave Up the Bomb and the Implications for Nuclear Nonproliferation Policy', *Journal of Public and International Affairs*, Vol. 15 (Spring 2004), p. 3.
20. Lieberman, 'The Rise and Fall of the South African Bomb' (note 17), p. 72.
21. Among many others see: Richard Lebow, 'The Long Peace, the End of the Cold War, and the Failure of Realism', *International Organization*, Vol. 48 (Spring 1994), pp. 249–77; Jeffrey Legro and Andrew Moravcsik, 'Is Anybody Still a Realist?', *International Security*, Vol. 24 (Fall 1999), pp. 5–55; Paul Schroeder, 'Historical Reality vs. Neorealist Theory', *International Security*, Vol. 19 (Summer 1994), pp. 108–48; John Vasquez, 'The Realist Paradigm and Degenerative vs. Progressive Research Programs: An Appraisal of Neotraditional Research on Waltz's Balancing Proposition', *American Political Science Review*, Vol. 91 (December 1997), pp. 899–912.
22. Scott Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W.W. Norton, 1995); Benjamin Frankel, 'The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation', *Security Studies*, Vol. 2 (Spring–Summer 1993), pp. 3–4.
23. John Mearsheimer, 'The Case for a Ukrainian Nuclear Deterrent', *Foreign Affairs*, Vol. 72 (Summer 1993), p. 54.
24. Mearsheimer said that 'the reason why Ukraine gave up its nuclear weapons was because US forced them to'. Mearsheimer, personal correspondence, 4 March 2005, International Studies Association Annual Convention, Honolulu. His statement on this topic is the exact opposite of his earlier comment above 'regardless of what other states say and do'. Furthermore, disarmament is opposite to what offensive realism predicts.
25. Classical and neo-classical realist research programmes fall short in providing an explanation of disarmament and are excluded here. For an example of classical realism see Hans Morgenthau, *Politics among Nations: The Struggle for Power and Peace* (New York: Knopf, 1954). For a neo-classical realist work see Randall Schweller, 'Bandwagoning for Profit: Bringing the Revisionist State Back In', *International Security*, Vol. 19 (Summer 1994), pp. 72–107.
26. For early theoretical discussion see Wolfers, *Discord and Collaboration* (note 4), pp. 81–102.
27. John Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton and Company, 2003); Fareed Zakaria, *From Wealth to Power: The Unusual Origins of America's World Role* (Princeton, NJ: Princeton University Press, 1998); Schweller, 'Bandwagoning for Profit' (note 25).
28. Stephen Walt, *The Origins of Alliances* (Ithaca, NY and London: Cornell University Press, 1987); Stephen Van Evera, *Causes of War* (Ithaca, NY and London: Cornell University Press, 1999); Jack Snyder, *Myths of Empire: Domestic Politics and International Ambition* (Ithaca, NY: Cornell University Press, 1993).
29. For different explanations of state behaviour by defensive realists see Charles Glaser, 'The Security Dilemma Revisited', *World Politics*, Vol. 50 (October 1997), pp. 171–201; Charles Glaser, 'Realists as Optimists: Cooperation as Self-Help', *International Security*, Vol. 19 (Winter 1994/95), pp. 50–90.
30. For excellent summaries of defensive and offensive positionalism see Sean M. Lynn-Jones, 'Offense–Defense Theory and Its Critics', *Security Studies*, Vol. 4 (Summer 1995), pp. 660–91; Fareed Zakaria, *From Wealth to Power* (note 27); Eric Labs, 'Beyond Victory: Offensive Realism and the Expansion of War Aims', *Security Studies*, Vol. 6 (1997), pp. 1–49.
31. Thomas Schelling, *The Strategy of Conflict* (Cambridge, MA: Harvard University Press, 1960).
32. Andrew Kydd, 'Sheep in Sheep's Clothing: Why Security Seekers Do Not Fight Each Other', *Security Studies*, Vol. 7 (Autumn 1997), p. 120.
33. See Paul, *Power vs. Prudence* (note 3) for an attempt to combine 'soft' realism and neo-liberal institutionalism in order to explain why countries have foregone their uncompleted nuclear weapons programme. Some states sought nuclear weapons but later gave up their programme without acquiring a nuclear capability. Since such states *never possessed* a nuclear capability I exclude them in my analysis. For Australia see Jim Walsh, 'Surprise Down Under: The Secret History of Australia's Nuclear Ambitions', *The Nonproliferation Review*, Vol. 5 (Fall 1997), pp. 1–20; for Sweden see Eric Arnett, 'Norms and Nuclear Proliferation: Sweden's Lessons for Assessing Iran', *The Nonproliferation*

- Review*, Vol. 6 (Winter 1998), pp. 32–43; for Argentine and Brazil see Julio C. Carasales, 'The Argentine–Brazilian Nuclear Rapprochement', *The Nonproliferation Review*, Vol. 2 (Spring–Summer 1995), pp. 39–48. Also see Philip C. Saunders, 'New Approaches to Nonproliferation: Supplementing or Supplanting the Regime?', *The Nonproliferation Review*, Vol. 2 (Fall 2001), pp. 123–36; Mitchell Reiss, *Bridled Ambition: Why Countries Constrain their Nuclear Capabilities* (Washington, DC: Woodrow Wilson Center Press, 1995). Dunn argues that the reason why states such as Brazil and Argentina discontinued their nuclear programme before they got the bomb was that their 'leaders saw economic modernization and technological advancement to be key to their respective countries' nuclear global status and domestic well-being' (p. 66). Lewis A. Dunn, 'Viewpoint: On Proliferation Watch: Some Reflections on the Past Quarter Century', *The Nonproliferation Review*, Vol. 5 (Spring/Summer 1998), pp. 59–77. T.V. Paul, *Power versus Prudence* (note 3), argues that 'credible security guarantees provided by a great power or presence of countervailing capability in chemical and biological weapons' is the reason why some states do not go nuclear although they have the infrastructure and technology to do so.
34. Stephen Walt, unlike Waltz, argues that states balance against the most threatening state rather than the most powerful state appealed to many scholars. There were numerous empirical examples to support Walt's case such as the Western European countries alignment with the United States rather than the Soviet Union. Stephen Walt's publication of *The Origins of Alliances* was greatly appreciated because of its ability to explain many empirical cases. If states at a minimum strive for security, in the defensive positionalist line, then one can agree that the security of a state has more to do with threats posed to the state by other states rather than other state's crude power. Among countless studies on nuclear proliferation that employ realist perspectives see: William Potter, *Nuclear Power and Proliferation* (Cambridge: Oelgeschalger, Gunn and Hain, 1984).
 35. See Ogilvie-White, 'Is There a Theory of Nuclear Proliferation?' (note 8).
 36. Sagan, 'Why do States Build Nuclear Weapons?' (note 2).
 37. See Table 1.
 38. My classification relies on Mistry's study as well as Walt's concept of threat: Dinshaw Mistry, *Containing Missile Proliferation* (Seattle and London: University of Washington Press, 2001), pp. 29–36. My coding does not disagree with Paul's typologies in *Power versus Prudence* (note 3).
 39. Oskar Morgenstern, *The Question of National Defense* (New York: Random House, 1959), p.74.
 40. Lawrence Freedman, *The Evolution of Nuclear Strategy* (New York: St. Martin's Press, 1981), p. 240.
 41. Michael D. Intriligator and Dagobert L. Brito. 'Nuclear Proliferation and the Probability of Nuclear War', *Public Choice*, Vol. 37 (January 1981), pp. 247–60; Bruce Bueno de Mesquita and William H. Riker, 'An Assessment of the Merits of Selective Nuclear Proliferation', *Journal of Conflict Resolution*, Vol. 26 (June 1982), pp. 283–306; Hugh Beach, 'Implementation of No First Use of Nuclear Weapons Strategy Agreements', Paper delivered to Pugwash Meeting no. 279, London, November, 2002.
 42. I have relied on the scholarly literature as well as the Federation of American Scientists' guide to 'Nuclear Weapons in the World', in operationalizing whether a state has a global secure second-strike capability or not. For further info see <http://www.fas.org/nuke/guide/index.html>
 43. While the United States and the Soviet Union had both, France and the UK heavily rely on keeping nuclear launch capable naval vessels at sea at all times.
 44. Freedman, *The Evolution of Nuclear Strategy* (note 40), p. 352.
 45. *Ibid.*
 46. Stephen Van Evera, *Causes of War* (note 28). Some may argue that there has not been a case of preventive first-strike, however because it did not happen does not refute neither the realist school of thought nor the hypothesis that I advanced. On a theoretical level we know for sure that first-strikes are a strategy that maybe considered in accordance with realist theorizing. Furthermore, the fact that first nuclear strikes have been considered by several states, as documented throughout the Cold War, shows that states do calculate strategic relations. A final justification is the case of the attack on the Iraqi Osiraq reactor on 7 June 1981 by Israeli forces. Israel's decision to launch a preventive airstrike was in part based on the realist rationality that is discussed in this essay.
 47. T.V. Paul, in a personal communication, has said that I employ a 'hard realist' framework, meaning 'worst case scenario'. I disagree with him for the reasons stated in the previous endnote.
 48. Freedman, *The Evolution of Nuclear Strategy* (note 40).
 49. Goertz and Starr argue that it is essential for scholars to consider the contra-positive hypothesis of their argument when they assert the logic of necessary and sufficient conditions. Gary Goertz and Harvey Starr, *Necessary conditions: Theory, Methodology, and Applications* (Lanham, MD: Rowman & Littlefield, 2003).

50. Farr points out that Israel may gain a regional secure second capability against its neighbours by adding nuclear-armed submarines to its fleet. He hints that Israel does not have a global secure second-strike capability that allows it to threaten any state in the system with retaliation if the need arises. The same is true of India. In any case, the persistence of Israel to hold on to its nuclear weapons is explained by the threat variable. Warner D. Farr, 'The Third Temple's Holy of Holies: Israel's Nuclear Weapons', USAF Counterproliferation Center: The Counterproliferation Papers (1999), available at <http://www.au.af.mil/au/awc/awcgate/cpc-pubs/farr.htm>. India will also have a global secure second-strike capability if it succeeds in developing in building their own nuclear powered, nuclear launch capable submarine, which India refers as 'Advanced Technology Vehicle'. For India's submarines see <http://www.fas.org/nuke/guide/india/sub/index.html>.
51. Helen Purkitt and Stephen Burgess, 'Paths to Disarmament: The Rollback of South Africa's Chemical-Biological Warfare and Nuclear Weapons Programs', Paper presented to the International Studies Association Annual Convention, 2001, p. 25.
52. For a chronology of S. Africa's security environment and nuclear programme see Zondi Masiza, 'A Chronology of South Africa's Nuclear Program', *The Nonproliferation Review*, Vol. 1 (Fall 1993), pp. 34–53.
53. Examples include: James Doyle and Peter Engstrom, 'The Utility of Nuclear Weapons: Tradeoffs and Opportunity Costs', in Barry R. Schneider and William L. Dowdy (eds), *Pulling Back From the Nuclear Brink* (London and Portland, OR: Frank Cass, 1998), p. 46.
54. David Albright, 'South Africa and the Affordable Bomb', *Bulletin of the Atomic Scientists*, Vol. 50 (July/August 1994), pp. 37–47.
55. David J. Karl, 'Proliferation Pessimism and Emerging Nuclear Powers', *International Security*, Vol. 21 (Winter 1996/1997), p. 96.
56. Long and Grillot support my hypothesis by arguing that 'the lack of suitable delivery system prevented South Africa from deploying weapons outside the region, reducing the number of potential targets to few, if any locations . . . the use of nuclear weapons against such targets would have been suicidal, carrying more disadvantages than advantages'. Cited in Babbage, 'White Elephants' (note 19), p. 7. Nevertheless, they fall back to an explanation that claims that 'South Africa gave up nuclear weapons in order to become part of the Western community'.
57. Babbage, 'White Elephants' (note 19), p. 12. Also in Purkitt and Burgess, 'Correspondence' (note 18), p. 190. Babbage, in order to be consistent with her own domestic politics explanation, discredits this evidence without serious qualification. Babbage also overlooks the US pressure through 1987–1999 to disarm.
58. Purkitt and Burgess, 'Paths to Disarmament' (note 51), p. 27. Also see Frank V. Pabian, 'South Africa's Nuclear Weapon Program: Lessons for U.S. Nonproliferation Policy', *The Nonproliferation Review*, Vol. 3 (Fall 1995), pp. 1–19.
59. Quoted in Doyle and Engstrom, 'The Utility of Nuclear Weapons' (note 53), p. 46.
60. Paraphrased from Purkitt and Burgess, 'Paths to Disarmament' (note 49), p. 27.
61. Doyle and Engstrom, 'The Utility of Nuclear Weapons' (note 53). For further reading on Ukraine, Belarus and Kazakhstan: William H. Kincade and Natalie Meincyczuk, 'Eurasia Letter: Unneighborly Neighbors', *Foreign Policy*, Vol. 95 (Spring 1994), pp. 84–95.
62. Paul, *Power versus Prudence* (note 3), p. 118.
63. Reiss, *Without the Bomb* (note 3), p. 90.
64. Ogilvie-White, 'Is There a Theory of Nuclear Proliferation?' (note 6).
65. Zachary S. Davis, 'The Realist Nuclear Regime', *Security Studies*, Vol. 2 (Spring–Summer 1993), p. 87. On nuclear diplomacy of Ukraine see Virginia Foran, 'Ukrainian Holdout: The Real Problem with the Treaty', *Washington Post*, 3 January 1993, p. C3; Margaret Shapiro, 'Ukraine Gets Defense Offer from Yeltsin', *Washington Post*, 16 January 1993, p. A14; Paul, *Power versus Prudence* (note 3), p. 118.
66. For more detail on the Kazakhstan see Murat Laumulin, 'Nuclear Politics and the Future Security of Kazakhstan', *The Nonproliferation Review*, Vol. 1 (Winter 1994), pp. 61–5; for Belarus see Amy F. Woolf, 'Nuclear Weapons in the Former Soviet Union: Location, Command, and Control', 17 November 1996. *Congressional Research Service Report*, available at <http://www.fas.org/spp/starwars/crs/91-144.htm>
67. 'Nuclear Weapons and the Ukraine', *National Security Caucus Foundation Publication*, available at <http://www.nscf.net/page26.html>
68. Mearsheimer argues that the Ukraine, Kazakhstan and Belarus lacked a secure second-strike capability against Russia in Steven E. Miller, 'The Case Against a Ukrainian Nuclear Deterrent', *Foreign Affairs*, Vol. 72 (Summer 1993).

69. Miller, 'The Case Against a Ukrainian Nuclear Deterrent' (note 68), p. 70. For the lack of secure second-strike capability in terms of maintenance, control and early-warning facilities see also: John F. Dunn, 'The Ukrainian Nuclear Weapons Debate', Soviet Studies Research Center, The Royal Military Academy, March 1993.
70. Stephen Blank, 'Proliferation and Nonproliferation in Ukraine: Implications for European and U.S. Security', 1 July 1994, available at <http://www.fas.org/news/ukraine/ukrain.htm> and <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=173>.
71. Doyle and Engstrom, 'The Utility of Nuclear Weapons' (note 53), pp. 49–50. The academic literature on Belarus and Kazakhstan, as compared to the Ukraine, is rather thin.
72. Woolf, 'Nuclear Weapons in the Former Soviet Union' (note 66).
73. *Ibid.*
74. *Ibid.*
75. A note on offensive realism is due. Setting aside Mearsheimer's earlier wrong prediction, one can derive from his *Tragedy of Great Power Politics* (note 27) that Mearsheimer believes that American pressure on Ukraine, falls within the offensive realist expectation that regional hegemons will intervene in other regions to prevent rise of other hegemons. Such an argument supposes that Ukraine is a rising power with a possible bid for regional hegemony. However, this is not an accurate description because offensive realism predicts that United States will try to prevent a possible resurrection of Russian power, because Russia is the likely candidate for a possible regional hegemony, not Ukraine. In fact offensive realism would have us predict that America should support the Ukraine in order to balance against Russian power. Therefore, Mearsheimer's offensive realism cannot explain the surrender of nuclear weapons in the case of Ukraine.
76. Waltz in Sagan, 'Why Do States Build Nuclear Weapons?' (note 2), p. 42.
77. 'The Military Balance 2001–2002', *International Institute for Strategic Studies*, October 2001.
78. Shai Feldman, *Israeli Nuclear Deterrence: A Strategy for the 1980s* (New York: Columbia University Press, 1982), p. 10.
79. *Ibid.*
80. For Israeli regional SSSC, and the acquisition of nuclear launch capable submarines see internet resource <http://www.fas.org/nuke/guide/israel/sub/index.html>
81. On North Korea's isolation see Mistry, *Containing Missile Proliferation* (note 38), p. 132.
82. Leon Sigal, *Disarming Strangers: Nuclear Diplomacy with North Korea* (Princeton, NJ: Princeton University Press, 1998), p. 20.
83. The US withdrew its entire arsenal from the Korean peninsula in the 1990s. However, there are still US nuclear capable naval vessels around the peninsula. For the US military presence in South Korea: Selig Harrison, 'The Missiles of North Korea: How Real a Threat?', *World Policy Journal*, Vol. 17 (Fall 2000), pp. 13–24.
84. Waltz in Sagan and Waltz, *The Spread of Nuclear Weapons* (note 22), pp. 38–9.
85. Sigal, *Disarming Strangers* (note 82), p. 9. Saunders, 'New Approaches to Nonproliferation' (note 33).
86. Saunders, 'New Approaches to Nonproliferation' (note 33), p. 129.
87. On North Korean leaders' will to have a deterrent against the US see Harrison, 'The Missiles of North Korea' (note 83).
88. Saunders, 'New Approaches to Nonproliferation' (note 33), p. 132.
89. Colin Elman and Miriam Elman, *Progress in International Relations Theory: Appraising the Field* (Cambridge, MA: MIT Press, 2003).