

The Spotlight's Harsh Glare:
Rethinking Publicity and International Order

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Online Appendix of Supporting Information

Model Appendix

In this section, we present the proofs of the model’s equilibria as discussed in the main text. We first solve the game when players have complete information, and then introduce imperfect information. We consider a world in which a state such as the U.S. monitors the rules, which means that strategically obfuscating a violation is an option, as shown in the game tree. We then compare the resulting equilibria to those in a world in which a non-strategic monitor, such as the IAEA or another IO, monitors the rules. In this game, strategically obfuscating a violation is not an option. Finally, we solve the model in a world with no monitoring, and then discuss a possible extension of the model to a repeated game. To fix ideas, we adapt the model to the nuclear realm, though it applies to a variety of domains in international relations.

Table of Parameters

Term	Description	Range
$\Omega_i(x)$	Normative utility pertaining to health of regime	$\in \mathbb{R}^+$
$\Theta_E(x)$	Normative utility of preserving nonproliferation regime	$\in \mathbb{R}^+$
d_i	Player i ’s security through matched capabilities	$\in \mathbb{R}^+$
b_i	Net benefit to player i of possessing nuclear weapons	$\in \mathbb{R}^+$
e	Cost of incurring sanctions	$\in \mathbb{R}^+$
s	Cost of obfuscating evidence	$\in \mathbb{R}^+$

A Complete Information

The setup and structure of the game in this section is a simplified version of the game tree in the main text, as there is now no uncertainty about E or A’s type. Here, A decides whether to violate the rules at the beginning of the game, and whether to continue to do so if E publicizes A ’s violation. B forms belief $k \in [0, 1]$ about whether A violated the norm, conditional on A and E ’s equilibrium strategies, and decides whether to violate the rules if E does not publicize A ’s violation. B also chooses its reaction to A ’s second decision. Therefore, three decisions and one belief form B ’s strategy at equilibrium. If A violates the rules, E chooses whether to publicize the violation.

We focus on pure strategy weak perfect Bayesian equilibria. We solve the model through backward induction.¹ We first find A , B , and E ’s optimal strategies after A violates the

¹To simplify the discussion, we do not consider equilibria under knife-edge conditions in which B is

agreement. We then find A 's optimal strategy at the first move of the game and B 's rational belief and optimal strategy if it does not observe E publicize a violation. The parameter space can be divided into 6 cases. We assume that $\Omega_i(\cdot)$ is linearly additive.²

A.1 Case 1: $\Omega_B(1) > d + (b)$ and $\Omega_A(1) > (b) - e$.

Since $\Omega_B(2) > \Omega_B(1) + (b)$, B does not violate the rules if A does not continue to violate the rules at its second move. Further, since $\Omega_B(1) > d + (b)$, B does not violate the rules even if A does at its second move. Therefore, B always complies with the agreement regardless of whether A continues to violates the rules. Given B 's choices, A comes into compliance at its second move since $\Omega_A(2) > \Omega_A(1) + (b) - e$. Given A and B 's choices, E obtains $\Theta_E(2)$ if E reports A 's violation; if E conceals A 's violation, E cannot obtain more than $\Theta_E(1) - s$. Therefore, E 's optimal strategy is to publicize if it observes A 's violation. Given A , B and E 's optimal strategies after A 's initial violation, if A obeys the rules in its first move, B knows that no violation took place so $k = 0$. B then also obeys the rules since $\Omega_B(2) > \Omega_B(1) + (b)$. A receives $\Omega_A(2)$. If A violates, E reports it and there is no restriction on B 's beliefs about k ; yet for any $k \in [0, 1]$, B 's optimal strategy is to comply. After E reports the violation, A comes into compliance and B also complies. A receives $\Omega_A(2)$. Therefore, A is indifferent between violating or not at its first move and so, as we have assumed, A does not violate the rules in the first place.

In sum, there exists a weak perfect Bayesian equilibrium in which A 's optimal strategy is $(\neg v_A, \neg v_A)$, B 's optimal strategy and belief set is $(k = 0, \neg v_B, \neg v_B, \neg v_B)$ and E 's optimal

indifferent between complying with the rules or violating them after A 's second move. For example, if $\Omega_B(1) = d + b$, B receives the same payoff regardless of whether it violates the rules. Since states are rarely indifferent between two actions in reality, this is not a strong assumption. Similarly, we assume that A strictly prefers either violating the rules or complying at its second move. We also assume that if A 's payoff from violating at its first move and complying at its second move is the same as its payoff from complying from the beginning, A will simply comply.

²This rules out the channel in which a state's willingness to comply depends on the rate of non-compliance. This is because $\Omega_i(2) - \Omega_i(1) = \Omega_i(1) - \Omega_i(0)$, which indicates that i 's benefit from its own compliance does not depend on the number of other countries that comply.

strategy is r .

A.2 Case 2: $\Omega_B(1) > d + (b)$ and $\Omega_A(1) < (b) - e$.

As before, B complies with the agreement regardless of whether A violates the rules at its second move. Given B 's optimal strategy, A violates the rules at its second move since $\Omega_A(2) < \Omega_A(1) + (b) - e$. Given A and B 's choices, E can obtain $\Theta_E(1)$ if E reports A 's violation; if E conceals A 's violation, E can obtain a maximum of $\Theta_E(1) - s$. Therefore, E reports A 's violation. Given A , B and E 's optimal strategies after A 's initial violation, if A obeys the rules, B knows that no violation took place so $k = 0$. B then obeys the rules since $\Omega_B(2) \geq \Omega_B(1) + (b)$, and A receives $\Omega_A(2)$. If A violates, E reports it and there are no restrictions on B 's beliefs about k ; yet for any $k \in [0, 1]$, B 's optimal strategy is to comply. After E reports a violation, A continues to violate and B will not violate; A then obtains $\Omega_A(1) + (b) - e$. Since $\Omega_A(2) < \Omega_A(1) + (b) - e$, A violates the rules in its first move.

In sum, in any weak perfect Bayesian equilibrium, A 's optimal strategy is (v_A, v_A) , B 's optimal strategy and belief set are $(k \in [0, 1], \neg v_B, \neg v_B, \neg v_B)$, and E 's optimal strategy is r .

A.3 Case 3: $d + (b) > \Omega_B(1) > b$ and $\Omega_A(2) > d + (b) - e$.

Since $\Omega_B(2) > \Omega_B(1) + (b)$, B does not violate if A does not violate in its second move, and since $\Omega_B(1) < d + (b)$, B violates if A violates in its second move. Therefore, B 's optimal strategy is to mimic A 's action after A 's second move. If A continues to violate the rules, A obtains $d + (b) - e$; if A comes into compliance, A receives $\Omega_A(2)$. Since $\Omega_A(2) > d + (b) - e$, A comes into compliance and B also complies. Given A and B 's optimal strategies, E can obtain $\Theta_E(2)$ if E reports A 's violation or at most $\Theta_E(1) - s$ if E does not report it.

Therefore, E 's optimal strategy is to report a violation if it observes one. Given A , B and E 's optimal strategies after A 's violation in its first move, if A complies, B knows that no violation took place so $k = 0$ and obeys the rules since $\Omega_B(2) > \Omega_B(1) + (b)$. A obtains $\Omega_A(2)$. If A violates the rules, E reports it and there are no restrictions on B 's beliefs about k .³ A comes back into compliance in its second move and B does not violate the rules; A then obtains $\Omega_A(2)$. A is indifferent between violating or not at its first move and prefers compliance at the second move; therefore A does not violate the rules in the first place.

In sum, there exists a weak perfect Bayesian equilibrium in which A 's optimal strategy is $(\neg v_A, \neg v_A)$, B 's optimal strategy and belief set are $(k = 0, \neg v_B, \neg v_B, v_B)$, and E 's optimal strategy is r .

A.4 Case 4: $d + (b) > \Omega_B(1) > b$ and $\Omega_A(2) < d + (b) - e$.

As in the previous case, B mimics A 's action after A 's second move. If A continues to violate the rules in its second move, A receives $d + (b) - e$; if A comes into compliance, A receives $\Omega_A(2)$. Since $\Omega_A(2) < d + (b) - e$, A violates in the second move and B also violates the rules. Given A and B 's optimal strategies, E receives 0 if E reports A 's violation and either $\Theta_E(1) - s$ or $-s$ depending on B 's choice, which is determined by B 's belief.

We now show that there exists a weak perfect Bayesian equilibrium in which A does not comply at equilibrium. Suppose A violates the agreement. If E conceals the violation, B knows that a violation took place so $k = 1$, and B violates the rules. A , B and E receive $d+b$, $-s$ and $d+b$ respectively. If E reports the violation, A continues to violate the rules and B also violates the agreement. E earns 0. B can then form any belief $k \in [0, 1]$. Define k^* as the value of k that satisfies $(1 - k^*)\Omega_B(2) + k^*\Omega_B(1) = (1 - k^*)[\Omega_B(1) + (b)] + k^*[d + (b)]$. If $k < k^*$,

³ B 's beliefs do not affect the equilibrium because either B complies or not, and it is always optimal for E to report a violation. If A violates, A then receives $d + (b) - e$, which is worse than its payoff if it complies. Therefore, A never violates the rules at its first move and there is no need to consider B 's optimal strategy based on its beliefs about k .

B complies with the rules. However, E then conceals A 's violation since $\Theta_E(1) - s > 0$. Therefore, no equilibrium exists in which A continues to violate the rules, E reports the violation, and B believes that $k < k^*$. If $k \geq k^*$, B does not comply with the norm and E receives $-s$ if it conceals the information; thus, E reports A 's violation. A , B and E receive $d + (b) - e$, $d + (b)$ and 0 respectively. If A complies with the rules, A can obtain $\Omega_A(2) < d + (b) - e$ at most; thus, A never complies in equilibrium.

In sum, in any weak perfect Bayesian equilibrium, A 's optimal strategy is (v_A, v_A) , B 's optimal strategy and belief set are $(k \in [k^*, 1], \neg v_B, \neg v_B, v_B)$, and E 's optimal strategy is r .

A.5 Case 5: $b > \Omega_B(1)$ and $\Omega_A(1) > d + (b) - e$.

Since $\Omega_B(2) < \Omega_B(1) + (b)$, B violates the rules if A does not come into compliance at its second move. Since $\Omega_B(1) < b < d + (b)$, B violates the rules if A continues to do so at its second move. Therefore, B always violates the rules in the subgame, regardless of A 's choice. A receives $\Omega_A(1)$ if A comes into compliance or $d + (b) - e$ if A continues to violate the norm. Since $\Omega_A(1) > d + (b) - e$, A complies. Given A and B 's choices in the subgame, E receives $\Theta_E(1)$ if it reports a violation, and $\Theta_E(1) - s$ at most if it does not do so. Therefore E always reports A 's violation if it occurs. Given A , B and E 's choices, if A complies with the rules in its first move, B knows that no violation took place so $k = 0$ and violates the rules; A then ends up with $\Omega_A(1)$. If A violates the rules in its first move, E reports the violation and B can hold any belief $k \in [0, 1]$ and always violates the rules at this information set. A then receives $\Omega_A(1)$. Since A is indifferent between violating the rules or not at its first move and prefers compliance in its second move, A complies in the first place.

In sum, there exists a weak perfect Bayesian equilibrium in which A 's optimal strategy is $(\neg v_A, \neg v_A)$, B 's optimal strategy and belief set are $(k = 0, v_B, v_B, v_B)$, and E 's optimal strategy is r .

A.6 Case 6: $b > \Omega_B(1)$ and $\Omega_A(1) < d + (b) - e$.

As in the previous section, B always violates the rules in the subgame, regardless of A 's action. A violates the rules at its second move since $\Omega_A(1) < d + (b) - e$. For any value of $k \in [0, 1]$, B violates the rules at this information set. Anticipating B 's action, if A violates the rules and E obscures the violation, E receives $-s$. Therefore E reports the violation if one occurs. If A violates the rules at its first move, A obtains $d + (b) - e$; otherwise, A receives $\Omega_A(1) < d + (b) - e$. Therefore, A violates the rules at its first move.

In sum, in any weak perfect Bayesian equilibrium, A 's optimal strategy is (v_A, v_A) , B 's optimal strategy and belief set are $(k \in [0, 1], v_B, v_B, v_B)$, and E 's optimal strategy is r .

A.7 Summary

In all cases, A either violates the rules at both if its moves or complies at both, and E always reports A 's violation if it occurs. Strategic obfuscation does not occur because B can figure out A and E 's optimal strategies based on their payoffs and correctly infer A 's action. Since hiding information will not prevent reactive proliferation, E 's optimal strategy is to report A 's violation.

However, in reality, we observe that enforcers like the United States strategically hide some countries' violations under the belief that some countries will remain unsure of the violation if the enforcer does not report it. Therefore, we must add imperfect information to the game. In particular, we add a step to the beginning of the game in which nature decides whether country A has strong needs for nuclear weapons or not. E observes nature's decision, but B only knows the probability that A has a high demand for a nuclear weapon. E chooses whether to hide the violation which it might do, for example, when it knows that B will violate the rules if it learns that A violated them. We thus also assume that $\Omega_i(2) - \Omega_i(1) > \Omega_i(1) - \Omega_i(0)$. We now turn to the solution of the game with imperfect information.

B Imperfect Information

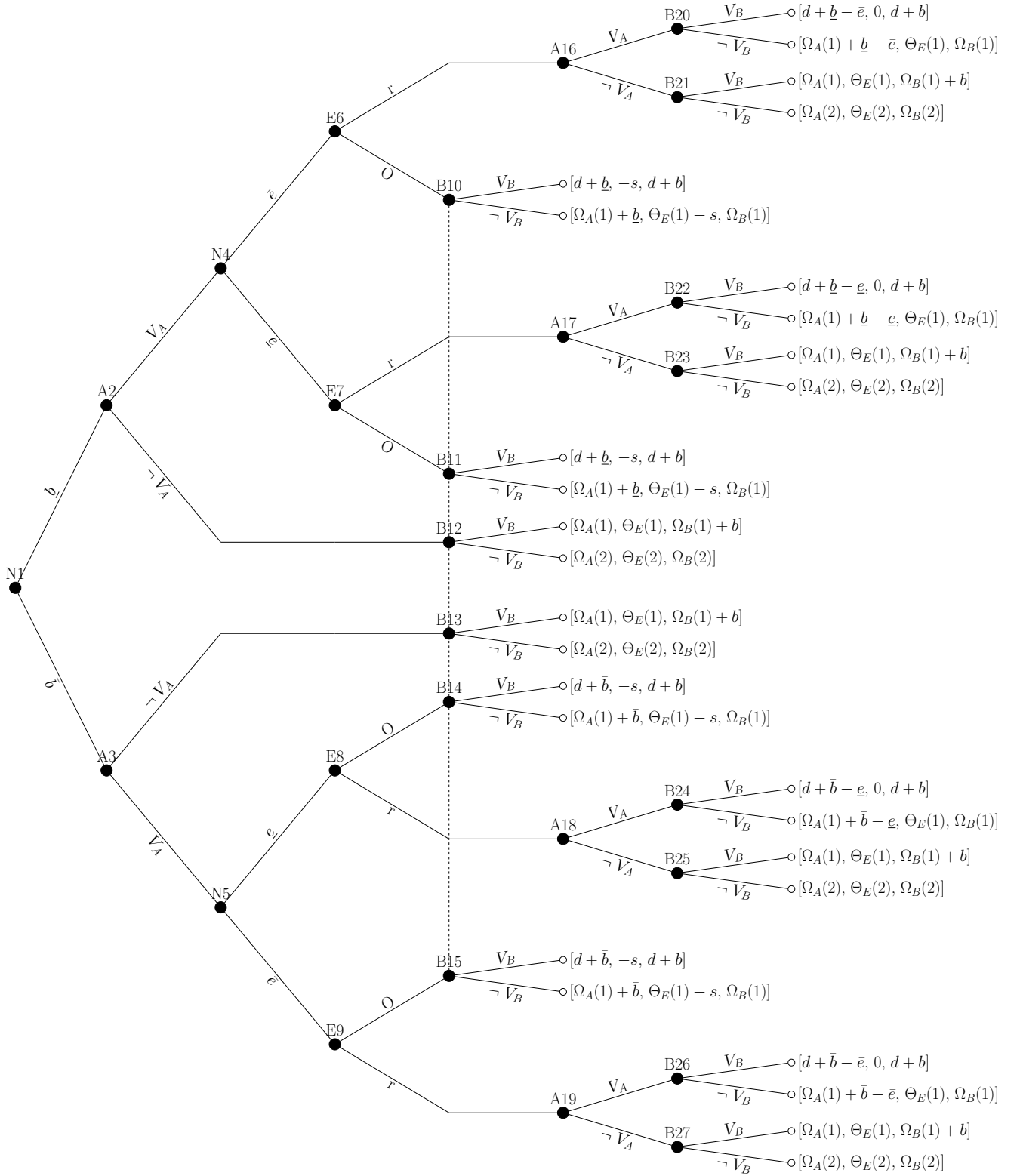
The setup of this version of the game is described in the main text. We reproduce the game tree here, numbering the nodes for clarity. Denote the nodes over which B has uncertainty – as indicated in the game tree – information set H . Here we describe the strategies and then solve the model. A decides whether to violate the rules when it is type- \underline{b} (at node 2), and whether to do so when it is type- \bar{b} (at node 3). A also decides whether to break the rules again if E publicizes its violation and announces how large A 's punishment (e) will be if it continues to violate the rules (at nodes 16 to 19). E decides, for a given punishment severity, whether to publicize A 's violation when type- \underline{b} of A violates (at nodes 6 and 7) and type- \bar{b} of A violates (at nodes 8 and 9). B has nine possible decisions to make, as shown in the game tree.⁴ Further, B forms a belief about the probability of a violation at each node in set H , represented by $\Sigma = [\sigma(10), \sigma(11), \sigma(12), \sigma(13), \sigma(14), \sigma(15)]$. Any rational belief should satisfy $\sigma(10) + \sigma(11) + \sigma(12) = p$ and $\sigma(13) + \sigma(14) + \sigma(15) = 1 - p$. Each element in Σ should be non negative.

We first solve for all possible equilibria under different parameter conditions and then discuss features of equilibria in which A violates the non-proliferation norm, since all cases in the empirical analysis begin with A violating the agreement. As stated in the main text, we assume that $\Omega_i(\cdot)$ is linearly additive.⁵ We assume that $\bar{b} - \bar{e} > \underline{b} - \underline{e}$, so that the difference in the potential domestic benefits associated with having nuclear weapons is greater than the difference between the two potential severities of E 's punishment. We also assume that

⁴These include: whether to violate the rules when type- \bar{e} of E publicizes type- \underline{b} of A 's violation and A continues to violate the rules (at node 20); when type- \bar{e} of E publicizes type- \underline{b} of A 's violation and A complies at its second move (at node 21), when type- \underline{e} of E publicizes type- \underline{b} of A 's violation and A continues to violate the rules (at node 22), when type- \underline{e} of E publicizes type- \underline{b} of A 's violation and A complies at its second move (at node 23), when type- \underline{e} of E publicizes type- \bar{b} of A 's violation and A continues to violate (at node 24), when type- \underline{e} of E publicizes type- \bar{b} of A 's violation and A complies at its second move (at node 25) when type- \bar{e} of E publicizes type- \bar{b} of A 's violation and A continues to violate (at node 26), when type- \bar{e} of E publicizes type- \bar{b} of A 's violation and A comes into compliance at its second move (at node 27) and when B does not observe any information about A and E .

⁵This rules out the channel in which a state's willingness to comply depends on the rate of non-compliance. This is because $\Omega_i(2) - \Omega_i(1) = \Omega_i(1) - \Omega_i(0)$, which indicates that i 's additional benefit from complying does not depend on the number of other countries that have already complied.

Figure 1: Game Tree: Imperfect Information



$\underline{b} > \Omega_A(1)$, where \underline{b} is A 's payoff if only A has nuclear weapons while $\Omega_A(1)$ is A 's payoff if only B has nuclear weapons. We thus assume that if only one country possesses nuclear weapons, A strictly prefers that A has them. Finally, we stipulate that $\tilde{e} = q\bar{e} + (1 - q)\underline{e}$.

B.1 Case 1: $b > \Omega_B(1)$

At nodes 10-15 and 20-27, B is always strictly better off choosing v_B . Therefore, in any weak perfect Bayesian equilibrium, B 's best response is $(v_B, v_B, v_B, v_B, v_B, v_B, v_B, v_B, v_B)$. Given B 's dominant strategy, when A violates the rules, E earns at least 0 if it reports A 's violation and $-s$ if it conceals A 's violation, regardless of A or E 's types. Therefore, given B 's strategy, E 's best response is (r, r, r, r) . Given E and B 's strategies, if $d + \underline{b} - \bar{e} > \Omega_A(1)$, A 's optimal strategy is $(v_A, v_A, v_A, v_A, v_A, v_A)$; if $d + \underline{b} - \underline{e} > \Omega_A(1) > d + \underline{b} - \bar{e}$, A 's optimal strategy is $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$; if $d + \bar{b} - \bar{e} > \Omega_A(1) > d + \underline{b} - \underline{e}$, A 's optimal strategy is $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$; if $d + \bar{b} - \underline{e} > \Omega_A(1) > d + \bar{b} - \bar{e}$, A 's optimal strategy is $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, \neg v_A)$; and if $\Omega_A(1) > d + \bar{b} - \underline{e}$, A 's optimal strategy is $(\neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. B 's belief at each node in set H can then be calculated; however, it does not affect B 's optimal strategy since given any probability distribution, it is always optimal for B to violate.

In sum, if A violates the rules, E reports it in any weak perfect Bayesian equilibrium. The intuition is that when $b > \Omega_B(1)$, B develops nuclear weapons regardless of A 's action. Therefore, conditional on A violating the agreement, the best E can do is to report A 's violation. This case is not considered in the empirical analysis of the paper because we only code B s that are not certain to violate the rules. If A and E 's actions do not matter for B 's decision, there are no interesting strategic dynamics to analyze.

B.2 Case 2: $\Omega_B(1) > d + b$

At nodes 10-15 and 20-27, B is strictly better off choosing $\neg v_B$. Therefore, in any weak perfect Bayesian equilibrium, B 's best response is $(\neg v_B, \neg v_B, \neg v_B, \neg v_B, \neg v_B, \neg v_B, \neg v_B, \neg v_B, \neg v_B)$. Given B 's dominant strategy, when A violates the rules, E earns at least $\Theta_E(1)$ if it reports A 's violation and $\Theta_E(1) - s$ otherwise, regardless of A and E 's types. Therefore, given B 's strategy, E 's best response is (r, r, r, r) . Given E and B 's strategies, if $\underline{b} - \bar{e} > \Omega_A(1)$, A 's optimal strategy is $(v_A, v_A, v_A, v_A, v_A, v_A)$; if $\underline{b} - \underline{e} > \Omega_A(1) > \underline{b} - \bar{e}$, A 's optimal strategy is $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$; if $\bar{b} - \bar{e} > \Omega_A(1) > \underline{b} - \underline{e}$, A 's optimal strategy is $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$; if $\bar{b} - \underline{e} > \Omega_A(1) > \bar{b} - \bar{e}$, A 's optimal strategy is $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, \neg v_A)$; and if $\Omega_A(1) > \bar{b} - \underline{e}$, A 's optimal strategy is $(\neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. B 's belief at each node in set H can then be calculated; however, it does not affect B 's optimal strategy since given any probability distribution, it is always optimal for B to comply.

In sum, if A violates the rules, E reports it in any weak perfect Bayesian equilibrium. This situation corresponds with a "low risk of B 's violation" as discussed in the main text. The intuition is that when $\Omega_B(1) > d + b$, B will not develop nuclear capacity regardless of A 's action. Anticipating B 's compliance, E has no incentive to hide information as a way to improve the chances that B will comply. By reporting A 's violation, there also exists a chance for E to pressure A into rolling back its program. Therefore, whenever A violates the rules, E reports it.

B.3 Case 3: $d + b > \Omega_B(1) > b$

At nodes 20-27, B plays a "tit-for-tat" strategy in which it violates the rules iff A violates them, or $(v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$.

If B chooses v_B at set H , E 's optimal strategy is (r, r, r, r) because E can only obtain $-s$ if it conceals A 's violation but it earns at least 0 if it reports the violation, regardless of

the players' types or optimal strategies in the following steps.

If B chooses $\neg v_B$ at set H , E 's optimal strategy is to obfuscate the information iff A will not roll back its program in the following subgame. This is because after B observes A 's violation and violates in response, E receives 0, but if E hides the information, B chooses $\neg v_B$ by assumption and E receives $\Theta_E(1) - s > 0$. Therefore, anticipating A 's violation at its second move and B 's compliance if it receives no information about A 's violation, E strategically obfuscates A 's action. Whether A rolls back its program depends on the values of the parameters, as we now discuss.

B.3.1 B chooses v_B at set H.

1. Suppose $d + \underline{b} - \bar{e} > \Omega_A(2)$. A 's optimal strategy at nodes 16-19 is (v_A, v_A, v_A, v_A) . Given B and E 's strategies, A 's optimal strategy at node 2 is v_A since $d + \underline{b} - \tilde{e} > \Omega_A(2) > \Omega_A(1)$, and A 's optimal strategy at node 3 is v_A since $d + \bar{b} - \tilde{e} > \Omega_A(1)$. Therefore, A 's optimal strategy is $(v_A, v_A, v_A, v_A, v_A, v_A)$. Since H is never reached in equilibrium, any belief Σ at H is possible as long as $[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)][d + (b) - \Omega_B(1)] + [\sigma(12) + \sigma(13)][(b) - \Omega_B(1)] > 0$. Choosing v_B at H is then rational for B .
2. Suppose $d + \underline{b} - \underline{e} > \Omega_A(2) > d + \underline{b} - \bar{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, v_A, v_A, v_A)$. Given B and E 's strategies, A 's optimal strategy at node 2 is v_A since $q\Omega_A(2) + (1-q)(d + \underline{b} - \underline{e}) > \Omega_A(2) > \Omega_A(1)$, and A 's optimal strategy at node 3 is v_A since $d + \bar{b} - \tilde{e} > \Omega_A(2)$. Therefore, A 's optimal strategy is $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$. Since H is never reached in equilibrium, any belief Σ at H is possible as long as $[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)][d + b - \Omega_B(1)] + [\sigma(12) + \sigma(13)][b - \Omega_B(1)] > 0$. Choosing v_B at H is then rational for B .
3. Suppose $d + \bar{b} - \bar{e} > \Omega_A(2) > d + \underline{b} - \underline{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, \neg v_A, v_A, v_A)$. Given B and E 's strategies, A 's optimal strategy at node 2 is v_A

since $\Omega_A(2) > \Omega_A(1)$, and A 's optimal strategy at node 3 is v_A since $d + \bar{b} - \tilde{e} > \Omega_A(1)$. Therefore, A 's optimal strategy is $(v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$. Since H is never reached in equilibrium, any belief Σ at H is possible as long as $[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)][d + (b) - \Omega_B(1)] + [\sigma(12) + \sigma(13)][(b) - \Omega_B(1)] > 0$. Choosing v_B at H is then rational for B .

4. Suppose $d + \bar{b} - \underline{e} > \Omega_A(2) > d + \bar{b} - \bar{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, \neg v_A, v_A, \neg v_A)$. Given B and E 's strategies, A 's optimal strategy at node 2 is v_A since $\Omega_A(2) > \Omega_A(1)$, and A 's optimal strategy at node 3 is v_A since $q\Omega_A(2) + (1-q)(d + \bar{b} - \underline{e}) > \Omega_A(2) > \Omega_A(1)$. Therefore, A 's optimal strategy is $(v_A, v_A, \neg v_A, \neg v_A, v_A, \neg v_A)$. Since H is never reached in equilibrium, any belief Σ at H is possible as long as $[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)][d + b - \Omega_B(1)] + [\sigma(12) + \sigma(13)][b - \Omega_B(1)] > 0$.
5. Suppose $\Omega_A(2) > d + \bar{b} - \underline{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, \neg v_A, \neg v_A, \neg v_A)$. Given B and E 's strategies, A 's optimal strategy at node 2 is v_A since $\Omega_A(2) > \Omega_A(1)$, and A 's optimal strategy at node 3 is v_A since $\Omega_A(2) > \Omega_A(1)$. Therefore, A 's optimal strategy is $(v_A, v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. Since H is never reached in equilibrium, any belief Σ at H is possible as long as $[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)][d + b - \Omega_B(1)] + [\sigma(12) + \sigma(13)][b - \Omega_B(1)] > 0$.

In each of the previous three equilibria, A strictly prefers compliance at its second move, yet it violates at its first move because B holds a pessimistic belief about A 's type at set H . If B does not receive any information from E , B believes that A is very likely to have violated the rules and B chooses v_B as a result. Therefore, A violates at its first move in order to show B that it ultimately comes into compliance. We do not consider these equilibria in the empirical test because in the game, an initial violation is the only way for A to demonstrate its compliance to B . However, in reality, states have many ways to show their compliance with the rules, including allowing the IAEA to inspect and monitor their facilities. This could be captured by giving A the option

to allow an IAEA inspection, but we view this as an unnecessary complication and thus disregard it for simplicity.

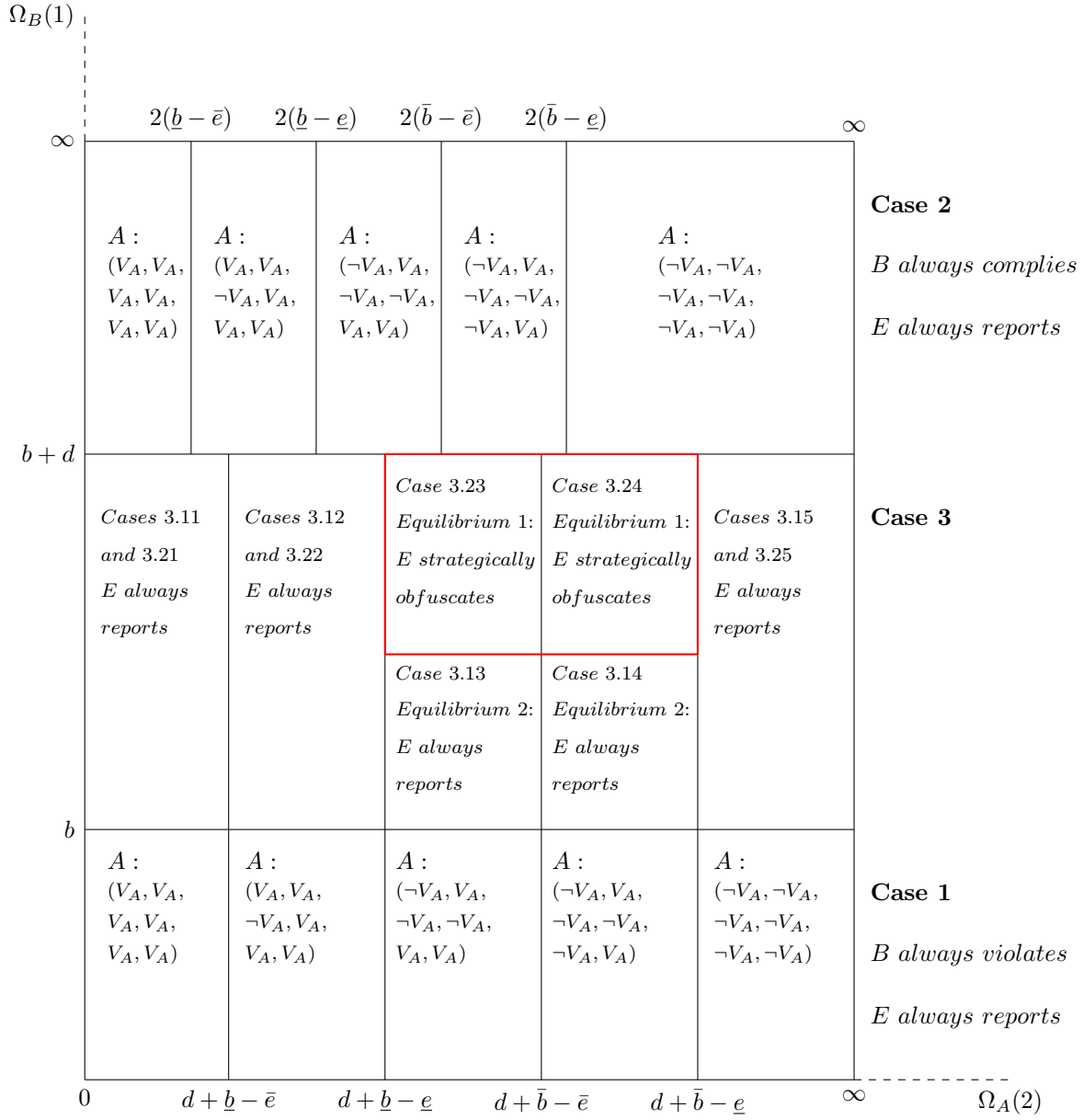
B.3.2 B chooses $\neg v_B$ at set H.

1. Suppose $d + \underline{b} - \bar{e} > \Omega_A(2)$. A 's optimal strategy at nodes 16-19 is (v_A, v_A, v_A, v_A) . Therefore, E 's optimal strategy is (o, o, o, o) . Given B and E 's strategies, A 's optimal strategy at node 2 is v_A since $\Omega_A(1) + \underline{b} > \Omega_A(2)$,⁶ and A 's optimal strategy at node 3 is v_A since $\Omega_A(1) + \bar{b} > \Omega_A(2)$. Therefore, A 's optimal strategy is $(v_A, v_A, v_A, v_A, v_A, v_A)$. Since E always obfuscates A 's violation, B infers from A and E 's strategies that at set H , $\Sigma = [pq, p(1-q), 0, 0, (1-p)(1-q), (1-p)q]$; thus, complying with the rules at set H is not optimal. Therefore, no pure strategy weak perfect Bayesian equilibrium in which B complies with the rules at H exists.
2. Suppose $d + \underline{b} - \underline{e} > \Omega_A(2) > d + \underline{b} - \bar{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, v_A, v_A, v_A)$. Therefore, E 's optimal strategy is (r, o, o, o) . Given B and E 's strategies, A 's optimal strategy at node 2 is v_A since $q\Omega_A(2) + (1-q)(\Omega_A(1) + \underline{b}) > \Omega_A(2)$, and A 's optimal strategy at node 3 is v_A since $\Omega_A(1) + \bar{b} > \Omega_A(2)$. Therefore, A 's optimal strategy is $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$. Since H is reached iff A violates at its first move and E conceals the violation, B rationally infers that $\Sigma = [0, \frac{p(1-q)}{1-pq}, 0, 0, \frac{(1-p)(1-q)}{1-pq}, \frac{(1-p)q}{1-pq}]$; thus, complying with the rules at set H is not optimal. Therefore, no pure strategy weak perfect Bayesian equilibrium in which B complies with the rules at H exists.
3. Suppose $d + \bar{b} - \bar{e} > \Omega_A(2) > d + \underline{b} - \underline{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, \neg v_A, v_A, v_A)$. Therefore, E 's optimal strategy is (r, r, o, o) . Given B and E 's strategies, A 's optimal strategy at node 2 is $\neg v_A$ since violating does not yield a higher expected payoff than complying from the beginning; thus, A 's optimal strategy at node

⁶Recall that we assume that $\underline{b} > \Omega_A(1)$ and $\Omega_A(\cdot)$ is linearly additive.

3 is v_A since $\Omega_A(1) + \bar{b} > \Omega_A(2)$. Therefore, A 's optimal strategy is $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$. B 's rational belief at set H is $\Sigma = [0, 0, p, 0, (1-p)(1-q), (1-p)q]$. Choosing $\neg v_B$ at set H is then rational as long as $p[\Omega_B(1) - b] + (1-p)[\Omega_B(1) - d - b] > 0$. In other words, if p is relatively high, it is rational for B to believe that A is likely type- \underline{b} and has complied with the rules.

4. Suppose $d + \bar{b} - \underline{e} > \Omega_A(2) > d + \bar{b} - \bar{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, \neg v_A, v_A, \neg v_A)$. Therefore, E 's optimal strategy is (r, r, o, r) . Given B and E 's strategies, A 's optimal strategy at node 2 is $\neg v_A$ since violating does not yield a higher expected payoff than complying from the beginning; thus, A 's optimal strategy at node 3 is v_A since $(1-q)(\Omega_A(1) + \bar{b}) + q\Omega_A(2) > \Omega_A(2)$. Therefore, A 's optimal strategy is $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, \neg v_A)$. B 's rational belief at set H is $\Sigma = [0, 0, \frac{p}{p+(1-p)(1-q)}, 0, \frac{(1-p)(1-q)}{p+(1-p)(1-q)}, 0]$. Choosing $\neg v_B$ at set H is then rational as long as $p[\Omega_B(1) - b] + (1-p)(1-q)[\Omega_B(1) - d - b] > 0$.
5. Suppose $\Omega_A(2) > d + \bar{b} - \underline{e}$. A 's optimal strategy at nodes 16-19 is $(\neg v_A, \neg v_A, \neg v_A, \neg v_A)$. Therefore, E 's optimal strategy is (r, r, r, r) . Given B and E 's strategies, A 's optimal strategy at nodes 2 and 3 is v_A since violating does not yield a higher expected payoff than complying from the beginning. Therefore, A 's optimal strategy is $(\neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. B 's rational belief at set H is $\Sigma = [0, 0, p, 1-p, 0, 0]$. Choosing $\neg v_B$ at set H is then optimal for B . This discussion is summarized in the subsequent figure.



The figure maps the equilibria to the corresponding parameter space in the imperfect information game. The red box frames strategic obfuscation equilibria.

C Solution to Nonstrategic Enforcer Game

In this game, E must report A 's violation if it occurs. When $d + b < \Omega_B(1)$ (Case 1 in the strategic enforcer game) or $\Omega_B(1) < b$ (Case 2 in the strategic enforcer game), reporting the violation is always optimal. Therefore, the equilibria in Cases 1 and 2 in the nonstrategic enforcer game are the same as those in the strategic enforcer game.

When $d + b > \Omega_B(1) > b$, if H is reached, it must be that $\sigma(12) + \sigma(13) = 1$ since E cannot obfuscate. Thus, complying with the rules is optimal, so that B 's optimal strategy is $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$. Given B 's dominant strategy and the fact that E must report a violation, A 's optimal strategy and B 's beliefs are easily derived under each condition and are summarized in the subsequent table.

D Strategic Versus Non-Strategic Enforcement

Table 1: Strategic vs. Non-Strategic Enforcement

	Nonstrategic Enforcer	Strategic Enforcer
Case 1		<p>E: always report. B: always violate.</p> <p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(1)$, A: $(v_A, v_A, v_A, v_A, v_A, v_A)$.</p> <p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(1) > d + \underline{b} - \bar{\varepsilon}$, A: $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$.</p> <p>If $d + \underline{b} - \bar{\varepsilon} > \Omega_A(1) > d + \underline{b} - \underline{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, v_A, v_A, v_A)$. $\sigma(12) = 1$.</p> <p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(1) > d + \underline{b} - \bar{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, v_A, v_A, v_A)$. $\sigma(12) = 1$.</p> <p>If $\Omega_A(1) > d + \underline{b} - \underline{\varepsilon}$, A: $(\neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. $\sigma(12) = p$, $\sigma(11) = 1 - p$</p> <p>E: always report. B: always comply.</p>
Case 2		<p>If $\underline{b} - \bar{\varepsilon} > \Omega_A(1)$, A: $(v_A, v_A, v_A, v_A, v_A, v_A)$.</p> <p>If $\underline{b} - \underline{\varepsilon} > \Omega_A(1) > \underline{b} - \bar{\varepsilon}$, A: $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$.</p> <p>If $\bar{b} - \bar{\varepsilon} > \Omega_A(1) > \underline{b} - \underline{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, v_A, v_A, v_A)$. $\sigma(12) = 1$.</p> <p>If $\bar{b} - \underline{\varepsilon} > \Omega_A(1) > \bar{b} - \bar{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, v_A, \neg v_A, v_A)$. $\sigma(12) = 1$.</p> <p>If $\Omega_A(1) > \bar{b} - \underline{\varepsilon}$, A: $(\neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. $\sigma(12) = p$, $\sigma(11) = 1 - p$</p>
Cases 3.11, 3.21	<p>If $d + \underline{b} - \bar{\varepsilon} > \Omega_A(2)$, A: $(v_A, v_A, v_A, v_A, v_A, v_A)$ E: (r, r, r, r) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p>	<p>If $d + \underline{b} - \bar{\varepsilon} > \Omega_A(2)$, A: $(v_A, v_A, v_A, v_A, v_A, v_A)$ E: (r, r, r, r) B: $(v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(2) > d + \underline{b} - \bar{\varepsilon}$, A: $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$ E: (r, r, r, r) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p>
Cases 3.12, 3.22	<p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(2) > d + \underline{b} - \bar{\varepsilon}$, A: $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$ E: (r, r, r, r) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p>	<p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(2) > d + \underline{b} - \bar{\varepsilon}$, A: $(v_A, v_A, \neg v_A, v_A, v_A, v_A)$ E: (r, r, r, r) B: $(v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>If $d + \underline{b} - \bar{\varepsilon} > \Omega_A(2) > d + \underline{b} - \underline{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$ E: (r, r, r, r) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>$\Sigma = [0, 0, 1, 0, 0, 0]$.</p>
Cases 3.13, 3.23	<p>If $d + \underline{b} - \bar{\varepsilon} > \Omega_A(2) > d + \underline{b} - \underline{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$ E: (r, r, r, r) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>$\Sigma = [0, 0, 1, 0, 0, 0]$.</p>	<p>If $d + \underline{b} - \bar{\varepsilon} > \Omega_A(2) > d + \underline{b} - \underline{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$ E: (r, r, o, o) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$. $p[\Omega_B(1) - b] + (1 - p)[\Omega_B(1) - d - b] > 0$.</p> <p>$\Sigma = [0, 0, p, 0, (1 - p)(1 - q), (1 - p)q]$</p> <p>Equilibrium 2 (Pessimistic B) A: $(v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$. E: (r, r, r, r).</p> <p>B: $(v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>$[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)]d + b - \Omega_B(1) + [\sigma(12) + \sigma(13)] [b - \Omega_B(1)] > 0$</p>
Cases 3.14, 3.24	<p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(2) > d + \underline{b} - \bar{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$ E: (r, r, r, r) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>$\Sigma = [0, 0, 1, 0, 0, 0]$</p>	<p>If $d + \underline{b} - \underline{\varepsilon} > \Omega_A(2) > d + \underline{b} - \bar{\varepsilon}$, Equilibrium 1 (Optimistic B) A: $(\neg v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$. E: (r, r, o, r).</p> <p>B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$. $\Sigma = [0, 0, \frac{p}{p+(1-p)(1-q)}, 0, \frac{(1-p)(1-q)}{p+(1-p)(1-q)}, 0]$.</p> <p>$p[\Omega_B(1) - b] + (1 - p)(1 - q)[\Omega_B(1) - d - b] > 0$</p> <p>Equilibrium 2 (Pessimistic B) A: $(v_A, v_A, \neg v_A, \neg v_A, v_A, v_A)$. E: (r, r, r, r).</p> <p>B: $(v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>$[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)]d + b - \Omega_B(1) + [\sigma(12) + \sigma(13)] [b - \Omega_B(1)] > 0$</p>
Cases 3.15, 3.25	<p>If $\Omega_A(2) > d + \underline{b} - \underline{\varepsilon}$, A: $(\neg v_A, v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$ E: (r, r, r, r) B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$</p> <p>$\Sigma = [0, 0, p, 1 - p, 0, 0]$</p>	<p>If $\Omega_A(2) > d + \underline{b} - \underline{\varepsilon}$, Equilibrium 1 (Optimistic B) A: $(\neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. E: (r, r, r, r).</p> <p>B: $(\neg v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$. $\Sigma = [0, 0, p, 1 - p, 0, 0]$</p> <p>Equilibrium 2 (Pessimistic B) A: $(v_A, v_A, \neg v_A, \neg v_A, \neg v_A, \neg v_A)$. E: (r, r, r, r).</p> <p>B: $(v_B, \neg v_B, v_B, \neg v_B, v_B, \neg v_B)$.</p> <p>$[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)]d + b - \Omega_B(1) + [\sigma(12) + \sigma(13)] [b - \Omega_B(1)] > 0$</p>

Note: If B's belief Σ is not specified in a cell, H is never reached. If conditions on Σ or other parameters are listed in a cell, these conditions must hold to support the equilibrium.

E High Versus Low Mistrust

In Case 1, B always complies since the domestic net benefit from nuclear weapons is low; thus, there exists no difference in the equilibria of the strategic and nonstrategic enforcement games. The same logic applies to Case 2. In Cases 3.1 and 3.2, A violates the norm regardless of E and B 's actions, so B correctly infers that A has violated the agreement without E 's help. Therefore, the type of enforcement does not influence B , and no difference between the two games exists. The same logic applies to Case 3.5. Therefore, we only need to compare the games in Cases 3.3 and 3.4.

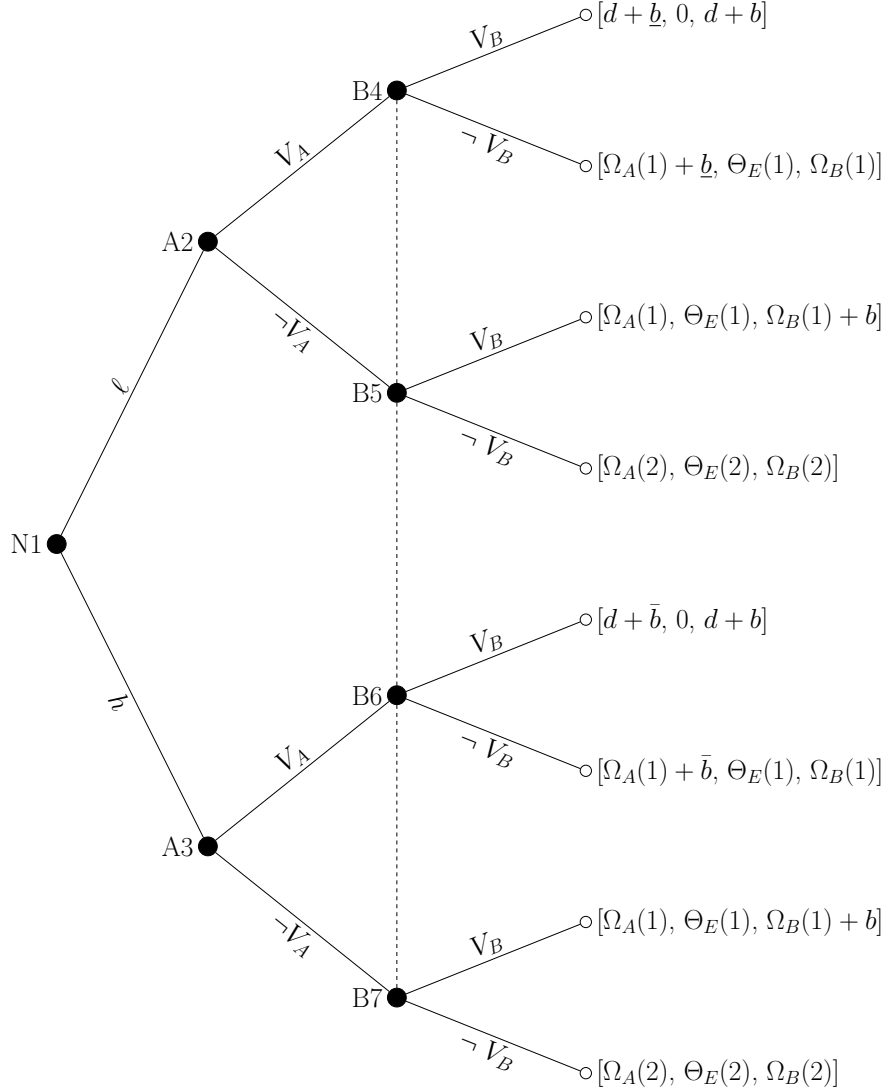
In both cases, two equilibria exist – an optimistic equilibrium in which B does not violate the rules when E provides no information, and a pessimistic equilibrium in which B violates when E provides no information. We can define the former situation as one in which B has high mistrust and the latter situation as one in which B has low mistrust in equilibrium. In contrast, when E is objective, B does not exhibit a high level of mistrust since E reports whenever A violates. We thus have the following table:

$d + b > \Omega_B(1) > b$	Non-Strategic Enforcer	Strategic Enforcer
Low Mistrust	B complies with no additional information	B complies with no additional information
High Mistrust	Not Applicable	B violates with no additional information

Table 2: Additional parameter conditions for the existence of the low mistrust equilibria are: $p[\Omega_B(1) - b] + (1 - p)(1 - q)[\Omega_B(1) - d - b] > 0$ and $d + \bar{b} - \bar{e} > \Omega_A(2) > d + \underline{b} - \underline{e}$ or $\Omega_A(2) > d + \bar{b} - \underline{e}$. Additional parameter conditions for existence of the high mistrust equilibria are: $[\sigma(10) + \sigma(11) + \sigma(14) + \sigma(15)][d + b - \Omega_B(1)] + [\sigma(12) + \sigma(13)][b - \Omega_B(1)] > 0$ and $d + \bar{b} - \bar{e} > \Omega_A(2)$.

F No Enforcer Game

Figure 2: Game Tree: No Enforcer



F.1 Case 1: $\Omega_B(1) < b$

B 's dominant strategy is to violate the rules. If $\Omega_A(1) > d + \bar{b}$, A 's optimal strategy is $(\neg v_A, \neg v_A)$; if $d + \bar{b} > \Omega_A(1) > d + \underline{b}$, A 's optimal strategy is $(\neg v_A, v_A)$; and if $\Omega_A(1) < d + \underline{b}$, A 's optimal strategy is (v_A, v_A) . B 's belief at set H can be derived easily based on A 's optimal strategy.

F.2 Case 2: $\Omega_B(1) > d + b$

B 's dominant strategy is to comply. If $\Omega_A(1) > \bar{b}$, A 's optimal strategy is $(\neg v_A, \neg v_A)$; if $\bar{b} > \Omega_A(1) > \underline{b}$, A 's optimal strategy is $(\neg v_A, v_A)$; and if $\Omega_A(1) < \underline{b}$, A 's optimal strategy is (v_A, v_A) . B 's belief at set H can be derived easily based on A 's optimal strategy.

F.3 Case 3: $d + b > \Omega_B(1) > b$

Suppose B violates the rules at set H . If $\Omega_A(1) > d + \bar{b}$, A does not violate the rules at nodes 2 and 3 and B follows the rules. Therefore, B does not violate the rules in equilibrium. If $\Omega_A(1) < d + \underline{b}$, A violates the rules at nodes 2 and 3, and B violates at H . Therefore, when $\Omega_A(1) < d + \underline{b}$, there exists an equilibrium in which A violates the rules at nodes 2 and 3 and B violates them at set H . If $d + \bar{b} > \Omega_A(1) > d + \underline{b}$, A 's optimal strategy is $(\neg v_A, v_A)$, and violating the rules at H is optimal iff $p[b - \Omega_B(1)] + (1 - p)[d + b - \Omega_B(1)] > 0$.

Suppose B does not violate the norm at set H . If $\Omega_A(1) < \underline{b}$, A violates the rules at nodes 2 and 3, and B violates at H . Therefore, B does not comply with the rules in equilibrium. If $\Omega_A(1) > \bar{b}$, A complies at nodes 2 and 3, and since A complies at set H , B complies as well. Thus, when $\Omega_A(1) > \bar{b}$, an equilibrium exists in which A complies at nodes 2 and 3 and B complies at set H . If $\underline{b} < \Omega_A(1) < \bar{b}$, A 's optimal strategy is $(\neg v_A, v_A)$, and complying with the norm at H is optimal iff $p[b - \Omega_B(1)] + (1 - p)[d + b - \Omega_B(1)] < 0$.

We list the parameter conditions and corresponding equilibria in the following table.

Parameter condition	Equilibrium feature
$d + \underline{b} > \Omega_A(1)$	A violates at nodes 2 and 3 and B violates at set H .
$d + \underline{b} > \Omega_A(1) > d + \underline{b}$ and $p[\underline{b} - \Omega_B(1)] + (1 - p)[d + b - \Omega_B(1)] > 0$	A: $(\neg v_A, v_A)$; B: v_B .
$b > \Omega_A(1) > \underline{b}$ and $p[\underline{b} - \Omega_B(1)] + (1 - p)[d + b - \Omega_B(1)] < 0$	A: $(\neg v_A, v_A)$; B: $\neg v_B$.
$\Omega_A(1) > b$	A complies at nodes 2 and 3 and B complies at set H .

Table 3

G Extension: Repeated Play

A world with imperfect information about types and/or preferences is beyond the scope of this paper; however, we can use the current model to infer the likely outcomes. In particular, we can imagine that the first period of the game is the same as in the static game, and that A 's type remains constant throughout the game. If in the first period A is type-h and we are in Case 3.3, E always conceals A 's violation. Then in each period beginning with the second period, B receives noisy information about A 's type before B decides whether to violate the rules. B thus relies on an independent source of information to update its belief about the probability that A is type-h in each period. Therefore, gradually, B 's belief that A is type-h becomes high enough that the optimistic regime discussed in the static game cannot be established. Instead, the pessimistic equilibrium is the only possibility, and B rationally violates the rules at set H , which forces E to report the violation from then on.

Thus, while obfuscation may prevent counterproliferation in the near term, its repeated use makes B less confident in the institution's ability to constrain A and leads to more mutual arming. It also becomes an infeasible strategy for E since E can no longer fool B by obfuscating and must deal with a weaker institution, which means more reporting when possible and more violations by B when not possible. This logic is supported by previous work; for example, Alt, Calvert and Humes (1988) focus on the analogous topic of hegemonic decline to show that this phenomenon results from greater periods of unpunished noncompliance. Observers update their beliefs overtime as they observe how the hegemon behaves, which leads them to eventually challenge the hegemon.

In sum, this logic indicates that institutions can make the world safer in the long-term; however, strategic enforcers prevent more proliferation than objective enforcers in the short-term when the threat of initial violations, which may spur reactive violations, is high. When the option to obfuscate exists for E , its ability to deter A is reduced and its credibility is diminished overtime.

Additional Case Analysis

The main manuscript omits an analysis of many of our cases due to space constraints. We provide these case studies here.

India (Proliferator Unlikely to Comply and High Risk of Reactive Proliferation)

Since the mid-1960s, U.S. leaders had believed that India was likely to obtain a nuclear weapon.⁷ These concerns came to a head in 1974 when India successfully detonated a nuclear device, claiming that it was intended for peaceful, civilian purposes (i.e. a peaceful nuclear explosion, or PNE), a technically permissible activity under Article V of the NPT.⁸ The critical question following the PNE was whether it was linked to a covert military program. However, U.S. leaders obfuscated the significance of India's test; while they privately expressed dismay to Prime Minister Indira Gandhi and quietly led efforts to tighten export controls among nuclear suppliers, they intentionally abstained from public criticism.⁹ The State Department instructed the embassy in New Delhi to respond to media inquiries with a "low-key" tone.¹⁰ U.S. diplomats later reminded India that the U.S. "did not publicly criticize India over its nuclear explosion last May. Indeed, [the] Secretary 'welcomed' [India's] policy statement that India intended not [to] develop nuclear weapons when he visited Delhi."¹¹ U.S. leaders even permitted new economic aid and debt forgiveness despite some internal calls for punishment.¹² Most importantly, U.S. leaders hid their private beliefs about the test's military dimension. U.S. intelligence assessments immediately following the PNE predicted that India would "proceed to fabricate weapons covertly" and that there "would be increasing demands for an effective operational force...[which] probably would prove irresistible."¹³ This was a consensus view; an internal analysis of U.S. intelligence assessments noted years later that the U.S. "consistently predicted" that India would proceed with weaponization.¹⁴

U.S. leaders opted against publicizing and punishing India partly due to pessimism about the prospects of reversing India's course.¹⁵ Even before the 1974 detonation, policy-makers doubted that they could alter India's nuclear ambitions, stating, "U.S. efforts would probably have little value in influencing a final decision."¹⁶ During an earlier scare about a possible

⁷See Department of State (1967).

⁸See Perkovich (1999). Though India was not an NPT member, its actions were considered relevant to the fate of the regime.

⁹See National Intelligence Council (1985).

¹⁰See Department of State (1974a, 1).

¹¹See Department of State (1975, 1).

¹²See Perkovich (1999).

¹³See National Intelligence Council (1974, 20).

¹⁴See National Intelligence Council (1985, 8). While the U.S. Congress passed the Nuclear Non-Proliferation Act in 1978 that would disrupt the supply of enriched uranium from the U.S. to India in response to India's test, the Carter administration circumvented the act by permitting France and Germany to supply the uranium instead. See Thomas (2006).

¹⁵See National Intelligence Council (1982).

¹⁶See Department of State (1967, 1).

detonation in 1972, U.S. leaders believed that the “US ability to influence events is marginal. Indeed, given the present poor state of Indo-US relations, an overly visible US effort could hasten, rather than delay, the day India explodes a device.”¹⁷ Economic leverage was limited, while a security guarantee vis-a-vis China was impossible given the U.S.’s tilt toward China and Pakistan during the Cold War.¹⁸ One widely circulated intelligence assessment concluded that the U.S. had no “tangible leverage on the Indian Government” because of its absence of food aid and arms sales and also due to the lack of feasibility in assembling a multilateral coalition, since other Western powers were unlikely to punish India.¹⁹ A multilateral coalition was also unlikely because the Soviets were more concerned with undermining China by strengthening their relationship with India, and believed that a nuclear India would balance against the existing nuclear powers. The Soviets thus cooperated with India in the nuclear realm instead.²⁰

Fear of the impact of a well-known military program in India on other potential proliferators was another key consideration. For the U.S., “India was considered a potential ‘nth country’ whose decision to retain or reject non-nuclear status would send out a strong signal to the entire region and other aspiring nuclear states.”²¹ As early as the mid-1960s, the U.S. worried that “the likelihood of further proliferation (e.g., Japan and Israel) would be increased, and nuclear pressures might be set in train in Germany”²² should India become a declared nuclear weapons state. Contemporary assessments echo these sentiments noting, “The implications could be considerable, both with regard to South Asia and in the broad nonproliferation context. The challenge is...trying to dissuade others from following suit.”²³

Maintaining uncertainty about the military side of India’s nuclear program was critical. The refusal by India and other states to treat it as a member of the nuclear club meant that “the symbolism and popularity that may attach to nuclear weapons [were] thereby contained.”²⁴ An internal U.S. review of proliferation stated, “The international nonproliferation regime can withstand isolated events such as the 1974 Indian explosion” because ambiguity about India’s weapon status meant that “members can pretend nothing has happened and avoid the extremely difficult and possibly divisive exercise of attempting to repair the norm and establish new rules.”²⁵ As one history of South Asian nuclear dynamics concludes,

Nuclear acknowledgement...by New Delhi and Islamabad would be likely to trigger an all-out nuclear competition...[and] would also considerably increase the pressures on neighbouring and other countries to acquire their own nuclear weapons...[It] could well revive incentives within the Brazilian military, for reasons of prestige, to revive their now dormant nuclear weapon programme. More broadly, open acknowledgement would have a greater corrosive impact on overall global non-proliferation

¹⁷See Rabinowitz (2014, 175).

¹⁸See Rabinowitz (2014, 188) and Miller (2014, 44-7).

¹⁹See National Intelligence Council (1972, 10).

²⁰See Szalontai (2011).

²¹See Schrafstetter (2002, 88).

²²See Department of State (1966, 1).

²³See Department of State (1974*b*).

²⁴See Joeck (1990, 79).

²⁵See National Intelligence Council (1985, 15).

efforts, undermining perceptions that wide-spread proliferation can still be avoided and lessening countries' readiness to pay a price to support non-proliferation efforts.²⁶

South Africa (Proliferator Unlikely to Comply and High Risk of Reactive Proliferation)

South Africa began weapons research in 1974, considered testing in 1977, and may have conducted a joint test with Israel in the Atlantic Ocean in 1979. In 1977 the U.S. concluded that South Africa had enough highly enriched uranium for several devices, and in 1984 it determined that South Africa had enough uranium for 2-4 devices.²⁷ The program was shrouded in secrecy until it began to be dismantled in 1989 and was publicly disclosed in 1993 during the transition away from apartheid. At several key junctures, U.S. officials debated whether to publicize these events, expressing fears of second-order proliferation and doubts that publicity and pressure could roll back South Africa's program.

Early American efforts to coerce South Africa into reversing its program, including threats to sever relations to the U.S. and offers to provide nuclear material in exchange for assurances, failed due to the high tensions in the region.²⁸ Ultimately, U.S. officials believed that South Africa would not reverse course, as the U.S. had "few means of pressuring the South Africans away from pursuing nuclear weapons"²⁹ and South Africa exhibited "unwillingness to bend to outside pressure."³⁰ Further intimidation "might provoke the South Africans to conduct a test as a warning that Pretoria will not be bullied,"³¹ and "a cut off of all nuclear cooperation might convince South Africa that it has nothing to lose by proceeding to develop nuclear explosives."³² U.S. intelligence concluded, "We do not believe that fear of adverse foreign reaction poses a sufficiently compelling reason for South Africa to avoid a test."³³ A multilateral coalition may have been possible in the 1970s, as the Soviets and the Americans were actually assisting each other in South Africa. For example, the Soviet Union shared intelligence about test preparations with the U.S. Indeed, Carter believed that international pressure stopped a test in 1977.³⁴ However, the collapse of detente and renewed Cold War rivalry poisoned the atmosphere for such cooperation during the Reagan years, encouraging a pivot towards obfuscation.³⁵

²⁶See Dunn (1991). India's decision to develop and test nuclear weapons was independent of the U.S.'s choice to strategically obfuscate and instead depended on domestic and security considerations. In part, India sought a deterrent against China, and "was motivated mainly by Indira Gandhi's domestic political considerations." See Rabinowitz (2014, 12).

²⁷See Montgomery and Mount (2014).

²⁸See Rabinowitz and Miller (2015). Congressional mandates to punish South Africa for its program played an important role.

²⁹See Burr and Richelson (2013).

³⁰See National Intelligence Council (1984, 7).

³¹See National Intelligence Council (1984, 2).

³²See Rabinowitz (2014, 116).

³³See Rabinowitz (2014, 115).

³⁴As (Lieberman, 2001, 68-9) notes, the multilateral sanctions that were erected in this period "were not highly costly in economic terms, and they were seen by Pretoria as anti-apartheid bullying rather than as being selectively targeted against the nuclear weapons program."

³⁵See Rabinowitz and Miller (2015).

The U.S. further worried that knowledge of the extent of South Africa's progress would undermine the non-proliferation norm. After the U.S. detected a possible nuclear test in 1979, an interagency memo discussed the difficulties raised by publicity of the event, warning that "[t]he nonproliferation stakes could be high"³⁶ due to the possibility of reactive proliferation. U.S. policy officials argued, "Revelation that South Africa possessed nuclear weaponry would immediately exacerbate the tensions that exist in southern Africa."³⁷ The introduction of nuclear weapons might "prompt neighboring black African states...to allow deployment on their territory of tactical nuclear weapons superior, no doubt, to any South Africa might have."³⁸ It would further "weaken the international nonproliferation regime and encourage the acquisition of nuclear weapons by other countries."³⁹ This threat was particularly severe since it came early in the regime (during Phase I), such that a single violation could severely weaken the norm. Statements by U.S. officials reflected this worry as when the CIA stated, "Several states (such as Pakistan, Argentina, Brazil, and Israel) might feel fewer inhibitions about developing nuclear weapons or openly publicizing their nuclear weapons capabilities" with an exposed South African arsenal.⁴⁰ Further, worries of additional reactive proliferation, such as in Israel and Taiwan, were also expressed.⁴¹

The U.S. thus sought strategic obfuscation, quietly pressuring South Africa not to visibly demonstrate its program. An intelligence report notes, "In late 1977...[s]trong U.S. pressure and other international reactions appeared to have deflected South Africa at least temporarily from testing."⁴² A 1985 intelligence report concluded that such pressure supported the non-proliferation norm "by causing Third World decision-makers to postpone actions—such as South Africa's decision in 1977 not to test its nuclear device—which might have seriously damaged the nonproliferation regime."⁴³ Policy officials concluded, "South Africa's nuclear program has not been a major source of contention in Africa....This is partly because of its low visibility."⁴⁴ However, it should be noted that in 1977, prior to obfuscating the program, the U.S. publicized its effort to prevent a test. The U.S., France, Germany, and the UK threatened to sever diplomatic relations otherwise, and once South Africa cancelled the test, the U.S. "told the world" that it was responsible for South Africa's decision.⁴⁵

³⁶See National Security Council (1979, 2)

³⁷See National Intelligence Council (1984, 1).

³⁸See National Intelligence Council (1984, 15).

³⁹See National Intelligence Council (1984, 3).

⁴⁰See National Intelligence Council (1984, 18).

⁴¹See Rabinowitz and Miller (2015).

⁴²See CIA (1979*b*, 6).

⁴³See National Intelligence Council (1985, 14).

⁴⁴See National Intelligence Council (1984, 17). While several countries including the Soviet Union, France, West Germany and the United Kingdom knew about South Africa's program, the states that were most susceptible to reactive proliferation did not. See Rabinowitz and Miller (2015).

⁴⁵See Rabinowitz (2014, 115).

Pakistan (Proliferator Unlikely to Comply and High Risk of Reactive Proliferation)

The U.S. estimated in 1983 that Pakistan could produce a weapon by 1985-6, and determined in 1986 that Pakistan had reached this capability.⁴⁶ Yet the U.S. did not believe it could dismantle Pakistan's program. Early efforts to reverse the program by imposing sanctions, offering military equipment, and threatening to reduce U.S. support for Pakistan failed.⁴⁷ In 1979 the State Department concluded, "Unless we can somehow devise a regime to head [Pakistan and India] off, we face the certain prospect of two nuclear weapons states in this troubled area."⁴⁸ However, the U.S. worried that "premature publicity could scuttle the effort."⁴⁹ In 1982, it maintained this belief, stating, "The odds are against any of the available options resulting in a complete termination of the Pakistan nuclear weapons program"⁵⁰ because "Pakistan's leaders are sensitive to public criticisms that Pakistan has become a 'pawn in a superpower rivalry,' and they shy away from publicly identifying with broader U.S. policy goals in the region."⁵¹ The U.S. noted that Pakistan was unlikely to reverse course because of "Pakistan's apparent determination, at a minimum, to deny India a nuclear monopoly, and, at a maximum, to develop a nuclear weapons capability and thereby establish its status as a regional military and industrial power and as a leader of the Islamic world. One measure of Pakistani determination is the degree to which it has been willing to endanger its ties with the United States and western Europe by illegal clandestine imports of sensitive technology."⁵² Further, a multilateral coalition to coerce Pakistan was unlikely; some nations such as China were actively helping with their nuclear program⁵³ and American leaders struggled to convince Western European suppliers like France not to do the same.⁵⁴

Thus, while the U.S. attempted to use various tools to including sanctions to halt Pakistan's program especially in the late Carter years, it was ultimately unable to reverse the program.⁵⁵ Indeed, Islamabad likely would have required U.S. inducements worth \$5 billion dollars, including high-level military equipment, which faced strong U.S. domestic opposition. Pakistan also demanded a security guarantee from the U.S. vis-a-vis India, which the U.S. could not provide due to "logistical and operational problems in its operationalization."⁵⁶ The New York Times reported that the Carter administration even considered attacking Pakistan's nuclear facilities, but it was considered too risky and was politically infeasible.⁵⁷

Further, the threat of reactive proliferation was high. Pakistan's program was developed during Phases I and II of the NPT, so that its public defection could prompt global pessimism

⁴⁶See Montgomery and Mount (2014); Schultz (1982).

⁴⁷See Rabinowitz and Miller (2015). Similar to the South Africa case, Congressional requirements such as those included in the Symington Amendment played an important role in this period. See Khan (2012, 129).

⁴⁸See U.S. Department of State (1979).

⁴⁹See U.S. Department of State (1979).

⁵⁰See Schultz (1982, 5).

⁵¹See Cronin (1988, 10).

⁵²See Cronin (1988, 8).

⁵³See Rabinowitz and Miller (2015).

⁵⁴See Perkovich (2001, 198).

⁵⁵See Khan (2012).

⁵⁶See Rizvi (2001, 950).

⁵⁷See Rabinowitz (2014, 143).

and undermine the regime. This danger was exacerbated by regional tensions surrounding Pakistan. U.S. intelligence emphasized, “Stability in South Asia will be seriously weakened as Pakistan approaches a nuclear weapons capability threatening to India...The likely alternative is that India will establish its own nuclear force, thus making India and Pakistan the first pair of nuclear armed adversaries in the Third World.”⁵⁸ The U.S. believed that if Pakistan acquired nuclear weapons, it could “jeopardize our global non-proliferation strategy, which could collapse under the weight of two additional nuclear weapons states.”⁵⁹ The U.S. worried that it would “be faced by the mid-eighties, or even earlier, with two internally unstable nuclear weapons states with a long history of conflict, mutual mistrust, and unresolved problems.”⁶⁰ Indeed, U.S. predictions about publicity’s effects were dire: “Pakistan’s nuclear weapons activities...will lead to a nuclear arms race on the Subcontinent. This would result in greater regional insecurity, including the possibility of pre-emption by India or Israel or even eventually a nuclear exchange...Moreover, eventual transfer of nuclear technology or weapons by Pakistan to unstable Arab countries cannot be excluded.”⁶¹

The U.S. thus kept Pakistan’s program secret, trying to “limit the buildup of stockpiles to that done covertly rather than overtly,”⁶² and attempted to dissuade it from conducting a nuclear test that would publicly display its capabilities.⁶³ Indeed, long after the U.S. knew that Pakistan possessed a nuclear device, the Reagan administration continued to certify that it did not⁶⁴ since publicizing Pakistan’s program would trigger foreign aid sanctions by the U.S. Congress, which would anger Pakistan.⁶⁵ Therefore, while the outcome is consistent with our theory, it was not driven solely by the mechanisms we identify. Importantly, however, even though Pakistan is an easy case for an alternative argument that the U.S. obfuscates to simply avoid sanctioning its allies, we still find support for our mechanisms in the primary evidence. Further, while obfuscation may seem overdetermined because of Pakistan’s centrality as a Cold War ally, the United States actually decided on a plan of obfuscation prior to the Soviets’ invasion of Afghanistan. While Pakistan became critical to U.S. strategy in Afghanistan after the invasion, this was not the case beforehand.⁶⁶ We discuss this potential alternative argument further below.⁶⁷

⁵⁸See National Intelligence Council (1982, 4).

⁵⁹See U.S. Department of State (1979).

⁶⁰See U.S. Department of State (1979).

⁶¹See Schultz (1982, 4).

⁶²See Griffin (1981, 10).

⁶³See CIA (1981).

⁶⁴See The National Security Archive (2012). Pakistan’s decision to develop nuclear weapons was largely independent of the U.S.’s decision to strategically obfuscate, and instead was based primarily on domestic and international security considerations, particularly following India’s test. See Rizvi (2001, 951).

⁶⁵See Cronin (1988, 1).

⁶⁶See Rabinowitz and Miller (2015).

⁶⁷Although the U.S. obfuscated Pakistan’s program eventually, the U.S. did not try to hide it prior to 1980. For example, in addition to applying sanctions on Pakistan, the U.S. also disclosed intelligence concerning Pakistan’s nuclear plans to France in order to convince France to suspend deliveries for a nuclear plant. See Richelson (2007, 329).

Iraq Before 1990 (Proliferator Unlikely to Comply and High Risk of Reactive Proliferation)

Starting in the early 1970s, Iraq attempted to acquire nuclear weapons several times. Military defeats set the program back twice, once in 1982 after Israel's airstrike on Iraq's Osirak reactor and again in 1991 after the Persian Gulf War. U.S. leaders embraced strategic obfuscation specifically from 1982-1991, the period in which U.S. intelligence detected clear signs of a revived nuclear program and U.S. leaders looked the other way. Following Iraq's invasion of Kuwait and defeat in the subsequent war, international inspections revealed the full extent of Baghdad's clandestine nuclear program.

Saddam's bid to quietly rebuild his nuclear infrastructure in the 1980s was detected by U.S. intelligence. Red flags were raised in 1985 and, by 1988, additional indications led the U.S. intelligence community to sound the alarm to policy leaders. One source of the U.S.'s (and Britain's) informational advantage was its access to Iraq's equipment purchases via their corporate subsidiaries' involvement.⁶⁸ Pessimistic assessments of Iraq's nuclear progress in the late 1980s, shared in classified briefings to Congress and within President George H. W. Bush's cabinet, noted a "broadly-based, sophisticated nuclear weapons effort underway by Iraq."⁶⁹ By late 1989, a high-level interagency intelligence assessment "distributed to top policy-makers" concluded that Iraq was aggressively pursuing nuclear weapons based on "strong evidence about Iraq's worldwide effort."⁷⁰

In contrast with later publicity campaigns in the 1990s and 2000s, the U.S. employed obfuscation. U.S. leaders consistently ignored their information in bilateral contacts with Iraq and did not reference Iraq's nuclear progress in public comments.⁷¹ One reason U.S. leaders rejected publicity was their belief that they could not bring Iraq into compliance. These officials worried that "denial efforts could be quite costly but still inadequate to keep Iraq from acquiring nuclear weapons"⁷² because, "given Iraq's concern over potential military threats from Iran and Israel, we doubt that international pressure would dissuade Baghdad from its goal of establishing a nuclear weapons capability."⁷³ Doing so would have been particularly difficult due to the U.S.'s desire to increase trade and to engage with Iraq.⁷⁴

Moreover, the U.S. believed that the risks of second-order proliferation were high. A U.S. intelligence memo stated that if Iraq acquired nuclear weapons, "the Arab-Israeli dispute would probably be significantly affected."⁷⁵ This threat was particularly severe due to "the weakness of the existing international nonproliferation regime,"⁷⁶ especially since the program

⁶⁸See, for example, purchases of weapons-specific items known to U.S. and British intelligence due to the Matrix-Churchill firm's involvement. See Jentleson (1994, 120-2).

⁶⁹See Jentleson (1994, 50-1, 106-8).

⁷⁰See Frantz and Waas (1992). The U.S. possessed information superior to that of the IAEA regarding Iraq's activities. In fact, the IAEA's failure to detect Iraq's program prompted the IAEA director general to state that the IAEA needed "more teeth," which led to the creation of the IAEA's Additional Protocol in 1997. See Fuhrmann (2012, 209).

⁷¹See Karabell and Zelikow (1994, 8-12).

⁷²See Director of Central Intelligence (1979, 4)

⁷³See Directorate of Intelligence (1989, 7).

⁷⁴See Gonzalez (1992) and Jentleson (1994, 127).

⁷⁵See Director of Central Intelligence (1979, 3).

⁷⁶See Director of Central Intelligence (1979, 3).

was developed during Phases I and II of the NPT. Further, the memo notes that Iraq's acquisition of nuclear weapons could "spark emulation elsewhere in the Middle East...Baghdad's nuclear program has reportedly already stirred Syrian interest in mounting a similar effort, and, if pressed aggressively, Iraq's quest for weapons-applicable facilities and technology could bring about a revival of Iran's nuclear ambitions."⁷⁷

Argentina (Proliferator Unlikely to Comply and Low Risk of Reactive Proliferation)

The U.S. determined in 1974 that Argentina would have a nuclear weapons capability by the early 1980s. Indeed, Argentina began its nuclear weapons program in earnest in the early 1980s, but by 1985 Argentina announced it would not develop nuclear weapons due to domestic and economic constraints, and in fact had no intent to develop them.⁷⁸ The program was terminated completely in 1990. During this time, the U.S. concluded that it could not lead Argentina to reverse its decision to develop the weapons, but that the threat of reactive proliferation was low enough not to warrant strategic obfuscation. (The possible exception was Brazil, which we detail below.) It therefore applied both bilateral and multilateral pressure on Argentina.⁷⁹

In the 1970s, the U.S. thought that perhaps publicity and pressure would persuade Argentina to comply, arguing in 1977, "They are reluctant to pay the high political price of a deferral of reprocessing. Privately, the Argentines have noted that this might be possible if Brazil also agreed to deferral. Hence we believe that there is a chance for our nuclear strategy to succeed as far as the Argentine side of the Brazil/Argentina equation is concerned."⁸⁰ However, initial U.S. efforts to persuade Argentina to give up its nuclear program instead led Argentina to dig in its heels. For instance, "In the late 1970s...the United States applied persistent pressure on Buenos Aires and Brasilia to modify their nuclear plans and policies. Both states reacted with strongly nationalistic opposition to this pressure at the time and would do so in the future."⁸¹ While some accounts conclude that Argentina actually never intended to obtain nuclear weapons at all, they argue that the U.S.'s publicity "backfired and led to an even greater expansion in Argentine nuclear capacities."⁸² The U.S., learning from the failure of these efforts, concluded, "The various disincentives—including strained relations with neighboring states and with Western industrialized states, the potential for a long-term cutoff of foreign nuclear technology, uncertainty about the implications of possible Brazilian reactions—probably would not appear unmanageable to Buenos Aires,"⁸³ and thus would not lead to compliance. Indeed, even once Argentina gave up its weapons, this decision was due to internal domestic change rather than US pressure.⁸⁴

⁷⁷See Director of Central Intelligence (1979, 15). Iraq's Kuwait invasion and the USSR's dissolution led U.S. leaders to embrace publicity and punishment instead. See Richelson (2007, 355-6).

⁷⁸See Montgomery and Mount (2014).

⁷⁹See Redick (1995).

⁸⁰See NSC (1977a, 3).

⁸¹See National Intelligence Council (1982, 22).

⁸²See Hymans (2001, 155).

⁸³See National Intelligence Council (1982, 21).

⁸⁴See Hymans (2001).

However, the threat environment was low enough that strategic obfuscation was unwarranted. First, the codification of the norm was in its intermediate stage (Phase II), such that a defection would represent only a moderate threat to the norm's health overall. Instead, the main fear was that Argentina's activities would lead Brazil to violate the rules as well. U.S. intelligence officials stated, "We believe, however, that if Brasilia became convinced that Buenos Aires had made a firm decision to develop, test, or deploy nuclear explosives, Brazil would initiate a serious effort to achieve its own nuclear weapons capability."⁸⁵ Yet this possibility was seen as relatively unlikely to occur, as the U.S. also concluded that Brazil would not likely develop a nuclear weapon due to domestic and economic constraints.⁸⁶ Indeed, nuclear weapons were not considered legitimate domestically in Brazil, further reducing the possibility that Brazil would actually develop them. Instead, "nuclear arms advocates faced a national normative consensus against the bomb, a norm originating in the international nuclear nonproliferation regime."⁸⁷ In addition, "Brazilian officers did not perceive a clear military threat, either nuclear or conventional in nature, from Argentina during this period. Brazilian officials recognized that only extreme and un-influential nationalist sectors in Argentina favored construction of atomic weapons. Hence Brazil reportedly never engaged in research necessary to develop employable weapons. Nor is there any evidence that atomic weapons were ever integrated into Brazilian military planning or strategic doctrine."⁸⁸ Rather than attempt to develop nuclear weapons, Brazil cared more about simply possessing the technology as a deterrent, as "the mere capacity to match a potential Argentine bomb was presumed sufficient to deter its construction."⁸⁹ Finally, the U.S. believed that while the Argentina and Brazil cases were somewhat threatening to the normative regime, the threat was low and much more manageable than the threats coming from the Middle East and South Asia.⁹⁰ The U.S. thus chose not to strategically obfuscate.

Iraq After 1990 (Proliferator Likely to Comply and High Risk of Reactive Proliferation)

During the Gulf War, the coalition of states that opposed Iraq's invasion of Kuwait was threatened by the possibility that Iraq could wield chemical or biological weapons against it.⁹¹ The war's ceasefire agreement therefore required Iraq to verifiably destroy its nuclear capabilities. It further stipulated that Iraq would be monitored to verify that it did not restart its nuclear weapons' programs. The UN Security Council Resolution 687 codified these demands and gave the responsibility for ensuring that they were met to the IAEA (along with the UN Special Commission for chemical and biological weapons).⁹²

⁸⁵See National Intelligence Council (1983, 1).

⁸⁶See Montgomery and Mount (2014).

⁸⁷See Reiss (1995, 30).

⁸⁸See Reiss (1995, 15).

⁸⁹See Reiss (1995, 15).

⁹⁰See National Intelligence Council (1982).

⁹¹See Jones (2004).

⁹²See Jones (2004). While close political relations with U.S. leaders in the South Korea and Taiwan cases led Washington to exert public scrutiny via leaks, its enmity with Iraq after 1990 (and North Korea) led Washington to use a more traditional style of broadly publicizing and punishing violations. See the analysis of South Korea and Taiwan for more on these points. Further, the multilateral approach was made possible

The IAEA was tasked with ongoing monitoring and verification of Iraq's efforts, which constituted the strictest international nuclear investigation ever undertaken. Meanwhile, the U.S. determined in 1991 that Iraq would have highly enriched uranium by the late 1990s and that it could develop a crash bomb within six months to a year.⁹³ In 1999 the U.S. believed that Iraq could develop a weapon in 5-7 years, and thought that it had begun a program (though it had not) in 2002.⁹⁴ Inspectors from these bodies discovered and disseminated knowledge of Iraq's efforts to obtain nuclear weapons, which included an advanced enrichment program. The IAEA produced several reports detailing Iraq's efforts.⁹⁵ These activities were heavily publicized, including extensive media coverage of UN inspectors' activities, and even the destruction of weapons stockpiles. According to a prominent NGO, this gave "unprecedented publicity to an activity—verification and monitoring—that was hitherto perceived as mysterious and arcane."

The contrast with U.S. policy prior to Iraq's aggression in 1990 is striking. A recently declassified memo, written as Iraq's troops were massing on Kuwait's border in July 1990, illustrates the dramatic pivot away from strategic obfuscation.

We propose the following steps with our allies and other countries that have substantive relations with Iraq. [1] Share information on Iraq's nonconventional weapons capabilities and related procurement networks with the MTCR, Australia Group, and other allied countries. [2] Urge these countries to contact Iraq to voice concern over its programs and their negative effect on regional tensions, and to strengthen controls on exports that could contribute to Iraq's nonconventional weapons development. [3] Urge these countries to implement or strengthen controls over the provision of defense services that could contribute to nonconventional weapons programs in Iraq and other countries. [4] The U.S. itself could seek, and urge other potential supplier countries to seek legislation similar to that recently passed by the Federal Republic of Germany, specifically making it a crime for citizens to assist foreign nuclear or CBW programs. (In the U.S. this would supersede current sanctions for violating the licensing provisions of the Atomic Energy Act, Arms Export Control Act or Export Administration Act, and supplement a recent law imposing criminal penalties for support of foreign BW programs. [5] Use "public diplomacy" to expose the activities of foreign firms and individuals supporting Iraqi weapons programs.⁹⁶

Further, the threat environment was high; though Iraq pursued the weapons during Phase III of the norm, after which time it was well codified, regional self-defense concerns were large. The U.S. believed that "Baghdad's nuclear program has reportedly already stirred Syrian interest in mounting a similar effort, and, if pressed aggressively, Iraq's quest for weapons-applicable facilities and technology could bring about a revival of Iran's nuclear ambitions. The actual or impending acquisition of nuclear weapons by a country with Iraq's

in part by the end of the Cold War.

⁹³See Montgomery and Mount (2014).

⁹⁴See Montgomery and Mount (2014).

⁹⁵See Albright (2002).

⁹⁶See Policy Coordinating Committee (1990).

interoperate credentials would be particularly upsetting to the Saudis and other Persian Gulf Arabs. The Saudis have long regarded Iraq as a major rival for influence in the Arab world and especially in the Gulf, but they are well aware they cannot match Iraqi military might."⁹⁷ Additionally, a 1992 Congressional Research Report captures the common view at the time that "[a]n overt or secret Iraqi attempt to acquire nuclear weapons would be the first violation of the NPT by a non-weapons member...Such an Iraqi venture could trigger an open or secret arms race in the Middle East, which could be seen as destabilizing and increasing chances that these weapons might be used in this region."⁹⁸

As anticipated, the strategy of exposure and sanctions were largely successful. While Iraq initially resisted the IAEA's efforts, General Hussein Kamel Hassan's defection led it to more completely disclose its activities. From 1995-6 in particular, the IAEA, the UN, and domestic intelligence organizations worked together closely and achieved many of their goals. In particular, Iraq supplied over 50,000 pages of secret papers, 17 tones of managing steel, and enough carbon fiber for 1000 centrifuges. Numerous accounts agree that the program "served as a powerful deterrent to Iraq when it was in place,"⁹⁹ and that it was very effective in dismantling Iraq's nuclear program,¹⁰⁰ though Iraq often made unilateral changes to avoid negative domestic publicity. While the inspectors then left Iraq in 1998 as the UN consensus broke down, up to that point, their efforts had largely succeeded.

Taiwan (Proliferator Likely to Comply and High Risk of Reactive Proliferation)

In 1974 the U.S. correctly assessed that Taiwan (Republic of China, or ROC) was conducting a nuclear program with the intent of developing nuclear weapons.¹⁰¹ In 1987 it discovered that Taiwan was trying to acquire a reprocessing plant,¹⁰² and it did obtain a very small-scale reprocessing facility.¹⁰³ It was reported:

A US interagency team recently returned from making a comprehensive inspection of nuclear facilities in Taiwan. There is strong (though circumstantial) evidence when intelligence reports are combined with the team's discoveries in Taiwan that the ROC illegally diverted and clandestinely reprocessed spent fuel...The IAEA did not detect this probable diversion, despite an intensive inspection last July...Any such diversion would be a clear violation of the agreement between the IAEA and the ROC on the TRR reactor. It would also be a violation of the spirit of the NPT and arguably of the letter of the Treaty as well.¹⁰⁴

⁹⁷See CIA (1979*a*, 15).

⁹⁸See Davis (1990).

⁹⁹See Albright (2002).

¹⁰⁰See Braut-Hegghammer (2004); Cirincione et al. (2004); Kimball (2003).

¹⁰¹Note the IAEA's weakness in detecting the program. Analyses of the topic conclude, "The fact that [the IAEA] took nine years to discover Taiwan's initial nuclear program...does not inspire confidence that our information will be both timely and actionable." See Hersman and Peters (2006, 549).

¹⁰²See Montgomery and Mount (2014).

¹⁰³See Albright and Gay (1998).

¹⁰⁴See NSC (1977*b*).

Further, the threat of second order proliferation was high. The proliferation risk came during Phases I and II of the norm, so that a defection could potentially harm the norm's health. Additionally, regional self-defense concerns loomed large. *The Washington Post* reported that the program "could cause major difficulties with mainland China, multiply the nuclear worries of Japan and of less developed Asian states, and accelerate a worldwide drift toward nuclear proliferation."¹⁰⁵

However, the U.S thought it could reverse Taiwan's program through public scrutiny and bilateral pressure. This stemmed in part from the fact that Taiwan depended heavily on the U.S. as a trading partner, for foreign investment, to provide arms, and to supply low-enriched uranium. In particular, Taiwan's dependence on the U.S. for security led intelligence officials to believe that U.S. policies could have "a major impact" on Taiwan's proliferation decision.¹⁰⁶ Further, the program was not very far along, as Taiwan sought a reprocessing facility, but did not possess one.¹⁰⁷ An internal policy memo reported, "In Taiwan, however, where there already is a perception of a declining US commitment, fear that secret nuclear weapons development would further accelerate this decline will act to discourage such activities."¹⁰⁸ This agreement with the U.S. was made public,¹⁰⁹ and key accounts conclude that "U.S. determination to prevent Taiwan from obtaining nuclear weapons had paid off."¹¹⁰ As a result, "The United States increased public and private pressure on Taiwan to end all nuclear weapons-related activities. Washington threatened to cut off all fuel supplies, demanded the return of all plutonium of U.S. origin, and hinted that Taipei's actions threatened to weaken the U.S. security guarantee and could result in a freezing of weapons sales to the island."¹¹¹ As in the case of South Korea, close political relations constrained how directly and openly U.S. officials could criticize Taipei. Instead, U.S. intelligence and policy officials generated scrutiny of Taiwan's nuclear program through a regular stream of unattributed comments and leaked intelligence analyses in major news outlets.¹¹²

Thus, the U.S. relied on both bilateral and international pressure, and did not engage in strategic obfuscation, neglecting to attempt to cover up the program. In response, Taiwan first abandoned the nuclear program in 1976, resumed the program in 1987, and gave it up again in 1988 after the U.S. presented intelligence on Taiwan's activities to Taiwan. Taiwan then agreed to ban all research related to nuclear weapons.¹¹³

¹⁰⁵See Washington Post (1976).

¹⁰⁶See National Intelligence Council (1974, 28-9).

¹⁰⁷See Miller (2013).

¹⁰⁸See National Intelligence Council (1982, 5).

¹⁰⁹See Albright and Gay (1998).

¹¹⁰See Albright and Gay (1998, 60).

¹¹¹See Hersman and Peters (2006, 544).

¹¹²See, for example, reports in *The Washington Post* about Taiwan's nuclear ambitions expressed by "top U.S. officials" in the Carter Administration. See Benjamin (1978). Further, two years earlier, there was confirmation by "Administration officials" that an intelligence leak describing diverted nuclear fuel was correct in *The New York Times*. See Binder (1976).

¹¹³See Campbell, Einhorn and Reiss (2004).

North Korea (Proliferator Likely to Comply and High Risk of Reactive Proliferation)

North Korea's nuclear program started at the Yongbyon reactor site in 1962, after which it joined the IAEA in 1974, and joined the NPT in 1985. A clandestine expansion of its program in the 1980s, key elements of which were detected by advanced U.S. satellite imagery, eventually prompted multilateral pressure and ultimately a regional diplomatic crisis. A 1994 bargain froze North Korea's nuclear development (i.e. the "Agreed Framework") but, after discovery of a nuclear complex at Kumchang-ni in 1998 and a centrifuge enrichment program in 2001, the bargain collapsed and North Korea tested a nuclear device in 2006.¹¹⁴ Rather than strategically obfuscate, time and again U.S. leaders shared sensitive intelligence about North Korea's nuclear program with other states and the International Atomic Energy Agency (IAEA). To demonstrate how the U.S. used publicity to build multilateral pressure and halt North Korea's nuclear ambitions, we focus on the period leading to the 1994 Agreed Framework.¹¹⁵

Declassified documents show that diplomacy during this period was driven by the disclosure of the U.S.'s proprietary information. U.S. leaders used satellite imagery and other sources to gain access to an otherwise opaque North Korea and detected expanded activity at Yongbyon around 1985.¹¹⁶ In 1989, U.S. officials shared information about "a long narrow factory-like building near the Yongbyon reactor that appeared to be a reprocessing plant" with South Korean, Soviet, and Chinese leaders "in hopes of gaining their cooperation in halting any North Korean movement toward nuclear weapons."¹¹⁷ A steady trickle of new signs of progress in 1990 and 1991 led to continued U.S. consultation with other states and the IAEA.¹¹⁸ With the IAEA Board of Governors focused on North Korea and its inspections attempting to clarify Pyongyang's intentions, U.S. satellite imagery detected new concealed work at North Korean sites in 1992 and quickly shared it.¹¹⁹ North Korea announced its intention to withdraw from the NPT the next month, which led to back-and-forth negotiations and, eventually, the Agreed Framework of 1994.

The U.S. adopted a strategy of sharing intelligence to show North Korean progress

¹¹⁴See Montgomery and Mount (2014).

¹¹⁵The IAEA had little information about North Korea's program. Fuhrmann states, "U.S. intelligence – not IAEA inspections – provided the most useful information about the country's noncompliance with its NPT obligations. An IAEA report issued in August 2003 summarized the limitations of safeguards in the North Korean case: 'Since 1993, the Agency has been unable to fully implement the comprehensive safeguards agreement with [North Korea]. . . . The Agency has never been allowed . . . to verify the correctness and completeness of the DPRK's initial declaration of nuclear material subject to safeguards under that agreement.'" See Fuhrmann (2012, 228).

¹¹⁶See CIA (1986).

¹¹⁷See Richelson (2007, 357).

¹¹⁸Department of State (1991*a,b*) provides a window into this close sharing of information and multilateral pressure from recently released memos.

¹¹⁹Richelson (2007, 519) states, "In late 1992 the [CIA] informed the IAEA that satellite reconnaissance had shown North Korean workers hurriedly constructing a new storage site for nuclear wastes ...The agency also told the nuclear inspectors that U.S. satellites had obtained images of North Korean workers digging trenches in the frozen ground through the winter of 1991 near one of the two suspected waste storage facilities...Imagery of the two waste sites, obtained in 1992, became the focus of the IAEA's governing board in February 1993, as they seemed to indicate yet another attempt at deception."

towards a nuclear weapon despite fears of reactive proliferation. The late 1980s and early 1990s straddle the second and third phases of the NPT, but regional tensions made second-order proliferation an especially grave issue. The U.S. concluded, "Exposure could lead South Korea—with its superior nuclear technology—to develop nuclear weapons as a response."¹²⁰ A U.S. policy memo summed up the U.S.'s concerns as follows: "Acquisition by the DPRK of nuclear weapons...[would] undermine the conditions for pursuing a relaxation of tensions, improved relations, and lasting peace [in the region]. Acquisition of such weapons by North Korea could also spark an arms race in the region and would surely do grave damage to the global nonproliferation regimes covering nuclear weapons."¹²¹ Indeed, U.S. policy reports noted that "the most important factor in South Korea's future nuclear decisions will be...the imminence of the North Korean threat"¹²²

Yet despite the high threat level, the two U.S. administrations spanning the late 1980s and early 1990s believed that North Korea could be coerced into halting its nuclear progress in exchange for security assurances, sanctions relief, and aid. While the U.S. had little leverage over North Korea since it was not a military ally and there was little economic interdependence, North Korea was seen as being vulnerable to multilateral pressure. The U.S. was confident that it could use the IAEA's scrutiny and diplomatic initiatives like the Four Party Peace Talks to serve "as a key means to securing greater cooperation from Pyongyang"¹²³ and "an era of decisively improved relations between the US and the DPRK."¹²⁴ The U.S. believed that North Korea's poor economic conditions would leave it amenable to negotiation and therefore began the talks feeling optimistic that they would succeed.¹²⁵ As one memo summarized, U.S. leaders believed a "broadly based, concerted international consensus expressed to North Korea offers the best hope of bringing about North Korean compliance with its NPT safeguards obligations." The U.S. thus consulted closely with Chinese and other leaders to build this consensus.¹²⁶

The 1994 Agreed Framework eventually unraveled and North Korea terminated it shortly before President Bill Clinton left office. The George W. Bush administration sharpened the U.S.'s rhetoric (i.e. by labeling North Korea as a member of the "axis of evil") and shifted away from negotiated agreements to coercion but continued documenting North Korean transgressions to isolate it.¹²⁷ These new tactics did not achieve meaningfully different

¹²⁰See Office of Scientific and Weapons Research (1986, 4).

¹²¹See Perry (1999, 3-4).

¹²²See CIA (1978, 2).

¹²³See The National Security Archive (2014).

¹²⁴See U.S. Department of State (1999, 3).

¹²⁵See Wampler, Robert A. "North Korea and the United States: Declassified Documents from the Bush I and Clinton Administrations." *National Security Archive Electronic Briefing Book No. 164*. The National Security Archive. Posted August 23, 2005.

¹²⁶See Department of State (1991b). The post-Cold War era allowed the U.S., Russia, and China to work together to place pressure on North Korea. It was also aided by the fact that many states possessed strong incentives to convince North Korea to abandon its nuclear ambitions. See CIA (1986). The U.S. considered using military force in 1994 but believed that doing so would likely result in an "all-out war." See McIntyre, Jamie. "Washington was on Brink of War with North Korea 5 Years Ago." *CNN*. October 4, 1999. Though we exclude North Korea after 2011 due to the fact that it had declared its nuclear capability, we note that a multilateral coalition was assembled, so the U.S. could likely reverse the program. We thus suspect that the U.S. would choose publicity as a result.

¹²⁷For example, the National Security Strategy and the Nuclear Posture Review declared it a belligerent

results, as North Korean progress allowed it to conduct a nuclear test in 2006.

Libya (Proliferator Likely to Comply and Low Risk of Reactive Proliferation)

Since coming to power in 1969, Muammar Gaddafi had pursued nuclear weapons, in large part to bolster his domestic image and maintain power.¹²⁸ The U.S. had monitored Libya's nascent nuclear program since the early 1980s and found in 2001 that Libya was seeking dual-use technologies. By 2002 the U.S. believed that Libya possessed enough highly enriched uranium to produce a weapon by 2007, though in reality Libya did not.¹²⁹ Yet the U.S. and Britain had a great deal of intelligence on the program, as after demonstrations of the extent of their intelligence capabilities in other areas, Libya "saw how much [the U.S. knew] about what they were doing" in the nuclear arena.¹³⁰ Libya's pursuit of nuclear weapons was thus monitored by U.S. and British intelligence and publicized.¹³¹

Libya represented a low to moderate threat for the nuclear non-proliferation regime because the program was mainly developed during Phase III of the NPT, after which the norm was well codified. (However, we note that the program began in the 1970s, when the regime was more fragile.) Further, Libya was relatively isolated from the international community, such that emulation did not pose a significant threat¹³² apart from some concerns regarding Egypt.¹³³ The program was also far from being able to actually produce a bomb, limiting the perceived danger to other nations.¹³⁴

The U.S. expected publicity and punishment to roll back the program, and indeed, it did. Coercion occurred in three phases, spanning sanctions and military actions under President Ronald Reagan, multilateralism and sanctions under President George H.W. Bush and President Bill Clinton, and bilateral negotiations under Clinton and President George W. Bush. The initial sanctions were placed on Libya due to its sponsorship of terrorism, and had little impact on its nuclear program due to a lack of international support, U.S. demands for regime change, and weak U.S. leverage.¹³⁵ Libya could fund its own expenses through domestic oil production and shifted exports to alternative partners, repressing any dissenters. However, after Libya ramped up its nuclear program in 1995, the U.S. was able to create a multilateral coalition in support of its sanctions regime, which was authorized by the United Nations Security Council. This shift was both due to a convergence in interests resulting from the threat posed by terrorism and an increase in U.S. leadership at the end of the Cold War.¹³⁶ Libya further experienced economic problems which led to some cooperation with the multilateral efforts.¹³⁷ At the end of 2003, Libya announced a full nuclear disarmament.

state. See Montgomery and Mount (2014).

¹²⁸See Solingen (2009).

¹²⁹See Montgomery and Mount (2014).

¹³⁰See Robbins (2003).

¹³¹See Bowen (2006). Note that, "Despite the fact that many of the transgressions discussed above occurred at a safeguarded facility, they were never detected by the IAEA." See Fuhrmann (2012, 232).

¹³²See National Intelligence Council (1985).

¹³³See Rost Rublee (2006).

¹³⁴See Crawford (2004).

¹³⁵See Jentleson and Whytock (2005).

¹³⁶See Jentleson and Whytock (2005).

¹³⁷However, the success of these efforts was moderated by U.S. domestic pressure against Libya after the

Further, while multilateral sanctions had already been placed on Libya, which had been made easier to implement by the post-Cold War period and the fact that Libya was considered a "pariah" state that traded and interacted little with powerful states, the U.S. required Libya to renounce its nuclear program before it would remove these sanctions. U.S. officials stated, "The United States has raised the bar to give the condition a spin it did not have when the resolution was passed. It now holds that the resolution covers weapons of mass destruction as well."¹³⁸

U.S. officials attributed Libya's compliance with the U.S.'s demands to the effectiveness of this strategy. The Bush administration believed that "Libya's announcement [of compliance]...is a product of the President's strategy which gives regimes a choice. They can choose to pursue WMD at great peril, cost and international isolation. Or they can choose to renounce these weapons, take steps to rejoin the international community, and have our help in creating a better future for their citizens."¹³⁹ In addition, in line with the conventional wisdom on the effects of publicity, the U.S. stated, "These actions have sent an unmistakable message to regimes that seek or possess WMD: these weapons do not bring influence or prestige - they only bring isolation and other unwelcome consequences."¹⁴⁰ The administration further surmised that Libya relinquished its weapons because "it was clear to Gaddafi that we were willing to use all the tools at our disposal to stem the flow of WMD. Ongoing international diplomacy, coupled with economic sanctions, isolated Libya and were having a significant impact on Libya's international status and economy. The Bush administration's relentless pursuit of the WMD black market exposed Libya's and other[s'] WMD programs, and diminished their chances of success."¹⁴¹ Further, while the Bush administration pointed to its preemptive strikes on Iraq as a deterrent, many scholars argue that the multilateral sanctions and Libya's increasing susceptibility to economic measures, combined with the other aspects of the U.S.'s coercive diplomacy, led to the reversal.¹⁴² Finally, Libya's compliance can also be attributed to the comparatively little progress that had been made in developing a nuclear weapon.¹⁴³ This case thus exemplifies the common belief about the result of publicity and punishment; the violator will come into compliance and the regime will be upheld.

Algeria (Proliferator Likely to Comply and Low Risk of Reactive Proliferation)

In addition to a publicly acknowledged research reactor supplied by Argentina, U.S. satellite intelligence discovered an Algerian nuclear reactor being constructed at a separate site in strict secrecy in 1991.¹⁴⁴ The "Es Salam" reactor, constructed with help from China,

Lockerbie incident.

¹³⁸See Qadhafi (2003, 44). While the U.S. kept its talks with Libya secret during the Clinton and Bush administrations, it was the actual diplomacy that was not revealed, rather than the extent of Libya's nuclear program, and thus does not represent strategic obfuscation.

¹³⁹See Qadhafi (2003, 44).

¹⁴⁰See Qadhafi (2003).

¹⁴¹See Qadhafi (2003).

¹⁴²See Jentleson and Whytock (2005); John (2004).

¹⁴³See Hymans (2012).

¹⁴⁴Algeria did not accept IAEA safeguards until 1992 under U.S. pressure and thus its activities were not detected by the IO.

appeared to some analysts to have a military purpose. Furthermore, the U.S. was also concerned because “Algeria’s record on timely completion of safeguards negotiations with the IAEA on the [Argentine reactor] is not a good one.”¹⁴⁵ U.S. deliberations about how to respond to the new Algerian reactor under construction were cut short. News of the Es Salam reactor was leaked to *The Washington Times* in April 1991.¹⁴⁶

With the allegation of Algeria’s new reactor in the public domain, the U.S. quickly embraced sharing its classified intelligence with other states and coordinating pressure on Algeria to secure a promise of non-military uses. According to a recently declassified cable:

To reinforce direct U.S. diplomatic pressure on Algeria (and China), we have sought to enlist seven other countries—France, the UK, Germany, Italy, Spain, Portugal and Japan—to exert influence on Algeria to ensure the Algerian nuclear program is devoted exclusively to peaceful purposes and is fully safeguarded....We have approached the seven countries noted above with information currently available to us and have requested that they supplement it to whatever extent possible. We have made these approaches in diplomatic channels and, in parallel, in intelligence channels.¹⁴⁷

The U.S. also “encouraged the IAEA to offer to visit the Ain Oussera [village] facility well before its completion,”¹⁴⁸ sought China’s help in convincing Algeria to follow nuclear nonproliferation, and pressured Switzerland not to sell a hot isostatic press that could be used for nuclear weapons purposes to Algeria.

In part, this use of publicity and pressure reflected U.S. officials’ faith that Algeria would likely reverse course as a result. Intelligence assessments prior to the detection of the new reactor stated, “Algeria, which has not signed the Nuclear Non-Proliferation Treaty (NPT), probably can be persuaded to accept limited safeguards, which will help to ensure that the country’s low proliferation potential is kept to a minimum.”¹⁴⁹ Algeria’s vulnerability to pressure was in part a function of its program being “fairly rudimentary” and dependent on “significant foreign assistance.”¹⁵⁰ The ease with which U.S. officials were able to build multilateral pressure from other nuclear suppliers underscored Algerian vulnerability as well. U.S. confidence was also buoyed by Algeria’s and China’s immediate moves to dispel international speculation in the two weeks following the leak. As one report noted, statements to U.S. diplomats by Algeria and China committing to seek IAEA safeguards “have, in large part, alleviated our concern about the proliferation implications of the reactor under construction.”¹⁵¹ Lastly, unlike other cases in which a long-term rival provided a strong

¹⁴⁵See Policy Coordinating Committee (1991, 2).

¹⁴⁶See The National Security Archive (2007). Unlike in South Korea and Taiwan where leaks were used as an intentional coercive tool against allies, later reporting suggests that these leaks resulted from a split among intelligence analysts about the danger of the reactor and the significance of China’s help. See Albright and Hinderstein (2001, 45-52).

¹⁴⁷See Roy (1991, 4).

¹⁴⁸See Roy (1991, 4).

¹⁴⁹See NSC (1988, 1).

¹⁵⁰See Roy (1991, 1,3).

¹⁵¹See National Security Archive (1991).

rationale for a state's nuclear ambitions, Algeria's security environment led outside leaders to perceive that it "had no clear motive."¹⁵²

Further, the U.S. believed that the threat of reactive proliferation by neighbors and states further afield was relatively low, noting that if a "significant nuclear proliferation risk" emerged, it would explore "other options."¹⁵³ Additionally, while "the Moroccans were quite concerned about the Algerian nuclear program....there was little real basis for this worry."¹⁵⁴ Moreover, the most plausible candidate for a nuclear rivalry with Algeria was Libya, but thanks to international efforts, Libyan ambitions in 1991 "had been largely thwarted."¹⁵⁵ Finally, Algeria's program was developed during Phase III of the NPT, such that the threat to the overall norm's health was small.

Though prompted by a premature leak of classified information, the final result in Algeria reflects the conventional wisdom. Despite a civil war, Algeria reassured the international community of its non-military goals by agreeing to sign the NPT in 1993, and then signing it in 1995. Thus, "Washington, Beijing, and the international community brought Algiers into the NPT-system within a few years of the controversy."¹⁵⁶

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¹⁵²See Albright and Hinderstein (2001, 46).

¹⁵³See Policy Coordinating Committee (1991).

¹⁵⁴See U.S. Embassy in Algeria (1991).

¹⁵⁵See Albright and Hinderstein (2001, 46).

¹⁵⁶See The National Security Archive (2007).

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