

# An Essay on Thomas Schelling's *Arms and Influence*

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*Even a genius such as Clausewitz did not clearly perceive the non-zero-sum nature of war, the fundamental property around which Schelling builds his models of cooperation and conflict*

— Reflections on Thomas Schelling<sup>1</sup>

## 1 Introduction

During the two decades between 1946 and 1966 American nuclear strategists articulated the first systematic theory of coercion.<sup>2</sup> For the history of ideas, the first and most important question to ask is—why? Why was it a group of essentially civilian academics, many of whom had no combat or political experience, who managed to explore and explain a subject which the best strategic minds had written upon for two and a half millennia?

Their contribution is all the more striking for having passed largely unremarked.<sup>3</sup> Histories of the period focus on the novelty of its circumstances, and they laud how Bernard Brodie, Albert Wohlstetter, Herman Kahn, Thomas Schelling, and others managed to invent a new kind of military strategy, one markedly different from anything either superpower had

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<sup>1</sup>Zeckhauser (1989, 153)

<sup>2</sup>*The Absolute Weapon* was published in 1946, *Arms and Influence* in 1966, after which strategic thought “hit something of a dead end” (Trachtenberg, 1988, 443). Colin Gray would put the start date at 1956. I cannot put the lack of previous theory better than Schelling did in 1960: “I cannot confidently assert that there are no handbooks, textbooks, or original works on the pure theory of blackmail circulating in the underworld; but certainly no expurgated version, showing how to use extortion and how to resist it, has shown up as ‘New Ways in Child Guidance,’ in spite of the demand for it” (Schelling, 1960, 13).

<sup>3</sup>The only exception seems to be among a few prominent economists who acknowledges its discipline’s debt to Schelling for the development of noncooperative game theory, among other things (see section 7).

adopted before. After all, nuclear weapons differ genuinely and radically from all previous technologies; that within two decades of their invention countries would understand and successfully exploit them is indeed remarkable. But these histories miss a contribution equally as startling. Before the nuclear age, there was no common framework to discuss coercion. Indeed, before the nuclear age, the very meaning of the word remained ill-defined. Writers as old as Sun Tzu had studied it, and some, like Machiavelli or Hobbes, had thought on it deeply. But these theorists always discussed coercion in the context of something else—as an aspect of war or revolution, for instance, or of domestic politics or state formation. Until the nuclear age, none had studied coercion on its own.<sup>4</sup>

The timing was not an accident. Traditionally, international relations required dividing two kinds of goods: first, the goods which each state might hope to gain through violence; second, the goods which both states could gain from avoiding violence.<sup>5</sup> The first states would divide in proportion to their strength—a state twice as likely to defeat an enemy as be defeated would enjoy twice the wealth; this is the realm of military power. The second kind of good states would divide by their ability to negotiate, and this is the realm of coercive bargaining. Historically, the effects of coercion have been difficult to discern; indeed, the importance of power to one's international position has tended to overwhelm any effects coercive bargaining might have. But nuclear weapons divorced coercion from military strength.<sup>6</sup> In doing so, they made it vastly more amenable to theory, since for the first time its role could be studied in isolation.

With nuclear weapons, the costs of war became so high that military power mattered far less to one's international position than coercive power—than reputation, risk, and com-

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<sup>4</sup>Or as Schelling observes, “the twentieth is not the first century in which ‘retaliation’ has been part of our strategy, but it is the first in which we have systematically recognized it” (Schelling, 1966, 15).

<sup>5</sup>Schelling (and other economists) would call the first a zero-sum conflict and the second a distributional conflict. It is worth noting that the second is in some sense ‘win-win,’ in that both states are better off; coercion determines who ‘wins’ the most, not who ‘loses.’ As Schelling notes, even in games of pure coordination—such as trade liberalization or arms control—there is still coercion, since there are multiple ways of distributing mutual gains, and so which way prevails will reflect the actors’ bargaining power. Thus, in some sense all bargaining that is not over purely zero-sum goods is coercive.

<sup>6</sup>I dwell on this aspect of nuclear weapons in greater detail when discussing Schelling’s contributions in section 5.

mitment. Avoiding the costs of nuclear war was far more valuable to the superpowers than any gains nuclear war might provide, and so the character of international relations came to depend far more on how well states could coerce than on how well they could fight. The early Cold War thus witnessed a struggle to understand these new rules of interstate politics, and this struggle produced among the greatest writers on strategy of the past century. I have chosen to highlight only one of their number, because I think he most transcends the details of the period to say something lasting: Thomas Schelling.

Above all his contemporaries, Schelling abstracted from the particular history and technology of nuclear weapons to understand the new era at its foundation. He sought to grasp the nature of coercive diplomacy, whether in the crises of nations or the pettifogs of traffic accidents. In doing so, he identified the common logic that underpins them all, crafting a theory far more general than the circumstances that gave it birth. His work thus subsumes that of his predecessors and of his contemporaries so that, while they might have seen trends and implications he missed, it is his work that unites them, and it is within the framework of his thought that other theorists must be placed. As Clausewitz is the quintessential theorist of war, Schelling is the quintessential theorist of coercion.

## **2 Schelling - Brief Background**

Almost uniquely among classic strategists, Thomas Schelling is an economist.<sup>7</sup> He graduated from Berkeley with a bachelor's in the subject in 1944, and he joined Yale as a professor of Economics in 1953 (and later Harvard in 1958). His expertise helps explain his approach to strategy. Unlike many of his contemporaries, Schelling is less impressed by technological changes as by changes in incentives. He seeks to understand how people respond to their environment and how they can reshape the environments of others. As a consequence, his writings never descend into the kind of technical detail common to other works on nuclear

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<sup>7</sup>The best biographical introduction to Schelling is his brief Nobel autobiographical note; Schelling (2005). Also almost uniquely, he is still alive.

strategy. Hence also why he can move seamlessly between subjects as disparate as ballistic missiles and medieval banditry. What interests Schelling is not what weapons can achieve but how they affect decision-making.

Schelling's emphasis on the theoretical does not stem from an ignorance of the practical. Though an academic, Schelling enjoys significant policy experience. Between graduating from Berkeley in 1944 and joining Yale in 1953, while completing his Ph.D. Schelling helped implement the Marshall Plan and served in the White House. Even after becoming a full-time professor, he went on to work at RAND and advise leaders across political administrations throughout the late 50s and 60s. During the Kennedy administration he chaired numerous committees on nuclear policy, including, he proudly recounts, ones which introduced the famous 'hotline' and led to the Anti-Ballistic Missile Treaty.

Schelling's writings on coercion begin in 1956, continuing in various articles until the publication in 1960 of *The Strategy of Conflict*. This book reached a wide audience of policymakers, political scientists, and economists, and it firmly established Schelling as a leading strategic thinker. Between 1960 and 1966 his energies focus almost exclusively on nuclear bargaining, including a book and numerous articles on arms control, as well as extensive writings on deterrence, civil defense, and flexible response. The period culminates in *Arms and Influence*, which expands and unites his previous work into a single framework. The book also marks the conclusion of Schelling's most important work on coercion. Afterward, he continues to publish on nuclear strategy and international affairs, but his interest shifts to other topics. He goes on to author important works on racial segregation and the theory of addiction, but his contributions to the study of coercive bargaining largely cease.

It is therefore *Arms and Influence* which forms the core of this essay. In this brief space I will not have the time to explore Schelling's writings on the particulars of nuclear strategy. Thus, volcanic debates surrounding issues like arms control or escalation dominance I will only mention, even though these issues occupy a significant portion of Schelling's words, energy, and influence. Instead, I focus on his theoretical contributions to the study of

grand strategy, showing how they culminate in a unified theory of coercion. This theory comprehends its subject with a breadth and coherence only Clausewitz can match.

### 3 Schelling's Approach to Theory

The comparison of Schelling to Clausewitz, while flattering, is not idle. Their works share a common approach to theory, an approach somewhat alien to other works of strategy, policy, and (especially) social science. To understand the works of either, one must first understand the nature of their theoretical enterprise.<sup>8</sup>

Neither Clausewitz nor Schelling is especially empirical.<sup>9</sup> Examples and anecdotes flavor the writings of both, but neither attempts seriously to test his argument. Rather, what evidence each offers remains always in the realm of illustration, not proof. Schelling himself goes so far as to concede that, whether his “theory provides good or poor insight into actual behavior is, I repeat, a matter for subsequent judgment” (Schelling, 1960, 4).<sup>10</sup>

Nor are their works theoretical in the sense of modern social science. A researcher cannot take their theories and derive testable predictions which he might then compare to actual events. Both provide advice to leaders in particular situations, but it remains entirely to the leader to discern whether their advice applies. The actions, prior beliefs, and interests which a given leader or country might have—all the things essential to make a model testable—are omitted. They are left as variables, variables which a practitioner or scholar must try to approximate as best he can (with no help from either author). What they offer are not Lanchester equations; they are not even rules-of-thumb. In the parlance of modern

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<sup>8</sup>I am aware of the irony of arguing that of Kahn, Brodie, and Schelling, Schelling most resembles Clausewitz in his approach. After all, Brodie was by far the more careful student of Clausewitz, and Kahn wrote a book whose title blatantly invokes *On War* as its heritage. Nonetheless, though both might have been more aware of their debts to the great Prussian, Schelling tracks his method the most closely.

<sup>9</sup>I must except those sections of Clausewitz, now outdated, on battlefield tactics, and the parts of Schelling, often ignored, devoted to arms control and NATO.

<sup>10</sup>Clausewitz explicitly says, “Theory is content to refer to experience in general to indicate the origin of the method, but not to prove it” (Clausewitz, 1976, 169). Trachtenberg remarks, “the strategists had developed a way of thinking about nuclear issues—not a technique for processing hard, and especially quantitative, information” (Trachtenberg, 1988, 467)

social science, there is not the slightest hint in either Clausewitz or Schelling of how to operationalize their ideas. They remain frustratingly, impudently abstract.

Instead, what both offer is an intellectual framework—a set of internally consistent ideas and concepts which practitioners and scholars can use to organize the world. For both Schelling and Clausewitz, to understand the world is to perceive the order behind its seemingly impenetrable complexity; to understand the world is to see how things fit together. Many steps remain between articulating basic concepts and predicting what will happen, and these steps they did not (and could not) take. But that does not make the concepts less valuable. Clausewitz would put the matter thus:

The function of theory is to put all this in systematic order, clearly and comprehensively, and to trace each action to an adequate, compelling cause . . . Only if the mind works in this comprehensive fashion can it achieve the freedom it needs to dominate events and not be dominated by them . . . Theory cannot equip the mind with formulas for solving problems...But it can give the mind insight into the great mass of phenomena and of their relationships.<sup>11</sup>

Their goal, in short, is clarity.<sup>12</sup>

Of course, theory is useless if impractical. During the 1950s and 60s, one of Schelling's greatest frustrations was with the current direction of game theory. He saw the field as increasingly dominated by mathematicians with little interest in its application, and so he wrote forcefully for its 'reorientation.' Throughout all his works, no matter how abstract, Schelling insists on returning to the real world; theory had become irrelevant because it had become too detached from reality. Like Clausewitz, Schelling seeks to remake theory, to reintroduce dimensions of human behavior which others had neglected because they proved too difficult to theorize. For Clausewitz, actual war makes no sense without reference to psychology, morale, and the fog of war. For Schelling, coercion makes no sense without

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<sup>11</sup>Clausewitz (1976, 577-8)

<sup>12</sup>While Schelling is more generous, Clausewitz is scathing of then-predominant theories, and his words apply as aptly today as they did in 1830: "our theoretical and critical literature, instead of giving plain, straightforward arguments in which the author at least always knows what he is saying and the reader what he is reading, is crammed with jargon, ending at obscure crossroads. . . The author himself no longer knows just what he is thinking and soothes himself with obscure ideas which would not satisfy him if expressed in plain speech" (Clausewitz, 1976, 169).

commitment, reputation, and chance. And so they bring back these ideas.<sup>13</sup> No matter how many tables or mathematical characters Schelling employs, he connects each one to a simple example with which his readers would be familiar, and then extends that example to an international conflict on which it can shed new light. Neither Clausewitz nor Schelling is interested in theory for theory's sake. For both, theory must be able to inform practice.

This approach is why Schelling is so general. With the exception of Brodie, Schelling's contemporaries all seem dated, of mere historical interest. They examine in almost microscopic detail the different properties of nuclear weapons. Schelling discusses aggressive driving and ancient Greek literature—because the same principles are at work there as between atomic superpowers. The nuclear age was radically different from perhaps all previous eras of international politics. But it was not so different from the problems faced by any parent. More than anyone else, Schelling saw the threads that bind these worlds together—what he called the strategy of conflict.

## 4 Schelling's Approach to Strategy

Schelling means something very particular by the word 'strategy.' For Schelling, strategy is the plan of action whereby an actor connects means to ends.<sup>14</sup> About these means he makes no presumption, and about the ends he offers no judgment. Indeed, he makes only one major assumption, and that he inherits from game theory: Schelling assumes that actors are rational. The simplicity and elegance of this approach, unencumbered from the particular histories and ideologies of nations or the psychoses and oddities of leaders, enables Schelling to abstract from the many details of international politics to discern something essential.

Game theory is a way of representing people's choices using mathematical language. Its key use is in modeling interdependent decision-making—that is, in modeling situations where

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<sup>13</sup>For instance, cooperative game theory, then the dominant mode of study, assumed that there are no commitment problems (an external agent is assumed to enforce all commitments), the very thing Schelling is most famous for exploring.

<sup>14</sup>Note that Schelling is conscious that how he uses the word 'strategy' differs from its traditional usage in military science—it is his first footnote in SoC.

the actions of one person or thing are affected by the actions of another. Game theory offers a way to study the choices people, companies, and countries make in different circumstances—in the language of the theory, how 'players' play a 'game.' The triviality of its language should not deceive a casual reader: a game might be as simple as tic-tac-toe, but it could also be as dangerous as a nuclear standoff between nations. Game theory seeks to represent the structure of these interactions (the 'game') using mathematical symbols, and then to predict how each player will behave. This way of representing the world allows a theorist to abstract from the noise of a situation in order to study the basic incentives and tradeoffs each person faces. Knowing these tradeoffs can then help predict how people will behave.

But knowing tradeoffs is not enough—a theorist must also understand how people respond to them. In reality, people's responses are conditioned in an impenetrably complex weave of habit, social cues, culture, cognitive shortcuts, and idiosyncratic predispositions. Therefore, like any science, in order to describe and predict reality game theory must simplify the real world. The simplification game theory makes is to assume that players act *rationally*. Importantly, game theorists use this word in a very narrow sense, one far more precise than common usage. By rationality, game theorists mean that people maximize their expected gains (and minimize losses) given their information and available actions. Schelling, though he will at times consider the implications of relaxing this assumption, by and large retains it. He assumes that, when formulating strategy, most nations usually act rationally, and they assume their rivals will, as well.

Assuming people behave rationally strikes many as absurd. Indeed, most criticism of game theory whenever it is applied centers on this assumption, and Schelling is no exception (see section six). Nonetheless, Schelling insists that rationality must be the starting point from which all theory begins. His justification is fivefold.<sup>15</sup> First, an assumption of rationality helps generate theory, and this theory can offer a systematic and coherent place to begin further exploration. Second, it compels us to think more carefully about what 'irrationality'

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<sup>15</sup>I draw this justification primarily from Schelling (1960, 16-20). I deal with some objections to Schelling's application of this assumption in section six.

means, what it implies, and in particular how its effects can vary widely. Third, many aspects of irrational behavior can be modeled productively within a rationalist approach (for instance, a probability that some action is taken even if that action is irrational). Fourth, even the mentally ill seem to grasp and apply rational, strategic principles, and so the assumption likely captures an intuition most human beings share. Finally, a theory of rational behavior can highlight the importance and even benefit of apparently irrational behavior in bargaining.<sup>16</sup> For these reasons, Schelling plants the foundation of strategic thinking firmly on the ground of deliberate, rational thought.

Because the assumption of rationality is a stumbling block to many, a few additional comments are in order. Importantly, Schelling, like most game theorists, does not believe people are actually rational. Rather, he thinks that people are often approximately rational and that rationality offers an attractive and fruitful way to think about the world. A careful student of his works will also note that many of his arguments turn on certain leaders or individuals behaving irrationally; Schelling saw in this analysis no contradiction, and indeed, hoped that future scholars would extend his analysis to other forms of irrational behavior. His goal was to establish a baseline: Schelling does not exaggerate in 1960 when he says that no theory of coercion exists, and he recognizes he cannot build a complete one on his own. He offers the scaffolding; others would supply the mortar. Rationality does not describe the world—but it does *begin* to. That is all Schelling intends to say.

## 5 Arms and Influence

Schelling is remembered chiefly for three books: *The Strategy of Conflict*, *Strategy and Arms Control*, and *Arms and Influence*. The first made him famous, but the last contains the fullest development of his thought, and it is, in the judgment of this reader, the best introduction

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<sup>16</sup>To these I would add a reason Schelling does not offer but that seems implicit in his writings: the effect of irrational attributes cannot be estimated until the predicted effect of rationality is known.

to Schelling of all his works.<sup>17</sup>

## 5.1 Coercion

I began this essay by asserting that American nuclear strategists invented the first systematic theory of coercion; I also noted that, until they came along, the word's very definition remained hazy. Schelling provides it: coercion is the "exploitation of potential force,"<sup>18</sup> and so all theories of coercive bargaining explore how someone uses "the power to hurt" to obtain what they desire.<sup>19</sup> Coercion is thus contrasted with brute force, which simply takes (or defends) what it desires.<sup>20</sup> To many this distinction might seem academic—violence is violence, after all—but Schelling explains why it is essential. The logic of *force* differs fundamentally from that of *threats* of force.

The success of brute force depends on the strength of an opponent, but the success of coercion depends upon his interests. Whether I can take something from you depends on how well you can defend it, but whether I can convince you to give me something depends on how much you value it. Thus, coercion demands a careful knowledge of an enemy's desires: one must know what he loves and how much he will endure before parting with it.<sup>21</sup> Indeed,

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<sup>17</sup>First, because nothing in *SoC*, except game theory, is not also in *AI*; second, because not all readers have the skill or training to access the game theory in *SoC*; third, because *AI* takes more seriously the role of non-rational forces and how they figure into strategy (especially nuclear strategy); fourth, because the contributions to game theory advanced in *SoC*, while revolutionary, are now common practice; fifth, because it comes at the end of the 'golden age' of American nuclear strategy, and after it are no major advances; sixth, because it ties together the different threads of Schelling's thought in a way no other work does (especially its integration of commitment, brinkmanship, and focal points); and finally and perhaps most importantly, because *AI* is the most engagingly written of all his books. In short: Schelling's greatest strength is his ability to explain game theoretic ideas in plain English, and this strength is at its height in *Arms and Influence*. In any case, if a reader would prefer to start with Schelling's more famous work, there is already an excellent retrospective on *SoC*, one written by a Nobel laureate; see Myerson (2009)

<sup>18</sup>Schelling (1960, 5). I use here the definition from *SoC* for its brevity; *AI* contains a more careful and lengthy explanation of the concept, as detailed below.

<sup>19</sup>Schelling (1966, v)

<sup>20</sup>The importance of this distinction should not be understated. The dictionary and common usage both include the *use* of force within the realm of coercion; to Schelling, this is a basic confusion he struggles to eliminate.

<sup>21</sup>This difference might account for the key disagreement between Sun Tzu and Clausewitz on the role of information. Clausewitz is, at the end of the day, a theorist of brute force, but Sun Tzu has a greater appreciation for the role of coercion in war, and hence his greater emphasis on the importance of information, particularly about an enemy's strategy.

coercion can enable even a weaker person or country to gain a more favorable outcome than a stronger if the weaker can credibly threaten something the stronger values (and the stronger cannot make a similar threat).

In this way, seemingly senseless violence becomes purposeful. Perhaps one country cannot hope to defeat another, but it might be able to hurt its enemy, and this ability to hurt, quite independent of actual strength, can suffice to obtain a desired outcome. Thus, although nuclear weapons do not in the least help the United States to conquer Russia (or vice versa), they are far from useless. The sheer threat of pain, uncoupled from any threat of victory, can induce an enemy to comply with one's demands. Thus, unlike some of his contemporaries, Schelling never stresses the need to win a nuclear war, since winning is beside the point. The character of the Cold War did not really depend on which side would probably come out ahead in a nuclear exchange; rather, it turned on how well each side could use the threat of monumental pain to get what it wanted.

Here is where nuclear weapons change the world. Schelling observes that, for most of history (or at least, recent history), some sort of military victory has been a prerequisite to successful coercion.<sup>22</sup> With a few exceptions, one state could not threaten great pain against a rival unless it could also defeat that rival. But nuclear weapons overthrow this principle, for one country can impose unfathomable damage even while losing a war. Thus, returning to this essay's opening thesis, before nuclear weapons coercion had largely been limited to the politics of surrender, and the subject did not occupy grand strategic thinkers as much as the politics of war. If military victory had to precede coercion (rather than a stalemate or truce), then one could coerce only those one could defeat; unsurprisingly, therefore, relative power dominated international affairs. With the dawn of nuclear weapons, coercion became the essence of international politics, for to avoid war became vastly more valuable than to exploit one's war-making strength. Or, in Schelling's formulation, with nuclear weapons, "the power to hurt is more impressive than the power to oppose."<sup>23</sup> Consequently, to explain

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<sup>22</sup>See especially Schelling (1966, 12-24).

<sup>23</sup>Schelling (1966, 26).

international outcomes, one had to examine the politics of coercion more and more, and the politics of war less and less.

Schelling's analysis of nuclear weapons might seem obvious, but at the time it was strikingly original. Indeed, many people still subscribe to a view he refuted fifty years ago. Libraries of books, articles, and interviews argue that nuclear weapons are a fundamentally new way of war because of their unprecedented destructive power. This is a mistake. The nuclear age is not the first in which human beings can eliminate entire civilizations or even a large part of the earth's population. As Schelling grimly observes, "against defenseless people there is not much that nuclear weapons can do that cannot be done with an ice pick."<sup>24</sup> Instead, he points out, there are only two real differences between nuclear weapons and previous technologies: first, the speed with which they operate; second, the ability of even defeated states to use them. The latter suffices to explain the rise of coercion as the fundamental tool of international relations. But the former is essential to explain how coercion could succeed, for they affect commitment.

## 5.2 Commitment

The success of coercion depends on its contingency: an enemy not only must believe the threat of pain, but also the assurance of its absence should he comply. If pain will result whether or not he complies, he might as well defy his opponent as submit. Likewise, if he knows an enemy would not follow through with a threat, he has no incentive to comply. Thus, both threats and assurances require actors to be able to commit to certain courses of action, causing a rival to believe that what they say they will do is what they actually will do. But these commitments are often exceedingly difficult to make. Exploring the nature of commitment, how and under what circumstances someone can make them credible, is one of Schelling's most lasting contributions.

Schelling's insight into commitment is again a product of the nuclear age. Typically,

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<sup>24</sup>Schelling (1966, 19).

among nations, disaster does not loom so immediately as with nuclear weapons. Two trucks might face catastrophe if they collide on the highway, but nations, even if they begin a war, can theoretically end it before suffering too much injury. Nuclear weapons change this ability, for by the time a war begins it may prove too late to stop catastrophe. Instead of incurring tolerable costs over an extended conflict, nuclear states face immediate and intolerable costs if one does not yield. As Schelling explains, the challenge is thus to give your enemy the last move.

Another phrase for this final step is the 'last clear chance.'<sup>25</sup> Essentially, if one leader or country can guarantee disaster unless the other yields, then of course the other will do so. Here Schelling introduces many of his most famous paradoxes. For many strategists, especially military strategists, Schelling upends traditional thought. Having the initiative is no longer a virtue but a vice, for it left a leader the 'last clear chance' and thus the worse bargaining position. He recommends that policy options should be eliminated, ideally to one. Control of a situation should be surrendered, not just to an opponent, but possibly even to chance, in order to coerce an enemy to yield. Even rationality can handicap a leader, and affecting an unstable mien might be the strongest bargaining tactic imaginable. All of these follow from one basic insight: unlike in war, when coercing an enemy it pays not to have the next move—if the next move is the last chance to avert disaster.<sup>26</sup>

The ideal strategy, thus, is to bind oneself utterly to take an action if an enemy violates a particular boundary or principle. In the case of nuclear weapons, the best strategy is for America to commit definitively to start a nuclear apocalypse if the Soviet Union fails to satisfy any of its demands. The problem with this strategy, of course, is that such a commitment is impossible.<sup>27</sup> Therefore, Schelling asks the sensible albeit terrifying question—how

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<sup>25</sup>In a classic example of Schelling's breadth and novelty, he borrows this concept from insurance law and applies it perfectly to international conflict, Schelling (1966, 44).

<sup>26</sup>Schelling, of course, is not the first strategist to suggest burning bridges. See Sun Tzu (1963, XI.33).

<sup>27</sup>This impossibility makes strategies of graduated escalation reasonable. Ideally, a state would commit to the worst possible outcome, but (as discussed later) its commitment to such a catastrophe might be less credible than its commitment to less-worse outcomes. Thus, states might come to prefer a strategy of graduated, rather than total, escalation.

do we help ensure America really would start such a war?

The answers are numerous but essentially of a single kind: we eliminate our other options. We place troops in Germany so that, if the Soviets invade, we will automatically be involved in a European war whether we like it or not. We stake our nation's honor (and our reelection chances) on the success of a particular negotiation. We build our reputation on interconnected alliance commitments, so that if we renege once we lose them all. We might even consider ceding control of nuclear weapons to local commanders.

In all of these answers, the problem of commitment arises from what students of international relations would call anarchy—not the anarchy of disorder, but the anarchy of ungoverned spaces. Most coercive bargaining, whether labor disputes or international crises, occurs at least in part outside the realm of enforceable law. In the world of perfectly enforced contracts, credibility is not a problem: I sign a document saying I will do something, and if I do not do it, I face unacceptable punishment with absolute certainty. Such a world scarcely exists in a well-regulated democracy; it certainly does not exist between nations. So, how does America convince the USSR it will take certain actions which it would never actually want to take? In answer, Schelling introduces another idea, one again even more brilliant than the last.<sup>28</sup>

### 5.3 Brinkmanship

Schelling's single most important, original, and celebrated idea is 'the threat that leaves something to chance.' This notion seems to be the key to understanding the Cold War. Without it, deterrence and nuclear politics make no sense; with this idea, the events spanning 1952-1989 begin to cohere.

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<sup>28</sup>I do not here have space to examine Schelling's many refinements of commitment. I will mention in this note only the most significant: the subdivision of coercion into deterrence and compellence. (Schelling suggests that J. David Singer makes a similar distinction, but no one seems to have read or applied Singer's work as they did Schelling (Schelling, 1966, 71).) All coercion is some combination of these two. Deterrence is a threat to do X *if* an enemy does Y; compellence is a threat to do X *until* an enemy does Y. Once again, the distinction seems irrelevant, but Schelling shows its hidden significance: to deter is almost always easier than to compel.

The major problem with most approaches to Cold War strategy is simple: no one could credibly commit to destroy the world. No matter how many options countries might eliminate for themselves, they could never eliminate the decision to begin Armageddon. And so deterrence could not rest on the threat to escalate conflict to nuclear war, because no one in their right mind would deliberately do so. Whatever the US might say, it would never intentionally begin a nuclear holocaust in order to save Berlin. And yet deterrence seemed to work. What is more, nuclear weapons seemed to play a major role in international politics. How could this be?<sup>29</sup>

Schelling was not the first to observe this problem, but he was the first to solve it.<sup>30</sup> While no one could credibly threaten nuclear war, the superpowers *could* credibly threaten to increase its risk. Virtually nothing was worth nuclear war, but Cuba might be worth a 5% chance of it.<sup>31</sup> Schelling offers a memorable and influential passage:

international relations often have the character of a competition in risk taking, characterized not so much by tests of force as by tests of nerve...the perils that countries face are not as straightforward as suicide, but more like Russian roulette.<sup>32</sup>

Or, as he put it in the *Strategy of Conflict*, brinkmanship is “the tactic of deliberately letting the situation get somewhat out of hand, just because its being out of hand may be intolerable to the other party and force his accommodation.”<sup>33</sup>

Where does this risk come from? The most likely source is accident, whether that entails a

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<sup>29</sup>Faced with this puzzle, many authors and strategists, especially Kahn, tried in vain to argue that a nuclear war was winnable, but their arguments, while they gained great attention, were never truly persuasive.

<sup>30</sup>Schelling also did not invent the term ‘brinkmanship’ (Dulles did), but we can safely credit him as the first person to give it coherence. The term enjoyed widespread currency long before Schelling wrote either *Strategy of Conflict* or *Arms and Influence*, but its use was ambiguous and unclear. Indeed, many people thought that brinkmanship required a credible threat to start nuclear war, and that the main purpose of heightening tension was to make one’s commitment clear to a rival. Obviously, this account of the tactic was dissatisfying, leading many to doubt the tactic’s value. Not until Schelling did people begin to understand how brinkmanship might actually function - that it was not so much about demonstrating commitment as about putting an enemy into an intolerably risky situation.

<sup>31</sup>It might have been worth even more: famously, during the Cuban Missile Crisis Kennedy estimated the odds of nuclear war as somewhere between  $\frac{1}{3}$  and  $\frac{1}{2}$ , though many historians have thought this estimate inaccurate.

<sup>32</sup>Schelling (1966, 94).

<sup>33</sup>Schelling (1960, 200).

Soviet ship unwittingly crossing a blockade line or a few drunken infantrymen stumbling into Red territory.<sup>34</sup> It can also result from psychology or irrational decision-making, especially if leaders are caught up by events and unable to think clearly. Sometimes it can result from incurring unintentional commitments which then must be honored (as the U.S. did with Taiwan). But however it arises, states can manipulate the level of risk they face. By beginning a limited war, by putting troops on the ground, by raising the level of domestic alarm—the list goes on—a country can increase the risk both sides face, ideally to a level intolerable to its opponent. Once this level is reached, its rival will yield.

Crucially, while countries somewhat control the level of risk, they do not control the risk itself. No one chooses to start a nuclear war; rather, during a crisis, a war simply and unintentionally breaks out. Thus, deterrence does not rest on the incredible threat to initiate nuclear war; rather, deterrence rests on the quite credible threat to risk nuclear war if one's demands are unmet. It is this kind of threat, Schelling emphasizes, which is the nature of crisis diplomacy.<sup>35</sup>

## 5.4 Stability

Brinkmanship increases the likelihood of accidental war during a crisis in order to extract concessions. But outside of crises, all countries have an incentive to minimize the risk of accidental war. Deterrence may function perfectly, but that is not enough to prevent disaster: if the foundation of nuclear diplomacy is brinkmanship, and brinkmanship involves

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<sup>34</sup>Importantly, Schelling stresses that accident itself cannot cause war but only their incentives on decisions (unless people are behaving irrationally). "The whole idea of accidental or inadvertent war, of a war that is not entirely intended or premeditated, rests on a crucial premise—that there is such an advantage, in the event of war, in being the one to start it and that each side will be not only conscious of this but conscious of the other's preoccupation with it" Schelling (1966, 227). Note his anticipation of the literature on the offense/defense balance.

<sup>35</sup>It is worth noting that the modern bargaining model of war, which otherwise owes almost everything to either Schelling or Clausewitz, seems to have forgotten brinkmanship as a cause of violent conflict. (See for instance the list of rationalist explanations in Jackson and Morelli (2011); the classic explanations as articulated in Fearon (1995) are information problems, commitment problems, and indivisible goods.) Schelling takes great care to remind us that brinkmanship only works because it is an *actual* risk, and so nuclear war, by the very nature of our bargaining tactics, must be a real possibility. MAD does not stop nuclear war; it just makes it unlikely.

the nonzero risk of war, then even if deterrence works, it might fail. Many citizens and policymakers therefore worry, quite justly, about minimizing the risk of failure during times of peace. The simplest way is arms control: since increasing the arsenals of countries increases the probability of an accident, then all countries have an interest in controlling the size of their arsenals.

Even today, many proponents of arms control then make the jump that reducing the size of arsenals reduces the risk of accidental war, but this is a mistake. The most important cause of war is not accident but the fear of surprise attack.<sup>36</sup> If one nation sees war as inevitable, or even likely, it has a strong incentive to attack before its enemy; in this way, war can become a self-fulfilling prophecy. Many of the deadliest conflicts in history resulted from this dynamic, and the great pacifying effect of nuclear weapons is to diminish the power of surprise and the importance of haste. Because the superpowers' arsenals could survive a first strike, neither had an incentive to strike first.

Schelling sets this tradeoff at the heart of questions about stability.<sup>37</sup> Limiting the arsenals of states will reduce the risk of accident, true—but it will often increase the benefits to surprise attack. If a country's arsenal is smaller and more vulnerable, its enemies have an incentive to strike first during a crisis. What is more, if a country's arsenal is more vulnerable, the country *itself* has an incentive to strike first. Reducing the risk of accident can often increase the fear of surprise attack. Arms control, if not done carefully, can actually make the world less safe. This imperative leads Schelling to recognize a great irony of his time, that “we have the anomaly of a great disarmament conference devoting itself in large measures to the protection not of women and children, noncombatants and population centers, but of weapons themselves.”<sup>38</sup>

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<sup>36</sup>Schelling calls it “the greatest piece of mischief that can be introduced into military forces, and the greatest source of danger that peace will explode into all-out war” (Schelling, 1966, 227).

<sup>37</sup>A study of the word's widespread and many uses alone could occupy volumes. In his use of the word 'stability', Schelling is not as consistent as elsewhere, but his use seems to center on minimizing the returns to surprise attack. I have not the space here to do Schelling's treatment of the idea justice, so I will focus only on its intersection with arms control.

<sup>38</sup>Schelling (1966, 233).

## 5.5 Focal Points

As states desire to increase stability in peace, minimizing the risk of accidental escalation, so too in war. Because countries share an interest in avoiding excess destruction, they have an interest in circumscribing the risk that a limited war will escalate. During the Cold War, the Soviet Union and United States both restrained the ways they fought proxy wars in order to reduce the risk of nuclear escalation (Schelling focuses on Korea in particular). But a difficulty arises: what will be the level of restraint? Are tactical nuclear weapons permissible, but not ones with larger loads? Perhaps certain kinds of delivery systems would be allowed (for instance, ones launched from a proxy state's territory), but not others? In game theory, the dilemma is known as *the problem of multiple equilibria*, since any one of these conventions seems plausible. So what will states do?

Schelling answers it by drawing on his first contribution to the theory of strategy, published a decade before *Arms and Influence* but revisited throughout his career: the concept of a focal point.<sup>39</sup> A focal point is something which, while perhaps having no intrinsic relevance to the question at hand, is nonetheless different because convention makes it different. The classic example Schelling supplies is a line of latitude. The lines crossing our maps and globes are not drawn by the hand of God but by historical accident, and yet, they routinely serve as essential tools in diplomatic negotiations. Similarly, while no nuclear weapons might not be the optimal usage policy, it is the clearest. The difference between different kinds of warheads, yields, and delivery systems is obscure and difficult to specify. Where exactly do you draw the line? But their total non-use is unambiguous. Consequently, it is the most obvious focal point around which states' policies can converge. And, happily, they did.

Schelling revisited this theme in his Nobel lecture.<sup>40</sup> What we have come to call the 'nuclear taboo' is perhaps the most important of all focal points. We should avoid employing nuclear weapons for even seemingly innocuous purposes (for instance, demolishing

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<sup>39</sup>Schelling (1957).

<sup>40</sup>Schelling (2005).

a mountain to put in a road), since such employment would accustom people to their use. Conceivably, many levels exist at which we could usefully and profitably employ nuclear weapons. But we should not disregard the costs of abandoning the salutary benefits of our present, unambiguous policy. The world has converged on a focal point, and disrupting that convergence, even if seemingly sensible in the short run, could lead to a much less desirable equilibrium. The second use of a nuclear weapon will be far easier than first.

## 6 Criticism

Coercion, commitment, brinkmanship, and focal points are probably Schelling's four most important theoretical innovations. Before turning to their influence, I first examine their critics. These fall into four categories; I discuss each category in turn.

Most commonly, Schelling is criticized for his theory's underpinnings. While Schelling appreciates the importance of non-rational, psychological, and cultural factors in bargaining, by and large his theories rest explicitly on the assumption of rationality. Many readers stop here: people are so obviously irrational, that no theory which rests on such an obviously absurd assumption could possibly be useful.<sup>41</sup> This critique, though common, is the least important and most easily dispatched: every theory rests on assumptions which do not wholly reflect reality; whether a theory is useful we cannot judge from its assumptions but only from its application.

A more subtle critique argues not that people aren't rational but that rational people wouldn't behave as Schelling says. In particular, rational individuals would never elect to 'play the game' which Schelling describes.<sup>42</sup> Brinkmanship might work in the crises Schelling describes—but what sensible person would ever be caught in such a crisis in the first place? Nonetheless, such crises *do* occur, and people *do* seem to behave the way Schelling describes.

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<sup>41</sup>Skeptical but less trenchant critics suggest that the assumption, while not invalidating the efforts, nonetheless greatly limit it. Hedley Bull, as quoted in Freedman, says, "the 'rational action' of a kind of 'strategic man'...on further acquaintance reveals himself as a university professor of unusual intellectual subtlety...must later be related back again to the world" (Freedman, 1981, 184-5).

<sup>42</sup>See Williams (1991).

Ultimately, this critique seems to rest not on the world the critics observe, but on the world they would like to inhabit. Brinkmanship does make rational sense, at least to some people, and this line of criticism is really a critique of leaders for having interests which make brinkmanship a conceivable strategy.

Hence the third point of criticism, which attacks the morality of Schelling's approach. Most prominently, Anatol Rapoport, a fellow game theorist, despises the application of game theory's methods to nuclear conflict. He fears that, by applying strategic thinking to international affairs, we dehumanize others and by so doing willingly consider scenarios which ordinarily we would never begin to contemplate. In short, Rapoport fears that the very act of thinking rationally makes the thinker less moral. This charge is not unique, and like Herman Kahn Schelling is often vilified for the seemingly nonchalant way he discusses nuclear annihilation. Some readers find it enlightening how nuclear weapons can be profitably compared to car accidents; others find it indefensible. Schelling, though scathing, does not try to refute this position, recognizing that at root lies a normative disagreement, not a scientific one:

Rapoport might agree with me [Schelling] as a theorist but, on matters of war and peace, he does not believe in disinterested research... [and this explains] his strong belief that strategic thinking is bad no matter how good it is.<sup>43</sup>

The final critique of Schelling—and about this there is no real debate—is his lack of data.<sup>44</sup> By Schelling's own admission, he offers only illustrations, unscientific samples, and anecdotes. The closest he comes to a case study might be a five page example from the Cuban Missile Crisis. Any well-trained scholar can offer a self-consistent theory of crisis behavior; without data, why should we favor Schelling's over any other? This criticism is important but not confounding. Schelling never offers his theories as proven; he offers

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<sup>43</sup>Schelling (1964, 1088).

<sup>44</sup>Marc Trachtenberg, an historian, quotes Bernard Brodie to criticize the writings of nuclear strategists: "One of the distinctive weaknesses,' he said, 'of the otherwise spectacular kind of strategic analysis that has developed especially in the United States is that it often seems to be conspicuously lacking in something that I can only call historic sense or sensitivity'" (Trachtenberg, 1988, 468).

them as hypotheses. His own and other generations have found him enlightening because he seems to describe reality; he did not supply the proof, but it seems subsequent experience has. When approaching Schelling, perhaps readers should proceed with caution, but that caution does not make him less worth reading. He enjoys an enormous influence for a reason.

## 7 Influence

In retrospect, Schelling's most important insight is that war is not a zero-sum game. This same insight transformed Cold War policy, game theory, and political science. Many others had realized this fact before, but no one had traced its consequences. If war (or any conflict) is not zero sum, if there are positive gains for both sides from avoiding conflict, then the distribution of these gains will matter—and can be itself a source of conflict. What is more, how states bargain over this distribution will operate according to rules fundamentally different from those of war, though not so very different from those of blackmail and child-rearing. Together, Schelling's theories compose the world's first theory of coercion.

To know to what extent ideas shape decisions is always difficult, but historians of the Cold War seem to agree that Schelling—along with Brodie, Kahn, and Wohlstetter, whom we know were read, consulted, and admired by policymakers at the highest levels of authority—had enormous influence on American grand strategy. What is more, we can trace the spread of their ideas to various areas of American policy. For instance, Robert Ayson argues that the adoption of 'stability' as the foundation of American strategy is the direct result of these strategic thinkers.<sup>45</sup> Particularly because a nuclear war had never been fought, policymakers relied upon theorists to understand how to structure their forces and even to decide which weapons to acquire.<sup>46</sup> Schelling, as the most accessible (and logical) of all nuclear strategists, proved uniquely influential to American policy.

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<sup>45</sup>Ayson (2004, 4).

<sup>46</sup>"Deterrence theorists made specific predictions during the 1950s about how the two nuclear superpowers would behave; these in turn directly influenced decisions on the procurement, deployment, and planned use of nuclear weapons in both Washington and Moscow" citep[9]Gaddis1992. Note that Gaddis cites Schelling explicitly as the key theorist.

Though less geopolitically significant, Schelling's contributions to game theory also deserve mention. In the preface to the 1980 edition of *The Strategy of Conflict*, Schelling despaired that he had enjoyed any influence on game theory,<sup>47</sup> and today he still views himself more as a consumer of game theory than a productive game theorist.<sup>48</sup> His worries are unfounded. Several scholars (including Nobel laureates) have attributed the rise of noncooperative game theory, now by far the predominant approach, to the writings of Thomas Schelling.<sup>49</sup> Similarly, Schelling's emphasis on the problem of commitment also helped drive the discovery of one of game theory's most important ideas: subgame perfection.<sup>50</sup> The idea of focal points Schelling's early 'unscientific' surveys helped germinate experimental economics. He was also the first to introduce the idea of common knowledge to game theory, a concept now assumed in most models throughout economics and political science.<sup>51</sup> But perhaps most importantly, Schelling "remains conspicuous, among those who have done important work in game theory, in taking as much pleasure in its applications as in the theory itself" (Crawford, 1991, 266). Whether in prose or in symbols, Schelling strove to make game theory practical, to retrieve it from the mathematicians so that we could better understand reality, and for this reason he is regarded "as the theory's most inspired and

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<sup>47</sup>Schelling (1980, vi)

<sup>48</sup>Schelling remarks in his Nobel Prize biography, "I don't think I had any noticeable influence on game theorists [with 'Reorientation'], but I did reach sociologists, political scientists, and some economists" (*Thomas C. Schelling - Biographical*, N.d.). See also the BBC announcement of the Nobel Prize, *Game theorists share Nobel prize* (2005), discussed in Dixit (2006).

<sup>49</sup>See Dixit (2006) or Myerson (2009). Paul Samuelson also apparently called Schelling a national treasure (Zeckhauser, 1989, 153). Before Schelling, most game theorists studied cooperative games. Only with *The Strategy of Conflict*, Myerson argues, did people realize that the coalitional form of cooperative games assumed too much to be practically relevant to most situations of interest, especially conflict. Myerson goes on to maintain that Schelling's emphasis on timing, information, and the structure of play required analyzing extensive form games, now a staple of most models.

<sup>50</sup>Though the phrase sounds technical, its meaning is remarkably straightforward: any player in a game cannot commit to taking an action which, in the event that actor is faced with the decision, it would not be in his interest to take. In other words, an actor cannot make incredible commitments. As with many of Schelling's contributions, this idea seems obvious, but most game theorists before its discovery did not find such incredible commitments objectionable. Indeed, the most famous of all strategies in game theory, Tit-for-Tat, is not a subgame perfect strategy for two players to use. Through Schelling's influence the absurdity of incredible commitments became apparent, and through Schelling's influence game theorists sought a way to formalize and theorize its restrictions.

<sup>51</sup>Crawford (1991, 291).

effective visionary.”<sup>52</sup>

This vision gives Schelling his most lasting influence. Unlike Kahn or Wohlstetter (or even Jomini or Douhet), whom professors assign for their historical interest, Schelling is a standard text in courses on international strategy. His analysis of coercion and of commitment remains the foundation for understanding coercive diplomacy. He is taught in policy-oriented lectures and theory-laden seminars, to curious freshmen and jaded graduate students. He is cited by historians, mathematicians, and everyone in between. In the study of international and economic conflict, he is ubiquitous—and likely to remain so. This influence is the strongest but the hardest to apprehend; all we can say is that, for anyone who has studied strategy, their thinking is in part the child of Thomas Schelling.

## 8 Conclusion

We now take nuclear strategy for granted. But in the early years of the Cold War, nuclear strategy was neither obvious nor easy. For years thinkers and practitioners revolved ideas like deterrence, brinkmanship, resolve, escalation, and reputation, trying to explain the daily realities of the Cold War. The era produced distinguished and influential works of strategy, but it was Schelling who at last bound their insights together into a single, coherent theory.

In 2005, Thomas Schelling (with Robert Aumann) won the Nobel Prize in economics. The award recognized his remarkable contributions to the study of conflict. In the process of puzzling over nuclear deterrence, Schelling developed theoretical arguments whose reach extends far beyond their subject and even their decade. Today he remains one of the most respected and widely-admired economists alive, and his reach extends far beyond his native discipline to areas of policy, political science, and criminal justice. His writings delight, even when discussing nuclear annihilation, and though the details of our present age differ from the Cold War, yet he is none the less relevant and engaging. Our methods may now be more advanced, but no author writes so clearly, vivaciously, and comprehensively about the

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<sup>52</sup>Dixit (2006, 214).

nature of conflict. He is unsurpassed.

I conclude this essay with my original thesis. What Schelling and his era achieved was something new in the theory of strategy. They bequeath us the first complete theory of coercion. This theory remains as important today as in 1966, for the rules of international relations are changed. As Schelling said then,

Military strategy can no longer be thought of, as it could for some centuries in some eras, as the science of military victory. It is now equally, if not more, the art of coercion. . . . Military strategy, whether we like it or not, has become the diplomacy of violence.<sup>53</sup>

To study war, we must read Clausewitz; to study institutions, Hamilton; democracy, Tocqueville. And to really grasp coercion—the diplomacy of violence, the *strategy of conflict*—we must read Schelling.

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<sup>53</sup>Schelling (1966, 34).

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