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CRITICAL THINKING ABOUT NUCLEAR WEAPONS

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Atomic Obsession: Nuclear Alarmism from Hiroshima to Al Qaeda, by John Mueller. Oxford University Press, 2009. 336 pages, \$27.95.

Les armes nucléaires: Mythes et réalités [Nuclear Weapons: Myths and Realities], by Georges Le Guelte. Actes Sud, 2009. 390 pages, €25.

KEYWORDS: Nuclear weapons; United States; Soviet Union; critical thinking; theory

At first glance, John Mueller's *Atomic Obsession: Nuclear Alarmism from Hiroshima to Al Qaeda* has little in common with Georges Le Guelte's *Les armes nucléaires: Mythes et réalités [Nuclear Weapons: Myths and Realities]*. In one book, a renowned professor provides an analytical recollection of the excessive emphasis that U.S. politics and media have given to nuclear weapons since 1945, an emphasis that was at best ineffective, at worse counterproductive, and in any case cost a lot of money. Mueller's critique strikes *tous azimuts* (in every direction): assessing the destructive capacity of nuclear weapons, their desirability, and the probability of their proliferation to states and non-state actors; accounting for their role in history, their military utility as weapons, and as a deterrent; and evaluating the efficacy of international sanctions, treaties, and agreements to prevent the spread of nuclear weapons. Mueller's book is fundamentally based on the idea that definitions of "worst case" usually do not pay enough attention to effective casualties, resulting in an overestimation in the assessment of an insurance policy.¹

In the other book, a retired executive of the French Atomic Energy Commission and former secretary of the Board of Governors of the International Atomic Energy Agency offers a political history of the U.S. and Soviet nuclear arsenals since the beginning of the nuclear age. Le Guelte focuses on the bureaucratic struggles between three groups—"idealists," "pragmatics," and "extremists"—that form coalitions advocating the production of certain types of weapons with the ad hoc support of industry, scientists, military, and public opinion. His main point: "From the moment when the arsenals became the image of the supremacy of the country [in the early 1960s, in his argument] the doctrine has become an abstract rhetoric, detached from the activities of the military. It has attempted at giving an apparent coherence to the contradiction between the foreign policy of the country and its armament policies." Indeed, he argues that in the United States the stated doctrine nearly never coincided with the actual arsenal, except when Secretary of Defense James Schlesinger formulated his doctrine of counterforce targeting

on January 10, 1974. In 1954, the United States was even in a situation of conflicting doctrines between the one approved by President Dwight Eisenhower in October 1953, a second one supported by John Foster Dulles and Richard Nixon in March 1954, and a third one finally defended by Dulles in April 1954. In Moscow, the Soviet arsenal was shaped strongly by the domestic rivalries between the Kremlin, the Communist Party, the arms industry, and the military.

However, since “intellectual muscles . . . have rarely been used since the end of the Cold War” regarding nuclear issues, these attempts at providing fresh critical insight into our understanding of nuclear history are most welcome, and comparing the authors’ perspectives may be fruitful.² Because the critical perspectives and political implications of these two books are not always compatible, they allow one to delineate more accurately the evolving modalities of thinking about nuclear weapons.³ Indeed, critical thinkers should challenge the accepted causal relationships between phenomena, investigate previously neglected or “unauthorized” problems, and possibly propose new political perspectives.⁴ By doing so, they may move the divisions among the experts or create new ones. Similarly, examining issues that the most critical experts (willing to be recognized as such) do not challenge sheds light on what binds the community together in descriptive and prescriptive terms.⁵

New Terms of the Debate on Military Nuclear Issues?

The radicality of the books’ critiques should be assessed while taking into account their respective audiences, which are *a priori* national. Because Mueller is particularly provocative, I will take his arguments as guiding principles of this review. He targets abolitionists and counterproliferation advocates at the same time, debunking two of their three common beliefs. Contrary to what they think, he argues, the exceptional destructive capability of the nuclear weapon has been overestimated, and they are wrong to use nuclear fear as a strategy or pedagogy. Those who believe in the necessity of nuclear weapons as a deterrent tool fundamentally rely on the fear of retaliation, whereas those who don’t focus more on the fear of an accidental nuclear launch that might lead to nuclear war.⁶ Mueller aims to de-emphasize these two aspects and reaches something close to nuclear insouciance associated with a critical stance in terms of budgetary priorities and the counterproductive effects of counterproliferation policies: “Whatever their impact on activist rhetoric, strategic theorizing, defense budgets and political posturing, nuclear weapons have been a substantial waste of money and effort, do not seem to have been terribly appealing to most States that do not have them, are out of reach for terrorists, and are unlikely to materially shape our future. Sleep well.” For Mueller, it is the culmination of a long reflection, released just after being awarded the International Studies Association’s 2009 Susan Strange Award for challenging conventional wisdom. In a way it is also a celebration: the twenty-first anniversary of his article of the “essential irrelevance of nuclear weapons.”⁷

Whereas many thinkers have considered that the utility of nuclear weapons as a deterrent should be reconsidered in a post-Cold War world, Mueller has already affirmed that post-World War II stability was established so that nuclear weapons were not critical to preventing World War III. This second point is shared by Le Guelte, who insists that a war between the two superpowers was materially impossible in the 1950s; their ideological opposition dating back to 1917, he points out, never caused a war and did not prevent them from fighting together against Nazi Germany. Such skepticism regarding the need for nuclear weapons as deterrent has to be underscored in the French context. Indeed, Le Guelte's book is one of the rare essays in French on nuclear history in recent years.⁸ Additionally, it goes against the so-called Gaullist consensus on the utility of nuclear weapons as guarantors of nuclear peace, an idea that most critical thinkers saw as outdated by the end of the Cold War, but which Le Guelte and Mueller were critical of much earlier.⁹ "Deterrence is a bet or a belief. It is not a guarantee. It cannot be a policy," concludes Le Guelte. However, he is anything but insouciant, worries about the fragility of the contemporary nuclear nonproliferation regime, and considers proliferation to be a major threat.

Both authors downplay the role of nuclear weapons in history and consider the overestimation of the enemy's nuclear arsenal and how that provided justifications and motivations to increase one's own arsenal. Their divergences suggest three things concerning new terms of the debate around nuclear issues.

First, the debates about state and non-state nuclear proliferation, disarmament, deterrence, and security are no longer seen as separate. Instead, they are all considered from the perspective of the perceived properties and utility of this weapon system. Is it seen as a winning weapon?¹⁰ A desirable one?¹¹ A reachable one in terms of cost, as well as technical and logistical capabilities?¹² A deterrent?¹³ If so, what exactly does it deter?

Second, disarmament—not just arms control—now appears to be a political possibility that cannot *a priori* be dismissed.¹⁴ This is much more salient in Le Guelte's book.

Third, however harsh Mueller's critique, he spares one of the three points of agreement between the abolitionists and the advocates of counterproliferation. "Judicious efforts to further reduce the danger of an accidental nuclear detonation, like those devoted to dissuading new states from acquiring nuclear weapons, are certainly justified," he concedes. Preventing nuclear use remains undoubtedly the unanimous goal of people working in this field, even when they downplay, as Mueller does, the effects of the weapons.

Of course, because these books are quite recent, it remains to be seen whether the community accepts the challenges and shifts that they propose.

Limited information, criticism, and the threat of ideology

The statements of nuclear experts—whether they are communicating a political stance or an analysis—are seen as authoritative because of their origin. Moreover, a critical

hypothesis (and *a fortiori* a theory), because it is critical and “original,” might be considered as “interesting” by some groups. If members of these groups, mostly in the media, are disposed for various reasons to agree with this idea, its “interesting” aspect will soon be turned into a criterion of validity, and the hypothesis will spread all the quicker because the media members will spread it to people with no ability to criticize its implications.¹⁵

Taking into account these elements is all the more important because available information is scarce in the nuclear field.¹⁶ Critical thinkers should be careful not to move from one certainty to another just because the new one is opposed to conventional wisdom. This movement was well described by Gaston Bachelard in his *Formation of the Scientific Mind* as “bipolarity of errors.” What is relevant to this discussion is the tendency Bachelard diagnosed: the scientific mind tends to escape from one error only to fall into its exact opposite.¹⁷

In some cases, Mueller falls into this trap, even if he is more cautious in his propositions—very didactically recapitulated in the last chapter—than in some of his abrasive charges against conventional wisdom. There are three points on which he seems to provide certainties, but he is at best walking on thin ice: the effects of nuclear catastrophes, what he calls nuclear arms races, and nuclear security.¹⁸

Given that consequentialist thinking is insufficient to make catastrophes of an unprecedented kind credible and therefore preventable, Mueller has to show that a nuclear catastrophe would not be unprecedented, so that his consequentialist perspective remains pertinent.¹⁹

He rightly underlines that total annihilation will not necessarily follow a first strike. However, his assessment of the effects of radiation seems questionable. He states that the Chernobyl accident “resulted in the death of less than 50 people, most of them underprotected emergency workers.” Yet, this figure seems quite low, and authoritative physicists Georges Charpak and Richard Garwin, to whom he refers for other purposes in the book, recognize that “it is very difficult to come up with the exact number of victims.”²⁰ Asserting certainty over the issue is inadequate.

As far as arms races are considered, Mueller provides a most welcome critique of “cascadology” but falls into an idea of negative arms races that relies on the same assumptions of a tipping point and a chain reaction. He even suggests that armament and disarmament are two sides of the same coin, and when the reasons for the first disappear, the second occurs.

As for nuclear security, Mueller might be right to consider that future nuclear states are “by far most likely” to behave as cautiously as current ones have done so far. In any case, he neglects the many nuclear near misses described by Le Guelte, such as the nuclear-armed Soviet submarine, hit by U.S. depth charges on October 27, 1962, during the Cuban Missile Crisis.²¹ The three officers on board needed to agree for a nuclear torpedo to be launched; only one did not. Mueller’s point is valid when he suggests that securitization will always be incomplete. However, considering the risk of nuclear accidents as acceptable is already a political option that should be considered as such.

He also neglects that the effects of fire have not only been underestimated, but also ignored in U.S. calculations of nuclear weapons damage.²² Additionally, he overlooks some

important distinctions like that between a taboo and a tradition of non-use, which is of major importance in the debate about the possibility and sustainability of complete nuclear disarmament.²³

One of the ways to avoid the risk of what I called ideology or apodictic certainties is to engage in critical discussions with opponents. However, the way Mueller frames his classical argument of the “essential irrelevance of nuclear weapons” does not take into account strong critiques that have been addressed over the last two decades.²⁴ Even if he modestly and carefully considers that his counterfactual is “more plausible” than the nuclear peace hypothesis, the argument would have benefitted from the methodological suggestions offered by Richard Ned Lebow, among others.²⁵ Indeed, given the interconnectedness of historical phenomena, he should have built a much more elaborate counterfactual, instead of working with everything being equal. Of course, considering all the other counterfactuals might have led to an infinite regress. However, because dis-inventing nuclear weapons requires a massive rewriting of history, his argument would have been strengthened by considering the most likely course of events that would have unraveled his expected outcome—peace, in this case. This suggestion remains valid even if one accepts Mueller’s point about the minimal effect of nuclear weapons on international relations, because he himself recognizes the huge amount of money they monopolized.

Hopefully these books will trigger a new generation of critical minds who can flex some “intellectual muscle” and show that new ideas do emerge in this field while making others aware of the risk of going too far for its own sake.

NOTES

1. On this idea, see Lee Clarke, *Worst Cases: Terror and Catastrophe in Popular Imagination* (Chicago: University of Chicago Press, 2006), pp. 9–16.
2. The quote is from Bruno Tertrais, “Correspondence: Nuclear Myth-Busting,” *Nonproliferation Review* 16 (July 2009), p. 131.
3. We might use the concept of epistemic community here as defined by Peter Haas, as John Mueller and Georges Le Guelte would probably consider themselves as part of “a network of professionals with *recognized expertise and competence* in a particular domain and an *authoritative claim to policy-relevant knowledge* within that domain or issue area.” (Emphasis my own.) See Peter Haas, “Introduction: Epistemic Communities and International Policy Coordination,” *International Organization* 46 (Winter 1992), p. 3. In spite of Michel Foucault’s popularity among international relations theorists, one should note that his notion of *episteme* cannot be used because it is in the study of epistemic communities without important changes. Indeed, the concept was forged by Foucault in his *Les mots et les choses* [*The Order of Things*] (New York: Pantheon Books, 1966), and abandoned in the 1970s. Moreover, it was associated with a much broader cultural background, namely the Western culture, and not with any particular group of experts or with a specific will to interfere in politics. When he came back to it in an interview in 1977, Foucault insisted on the fact that it was a discursive device that allows one to distinguish not what is true from what is false, but what pretends to be scientific from what is not within a field of scientificity. In other words, it is only a discursive device that is not related to a specific field of expertise or to a specific political goal. See Michel Foucault (interview with Dominique Colas, Alain Grosrichard, Guy Le Gaufey, Jocelyne Lévy, Gerard Miller, Judith Miller, Jacques-Alain Miller, Catherine Millot, and Gérard Wajeman), “Le jeu de Michel Foucault” [“Michel Foucault’s Game”]

Ornicar? Bulletin périodique du champ freudien [Ornicar? Periodical Bulletin of the Freudian Field], July 10, 1977.

4. Another concept built by Foucault might be relevant: that of “refraction principle,” which delineates the authorized discourses in one field by delegitimizing most of the others *a priori*. See Michel Foucault, “L’ordre du discours” [“The Discourse on Language”], reprinted as an appendix to *Archaeology of Knowledge* (New York: Pantheon, 1971). In this respect, critical thinkers change the refraction principles over time. In international relations theory, Emanuel Adler’s framework of “communities of practice,” of which epistemic communities are a specific kind, allows an understanding of them as evolving thanks to a theory of learning contrary to more structural approaches. See Emanuel Adler, “Communities of Practice in International Relations,” in *Communitarian International Relations: Epistemological Foundations of International Relations* (London: Routledge, 2005).
5. Adler recognizes that most communities of practice share a common goal. Adler, “Communities of Practice,” p. 22.
6. Bruce G. Blair, *The Logic of Accidental Nuclear War* (Washington, DC: Brookings Institution Press, 1993).
7. John Mueller, “The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World,” *International Security* 13 (Fall 1988), pp. 55–79.
8. The others are Thérèse Delpech, *L’héritage nucléaire* [The Nuclear Legacy] (Brussels: Complexe, 1997); Georges Le Guelte, *Histoire de la menace nucléaire* [The History of the Nuclear Threat] (Paris: Hachette, 1997); and Bruno Tertrais, *Le marché noir de la bombe. Enquête sur la prolifération nucléaire* [The Black Market of the Bomb: An Investigation in Nuclear Proliferation] (Paris: Buchet Chastel, 2009).
9. Indeed, Michel Rocard, who wrote the foreword of Le Guelte’s book, stated this earlier in his introduction to the French version of the report of the Canberra Commission on the elimination of nuclear weapons, in which he participated: *Éliminer les armes nucléaires* [Eliminating Nuclear Weapons] (Paris: Odile Jacob, 1997), pp. 8, 11. In the recent opinion piece he published in *Le Monde* with three other high-level French officials, wishing that France would “resolutely declare its commitment towards the success of [the] disarmament process and its resolve to act consequently regarding its own capability when the time comes,” the words are more cautious: nuclear deterrence “played a role in the limitation of armed conflicts during the Cold War.” See Alain Juppé, Bernard Norlain, Alain Richard, and Michel Rocard, “Pour un désarmement nucléaire mondial, seule réponse à la prolifération anarchique” [“For a World Nuclear Disarmament, the Only Answer to Anarchical Proliferation”], *Le Monde*, October 15, 2009. Similarly, a lieutenant-commander attending the Joint Service Defence College suggested renouncing nuclear deterrence while maintaining that it was a guarantee of “national independence,” though he did not mention the guarantee of peace. Luc Savoyant, “Renoncer à la dissuasion nucléaire?” *Défense nationale et sécurité collective*, July/August 2009, pp. 134–35. An English translation is available from Diploweb as “Should We Abandon Nuclear Deterrence?” <www.diploweb.com/Should-we-abandon-nuclear.html>. See also Bruno Tertrais, “The Last to Disarm: The Future of France’s Nuclear Weapons,” *Nonproliferation Review* 14 (July 2007), pp. 251–73; and Bruno Tertais, “French Perspectives on Nuclear Weapons and Nuclear Disarmament,” in Barry Blechman, ed., *Unblocking the Road to Zero: Perspectives of Advanced Nuclear Nations* (Washington, DC: Henry L. Stimson Center, 2009).
10. See Ward Wilson, “The Winning Weapon? Rethinking Nuclear Weapons in Light of Hiroshima,” *International Security* 31 (Spring 2007), pp. 162–79.
11. For recent insight on that, see Anne Harrington de Santana, “Nuclear Weapons as the Currency of Power: Deconstructing the Fetishism of Force,” *Nonproliferation Review* 16 (November 2009), pp. 325–45.
12. The argument is regularly made that nuclear weapons may be cheaper than conventional weaponry, in spite of evidence laid out in Stephen Schwartz, ed., *Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons since 1940* (Washington, DC: Brookings Institution Press, 1998), which is quoted by Mueller and Le Guelte.
13. See Ward Wilson, “The Myth of Nuclear Deterrence,” *Nonproliferation Review* 15 (November 2008), pp. 421–39; and the discussion by Philipp C. Bleek and Bruno Tertrais, “Correspondence: Nuclear Myth-Busting,” *Nonproliferation Review* 16 (July 2009), pp. 135–39.
14. On the emergence of arms control as a valid political goal among U.S. and then Soviet experts, see Emanuel Adler, “The Emergence of Cooperation: National Epistemic Communities and the International Evolution of the Idea of Arms Control,” *International Organization* 46 (Winter 1992), pp. 101–45.

- On how it was then framed in opposition to that of disarmament, see Neil Cooper, "Putting Disarmament back in the Frame," *Review of International Studies* 32 (2006), pp. 353–76.
15. On these dynamics, see Raymond Boudon, *The Analysis of Ideology* (Chicago: University of Chicago Press, 1989), chs. 6 and 7. On the epistemological impossibility of doubting endlessly and the need for authorities to make judgments, see Ludwig Wittgenstein, *On Certainty* (New York: Wiley Blackwell, 1991 [1950]), notably § 493 and 625.
 16. Tanya Ogilvie-White rightly insisted on how fundamental the question of the content of knowledge is in nuclear issues. (She focused on proliferation, but her point has a larger pertinence.) See Tanya Ogilvie-White, "Is There a Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate," *Nonproliferation Review* (Fall 1996), p. 43.
 17. Gaston Bachelard, *The Formation of the Scientific Mind* (Manchester: Clinamen Press, 2002 [1938]). Bachelard considered the opposition between rationalism and empiricism in the history of sciences.
 18. Mueller first made his argument on the two types of nuclear arms races in *Quiet Cataclysm, Reflections on the Recent Transformation of World Politics* (New York: HarperCollins, 1995), ch. 3.
 19. On that point and the political problems that follow, Benoît Pélodidas, "de l'incrédulité à l'action" ["From Incredulity to Action"], *Esprit* 343 (March 2008), pp. 158–72. In the nuclear field, General Pierre-Marie Gallois considered nuclear deterrence as an "insurance against the unforeseeable." Pierre-Marie Gallois, *L'arme nucléaire: assurance contre l'imprévisible* (Paris: Cahiers du Centre d'Etudes d'Histoire de la Défense, 1997).
 20. Richard Garwin and Georges Charpak, *Megawatts and Megatons* (New York: Alfred A. Knopf, 2001), p. 192 (see also p. 75). However, nongovernmental organizations issued reports suggesting as many as 200,000 additional deaths. But even the second report released in 2006 by the Chernobyl Forum of the International Atomic Energy Agency and the World Health Organization goes far beyond the number of fifty deaths. It suggests 4,000 deaths due to the accident, with remaining uncertainty. See *Health Effects of the Chernobyl Accident and Special Health Care Programmes* (Geneva: WHO, 2006, p. 106). The point here is not to discuss the exact figure but to say that it is increasing and cannot be precisely established.
 21. For a recollection of these near-misses, cf. Scott Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton, Princeton University Press 1993).
 22. Lynn Eden, *Whole World on Fire* (Ithaca: Cornell University Press, 2004), chs. 9, 10.
 23. The distinction between taboo and tradition builds upon the following elements. First, social taboos like incest and cannibalism are not considered as possible actions that should be assessed by a cost-benefit analysis. This has not been the case for the use of nuclear weapons, which has been contemplated on several occasions. Second, a taboo implies an inevitable and very severe punishment if you break it, whereas there is no formal punishment for violation of the so-called nuclear taboo. The threat of use of nuclear weapons, which has never been condemned, even in the advisory opinion of 1996 by the International Court of Justice, proves that the taboo is at best incomplete and should be approached as a tradition. See T.V. Paul, *The Tradition of Non-Use of Nuclear Weapons* (Palo Alto: Stanford University Press, 2009), pp. 4–13. On the tradition versus taboo debate, see also Nina Tannenwald, *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945* (Cambridge: Cambridge University Press, 2007). Believing in a normative taboo as a foundation for non-use over the last sixty years would resolve one of the important problems raised by the perspective of abolition. If the existence of a taboo is the fundamental reason—not complementary, but alternative, to deterrence—why nuclear weapons have not been used, then the situation of nuclear monopoly that comes just before a nuclear-weapon-free world is not likely to be dangerous at all. The taboo will work anyway, which also reduces the risks associated with the durability of a nuclear-weapon-free world. However, the main proponent of the notion of taboo, Nina Tannenwald has clarified that if a normative taboo *partly* explains the non-use of nuclear weapons, this factor is complementary to deterrence and cannot be considered as a substitute for it or its only foundation. See Nina Tannenwald, comments on T.V. Paul's book, International Studies Association Fiftieth Annual Convention, New York, February 16, 2009.
 24. After Mueller's *International Security* article, he restated his argument in "Cold War, Containment and the Irrelevance of Nuclear Weapons," in *Retreat from Doomsday: The Obsolescence of Major Wars* (New York: Basic Books, 1989), ch. 5; in *Quiet Cataclysm*, ch. 5; in "Epilogue: Duelling Counterfactuals," in John Lewis Gaddis, John R. May, Ernst Gordon, and Jonathan Rosenberg, eds., *Cold War Statesmen*

Confront the Bomb, Nuclear Diplomacy since 1945 (Oxford: Oxford University Press, 1999); and "What Was the Cold War About? Evidence from Its Ending," *Political Science Quarterly* 119 (Winter 2004–2005). The most recent statements of this argument include the idea that the peaceful ending of the Cold War and the collapse of the whole ideological, political, and social Soviet system in spite of the persistence of the weapons reveals their at best modest impact on history.

25. Richard Ned Lebow, "What's So Different about a Counterfactual?" *World Politics* 52 (July 2000), pp. 576, 584. He rightly points out that Mueller's conclusion has been much more discussed than his method (p. 568).