



Sustainable economic development: A criminal justice challenge for the 21st century

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Abstract. The environmental challenges of the 21st century require co-operation between criminal justice experts and economists. Three different economics perspectives are relevant for the discipline of criminal justice in general and for addressing environmental problems in particular: neo-classical economics, political economics and the economics of sustainable development. Criminal justice plays a role in the effort to attain sustainable development because the limitations of market based decision making necessitate a role for law and regulation in addressing environmental degradation. Sustainable development itself is relevant to the general discussion of crime. Issues of sustainable development are already discussed in criminal justice literature. While criminal law has limitations as a tool against environmental crime, it will necessarily supplement the tools of the market and civil regulation in coping with environmental problems. The inherently multidisciplinary undertaking of sustainable development will be most effectively met if experts in both economics and criminal justice understand more of one another's fields. Suggestions for including the three perspectives of economics in the criminal justice curriculum are provided.

Introduction

One of the greatest challenges of the twenty first century is whether or not we can meet the needs of the world's population without irreparably degrading the environment in which we live. The development patterns that have evolved in the increasingly internationalized global economy have been characterized by so much poverty and environmental damage, that many economists have become dissatisfied with our approaches to achieving economic well being. Sustainable economic development addresses not only the process of economic development, its requirements and dynamics, but also whether or not the development path chosen is sustainable for people and for the environment. The criminalization of environmental violations and the strong interrelationships between the issues of economic development and crime and criminological theory make sustainable economic development an important topic of study for criminal justice education. Further, criminal justice skills must be joined to those of economists and environmentalists in order to achieve development processes that meet the criteria of sustainability.

This article begins by discussing the importance of including economics as an ingredient of criminal justice education in general and then proceeds to discuss the relevance of the issues of sustainable economic development in particular to the field of criminal justice. The need to include the perspectives of neoclassical economics, political economy, and sustainable economics in the general foundations will be presented. Examples of the relevance of each to criminal justice education will be provided. Attention will be given to new measures and concepts that are emerging from work on sustainability and that are of use in the study of crime and to the reasons that the tool of criminal law has been employed in the attempt to preserve the environment. A review of criminal justice literature will demonstrate that the issues of sustainability both address and are becoming more important in that literature. The types of contributions criminal justice experts can make to the attainment of sustainable economic development will be presented. Finally, suggestions for courses and possible texts for teaching economics in general and sustainable economic development in particular will be provided.

Role of economics in criminal justice education

The study of economics is a critical element of criminal justice education in general for several reasons. Economic tools are used in the analysis of the criminal justice system itself and are applicable to a wide range of crime problems such as theft, corruption, organized crime and illegal drugs. Economic factors play a critical role in criminological theory such as strain, conflict, and deterrence theories. Economic theory is needed to clarify the dynamics that produce those economic effects. The explanation of those economic dynamics requires exposure to the tools of both neo-classical and political economics.¹ Neo-classical economics assumes as given the political economic structures of society and seeks efficiency through market processes without opening the possibility of altering those structures. Political economy makes those structures explicit, examines their origin and consequences and the potential for their alteration as part of the solution to economic problems. Further, it is being increasingly recognized that the tools of neo-classical and political economy are not sufficient for the analysis of economic problems and that an even more holistic approach is needed. It is necessary to account for the interrelationship between the environment and economic activity and to recognize explicitly all actors in the economic decision making process, including the community. The study of the sustainability of economic development has been a response to these concerns. All of these schools of economics have developed tools and analyses relevant to criminal justice analysis.

While different approaches to economics can produce debates about diagnosis and policy, that discussion will not be the major focus of this paper. Rather the topic is the relevance of economics in general and sustainable economic development in particular to the student of criminal justice. The tools of both neo-classical economics and political economy are germane to the study of sustainable economic development. Exposure to all of these schools of economics is necessary to enable the criminal justice analyst to assess critically the diverse arguments made about the economics of crime.

Most introductory economics textbooks provide a broad economics foundation taught from a neo-classical perspective. While topics of political economy and sustainability appear in some texts, supplementary readings will be required in most instances. Specific suggestions will be provided at the end of the article. As will be seen from what follows, it is possible to teach the required topics with examples of importance and interest to the student of criminal justice.

Relevance of topics taught in introductory economics courses

Introductory texts are generally divided into microeconomic analysis of the firm and macroeconomic analysis of the larger economy. Microeconomics includes the basic neo-classical analytic devices of demand and supply analysis of why and under what conditions market prices vary, the nature of market firm costs and revenues that affect their decision making, and the difference in the structure and behavior of competitive, oligopolistic and monopolistic markets in which firms operate. Industrial structure models have been used in the analysis of illegal drug market behavior (Hellman and Alper, 1997) and white collar crime (Clinard, Marshall and Yeager, 1982). They are helpful in understanding the allocation of costs issues involved in privatization of prison and other criminal justice services (Hellman and Alper, 1997; Schicor, 1995; Dilulio, 1986).

Macroeconomics includes the study of varieties and causes of unemployment and inflation, business cycles, and the impact of government spending, the creation of money on the economy, and international economics topics such as balance of payments, trade, exchange rates and international trade organizations. Unemployment and inflation are variables that are regularly employed in the study of crime (Kohfield and Sprague, 1988; Parker and Horwitz, 1986; Guttentag, 1968; Long and Witte, 1981; Chiricos, 1987; Devine, Shelley and Smith, 1988; Steffensmeier, 1988; Hoffman, 1997). Criminal justice students should understand the variables in some depth. For instance, the official unemployment rate does not include those persons too discouraged to look for work. Understanding this limitation is important for creating effective crime models (Steffensmeier, 1988; Hoffman, 1997). Understanding

inflation is important because crime analysts should use real values of prices, income and other economic indicators in studies of crime at different periods of time and be aware that cost of living differences among regions has an impact on the comparability of money incomes among the regions. Students need to learn how to deflate current monetary indicators used in their research. Business cycles affect unemployment and inflation, and government spending and money creation influence business cycles. The basics of money and banking taught to explain money creation are a critical foundation for students of money laundering. In an increasingly globalized economy, international crime is growing right along with international trade. Understanding what factors cause and shape international trade, causes fluctuations in exchange rates and the nature of international financial institutions is important to the analyst of international crime.

While most introductory texts present these topics from the neo-classical perspective that holds that competitive market conditions generally provide superior results for society, the important exception created by externalities, or the impact of market transactions on third parties (others besides the buyers and sellers), such as pollution and education, is universally included. It is recognized that market institutions, although powerful, are not sufficient to meet our economic, social and collective needs. Because the benefits of such goods and services as bridges, education, and environmental protection are so diffuse, it is a theorem of economics that there is a tendency of society to underspend on such public sector items. The costs are more easily monetized than are the benefits to current or future generations (Schiller, 1997: 580). The theorem has relevance in arguments to increase spending on crime prevention, prison rehabilitation, police and other public sector criminal justice services.

Relevance of political economy perspective

The political economy perspective by its very nature not only places a strong emphasis on the importance of externalities or social needs not met by the market, it further argues that competitive markets do not produce inherently superior results (Papandreou, 1976; Bowles and Edwards, 1993; Hoffman, 1997b), provides analyses of the impact of economic structure on socio-economic phenomena and the context of individual decision making, and argues that market processes create some of our problems. One example is the explanation of how the very dynamics of economic competition result in non-competitive markets (Hymer, 1976; Bowles and Edwards, 1993). This analysis can be applied to illegal markets. Another is research demonstrating that the newly emerging structure of international corporate networks is operating in a ways that undermine the quality of a significant segment of work opportunities (Harrison, 1996).

One example of how political economy can deepen insight into crime problems is in the area of inequality. Several criminological theories such as strain and conflict theories emphasize the role of inequality in crime (Merton, 1957; Vold, 1958; Turk, 1976; Cloward and Ohlin, 1960). Many studies have found a significant link between race and class inequality or relative deprivation and many types of crime rates (e.g. Chilton and Datesman, 1987; Belknap, 1989; Hill and Crawford, 1990; Hoffman, 1997a). The theories do not explain the origin of the inequality that plays a pivotal role in their theory. Political economy provides insights into how the inequality is generated and perpetuated. One example is the analysis of how the formal and informal institutions of racism result in job segregation and disproportionate economic disadvantages among minorities and in minority communities (Wolf, 1997; Albelda, Drago and Shulman, 1997). For instance, political economists analysing the impact of business cycles wrote:

The political economy of discrimination therefore predicts that the intensity of employment discrimination against minorities and women should rise during recession and fall during expansions.

Albelda, Drago and Shulman, 1997: 192)

Myers (1978) applies the political-economic analysis to decision making about crime and argues that the context of racial discrimination in job markets affects the decisions of minority males just released from prison to reenter the illegal economy.

Gender inequality does not generate the same types of differences in crime rates that race and class inequalities do. This is considered a challenge to criminological theory (Leonard, 1994; Worrall, 1987). Feminist theorists have called for a reformulation of theory that recognizes the patriarchal structures of society. The political economic structures of society such as the division of labor between men and women in the home and in the workplace are critical elements of the structure of patriarchy (Amott and Matthei, 1991; Folbre and Nancy, 1994; Albelda, Drago and Shulman, 1997; Hartman, 1979; Bergman, 1986; Beneria, 1995).

Another example of how political-economic analysis deepens insights into crime can be seen in the case of cost-benefit analysis. Cost-benefit analysis is a neo-classical tool that compares a stream of costs and benefits over time and has been used in a deterrence theoretical approach to crime. The focus of this neo-classical economic theory, like that of classic criminology is on the role of the individual decision-makers. Applied to crime it asks how the deterrence of the threat of punishment affects individual choice about criminal behavior (e.g. Becker, 1968; Block and Heineke, 1975). Nickerson (1983) points out in his analysis of the different versions of this theory that, except

for monetary gain and the threat of punishment, everything about the social context of choice is ignored. A political economist considers the limitations of the structure of opportunities such as the limitation of opportunities in poor communities on the decision to earn money illegally (e.g. Myers, 1978; McGahey, 1986; Hoffman, 1997b). The political economist considers the structure creating the current cost-benefit stream and would consider altering that structure as one of the policy options.

Relevance of sustainable economic development perspective

Sustainable economic development extends our focus beyond the market and the political economic structures of society to ask about the sustainability of our production processes. A narrow definition of sustainable economic development focuses on the impact of our production on our natural resource base and is concerned with the degradation and depletion of those resources. However, there is increasing recognition that poverty, inequality, and the quality of our social institutions are not only current problems but have implications for the future of society and for maintaining the environmental base (UNEP, 1987). The broader definition of sustainability will be used here. Its concerns include accounting for sustainability in economic measures, maintaining the infrastructure of development and the natural resource base, avoiding inordinate inequality, empowering people to sustain themselves in the long run, and creating sustainable social institutions.

The issues of sustainability are relevant to criminal justice education for several reasons. Economic factors that undermine sustainability such as poverty and inequality have been demonstrated to be criminogenic in many studies of crime (Hsiegh and Pugh, 1993). Crime itself can reach levels that undermine the sustainability of the development process. Analysts concerned with the sustainability of our production processes are questioning the adequacy of traditionally used measures of economic progress. These measures are commonly used in crime analysis. New measures are being evolved. The critique of the old and development of the new measures are of inherent interest to crime analysts.

New measurement concepts of interests for criminal justice education

The new measures of economic well being arose out of dissatisfactions with the patterns and sustainability of global economic development. Economic development is the analysis of the connection between economic growth and changes in the socio-economic structures of society over time (e.g. Rostow, 1960; Baran, 1996; Frank, 1996). Sustainable development addresses whether or not the growth process and the institutional structures of society are sus-

tainable (Brundtland, 1987; Tietenberg, 1996). Concern about the extensiveness and intensity of world poverty and our growing environmental problems has lead economists to question the adequacy of our market-based measures of well being and progress such as median income and Gross Domestic Product (GDP).

Income, commonly used in studies of crime, may fail to measure economic well-being because it does not include entitlements, a concept introduced by A.K. Sen (1981). Entitlements are not all rooted in market processes and may involve, for instance, kinship rights and public services. His work on famines demonstrated that more hunger occurred not where food shortages were greatest but rather where people were most reliant on market incomes, because in market dependent areas people lost their income entitlement to foods when they lost jobs as a result of the famine. In non-market areas non-market entitlement rights to food, such as kinship, mitigated the effects of the shortages. When the market fails if supplementary entitlements of basic needs are not provided, the future can be severely affected. As one development expert asked, "What would be the longer-run consequences of failure to provide minimal nutrition for pregnant women and children in their crucial early years" (Helleiner, 1996: 47). Entitlements can be applied to the analysis of crime. The author, building on the concept of entitlement, created a measure of disentanglement and showed a significant relationship between it and women's drug arrest rates (Hoffman, 1997a).

Another innovation in measurement of great potential interest to the criminal justice analyst is the concept of human agency. The United Nations Development Program (UNDP) defines human agency as the ability of people to be able to be effective agents in their own interest. It is argued that to gain insight into the long run effectiveness of the development process, it is not sufficient to consider only economic growth, human beings as inputs into the economic process, and human beings as the recipients of benefits and human beings' basic needs. People must be able to be productive and to participate "in the decisions and processes that affect their lives" (UNDP, 1995: 12). People deprived of agency in the development process are unlikely to be able to further their own and society's interests over time. The UN's Human Development Index (HDI) is an alternative measure to GDP of economic development and is meant to reflect human agency now and in the future. It includes four components: life expectancy, education enrollment levels, adult literacy, and a GDP figure that is adjusted for distribution of income by reducing the weight of the income of high earners. (It does not yet have an environmental component.) The UN has also created a Gender Development Index (GDI) created by correcting HDI for gender inequalities and an index for gender empowerment (GEM) (UNDP, 1995). These measures are now

available from the UN and should be investigated for use in international studies of crime.

Analysts of international and environmental crime would also find the World Bank's Wealth Index (WI) of interest. It was created in response to widespread criticism of its reliance on gross domestic product growth rates in its decision making. The WI includes traditionally expected measures of infrastructure and financial assets and also a variety new measures such as environmental capital, human capital and measures of social capital such as community (Henderson, 1996).

Unofficial, but much more detailed, alternative measures to GDP that have potential for criminal justice analysis have been developed. It is as if economists had finally begun to hearken to the admonition of Durkheim at the turn of the century:

According to the economists, the division of labor is caused by the need for increasing our happiness. This supposes that we are really becoming happier. Nothing is less certain. (Durkheim, 1893; 1949: xix)

Dissatisfactions with current GDP estimates include their failure to count women's work, depletion of environmental resources, the impact of crime, and income distribution. Failure to officially count women's work in national economic accounts misrepresents national welfare and distorts planning. Some measure of agricultural subsistence work by women is included in the national accounts of about 70 countries. Environmental degradation has created the need for natural resource accounting. One study correcting the national accounts of Indonesia for natural resource depletion lead to a downward estimates of economic growth from 7 to 4 percent (Repetto et al., 1989). Two alternative measures of GDP are the index of sustainable welfare (ISEW) and the Genuine Progress Indicator (GPI). Both of these after correcting for many of the above factors showed significant declines in national welfare during years that the GNP was rising (Cobb, Halstead and Rowe, 1995; Daly and Cobb, 1994). All of the above measures can be useful in studying the impact of aggregate economic conditions on crime, nationally over time and across nations. Students should be made aware of their existence.

Environmental degradation and crime

The environmental degradation not captured by official GDP estimates is such a grave problem that increasingly, criminal sanctions have been applied in environmental laws. The world famous Brundtland report (UNEP, 1987) warned that although official indicators of prosperity such as gross domestic product (GDP) were rising, we have environmental problems of enormous scope that affect our lives now and our ability to produce in the future. The

pervasiveness of the problems is indicated by their presence in both rich and poor lands. Further, environmental economists have demonstrated that the market cannot be relied upon to solve our problems. Environmental economist Tom Tietenberg, summarizing a review of the results of models of market resource allocation over time writes:

For each model the question becomes, "Will efficient markets automatically produce sustainable development?" The conclusion to be drawn from these models is very clear; restoring efficiency is not sufficient to produce sustainability. (Tietenberg, 1996: 542)

Government regulation is required to address our environmental problems. Some countries have responded by incorporating the guarantee of environmental protection into their constitutions (del Frate and Norberry, 1993: 7). Because environmental effects are so pervasive and recognize no political boundaries interstate and international co-operation are required. Since the late 1960s there has been a steady increase in international treaties designed to provide environmental protection (Del Frate and Norberry: 18). Criminal penalties have been applied to environmental regulations in the search for effective tools to deal with this inherently complex problem.

So extensive are the opportunities for environmental degradation that community participation is vital. There is a history of long run successful community co-operation in the preservation of local commons, but there are conditions under which this co-operation breaks down (Sethi and Somanathan, 1997). Achieving effective community participation broadly defined to include cooperation among businesses will require general public education and support. Applying criminal sanctions is one way of alerting the public to the seriousness of our problems. Fortunately, awareness of the gravity the environmental problem is growing. Increasingly, environmental violations are considered serious crimes by the public (Mueller, 1996).

Environmental sustainability cannot be separated from the general sustainability of economic development for a number of reasons. Poor communities cannot afford the infrastructure required for pollution control. Economists have shown that communities with lower environmental resources can be shown to be more likely to violate environmental laws and engage in non-sustainable practices using market decisions unless there is intervention (Barbier, 1993). While some environmental decisions are made by a few powerful people in large firms, many environmental problems are created by the unobserved decisions of people about such things as water usage. There has to be community support and consensus about environmental values. Economic development that generates great inequality is undermining to a sense

of fairness and consensus about sharing the burden of environmental control costs.

The issues of sustainable development are germane to criminal justice analysis. There is already extensive evidence of the intertwined concerns of criminal justice and sustainable economic development in the criminal justice literature. Also, criminal justice experts have a critical role to play in the effort to achieve sustainable economic development. The study of sustainable economic development will be of great benefit to criminal justice analysts in general and better equip them to participate in the ongoing efforts to attain sustainability in our economic lives.

Relevance of sustainable economic development to criminal justice literature

Environmental crime

Environmental transgressions were considered criminal matters as far back as the time of the Roman Empire. In the United States federal environmental laws have contained criminal penalties since the 1970s (Mueller, 1996: 3–6). Many states have criminal sanctions for environmental violations; further, states which have important environmental problems but lack strong environmental agencies are especially likely to rely on the police for environmental enforcement (Edwards, 1996: 239). Other nations also use criminal sanctions (Gunningham, Norberry and McKillop, 1993). Consequently, debate about the relevant advantages of using criminal law, civil law and economic regulation has been a topic of criminal justice literature.

There is a consensus in the literature about the seriousness of our environmental degradation and concern about the inherent problems in using criminal law to address problems. Obtaining convictions under criminal law is especially difficult because of the need to prove intent (*mens rea*) and the requirement that burden of proof must be beyond reasonable doubt. Criminal law traditionally has a lack of compensation for victims, and compensation is necessary for the correction of environmental damage. However, recent changes in allowing compensation to victims have softened the distinction between criminal and civil law in that regard (Cohen, 1992; Robinson, 1993; Pain, 1993; Mueller, 1996). Another concern is that recent changes in sentencing guidelines will produce fines too high so as to impede economic activity (Cohen, 1992). Also, criminal law was designed as a system of punishment, and the point of environmental protection is to prevent damages before they occur, in particular because some of the effects such as contamination of ground water supplies are permanent. However, there is evidence that the

criminal penalty of incarcerating responsible corporate officers seems to have an important long run deterrent effect in making companies more active in prevention activities (Adler, 1996a).

Recognizing the disadvantages of using criminal law, writers often recommend that it be combined with or replaced by civil law or economic regulation (Cohen, 1992; Robinson, 1993; Adler, 1996a; Mueller, 1996). A combination of neo-classical and political analysis is required to recognize the consequences of these recommendations. For instance, the dynamics of the economic system itself can diminish the power of civil law, with fines and damages being incorporated as a cost of production rather than resulting in a diminishment of polluting activity (Tokar, 1996). In such situations, discussion of criminal sanctions becomes particularly appropriate. Green taxes and emissions trading programs are mentioned as substitutes for criminal law. However, writers do not mention and may not be aware of the differences in the effects of these recommended substitutes. Green taxes, if passed, would have a stronger effect on emissions. Also, while emissions trading in general sounds attractive, in the context of the real world there are limitations to its usefulness. For instance, emission credits can result in creases in pollution. For instance, acid raining suffering area credits have been sold to acid rain producing areas. And, emission credits put a cap on emission reductions that taxes do not (Vig and Kraft, 1990; Tokar, 1996; Tietenberg, 1996).

There is implicit and sometimes explicit recognition in the literature of the importance of striving for sustainability in our economic development. One reason is that prevention of the damages from environmental crime is so critical. The UN held a conference in 1992 entitled Environmental Crime, Sanctioning Strategies and Sustainable Development and published the proceedings (del Frate and Norberry, 1993). Consideration of the use of environmental auditing, which would help incorporate consideration of sustainability into business decision making, was one recommendation of that conference, but the potential criminal liability attached to provision of information is a drawback of that approach (Gunningham and Norberry, 1993). Because the opportunities for environmental transgressions are boundless and the hopes of guarding all potential sites of violation hopeless, writers have recognized that preserving the environment has to become an accepted and valued goal that is incorporated into the values of people throughout the economic decision making process. It is argued that corporate officers and workers alike must be committed to protecting the laws. In fact, incarceration in criminal law has been advocated to raise consciousness of the importance of environmental crimes (Adler, 1996). The importance of businesses working with local communities has been emphasized as a means of reducing violations (Robinson, 1993: 16). However, crime analysts recognize that economic

poverty can result in inadequate infrastructure for sanitation and water supplies and worry that inequality can produce resentments that might be acted out environmental terrorism (Hyatt and Trexler, 1996).

International crime

The increase in international and transnational crimes has attracted the attention of criminal justice experts and educators. Economic processes are at the roots of many of these crimes such as labor human rights violations, money laundering, illegal arms commerce, insurance fraud, computer crime, environmental crime, smuggling of people, corruption and infiltration of businesses. However, the need to study economics was omitted in a recent article introducing a journal issue devoted to teaching about international crime, despite a call to broaden the curriculum to include geography, geopolitics, world history and international relations (Adler, 1996a).

The growth of the global economy and world trade heightens the need for criminal justice experts to have an economics foundation in general and in economic development in particular. Increasingly world trade is becoming bound by international agreements and institutions. Their economic effects need to be understood to understand international and transnational crime. International exchanges take place between economies of different structures and at different stages of development. While there is a call in criminal justice literature to educate students to study international relations, comparative criminal justice and differences in cultures (Friday, 1996), the need to understand the economic dynamics that produce differences in development patterns is not recognized. It is argued by a variety of experts that the problems of underdevelopment create financial pressures to violate environmental and human rights standards (del Frate and Norberry, 1993; Swinnerton and Schoepfle, 1994; Hyatt and Trexler, 1996). A great deal of thought and attention will need to be directed into the nature of trade treaties and regional pacts and the development of the World Trade Organization because their effects will be so far ranging (Hoffman, 1997). It is increasingly important that criminologists become familiar with the dynamics of economic development and trade and the nature of international economic institutions and the economic controversies about them. This familiarity will enable them to more fruitfully participate in the discussion of not only penalties for, but means of prevention of international and transnational crime.

Economic development and crime

There is already a literature that focuses on the links between economic development and crime that goes back to work done at the turn of the century

(Bonger, 1916; Durkheim, 1897; Clinard and Abbott, 1973; Shicor, 1985; Bennett, 1991; Ortega, Corzine and Burnett, 1992). The types of crime associated with different levels or types economic development, the impact of development on crime and the role of development in preventing crime are some of the concerns of this literature. Focus in the past has been on traditional crime categories, but environmental crime is increasingly important and some of the environmental crime literature can implicitly be considered a part of this field (e.g. del Frate and Norberry, November 1993; Hyatt and Trexler, 1996).

Exposure to the research on the measurement of economic growth and development can enhance the modeling of the impact of development on crime. There is an ongoing debate about the impact of development on crime utilizing a variety of models [Durkheim, modernization or opportunity theories] (David Shicor, 1985). When these models are tested they often employ measures of gross national product (GNP) per capita as an indicator of development, with controls for inequality, urbanization or degree of industrialization. The models have had mixed results (Bennett, 1991). The limitations of GNP as a measure of economic capability and well being may explain some of the problems in the crime models. GNP does not measure domestic production as GDP does, and neither measures depreciation of capital stock or of natural capital or is an adequate measure of human welfare, people's entitlements and human agency. Sen shows for instance that nations with similar life expectancy have radically different GNP per capita. GNP fails to predict life expectancy, because nations at similar levels of measured income have dissimilar political economies that afford different degrees of economic agency and entitlement that have an impact on longevity (Sen, 1996). The inclusion of inequality as a control variable in some crime models to overcome the inadequacies of the GNP measure is not necessarily sufficient compensation. Some of the benefits that make the actual difference in people's agency or entitlements are non-monetary, such as public health programs or access to water or health facilities. Familiarity with these measurement concepts would greatly enrich the discussion of model building of connections between aggregate economic conditions and crime.

Understanding sustainable economic development also provides excellent background for discussions of the role of economic development as in crime prevention. Some authors have advocated not only economic development as a means of reducing crime, but have shown some awareness that the type of economic development should be meaningful and address the factors that give rise to crime in the first place (McGahey, 1986; Fisher, 1987; Morales, Fall 1990). Consideration of the sustainability of the development process should deepen and enrich this literature.

Criminal justice experts should be conversant with the ongoing debate in economics literature about the proper role of the market and other institutions in development processes. While some economists argue for increased reliance on the market (Lai, 1996) others consider that over reliance on the market has created devastating economic problems for hundreds of millions of people (Cornia and Francis, 1987; Jameson and Wilber, 1996). In one discussion of the connections between crime and development, criminologists are urged to consider the model of Walt Rostow with his five stages of development (Fisher, 1987). This model implicitly suggests that the market process will naturally take society to a stage of development. However, other economists argue that market processes can result in enduring relationships of dependency among nations with underdevelopment being created as a result (Beckford, 1972; Baran, 1996; Sen, 1996). The World Bank, the International Monetary fund and the World Trade Organization are all international institutions that have powerful effects on development processes. Their policies are affected by this intellectual debate. Research outcomes are affected by the questions asked. Discussion of the impact of development policy outcomes on crime is a natural part of the debate. Criminologists should be familiar with the roots this debate to help them with the formulation of research questions and of anti-crime policies.

Environmental justice

The literature on environmental justice is concerned with the distribution of environmental risks and the costs of controlling them. The distribution of environmental crime is implicitly an aspect of environmental justice, although risks are not uniformly criminalized. Evidence of environmental injustice abounds. The injustices are a problem for the people being affected and for the entire environmental movement. The sense that there is general equity in environmental struggles is critical because it affects the chances of laws being passed and community participation (Bryant, 1995; Tietenberg, 1996: 487–489).

Environmental injustice cannot be separated from the sustainable economic development issues of income distribution, entitlement, and human agency. Disempowered and poor communities are less able to protect themselves from environmental problems. There is strong evidence of environmental injustice with regard to race. For instance, 60% of black and Hispanic Americans were found to live in areas with toxic waste contamination (Tietenberg, 1996: 487–489). When weaker communities are unable to insist on strong environmental protections, the environmental contamination is not isolated in that community, but spreads regionally and internationally through such means as contamination of ground water and air currents. Additionally,

the perception of injustice in general is not conducive to general respect for society and for law itself (Silberman, 1978).

The role of criminal justice in sustainable economic development

Just as the study of neo-classical and political economics and sustainable economic development can be of great use to students of criminal justice, so can the knowledge and insights of criminal justice experts play a vital role in the efforts to attain sustainable economic development. Because their potential contribution is so large, it is important that they have an economics background.

Crime itself can reach levels that impede healthy development. Where that condition exists, criminal justice expertise is clearly vital to the development process (Clinard and Abbott, 1973). However, development programs might be more successful if criminal justice experts familiar with the economics of development were included in policy formulation. According to one UN expert, the presence of crime is best planned for:

when the very order on which peaceful development depends is no more than skimmed in development plans; and when plans are made if a crime just did not exist; then it is more than just likely that the developmental bucket is left with a hole through which its benefits are being drained. . .
(Clifford, 1973)

Corruption is one of the crimes that undermine economic development. Principal agent theory represents the application of cost-benefit tools to the criminal justice task of reducing corruption by restructuring the work environment. It was successfully applied by a criminal justice expert in the Philippines (Klitgaard, 1988).

The growth of organized crime is predicted for developing countries in general and for environmental crime in particular (Hexler and Trexler, 1996). While economic analysis is valuable for understanding the structure and economic behavior of organized crime, the experience of criminal justice experts with analyzing, detecting and enforcing laws against particular organized crime groups is necessary. Examples include toxic waste disposal, smuggling, and trade secret piracy.

Sustainable economic development requirements include a tremendous need for intergroup cooperation between business and community, among corporations, and among countries. Criminal Justice research into the type of situation and behavior that does and does not produce white-collar crime, may provide valuable insights into situations that do and do not produce environmental cooperation. Graham's study of environmental crime and corporate social responsibility found for instance that a corporations situated in states

with a high percentage of membership in an environmental organization like the Sierra Club, were more apt to obey environmental regulations (Graham, 1994). Workplace cultures have been cited as being criminogenically significant in a variety of crime research (Clinard and Yeager, 1987; Vandiver, 1987; Geis, 1987). Criminal justice analysis which includes a foundation in economic analysis can contribute to an understanding of what corporate and international arrangements are the most conducive to our environmental survival.

Criminal justice experts in their recognition of the limits of the usefulness of criminal law against environmental crime have often referred to the desirability of using economic incentives, like emissions trading (Cohen, 1992; Robinson, 1993; Mueller, 1996; Adler, 1996a). However, economic analysis of emissions trading systems reveals that the system creates a financial incentive to underreport admissions (Tokar, 1996). There is also a great potential for corruption in the environmental monitoring process, because the forces of economic competition create incentives for businesses to seek weak enforcement. The principle agent model identifies situations and circumstances that create opportunities for corruption [monopoly power and discretion] and those that make it more difficult [accountability] (Klitgaard, 1988: 75). Experts with experience with this model can be of use in the effort to achieve effective enforcement of environmental laws and preventing further environmental damage.

Routine activity theory is concerned with situational crime prevention. It identifies motivated offenders, suitable targets and absence of capable guardians as the ingredients of a crime prone situation (Cohen and Felson, 1979; Felson, 1994). If these criteria are combined with economic analysis of industrial organization, they can help analysts identify situations particularly susceptible to environmental violations, leading to better detection and possibly reorganization to facilitate prevention. An example might be businesses in a highly competitive industry with highly toxic wastes. If the competition were international, especially from low wage areas that did not enforce regulations, the cost pressures might be especially intense. Plants in relatively isolated areas would have greater opportunities.

The police are already involved in the detection and enforcement of environmental crime (Epstein and Hammett, 1995; Brewer, 1995; Edwards, 1996a). In a study of state police organizations, Edwards found that 21 of 41 respondents had some responsibility for environmental crime, especially the transport of toxic waste (Edwards, 1996). Because the potential for environmental crime is so geographically pervasive, enforcement is a demanding challenge. Hyatt and Trexler, for instance, worry about the ubiquitous potential for environmental terrorism. The police roam the landscape as a part of

their regular duties: "By the nature of the job, police officers often are the first public officials to arrive at hazardous materials incidents, environmental crime scenes, or traffic mishaps involving hazardous cargo" (Brewer, May 1995). It is not surprising that many states have solicited their assistance. There are calls to train the police to recognize and respond properly to environmental violations in a manner that ensures safety and enhances the changes of successful enforcement (Brewer, May 1995). The police themselves report that they need more resources to do the job well. An evolving area of expertise is likely to be determining how the police can be most usefully deployed. Their effectiveness in preventing crime can be enhanced if they understand not just specific violations, but circumstances that are apt to produce violations as suggested in the previous discussion of routine activity theory.

Considerable controversy surrounds theories that biological or chemical conditions are conducive to delinquency because they promote emotional states such as aggression, because it is argued that the social context of one's life can affect how a person with a given biological condition behaves. It is possible that some acts of delinquency can reflect an underlying physiological condition, and it is possible that the increasing number of pollutants in society could affect people's emotions.

Environmental justice research demonstrates that these pollutants are not distributed evenly. Thus, it may be that unusual or geographically concentrated patterns of delinquency, just as of health effects, might give us clues to the existence of problematic emissions of toxic waste.

The issues of sustainable economic development are of paramount importance for the quality of life of people all over the earth. Widespread cooperation of people and organizations on a global basis is necessary to success. New territories are being charted in many disciplines in the effort to understand how best to proceed. Interdisciplinary research is vital and the combined efforts of economists and criminal justice experts in particular are critical. Toward that end, criminal justice education should provide students with a foundation in economics that includes neo-classical and political economics and sustainable economic development. Such a foundation would enrich criminal justice work in many fields from theory to white collar crime to as has been demonstrated.

Economics in the criminal justice curriculum

To provide the criminal justice student with a grounding economics skills, the curriculum should include a basic course in economics taught with examples from criminal justice. It has been the experience of economics professors who have taught economics to criminal justice students at John Jay College of Criminal Justice, that it is difficult for students to follow economics of crime

literature without this foundation. The foundation course should include the basic topics both neo-classical and political economic analysis, introduce ideas of international and sustainable economics and employ examples that raise students international awareness. Because most texts are taught from a neo-classical perspective, supplementary readings in political economy and sustainable economic development should be provided. Examples of texts are listed below.

If students have a foundation in economics, upper level courses can more effectively utilize journal articles. An advanced general economics of crime course would then be possible. An upper level course on sustainable economic development and crime would be valuable preparation for the increasing challenges facing criminal justice experts due to globalization of the economy, increasing inequality, and environmental constraints. Building on the tools introduced in the first course, the topics of development and underdevelopment, sustainability, environmental economics and international economics and institutions would be presented. The relationship of these to crime would be discussed throughout the course. References from this article could provide a base for building these courses.

Criminal justice as a relatively new discipline is still being shaped. Increasing the role of economics in that education and providing students with a background in sustainable economic development will not only give students excellent analytic foundations, but also prepare them to participate in one of the most critically important struggles of the twenty-first century.

Discussion of texts

Economics texts

Schiller, Bradley. 2000. *The Economy Today*, 8th ed. New York: McGraw Hill. (860 pages hardback)

Schiller, Bradley. 1999. *Essentials of Economics*. New York: McGraw Hill. (386 pages paperback)

This is just one set of many introductory economics texts, so numerous that they cannot be listed here. This particular author provides an option that would be of interest when examining texts for use in criminal justice programs. A concise but comprehensive edition of the “essentials” of economic issues is particularly useful for teaching a one-semester course in introductory economics. The lower cost of the smaller volume makes the assignment of supplementary texts more affordable for students. Generally, these texts are available in one-volume hardbacks and in “splits”, separate micro- and macroeconomic paperback editions. An “essentials” edition would be particularly useful for undergraduates. Graduate students seem to enjoy the reading the more extensive one volume hardbound edition.

Supplementary readings: Political economy

Abelda, Randy, Robert Drago and Steven Shulman. 1997. *Unlevel Playing Fields*. New York: McGraw Hill. (225 pages paperback)

This book includes an explicit discussion of the differences in the assumptions and approaches of neo-classical and political economics. It demonstrates how both approaches are used to analyze issues of wage inequality and labor market discrimination.

Dollars and Sense Editorial Collective: *Real World Micro* 14th ed. Dollars and Sense: Economic Affairs Bureau. Inc. One Summer Street Somerville, Mass. 02143 (617-628-8411) (125 pages paper)

Dollars and Sense Editorial Collective: *Real World Macro* 14th ed. Dollars and Sense: Economic Affairs Bureau. Inc. One Summer Street Somerville, Mass. 02143 (617-628-8411) (125 pages paper)

The Dollars and Sense editorial collective annually publishes sets of readings with a political economic approach to economic problems. All readings are based on issues currently in the news. The topics are designed to be compatible with what is taught in introductory economics courses.

Schumacher, 1989 (1973). *Small is Beautiful*. New York: Harper Collins (paperback)

This classic volume does not discuss political economy explicitly, but it does raise probing questions about over reliance on the market for economic guidance and discusses the use of other criteria in economic decision making. It has inspired more than one generation of readers.

Supplementary readings: Sustainable development

Elliot, Jennifer. 1994. *An Introduction to Sustainable Development*. London: Routledge. (120 pages paperback)

This text presents the economics of sustainability in the context of the third world and includes a discussion of toxic waste problems.

Reid, David. 1995. *Sustainable Development*. London: Earthscan Publications. (260 pages paperback)

This introductory guide begins with a presentation of the dimensions of the global crisis, proceeds to discuss the definition and principles of sustainable development, the obstacles that exist and ends with an assessment of the state of current organized efforts to achieve sustainability.

Brown, L.R., C. Flavin and H. French (World Watch Institute). 1998. *State of the World 1998*. New York: W.W. Norton & company. (250 pages paperback)

This volume of an annual series outlines the dimensions and causes of the various problems affecting sustainability and includes a section addressing the need to redesign the economic system to attain sustainability.

Brown, L.R., M. Renner and C. Flavin (World Watch Institute). 1997. *Vital Signs 1997*. New York: W.W. Norton & company. (165 pages paperback)

This edition of an annual series provides up to date summaries of the social, economic, and environmental forces that affect sustainability.

Jackson, Robert M. (ed.). 1996. *Global Issues* (12th Edition). Guilford Connecticut: Dushkin Publishing Group. (272 pages paperback)

This edition of an annual series addresses issues that are international in dimension. Issues that affect sustainability comprise a significant proportion of readings by a variety of experts.

Addressing sustainability problems on a personal level

Goldbeck, Nikky & David. 1995. *Choose to Reuse*. Woodstock, N.Y.: Ceres Press.

Stein, D. and Wisners, R.M. *Living Healthy in a Toxic World*. New York: The Earthworks Press.

The Earthworks Group. *50 Simple Things you Can Do to Save the Earth*. Berkeley, CA: Earthwork Press.

The Earthworks Group. 1990. *The Recyclers Handbook*. Berkeley, CA: Earthworks Press.

Note

1. Hamilton and James provide a detailed discussion of the role of neo-classical and political economics as it pertains to the historical criminal justice literature. They argue that neo-classical economics is insufficient and often counter intuitive for criminologists and that political economy is a necessary part of the criminal justice analyst's toolbox.

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