

Markets for suspicion: Assessing cost-benefit analysis in criminal justice

Tiffany Bergin

Introduction

Across the industrialized world, cost-benefit analysis (CBA)—the systematic weighing-up of the economic and social costs and benefits of a particular program, project, or policy, and assigning to them a monetary value—has gained increasing prominence in public-sector decision-making. Long applied to environmental policies, in recent years CBA has been used with ever-greater frequency in criminal justice policy decisions.

The application of CBA to the realm of criminal justice is perhaps most pronounced in the United States, where examples of the utilization of this technique can be found at both the national and state levels. For example, the National Institute of Justice (2008) has employed CBA to determine the value of new criminal justice policies or procedures, such as using forensic evidence to solve property crimes. CBA has also been used to evaluate state-level criminal justice policies (Roman et al. 2007). Indeed, in 2012, the National Conference of State Legislatures reported that state governments were increasingly using CBA to inform their juvenile justice policies (Brown 2012, 13), while state Supreme Court judges have also emphasized the importance of CBA in the criminal justice system (Price 2012). In addition to these governmental applications, a substantial proportion of the scholarship on CBA's applications to crime and criminal justice has been produced by US-based scholars (Byford et al. 2010, 48). Indeed, the US-based criminal justice research organization the Vera Institute of Justice (2012) has created a »knowledge bank« of research on CBA and criminal justice.

The US, however, is not the only country that has employed CBA in criminal justice policymaking. The United Kingdom's Home Office has required evaluators of a major crime reduction initiative to use CBA and has even issued guidance documents to ensure rigor and consistency among evaluators' CBA approaches (Farrell, Bowers, and Johnson 2005). In 2003, the European Commission issued a call for tenders for a review of research into cost benefit analysis and crime prevention strategies in European Union member states (van Soomeren et al. 2005, 5). In New Zealand, a discussion paper examining CBA and estimating the costs of crime was produced under the auspices of the Ministry of Justice (MacCallum 1997). Although this article focuses on the US and the UK, this interest from the European Commission and the New Zealand government indicates that the issue of CBA in criminal justice decision-making has wider geographic relevance.

CBA's increasing use in criminal justice policymaking is an important development that deserves greater attention. This article adds to a growing body of literature on this and related topics (see, for example: Cohen 2005; Albertson and Fox 2012) by offering an overview of CBA's history and its potential benefits and limitations in criminal justice. Such an overview—and, more broadly, a considered debate about the merits and consequences of using CBA—is urgently needed, given CBA's prominence in criminal justice policy decisions. By analyzing key critiques that have been levelled at CBA, this article has practical relevance for the increasing number of criminal justice scholars who use CBA in their evaluations and research. By applying theoretical frameworks to critically evaluate CBA and situate its rise within its historical, economic and political contexts, the article also has scholarly relevance for readers interested in linkages between CBA and models of »actuarial« crime and justice (Feeley and Simon 1992), as well as ideas regarding the »risk society« (Giddens 1999; Beck 1992).

In addition to a critical assessment of major critiques of CBA both in criminal justice and in other policy fields, this article also examines the question of whether the same critiques that have been leveled at the application of CBA in other policy domains *also* apply to criminal justice

policies. The article concludes with a discussion of the future implications of the application of CBA in criminal justice policymaking—and why such applications will likely only increase in the future.

A brief history of CBA

Before critically evaluating CBA, it is essential to first examine the history and content of this technique. CBA's lineage can be traced to the 19th-century utilitarian philosopher Jeremy Bentham, who proposed a methodology to precisely measure the pain against the pleasure or benefits of various choices and activities (Skousen 2009, 122). In Bentham's view, logical individuals endeavor to make choices that increase their pleasure and decrease their pain, meaning that they are forever making calculations about the benefits and harms or drawbacks of various acts (Clear, Cole, and Reisig 2011, 38). This focus on calculation and the measurement of seemingly intangible constructs prefigured later developments in the use of CBA in criminal justice. In the early 20th century, Vilfredo Pareto, John Hicks, and Nicholas Kaldor's work in welfare economics helped lay the groundwork for later CBA techniques (Pearce, Atkinson, and Mourato 2006, 32). The notion of Pareto superiority posits that a policy or project that does not harm anyone, but does benefit someone should be adopted, while the Kaldor-Hicks criterion argues that even if some are harmed by a policy, the policy should be adopted if those who benefit gain enough that they are able to fully compensate those who are harmed (Fuguitt and Wilcox 1999, 39). The weighting of costs and benefits to different stakeholders in the Pareto and Kaldor-Hicks models is redolent of CBA ideas, although these concepts typically measure welfare or utility rather than money, which is central to CBA calculations (Adler and Posner 2006).

CBA was explicitly used to guide policy decisions as early as the 1930s in the US, when it was applied to decisions about environmental projects (Kula 1992, 217). During this period, CBA was applied in particular to policy choices regarding water resources, to ensure that public management projects delivered value to citizens. This governmental interest in CBA encouraged academic research in this area (Hanley and Spash 1993,

4). Adler and Posner (1999, 169) have linked the emergence of CBA in governmental decision-making in the 1930s to the expansion of the federal government that occurred during this same period as a result of President Franklin Roosevelt's New Deal.

After the Second World War, CBA's prominence grew as demands for cost-effective government programs increased (Pearce, Atkinson, and Mourato 2006, 16). By the 1960s, CBA principles were applied to assess the potential effects of some American decisions about environmental policies (see examples in Carlin 2005) as well as of British decisions about transportation projects (Fuguitt and Wilcox 1999, 7). A decade later, CBA was endorsed in a landmark publication for the World Bank (Squire and Van der Tak 1975). Today in the US, all federal government environmental regulations must still be subjected to CBA before they can be implemented (Brent 2006, 13), whilst the 1995 Environment Act promoted the inclusion of CBA in UK policymaking (Vergano and Nunes 2007, 3393). Among European countries, by the mid-2000s the UK had developed the widest body of research on CBA (van Soomeren et al. 2005, 7).

The application of CBA-like techniques to criminal justice issues was first undertaken primarily by economists. Most famously, in 1968 the economist Gary Becker theorized that some criminal behavior can be understood through a rational choice perspective in which individuals weigh the costs and benefits of committing crimes. According to Becker's theory, societies could therefore reduce crime by increasing the potential costs of crime to offenders—for example, by increasing criminals' likelihood of getting caught and by imposing stiffer penalties for crime.

In addition to this use of CBA to help explain criminal behavior, CBA has also been used more broadly to inform American and British criminal justice policy decisions—although the technique has yet to be fully applied to all aspects of criminal justice policymaking. Farrell and Roman (2010, 165 and 167), for example, have noted that CBA has only been sporadically applied to the area of victimology. Additionally, Brown (2004, 372) has argued that CBA has not been comprehensively applied

to American criminal law, but could be used more widely to improve criminal law's efficiency and effectiveness. These findings illustrate that CBA is not applied universally in criminal justice policymaking, and its use should not be overstated.

Although the full range of specific measures that have been used to perform CBA cannot be discussed in detail in this chapter, one widely-used measure that was originally developed in public health is quality-adjusted life years (QALYs) (Prieto and Sacristán 2003). When applied to the realm of criminal justice, this technique assumes that more serious crimes involve greater losses of QALYs, although measuring the precise loss from various crimes can be extraordinarily difficult (Farrell and Roman 2010, 165–66), a limitation discussed in more detail in the next section. Another key measure within CBA, willingness-to-pay, measures costs based upon how much an individual would pay to avoid those costs or to reduce the risk of incurring such costs (Weimer 2008). The obvious difficulties of adapting this measure to the criminal justice context, and assigning monetary values to instances of crime, are discussed in the next section.

In addition to CBA, several related techniques have also been used in medicine and public health to quantitatively assess programs or decisions. Such techniques include cost-comparison analysis (Grosse 2009) and cost-consequence analysis (Mauskopf 2009). A third, related, technique, cost-effectiveness analysis (CEA), is similar to CBA in that it also involves considering costs and benefits of various alternatives; however, unlike CBA it focuses only on achieving an outcome at the lowest possible expense and does not consider whether a policy is worthwhile—or whether its benefits outweigh its costs (see, for example, Loisel et al. 2002). Given the techniques' similarities, some scholars have posited that CEA should be considered a sub-technique within CBA (Johannesson 1995) although it is essential to remember that, unlike CBA, CEA does not endeavor to monetize a program's impacts (Swaray, Bowles, and Pradiptyo 2005, 143). Despite CEA's limitations, the use of this alternative technique in some evaluations shows that CBA is not the only prevalent method for evaluating policies economically. Although this article

focuses on CBA as it has achieved the greatest prominence in the literature, it is important to remember that alternative techniques also exist. Indeed, CEA has been used in some studies when the goal is to uncover the relative cost-effectiveness of criminal justice programs (Griffith et al. 1999).

The rationale for employing CBA

A key rationale for employing CBA in policymaking is the innate clarity of its results. CBA can produce findings that are simple to interpret and provide a straightforward answer to the question of whether a policy decision is economically »worthwhile.« One CBA-oriented study of the US state of Washington, for example, found that adult drug courts could produce \$1.74 in benefits for every \$1 spent, as they could reduce expenditures in other parts of the criminal justice system through lower recidivism rates (Washington State Institute for Public Policy 2003). This finding is easy to interpret and, for non-specialists at least, would likely have a greater intuitive appeal than a complex list of regression coefficients and significance levels.

A second rationale for employing CBA is that the technique requires policymakers or bureaucrats to think through a policy's potential outcomes and consequences (Brown 2004, 335). Such close scrutiny of a policy's effects could produce better policymaking. Indeed, as Pearce, Atkinson, and Mourato (2006, 34–35) have argued, CBA encourages decision-makers to think about who will benefit and who will be harmed as a result of a decision and, since CBA takes into account all costs and benefits, it requires decision-makers to adopt a broader perspective regarding a decision's impact. In other words, performing CBA calculations makes it more difficult for policymakers to ignore that certain citizens might be harmed by a policy.

A third rationale is that CBA could help save taxpayer dollars—and indeed CBA is often specifically employed to achieve this purpose. Escalating costs are of particular concern in the criminal justice realm since, even after taking into account inflation, criminal justice spending in the US has increased dramatically over the past several decades, with steep

rises especially in the area of corrections (Brux 2008, 30). These increases—and the related desire to curb these costs—have likely helped drive the increased application of CBA to criminal justice policymaking.

A fourth and final rationale is that CBA can contribute additional information that other evaluations of criminal justice policies' effectiveness cannot convey. Marsh, Chalfin, and Roman (2008) found that, across numerous studies of criminal justice interventions, effect size (indicating the intervention's impact) and net benefit (indicating the benefits of the intervention minus its costs) were not strongly related. Thus evaluations and CBA do not always produce similar results—in fact, they could actually lead policymakers to endorse different policies. CBA thus has the potential to contribute unique and important information to policy decisions that is not available through other sources.

Although these four rationales do not encompass all of the varied reasons for CBA's appeal, they show that CBA offers a range of potential advantages. On the other hand, aspects of CBA have also been subjected to numerous critiques. These criticisms are explored in detail in the next section.

Methodological, ethical, and other critiques

CBA's main critiques can be divided into two categories: practical criticisms of how CBA is conducted, and more fundamental critiques of its theoretical foundations. This section reviews both criticisms that have been advanced about CBA in *criminal justice* policymaking, as well as more general critiques of CBA in other policy realms. These more general critiques must also be examined to determine whether they might likewise apply to CBA in criminal justice.

Practical criticisms

Despite the recent increased interest in exploring the costs and benefits of criminal justice policies, Marsh (2010, 3–4) has noted that relatively few *rigorous* economic analyses have been conducted in this area. Indeed, in their comprehensive 2005 review of attempts to apply economic analysis to criminal justice policies and practices, Swaray, Bowles, and

Pradiptyo (2005, 141) only found 10 studies produced post-1979 that had applied »rigorous« economic analysis methods—a discovery that underlines the need for more methodologically-advanced work in this area. Using CBA in criminal justice studies can present many methodological problems and challenges (Roman 2004).

A key cause for some of these problems is the difficulty of measuring crime's costs and crime prevention's benefits. Precisely calculating each of these figures is essential for accurately conducting cost-benefit analysis (Kania and Davis 2012, 142). Yet these calculations' complexities have prompted numerous debates among experts; indeed, scholars have long disagreed about how to best calculate the costs that crime poses to society (Czabański 2008). More direct losses resulting from crime (such as revenue losses for a store owner who has been a victim of theft, or the costs of hospital treatment for an assault victim) are often easier to conceptualize monetarily than the likely intangible costs (for example the psychological trauma experienced by victims) (Farrell and Roman 2010, 165). However such intangible costs can be immense. In addition to the obvious difficulty of attaching monetary values to such unquantifiable harms, calculating these costs is further complicated by the fact that such harms can often be prolonged—indeed, trauma suffered by victims can be lifelong (Byford et al. 2010). How can one adequately predict, and account for, the lasting nature of such impacts? When indirect and intangible costs are added together, the costs of a single, serious violent crime are often, unsurprisingly, very large. The scale of these costs imposes an additional difficulty—namely, that the rare occurrence of a single, serious violent crime can sharply affect CBA estimates and therefore lead to very different policy recommendations (Roman 2004; Farrell, Bowers, and Johnson 2005). The sensitivity of CBA calculations to such rare occurrences is an important issue to consider.

Further difficulties are encountered if, in addition to the costs to victims, one also attempts to take into account the costs that crime poses to society in general—which most CBA schema aim to do (Czabański 2008, 10). Such costs include the money that is spent prosecuting and punishing offenders, and the public and private effort that is devoted to avoi-

ding crime by, for example, purchasing locks. Although calculating such costs might be simpler than calculating the intangible costs of trauma to victims, it is still not straightforward. One key issue, as Austin (2010, 55) has observed, is that, when measuring the costs of punishing offenders, researchers sometimes assume that correctional spending increases or decreases in direct response to changes in the number of individuals in prison or under community supervision. However, in reality, decreases in the incarceration rate do not always result in equivalent decreases in correctional budgets, due to institutional overheads and other costs. If researchers make this mistaken assumption they risk, as Austin has pointed out, overstating a policy's potential cost savings.

Taking into account the costs that crime poses to society in general also requires analysts to make difficult decisions about how (or even if) the costs borne by future generations will be included—a question that is central not only to CBA in criminal justice policymaking, but to CBA in all other policy areas as well (Trumbull 1990). Indeed, nearly five decades ago, this general issue of considering the future was discussed by Prest and Turvey (1965), illustrating the persistence and breadth of this question. In criminal justice, the problem of how to calculate and consider the costs borne by future generations would emerge if policymakers were, for example, thinking about public borrowing to build a new prison that would be paid off over many decades. Such a decision would have cost ramifications for future generations. This example is just one of many that could be cited in the criminal justice arena.

Finally, as discussed in the previous section, CBA is often conducted in concert with impact evaluations—or studies that aim to uncover the effectiveness of a policy or program in achieving a potential outcome (such as reduced recidivism or lower crime rates). As already outlined, one of the main advantages of CBA is that it can provide extra information not found in impact evaluations alone (Marsh, Chalfin, and Roman 2008). Yet CBA's connection to impact evaluations means that its accuracy depends upon the rigor of those underlying evaluations (Roman and DeStefano 2004, 129). CBA calculations based upon poorly-conducted impact evaluations hold little value. The dependence of some CBA cal-

culations on rigorous impact evaluations is thus another practical limitation to keep in mind.

All of these challenges are essential to consider because, if the costs and benefits of a program or policy are not calculated accurately in CBA, then the entire utility of the CBA exercise must be called into question. The mis-estimation of these costs due to the issues discussed in the previous paragraphs is thus a serious concern. Another serious problem is the mis-estimation of these costs by interested parties. The observation by a leading environmental policy scholar that—in the environmental field, at least—industries sometimes overestimate the future costs of regulations, could potentially also apply to crime policies (Uhlmann 2012). Like environmental policymaking, criminal justice policymaking can also be influenced by various stakeholders' economic and political interests. Such political interests could include policymakers' desires to appear »tough« on crime to appeal to voters. The potential for such interests to influence estimates of the costs and benefits of criminal justice policies by these stakeholders thus should not be ignored.

Theoretical critiques

The criticisms discussed so far have all focused on practical issues related to the execution of CBA, and whether (and how) to monetize and take into account various kinds of costs and benefits. In addition to these criticisms, however, much more comprehensive attacks have been leveled at the technique's theoretical premises.

The first of these major critiques posits that a market-based approach cannot fully appreciate the true value of non-market-based harms and benefits. This critique has often been applied to the use of CBA in environmental policymaking, with critics arguing that the benefits of unpolluted air and other non-market-based consequences cannot be captured through monetary measures alone (Uhlmann 2012; see also: Pearce, Atkinson, and Mourato 2006, 31). More broadly, the American political scientist Charles E. Lindblom (2001) has described that the market system has limitations when it comes to valuing non-economic concerns—an important limitation to consider when examining criminal justice

policymaking since non-economic concerns (such as the freedom to walk around a city at night without fear of being attacked) are central to many criminal justice policy decisions.

A second critique applies specifically to CBA in criminal justice policymaking. Going beyond the more practical criticism that calculating the harms that crime imposes on victims is difficult and complex; it has been argued that the entire premise of attempting to monetize the value of a person's life is morally unacceptable (see, for example: Office of Technology Assessment 1981, 197). Of course, as Farrell and Roman (2010, 167) have explained, monetary values are typically used to represent »utility« in such calculations; yet even the use of money as a stand-in for utility when considering crime's impacts would strike many as callous. Additionally, using money as a proxy could potentially distract from the crime problem itself. As Zimring and Hawkins (1995) have explained, focusing on costs shifts the focus of attention from the number of crimes averted to the amount of money saved; it is therefore important to consider whether cost savings might surpass crime prevention in policymakers' minds as the ultimate goal of criminal justice policies.

A related issue is whether, and how, to incorporate the tangible and intangible (i.e., psychological) gains that criminals can receive from the crimes they commit (Trumbull 1990). If policies are introduced that prevent or reduce these crimes, these gains are lost. Whether to take into account these lost gains is a particularly fraught question in criminal justice. As Whittington and MacRae (1986) have pointed out, the consideration of losses due to committing fewer crimes would likely disturb many citizens. Indeed, arguing that criminals gain *any* »benefits« from murders or rapes would strike many as deeply sickening—a further example of the sense of moral unacceptability described in the previous paragraph. Yet in a famous 1981 study of a program aimed at disadvantaged young people, Long, Mallar, and Thornton considered both the benefits to society of reduced crime after the introduction of the program, as well as the *losses* the participants experienced from committing fewer crimes while in the program (see also discussion of the study in Whittington and MacRae 1986, 667–68). Whilst it is not clear that eli-

minating these losses from the calculation would make the CBA less accurate, the issue of *which* costs and benefits deserve inclusion in CBA calculations is nonetheless highly contentious.

A third fundamental critique applies to the use of CBA in all policy areas and not just criminal justice. This critique posits that the straightforward results produced by CBA can give an *overly* simplistic impression of a policy's more complex consequences. Although CBA's straightforward results were identified in the previous subsection as one of the technique's main advantages, their simplicity might actually mask more nuanced findings. For example, although a policy might have an overall net benefit for society, it may have negative impacts for some vulnerable groups within society—and these impacts may not be readily apparent in one or two CBA figures. The idea that the impacts felt by certain particularly-affected groups should be given more weight in CBA decisions has been raised in some government reports (Payments Council 2009, 4). A potential compromise to overcome this problem is to follow Farrell, Bowers, and Johnson's (2005) recommendation that policymakers be given a limited *set* of estimates; a set would increase the comprehensiveness of the evidence policymakers could draw upon, but would preserve the straightforwardness (and lack of overwhelming information) that makes CBA so appealing.

A fourth and final fundamental critique of CBA is that it might have an inverse effect. Instead of saving public money, it may actually *discourage* policymakers from making economically-efficient choices. Although this critique might sound counter-intuitive, this inverse result could occur because of CBA's potential methodological problems that were discussed in the previous subsection. Such methodological problems and lack of accuracy could make citizens and policymakers less willing to endorse the technique's results, and thus more wary of adopting a given policy or program. As Austin (2010, 56) has argued, the unreliability of long-term cost-benefit predictions might make the public eager to endorse more reliable or more certain options. Although a more certain strategy might actually have higher costs and fewer benefits, it may seem more appea-

ling to the public than waiting for another policy's benefits to materialize far in the future.

The practical criticisms and theoretical critiques discussed in this section do not represent the complete range of bleak assessments of CBA that scholars have advanced, yet they do reveal that the use of CBA in criminal justice policymaking remains contentious. Interestingly, some of these criticisms have been advanced by scholars who actively use CBA, indicating that not all critics believe these limitations doom the entire CBA enterprise. Nevertheless, any attempts to rely on CBA must at least address these critiques and acknowledge that, like many quantitative techniques, CBA has limitations that continue to be the subject of vigorous debate.

Actuarial justice and the risk society

Of the practical criticisms and theoretical critiques examined in the previous section, one of the most significant is the difficulty—or even the impossibility—of attaching monetary values to non-market-based phenomena. Some scholars have emphasized the practical challenges involved in this process; other critics have argued that such monetization is morally repugnant and should not be done at all. Regardless of one's specific position, these criticisms highlight the centrality of this issue to any discussion of CBA. This section therefore explores the issue of attaching monetary values to non-market-based phenomena in more detail, focusing specifically on criminal justice policymaking. Two major theoretical frameworks—Malcolm Feeley and Jonathan Simon's (1992) notions of »actuarial« perspectives in crime and justice and Anthony Giddens' (1999) and Ulrich Beck's (1992) idea of the »risk society«—are explored in depth, as they offer significant insight into the origins and consequences of such monetization and quantification, and have particular relevance to the use of CBA in criminal justice policymaking. Indeed, Feeley and Simon's framework was developed explicitly in a criminal justice context, while the weighing of risks that Giddens and Beck have described is often a central element in criminal justice decision-making.

The first theoretical framework, actuarial justice, was described by Feeley and Simon (1992; 1994) as a contemporary, statistical-based emphasis on managing risk and crime; the tactic gives great weight to probabilities and statistical assessments. The *management* of offending is prioritized over more difficult questions of fairness or what constitutes a crime, and the goal of eliminating crime entirely is abandoned in favor of the goal of ensuring that crime remains at a practicable and controlled level (Feeley and Simon 1994, 173; Young 1999, 391).

Given CBA's quantitative, cost-weighting, managerial nature, it is not difficult to see the technique's connection to actuarial justice. Like actuarial justice—which focuses on crime management rather than crime prevention—CBA, as stated earlier, can shift the focus of societal attention from the number of crimes averted to the amount of money saved (Zimring and Hawkins 1995, 147). CBA's emphasis on saving money promotes a managerial role for criminal justice policy, in which costs are calculated precisely and the goal of complete crime elimination might be minimized in favor of containment and saving money. CBA's increasing prominence further underlines the ascent of actuarial justice-related ideas in criminal justice policymaking.

Interestingly, this de-emphasizing of other values—such as safety, equality, and consistency—in favor of saving money reveals how actuarial justice and CBA link to Max Weber's much earlier writings on bureaucracy and rationalization. In the early 20th century, Weber (1947) explored how an efficient public bureaucracy had emerged in concert with the rise of a market-based economy. This Weberian bureaucracy was rational, and focused on making efficient decisions unhindered by personal biases. Weber's rationality idea shares similarities with actuarial justice and CBA for, as Elster (2000, 36) has observed, Weberian instrumental rationality stresses efficiency over other values. This emphasis echoes CBA's focus on cost savings above all else. Dryzek (1993, 221) has similarly described how CBA can be seen as a »rationalistic« method for approaching policy decisions, in which efficiency is given prominence over other values that may also have substantive importance. This criticism harkens back to the theoretical critique of CBA, discussed in the previ-

ous section, about the limitations of any market-based technique to fully capture the value of non-market-based concerns.

The connections among CBA, actuarial justice, and Weberian concepts have also been hinted at by other scholars, such as Brown (2006, 110), who has noted that actuarial approaches in criminal justice naturally give regard to cost-benefit analysis and risk analysis to ensure systems operate efficiently. CBA can therefore be seen to play a central role in actuarial justice decisions, and it is also reminiscent of Weber's idea of rational and efficient bureaucracy. Similarly, Kempf-Leonard and Peterson (2000, 88) have pointedly stated that, in the US, actuarial justice's intents include the efficient and cost-effective imposition of long and harsh sentences. In this observation the implicit connection between CBA and actuarial justice is once again advanced.

CBA's link to actuarial justice and Weberian ideas means that these two concepts' limitations must also be explored. In particular, could actuarial justice's limitations also apply to CBA, given the concepts' similarities? Such limitations are numerous and, as Smith (2006, 101) has explained, include the problem that judgments about risk are often personal and disputed. This problem is significant because, according to Feeley and Simon's (1994, 173) formulation, actuarial justice focuses on overseeing and controlling groups of individuals who are classified by the level of threat they pose to society—in other words, assessing risk is one of actuarial justice's central tasks.

The challenge of assessing risk reveals the connections between the second major theoretical framework considered in this section and actuarial justice and CBA. This second framework is that of the »risk society«—an idea explored most prominently by Ulrich Beck (1992) and Anthony Giddens (1999). Giddens (1999, 3) defined the risk society as a society where individuals are surrounded by new technologies that are ever-more complex and beyond the comprehension of most human beings. For Beck (1992), risks and hazards are a result of modernity and industrialization, and the risk society itself is thus a relatively recent development in human history.

The risk society framework highlights the omnipresence of risk in human activities. Even decisions about criminal justice are all subject to risks which must, somehow, be dealt with. When assessing crime and justice issues, it is important to remember Calandrillo's (2001, 980) point, made in a more general context, that since risk is present in every human choice and action, efforts to reduce danger and foster safety are really efforts to reduce risk to an »efficient« amount. This emphasis on efficiency is deeply redolent of CBA. Indeed, CBA—with its precise, market-based weighting—is perhaps best seen as an efficient way of balancing these risks against wider societal goals. Interestingly, a slight variation on CBA that explicitly takes into account risk, risk-cost-benefit analysis (RCBA), has been used in US public-sector decision-making (Shrader-Frechette 1985). The key difference between CBA and RCBA is the explicit weighting and monetization of risks alongside costs in the latter technique.

The prevalence of such risk-weighting and cost-calculating in contemporary criminal justice is a phenomenon at the heart of actuarial justice; van Swaaningen (2000, 95) has described how, within the risk society, criminal justice officials can be seen as »actuaries.« This statement underlines that the term »actuarial« is connected to the insurance industry, where the employees tasked with weighting risks to determine insurance premiums are known as actuaries. From this perspective, the increasing use of CBA in criminal justice might only further encourage policymakers and criminal justice practitioners to behave as actuaries, meticulously comparing the costs and benefits of policy decisions. CBA can thus be seen as a fundamental expression of both actuarial justice concepts and risk society concepts, and CBA's increasing use in criminal justice offers empirical support to both of these theoretical perspectives.

However, it is of course also essential not to overstate CBA's emergence, or the newfound prevalence of actuarial justice and risk society concepts in criminal justice policy decisions. O'Malley (2002), for example, while acknowledging connections between actuarial justice and risk society concepts, has also noted that such models do not describe criminal justice policymaking everywhere. Indeed, according to O'Malley, there is

scant evidence that actuarial justice and risk society concepts have been exported from the US and impacted criminal justice policies in other countries such as Australia (the focus of O'Malley's article). Since the analysis in this article focuses on the US and the UK, there is certainly a need for more research to determine whether this same relationship among CBA, actuarial justice, and the risk society also exists elsewhere. Given the increasing interest in CBA in other countries—as described in the introduction, organizations as geographically-diverse as the European Commission and New Zealand's Ministry of Justice have indicated potential interest in the technique (van Soomeren et al. 2005; MacCallum 1997)—the need for further research in this area could become even more pressing in the near future.

Neoliberal ideas

According to Beck (1992), the risk society emerged at a particular historical moment, when industrialization and modernization exposed societies to new challenges and uncertainties. Interestingly, as described previously, the antecedents of CBA, such as Bentham's 19th-century utilitarian ideas, also emerged in the period following industrialization (Skousen 2009)—further evidence of the two concepts' similarities.

In contemporary times, historically-bound political and economic forces have also likely encouraged the growth of enthusiasm for CBA in criminal justice policymaking. In particular, neoliberal economic ideals, which have gained increasing prominence in many circles in the US and in the UK since the 1970s, seem to have played a key role in CBA's rise. With its emphasis on free-market principles and accountability, neoliberalism has a natural affinity with CBA's core tenets. Writing in the very different realm of education policy, Apple (2001, 38) has pointedly observed that, in neoliberalism, notions of »efficiency« and ideas about cost-benefit analysis both have great prominence. Given this affinity between CBA and neoliberal ideas, it is not surprising that Collins and Jimenez (2012, 62) have described the connection between CBA and neoliberal economic ideas in the US context, citing its increased use during Reagan's presidency and role in deregulation policies. Of course it is

important not to overstate the connection between CBA and post-1970s American and British enthusiasm for neoliberal tenets; the historical overview offered earlier in this article reinforces Scott and Light's (2004, 123) observation that CBA was used in certain contexts long before neoliberalism took hold. Thus neoliberal ideas are clearly not the only driver of CBA's development, although neoliberal ideas would certainly reinforce CBA's principles. The precise interrelationship between CBA and neoliberalism can be detected in Foucault's (2008, 116) idea that neoliberalism can be seen as a system in which even the government is governed by the market. Building upon Foucault's assertion it can be argued that, in order to achieve legitimacy within such a neoliberal economic system, the state must adopt the market's values. Such values would almost by definition *require* the state-led use of CBA in public decision-making.

Conclusion

This article has offered a critical overview of the potential implications, advantages, and challenges of using CBA in criminal justice policymaking. Critical analysis of CBA's presence in this field is particularly important, given the growing prominence of this technique. In January 2011, President Obama issued an executive order that explicitly recognized the role CBA can play in improving policymaking (Levshin 2011). In future years, public sector funding cuts—a consequence of the recession—might increase the pressure on policymakers to use CBA. In the US, for example, Congress voted to slash funding for federal criminal justice projects by 17% in 2011 (Burch 2011), thus increasing the incentive to develop cost-saving policies.

Given CBA's growing and future potential popularity, it is important to acknowledge the many challenges of applying it to the criminal justice realm and the underlying theoretical discomfort that many feel with regard to CBA's core tenets. As Trumbull (1990) has described, an economic-centered approach to criminal justice risks turning the justice system into a set course of »prices« that aim to balance the benefits of reduced crime with the costs of greater crime prevention. Given the

emotive nature of many crime issues, CBA's calculations and emphasis on efficiency can, for some, seem deeply misplaced. Additionally, CBA and other similar rationalistic techniques have been accused by critics of displaying little regard for the true complexities of politics and policymaking (Dryzek 1993, 221–22). Given the analysis presented in this article, one can certainly sympathize with these concerns. Even though—as Tropman and Gohlke (1973) have explained—CBA provides a potentially insightful tool for decision-makers working in the area of criminal justice, the increasing use of CBA underlines the need for more critical analysis about its role in policymaking, and its use in criminal justice policymaking in particular.

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Tiffany Bergin, Ph.D., Assistant Professor, Department of Sociology,
Kent State University.

tbergin@kent.edu