

Chapter 16. CRIME AND CRIMINALITY

It is criminal to steal a purse,
It is daring to steal a fortune.
It is a mark of greatness to steal a crown.
The blame diminishes as the guilt increases.

Johann Schiller (1759-1805)

We sow an act and reap a habit:
We sow a habit and reap a character:
We sow a character and reap a destiny.

William Black (1893)

...the root causes of crime [are] poverty, unemployment, underemployment, racism, poor health care, bad housing, weak schools, mental illness, alcoholism, single-parent families, teenage pregnancy, and a society of selfishness and greed.

Patrick V. Murphy (1985)
former NYPD Commissioner

I. Introduction

A. *The Intractable Problem of Crime*

We have made the claim that, aside from being an interesting intellectual exercise, there are important practical reasons for trying to understand human behavior in an integrated fashion. *In this chapter we will test the utility of the human ecological approach on one of the most intractable internal social problems in culturally diverse societies—crime.* In subsequent chapters, we also will test our approach on more group-level problems such as the conservation of public resources and war.

Crime is a particularly interesting problem because it is in many respects the obverse (i.e., the ‘flip side’) of altruism. This is especially true if we define crime broadly as behavior in which individuals obtain resources from others via force, fraud, or stealth. Think about this. We’ve discussed the apparent importance of altruism for large-scale social interactions between unrelated people. In order for people to reap the full benefits of group cooperation and division of labor, they sometimes must subordinate their personal interests to those of others—occasionally in dramatic fashion. Altruistic acts cost an individual more than he or she gains. Criminal acts do just the opposite. People who commit these acts intentionally harm others for their own gain.

Of course, sometimes altruism on the small scale is necessary to execute predatory

strategies against the larger societies. Criminal conspiracies may enjoin considerable self-sacrifice on the part of gang members who are caught. The Sicilian Mafia was apparently successful in part because of its tradition of *omerta*, silence in the face of police questioning and inducements to rat on the gang. Other criminal conspiracies often try to mimic the Sicilians in this regard, but they were long the most successful.

The following discussion will define key terms in a broad enough sense so that the larger issues associated with crime can emerge. *We then will discuss the ways in which crime harms individuals and groups and why we think that it is necessary from a practical standpoint to take a long-term integrated approach to understanding and controlling crime.* In other words, we'll try to see what special insights the human ecological approach to understanding criminal behavior can bring to this thorny problem that affects us all every day. At the end of this chapter, we'll argue that our approach suggests practical policy alternatives that traditional academic disciplines have tended to overlook. (Surprise!)

So that you can make your own decisions about the reasonableness of our positions, we'll first summarize well established empirical findings about the nature and distribution of crime then try to make sense of them using standard ecological tools and some of the insights developed thus far in this course.

B. Definition of Terms

Legally, crimes usually are defined as acts or omissions forbidden by law that can be punished by imprisonment and/or fine. Murder, robbery, burglary, rape, drunken driving, child neglect, and failure to pay your taxes all are common examples. However, as several eminent criminologists recently have noted (e.g. Sampson and Laub 1993; Gottfredson and Hirschi 1990), the key to understanding crime is to focus on fundamental attributes of all criminal behaviors rather than on specific criminal acts. Instead of trying to separately understand crimes such as homicide, robbery, rape, burglary, embezzlement, and heroin use, we need to identify what it is they all have in common. Much past research on crime has been confounded by its focus on these politico-legal rather than behavioral definitions.

The behavioral definition of crime focuses on, criminality, a certain personality profile that causes the most alarming sorts of crimes. All criminal behaviors involve the use of force, fraud, or stealth to obtain material or symbolic resources. As Gottfredson and Hirschi (1990) noted, criminality is a style of strategic behavior characterized by self-centeredness, indifference to the suffering and needs of others, and low self-control. More impulsive individuals are more likely to find criminality an attractive style of behavior because it can provide immediate gratification through relatively easy or simple strategies. These strategies frequently are risky and thrilling, usually requiring little skill or planning. They often

result in pain or discomfort for victims and offer few or meager long-term benefits because they interfere with careers, family, and friendships. Gottfredson and Hirschi assert that this means the “within-person causes of truancy are the same as the within-person causes of drug use, aggravated assault, and auto accidents (1990, p. 256).” Criminality in this sense bears a problematic relationship with legal crimes. Some drug dealers, tax cheats, prostitutes and other legal criminals may simply be business-people whose business activity happens to be illegal. Psychologically, they might not differ from ordinary citizens. Almost all ordinary citizens commit at least small legal crimes during their lives. Nevertheless, Gottfredson’s and Hirschi’s hypothesis is that the vast majority of legal crime is committed by individuals a general strategy of criminal activity.

This conception of crime explains the wide variety of criminal activity and the fact that individuals tend not to specialize in one type of crime. It also is consistent with the well-established tendency of people to be consistent over long periods of time in the frequency and severity of crimes they commit. Even executives who commit white collar crimes probably are more impulsive, self-centered, and indifferent to the suffering of others than those who do not take advantage of similar opportunities.

Focusing on criminality rather than political-legal definitions also allows us to finesse the perplexing problem of why some acts (e.g., marijuana consumption) are defined as crimes while similar arguably more damaging acts (e.g., alcohol consumption) are not. These issues, central to conflict theories and critical theories of crime, are important. However, because they focus on systematically deeper power relations between competing interest groups, they seldom provide feasible policy alternatives and tend to reinforce perceptions of crime as an insolvable problem. What we want to do here is see if the human ecological approach can lead us to some practical strategies for controlling crime.

Human resources can have material, symbolic, or hedonistic value. In crimes such as thefts, individuals take material resources such as property from another person without his or her knowing cooperation. Those who commit crimes such as narcotics trafficking and gambling attempt to obtain money that can be exchanged for material resources. In crimes such as assaults not associated with theft, sexual assaults, and illicit drug use, people obtain hedonistic resources that increase pleasurable feelings or decrease unpleasant feelings. Political crimes such as terrorism or election fraud attempt to obtain symbolic resources such as power or prestige.

C. How Bad is the Problem of Crime?

The US is truly in the midst of a crime wave. Serious crime rates in the United States rose 40 percent from 1970 to 1990. Rates for reported violent crimes rose 85 percent, rates

for more common property crimes 35 percent. As we attempted to control crime through traditional approaches, expenditures for federal, state, and local criminal justice system activities increased from \$12.3 billion in 1971 to \$74.3 billion in 1990. Our imprisonment rates soared from 96 to 292 per 100,000, becoming higher than any other industrialized nation.

Crime has high and diverse costs. The direct physical, material, mental, and emotional injury suffered by victims of crime is deplorable. Perhaps even more tragic, however, is the indirect damage to society. Attempts to control crime through the criminal justice system increasingly intrude in our private lives. Personal freedoms are threatened as we repeatedly choose between public order and individual rights. Moreover, crime amplifies mistrust, feeds prejudice, and generally degrades social cohesion (Vila, 1994). People become more fearful, often imprisoning themselves in their own homes. Guns are kept within reach, a knock on the door evokes terror, a stranger in need of assistance is ignored.

II. A Systems Perspective on Crime

Criminal behavior is the product of a systematic process that involves complex interactions between individual, societal, and ecological factors over the course of our lives. In other words, from conception onward the intellectual, emotional, and physical attributes we develop are strongly influenced by our personal behaviors and physical processes, interactions with the physical environment, and interactions with other people, groups and institutions. These systematic processes affect the transmission from generation to generation of traits associated with increased involvement in crime. As will be discussed, this often ignored fact has important policy implications. Table 17.1 provides a rough idea of some of the kinds of interactions that are possible.

Before discussing the systematic processes that cause crime, we first must outline key ecological-, societal-, and individual-level components of that system. In other words, we must look at the parts separately before we can understand how they work together.

A. Ecological Factors

Ecological factors involve interactions between people and their activities in a physical environment. This category includes things associated with the physical environment such as geography and topography, crowding, pollution, and recreational opportunities. These ecological factors can affect how people develop physically and emotionally over their lives as well as the level of hostility, fear, or well-being they feel from moment to moment as they experience, for example, a crowded subway, dark lonely parking lot, or serene park.

Ecological factors also determine what opportunities for crime exist because they include interactions between people and the ways physical environments channel those interactions. The routine activities of people in a physical setting can have important effects on when and where opportunities for crime occur. A crime is not possible unless a motivated and able offender converges with a victim, property, or illicit substance or behavior in the absence of capable guardianship (people or physical barriers to prevent the crime).

Table 1: Examples of important direct effects that can produce interactions among ecological, microlevel, and macrolevel factors associated with crime.

AFFECTS OF	ON		
	<i>Ecological Factors</i>	<i>Microlevel Factors</i>	<i>Macrolevel Factors</i>
<i>Ecological Factors</i>	X	<ul style="list-style-type: none"> -Environment reinforces (& perhaps counteracts) temperamental propensities. -Pollution hazards degrade learning, cause hyperactivity, etc. -Exposure to danger increases aggressiveness and/or fear. -Deviant models provide opportunities to learn deviant behaviors. -Criminal opportunities increase temptation. -Overcrowding may increase hostility. 	<ul style="list-style-type: none"> -Physical resources provide economic opportunities. -Geographic barriers reinforce class/ethnic boundaries and self-interestedness. -Ecological interactions drive population-level evolution of culture.
<i>Microlevel Factors</i>	<ul style="list-style-type: none"> -Routine activities of individuals affect opportunities for crime. -Individuals can modify local environment. -Individual historical and genetic variation assures some variation between the abilities, motivation, and strategies of interacting individuals. 	X	<ul style="list-style-type: none"> -Individual variation provides grist for evolutionary processes. -Individual actions change average payoffs for criminal and noncriminal behaviors. -Individuals form interest groups to change government.

Table 1: Examples of important direct effects that can produce interactions among ecological, microlleve, and macrolevel factors associated with crime.

AFFECTS OF	ON		
	<i>Ecological Factors</i>	<i>Microlevel Factors</i>	<i>Macrolevel Factors</i>
<i>Macrolevel Factors</i>	<ul style="list-style-type: none"> -Government modifications of built environment channel population movement and change location of criminal opportunities. -Sociocultural heterogeneity creates more opportunities for crime. -Weak regulation or guardianship creates opportunities for crime. 	<ul style="list-style-type: none"> -Cultural beliefs influence parenting styles and parental behavior. -Economic inequality creates pressures for crime via poverty and greed. -Poverty increases child developmental risks by creating strains on parents, & degrading education and health care. -Unequal access to information and education creates power inequities. 	X

B. Societal or Macrolevel Factors

Societal or macrolevel factors deal with systematic interactions between social groups. Societal factors describe the ways society is structured. They include such things as the relative distribution of the population among groups and the flows of information, resources, and people between groups. Societal factors encompass the variety and heterogeneity of racial/ethnic/cultural/productive groups, their behaviors and beliefs, and economic relations.

C. Motivation and Opportunity

Individuals actually commit the crimes. Although ecological and societal factors must be included in any full explanation of crime, individual factors always intervene between them and a criminal act. For this reason individual factors need to be the center of any description of the causes of crime.

Individual or microlleve factors describe how a person becomes motivated to commit a crime. Before describing those factors, however, it is important to define another key component of the system—*motivation*. Is it just the driving force behind our actions? In this discussion, motivation is more than the “I want.” portion of the equation. It includes “I could.” “What will it cost me compared to what I think I’ll get?” and “Is this right and proper?” Motivation is the outcome of a process in which a goal is formulated, costs and benefits are assessed, and internal constraints on behavior are applied. The relative importance of the components of this process may vary from individual to individual, time to time, and situation to situation. In other words, sometimes a person’s motivation is influenced more

by rational decisionmaking, other times by emotions such as anger, greed, or lust. Similarly, some people tend to be more motivated by cost/benefit calculations more of the time than others. Moreover, the value people place on different objects or activities can vary as can their ability to resist temptation.

Motivation alone cannot cause a crime to occur; opportunity also is required. And—although few researchers today address this issue—opportunity itself may influence motivation (Katz 1988). Lay people call this “temptation” and probably would consider any discussion of motivation that excluded temptation silly. Thus a person’s propensity to commit a criminal act at a particular point in time is a function of both motivation and opportunity. Some may be motivated to seek out and exploit criminal opportunities that offer extremely small rewards; others will commit crimes only when presented with relatively enormous opportunities; and a very few will not commit crimes regardless of rewards.

As Cohen and Machalek (1988) noted in their innovative work on the evolution of crime and criminal strategies, disadvantage may motivate people to commit crimes, but so can advantage. As the past decade’s string of institutional scandals has graphically illustrated, the elevated skills and status that provide access to lucrative criminal opportunities with little risk of being caught and punished also can motivate people to commit crimes. We might imagine that most politicians and business-people who take and offer bribes and the like are less impulsive and thrill-seeking than street criminal, but still have higher motivation to commit crimes than their honest colleagues. However, in politics and business, the opportunities are enormously tempting. Contrariwise, scientific scandals are relatively rare. However, it is not likely motivation but opportunity that is lacking. The main reward in science is prestige, and it is gained by publishing papers. Plagiarism and data faking occur, but if the idea is an important one, the victim of plagiarism will complain, and others will attempt to replicate the faked experiment. The criminal act of publishing a faked paper is highly public; your name is attached and the chances of getting caught are high.

Criminologists hypothesize that a number of individual factors determine a person’s motivation to commit an act. Motivation at a particular point in time is the result of interactions over a person’s life course between biological, socio-cultural, and developmental factors—as well as contemporaneous opportunity. Psychological factors are the result of interactions between biological and socio-cultural factors. Criminologists do not imagine that some simple constitutional factor (“criminal nature”) is a very satisfactory explanation for motivational factors.

Biological factors include such things as physical size, strength, or swiftness, and the excitability/reactivity of nervous and organ systems in the body (see

Fishbein 1990; Wilson and Herrnstein 1985). It is easy to imagine that big, athletic, young males are likely to be statistically over-represented among strong-arm robbers compared to small, skinny, awkward fellows. Although these factors set the physical boundaries of our behavior and influence our affective state, they do not *determine* which of the myriad possible behaviors we perform.

Socio-cultural factors influence the strategies of behavior and personal beliefs, values, needs, and desires a person acquires over his or her life. These have been the focus of many well known theories of crime that emphasized such things as social learning, rational choice, self-control, and social strain. They include the knowledge, skills, attitudes, and other cultural information we learn through interactions with other people and groups—as well as from cultural artifacts such as books and movies.

Socio-culturally acquired traits affect which behavioral strategies (ways of doing things to achieve desired ends) one knows how to apply and they influence how we perceive the costs and benefits of a course of action. For example, the value we place on the good will and opinion of others is a socio-cultural factor, as are many of the beliefs that affect the value we assign to material or symbolic goods. Socio-cultural factors influence the strength of self-control that helps us resist temptation. They also can produce “strain” that magnifies temptation when there are disjunctions between what we have learned to desire and the opportunities we perceive.

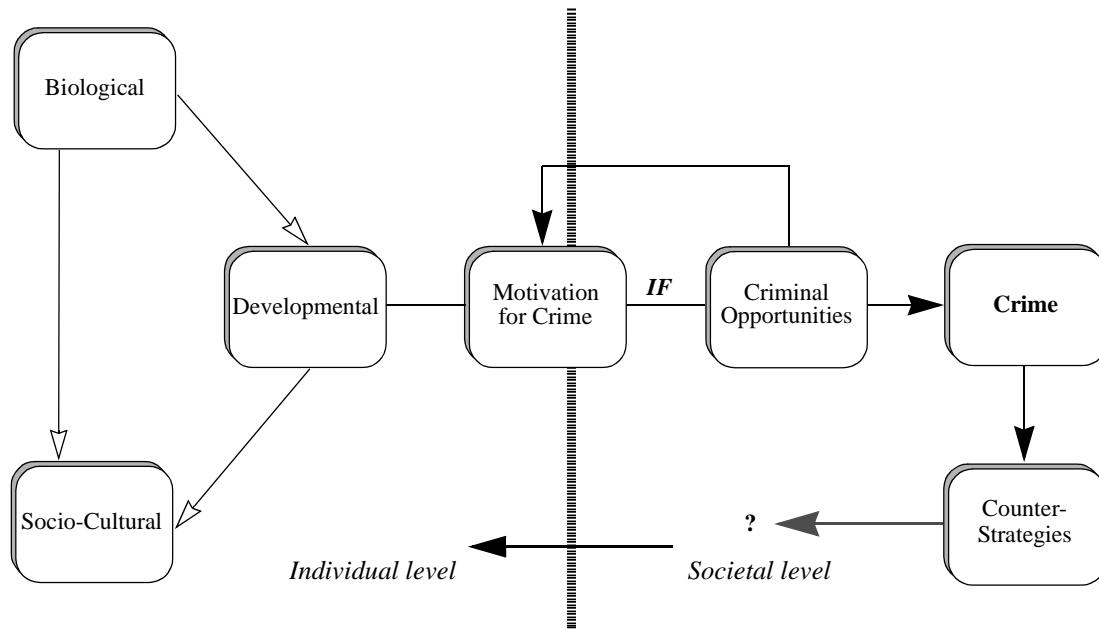
Development is the process of physical, intellectual, and emotional growth that begins with conception and ends with death. Development can be adversely influenced by such factors as environmental pollutants, disease, physical injury, and lack of nurturing. Interactions throughout the life course between biological, sociocultural, and developmental factors determine who we are and how we respond to opportunities at any point in time.

Child development—the source of many core personality traits—is particularly vulnerable to poor family management practices arising from such things as poverty, lack of education, or living in a high crime neighborhood. Family stressors such as unemployment, marital conflict, and divorce also can disrupt family life. According to Patterson and his colleagues at the Oregon Social Learning Center, growing up in a disrupted family is strongly associated with child antisocial behavior—of which crime is one type (e.g. Patterson, DeBaryshe, and Ramsey 1989).

D. Summary of Systematic Relationships

Figure 17.1 illustrates the interactions between the three types of individual factors, motivation, and opportunity. Over time, interactions between biological, socio-cultural and developmental factors affect how motivated a person is to use force, fraud, or stealth to obtain resources when an opportunity is presented. If motivation is sufficiently high in the presence of an attractive opportunity, a crime may occur so long as the person has the ability required to commit it. As we will discuss later, crimes provoke responses from victims and potential victims.

Figure 17.1. Important systematic interactions between individual and societal factors that cause crime.



III. The Nature and Distribution of Crime

A. Correlates and Causes of Crime

A large body of research indicates that crime is highly correlated with *youthfulness and male gender*, and that *early involvement* in crime is predictive of subsequent involvement. Similarly, *poverty, inequality, disrupted families, inadequate socialization, and the presence of criminal opportunities* all seem to be important correlates of crime (e.g., Sampson and Laub 1993; Reiss and Roth 1993; Tonry, Ohlin, and Farrington 1991; Land, McCall, and Cohen 1990; Gottfredson and Hirschi 1990; Blau and Schwartz 1984). These general findings about the primary correlates of crime seem likely to endure—although there remains substantial debate among criminologists in various academic disciplines about the relative causal importance of, and relationships between, different variables. This debate tends to obscure larger issues regarding the appropriate causal scope and scale for understanding and controlling crime; i.e., which variables interacting in what ways should be considered, and at what levels of analysis. The problem not easy to solve with better correlational studies because so many variables are intercorrelated. For example, poverty, racial discrimination, and family disruption all disproportionately affect African Americans, who also disproportionately engage in criminal behavior. However, from the correlational data alone it is impossible to say which variable is the most important or direct cause of crime, or anything about how the variables might be causally inter-related.

As a result, no satisfactory unified theoretical framework yet has been developed.

This has diminished the policy relevance of recommendations from even some of the most comprehensive interdisciplinary research on crime. This is a prime example of the kind of interdisciplinary problem associated with the sociology of science that human ecology tries to address.

B. Research vs. Policy?

Although research and policy formulation should be complementary activities, they often have different imperatives. Whereas scientists are engaged in an endless pursuit of information and understanding, policymakers eventually must take action. In this chapter we are not trying to settle debates about which causal variables explain more variance in crime rates or criminal behavior. Rather we want to show how the human ecological approach might be used to systematically and completely organize information and empirically supported insights from the many disciplines that study crime. If this approach makes it possible to develop a truly general theory of criminal behavior, it finally might be possible to establish a unified framework to guide both research and, eventually, policy.

We do think that the policy relevance of research is important. For decades theoretical fragmentation in criminology has contributed to generally ineffective, fragmented, and short-sighted public policies. Without a holistic understanding of the causes of crime, elected officials will continue to shift the focus of control efforts back and forth from individual level to macrolevel causes as the political pendulum swings from right to left. This erratic approach feeds the desperate belief that the problem of crime is intractable—a belief that results in calls for increasingly draconian crime control measures that threaten constitutional guarantees, even commonsense (e.g., “Shoot casual marijuana users [Gates 1992:286-287].”).

C. Partial Theories of Crime

A number of ‘general’ and/or very broad theories of crime have been proposed during recent years. Yet no single perspective has been able to integrate causal factors across important ecological (environmental and situational), microlevel (intrinsic to the individual), and macrolevel (social structural and economic) domains to explain the full scope of criminal behavior. For example, Wilson and Herrnstein (1985) provide an exhaustive review of microlevel biopsychological factors associated with the development of criminal propensities by individuals, but largely ignore macrolevel factors such as social structure, cultural beliefs, and the role of ecological interactions. Gottfredson and Hirschi (1990) attend more to ecological and macrolevel factors associated with development of self-control, but deny that biological factors have any importance. Braithwaite (1989) links micro-

and macrolevel factors and processes with the ecological organization of communities, but fails to consider how these relations evolve over time or how the propensities of individuals develop over the life course. Pearson and Weiner (1985) recommend a dynamic processes-oriented approach to understanding how interactions between ecological, micro- and macrolevel factors affect social learning and rational behavior in individuals. But they neglect the reciprocal influence of these individuals on the evolution of macrolevel factors as well as environmental and biological factors. Others (e.g., Agnew 1992; Elliott, Ageton, and Canter 1979) lay a foundation for understanding how the propensities of individuals develop over the life course in response to micro- and macrolevel factors, but ignore biological and ecological factors that influence criminal behavior.

There is a more synthetic trend in recent research. Sampson, working with others, recently has described most of the salient relationships. For example, Sampson and Laub (1993) described how macrolevel factors influence individuals over the life course via systematic links to family relations and the institutions of school and work. And Sampson and Groves (1989) identified how these factors are affected by the ecological organization of communities. However, these scholars avoid discussing the role of biological factors and do not account for the evolution of macrolevel factors over time. Similarly, Farrington (1986) explains crime as the product of a chain of processes that involve biological, microlevel, and ecological factors that influence what is desired, which strategies are selected to obtain desiderata, and situational and opportunity factors that affect decisionmaking. But he does not deal with the evolution of macrolevel and ecological factors.

Developmental psychologists have focused more broadly on the etiology of antisocial behavior. For example, Moffitt (in press) and Patterson et al. (1989) take into account generational and life span issues as well as demographic, micro-, and macrolevel factors. However, they ignore the roles played by criminal opportunities and factors associated with the evolution of criminal behaviors and social responses to crime. All these factors must be understood together before we can explain, predict, or control crime fully.

A human ecological approach is fundamentally different from these earlier theories (Vila 1994). Each of the perspectives mentioned thus far attempted to show how analysis of variables within a favored domain, or associated with a particular construct or set of constructs, could be used to explain all or most aspects of criminal behavior. Each of these perspectives understandably tended to be largely congruent with their authors' academic disciplines—disciplines whose boundaries exist in our minds and institutions, but not in reality. Human ecology similarly has its roots in the 'interdiscipline' of evolutionary ecology. But it uses a problem-oriented, rather than discipline-oriented, approach to understanding

criminal behavior. For example, it does not ask “How can one reconcile ‘strain’, ‘control’, ‘labelling’, ‘social learning’ and... theories?” Instead it asks “What relationships tend to be fundamentally important for understanding changes over time in the resource acquisition and retention behaviors of any social organism?” This defines naturally the boundaries of the problem and leads us to view systematic interactions between various domains in a more realistic fashion as dynamic rather than static.

IV. Key Causes of Crime

It is necessary to apply a *generational time scale* in order to holistically understand the causes of individual criminal behavior. We begin the same way an ecologist would approach the study of any organism: by examining the life cycle.

A. The Role of Early Life Experiences

As we noted previously, early life experiences appear likely to have an especially strong influence on the development of criminality because individuals acquire their traits sequentially. The traits we possess at any juncture are the result of the cumulative cognitive, affective, physical, and social effects of a sequence of events that began at conception. As a result of these events, individuals acquire a strategic style over the course of their lives. Some individuals develop a strategic style that emphasizes the use of force, fraud, or stealth to obtain resources and is characterized by self-centeredness, indifference to the suffering and needs of others, and low self-control—criminality.

Some of the more important developmental factors include parenting and family management practices, educational success, pre-, peri-, and postnatal stress (e.g., Wilson and Herrnstein 1985), nutrition, and complex interactions between genes and environment (Fishbein 1990). Two especially important factors are whether an environment helps or hinders a child’s attempt to cope with his/her temperamental propensities and the ability of parents to cope with or redirect the behaviors of a difficult child. As Werner and Smith (1992) note, children are placed at increasing risk of becoming involved in crime by such things as economic hardships, living in high crime neighborhoods, serious caregiving deficits, and family disruption. But these risks appear to be buffered by factors like an easy temperament, scholastic competence, educated mothers, and the presence of grandparents or older siblings who serve as alternate caregivers. The relative importance of risk and protective factors varies according to life stage, gender, and social environment.

Demographic stressors such as poverty, lack of education, high crime neighborhood and family stressors such as unemployment, marital conflict, and divorce all tend to influence development by disrupting family management practices (Sampson and Laub

1993:83). Growing up in a disrupted family is associated strongly with child antisocial behavior, of which crime is one type. The generational time scale is particularly important here because poor family management, antisocial behaviors, and susceptibility to stressors often are transmitted intergenerationally from grandparents to parents to children (Patterson, DeBaryshe, and Ramsey 1989). As will be discussed, this may have important policy implications.

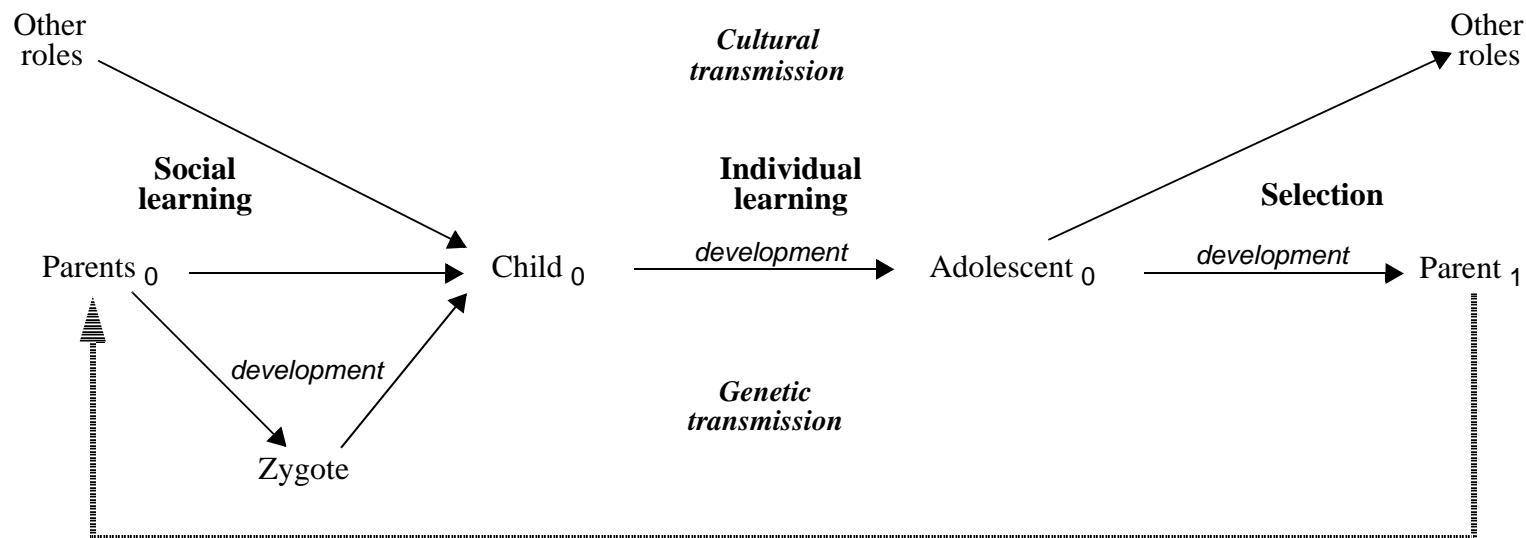
B. An Example

As figure 17.2 illustrates, *parents may transmit genes that—in conjunction with pre-, peri-, and postnatal experiences—cause offspring to develop nervous and organ systems that make them much more difficult and cranky*. This affects the probability they will bond properly with a parent, especially if that parent is under extreme stress from economic, social, or personal factors. For example, children of poor parents beset by economic difficulties and of wealthy parents whose extreme focus on social and career concerns leads them to nurture their children irregularly may be vulnerable to this dynamic¹. The parent/child bond affects how strongly a child values parental approval—weakly bonded children tend to be much more impulsive and difficult to control. This can initiate a vicious cycle in which a child receives less affection and nurturance because of misbehavior and therefore seeks less and less to please. Over time, the child develops a strategic style in a setting where rewards often are unpredictable as parents struggle with alternating resentment and desire to nurture. Because rewards are perceived as undependable, the child learns to immediately grasp opportunities for short-term gratification rather than learning to defer them for future rewards. In this setting a child also is less likely to acquire conventional moral beliefs. And the risk of physical and emotional child abuse—which further tends to fuel this vicious spiral toward criminality (Widom 1992)—also may be greater.

More impulsive children tend to do less well in school. Poor school performance strongly influences future life chances and thus how much stake they develop in conventional society. It also increases the likelihood children will associate with, and learn criminal behavioral strategies from, deviant associates. Both of these factors increase the likelihood of engaging in serious and frequent delinquency (Hirschi 1969). Engaging in delinquency further can diminish conventional opportunities and weaken beliefs about the moral validity of specific laws, thus reinforcing criminality. This trajectory will tend to continue into adulthood until/unless it is altered. Sampson and Laub cite fundamental shifts in family relations and work as the most important sources of potential change (1993:248).

1. See Moffitt (in press: 15-21) for a more detailed description of “problem child/problem parent interactions and the emergence of antisocial behaviors” in adverse rearing contexts.

Figure 17.2. The human life cycle. People acquire traits that influence their behavior sequentially over the life course. Which traits are acquired depends upon interactions between genes, social and individual learning, and environmental factors during development. Examples of factors associated with development of criminality at each stage are listed below the diagram.



Examples of important factors affecting the development of criminality at different life stages:

<i>Prenatal</i>	<i>Early childhood</i>	<i>Late childhood</i>	<i>Adolescence</i>	<i>Early adulthood</i>
Grand- and parental traits	Lack of emotional/social support			
Genetic influences	Disruption of family unit			
Pre-, peri-, post-natal stress	Number of stressful life events			
Poverty				
Nutrition		Low scholastic competence		Unemployment
Environmental effects				

Unless the trajectory is deflected, this cycle of crime causation will tend to continue when people with high criminality become parents or role models. For example, men raised in a disrupted household are likely to become impulsive delinquent adults. Their own children are thus more likely to live in disrupted households that lead to more impulsive, delinquent children. At the *population level*, this process thus can have an important effect on how the frequency, distribution, and character of crime evolves. The long, slow multigeneration increase in crime experienced in the US may well be a product of factors such as poverty that have small effects in any one generation, but accumulate over the generations due to cultural transmission.

V. The Evolutionary Ecology of Crime

Before we can identify effective crime control strategies, we first must understand what makes crime evolve. In the discussion thus far, it was possible to holistically understand *individual* criminality by considering together opportunities for crime and interactions between the biological, socio-cultural, and developmental factors that influence motivation. If we now use Darwin's trick of expanding our focus to look at *population* level changes as the result of individual interactions and behaviors we can understand how the amount and type of crime in society evolves over time. This is the same approach to understanding complex systems that ecologists apply to biological communities, except that it accounts for uniquely human attributes such as the extensive use of culture and symbolic behaviors². Understanding what makes crime evolve as well as what causes criminal behavior makes it possible to identify effective crime control strategies.

A. Individual Variation

The individual interactions that drive societal-level changes in crime occur between people with different characteristics. Over the course of their lives, people acquire characteristics such as knowledge, skills, attitudes, beliefs, and styles of strategic behavior. Which characteristics they acquire is strongly influenced by repeated interactions between socio-cultural, biological, and developmental factors (figure 17.1). These characteristics affect the value they place on material and symbolic resources at a particular point in time. They also affect their ability to obtain those resources. In other words, the characteristics we pos-

2. As we've discussed previously in this course, cultural traits are those based on learned information and behaviors. Humans are unique in their extensive use of cultural adaptations. Most organisms' adaptations are directly driven and constrained by genetic information that only can be transmitted from parents to children over generational time. In contrast, humans readily transmit cultural information within and between generations, between related and unrelated individuals, and across vast distances. Since human cultural traits may be intentionally modified to adapt to environmental opportunities and challenges, we may guide the evolution of culture.

sess at any time strongly influence which things we want and our ability to get them. We may possess the desire and ability to use conventional strategies such as legal employment to get money, goods, or respect. We also might be inclined to use criminal strategies entailing force, fraud, or stealth to get the same things. Alternatively, we could want to use conventional strategies but lack the ability to do so. A person's motivation to commit a crime is determined by these factors plus the effects of temptation exerted by an opportunity for crime. If motivation is sufficiently high and an opportunity exists, a crime can occur.

B. Coevolution of Criminal Strategies and Counterstrategies

Crimes tend to provoke counterstrategies—defensive responses—from victims and potential victims. They install alarm systems, avoid going out at night, or stay away from rough areas. As information about crime spreads, others adopt similar counterstrategies. Eventually, community groups and government may respond with things such as neighborhood watch programs, increased police surveillance of problem spots, or new legislation.

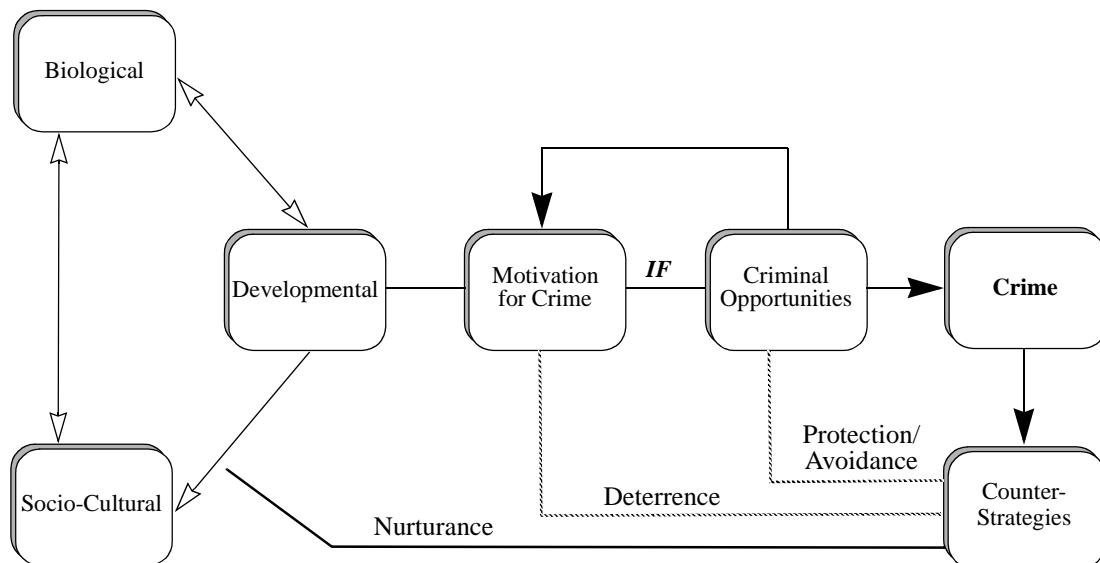
Over time, criminal strategies and counterstrategies can coevolve in response to one another for several reasons. As is discussed below, defensive counterstrategies encourage people seeking criminal opportunities to adapt by developing new strategies for crime or shifting to a different type of crime (Cohen and Machalek 1988). More generally, higher crime rates often lead to more rigorous protective measures that initially may cause crime rates to decline. Similarly, lower crime rates may lead to a relaxation of barriers to crime as individuals and communities channel limited resources to more pressing problems. Declining crime rates thus eventually may make crime an easier, less risky, and more attractive, way to get resources. This suggests that crime probably will always exist at some level in society. As fewer people are attracted to crime, potential rewards will tend to increase until they are bound to attract someone. These dynamics—and the tendency of defensive counterstrategies to initiate a vicious cycle by provoking counter-counterstrategies from offenders—suggest that crime probably always will exist at some level in society. Understanding the different ways that counterstrategies address the causes of crime is the key to making criminological research relevant to public policy.

C. Counterstrategic Options

In the past, most crime control proposals ignored the simple fact that criminality is strongly influenced by early life experiences due to the cumulative, sequential nature of development. As the dashed arrows in figure 17.3 illustrate, usually we have employed counterstrategies that attempted to reduce opportunities for crime or deter it. *Protection or avoidance strategies* attempt to reduce criminal opportunities by changing people's routine activities or by incapacitating convicted offenders through incarceration or electronic mon-

itoring devices (Reiss and Roth 1993:325). They also may increase guardianship through such things as target hardening, neighborhood watch programs, and increasing the numbers or effectiveness of police. *Deterrence strategies* attempt to diminish motivation for crime by increasing the perceived certainty, severity, or celerity of penalties. ‘Non-punitive’ deterrence approaches also advocate raising the costs of crime but they emphasize increasing an individual’s stake in conventional activities rather than punishing misbehavior (see Wilson and Herrnstein 1985). *Nurturant strategies* (solid arrow in figure 17.3) seldom have been included on crime control agendas. They attempt to forestall development of criminality by improving early life experiences and channeling child and adolescent development.

Figure 17.3. Short-term crime control strategies (dashed arrows) attempt to diminish opportunities for crime or reduce its rewards relative to conventional behavior. Long-term strategies (bold arrow) address the roots of criminal behavior early in the life course.



The long-term effectiveness of protection and avoidance strategies is limited. The evolutionary dynamics illustrated in figure 3 mean that protection strategies tend to stimulate “arms races” reminiscent of predator-prey coevolution. For example, criminals adapt to better locks by learning to overcome them, to anti-theft car alarms by hijacking autos in traffic rather than while parked, to changes in people’s routine activities by moving to areas with more potential targets. Whatever the long-term limitations of protection strategies, however, they obviously always will be necessary because of the opportunistic nature of much crime. Due to the potentially rapid nature of cultural evolution, these strategies

should be able to evolve quickly in response to changes in criminal strategies.

The effects of opportunity-reducing strategies like incapacitation through incarceration are unclear and may be confounded by the fact that younger offenders—who are least likely to be incarcerated—often commit the most crimes (see Reiss and Roth 1993:292-294). Moreover, incarceration is expensive and perhaps often counterproductive. Sampson and Laub (1993:9) assert that incarceration indirectly *causes* crime by disrupting families and ruining employment prospects. Newer alternatives like incapacitation via electronic monitoring of convicted offenders in their homes are cheaper than incarceration and may be less counterproductive.

Conventional deterrence strategies also are problematic. There is little evidence that—in a free society—they can be effective beyond some minimal threshold for controlling most³ crimes (Reiss and Roth 1993:292; Wilson and Herrnstein 1985:397-399). One novel deterrence approach recently suggested by the National Research Council's Panel on the Understanding and Control of Violent Behavior might be more effective. It would attempt to improve the ability of people who use alcohol and other psychoactive drugs to calculate costs and benefits via treatment and pharmacological interventions (Reiss and Roth 1993:332-334).

Non-punitive deterrence strategies that attempt to increase the stake adolescents and adults have in conventional life show promise for ‘correcting’ life trajectories. Sampson and Laub's (1993) rigorous reanalysis of data from the Glueck Archive indicate that the best way to encourage most adult offenders to desist from crime is to increase their “social capital” by improving employment opportunities and family ties. There also is evidence that military service among young men may help compensate for the criminogenic effects of earlier risk factors because it provides an opportunity to repair educational and vocational deficits (Werner and Smith 1992).⁴ However, the paradigm proposed here indicates that non-punitive deterrence strategies still may provide less potential crime control ‘leverage’ than nurturant strategies. Since criminality has its roots in the early life course, changing the strategic styles of adults generally is more difficult than influencing the development of

3. Traffic offenses and crimes like drunken driving may be exceptions.

4. Since improving employment opportunities appears to diminish the risk of offending, it is ironic that, compared with most other industrialized nations, the United States has largely ignored the occupational training needs of non-college-graduates who comprise over 80 percent of U. S. adults over age 25. The National Center on Education and the Economy notes that the U. S. may have the worst school-to-work transition system of any advanced industrial country. In an apparent step in the right direction, the Clinton Administration recently approved non-military national service programs that might help smooth the school-to-work transition for young adults.

children. To paraphrase Alexander Pope, it is easier to bend a twig than a mature oak.

Improving child nurturance may be the most effective defense against crime. This paradigm suggests that it should be possible to reduce the concentration of criminality in a population by improving early life experiences⁵ and channeling child and adolescent development⁶. However, nurturant strategies such as educational, health care, and child care programs that address the roots of criminality early in the life course seldom have been employed for crime control. And the results of educational and public health programs that attempted to improve early life course factors often have been equivocal or disappointing. In fact, substantial increases in crime have accompanied what some would argue are enormous improvements during the past one hundred years in such things as health care access, public education about family management, and provision of counseling for abuse victims. How might this apparent inconsistency be explained?

Although there obviously have been substantial improvements in these areas at the national level, their distribution undeniably has been uneven. And increases in reported crime rates have been most dramatic during the last forty years. Much of the increase in crime during this period appears to have been associated with such factors as demographic and business cycle fluctuations (e.g., Easterlin 1987; Hirschi and Gottfredson 1983), and changes in people's routine activities (Cohen and Felson 1979). Increased urbanization, social disorganization, and concentration of those who are most deprived as well as population growth also appear to be very important (W. J. Wilson 1987).

Past attempts to measure the impact of nurturant strategies on crime rates may have been confounded by time-lag effects. For example, previous empirical efforts to identify re-

5. For example, nurturant strategies might attempt to 1) assure that *all* women and children have access to good quality pre-natal, post-natal, and childhood health care; 2) educate as many people as possible about the basics of parenting and family management; 3) help people prevent unwanted pregnancies; 4) make help available for children who have been sexually, physically, and emotionally abused—and for their families; and 5) make available extended maternity leaves and quality child care for working parents.

6. Crime control strategies that channel tendencies such as impulsivity associated with increased risk of criminal behavior are necessary since biological, developmental, and environmental variation assure that some people always will be more impulsive. Here the emphasis would be on improving the match between individuals and their environment. Channeling impulsivity might involve broad-based changes that improve the quality of education for all students. For example, schools could place less emphasis on forcing children to sit all day, instead allowing them to participate in more active learning or to read in a preferred position. Similarly, self-regulation training that improves self-control and diminishes impulsivity would benefit all children. More impulsive students also might be encouraged to prepare for conventional occupations that reward people who prefer *doing* to sitting and talking and/or provide shorter-term gratification. This might help them acquire a larger stake in conventional behavior and diminish risks associated with school failure, making them less likely to develop or express criminality (Sampson and Laub 1993; Werner and Smith 1992; Lemert 1972).

lationships between crime and social structural/economic variables (e.g., income inequality, poverty, and unemployment) using aggregate data primarily focused on contemporaneous rather than lagged effects. The proposed importance of life-course thinking and intergenerational effects indicate that results of educational, health care, and child care programs implemented today should begin to be seen in about 15 years—when today's newborns enter the 15-29 year-old age group most at risk for criminal behavior. Even then, according to the paradigm, change probably would be gradual with the population-level concentration of criminality continuing to decline as each generation of more fully nurtured people became parents themselves. This means that change associated with nurturant strategies might require three or four generations. Attempts to measure past effects of nurturant strategies also might be confounded by immigration because, for example, national programs affecting early life course factors would not have had an effect on those whose childhoods were spent outside the country. *Legal* immigration as a percentage of total U. S. population growth has increased regularly from -0.1 percent during the depression to 29.2% from 1980-1987.

It is unclear whether the apparent failure of past nurturant programs reflects their lack of utility, faulty program implementation, or a failure to persistently pursue them over generational time frames. It also is possible that the effects of these programs have yet to be measured. There could be substantial payoffs if it is possible to successfully implement programs such as these over the long-term. There is strong evidence that the most persistent five or six percent of offenders are responsible for roughly 50 percent of reported crimes. Moffitt (in press) suggests that antisocial behavior in this group is most likely to be the result of early life course factors.

VI. Thoughts for the Future

We have argued that it is possible—and probably necessary—to use a human ecological approach to understand crime holistically if we are to conduct sound research and develop sound public policies for crime control. And we've tried to explain how this approach can be used to describe how ecological, microlevel and macrolevel factors associated with criminal behavior interact and evolve over time and how they influence individual development over the life course and across generations. If the proposed relationships and effects are supported by research, a single theoretical framework could account for the ways individuals acquire behavioral strategies such as crime and how they are differentially motivated to employ those strategies by variation in individual resource holding potential, resource valuation, strategic style and opportunity.

Applying the same well established techniques and concepts that have unified our understanding of complex organic systems in the biological sciences—while giving special consideration to the unique properties of culture—provides a unique holistic perspective on human behavior. It allows us to view crime as a cultural trait whose frequency and type evolve over time as a result of dynamic interactions between individual and group behavior in a physical environment. An appreciation of the nondeterministic nature of these processes encourages us to consider ways to guide the evolution of culture in desirable directions.

Our analysis of the problem indicates that crime control strategies should take evolutionary and ecological dynamics into account. These dynamics suggest that protection/avoidance and conventional deterrence strategies for crime control always will be necessary but will tend to have limited effectiveness in a free society. Non-punitive deterrence strategies that attempt to improve the “social capital” of adults show promise—although they offer limited crime control leverage because the fundamental behavioral styles individuals develop early in life are difficult to change. Strategies that address the childhood roots of crime over several generations appear most promising from a theoretical standpoint but past efforts in this direction generally have been disappointing. This paradigm emphasizes the importance of determining the reasons for their apparent failure and suggests several possible new avenues of research.

However unattainable they now may seem, nurturant crime control strategies are practically and philosophically appealing because they are proactive and emphasize developing restraint systems within individuals rather than increasing governmental control. They also have broader implications. If crime control strategies focused on controlling the development and expression of criminality instead of controlling specific criminal acts, it might be possible to address simultaneously the common source of *an entire set* of dysfunctional behaviors: crime, drug abuse, accidents, and perhaps even suicide. And we might do so in a manner that builds human capital and improves social cohesiveness. It is ironic that some think it naive to consider employing nurturant strategies that, according to this paradigm, will take generations to control crime. We routinely plan cities, highways, and military weapons systems 20 years or more into the future. Twenty years ago Richard Nixon became the first of five successive presidents to declare “war” on crime (Bill Clinton became the sixth in December 1993). Our analysis indicates that it is time to *evolve* the culture of our society and become less impulsive, less dependent on coercion, and more sensitive to the needs and suffering of others.

VI. Bibliographic Notes.

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