

Deterrence and Rational Choice Theory

RICHARD WORTLEY and AIDEN
SIDEBOTTOM

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Few theories in the social sciences can boast a greater pedigree than rational choice. Its central premise is beguilingly simple: when faced with a set of alternatives, individuals will prefer that which is expected to produce the most favorable outcome. It has a long history – dating back to at least the eighteenth century and “classical criminologists” such as Cesare Beccaria (1764) and Jeremy Bentham (1789) – yet continues to generate much research and scholarly debate. Elements of rational choice can be seen in seminal criminological perspectives such as neutralization (Sykes and Matza, 1957), social disorganization (Merton, 1938), control (Gottfredson and Hirschi, 1990), and routine activities (Cohen and Felson, 1979) theories. In particular, rational choice is arguably the dominant framework for understanding offender decision making. According to rational choice theory, prospective offenders choose to commit crime in much the same way as they choose to carry out any other behavior, by weighing up the perceived costs and benefits of doing so. Crime occurs when the perceived benefits outweigh the anticipated costs. It follows that potential offenders can be deterred from acting on their criminal intentions by increasing the relative costs of offending.

This entry begins with a review of the key features of rational choice theory. Two ways in which the deterrence principle implicit in rational choice theory has been operationalized to prevent crime are then examined. The first is its application at the macro-level via the apparatus of the criminal justice system and the imposition of formal sanctions. The second is its application at the micro-level via the manipulation of situational contingencies operating at the prospective crime setting in ways that make crime more difficult or risky to carry out. The entry concludes

with an evaluation of rational choice theory as a conceptual basis for deterring offenders.

Rational Choice Theory

While the roots of rational choice theory are in the classical criminology writings of Beccaria and Bentham, much of the subsequent theorizing in more recent years has occurred in other social science disciplines, notably economics and psychology (Becker, 1968; Kahneman and Tversky, 1979). Rational choice theory operates with a stripped-down model of human psychology, focusing on the universal processes by which decisions are made and largely ignoring the role of individual differences. The concept of rationality is based on three central tenets, namely: that behavior is purposive and goal-oriented; that preferences are consistent, can be ranked and are transitive (i.e., if $A > B$ and $B > C$ then invariably $A > C$); and that decision makers behave hedonistically to maximize utility (MacDonald, 2003).

There are two main approaches to modeling rational decision making: normative and descriptive. Normative models account for the way decisions should be made if the decision maker is acting purely rationally. For empirical purposes, normative models attempt to express decisions as (often complex) mathematical formula. The expected utility of a decision can be calculated by multiplying the value of the outcome by the probability that the outcome will occur (von Neumann and Morgenstern, 1944). For example, a 50% chance of winning \$100 produces an expected utility of \$50, while a 75% chance of winning \$80 produces an expected utility of \$60; hence, faced with a choice between these two options, the second one represents the most rational alternative. Of course, in real-life situations of the sort confronting offenders when deciding whether or not to engage in crime, the objective outcomes and probabilities are rarely known. A prospective burglar, for example, does not know precisely the value of the goods in a particular house, nor the exact likelihood that he will be caught. In these cases the decision maker must make personal judgments about the

subjective utility of a decision (Savage, 1954). Our prospective burglar, then, must decide whether, *from his perspective*, the potential gains are worth the risk.

It is universally acknowledged among rational choice theorists that normative models do not account for the process by which human beings go about making decisions (Edwards, 1992). Rather, human decision making is characterized by many deviations from optimal rationality in the form of perceptual errors, heuristics, and biases (see Kahneman, 2011). Descriptive models attempt to capture these cognitive “errors” and so to describe more accurately actual decision-making processes (Kahneman and Tversky, 1979; Simon, 1983). Arguably the best-known descriptive model in criminology is Simon’s (1983) concept of *bounded* rationality. Simon argued that human decision making is neither perfectly rational nor wholly irrational. Individuals strive to benefit themselves to the best of their ability but are constrained by the fundamental limits of human information processing, emotional states, and other individual characteristics, and the amount of time and other environmental factors that reduce the quality of the information that is available. Simon described human decision making as *satisficing* – satisfactory and sufficient – designed to meet the decision maker’s minimum requirements at that time. Returning to our prospective burglar, he does not carefully weigh up the costs and benefits associated with every house in a neighborhood before deciding whether to commit burglary. His decision to proceed with a burglary is a rough and ready one, and the quality of his decision may be compromised by many factors including his level of intoxication or drug intake, his cognitive capacities, and the heightened emotions and time pressures associated with offending.

Deterrence and the Criminal Justice System

Beccaria (1764) and Bentham (1789) were motivated to develop their models of deterrence by what they observed to be society’s preoccupation with punishment over prevention. They argued for the reverse – “better to prevent crimes than punish them” (Beccaria 1986 [1764]: 93). They

were particularly critical of the brutality and non-proportionality of punishments. With literally hundreds of crimes attracting the death penalty at the time, they argued that there was no incentive for a petty offender not to progress to more serious offences – in the words of a contemporary saying, one might as well be hung for a sheep as a lamb. They proposed that in order to deter offenders, the severity of punishment should just outweigh the benefits derived from offending. To achieve this, punishments that could be infinitely graduated, such as terms of imprisonment and monetary fines, were favored since severity could be finely tailored to suit the crime. Crucially, in addition to the severity of sanction, they identified two further necessary conditions for effectively deterring criminal behavior: certainty and the swiftness of punishment. Severity will have little effect if the offender knows s/he will not be caught for their crime or if there is an inordinate delay between the crime and the punishment.

Despite its initial influence, classical criminology and its associated deterrence doctrine gave way to positivistic theories in the early twentieth century, with the focus shifting onto biological and sociological explanations for crime and towards solutions to crime that involved “curing” offenders or redressing the social ills that produced them. In the latter quarter of the twentieth century, however, interest among criminologists in rational choice theory was revived by the work of economists such as Gary Becker (1968) as researchers turned their attention to policy-relevant research (e.g., Blumstein, Cohen, and Nagin, 1978). This research was given further impetus by the widespread adoption of “get tough” criminal justice policies in the United States from the 1980s (such as stiffer prison sentences), which reflected a renewed “common-sense” political faith in the power (and popularity) of deterrence.

Research on the effectiveness of criminal justice deterrence as a crime prevention mechanism suggests that it is at best a blunt instrument. Pratt and Cullen (2005) conducted a meta-analysis of 214 studies on macro-level predictors of crime. Deterrence-relevant findings were derived from three categories of study – those examining the effects of “get tough” crime policies, those examining the effects of deterrence-oriented

police practices, and those examining the effects of imprisonment. Overall, deterrence strategies were found to be weak and inconsistent predictors of crime. The strongest deterrent effect was for incarceration (effect size $-.317$), although the researchers were not able to determine the extent to which lower crime rates were the result of an incapacitation effect as opposed to deterrence. Policing practices and crime policy had negligible (though marginally significant) effects on crime.

It is tempting to conclude from Pratt and Cullen's meta-analysis that criminal justice deterrence "does not work," either because attempts to operationalize deterrence have been ineffective – for example, because the chance of being caught remains low (Burrows et al., 2005) – or because offenders simply are not rational. However, an important distinction needs to be made between threshold deterrent effects and the impact of increases in deterrence efforts. While increasing criminal justice sanctions might not result in a proportionate decrease in crime, consider what would happen if these sanctions did not exist. Some idea of the outcome of such a scenario can be gained by examining the breakdown in law and order as a result of police strikes (Nagin, 1978), blackouts (Muhlin et al., 1981), and natural disasters (LeBeau, 2002). In these cases crime rates increase sharply. Thus the criminal justice system clearly does deter crime but the relationship between criminal justice deterrence measures and crime reduction is not linear.

Deterrence and situational crime prevention

As outlined earlier, deterrence is typically thought of in terms of criminal justice sanctions. The principal deterrence lever available to the criminal justice system is the severity of punishment; certainty and swiftness is difficult to deliver. Situational crime prevention represents another way of operationalizing the deterrence principle, this time by focusing not on the threats of formal punishment that may (or may not) occur in the distant future, but on deterrent effects that can be applied at the very time the offender is contemplating committing a crime.

The chief architect of situational crime prevention is Ron Clarke (1980) and, with his colleague

Derek Cornish, he explicitly drew on rational choice theory for its prime theoretical underpinning (Clarke and Cornish, 1985). However, Clarke and Cornish adapted the prevailing interpretation of rational choice theory in a number of important ways. First, they realized that many of the decisions made by potential offenders involved information available at the crime scene. In the original version of situational crime prevention (later elaborated in ways that are not of concern here) they argued that the decision whether or not to proceed with a crime is made with reference to three main cost–benefit dimensions – the perceived risk, effort, and potential rewards associated with carrying out the contemplated crime. The offender might calculate, for example, that a house with a burglar alarm is a riskier burglary prospect than a house without an alarm, and so choose not to burgle it. Second, the decision to commit crime is *situation-specific*. Where criminal justice deterrence presents a macro-level application of rational choice theory, Clarke and Cornish emphasized that decisions are made on a case-by-case basis. The goal of criminal justice deterrence is to dissuade individuals from offending in general; the goal of situational prevention is simply to dissuade an individual from committing a specific crime in a specific setting. A burglar may choose not to burgle a house with an alarm, but go on to burgle one without an alarm or, indeed, to commit some unrelated crime. Third, Clarke and Cornish explicitly rejected the "pure" normative models of rational choice – which strongly influenced criminal justice deterrence – and embraced Simon's descriptive model of bounded rationality. Clarke and Cornish were concerned with the practical implications of rational choice; their primary aim was to develop a "good enough theory" to provide a framework for developing situational crime prevention strategies.

Clarke and Cornish could point to various sources of evidence which supported the notion that criminal behavior is causally influenced by situational contingencies, most dramatic of which was the huge fall in the rates of suicide in 1960s Britain which corresponded to gradual reductions in the toxicity of domestic gas supply in households. Self-gassing was once a common suicide method. The gas supply to most homes contained toxic levels of carbon monoxide which

in high quantities was lethal. In the ensuing decade suicide rates using this method plummeted. There was little reason to believe that the prevalence of suicide ideation had changed over this period. Methods to commit suicide abounded. Yet the removal of a widespread, painless, and easy-to-operate suicide method appeared to initiate a reduction in suicide overall (for an overview, see Clarke and Lester, 1989). The agenda set out in the earlier formulations of situational crime prevention assumed that what held for suicide may also work for many other types of criminal behavior. Since then, situational crime prevention has undergone much development, has been applied to a wide variety of problems, and has amassed extensive evidence in support of reducing crime by manipulating the immediate environment (for recent reviews, see Clarke, 2008; Tilley and Sidebottom, 2014).

Perhaps the most persistent criticism of situational crime prevention is that it is likely to merely displace crime rather than prevent it. It is reasoned that if an offender is thwarted in endeavors to commit crime at one time or location he or she will simply offend at another time or place. Guerette and Bowers (2009) have tested this assumption empirically, conducting a systematic review of 102 evaluations of situational crime prevention. They found that displacement was reported in just 26% of cases, while in 27% of cases diffusion of benefits occurred (i.e., crime fell in nearby places where no interventions were put in place). These findings can be explained within the terms of rational choice. Crime does not necessarily displace because crime opportunities are not evenly distributed in time and space, and moving to another area to offend often entails expending greater effort and taking more risks for less reward. In the case of diffusion of benefits, it seems that offenders have assumed that the prevention interventions were more widely implemented than was the case. Both outcomes are indicative of a reasoning offender, not one slavishly driven by a disposition to offend.

Evaluation and Conclusion

Rational choice has undergone significant development since Beccaria and Bentham articulated the basic principle that behavior is a function of its

perceived consequences over two hundred years ago. It has been the subject of extensive empirical research, complex mathematical modeling, and theoretical elaboration. At the same time, the practical implications of rational choice – that criminal behavior can be deterred by increasing the relative perceived costs of offending – has had a profound impact on the approaches taken to prevent crime. However, an examination of the various ways that the deterrence principle has been applied to reduce crime tells two different stories.

The usual way to implement deterrence, and the concern of Beccaria and Bentham, is through levers of the criminal justice system. There is perhaps some irony in the fact, however, that a principle devised by two great thinkers of the Enlightenment to counter criminal justice excess became the rationale for the get tough policies of recent times. In any event, the renewed academic interest in deterrence coincided with the shift towards a more punitive approach to offenders. As a consequence, much of the recent criminological research has been directed at demonstrating the ineffectiveness of some of the more extreme, populist manifestations of the deterrence logic (Pratt and Cullen, 2005). But more generally than this, researchers often express puzzlement and some disillusionment at why criminal justice deterrent effects are not stronger than the evidence indicates (Paternoster, 2010).

The alternative way to apply the deterrence principle is at a situational level. Here there appears more evidence of success and certainly greater levels of enthusiasm among researchers. While there are debates about whether rational choice provides a complete model for situational crime prevention (Wortley, 2014) – and indeed situational crime prevention has evolved to include strategies beyond deterrence (Cornish and Clarke, 2003) – few in the field would doubt that manipulating situational contingencies to increase the relative perceived costs of crime is an effective crime prevention strategy.

One conclusion to be drawn from these two experiences of deterrence is that the specificity and immediacy of deterrence strategies matter. Most criminal justice measures are by nature applied in a blanket fashion and involve costs that take place in the distant future. When deterrence is made more immediate and is related to

specific behaviors then the connection between the outcome and the behavior is made more obvious to the decision maker. Policing research demonstrates the point. Simply increasing police numbers (Pratt and Cullen, 2005) or the number of police patrols (Kelling, Pate, Dieckman, and Brown, 1974) has been shown to have little effect on crime rates. On the other hand, targeting specific crime hotspots (Braga, Papachristos, and Hureau, 2012) and chronic offenders (Kennedy, 2008) has been shown to be more effective and give cause for greater optimism. As Beccaria and Bentham knew, simply increasing the severity of punishment is an incomplete and ineffective interpretation of the deterrence principle.

SEE ALSO: Labeling Theory; Life-Course Theories; Self-Control Theory; Social Support Theory; Strain Theories

References

- Beccaria, C. (1986 [1764]). *On crimes and punishments*. (Trans. Henry Paolucci). New York: Macmillan. (Originally published in 1764).
- Becker, G. S. (1968). Crime and punishment: An economic approach. *Journal of Political Economy*, 76(2): 169–217.
- Bentham, J. (1988 [1789]). *An introduction to the principles of morals and legislation*. Amherst, NY: Prometheus. (Originally published in 1789).
- Blumstein, A., Cohen, J. and Nagin, D. (Eds.). (1978). *Deterrence and incapacitation: Estimating the effects of criminal sanctions on crime rates*. Washington, DC: National Academy of Sciences.
- Braga, A. A., Papachristos, A. V., and Hureau, D. M. (2012). The effects of hot spots policing on crime: An updated systematic review and meta-analysis. *Justice Quarterly*, 633 – 663.
- Burrows, J., Hopkins, M., Hubbard, R., Robinson, A., Speed, M., and Tilley, N. (2005). *Understanding the attrition process in volume crime investigations*. Home Office Research Study 295. London: Home Office.
- Clarke, R. V. (1980). Situational crime prevention: theory and practice. *British Journal of Criminology*, 20:136–147.
- Clarke, R. V. (2008). Situational crime prevention. In R. Wortley and L. Mazzerole (Eds.), *Environmental criminology and crime analysis* (pp. 178–194). Willan: Cullompton.
- Clarke, R. V., and Lester, D. (1989). *Suicide: Closing the exits*. New York: Springer-Verlag.
- Cohen, L., and Felson, M. (1979). Social change and crime rate changes: A routine activity approach. *American Sociological Review*, 44: 588–608.
- Cornish, D. B., and Clarke, R. V. (1985). Modelling offenders' decisions: A framework for research and policy. In M. Tonry and N. Morris (Eds.), *Crime and justice: A review of research* (Vol. 6). Chicago: University of Chicago Press.
- Cornish, D. B., and Clarke, R. V. (2003). Opportunities, precipitators and criminal decisions: A reply to Wortley's critique of situational crime prevention. In M. Smith and D. B. Cornish (Eds.), *Theory for situational crime prevention*. Crime Prevention Studies, Vol. 16. Monsey, NY: Criminal Justice Press.
- Edwards, W. (1992). Towards the demise of economic man and woman: Bottom lines from Santa Cruz. In W. Edwards (Eds.), *Utility theories: Measurements and applications*. Dordrecht: Kluwer.
- Gottfredson, M. R., and Hirschi, T. (1990). *A general theory of crime*. Palo Alto, CA: Stanford University Press.
- Guerette, R. T., and Bowers, K. (2009). Assessing the extent of crime displacement and diffusion of benefit: A systematic review of situational crime prevention evaluations. *Criminology*, 47(4): 1331–1368.
- Kahneman, D. (2011). *Thinking fast and slow*. New York: Farrar, Straus and Giroux.
- Kahneman, D., and Tversky, A. (1979). Prospect theory: An analysis of decisions under risk. *Econometrica*, 47: 263–291
- Kelling, G. L., Pate, T., Dieckman, D., and Brown, C.E. (1974). *The Kansas City prevention patrol experiment: A summary report*. Washington, DC: Police Foundation.
- Kennedy, D. M. (2008). *Deterrence and crime prevention: Reconsidering the prospect of sanction*. New York: Routledge.
- LeBeau, J. L. (2002). The impact of a hurricane on routine activities and on calls for police service: Charlotte, North Carolina, and Hurricane Hugo. *Crime Prevention and Community Safety*, 4(1): 53–64.
- MacDonald, P. K. (2003). Useful fiction or miracle maker: The competing epistemological foundations of rational choice theory. *The American Political Science Review*, 97(4): 551–565.
- Merton, R. K. (1938). Social structure and anomie. *American Sociological Review*, 3: 672–682.
- Muhlin, G. L., Cohen, P., Struening, E. L., Genevie, L. E., Kaplan, S. R., and Peck, H. B. (1981). Behavioral epidemiology and social area analysis: The study of blackout looting. *Evaluation and Program Planning*, 4: 35–42.
- Nagin, D. (1978). Crime rates, sanction levels, and constraints on prison population. *Law Journal*, 12: 341–366.

- Paternoster, R. (2010). How much do we really know about criminal deterrence? *Journal of Criminal Law and Criminology*, 10(3): 765–823.
- Pratt, T. C., and Cullen, F. T. (2005). Assessing macro-level predictors and theories of crime: A meta-analysis. In M. Tonry (Ed.), *Crime and justice: A review of research* (Vol. 32). Chicago: University of Chicago Press.
- Savage, L. (1954). *The foundations of statistics*. New York: John Wiley & Sons.
- Simon, H. A. (1983). *Reasoning in human affairs*. Oxford: Blackwell.
- Sykes, G. M., and Matza, D. (1957). Techniques of neutralization: A theory of delinquency. *American Sociological Review*, 22(6): 664–670.
- Tilley, N., and Sidebottom, A. (2014). Situational crime prevention. In G. Bruinsma and D. Weisburd (Eds.), *Encyclopedia of criminology and criminal justice* (pp. 4864–4874). New York: Springer-Verlag.
- von Neumann, J., and Morgenstern, O. (1944). *Theory of games and economic behavior* (1st ed.). Princeton, NJ: Princeton University Press.
- Wortley R. (2014). Rational choice and offender decision making: Lessons from the cognitive sciences. In B. Leclerc and R. Wortley (Eds.), *Cognition and crime: Offender decision making and script analysis*. London: Routledge.

Further Reading

- Cornish, D. B., and Clarke, R. V. (1986). *The reasoning criminal: Rational choice perspectives on offending*. New York: Springer-Verlag.
- Pratt, T. C., Cullen, F. T., Blevins, K. R., Daigle, L. E., and Madensen, T. D. (2006). The empirical status of deterrence theory: A meta-analysis. *Taking stock: The status of criminological theory*, 15: 367–395.

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ABSTRACT

Simply put, rational choice theory assumes that when faced with a set of alternatives, individuals will prefer that which is expected to produce the most favorable outcome. Aspects of rational choice can be found in numerous criminological perspectives. In this entry we explore the relationship between rational choice theory and deterrence. Two ways in which rational choice theory has been applied in the service of deterrence are considered. First, deterrence at a macro-level via the apparatus of the criminal justice system and the imposition of formal sanctions is examined. Second, deterrence at the micro-level through the manipulation of the immediate environment in ways that influence the decision making of prospective offenders is examined.

KEYWORDS

deterrence; rational choice; situational crime prevention

AUTHOR BIOGRAPHY

Richard Wortley is Director of the UCL Jill Dando Institute of Security and Crime Science. He is a psychologist and began his career working in that capacity in the prison system for 10 years. His main research interests center on the role that immediate environments play in criminal behavior, and the implications this has for crime prevention. He has published widely in this field, including eight books.

Aiden Sidebottom is a lecturer in the Department of Security and Crime Science at University College London. His main research interests are crime prevention evaluation and evidence-based policing. He has published over 30 articles in journals such as *Criminology* and *Journal of Research in Crime and Delinquency*.