Prisoners of Reason

Game Theory and Neoliberal Political Economy

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Neoliberalism

The political effects of nuclear weapons are also a serious consideration. American values have been affected. Our central government is larger, and the executive branch plays a larger role in foreign affairs. Interaction between strategic adversaries involves secrecy, and secrecy is difficult to reconcile with democracy. Many of these changes began before 1945, but enormous life-and-death decisions are nevertheless delegated to the president or his successors, and the circumstances may not permit congressional involvement. Knowledge of the details of nuclear targeting plans tends to be restricted to the military, and there have been cases in the past where a significant gap existed between military plans and what elected officials thought to be policy.

Joseph S. Nye Jr., 1986

The distinction between acting parametrically on a passive world and acting non-parametrically on a world [of game theory] that tries to act in anticipation of these actions is fundamental. If you wish to kick a rock down a hill, you need only concern yourself with the rock’s mass relative to the force of your blow. . . . By contrast, if you wish to kick a person down the hill, then unless the person is unconscious, bound or otherwise incapacitated, you will likely not succeed unless you can disguise your plans until it’s too late for him to take either evasive or forestalling action.

Don Ross, 2006

The resultant dominant ideology is founded on the illusion that observed inequality is not to be explained in terms of the social power of one class or group over the other but, instead, is the result of different abilities, work ethic, etc. . . . Indeed, mainstream economics, and by association game theory, may be thought of as the highest form of this ideology . . .

Our world may have never before been so ruthlessly divided along the lines of extractive power between those with and those without access to productive means. And yet never before has the dominant ideology been so successful at

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Neoliberalism

principles of orthodox game theory. The second section explores how the political philosophy consistent with rational choice theory departs from the founding principles of classical liberal markets and government. Neoliberal theory negates side constraints, deontic commitments, and due process. Classical liberalism depends on the no-harm principle and mutual respect for its defense of free markets and a minimal state. Neoliberalism cannot define harm; even if actors agreed on a standard of harm, still they would advance their self-interest at the expense of others, breaking agreements and free riding whenever possible.

This chapter's final section provides an overview of how neoliberal theory starts with the minimal assumptions of strategic rationality and attempts to derive a basis for a social order that roughly resembles modern free markets and democratic governance. Numerous rational choice theorists have viewed the challenge of achieving peace out of anarchy as a version of Prisoner's Dilemma under the assumption that every individual will seek self-benefit at a cost to others. Their solution is the introduction of incentives to mobilize individuals' compliance with laws. Although neoliberalism seems to offer a means to achieve stability, it differs from classical liberalism by normalizing the pursuit of gain at the expense of others and the implementation of governance through coercive sanctions, leaving little room for legitimacy and voluntary compliance.

The arc of Prisoners of Reason begins with the international relations nuclear security dilemma, then proceeds to the identical security dilemma proposed to underlie civil government, and ends with the similarly formulated question of how evolving life forms individually survive and achieve stable, resource efficient, equilibria. In each case, theorists have found that the Prisoner's Dilemma game represented a key decision problem confronting actors. This chapter's final section, “Neoliberalism and Nuclearism,” articulates how orthodox game theory resonated with the realpolitik approach to international relations popular during the Cold War period. Exploring this overlap between game theory and international relations realism helps clarify the implications of applying the same assumptions to the structure of civil society.

DEFINING NEOLIBERALISM

The term neoliberalism is currently in vogue. At least since David Harvey published A Brief History of Neoliberalism (2007), there has been a mushrooming

5 Note, for example, that the Nash equilibrium solution concept of “mutual-best-reply” is only guaranteed when mixed (randomized) strategies relying on expected utility theory are permitted; furthermore, in many useful applications, interpersonally transferable sources are assumed (hence permitting that players can offer side payments to other players). For discussion, see Duncan Luce and Howard Raiffa, Games and Decisions (New York: Wiley, 1957), 88–113.
6 See how Roger B. Myerson introduces game theory with the idea that money serves as a useful means to model interactions: Game Theory (Cambridge, MA: Harvard University Press, 1991), 3. See also Ken Binmore's treatment, Game Theory: A Very Short Introduction (New York: Oxford University Press, 2007). The Economist magazine makes clear that to use the tool of cost-benefit analysis, common in neoliberal economic practice, all decision making must be made as if outcomes have prices: “Economic Focus: Never the Twain Shall Meet,” Economist, February 2, 2003, 82.

inquiry into the nature of the practices constituting late-modern political economy, often dated to the late 1970s when President Jimmy Carter appointed Paul Volcker to chair the Federal Reserve Bank and actively promoted policies of deregulation. Following the planned economy of the New Deal and World War II, and the ensuing fiscal Keynesianism, public choice theorists supported a renewed enthusiasm for the power of markets to solve social problems and generate prosperity. This late twenty-century incarnation of capitalism, associated with Margaret Thatcher, Ronald Reagan, Deng Xiaoping, and later John Williamson’s 1989 Washington Consensus, has come to be referred to as neoliberalism. Harvey argues that neoliberalism, as a mode of discourse, has become hegemonic, producing “pervasive effects on ways of thought to the point where it has become incorporated into the common-sense way of many of us interpret, live in, and understand the world.” Neoliberalism, he explains, argues that “the social good will be maximized by maximizing the reach and frequency of market transactions” and thus “seeks to bring all human action into the domain of the market.” Michael Sandel draws attention to similar concerns in his recently published book What Money Can’t Buy: The Moral Limits of Markets. His argument, that the contemporary practice of monetizing all value displaces moral and other-regarding dimensions of action, resonates with the thesis explored in Prisoners of Reason: that the exhaustive application of game theory and rational expectations as our orthodox understanding of rational action effectively distills out ethical action, other-regarding considerations, and the ability to voluntarily cooperate in groups.

Neoliberalism has a number of agreed-upon facets. All value is commodified and financialized. Work and gradual wealth accumulation are replaced with speculation, risk management, and casino finance. Elite institutions spread the ethos of neoliberal agency and public policy. Citizens experience an increasing disparity in access to resources, income, and wealth. Consumers accept the inevitability that there are winners and losers, counter to the belief that markets will bring progressively improving living conditions for everyone. Experts denounce the possibility for collective action and meaningful democratic will formation, or even the existence of a public interest. Government and business incentivize compliance with performance metrics and regulations formulated to achieve social order. Individuals experience responsibility in terms of pay-as-you-go access to conditions necessary to sustain life. Entrepreneurs accept predatory practices to promote profit, circumventing mutual exchange. New practices of coercive bargaining are resolved through binding arbitration and debt bondage instead of court of justice and normative conduct oriented toward mutual exchange and reciprocal respect.


A central theme in studies of neoliberalism is the increasing disparity of wealth in addition to the politics of wealth accumulation through dispossession. See Harvey, Neoliberalism, 2007, 31–35.

Theme of Giroux, Terror of Neoliberalism, 2004; see also Harvey, Neoliberalism, 2007, 66.

See Hilger, “Three Anthropological Approaches,” 2013, 356; there is an acknowledgment that rules of law are the product of interests, but there is also a sense of the inevitability of positive law and the power underlying the promotion of self-interest, e.g. Harvey, Neoliberalism, 2007, 77, 139–140. See also Brown, Undoing the Demos, 2015, 125–150.


On the acceptance of unsecured debt that is essentially permanently unresolvable, see Hilger, “Historicity of the Neoliberal State,” 2012, 83–84; on the rise of binding arbitration, see the documentary, Hot Coffee (2011), directed by Susan Sarandon.
set-pieces – the free-rider problem, the prisoner’s dilemma, the tragedy of the commons – became fixtures of common sense.” Rodgers points out how game theory offers the intellectual infrastructure for contemporary economic analysis. Rational choice theory assumes that actors maximize expected gain and compete with one another strategically. The integration of game theory and rational expectations into economic science marks a new period in the history of economic thought. Sequential to both the initial classical period from Adam Smith’s Inquiry into the Nature and Causes of the Wealth of Nations (1776) to Karl Marx’s Das Capital (1867–94) and to the subsequent neoclassical period encompassing William Stanley Jevon’s Theory of Political Economy (1871), Vilfredo Pareto’s Manual of Political Economy (1906), and Lionel Robbins’s Nature and Scope of Economic Science (1932).

The ideas of game theory are historically unprecedented and have justified, and rendered plausible or even inevitable, the iconoclastic features of neoliberalism. The financialization of all value is consistent with game theory but not with classical or neoclassical economics.

Collective action, public

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The pioneers of game theory were acutely aware that they were contributing a new method for economics and social science. See von Neumann and Morgenstern, Theory of Games, 2007, 1–45; Luce and Raiffa, Games and Decisions, 1958, 1–11.

To see this, consider how Lionel Robbins argued that economics is concerned with scarce resources that serve as means to ends and that money can only ever be a means and not an end, Essay on the Nature and Significance of Economic Science, and ed. (London: Macmillan, 1962). Critical political economists viewed the cost of subsistence as the basis from which to evaluate profit and surplus value. See Istvan Hont and Michael Ignatief, “Needs and Justice in The Wealth of Nations,” in their edited collection Wealth and Virtue: The Shaping of Political Economy in the Scottish Enlightenment (Cambridge: Cambridge University Press, 1983), 1–44. By contrast, according to contemporary economics, “Trade-offs can be struck between competing ends . . . choices must be made. Even if environmentalists ruled the world, difficult choices would have to be confronted – and, working backwards from those choices [using revealed preference theory], made according to whatever criteria, it will always be possible to calculate economic values . . . trade-offs, measurable in dollar terms, had in fact been struck” (“Economic Focus,” 2004, 82). Expressed utility theory, with its requirement that all outcomes be ranked on a single scale, and its application to empirical phenomena via the identification of a salient tangible property, often introduces a monetary metric as the default against which all value is ascertained; see, e.g., Myerson, Game Theory, 1991, 3–25.

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interest, voluntary cooperation, trades unions, social solidarity, and even voting are all irrational according to rational choice theory.\textsuperscript{33} Consent is rendered superfluous because knowledge of an individual's preferences over all possible outcomes makes it possible to deduce what that individual would choose to do in every situation which may conceivably arise.\textsuperscript{34} The invisible hand of classical political economy and general equilibrium theory becomes an old-school myth that must be countered by the backside of the invisible hand via coercive sanctions.\textsuperscript{35} Given the way that incentive schemes function in game theory such that everything of value to an agent must be reflected in a common metric, such as money, food calories, energy, time, and information, non-scarce resources such as integrity and trust are treated as though they were costly and finite.\textsuperscript{36} This results in a mentality whereby every decision is evaluated on a cost-benefit analysis basis of how it promotes individual interest in accordance to a fungible rewards scheme. It thus becomes rational to cheat if one can do so without getting caught.\textsuperscript{37} Instead of one market-clearing, public price that forms an equilibrium of supply and demand, pricing becomes private and invisible to general scrutiny, finely honed to each individual's personal willingness and ability to pay, knowable through comprehensive, non-anonymous, asymmetrically leveraged data mining.\textsuperscript{38} New means of systematically exploiting surplus value by finding ways to charge individuals scarce cash value for positive-sum, inherently unlimited resources create new opportunities for profit.\textsuperscript{39}

Rational decision theory, first solidified as rational deterrence theory in the 1960s, was integrated into evolutionary biology and analyses of political economy in the 1970s and finally became mainstream in economics in the 1980s. John Harsanyi, Reinhard Selten, and Robert Aumann contributed game theory analyses to Models of Gradual Reduction of Arms (1967) before going on to win Nobel Prizes in economics in 1994, 1994, and 2005, respectively. Similarly, Thomas Schelling was preeminent for his work on nuclear deterrence and arms control in the 1960s before becoming a Nobel Laureate in economic science in 2005.\textsuperscript{40} Strategic rationality can build helpful descriptive models, but more importantly, it offers a normative and prescriptive understanding of rationality that may inform decision making and structure subjective appraisals over appropriate action choices. It exists as a powerful pedagogy that can revise actors' interpretations of valid and effective courses of action.\textsuperscript{41} Given that the ideas examined in Prisoners of Reason received recognition at the same time as the onset of neoliberal institutions and practices, we may hypothesize that this congruence is not coincidental or accidental. Certainly, the core ideas that inform neoliberal governance and market discipline are structured in accordance with game theory and are markedly distinct from the body of ideas defining classical liberalism.

RECALLING CLASSICAL LIBERALISM


For an analysis of aspects of this phenomenon permitting the privatization of pricing see Assessing the Impact of Online Personalization on Algorithmic Culture, a project of inquiry at Northeastern University, Boston, MA: www.northeastern.edu/ulab/personalization-research-northeast/ accessed January 30, 2015.


Many post–World War II economists whose contributions have been acknowledged with a Sveriges Riksbank Prize in Economic Sciences in memory of Alfred Nobel contributed to or used game theory: Kenneth J. Arrow, James M. Buchanan, Gary S. Becker, John C. Harsanyi, John F. Nash Jr., Reinhard Selten, Douglas C. North, Roger B. Myerson, Robert J. Aumann, Daniel Kahneman, and two theorists whose work is critical of the paradigm – Amartya K. Sen and Elinor Ostrom.
the family of liberal political philosophies.42 We may perceive of distinct classical, progressive, and welfarist liberalisms, which are articulated by John Locke, Adam Smith, and Immanuel Kant; T. H. Green, John Stuart Mill, and John Dewey; and John Rawls, respectively.43 We could also include the mid-century renewed faith in free markets, pointing to Friedrich Hayek and Milton Friedman, as well as Robert Nozick’s libertarianism.44 We might also incorporate the instrumentalist approach to liberalism, encompassing Hugo Grotius, Thomas Hobbes, and David Gauthier.45 We could see liberalism based on an empirical pragmatist approach, best characterizing Adam Smith’s method, or on a deontological ethics consistent with Kant’s work.46 Classical liberalism can also be viewed in terms of achieving accord among nations.47 Liberalism is obviously a multifaceted approach to understanding individual freedom and the proper relationship between government and private citizens.48


48 Smith, Theory of Moral Sentiments, 1759; Kant, Groundwork, 1784.

49 Richard Tuck argues that classical liberalism was first defined in terms of international relations theory during early modernity: The Rights of War and Peace: Political Thought and the International Order from Grotius to Kant (Oxford: Oxford University Press, 2002); for discussion of the classical liberal approach in international relations theory, see also Michael Doyle, Ways of War and Peace (New York: W. W. Norton, 1997), 205–314.

50 Duncan Bell argues that “liberalism” refers to such a variety of political theories that the term lacks specificity and furthermore was used in the mid-twentieth century in the Cold War effort to ground democracy; “What Is Liberalism?” Political Theory (2014) 42:6, 682–715. Russell Hardin argues that there was so much disagreement by the end of the twentieth century among the select theorists who actively recognized a common philosophical tradition (including including John Rawls, Robert Nozick, and James M. Buchanan) that the sheer fact of such disagreement demonstrates the lack of theoretical cogency to “liberalism”; “Contractarianism: Wistful Thinking,” Constitutional Political Economy (1990) 12:4, 35–32; Gerald Gaus identifies liberalism as a coherent family of political orders, “The Diversity of Comprehensive Liberalisms”; see also Eric Mack and Gerald Gaus, “Classical Liberalism and Libertarianism: The Liberal Tradition,” both essays in Gerald F. Gaus and Chandran Kukathas, eds., Handbook of Political Theory (London: Sage, 2004), 100–114 and 125–130.

51 Kant, Metaphysical Elements of Justice, 1965, 43–44.


53 For example, Amartya K. Sen defines the “minimal liberal” condition to permit every individual a choice among two outcomes, which hence limits another individual’s freedom of choice over that pair of outcomes, and yet Sen discovers a contradiction between this condition and that of Pareto optimality, holding that if all members of a community prefer state a to state b, then the group as a whole must also prefer state a to state b. He therefore concludes that there is no way to uphold the classical liberal concept of freedom of choice and also respect the Pareto conditions of market efficiency: “Impimissibility of a Pareto Liberal,” in his Choice, Welfare and Measurement (Cambridge, MA: Harvard University Press, 1981), 283–290.

54 See, e.g., Nozick’s concept of side constraints, Anarchy, State, and Utopia, 2013, 23–82.

55 As an example, see Locke, Second Treatise of Government, 1998, section 7.
The key insight of the classical liberal approach is that state intervention can be kept to a minimum because individuals by and large gratuitously respect one another’s rights. Citizens recognize this commitment to be entailed by their own assertion of liberty. Richard Tuck elucidates the insights of Hugo Grotius:

All men would agree that everyone has a fundamental right to preserve themselves, and that wanton or unnecessary injury to another person is unjustifiable. No social life was possible if the members of a society denied either of these two propositions, but no other principles were necessary for social existence, at least on a rudimentary level.54

The classic liberal derivation of voluntary self-constraint thus follows from extending one’s own right to self-preservation to all human actors. Self-preservation is a natural right coextensive with the reality that agents have an innate drive to protect themselves. Classical liberal civil society emerges from individuals’ recognition that acknowledging and respecting others’ right to exist, and the conditions for their liberty with respect to the sanctity of their persons and personal possessions, is the basis for peaceful coexistence. For classical liberal theorists, even though positive law may have differing means of legitimation, from Hobbesian authoritarianism to Locke’s representative democracy, there is still a common understanding prior to codified law in individuals’ tacit acknowledgment that the liberty of person possible in a civil society relies on individuals’ voluntarily yielding their right to all things, including one another’s persons.55

Consequently, in classical liberal theory, all individuals’ rights exist as a function of respecting others’ like rights as a matter of first principle, fleshed out with respect to the specific content of rights. This point is so essential and incontrovertible that the words of Locke bear recalling:

The Freedom then of Man and Liberty of acting according to his own Will, is grounded on his having Reason, which is able to instruct him in that Law he is to govern himself by, and make him know how far he is left to the freedom of his own will … And reason, which is that Law, reaches all Mankind, who will but consider it, that being all equal and independent, no one ought to harm another in his Life, Health, Liberty, or Possessions.56

Individuals can only meaningfully exercise their own right to life, property, and the pursuit of happiness insofar as they of their own accord cede to others the liberty of person, possession, and pursuit of happiness.

Two theoretical commitments are entailed in this classical liberal approach to achieving social order, each of which neoliberalism rejects. First, individuals must recognize others’ right to exist. Second, individuals must integrate this


respect for others into their own decisions for action. The classical liberal political process assumes these two orientations and has the task of reinforcing them in state-sponsored legislation. In contemporary parlance, this limitation on action may be viewed as each individual voluntarily complying with the Pareto principle that every choice must make at least one individual better off and no one worse off.

To differing degrees, Kant, Nozick, Rawls, and Locke reflect a deontological approach to liberal political philosophy that justifies norms of conduct in accordance with the application of reasoned reflection.57 However, even self-colored proponents of minimal classical liberalism who look to tradition, custom, or convention reach the same conclusion that the claim to liberty is dependent on acquiescence to guidelines of conduct that respect others’ pursuit of freedom. This effective self-governance underwrites the minimal state. As Hayek explains, “It is indeed a truth, which all of the great apostles of freedom … have never tired of emphasizing, that freedom has never worked without deeply ingrained moral beliefs and that coercion can be reduced to a minimum only where individuals can be expected as a rule to conform voluntarily to certain principles.”58 For Hayek, the enactment of a system of mutual liberty follows from individuals’ recognition of moral obligation and their voluntary compliance with these moral guidelines that inform action yet are prior to positive law.

Isaiah Berlin, who also eschews the need to supply metaphysical or deontological justifications for liberty, concurs with this elementary position. In his support of the “sanctity of person,”59 he observes,

I must establish a society in which there must be some frontiers of freedom which nobody should be permitted to cross. Different names or natures may be given to the rules that determine these frontiers. They may be called natural rights, the word of God, natural law, the demands of utility, or the “permanent interests of man”; I may believe them to be valid a priori or assert them to be my own ultimate ends or those of my society or culture.60

Berlin clarifies further, “What these rules or commandments will have in common is that they are accepted so widely, and are grounded so deeply in the actual nature of men as they have developed through history, as to be, by now, an essential part of what we mean by being a normal human being.”61 He is adamant that “genuine belief in the inviolability of a minimum extent of individual liberty entails some such absolute stand.”62

Berlin upholds the tradition of classical liberalism that gradually narrowed its claims from (2) Smith’s confident “System of Natural Liberty” buttressed by an

58 Hayek, Constitution of Liberty, 2011, 123.
60 Ibid., 210.
61 Ibid.
62 Ibid.
invisible hand that guarantees mutual prosperity, to (2) Mill's soft paternalistic encouragement of individual development within the framework of a no-harm principle, and then to (3) a final minimalist stand. Yet, as Berlin himself acknowledges, this stand is so pertinent to liberalism that it bears restating:

No society is free unless it is governed by at any rate two interrelated principles: first, that no power, but only rights can be regarded as absolute, so that all men, whatever power governs them, have an absolute right to refuse to behave inhumanly; and, second, that there are frontiers, not artificially drawn, within which men should be inviolable, these frontiers being defined in terms of rules so long and widely accepted that their observance has entered into the very conception of what it is to be a normal human being.  

From the vantage of liberal tradition, which defines individual liberty as freedom from interference, this agreement on the boundaries that define the sanctity of persons is sufficiently self-evident so that it informs individual action such that, for the most part, individuals avoid harming one another. Classical liberals are confident that individuals can distinguish between harmful and benign acts. Moreover, they accept that the rationale and motive force underlying the prohibition on committing harmful acts is sufficiently self-evident, as a result of the conditions for mutual recognition, treating every agent as an end in him- or herself, or agentic autonomy.

The role of the state is thereby minimal because it need only apportion police force and judicial oversight to those pathological individuals who do not agree to recognize or uphold the sanctity of persons, or to anomalous cases defying ready judgment in accordance with precedents. Actors' recognition that liberty is dependent on their accepting the responsibility for avoiding harming other persons, or interfering with their basic rights, is essential to any form of liberalism. Otherwise, maintaining social order would rely on police force and private vigilantism. Thus, in classical liberalism and the family of liberal political philosophies that it inspired, actors are inclined to uphold a principle of noninterference. Even if, admittedly, harm may need to be legislatively defined, agents are motivated to refrain from harming others and to recognize other individuals as ends in themselves, not mere means or active opponents whom one must strategically dominate to attain personal satisfaction. Actors enter into normative bargains in which they keep agreements made by their own volition, thereby obviating the coercive bargaining characteristic of noncooperative game

equality and governance via the calibrated threat of sanctions consistent with the rational choice account of action.

NEOLIBERALISM AND NUCLEARIZED SOVEREIGNTY

Classical liberalism, as explained earlier, is premised on individual freedom, typically conceptualized in terms of sanctity of personhood and private property, sustained by the negative virtue commitment to avoid harming others. Self-determination and individual initiative sustain voluntary exchange, efficient production, the gradual accumulation of wealth, and mutual prosperity. Free market forces of supply and demand alleviate scarcity and lower the cost of living and are justified for this reason.

By contrast, in neoliberal political economy, individuals are identified by their preferences and opportunities. Freedom becomes the prerogative to make any available choice and thus conveys more of a tautological rather than normative imperative. Agents profit through effective risk management or the creation of "externalities," that is, self-gain at a cost to another party. Intelligence is algorithmic, bargaining is coercive, and norm-following behavior, if it arises, is an equilibrium outcome of individualistic utility maximization. The role of government is to improve social order through monitoring behavior and threatenning sanctions. Mass incarceration is tolerated if it costs less to house prison inmates than to guarantee employment opportunities. There is no characteristic distinction between a citizen and a criminal, because all rational actors would break the law if the benefits outweigh the costs.

The attributes of classical liberalism are consistent with its founding association of liberty with the sanctity of personhood from violation by the state or individual actors. The practices characteristic of neoliberalism are consistent with strategic rationality according to which common knowledge of other actors' preferences replaces reciprocal acknowledgment of one another's right to exist.

This new interpretation of political economy delineated using game theory is intimately connected with the changing practice of market exchange from

60 On Adam Smith's system of natural liberty predicated on negative virtue and promising mutual prosperity, see Amadae, Rationalizing Capitalist Democracy, 2003, 193-219.
61 The only way to prevent choice from automatically being that which the agent prefers is to identify a salient property of the decision environment enabling a criterion for consistency to be applied: Myerson, Game Theory, 1997, 25.
64 On common knowledge, see David Lewis, Convention: A Philosophical Investigation (Oxford: Blackwell, 2002), 52-60.
that ground the standard application of game theory are consistent with realism. First, only outcomes matter, not the means by which they are achieved. Second, the source of value or power is fungible: it is divisible and transferable, like money. Third, rational actors must act independently and individualistically; they cannot act jointly or with solidarity. Fourth, gratuitous altruism, imperfect duty, and other-regarding preferences are irrational. By contrast, in classical liberalism, actors have the perfect and therefore justiciable duty to refrain from harming others. They also have the imperfect duty of personal conscience to consider contributing to those in need, but because every specific choice is the product of private judgment and represents one possible use of scarce resources rather than a precise prohibition, such actions are not subject to legislation. Although it may appear merely coincidental that the progression of the national security debate over nuclear deterrence occurred at the same time as the development of game theory, the two fields were, in fact, intimately connected. Orthodox game theory, articulated in von Neumann and Morgenstern’s *Theory of Games and Economic Behavior* as an exhaustive and comprehensive science of decision making, adopts a stance of realpolitik that offers such a thoroughgoing instrumentalist approach that other actors are treated as complex objects or malevolent opponents. In the game


In *Nuclear Ethics* (London: Free Press, 1986), Joseph S. Nye Jr. observes that deterrence theory is consistent with a thoroughgoing instrumentalism, that some have argued that having nuclear weapons necessarily defeats the modern Western commitment to just war theory (44), and that merely having and by extension intending to use such weapons of mass destruction in itself is an immoral act (50-51).

Doyle, *Ways of War and Peace*, 1997, points out the consistency between the assumption of fungible sources of power and realism, 47; Baldwin points out how Robert Axelrod’s Tit-for-Tat solution of the indefinitely repeated Prisoner’s Dilemma game often used to model anarchy in international relations assumes that actors compute over fungible sources of value, “Neoliberalism, Neorealism, and World Politics,” 1993, 206; Thomas Schelling makes clear the importance of fungible value in repeating, multiparty Prisoner Dilemma games: “Hockey Helmets, Concealed Weapons, and Daylight Saving,” 1973.

The need to go it alone and pursue interests independently is favored in international realism. For discussion, see Art Stein, “Coordination and Collaboration: Regimes in an Anarchic World,” in Baldwin, ed., *Neo Realism and Neoliberalism*, 1993, 49-59, at 51. Although it is conceivable that solidarity, joint maximization, and team reasoning could be modeled using game theoretic tools, this method and assumption counters the game theoretic orthodoxy that actors maximize independently from one another. See Michael Bachtach, Natalie Gold, and Robert Sugden, *Beyond Individual Choice* (Princeton, NJ: Princeton University Press, 2006).


of life, actors are ceaselessly jockeying for resources and status against one another.\(^8\)

The agency normalized by strategic game theory reinforces the understanding of agency presumed by international relations realists. Prisoners of Reason follows the nuclear security debate between proponents of mutual assured destruction (MAD), who accepted the classical liberal position that deterrence should be restricted to bilateral or multilateral self-defense, and the advocates of nuclear utilization targeting selection (NUTS), who argued that the pursuit of strategic dominance was part of self-defense. Game theory intersected with this debate because nuclear strategy was a nonempirical science appropriate for abstract and analytic formal modeling. Although, as a theory of rational action, game theory appeared solely to provide rigorous argumentation devoid of content, the assumptions buried within its original formalization helped secure the analytic victory of NUTS over MAD. Whereas strategic rationality could be deemed one logic of action among many, its construction presupposes that it provides a comprehensive treatment of rational action that necessarily subsumes all other considerations for action under its auspices.\(^9\)

Thus, rather than permit logics of appropriateness, solidarity, and imperfect duty to coexist either alongside or within strategic rationality, game theory instead negates these alternative means of attributing intelligibility to action.

Nuclear strategy appears to be a world apart from markets and democratic governance. However, understanding the nuclear security debate is crucial for grasping how game theory came to characterize all purposive agency during and beyond the Cold War era.\(^9\) In its orthodox form, game theory asserts a purely consequentialist evaluation of outcomes, a realist single criterion metric for value, and individualistic combat. Whereas self-determination and reciprocal respect of human dignity were the starting points for classical liberal theory, neoliberal theory offers the freedom of individual choice to do as he or she pleases constrained only by feasible options. Under neoliberal political philosophy, even affording to others rights of personhood and human dignity is regarded as a weakness and moralism at odds with strategic conduct.

In 1986, Joseph S. Nye Jr. argued that it was a “serious exaggeration to say that ‘nuclearism’ [the exercise of national sovereignty by projecting power through nuclear deterrence] has caused a cultural, as well as a political and constitutional breakdown.”\(^8\) However, assessing the entanglement of rational deterrence theory, or game theory, with civil political theory and practice leads one to the opposite conclusion. The type of reasoning that strategists found useful for buttressing nuclear deterrence was specifically that of orthodox game theory, which openly broke with classical liberal mutual self-regard.\(^5\) Game theory coevolved with US nuclear deterrence, which by 1980 had moved from a stance consistent with classical liberal reciprocal respect of the right to self-preservation to the neoliberal, or offensive realist, posture that credibly sustaining deterrent threats relies on demonstrating the intention and capability to prevail in all levels of conflict by leveraging asymmetric power.\(^7\)

Nye’s Nuclear Ethics provides an overview of the Cold War strategic debate in which those who supported NUTS “attacked MAD in the 1970s in order to urge the development of new, prompt counter-silo weapons [and] failed to distinguish between the doctrine of assured destruction targeting and the condition of ultimate vulnerability that remains even when the doctrine is changed.”\(^8\) Nuclear Ethics makes clear that nuclear deterrence theory was predicated on the irrationality of ever using nuclear weapons but also dedicated to establishing “credible options for the use of nuclear weapons that encourage prudence in the calculation of a rational opponent.”\(^9\) With respect to the former, which Nye


\(^9\) This much is evident in the common knowledge assumption, and in the ready applicability of game theoretic modeling to the evolution of prehuman ancestors. On the common knowledge assumption, see Shaun Hargreaves Heap and Yanis Vouroukas, Game Theory, and ed. (London: Routledge, 2004), 60–72. On distinguishing the distinction between humans and other life forms, see Robert Axelrod, Evolution of Cooperation (New York: Basic Books, 1984).

\(^10\) S. N. Hargreaves Heap and J. Vouroukas, Game Theory, and ed. (London: Routledge, 2004), 60–72. The abnegation of the “no first use” pledge is consistent with the Schlesinger Doctrine’s flexible response and slips into treating nuclear weapons as conventional weapons; Nye discusses the strategic rationality for rejecting a no first use pledge, Nuclear Ethics, 1986, 49–58, specifically p. 53. Thomas Schelling speaks at length of the US strategic advantage in maintaining the threat to use nuclear weapons on a first use basis only balanced by the negative evaluation this policy may evoke from other nations: The most critical question about nuclear weapons for the United States Government is whether the widespread taboo against nuclear weapons and its inhibition on their use is in our favor or against us. If it is in the American interest, as I believe obvious, advertising a continued dependence on nuclear weapons, I.e. a U.S. readiness to use them, a U.S. need for new nuclear capabilities (and new nuclear tests) – let alone ever using them against an enemy – has to be weighed against the corrosive effect on a nearly universal attitude that has been cultivated through universal abstention of sixty years.


\(^8\) Nye, Nuclear Ethics, 1986, 110–112.

\(^9\) Ibid., 127.
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threat and maintain just war theory because, at a minimum, deterrence relies on making a credible threat to harm innocent lives, and, at a maximum, any actor credibly threatening deterrence must acknowledge the lack of any guarantee for the survival of the human species.97

Nye identifies five maxims of nuclear ethics derived from extending the just war tradition to address nuclear deterrence. First, with respect to motives, self-defense is a just but limited motive. Second and third, with respect to means, "never treat nuclear weapons as normal weapons" and "minimize harm to innocent people."98 And fourth and fifth, with respect to ends, reduce the risk of nuclear war in the short term and the reliance on nuclear weapons in the long term.99 Given Nye’s acknowledgment that deterrence has one foot in the sphere of strategic rationality and one foot in the domain of core values, and his acknowledgment that mutual assured destruction is an existential fact, he suggests that not much is necessary to deter.100

However, in following the contours of the debate between the limited deterrence option of mutual assured destruction and the pro-nuclear use war-fighting school, moral constraints on deterrent threats stood in the way of maintaining credible, and hence effective, deterrence. Although the classical liberal framework grounded the modern era with its negative duty to avoid harm and its positive duty to engage in charity when possible, strategic rationality broke with this tradition and buttressed nuclear deterrence with a hard-nosed realism exclusive of respect for side constraints and the recognition of common human dignity. Side constraints on action consistent with the no-harm principle, such as those Nye recommends, have no role in either nuclear deterrence or in the mathematical formalism of game theory. Orthodox game theory therefore breaks with the classical liberal tradition because it has no provision for respecting human dignity or the negative virtue of avoiding injuring people. By accepting that national security depends on wielding deterrent threats to wage nuclear war, game theory offers an abstract formal means to model the security dilemma and evaluate the credibility of threats. Subsequently, after first offering guidance in the form of rational deterrence theory, strategic rationality soon became recognized as the state of the art theory for capturing prudence throughout international relations and soon thereafter the behavioral standard for reasoned judgment for all human relationships.102

97 Ibid., pp. 52–77, 45.
98 Schelling reports how it may well be in the interest of the United States to threaten the use of nuclear war as though nuclear weapons were indistinguishable from conventional weapons, "Astonishing Sixty Years," 2005.
100 Ibid., 107.