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Rational Choice Models of Political Violence: The Role of Injustice and Retribution

Project Lead

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Statement of Problem

Rational choice theory, a cornerstone of economic theory for more than a century, has been largely dismissed as having relevance to the study of political violence, especially when applied to individuals rather than to groups. Yet rational choice theory offers many benefits to policymakers attempting to prevent political violence: it can place political violence within a continuum that ranges from tacit approval of violence, to nonviolent explicit support, to actual participation in violent acts. Because such models also include explicitly the constraints on individual behaviors that are the most common and promising targets for policy, they hold promise for understanding the role that counterterrorism policies play in determining individual behavior. To be most useful, however, rational choice models need to incorporate concepts such as cultural or religious beliefs that many researchers suggest are key motivators of political violence. This brief argues that rational choice models can be usefully extended to explore the role that revenge seeking plays in individuals' choices to engage in political violence.

Background

Rational choice theory has been the theoretical cornerstone of economics for more than a century (Spiegel, 1991) but has been dismissed by many scholars as a valid theory for understanding the violent political behavior of individuals (Caplan, 2006). Yet rational choice models have played a key role in understanding the violent political behavior of groups. For example, Enders and Sandler (2006) have used rational choice theory to successfully model the reaction of terrorist groups to counterterrorism efforts by governments. Furthermore, game theory, which assumes rational agents, is increasingly being used to examine the strategic behaviors of terrorist groups (Sandler and Arce, 2003). Based in part on the success of rational choice models as applied to group behaviors, some authors have used rational choice theory to model individuals' decisions to join extreme religious groups (Iannaccone & Berman, 2006). Despite the success of rational choice theory in these areas, many authors continue to reject rational choice theory as an option when trying to understand individuals' engagement in political violence.

One objection to applying rational choice theory to such behavior is that the theory is one of individual behavior while violent political behavior such as terrorism "can best be explained by the psychology of the group" (Bandura, 1990, p. 79). Another objection to rational choice theory when applied to violent political behavior is its prominent assumption that individuals rationally seek to maximize their well-being. Many authors point to the behavior of suicide terrorists as an obvious violation of the rationality assumption in that the personal cost of the behavior clearly outweighs the personal benefits (Caplan, 2006). Furthermore, work in behavioral economics (a field of economics that incorporates psychological methods and theories into economic research) casts doubt on the universal applicability of the rational choice framework (Rabin, 1998).

Despite these criticisms, a theory of violent political behavior based on rational choice theory promises many practical benefits to policymakers (Enders and Sandler, 2006). First, rational choice models can explore the motives of all individuals connected to violent political activities within a single conceptual framework from tacit approval to explicit monetary support, nonviolent protests in support of political extremists, and active membership in terrorist organizations. In so doing, it allows us to examine the conditions under which the expression of strong political beliefs turns from nonviolent to violent. Second, rational choice theory is a positive theory rather than a normative one (Nicholson, 1989). That is, it does not pass value judgments on the reasonableness or appropriateness of individuals' political, religious, or moral beliefs. Rather, it takes those beliefs as given and examines the tradeoffs individuals make within that context (Enders and Sandler, 2006). Third, it explicitly incorporates constraints on individuals' behaviors. These constraints, such as freedom of movement, the price of basic goods and services or of munitions, or the availability of education or employment opportunities, are the immediate and most movable policy targets for

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policymakers seeking to prevent political violence. Finally, the predictions of rational choice models are empirically testable with observational data. The policy implications of the model need not be accepted or rejected on blind faith, but rather can be tested by examining the behaviors of individuals in the real world.

To understand the extent to which rational choice theory might be applicable to models of political violence, we must first understand some of the basic concepts and terms of the theory. Rational choice theory assumes that individuals behave as if they attempt to maximize their well-being within the constraints of their environment (Nicholson, 1989). The phrase "as if" deserves some discussion because it has been a point of contention among some theorists (Madden, 2006). As articulated by Milton Friedman (1953), the "as if" methodology of positivist economics holds that the usefulness of theoretical models lies in their ability to predict behavior and so theory should be judged solely on its predictive ability. Although many social scientists (including many economists) argue that there are other criteria by which a theory should be judged (e.g., Madden, 2006), if the objective of applied research is to inform public policy then the primary, although not necessarily sole, measure of success for a theory should be its ability to predict the effects of policy on behavior. Thus, this brief considers the potential for a "successful" rational choice theory of political violence based on the "as if" methodology of positive economics. For simplicity of exposition and to avoid unnecessary redundancy, however, the phrase "as if" will be dropped from the remaining discussion.

Returning to rational choice theory, let us define some basic terminology. First is the concept of individual preferences. Rational choice theory assumes that individuals have preferences over various states of the world. In traditional microeconomic models of consumer behavior these states of the world are bundles of goods such as a hamburger and a drink. Individuals intuitively know whether they prefer hamburgers to hotdogs and so can rank various bundles of goods as being more or less preferred. In economics, this preference ranking is commonly referred to as utility. Thus, economists speak of individuals deriving utility from various goods or services.

Importantly, the original conceptualization of utility involved much more than preference rankings of material possessions. Moral and political considerations were also thought to be an integral part of individuals' utility, and some early authors considered these aspects of utility to be the more important in influencing individual behaviors (Spiegel, 1991). Thus, rational choice theory allows individuals to have preferences not only for material possessions such as hamburgers or hotdogs, but also for psychological, moral, and political considerations. It is entirely consistent with rational choice theory for individuals to sacrifice all material possessions for their religious or cultural beliefs.

Given individuals' preferences, rational choice theory assumes that individuals will act in systematic, predictable ways that are consistent with those preferences. Thus, rational choice theory does not require individuals to have "rational" preferences, but rather that they act on those preferences in consistent, "rational" ways. As a result, rational choice theory uses

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calculus to make predictions about individuals' behavior. To do this, we need to have a mathematical representation of individuals' preferences, called a utility function. We can represent an individual's preferences with a utility function provided that individuals' preferences exhibit two basic properties: completeness and transitivity (Nicholson, 1989).

Completeness merely states that individuals can rank *all relevant* states of the world (although indifference between two states of the world is allowed). That is, when faced with a decision, people can make one. Stronger versions of completeness require that individuals can rank *all possible* states, but this is not strictly required. All we need is that individuals make a choice when offered one, not that they can rank hypothetical states of the world that may or may not happen. Transitivity requires that if a person prefers state A to state B and state B to state C, then he also prefers state A to state C. As with completeness, there are stronger and weaker versions of the transitivity property. In its most basic form, transitivity merely implies that when offered a choice between two or more alternatives, individuals will not repeatedly reverse their decisions. Although other assumptions about individuals' preferences are often made by theorists to simplify model development, only weak completeness and transitivity of preferences are necessary to validly represent preferences with a utility function.

Although a growing body of literature in behavioral economics suggests that transitivity may be violated in some experimental situations, the use of formal mathematical models is still considered to be a major strength of economic methods (Rabin, 1998). Thus, even if individuals' behaviors do not adhere strictly to the basic assumptions of utility theory, the basic approach of the rational choice model still retains its strengths. Furthermore, some studies examining the underlying physiological process of decision making suggest that the rational choice model may be more applicable to intuitive or instinctual decisions than to the complex, abstract, or long-term choices most often used in behavioral economics experiments (Camerer et al., 2005). These results suggest that, even in light of evidence questioning the basic tenets of utility theory, the rational choice model may be useful for understanding violent political behavior to the extent that the decision to engage in political violence is, at least in part, a basic, instinctual decision.

Two final concepts derived from the use of rational choice theory in economics deserve attention: the budget constraint and economic bads. In its simplest form, the budget constraint reflects the economic constraints placed on individuals by their income: a person cannot purchase a hamburger if he or she does not have the money to do so. The concept of the budget constraint can be extended to reflect any number of constraints on individuals' behaviors, including social and moral constraints. Many cultural or religious beliefs may be better incorporated into rational choice models as constraints rather than as choices, yet little research has considered the role that such constraints may play in influencing violent behavior.

Economic bads (as opposed to economic goods) are a concept that is not discussed much in most of economic theory. Goods are things that individuals like and therefore will pay money to obtain (or more generally, give up other goods to obtain). Bads are things that

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individuals do not like and therefore will pay to avoid or to eliminate (Nicholson, 1989). For example, in most cases people do not sell their household garbage but rather pay money to have it removed; therefore, garbage is an economic bad. Within rational choice theory, economic goods exhibit a property called diminishing marginal utility. This property states that the more of a good a person has, the less value each additional unit of that good has for the person. For example, a person is more willing to trade a hamburger for a hotdog if he has five hamburgers than if he has only one. Economic bads also exhibit this property but in reverse: bads exhibit increasing marginal disutility. The more of a bad a person has the more he is willing to pay to get rid of it. In other words, bads exhibit the "straw that broke the camel's back" phenomenon.

Now that we a have basic understanding of key concepts of rational choice theory, how might it be applied to political violence? The first step is to decide what are the relevant decision factors for a theory of political violence; that is, what should we include in the utility function? Of course, in the theoretical extreme we should include everything in the utility function, but in practice this is not feasible. Thus, we need to understand the motivations of individuals who participate in political violence versus those who do not. Common wisdom suggests that political violence in general, and terrorism in particular, is motivated by poverty and a lack of education and economic opportunities (Krueger, 2007). Numerous scholarly works, however, suggest that this explanation is at best overly simplistic and at worst completely wrong. In various studies on the topic, Alan Krueger has shown that there is no evidence to support the contention that terrorists are impoverished or have less education. To the contrary, in most circumstances individuals engaged in political violence come from the ranks of the relatively well off and well educated, although he notes political violence in Northern Ireland as a notable exception (for a summary of Krueger's work, see Krueger, 2007). In a recent review of the relevant literature, Ethan Bueno de Mesquita (2008) suggests that the poverty of the society with which terrorists identify may be a key factor in political violence even if the perpetrators themselves are not impoverished.

Consistent with this more nuanced view of the connections between political violence and economic conditions, much of the rhetoric of terrorists, political extremists, and radicals emphasizes long-held grievances as a motivation for political violence. Louise Richardson suggests that the primary motivations for political violence are revenge, renown, and reaction (Richardson, 2006). She argues that the sought-after revenge is for societal injustices that may persist for years or even generations rather than for personal wrongs, although such wrongs may well motivate many individuals to violence. The sought-after renown is both near-term fame from news publicity and the long-term, societal fame of achieving legendary or martyrdom status. Finally, the desired reaction is some form of political reaction on the part of the target. Of the three motivations, Richardson suggests that revenge is the most powerful and the only one that perpetrators of political violence can take rather than be given; renown and reaction must be given by the media or target governments but revenge can be exacted

even with anonymous attacks. Furthermore, many nonviolent, politically active individuals seek renown or reaction yet few espouse a desire for revenge. Thus, revenge seems to be the most relevant factor to incorporate into a utility function when developing a rational choice model of political violence.

Recent work by economists seeking to understand the underlying physiological mechanisms of consumer preferences and decision making suggests that this revenge motive does not need to be strictly altruistic (although the rational choice model can accommodate altruistic behavior; e.g., Andreoni & Miller, 2008). Studies suggest that individuals will punish perceived harms at a future cost to themselves and will even do so on behalf of third parties (Fehr & Gachter; 2000; Marlowe et al., 2008). Other studies suggest that immediate satisfaction may be the motive for apparently altruistic punishment behavior. De Quervain and colleagues (2004) found that the administration of punishment was associated with the activation of brain areas associated with pleasure. Furthermore, when personal costs to administering the punishment were included in the experiment, subjects continued to administer punishment but areas of the brain involved in weighing costs and benefits were also activated.

These findings suggest that the stated motive of seeking retribution or revenge for social injustices suffered by a larger group may well be a relevant motive of those engaged in political violence. Furthermore, individuals may seek this retribution not for strategic reasons or for future gains, but rather for the immediate satisfaction that it brings. They may also subconsciously weigh the immediate satisfaction of retribution against the future costs. When viewed within this context, the relevance of the rational choice model for explaining political violence seems much more likely.

If rational choice models offer benefits to understanding political violence, what existing models are the best templates from which to start? First are existing efforts to develop rational choice models of political violence. Sandler and Enders (2004) develop utility maximization models of terrorist groups to support empirical analyses of counter-terrorism measures and these models are a useful starting point. In addition, Caplan (2000, 2006) suggests a model of "rational irrationality" as a means to address the criticisms raised by behavioral economics. This model includes terms in the utility function to capture strongly held, "irrational" beliefs that may cause individuals' preferences to deviate from the standard assumptions of utility theory.

Next, to incorporate the accumulation of longstanding grievances into the utility function, economic models that consider the accumulation over time of goods or services need to be considered (e.g., Becker, 1993; Becker & Murphy, 1988). In economics any quantity or good that accumulates over time, such as wealth, is called a stock, as contrasted with a flow, which is any quantity that is used, consumed, or saved to form a stock, such as income that can be saved or invested to create wealth. For example, in the theory of rational addiction (Becker & Murphy, 1988), the use of an addictive good such as alcohol or cigarettes leads to the accumulation of an addictive stock. The addictive stock is an economic bad that captures the

harms of addiction. Becker and Murphy (1988) and others have shown that even if agents are aware of the harmful addiction, they may still rationally choose to consume addictive goods because the current enjoyment of that consumption outweighs the discounted future harms. This model has led to the positive hypothesis that permanent increases in the price of addictive substances could decrease consumption, which has been born out by empirical evidence (e.g., Chaloupka & Wechsler, 1997; Farrelly, Bray, Pechacek, & Woollery, 2001).

Another model with applicability to political violence is Becker's (1965) theory of household production. In this model, individuals spend time and purchase goods to produce the economic commodities that ultimately bring them satisfaction or utility. For example, an individual does not enjoy a movie ticket; rather he enjoys watching a movie. In the theory of household production the movie ticket is a purchased good that, when combined with the time spent in the movie theater, produces the commodity of watching a movie. This theory is useful because political violence is typically more a commitment of a person's time than of his or her income and so any model of political violence must be first a model of time allocation.

Synthesis

A model of individual behavior based on rational choice theory is needed to understand the tradeoffs and constraints on the demand for political violence. Using the rational addiction and household production models as starting points, theoretical work can incorporate perceived injustices as an economic bad to which individuals respond. Political violence is then the individual's attempt to reduce the amount of this bad. By using a household production framework, the model can accommodate both the purchase of goods and the devotion of time to political violence. By incorporating the actions of the target governments and societies as constraints, the model can predict the likely impact of various policies on the demand for political violence.

If, as suggested earlier, this model is to be judged on its ability to predict behavior, what evidence is there that it can make useful predictions? First, by modeling the demand for revenge as a response to an economic bad, the model predicts disproportionate responses to apparently small harms, such as the widespread riots that occurred following the publication of cartoons in a Danish newspaper depicting the prophet Mohammed. This is a direct consequence of the "straw that broke the camel's back" phenomenon exhibited by economic bads.

Another key prediction of the model comes from the conceptualization of revenge as a household commodity that is produced using time and money, and therefore competes with the production of basic consumption goods such as food and shelter. Individuals at very low levels of consumption will place a very high value on basic consumption goods (due to the property of diminishing marginal utility discussed earlier). Therefore, they are likely to devote nearly all their time to consumption activities, leaving very little time for political violence. In

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other words, engaging in revenge is a luxury good. Individuals who are struggling to achieve the basic necessities of life will have very little time to engage in political violence. Krueger (2007) came to the same conclusion, but failed to grasp the broader implications. In societies without strong social welfare supports, such as many Middle Eastern countries, only the relatively well-off can afford to engage in political violence. However, in countries with well-established social welfare systems, such as Northern Ireland, individuals from all classes can afford to engage in political violence because the basic necessities of life are secure. Thus, viewing revenge as a luxury good resolves what Krueger called the puzzle of Northern Ireland: that it is one of the few conflicts he studied in which the perpetrators of political violence did not come from the ranks of the relatively well-off.

Of course, one advantage of the mathematical rational choice model is that it uncovers previously unknown, and sometimes counterintuitive, implications. These implications are often the most important for empirical testing because they are often unique to the rational choice model. Formal derivation and extension of a rational choice model of political violence will undoubtedly uncover additional implications. Empirical testing of these implications will almost certainly provide supporting evidence for some of these implications and contradictory evidence for others. From a policy standpoint, whether this evidence is viewed as support or refutation of rational choice theory as a whole or merely the specific rational choice model being tested is irrelevant. What is important is the extent to which the model can inform policy and so empirical results can be used to adapt and modify the model without requiring us to start over with an entirely new theoretical framework.

Future Directions

Both theoretical and empirical work is needed to determine the usefulness of the rational choice model in explaining political violence. Theoretical work should focus on fully specifying the model and deriving testable policy implications of the theory. A fully specified rational choice model should include not only a revenge motive, but also political goals and cultural values. It should also consider incorporating some cultural and religious beliefs as constraints on behaviors rather than as choices. Perhaps individuals' behaviors are more consistent with some acts of political violence being "required" by social and religious mores rather than as being a choice made by rational actors. The fact that some Western scholars may view such "constraints" as irrational is irrelevant: The rational choice model takes individuals' preferences and perceived constraints as given and examines their decisions within that context.

Empirical work would use existing data on terrorist events to empirically test the policy implications of the model. Possible databases include the Terrorism in Western Europe: Events Data (TWEED) database, the International Terrorism: Attributes of Terrorist Events (ITERATE) database, the Terrorism Knowledge Base, or the Global Terrorism Database. The model can then be refined based on the results of empirical work. Advanced econometric and

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psychometric techniques that estimate the effect of unmeasured, latent variables will most likely be needed to asses the effects of variables such as revenge or cultural beliefs on individuals' behaviors. For example, latent class analysis (McCutcheon, 1987) could be used to identify two or more types of individuals who differ on the extent to which revenge influences behaviors. The final step would be to use the refined model to conduct policy simulations that would inform a host of U.S. policies, including hearts and minds campaigns, humanitarian aid missions, and military operations.

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