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Facing Nuclear War: Luck, Learning, and the Cuban Missile Crisis

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The possibility of thermonuclear war has in many ways shaped the agendas of History and International Relations (IR). To some degree—but not enough in our view—it has built connections between these fields of scholarship. The major problem confronting scholars in both fields with an interest in nuclear questions is not empirical but ethical. If thermonuclear war would be the greatest catastrophe humans could inflict upon themselves, avoiding it must become our overarching political objective. For policymakers and scholars alike this means facing up to the possibility of such a war, not denying it (Pelopidas 2020). Admittedly, the scale and unprecedented nature of nuclear war makes it unusually hard to imagine and analyse (Anders 1962; Amis 1987; Pelopidas 2022 chapter 6).<sup>1</sup> Most strategic planners and scholars recoil from the prospect of such a war and consider its prevention as the central goal of nuclear weapons and

strategy. For their critics this is a political oxymoron. Equally troubling are efforts by military and civilian strategists to reduce the problem of war avoidance to a largely technical one. Efforts to pretend that their scholarship is *detached* and *value free* inevitably lead to obfuscations and internal contradictions (Craig 2003 chapters 6 and 7; Pelopidas 2016, 327–328).

C48P2

Perhaps the most direct way to counter strategies of denial of the possibility of nuclear war is to offer evidence that nuclear war has not been as remote as the conventional wisdom supposes. We accordingly turn to counterfactual analysis as a means of exploring alternative pasts. Similar methods can be used to imagine diverse futures (Bernstein, Stein, Lebow, and Weber 2007), and we need to account for the past, present, and future possibility of nuclear war. Rigorous counterfactual analysis can expose illusions of inevitability, control and understanding, and bring to the fore possibilities that did not (yet) materialize (Clarke 2005, chapter 2; Lebow 2010, 2015; Pelopidas 2015, 2017, 251–3; Pelopidas and Verschuren 2023). Thinking about the future is critical because nuclear war planning as well as proposals for arms control and disarmament are based on imagined future scenarios. Current thinking about the future rarely goes beyond extrapolation. We must approach the future with more

imagination than mere extrapolation of present trends. We also need to study what political actors think about the future. Their imagined futures determine policy choices as much as their imagined pasts (Andersson 2018; Connelly et al. 2012; Pelopidas 2016, 330–331, 2020, 2021).

C48P3

Counterfactual analysis must rely on the best secondary studies and primary documents. We accordingly act like historians in reconstructing critical events that might have led to nuclear war and discovering why they did not. This is the mirror image of the more common use of counterfactuals to untrack wars that occurred, notably the First and Second World Wars. As Max Weber recognized, so-called facts never speak for themselves; they are products of our frames of reference. We must make these frames explicit and also the political, ethical, psychological, and technical assumptions on which they rest. They are often superficial, inappropriate, politically motivated, or badly applied. They may rest on historical ‘lessons’ and analogies whose accuracy or relevance is questionable.

C48P4

The Cuban Missile Crisis is an understandable focus of interest as it is generally assumed that it is the closest we have come to nuclear war. Most accounts of the missile crisis are indisputably modernist. They are increasingly at odds with the evidence that has emerged over the course of

the last three decades—as are the dominant narratives about the Cold War. They do not give agency sufficient recognition, and when they do often misattribute motives in their desire to construct a coherent and parsimonious narrative. Even when they downplay agency they fail to recognize the most important and common constraint on agency: loss of control arising from the impossibility of leaders to impose effectively their preferences on the organizations they ‘control’. For all these reasons these narratives present the conflict, its peaks and troughs, and ultimate resolution as reflections of underlying and changing geopolitical or economic conditions. They disregard the prospect that multiple, contradictory narratives about the Cold War can be constructed consistent with the evidence.

C48P5

The first section of our paper focuses on modernist Cold War narratives and their conceptually and empirically questionable conceits. The second addresses the missile crisis and problems of agency and control. We contend that mainstream nuclear scholarship has only learned lessons compatible with its grand narratives. Instances of loss of control over nuclear weapons and their near use are downplayed or ignored as they are inconsistent with these narratives. We conclude with thoughts on how to escape from the intellectual straight-jacket of modernity. This

involves rejection of reductionist theories in favor of theoretically informed bottom-up accounts. When investigating the possibility of nuclear war, we must engage not only with events and micro-dynamics that might trigger such war, but also with the long-term trends, conceptions, methods, historical analogies, and imagined futures. The latter are important because they produce conditions in which nuclear war becomes possible. Nuclear scholarship must recognize that it confronts uncertainty, not quantifiable risk, embrace rather than decry counterfactual methods, rethink its narrow focus on policy relevance, and engage the wider scholarly world and its practice of accountability.

C48S1

## Grand Narratives Of The Cold War

C48P6

Grand narratives were once considered the pinnacle of historical scholarship. From Gibbon's *Decline and Fall of the Roman Empire* ([1776–89] 2001) through Karl Marx's *Das Kapital* ([1867] 1965) to Arnold Toynbee's *A Study of History* (1945) and Winston Churchill's *History of the English-Speaking People* ([1956–58] 1990) they propagated political and moral lessons by 'making sense' of a complex past. These works have lost their sheen, and post-modernists have done their best to undermine the very project of grand narratives—despite producing their own (Lyotard 1979).

C48P7

David Hume rightly observed that history is distinguished from chronicles by having a plot. This is a story line that emphasizes certain developments at the expense of others and even if it involves flash backs and asides tells a linear tale in the sense that it has a beginning, middle, and end. Cold War narratives—whether grand or petit—conform to this pattern. Petit narratives tell stories about Cold War events, like the Cuban Missile Crisis, and grand narratives embed these events in efforts to make sense of the Cold War as a whole. The very notion that there is such a thing as a Cold War, with a beginning, middle, and end, is another story—and only one of many that might be told about relations among the victors of the Second World War. The Cold War in turn might be embedded in more embracing narratives about the postwar world, the twentieth century, modernity, or even the Anthropocene. The choice of petit or grand, and the character of the narrative reflect the ideological, political, and psychological projects of their authors—and often their desire for recognition, status, and material rewards.

C48P8

Narratives differ in their feature of repetition or progress. Until modern times there was little expectation of secular progress. In part for this reason there were few historical narratives. Among the most prominent exceptions are Thucydides' account of the Peloponnesian War

(1996) and Livy's of the Roman Republic (1976). Both are stories of rise and fall, and Thucydides frames his account of Athens as one instance of a more general phenomenon.

C48P9

Realist accounts of the Cold War follow Thucydides in depicting the Cold War as the latest instance of class of events: a power struggle among leading political units in the aftermath of a struggle against a common enemy. They differ from Thucydides in their greater emphasis on the role of power in causing the conflict, shaping its evolution, and determining its outcome. William Wohlforth (2003) represents this tradition in its purest form. The Cold War ended, in his judgment, because Mikhail Gorbachev recognized that the balance of power was becoming increasingly unfavorable to the Soviet Union and sought an accommodation before his bargaining position deteriorated further.

C48P10

Realist narratives emphasize the rational calculation of actors and the authority and control of leaders. Their leaders are rarely constrained by domestic or organizational politics when it comes to critical questions of national security, and do not entertain grossly inappropriate or inaccurate perceptions of their situation. For both reasons, realists argue, nuclear war during the Cold War was never a very real possibility. John Gaddis's (1987) account for the so-called 'long peace' is typical. So is its

further theoretical elaboration by Kenneth Waltz (1979) with his claim that bipolar worlds were more stable because it was easier to calculate the balance of power than it was in multipolar worlds. Wars are often the result of uncertainty or miscalculation of the balance. Rationalist accounts of war rely on the same assumption (Powell 2006; Fearon 1995; De Mesquita 1981). The most extreme version is Thomas Schelling (1987), who insists he lost no sleep during the missile crisis. If Khrushchev attempted to further challenge the US, he insisted, the generals would have put a gun to his head. The Soviet Union was outgunned conventionally in the Caribbean and at a strategic nuclear disadvantage globally and had no choice but to capitulate. Grand and petit narratives for realists are reinforcing.

C48P11

The other dominant Cold-War narrative had its roots in Christianity and more particularly in the third-century Mesopotamian apostle Mani, who propagated the philosophy of dualism. There were always opposing sides, as with good and evil, light and dark, god and the devil. Hans Morgenthau (1948, 430), a committed realist, lamented that the Cold War had quickly turned into Manichean struggle. The goal of leaders and peoples was no longer managing an acute conflict but defeating the other side. Protestant evangelicals like Billy Graham,

conservative Republicans, many Cold War liberals propagated this narrative (Lahr 2020). President Reagan referred to the Soviet Union as ‘the evil empire’ (1983).

C48P12

In Morgenthau’s view this framing made war more likely (1948, 430). To the degree the ‘other’ was regarded as the incarnation of evil, compromise became difficult to impossible. Ironically, it also made the US more like its adversary, as Democratic and Republican leaders increasingly pursued policies at odds with its proclaimed democratic values (e.g. assassinations, coups, interventions, interference in elections, support of right-wing dictators) (Lebow 2019). It gave rise to counter-narratives about the Cold War from the libertarian right and non-Marxist left, both of which stress the ways in which foreign policy has subverted American society and politics (Paul 2009; Lebow 2019).

C48P13

The liberal narrative of the Cold War arguably begins with George Kennan. His famous ‘Long Telegram’ (1947) portrayed the Soviet Union as a nasty and aggressive dictatorship, but a careful one that could be contained by a prosperous and democratic West and Japan. Sooner or later the Soviets would seek accommodation or collapse by virtue of internal tensions and contradictions. The liberal narrative quickly gave way to a militarized version, symbolized and fostered by NSC-68, presented to

President Truman in 1950. It became a prop of the Manichean narrative. The liberal narrative resurfaced at the end of the Cold War, with liberal intellectuals and academics proclaiming that the collapse of communism and the demise of the Soviet Union and its empire was proof that the only rational response to modernity was capitalist democracy (Rosecrance 1986; Friedman 1999; Ikenberry 2005). Francis Fukuyama (1992) garnered much attention with his claim that the end of History had arrived.

C48P14           The Marxist narrative never had many adherents in the US and has been more popular in the UK and Western Europe. It reduces the Cold War to economics and, depending on the author, attributes hostility to the Soviet Union to capitalist fear of socialism or the need for markets, raw materials, and foreign investment (Thompson 1982; Brewer 1990; Stephanson 2007; Dunn 2009; Anievas 2010).

C48P15           There is also a political-psychological narrative. In the early 1960s psychologists (Bronfenbrenner 2010) explored Cold War stereotypes and the ways in which they had penetrated thinking in the US. Other psychologists emphasized the extent to which major wars of the past, notably the First World War, were the result of misperception (White 1968). Psychologists and political scientists explored crisis decision-making and how faulty procedures contributed to bad policy decisions and

war. This is more petit than grand narrative. It nevertheless constitutes a challenge to realist and rationalist reliance on rationality.

C48P16           New narratives emerged late in the Cold War. The tragic narrative, implicit in the writings of Morgenthau, was made explicit in the writings of Ned Lebow (2003, 216–256) and his account of what he calls ‘classical realism’. It follows Thucydides—contra most realists—in emphasizing the ways in which so-called rational calculations are the cause of conflict and war, not means of forestalling or coping with them (Lebow, Erskine, and Lebow 2012; Williams 2022).

C48P17           Then there is a post-colonial narrative. It is concerned with the periphery (Westad 2017; Lawson and Mulich 2021). It rejects the concept of bipolarity as a justification for neocolonialism and focuses on efforts of colonial peoples, newly independent states, and neutrals to advance their agendas and the ways in which the Cold War affected them. It pays little attention to nuclear weapons and war in isolation (Said 1994; Bhabha 1994; Wilkins 2017). Postcolonial scholarship focuses on denial of access to technology, including nuclear weapons (Mahtur 2020) or crafts a notion of nuclearity (Hecht 2012) that emphasizes the ideological project behind the separation of nuclear energy and nuclear weapons (Biswas 2014). For those scholars, the focus on war avoidance should not lead to a neglect of

past and present harm caused by the extraction of nuclear materials, production, and reproduction of nuclear control regime (Biswas 2014, 2020).

C48P18            These narratives can be compared along several dimensions. First is the level of analysis. All but the psychological have generated grand and petit narratives, with the latter offered as instantiations or building blocks of the former. Second is the focus of petit narratives. The missile crisis is a primary focus of the realist, tragic, and psychological narratives, in large part because of their interest in nuclear war. They accept the conventional wisdom this crisis raised a serious prospect of war but offer quite different accounts for why it did and why war was averted. The postcolonial narrative suggests a relatively unexplored perspective: analysing the crisis from the perspective of Cuba, a central player in the crisis, and other unheard voices. The third dimension has to do with nuclear war more generally. It is a principal concern to the realist, Manichean, tragic, and psychological narratives.

C48P19            Works in these several traditions give different estimates of the likelihood of nuclear war, and they reflect different analyses of its causes. For realists, war is least likely because reason is expected to restrain political leaders from committing mutual suicide. For Manicheans it was

the most likely because they expected Soviet leaders to launch an attack the moment they thought they could benefit from it, regardless of the absolute cost to both sides. No doubt, there were Soviet officials who thought this way about the US, as the response to the Able Archer exercise in 1983 indicates (Scott 2020; Kaplan 2020, 158–163). Tragic and psychological narratives put more emphasis on war arising from loss of control, accident, and miscalculated escalation. In contrast to the Manichean narratives, their concern was with acute crisis, although they did not dismiss the possibility of war arising as a result of an accident in periods of lower tension.

C48P20                Liberalism and Marxism are teleological, and their grand narratives expect the ultimate victory of their respective movements (Ashworth 2022). Some realists made claims—generally *ex post facto*—about the outcomes of individual confrontations on the basis of the balance of power. Tragedy eschews prediction, although understands that people cannot live without making them.

C48P21                Finally we come to the question of modernity. The tragic and Manichean narratives are pre-modern in origin. Neither puts much emphasis on reason or control, which is why they make no predictions. They are otherwise quite different. Tragedy can be a vehicle for learning

the value of caution, self-restraint, and seeing the world through the eyes of others. Manicheism paints a stark picture of good and evil and discourages empathy. If tragic narratives would see nuclear annihilation as the worst of all outcomes, Manicheism would consider it acceptable if evil was destroyed (Cook 2004). Whether he meant it or not, in 1966 Mao Zedong publicly embraced this position (Kennedy 2012, 118–119).

C48P22           The realist, liberal, and Marxist narratives are squarely within the modernist tradition. They emphasize reason, calculation, control over people and the environment. Liberals and Marxists also believe in progress, which realist narratives do not. Realism straddles pre-modern and modern narrative forms, although neo-realism is distinctly modern in its pretense of being science. Overall, tragic and Manichean grand narratives make the possibility of nuclear war conceivable. On the contrary, defining features of modern grand narratives create what has been called a ‘survivability bias’ derived from a focus on control and predictability (Pelopidas 2020) which makes the possibility of nuclear war inconceivable, while claiming to account for it. The combination of those two claims characterizes the modernist overconfidence when it comes to the possibility and danger of nuclear war. It is illustrated in the treatment of the Cuban Missile Crisis, luck, and learning, we now turn to.

C48S2

## Cuba, Luck, and Learning

C48P23

There is unanimity on the need to learn lessons from the nuclear age and this crisis in particular (Allison 1971, 1–2; Lebow 1981, chapter 9; Iklé 2006 chapter 5; Blight and Lang 2005; Perry 2015). A concept of ‘nuclear learning’ was crafted by IR scholars in the 1980s (Nye 1987; Knopf 2012). Even a critical constructivist/post-structuralist take on the crisis such as Jutta Weldes’ *Constructing national interests* (1999) accepts the need to draw lessons from the crisis. There is no consensus about whether these lessons can make future confrontations more predictable or controllable.

C48P24

There were originally two schools of thought about nuclear war-avoidance in Cuba. Advocates of compellence claimed US victory and attributed it to military and nuclear superiority (Horelick 1963; Betts 1987; Kroenig 2018, 84–94). A minority denied there was a winner and argued that nuclear superiority did not affect the outcome (Waltz 2012, 7).

C48P25

Evidence from US and Soviet archives and interviews with crisis participants challenge both interpretations (Blight, Allyn, and Welch 2002 [1993]; Lebow and Stein 1994, Part I; Sagan 1993 chapters 2 and 3; Schlosser 2013; Sherwin 2020). They also reveal that policymakers overestimated their degree of control as well as the weapons’ safety and

underestimated the danger of the crisis. American and Soviet officials have endorsed these assessments and emphasized the role of luck in resolving the crisis (Ellsberg 2017, 197–201; Blight and Blanton 2002). Other officials have since then gone public about their longstanding concerns about the limits of control at the time of the crisis and its lucky outcome (Perry 2015, 3). It is now known that such worries had been voiced earlier on by high level US officials (Acheson 1969). Most importantly, we are not aware of any interpreter who changed their mind in the other direction, towards an interpretation of the crisis in terms of control, either deterrence or compellence. In addition, there is a growing awareness that nuclear weapons were a principal cause of the missile crisis (Lebow and Stein 1994, 49; Gavin 2020, 300–301).

C48P26            Revealing in this connection is the shift in former Secretary of Defense Robert S. McNamara's thinking about control, safety, and luck. During the crisis McNamara was hawkish and acted as if he believed in the controllability of the crisis, the validity of his knowledge and the safety of the weapons. At the beginning, he initiated the idea of a quarantine around Cuba and, from 25 October, advocated the use of force and escalation as well as the dropping of practice depth charges near Soviet submarines to enforce the blockade (Stern 2012, chapter 4; Kaplan

2020, 67–73). At the peak of the crisis, on 27 October he is on the record telling Attorney General Robert Kennedy: ‘you need to really escalate this ... And then we need to have two things ready. ... a government for Cuba, because we’re gonna need one after we go in with five hundred aircraft. And secondly, some plans for how to respond to the Soviet Union in Europe, cause sure as hell they’re gonna do something there’ (Stern 2012, 61).

C48P27            McNamara’s confidence was visible in 1961 during the Berlin crisis. Before safety devices called Permissive Action Links were placed on nuclear weapons he decided to equip US troops on the frontlines with Davy Crockett atomic rifles to counter a Soviet invasion. Those rifles could be used at the will of the soldier (Schlosser 2013, 280). During the missile crisis he insisted that the Navy could drop practice depth charges on Soviet submarines to lead them to surface without damaging them or leading them to respond violently. The President was stunned by his level of confidence (Stern 2012, 61). On 5 December 1962, less than two months after the crisis, McNamara was still advocating for a massive increase in the US arsenal. In other words, uncertainties regarding the estimates of the number of Soviet weapons and the expectation that US Congress would act as a veto player if he would have asked for fewer

nuclear weapons trumped considerations of nuclear weapons safety and the fueling of the arms race (Pelopidas 2021). His response to uncertainty was to ‘take whatever any reasonable person would say is required’ and ‘double it’. ‘That would be money well spent’ (Kaplan 2020, 77).

C48P28

For the next thirty years McNamara publicly hailed the crisis as a case of exemplary control and management. In a 1983 special edition of American Broadcasting Company (ABC) news *Viewpoint* following the screening of *The Day After*, which depicts a nuclear war between the US and the Soviet Union resulting in the annihilation of the US. Conservative commentator William F. Buckley cites a character from the movie claiming that ‘we overcame’ the crisis of 1962 because ‘we had a considerable deterrent which was unambiguous’. He then turns to McNamara, who asserts confidently that ‘we have a stable deterrent today’ without correcting the picture of control and safety in the crisis that was painted (McNamara 1983 at 34). McNamara displayed the same confidence in the long interview he gave on 20 February 1986 for the Public Broadcasting System (PBS) series *War and Peace in the Nuclear Age*. He called the crisis ‘the most dangerous time’ during his service as Secretary of Defense but only because ‘it was a period of great tension’. ‘And not only was it the most dangerous period in my seven years as

Secretary of Defense’, he added, ‘but I think it was also the most expertly handled’.

C48P29 In 1986 McNamara acknowledged the problem of ‘inadequate information, misinformation, emotion’, and the likelihood that ‘in a crisis, you make misjudgments’. He nevertheless mostly applied his caveats about miscalculation and loss of control to the Soviet Union.

C48P30 The reason I felt so concerned Saturday evening, as I say, I wondered whether I’d ever see another Saturday sunset, was that events were moving out of control. There were forces at work in the Soviet Union, in the West, that very possibly would have escalated, perhaps not through initiation or action by the West, I hoped it wouldn’t come that way, perhaps the Soviets would have in some fashion moved. And they had Castro to think of. Perhaps they weren’t entirely in control of his actions. They had the troops to think of perhaps they weren’t entirely in control of them. (McNamara 1986 at 50)

C48P31 In classified settings, however, McNamara showed serious concerns about safety and the command and control over the weapons as early as 26 January 1963. He briefed members of the National Security Council about

accidents in Texas and North Carolina involving the possibility of accidental explosions of Mark 39 thermonuclear weapons. The declassified summary of this account reports that ‘he went on to describe the crashes of US aircraft, one in North Carolina and one in Texas, where, by *the slightest margin of chance*, literally the failure of two wires to cross, a nuclear explosion was averted. He concluded that, ‘despite our best efforts, the possibility of an accidental nuclear explosion still existed’ (cited in Schlosser 2013, 301). Eric Schlosser concludes that McNamara was the most concerned about maintaining presidential control over the use of the weapons, not just their safety, and the one who was most scared among those who were briefed on those accidents (Schlosser 2013, 249). In January 1968, when another serious accident took place as a B-52 bomber carrying thermonuclear weapons crashed near the Thule Air Force Base in Greenland, McNamara immediately—the day after the accident—discontinued the airborne alert, requiring bombers to fly around the clock with weapons on board. (Sagan 1993, 170–180; Schlosser 2013, 325; Ellsberg 2017, 314).

C48P32

McNamara’s confidence in the safety of nuclear weapons at the time and in the chain of command was further shattered by the Oral History Conference in Havana in 1992 that gathered remaining

participants in the crisis. Alongside the discoveries about the limits of control, of leaders' knowledge at the time and of weapons' safety in the 1990s, the face to face encounter with Castro led McNamara to conclude that 'it was luck that prevented nuclear war' (McNamara in Blight and Lang 2005, 60).

C48P33            At this conference McNamara learned that Soviet submarines around Cuba each carried a nuclear torpedo. Stalking and dropping depth charges compelled the Soviet attack submarine, the B-59 to surface in the Caribbean because of low batteries and rising temperatures. Once in sight it was strafed by an ASW S-2 Tracker aircraft that flew overhead at an altitude of only 10–15 metres. Machine gun bullets hit the water in front of it and on either side. American destroyers surrounded the submarine, pointed their guns at it and tried to blind the crew on deck with searchlights. Captain Valentin G. Savitsky not unreasonably concluded that they were under attack. Out of contact with his command he reasoned that perhaps war had broken out. His orders compelled him to fire his nuclear torpedo if attacked. Before leaving port, the chief of staff of the Northern Fleet had made it clear to his submarine commanders that if attack was imminent, they should fire first (Sherwin 2020, 22–26; Plokhy 2021, 257–274).

C48P34

Savitsky and his fellow commanders made a pact among themselves that they would go down fighting rather than disgrace their country. Savitsky ordered an urgent dive and the readying and loading of their nuclear-tipped torpedo. His descent into the submarine was blocked temporarily by the stocky signaling officer, who had become stuck in the conning tower. Also on board and on deck the B-59 was Captain Vassily A. Arkhipov, representing the brigade commander. He observed that the American destroyers were firing over, not at, their submarine and that one of the destroyers was trying to signal to them. He yelled at Savitsky to cancel the dive (Sherwin 2020, 26–28; Ploky 2021, 257–274).

C48P35

The US Navy came within a hair's breadth of starting a nuclear war because its dropping of grenades to make Soviet submarines surface, and subsequent harassment by destroyers and aircraft, made at least one Soviet Captain convinced that war had broken out and that he should retaliate before being sunk. It seems almost certain that this would have happened had Captain Arkhipov not been on deck and if the signalling officer had not blocked access to the conning tower (Ploky 2021, 257–274). The submarine's torpedo would have sunk at least one ship, if not more, and—with or without authorization from the White House—the United States' Navy would have attacked all the submarines they were

tracking. There would have been a shooting war in the Caribbean involving nuclear weapons. It is anyone's guess what would have happened next.

C48P36            McNamara later acknowledged that the Excomm also knew nothing about this or of the 90 Soviet tactical nuclear weapons in Cuba (McNamara 2005, 33). Listening to Castro in 1992, he realized that the hawkish course of action he had initially advocated during the crisis could have invited Soviet escalation:

C48P37            Near the end of that meeting, I asked Castro whether he would have recommended that Khrushchev use the weapons in the face of a U.S. invasion, and if so, how he thought the United States would respond. "We started from the assumption that if there was an invasion of Cuba, nuclear war would erupt," Castro replied. "We were certain of that .... [W]e would be forced to pay the price that we would disappear." He continued, "Would I have been ready to use nuclear weapons? Yes, I would have agreed to the use of nuclear weapons." And he added, "If Mr. McNamara or Mr. Kennedy had been in our place, and had their country been invaded, or their country was going to

be occupied ... I believe they would have used tactical nuclear weapons.” I hope that President Kennedy and I would not have behaved as Castro suggested we would have. (McNamara 2005, 33; see also Ellsberg 2017, 210)

C48P38

In spite of this compelling evidence many historians and IR scholars remain reluctant to acknowledge the role of luck and the limits of safety and control—even though they maintain the need to learn from the past and use the missile crisis as a crucial reference point. Ariel Colonomos noted astutely in 2013 that ‘the “science” of international politics does not like “luck”’ (2013, 190). In 2018, Milton Leitenberg (2018, 249) concluded his study of nuclear weapons during the Cold War with the observation that ‘luck is a term one rarely finds in an academic study’. Most strikingly, scholars have not incorporated this new knowledge in their interpretation of the event (Waltz 2012, 7; Kroenig 2018). French interpreters have shown similar inflexibility (Pelopidas 2017, 258–260). Mark Bell and Julia Macdonald are an exception. They write that ‘luck was required to peacefully negotiate the Cuban Missile Crisis’ after fully acknowledging the limits of control, knowledge, and weapons safety (Bell and Macdonald 2019, 55–57, quote on 60). So too does Lebow (1987).

C48P39            Mainstream IR requirements of structured predictions and policy relevance understood as advice to future nuclear crisis managers make recognition of the limits of knowledge, control and the role of luck a priori unacceptable (Pelopidas 2016; 2017, 248–251) As a result, even Bell and Macdonald (2019, 59), in spite of their acknowledgment of the role of luck, end up quantifying the risk of nuclear use in the crisis, assess it as ‘moderate’ and conclude that ‘the brinkmanship model accurately captures the key dynamic—the manipulation of risk—of the Cuban Missile Crisis’. Frank Sauer admits his uneasiness with the notion of luck: ‘This is not only an unsettling notion’, he writes. ‘It is also hard to believe’ (Sauer 2015, 2). He excludes it from his analysis without providing any good reason. Gavin (2020, 306–307) does the same. For a thorough critique of nuclear crisis management, see Lebow (1987).

C48P40            Among historians, the impediment is resistance to counterfactual methodology, which makes it almost impossible to examine possibilities that did not materialize and therefore any assessment of the role of luck (Lebow 2015, 406; Pelopidas 2017, 251–253). There is not a word on the possibility of nuclear war or luck in avoiding it in the chapter on ‘the Cuban Missile Crisis’ in the 2010 *Cambridge History of the Cold War* or the 2013 *Oxford Handbook of the Cold War* (Hershberg 2010; Immerman

and Goedde 2013). One exception is Ruud van Dijk who writes that the crisis ‘demonstrates that individual actors are capable of taking irresponsible risks (while fortuitously also being able to choose the opposite course of action at key moments’ (van Dijk 2014, 275).

C48P41            In the face of a wealth of supporting evidence and the ability of at least some of the policymaking elite to take it aboard, the world of social science remains reluctant or unable to learn the most important lesson of nuclear crisis.

C48S3            **Conclusion**

C48P42            The July 1914 crisis triggered the First World War. Historians described it as inevitable, and this remained the conventional wisdom until quite recently (Afflerbach and Stevenson 2007, Lebow 2010; Macmillan 2013; Clark 2012). If the Cuban Missile Crisis had led to war—conventional or nuclear—historians would have constructed a causal chain leading ineluctably to this outcome (Lebow 2015, 406). Instead they have done the opposite. Because the crisis was peacefully resolved they have assumed the equal inevitability of this outcome and the narratives we have analysed provide different reasons why this is so.

C48P43            Cognitive psychologists would look to the hindsight bias to explain efforts to portray the past as overdetermined. We think more

fundamental processes are at work. In the First World War powerful political and psychological reasons were mutually reinforcing. Those in power in 1914 had strong incentives to deny to themselves and their publics any responsibility for the catastrophe.

C48P44

Just the reverse happened with the missile crisis, and for equally powerful political and psychological reasons. Belief in the ability of deterrence and compellence to prevent nuclear war was immensely reassuring to everyone. Downplaying uncertainty, denying loss of control and miscalculated escalation, exaggerating rationality, risk management, and control over nuclear weapons and the military, buttressed presidential authority and justified Kennedy's nuclear arms buildup and the off-scale military budget (Sherwin 2020, 465–469). Diverse political and economic constituencies had strong interests in propagating this fairy tale. The realist narrative provided the vehicle for this reading of the crisis and its widespread acceptance is hardly surprising. The crisis also gave a boost to the Manichean narrative as Khrushchev and the Soviet Union could readily be portrayed as aggressors only held in check by superior power. The Marxist narrative suffered, and the liberal narrative accommodated. The crisis was the catalyst for the psychological narrative, but it took a decade to develop and had relatively little traction, even in the academy.

C48P45

These political and psychological defenses have important implications. One of the reasons the July crisis was not resolved was the belief, among so many leaders and diplomats in Russia, France, and Britain, that it would be resolved peacefully as had earlier European crises. The realist narrative of Cuba created similar expectations about the ability of superpowers leaders to manage their relationship. This optimism has carried over into the post-Cold War era and conflicts between the US and China and Russia. It has also provided the justification for even more disproportionate military spending, new generations of nuclear weapons, and corresponding strong reasons to resist all the evidence from Cuba and other crises that luck had played a very large role in their peaceful resolution. Rather than enhancing conflict management and prevention, dominant narratives make crises, accidents, and war more likely.

C48P46

The tragic narrative suggests that the realist narrative and the nuclear policies based on it are what made luck necessary. The missile crisis and the Cold War accordingly offer a broader lesson about modernity, and one that is the central theme of Sophocles' exploration of the fate of Oedipus. In his desire to escape the prophecy that he will kill his father and bed his mother, he fulfills it. Oedipus' power and reason—and commitment to avoid murder and incest—are responsible for this

outcome. So too, the tragic narrative asserts, have overreliance on power and reason in the modern world brought about undesired outcomes, and not infrequently the very ones people were trying to avoid. It is possible that a sincere commitment to avoid nuclear war could make it more likely.

C48P47

What should be done? We in the academy, government, and media must recognize how lucky we have been. We cannot blindly count on good fortune and must make the possibility of nuclear war imaginable. We need to identify pathways that lead to war other than a conscious decision by an evil adversary to start one. We must take seriously problems of miscalculated escalation through fear, flawed estimates and judgments, and loss of control. We need to broaden the audience for this new sensitivity and analysis beyond the narrow community of nuclear crisis managers. Ideally, we should combat the organizational, corporate, and political interests that want to maintain the dominant narrative. To do so, we need to become able to distinguish a sincere commitment to avoid nuclear war grounded in the belief that it is possible from lack of imagination or refusal to believe in its possibility (Anders 1962, 496–497). Tragedy may apply to the former but should not be misused as an excuse for the latter.

C48P48            We scholars must continue archival research on cases of near nuclear use through decisions or accidents. We must embrace counterfactual analysis as a means of probing the contingency of important political outcomes and further develop this method. We need to embrace the Knightian distinction between risk and uncertainty, and develop a more sophisticated understanding of luck. Above all we must avoid the survivability bias.

C48S4            **References**

C48P49            **Acheson, D. 1969.** ‘Dean Acheson’s Version of Robert Kennedy’s Version of the Cuban Missile Affair’. *Esquire* (February 1969).

C48P50            **Afflerbach, H. and D. Stevenson, eds. 2007.** *An Improbable War: The Outbreak of World War I and European Political Culture Before 1914*. New York: Berghahn.

C48P51            **Allison, G. T. 1971.** *The Essence of Decision. Explaining the Cuban Missile Crisis*. New York: Little, Brown.

C48P52            **Amis, M. 1987.** ‘Thinkability’. Introduction to *Einstein’s Monsters*. London: Penguin: 1-23.

C48P53            **Anders, G. 1962.** ‘Theses for the Atomic Age’. *Massachusetts Review* 3(3): 493–405.

- C48P54 Andersson, J. 2018. *The Future of the World. Futurology, Futurists, and the Struggle for the Post-Cold War Imagination*. Oxford: Oxford University Press.
- C48P55 Anievas, A. 2010. *Marxism and World Politics: Contesting Global Capitalism*. London: Routledge.
- C48P56 Ashworth, L. 2022. 'Liberal Progressivism and International History'. in this volume.
- C48P57 Bhabha, H. K. 1994. *The Location of Culture*. London: Routledge.
- C48P58 Bell, M. S. and Macdonald, J. 2019. 'How to Think About Nuclear Crises'. *Texas National Security Review* 2(2): 41–65.
- C48P59 Bernstein, S., Stein, J., Lebow, R. N., et al. 2007 'Social Science as Case-Based Diagnostics'. In *Theory and Evidence in Comparative Politics and International Relations*, eds. R. N. Lebow and M. I. Lichbach, 229–260. New York: Palgrave-Macmillan.
- C48P60 Betts, R. 1987. *Nuclear Blackmail and Nuclear Balance*. Washington D.C.: Brookings Institution Press.
- C48P61 Biswas, S. 2014. *Nuclear Desire. Power and the Postcolonial Nuclear Order*. Minneapolis: University of Minnesota Press.

Biswas, Shampa. 2020. 'Nuclear Harms and Global Disarmament'. In *The Age of Hiroshima*, eds. G. J. Ikenberry and M. Gordin, 259–275. Princeton: Princeton University Press.

C48P62 Blight, J., Allyn, B. J., and Welch, D. 2002. *Cuba on the Brink: Castro, the Missile Crisis and the Soviet Collapse*. New York: Rowman & Littlefield Publishers.

C48P63 Blight, J. and Blanton, T. S. 2002. 'A Conversation in Havana'. *Arms Control Today* 32(9): 6–7.

C48P64 Blight, J. and Lang, J. 2005. *The Fog of War. Eleven lessons from the life of Robert S. McNamara*. New York: Rowman and Littlefield.

C48P65 Brewer, A. 1990. *Marxist Theories of Imperialism: A Critical Survey*, second edn. London: Routledge.

C48P66 Bronfenbrenner, U. 2010. 'Mirror Image in Soviet-American Relations: A Social Psychologist's Report'. *Journal of Social Issues* 17(1): 5–56.

C48P67 Churchill, W. S. 1990. *A History of the English-Speaking Peoples*. New York: Dorset House.

C48P68 Clark, C. 2012. *Sleepwalkers: How Europe Went to War in 1914*. London: Allen Lane.

- C48P69 Clarke, L. 2005. *Worst Cases. Terror and Catastrophe in the Popular Imagination*, Chicago: Chicago University Press.
- C48P70 Colonomos, A. 2013. *The Gamble of War*. Basingstoke: Palgrave.
- C48P71 Cook, M. 2004. *The Moral Warrior*. Albany: State University of New York Press.
- C48P72 Connelly, M., Fay, M., Ferrini, G., et al. 2012. ““General, I Have Fought Just as Many Nuclear Wars as You Have”: Forecasts, Future Scenarios, and the Politics of Armageddon’. *American History Review* 117(5): 1431–1460.
- C48P73 Craig, C. 2003. *Glimmer of a New Leviathan. Total War in the Realism of Niebuhr, Morgenthau, and Waltz*. New York: Columbia University Press.
- C48P74 Dunn, B. 2009. *Global Political Economy: A Marxist Critique*. London: Pluto.
- C48P75 Ellsberg, D. 2017. *The Doomsday Machine. Confessions of a Nuclear War Planner*. New York: Bloomsbury.
- C48P76 Erskine, T. and R. N. Lebow, eds. 2012. *Tragedy and International Relations*. London: Palgrave.
- C48P77 Fearon, J. 1995. ‘Rationalist Explanations for War’. *International Organization* 49(3): 379–414.

- C48P78 Friedman, T. 1999. *The Lexus and the Olive Tree: Understanding Globalization*. New York: Farrar, Straus, and Giroux.
- C48P79 Fukuyama, F. 1992. *The End of History and the Last Man*. New York: Free Press.
- C48P80 Gaddis, J. L. 1987. *The Long Peace*. Oxford: Oxford University Press.
- C48P81 Gavin, F. J. 2020. 'History and the Unanswered Questions of the Nuclear Age'. In *The Age of Hiroshima*, eds. M. D. Gordin and G. J. Ikenberry, 294–311. Princeton: Princeton University Press
- C48P82 Gibbon, E. 2001. *The History of the Decline and Fall of the Roman Empire*. London: Penguin.
- C48P83 Hershberg, J. G. 'The Cuban Missile Crisis'. In *The Cambridge History of the Cold War*, Vol. II, eds. M. Leffler and O. A. Westad, 65–87. Cambridge: Cambridge University Press.
- C48P84 Hecht, G. 2012. *Being Nuclear*. Boston: MIT Press.
- C48P85 Horelick, A. 1963. 'The Cuban Missile Crisis: An Analysis of Soviet Calculations and Behavior'. Santa Monica: Rand.
- C48P86 Ikenberry, G. J. 2005. *Liberal Order and Imperial Ambition: American Power and International Order*. New York: Polity Press.
- C48P87 Iklé, F. C. 2006. *Annihilation from Within*. New York: Columbia University Press.

- C48P88 Immerman, P. and Goedde, P. 2013. *Oxford Handbook of the Cold War*.  
Oxford: Oxford University Press.
- C48P89 Kaplan, F. 2020. *The Bomb. Presidents, Generals and the Secret History of Nuclear War*. New York: Simon & Schuster.
- C48P90 Kennan, G. F. 1947. 'The Sources of Soviet Conduct'. *Foreign Affairs*  
25(4): 566–582.
- C48P91 Kennedy, A. B. 2012. *The International Ambitions of Mao and Nehru*.  
Cambridge: Cambridge University Press.
- C48P92 Knopf, J. W. 2012. 'The Concept of Nuclear Learning'. *Nonproliferation*  
*Review* 19(1): 79–93.
- C48P93 Kroenig, M. 2018. *The Logic of American Nuclear Strategy: Why Strategic Superiority Matters*. Oxford: Oxford University Press.
- C48P94 Lahr, A. 2020. 'American Evangelical Politics During the Cold War'.  
*Oxford Research Encyclopedias*. Available at:  
<https://oxfordre.com/religion/view/10.1093/acrefore/9780199340378.001.0001/acrefore-9780199340378-e-701?rskey=vD2pmx&result=2>. Accessed April 1, 2023.
- C48P95 Lawson, G. and Mulich, J. 2021. 'Global History and IR'. in this volume.
- C48P96 Lebow, R. N. 1981. *Between Peace and War: The Nature of International Crisis*. Baltimore: John Hopkins University Press.

- C48P97 Lebow, R. N. 1987. *Nuclear Crisis Management. A Dangerous Illusion*. Ithaca: Cornell University Press.
- C48P98 Lebow, R. N. 2010. *Forbidden Fruit. Counterfactuals and International Relations*. Princeton: Princeton University Press.
- C48P99 Lebow, R. N. 2015. 'Counterfactuals and Security Studies'. *Security Studies* 24(3): 403–412.
- C48P100 Lebow, R. N. 2019. *A Democratic Foreign Policy*. New York: Palgrave-Macmillan.
- C48P101 Lebow, R. N. 2003. *The Tragic Vision of Politics: Ethics, Interests, and Orders*. Cambridge: Cambridge University Press.
- C48P103 Lebow, R. N. and Stein J. 1994. *We All Lost the Cold War*. Princeton: Princeton University Press.
- C48P104 Leitenberg, M. 2018. 'The Hazards of Operations Involving Nuclear Weapons during the Cold War'. *Journal of Cold War Studies* 20(3): 207–249, Doi:10.1162/jcws\_a\_0082.
- C48P105 Livy, T. 1976. *Rome and the Mediterranean: The History of Rome from Its Foundation, Books 31–45*. London: Penguin.
- C48P106 Lyotard, J-F. 1979. *La Condition postmoderne: Rapport sur le savoir*. Paris, Minuit.
- C48P107 Macmillan, M. 2013. *The War That Ended Peace*. London: Profile.

- C48P108 Mathur, R. 2020. *Civilizational Discourses in weapons control*.  
Basingstoke: Palgrave.
- C48P109 Marx, K. 1965. *Das Kapital*. Moscow: Progress Publishers.
- C48P110 McNamara, R. S. 1983. ABC Viewpoint with Ted Koppel. Available at:  
<https://www.youtube.com/watch?v=p3CLeA2bOKU>, last accessed  
[March 20, 2023](#).
- C48P112 McNamara, R. S. 1986. 'War and Peace in the Nuclear Age; Europe Goes  
Nuclear'. Interview with, GBH Archives, 20 February. Available  
at:  
[http://openvault.wgbh.org/catalog/V\\_DF35A31CD90545FE83A07  
7DE010DD044](http://openvault.wgbh.org/catalog/V_DF35A31CD90545FE83A077DE010DD044). Accessed March 20, 2023. McNamara, R. S.  
2005. 'Apocalypse Soon'. *Foreign Policy* 148(May/June 2005):  
28–35.
- C48P113 de Mesquita, B. B. 1981. *The War Trap*. New Haven: Yale University  
Press.
- C48P114 Morgenthau, H. J. (1948). *Politics Among Nations*. New York: Alfred  
Knopf.
- C48P115 Nye, J. S. 1987. 'Nuclear Learning and U.S.–Soviet Security Regimes'.  
*International Organization* 41(3): 371–402.

C48P116

Paul, R. 2009. 'Opportunities for Peace and Nonintervention'. in

LewRockwell.com. Available at:

<https://www.lewrockwell.com/2009/01/ron-paul/opportunities-for-peace-and-nonintervention/>. Accessed April 1, 2023.

C48P117

Pelopidas, B. 2015. 'A Bet Portrayed as a Certainty'. In *The War that Must Never be Fought*, eds. G. Shultz and J. E. Goodby, 5–55. Stanford: Hoover Institution Press.

C48P118

Pelopidas, B. 2016. 'Nuclear Weapons Scholarship as a Case of Self-Censorship in Security Studies'. *Journal of Global Security Studies* 1(4): 326–336.

C48P119

Pelopidas, B. 2017. 'The Unbearable Lightness of Luck. Three Sources of Overconfidence in the Controllability of Nuclear Crises'. *European Journal of International Security* 2(2): 240–262.

C48P120

Pelopidas, B. 2020. 'Power, Luck and Scholarly Responsibility at the End of the World(s)'. *International Theory* 12(3): 459-470

C48P121

Pelopidas, B. 2021. 'The Birth of Nuclear Eternity'. In *Futures*, eds. J. Andersson and S. Kemp. Oxford: Oxford University Press: 484-500.

C48P122

Pelopidas, B. 2022. *Repenser les choix nucléaires. La séduction de l'impossible*. Paris: Presses de Sciences Po.

Pelopidas, B. and Verschuren, S. 2023. 'Writing IR after COVID-19. Reassessing Political Possibilities, Good Faith, and Policy-Relevant Scholarship on Climate Change Mitigation and Nuclear Disarmament'. *Global Studies Quarterly* 3(1): 1-12.

<https://doi.org/10.1093/isagsq/ksad006>. Accessed April 1, 2023.

C48P123 Perry, W. J. 2015. *My Journey at the Nuclear Brink*. Palo Alto: Stanford University Press.

C48P124 Plokhy, S. 2021. *Nuclear Folly: A History of the Cuban Missile Crisis*. New York: Norton.

C48P125 Powell, R. 2006. 'War as a Commitment Problem'. *International Organization* 60(1): 169–203.

C48P126 Reagan, R. 1983. 'Andrew Glass, "Reagan Brands Soviet Union Evil Empire". March 8, 1983'. *Politico*. Available at: <https://www.politico.com/story/2018/03/08/this-day-in-politics-march-8-1983-440258>. Accessed April 1, 2023.

C48P127 Rosecrance, R. 1986. *The Rise of the Trading State: Commerce and Conquest in the Modern World*. New York: Basic Books.

C48P128 Sagan, S. D. 1993. *The Limits of Safety. Organizations, Accidents and Nuclear Weapons*. Princeton: Princeton University Press.

C48P129 Said, E. 1994. *Culture and Imperialism*. London: Vintage.

Sauer, Frank. 2005. *Atomic Anxiety. Deterrence, Taboo and the Non-Use of U.S. Nuclear Weapons*. London: Palgrave.

C48P131 Schelling, T. 1987. Comments at dinner, 11 October, 1987, Conference on the Cuban Missile Crisis, John F. Kennedy Center.

C48P132 Scott, L. 2020. November 1983. The Most Dangerous Moment of the Cold War? *Intelligence and National Security* 35(1): 131–148.

C48P133 Sherwin, M. J. 2020. *Gambling with Armageddon. Nuclear Roulette from Hiroshima to the Cuban Missile Crisis*. New York: Random House.

C48P134 Schlosser, E. 2013. *Command and Control*. New York: Allen Lane.

C48P135 Stephanson, A. 2007. 'Fourteen Notes on the very Concept of the Cold War'. *H-Diplo Essays*. Available at:  
<https://issforum.org/essays/PDF/stephanson-14notes.pdf>. Accessed April 1, 2023.

C48P136 Stern, S. 2012. *The Cuban Missile Crisis in American History and Memory*. Palo Alto: Stanford University Press.

C48P137 Thompson, E. P. 1982. 'Notes on Exterminism. The Last Stage of Civilization'. *New Left Review* 121(1): 3–31.

C48P138 Thucydides. 1996. *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War*, ed. R. Strassler. New York: Free Press.

- C48P139 Toynbee, A. J. 1945. *A Study of History*, 9 Vols. Oxford: Oxford University Press.
- C48P140 Van Dijk, R. 2014. 'Nuclear weapons and the Cold War'. In *The Routledge Handbook of the Cold War*, eds. A. M. Kalinovsky and C. Daigle, 275–291. London: Routledge.
- C48P142 Waltz, K. N. 2012. 'More May be Better'. In *The Spread of Nuclear Weapons. An Enduring Debate*, eds. D. S. Scott and K. N. Waltz, 3–40. New York: W. W. Norton.
- C48P143 Waltz, K. N. 1979. *Theory of International Politics*. Reading, Ma: Addison-Wesley.
- C48P144 Weldes, J. 1999. *Constructing National Interests. The United States and the Cuban Missile Crisis*. Minneapolis: University of Minnesota Press.
- C48P145 Westad, O. A. 2017. *The Cold War: A World History*. New York: Basic Books.
- C48P146 White, R. K. 1968. *Nobody Wanted War: Misperception in Vietnam and Other Wars*. New York: Doubleday.
- C48P147 Wilkins, J. 2017. 'Postcolonialism in International Relations'. *Oxford Research Encyclopedias: International Relations*. Available at: <https://oxfordre.com/internationalstudies/view/10.1093/acrefore/9>

[780190846626.001.0001/acrefore-9780190846626-e-101](https://doi.org/10.780190846626.001.0001/acrefore-9780190846626-e-101).

Accessed April 1, 2023.

C48P148

Williams, M. 2022. 'Realism, Tragedy, and International History'. in this volume.

C48P149

Wohlforth, W. C., ed. 2003. *Cold War Endgame: Oral History, Analysis, Debates*. State College: Pennsylvania State University Press.

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1 Anders' concept of 'promethean discrepancy' captures the gap between the human possibility to destroy and imaginatively and morally relate to.