



UNC
SCHOOL OF LAW

NORTH CAROLINA JOURNAL OF LAW & TECHNOLOGY

Volume 4
Issue 1 *Fall* 2002

Article 4

10-1-2002

Organized Cybercrime - How Cyberspace May Affect the Structure of Criminal Relationships

Susan W. Brenner

Follow this and additional works at: <http://scholarship.law.unc.edu/ncjolt>



Part of the [Law Commons](#)

Recommended Citation

Susan W. Brenner, *Organized Cybercrime - How Cyberspace May Affect the Structure of Criminal Relationships*, 4 N.C. J.L. & TECH. 1 (2002).

Available at: <http://scholarship.law.unc.edu/ncjolt/vol4/iss1/4>

This Article is brought to you for free and open access by Carolina Law Scholarship Repository. It has been accepted for inclusion in North Carolina Journal of Law & Technology by an authorized administrator of Carolina Law Scholarship Repository. For more information, please contact law_repository@unc.edu.

**Article: Organized Cybercrime? How Cyberspace May Affect
the Structure of Criminal Relationships**

*Susan W. Brenner*¹

I. Introduction

*"It is hard to say what forms the organised crime
will take in the future, but the reality is not very far
from some science fiction movies."*²

The twentieth century marked the era when organized crime,³ typically equated with the Mafia or La Cosa Nostra, became a widely recognized and widely studied phenomenon. Organized crime in the La Cosa Nostra sense burst into the American awareness in the 1950's and 1960's as a result of Senator Estes Kefauver's inquiries,⁴ the McClellan Committee hearings,⁵ and the Congressional testimony of Joe Valachi, who was the first Mafia soldier to breach the mob's code of silence.⁶

¹ NCR Distinguished Professor of Law & Technology, University of Dayton School of Law. Web site: <http://www.cybercrimes.net>.

² Bojan Dobovsek, *Organised Crime – Can We Unify the Definition?* in POLICING IN CENTRAL AND EASTERN EUROPE: COMPARING FIRSTHAND KNOWLEDGE WITH EXPERIENCE FROM THE WEST (1996), National Criminal Justice Reference Service, available at <http://www.ncjrs.org/policing/org323.htm> (on file with the North Carolina Journal of Law & Technology).

³ This article uses the term "organized crime" to denote collaborative criminal activity carried out by three or more persons all of whom share a relationship structured according to certain principles. For more on this concept, see *infra* § II.

⁴ See, e.g., ESTES KEFAUVER, CRIME IN AMERICA (1951); U.S. Senate, May 3, 1950: *Kefauver Crime Committee Launched*, at http://www.senate.gov/artandhistory/history/minute/Kefauver_Crime_Committee_Launched.htm (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). See also Craig M. Bradley, *Racketeering and the Federalization of Crime*, 22 AM. CRIM. L. REV. 213, 236-41 (1984).

⁵ See, e.g., Bradley, *supra* note 4, at 241-42; Brian Goodwin, Note, *Civil Versus Criminal RICO and the "Eradication" of La Cosa Nostra*, 28 NEW ENG. J. ON

Organized crime in the form of street gangs and the Black Hand existed in the United States for over a century before Kefauver began his crusade against the mob in the early 1950's.⁷ Despite his efforts, though, organized crime remained outside mainstream American consciousness. The 1920's saw much press and cinematic attention given to organizations such as Al Capone's operation in Chicago, but these bootlegger gangs were generally perceived as a specialized phenomenon, a product of Prohibition.⁸ Since Americans were, to say the least, ambivalent about Prohibition, these gangs were neither regarded as a particularly ominous phenomenon nor considered a threat to the average

CRIM. & CIV. CONFINEMENT 279, 290-291 (2002). *See also Organized Crime and Illicit Traffic in Narcotics: Hearings before the Permanent Subcommittee on Investigations of the Senate Committee on Government Operations*, 88th Cong. 80 (1963) (statement of Joseph Valachi) [hereinafter Hearings].

⁶ "Until Joseph Valachi went public in 1963 . . . no Cosa Nostra member had ever been willing to testify about Cosa Nostra." James B. Jacobs & Lauryn P. Gouldin, *Cosa Nostra: The Final Chapter?*, 25 CRIME & JUST. 129, 131 (1999). *See* Hearings, *supra* note 5. *See also, e.g.*, MICHAEL D. LYMAN & GARY W. POTTER, ORGANIZED CRIME 30-31 (2d ed. 2000); PETER MAAS, THE VALACHI PAPERS (1968).

⁷ *See, e.g.*, IRVING SPERGER, YOUTH GANGS: PROBLEMS AND RESPONSES, ch. III (1991), National Criminal Justice Reference Service, at <http://www.ncjrs.org/txtfiles/d00027.txt> (on file with North Carolina Journal of Law & Technology); HERBERT ASBURY, THE GANGS OF NEW YORK: AN INFORMAL HISTORY OF THE UNDERWORLD 21-36, 252-62 (1990) [hereinafter GANGS OF NEW YORK]; HERBERT ASBURY, GEM OF THE PRAIRIE: AN INFORMAL HISTORY OF THE CHICAGO UNDERWORLD 222-31 (1986) [hereinafter GEM OF THE PRAIRIE]. *See also* Thomas L. Jones, *Carlos Marcello: Big Daddy in the Big Easy: Coming to America*, The Crime Library, at <http://www.crimelibrary.com/gangsters/Marcello/2.htm> (last visited Nov. 6, 2002) (Italian immigrants, who began coming to the United States in the 1860's, brought the "Black Hand", or the Mafia, with them) (on file with North Carolina Journal of Law & Technology). In 1890, the New Orleans police estimated that the Sicilian Mafia had committed over one hundred murders in the city between 1870 and 1890. *See id.* *See also* Federal Bureau of Investigation, *La Cosa Nostra/Italian Organized Crime/Labor Racketeering Unit*, at <http://www.fbi.gov/hq/cid/orgcrime/lcn/lcn.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology) [hereinafter FBI].

⁸ Jefferson M. Fish, *Conference: Is Our Drug Policy Effective? Are There Alternatives?*, 28 FORDHAM URB. L.J. 3, 252-53 (2000).

American citizen.⁹ Much the same was true of the slightly-organized bank robbery gangs, such as the Dillinger gang, Bonnie and Clyde's group, and others that emerged in the 1930's. While these gangs represented a type of organized criminal activity, they were small-scale operations engaging in an activity with which many Americans sympathized in an era of bank foreclosures.¹⁰

By the 1960's, however, the combined efforts of Senator Kefauver, the McClellan Committee, and Attorney General Robert Kennedy raised American awareness of organized Mafia-type crime and generated the perception that it was a phenomenon which threatened the American way of life.¹¹ National concern

⁹ See Sidney J. Spaeth, *The Twenty-First Amendment and State Control Over Intoxicating Liquor: Accommodating the Federal Interest*, 79 CAL. L. REV. 161 (1991) (discussing the ineffectiveness of national regulation in view of significant variations among local attitudes towards consumption of alcohol). See also Jendi B. Reiter, *Citizens or Sinners? – The Economic and Political Inequity of "Sin Taxes" on Tobacco and Alcohol Products*, 29 COLUM. J.L. & SOC. PROBS. 443, 444 n. 4 (1996) (noting that it was a frequent Prohibition-era argument that bootleggers' activities should be taxed, not criminalized).

¹⁰ Sympathy for these criminals was much augmented by romantic portrayals in the national media. See CLAIRE BOND POTTER, *WAR ON CRIME: BANDITS, G-MEN, AND THE POLITICS OF MASS CULTURE* (1998) (chronicling J. Edgar Hoover's promotion of a dramatic "G-Man" image during the 1930s).

¹¹ The image of organized crime that emerged during this era was calculated to cause concern among the American public of the 1950's and 1960's. For one thing, the Mafia was styled, often in lurid terms, as a group composed of "foreigners" (or recent immigrants, who were perceived in much the same fashion) who did not share American values. See KEFAUVER, *supra* note 4, at 19-24. The mob was not, like the bank robbery gangs of the 1930s, made up of good, Midwestern people who had been treated badly by the banks and were simply seeking a measure of justice. In the still-very-parochial America of the mid-twentieth century, the foreignness of the mob made it that much more threatening. See generally *id.*

Another factor contributing to national concern with organized crime during this era was the fact that Mafia activities were not activities with which average American citizens could empathize. The image that emerges from this era is of an organized group of "foreign" hoodlums who preyed upon good American citizens for purely commercial reasons. Unlike the perception of the bootleg gangs of the 1920s and the bank robbery gangs of the 1930s, these gangs were perceived as having no purpose except victimization for the purpose of making money. See, e.g., *id.* at 12-18. And their victims were good, decent Americans, not the Prohibition authorities of the 1920's or the exploitative banks of the 1930's.

about organized crime resulted in Federal law enforcement making it a priority for the next thirty years.¹² The Federal Bureau of Investigation, in particular, concentrated on tracking the activities of various mob families and pursuing their leaders, such as Sam Giancana and John Gotti.¹³ Federal prosecutors successfully pursued large-scale prosecutions against high-profile Mafia organizations by the 1980's.¹⁴ The mob still existed but as a known threat under control.¹⁵

In the 1990's, law enforcement officials and others who tracked organized criminal activity identified new types of organized crime emerging in the United States.¹⁶ Some of these

¹² See, e.g., FBI, *supra* note 7. The concern with organized crime also resulted in the definition of new, more complex crimes. See, e.g., Susan W. Brenner, *RICO, CCE and Other Complex Crimes: The Transformation of American Criminal Law?*, 2 WM. & MARY BILL RTS. J. 239 (1993).

¹³ See, e.g., Federal Bureau of Investigation, *About Organized Crime*, at <http://www.fbi.gov/hq/cid/orgcrime/aboutocs.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology).

¹⁴ Lesley Suzanne Bonney, *The Prosecution of Sophisticated Urban Street Gangs: A Proper Application of RICO*, 42 CATH. U.L. REV. 579, 587-99 (1993). See also SHANA ALEXANDER, *THE PIZZA CONNECTION: LAWYERS, MONEY, DRUGS, MAFIA* (1988).

¹⁵ James B. Jacobs and Lauryn P. Gouldin, *Cosa Nostra: The Final Chapter?*, 25 CRIME & JUST. 129, 176-80 (1999).

¹⁶ See, e.g., 137 CONG. REC. S8310-01 (daily ed. June 20, 1991) (statement of Sen. Specter introducing "bill to implement a Federal crime control and law enforcement program to stem gang violence"); 137 CONG. REC. 2740-42 (Jan. 31, 1991) (statement of Sen. Deconcini introducing "a bill to enhance the Federal Government's authority and ability to eliminate violent crime committed by outlaw street and motorcycle gangs"); Douglas Frantz, *Chasing a New Type of Mob*, L.A. TIMES, May 20, 1991, at A1; PRESIDENT'S COMM'N ON ORGANIZED CRIME, *THE IMPACT: ORGANIZED CRIME TODAY*, 33-128 (1986) (stating that groups active in the 1980's United States included Mafia, oriental tongs and triads, outlaw motorcycle gangs, Columbian cartels, Japanese Yakuza, Jamaican Posses, and Russian, Irish, Cuban, Vietnamese, and Canadian gangs). See also International Crime: Address Before the U.S. Senate Committee on Appropriations Subcommittee on National Operations (April 21, 1998) (statement of Louis J. Freeh), Federation of American Scientists, at http://www.fas.org/irp/congress/1998_hr/s980421-lf.htm (on file with the North Carolina Journal of Law & Technology); NATIONAL COMMUNICATIONS SYSTEM, *THE ELECTRONIC INTRUSION THREAT TO NATIONAL SECURITY AND EMERGENCY PREPAREDNESS (NS/EP) INTERNET COMMUNICATIONS* 34-35 (December 2000), at

new groups were foreign imports, such as the Japanese Yakuza, Chinese triads, Jamaican posses, and, at the end of the decade, Russian gangs composed of expatriate members of the Mafiya.¹⁷ Other groups were domestic. The Hell's Angels motorcycle club, for example, became a highly-organized, widespread criminal organization.¹⁸ These new and mostly foreign groups resembled the Mafia insofar as they had complex organizational structures emphasizing a hierarchical division of labor, but they were more flexible and less parochial than the Mafia, which still retained much of its Black Hand ethos.¹⁹ They also deviated from the

http://www.ncs.gov/ncs/Reports/electronic_intrusion_threat2000_final2.pdf (on file with the North Carolina Journal of Law & Technology). The same phenomenon was occurring in other countries, as well, but this article is concerned only with the evolution of criminal organization in the United States. See, e.g., JAMES O. FINCKENAUER AND YURI A. VORONIN, THE THREAT OF RUSSIAN ORGANIZED CRIME (June 2001), available at National Criminal Justice Reference Service, at <http://www.ncjrs.org/pdffiles1/nij/187085.pdf> (on file with the North Carolina Journal of Law & Technology).

¹⁷ See, e.g., Sara Jankiewicz, *Glasnost and the Growth of Global Organized Crime*, 18 HOUS. J. INT'L L. 215 (1995); Goodwin, *supra* note 5, at 279, 283; Jacobs and Gouldin, *supra* note 15, at 139. See also JEFFREY ROBINSON, THE MERGER: THE CONGLOMERATION OF INTERNATIONAL ORGANIZED CRIME 83-103, 169-93, 298-315 (2000).

¹⁸ See Goodwin, *supra* note 5, at 283. See also Stephen S. Trott, *Words of Warning for Prosecutors Using Criminals as Witnesses*, 47 HASTINGS L.J. 1381 (1996) (analyzing failed federal prosecution of gang members on conspiracy and racketeering charges).

¹⁹ See, e.g., Edgardo Rotman, *The Globalization of Criminal Violence*, 10 CORNELL J.L. & PUB. POL'Y 1, 18 (2000). The "Black Hand" ethos refers to the Italian Mafia's strong emphasis on ethnic and family ties. See, e.g., Ralph Salerno, *The Assassination of President John F. Kennedy and Organized Crime* ¶¶ 14-16, at Kennedy Assassination Home Page, at <http://mcadams.posc.mu.edu/russ/jfkinfo/jfk9/hscv9a.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). It also denotes the principles upon which it is based. For centuries, Mafia initiates have taken an oath in which they swear to the following: a code of silence (omerta); total obedience to the capo or boss; an obligation to assist any allied Mafia member or group; a commitment to avenge an attack on members of one's Mafia family; and a commitment to have nothing to do with legitimate authorities. See, e.g., *History of the Mafia*, at The Alleged Mafia Site, at <http://mcadams.posc.mu.edu/russ/jfkinfo/jfk9/hscv9a.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). These principles date back many centuries, to the Mafia's origins in native Sicilian

Mafia in another important way: they tended to be overtly and self-consciously transnational in their membership and activities.²⁰ While the Mafia occasionally engaged in transnational activities, these activities tended to be limited, reflecting the Mafia's primary emphasis on local endeavors, such as drug dealing, loan-sharking, illegal gambling, and prostitution.²¹

The emergence of these transnational criminal organizations in the late twentieth century generated concern analogous to that produced by American society's "discovery" of the mob in the 1960's.²² Nations, law enforcement, and others who tracked organized criminal activity began concentrating on transnational organized crime as a new and even more dangerous phenomenon than the emergence of the Mafia.²³ This focus continues today. Since the globalization of crime is a trend that

resistance to invading forces. *See, e.g., id.*

The name "Black Hand" comes from a practice Sicilian organized crime developed in the 1700s: Gang members sent "Black Hand" notes to wealthy citizens asking for money in return for protection. *See, e.g., id.* If the victims did not comply, they and their families would almost certainly be targeted for violence. *See id.* In the nineteenth century, Italian immigrants brought this practice to the United States. *See, e.g.,* Thomas L. Jones, *Carlos Marcello: Big Daddy in the Big Easy: Coming to America*, at <http://www.crimelibrary.com/gangsters/marcello/2.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology).

²⁰ *See, e.g.,* ROBINSON, *supra* note 17, at 102 (noting that "there are fifty-four countries around the world that have an active Russian organized crime presence"). *See also* Canadian Security Intelligence Service, *Transnational Criminal Activity* (Nov. 1998), Federation of American Scientists, at <http://fas.org/irp/threat/back10e.htm> (on file with the North Carolina Journal of Law & Technology); *International Crime Threat Assessment*, Federation of American Scientists, at <http://fas.org/irp/threat/pub45270chap1.html> (Dec. 2000) (on file with the North Carolina Journal of Law & Technology).

²¹ *See generally* Jacobs & Gouldin, *supra* note 15, at 139-55. The Mafia's transnational efforts almost exclusively consisted of activities undertaken to facilitate its local endeavors. As such, the mob developed international connections to allow the importation of drugs and the laundering of the proceeds of its unlawful activities.

²² This phenomenon evoked similar concern in other countries but, again, this article is concerned only with the United States experience.

²³ One of the concerns about emerging organized transnational crime groups is the degree to which they are willing to collaborate with each other. *See, e.g.,* ROBINSON, *supra* note 17, at 298-315.

will only accelerate, this concentration on transnational organized crime will persist.

The issue to be considered in this article is whether what is true of traditional crime is likely to also be true of cybercrime, which deviates from the traditional model of crime in several ways. Section II of this article examines reasons why organized activity has emerged as an aspect of real-world crime. More precisely, it considers the advantages organization offers for real-world criminals. Section III then considers whether these advantages translate to cybercrime. If they do translate, we can expect to see the emergence of organized cybercriminal activity analogous to that encountered in the real world; that is, we can anticipate the emergence of cybercrime Mafias and cybercrime cartels. To the extent that these advantages do not translate to cybercrime, we may see a very different pattern emerge; organization may prove to be a less significant feature of cybercrime than of real-world crime or it may take quite different forms than those found in real-world crime.

II. Criminal Organization: The Real World

This article is concerned with criminal organization. For purposes of this article, a criminal organization is an organization that devotes the majority of its efforts to committing crimes for the primary purpose of generating wealth.²⁴ Any criminal

²⁴ See, e.g., Gwen McClure, *The Role of Interpol in Fighting Organized Crime*, 481 INT'L CRIM. POLICE REVIEW (2000), Interpol, at http://www.interpol.int/Public/Publications/ICPR/ICPR481_1.asp (Interpol defines organized crime as "any association or group of people taking part in continuing illegal activity for profit, regardless of national boundaries") (on file with the North Carolina Journal of Law & Technology). The discussion that follows in the next two sections will often tend to equate "generating wealth" with theft, robbery, or extortion; that is, they emphasize a dynamic in which the criminal elicits wealth from a victim by overcoming the victim's resistance. In other words, the victim parts with his or her wealth unwillingly. Criminals can, of course, also "generate wealth" by tricking a victim into parting with money or other things of value; this is larceny by trick or fraud. The discussion in the text tends to emphasize the unwilling victim scenario when it is discussing the first type of criminal organization, the "gang" structure, because this structure evolved to facilitate theft, robbery and extortion.

organization, so defined, also commits crimes for other purposes, such as security. To ensure its survival, a criminal organization may bribe officials, murder rivals and turncoats, and engage in related activities. These efforts, however, are subordinate to the organization's principal goal of making money; a criminal organization of whatever order of complexity is a business venture. This essentially commercial focus differentiates a criminal organization from an individual criminal, as individual crime is often irrational, emotional crime. The type of group crime considered for this discussion is rational, goal-oriented crime that enriches perpetrators at the expense of victims.²⁵

This commercial focus also differentiates a criminal organization from its closely-related counterpart, a terrorist organization. Much of what is stated below regarding the advantages of organization for criminal groups is also true of terrorist groups, and the next section considers how the availability of cyberspace may influence the structure of terrorist organizations. The analysis concentrates primarily on criminal organizations, however, because their rational, goal-oriented focus means they are likely to seize upon whatever organizational or other techniques enhance their pursuit of wealth.²⁶ This capacity to adopt new organizational or other techniques is less true of terrorist organizations because, while they can operate in a rational, goal-oriented manner, their concern with ideological principles often causes them to make irrational decisions when pursuing their goals.²⁷

²⁵ Individual crime can also be rational and directed toward enriching the perpetrator at the victim's expense. The distinction which is important for the analysis in this section is that while individual crime *can* be rational, goal-oriented crime, it can also be emotional and irrational; group crime, on the other hand, is intrinsically rational and goal-directed. It is also significant for this discussion that, as is explained later in the text, individual crime cannot, by definition, be organized crime; organized crime requires the existence of a group. See *infra* notes 27-33 and accompanying text.

²⁶ See, e.g., *THE ECONOMICS OF ORGANIZED CRIME* (G. Fiorentini & S. Peltzman eds. 1995); PINO ARLACCHI, *MAFIA BUSINESS: THE MAFIA ETHIC AND THE SPIRIT OF CAPITALISM* (Martin Ryle trans. 1986).

²⁷ The decision-making processes of some terrorist organizations can be genuinely irrational – motivated by anger, pain, or frustration without regard to method or consequence; however, some apparently irrational decisions may

Criminal organizations, like their civilian counterparts, are assemblages of individuals whose relationships are structured according to certain principles. Since staff is a defining characteristic of any organization, it is necessary to begin a consideration of criminal organizations by parsing out staffing modalities employed in the commission of crime.

A. Staffing of Criminal Organizations

Logically, there are three modalities for criminal activity: solo commission, collaboration by two people, and activity conducted by three or more people. Only the third alternative represents organized criminal activity. Since organization requires a structured relationship between persons, action by a single individual cannot involve organization. One could argue that since it is possible to have a structured relationship between two people,²⁸ such collaboration should qualify as organization. This

merely reflect goals, methods, rewards, and punishments defined through a very different set of values. See, e.g., W. Michael Reisman, *Symposium Legal Responses to International Terrorism: International Legal Responses to Terrorism*, 22 HOUS. J. INT'L L. 3, 10-11 (1999).

²⁸ The relationship would necessarily have a simple structure. Logically, the two could operate as equals or one could assume responsibility for directing their joint activities and the other could follow this individual's direction. As sociologist Georg Simel explained, the structure of human interactions becomes much more complex as one moves from a dyad (two people) into a triad (three or more people). See, e.g., LEWIS COSER, *MASTERS OF SOCIOLOGICAL THOUGHT* 186 (2d ed. 1977):

Simmel's emphasis on the structural determinants of social action is perhaps best exemplified in his seminal essay, "Quantitative Aspects of the Group." . . . examines forms of group process and structural arrangement insofar as these derive from sheer quantitative relationships.

A dyadic relationship differs qualitatively from all other types of groups in that each of the two participants is confronted by only one another and not by a collectivity. Because this type of group depends only on two participants, the withdrawal of one would destroy the whole

. . . .

When a dyad is formed into a triad, the apparently insignificant fact that one member has been added actually brings about a

argument, however, ignores the reasons why organized criminal activity is perceived as a distinct threat. The law has long recognized the increased dangers that result when criminals associate, as evidenced by the historic tradition of imposing liability for conspiracy and complicity. Two criminals can cause more harm than one, but the level of harm they can cause is necessarily limited. A criminal collaboration between two people is just that; it cannot expand into new, different, and more dangerous forms.²⁹ Criminal organizations' ability to expand, both in terms of personnel and the level of harm inflicted, is one of their distinctive aspects³⁰ and is the reason why twentieth century law enforcement devised new strategies to deal with organized or enterprise criminality.³¹ Another distinctive aspect of criminal

major qualitative change. In the triad, as in all associations involving more than two persons, the individual participant is confronted with the possibility of being outvoted by a majority.

The triad is the simplest structure in which the group as a whole can achieve domination over its component members; it provides a social framework that allows the constraining of individual participants for collective purposes. The dyad relies on immediate reciprocity, but the triad can impose its will upon one member through the formation of a coalition between the two others. Thus, the triad exhibits in its simplest form the sociological drama that informs all social life: the dialectic of freedom and constraint, of autonomy and heteronomy.

See also Georg Simmel, *Quantitative Aspects of the Group* in *THE SOCIOLOGY OF GEORG SIMMEL*, 87 (K.H. Wolf ed. 1950).

²⁹ See *supra* note 28. It is therefore sufficient from the law's perspective to prohibit and punish such collaborators for (a) the specific, substantive crimes they commit together and (b) the act of collaborating, which take the form either of conspiring (agreeing to work together toward criminal ends) or abetting (providing assistance in the commission of criminal acts).

³⁰ At a very basic level, the dynamics of the relationship between individuals changes dramatically when it moves from two to three people. See *supra* note 28. As noted above, there are only two possible structures for a two-person relationship, i.e., equals or leader and follower. But once a third person is added, the complexity of the possible relationships increases. See *supra* note 28.

³¹ At the federal level, for example, Congress created the RICO and CCE statutes, both of which are designed as weapons against highly organized criminal activity. The legislative history of both statutes clearly evinces

organizations is that, like a corporation, the organization survives the departure of individual members.³² This is not true of a criminal collaboration between two people; the desertion of either destroys the association.³³ Consequently, the remainder of this article will use the term organization to mean a group of *at least* three individuals that is structured according to certain principles and works to achieve criminal ends.³⁴ Three individuals is, of course, merely a benchmark; the discussion will assume groups of much larger size.

Having resolved the staffing issue, an important question for purposes of this analysis is why those committed to criminal endeavors find organization attractive. To answer this question, it is necessary to consider the evolution of criminal organization in Anglo-American history.³⁵

Congress' recognition, based on its investigation of emerging types of organized criminal activity, that there is a direct relationship between the complexity of a criminal organization and the level of harm it can inflict.

³² See *supra* note 28. See also James Moody & Douglas R. White, Social Cohesion and Embeddedness: A Hierarchical Conception of Social Groups (June 22, 2000), (manuscript submitted for publication to American Journal of Sociology) at

http://www.santafe.edu/files/workshops/dynamics/SCO_CON1.pdf (on file with the North Carolina Journal of Law & Technology).

³³ See Moody & White, *supra* note 32.

³⁴ This definition is common in statutes that address the activities of organized criminal groups. See, e.g., CAL. PENAL CODE § 186.22(f) (1997 & Supp. 2002); FLA. STAT. ANN. § 874.03(1) (2000 & Supp. 2002); Iowa Code Ann. § 723A.1(2) (1993 & Supp. 2002); 15 LA. REV. STAT. ANN. § 1404(A) (2001 & Supp. 2002).

³⁵ What follows is, of course, merely a sketch of the history of organized crime in Anglo-American history. The analysis is limited to the Anglo-American tradition because this is the context from which our legal principles emerged, including those governing the criminalization of collaborative criminal activity. The purpose here is not to provide a detailed historical account of this phenomenon, but rather to provide a general empirical framework that can be used to analyze whether organization will assume the same importance for cybercrime that it has for real-world crime.

B. The Evolution of Criminal Organization in Anglo-American History

Criminal organizations have existed for centuries.³⁶ In the thirteenth century, the perhaps-apocryphal Robin Hood presided over his band of Merry Men, which was clearly a type of criminal organization. The group was structured according to certain principles: Robin was in charge and the others were not; Robin decided what activities the group would undertake, and his Merry Men implemented his decisions. This type of criminal organization, which manifests itself through succeeding centuries in English and American history, is best characterized as a gang organization. A gang organization is effectively two-tiered: there is a leader and there are followers.³⁷ The leader may have one or more subordinates to whom he delegates leadership authority in his absence, but this delegation is limited, and subordinates remain mere followers.³⁸ The advantage this simple organizational model

³⁶ More precisely, they have existed for centuries in the Anglo-American tradition, which is the context examined in the text above. Criminal organizations of the “gang” type described in the text have existed for millennia and have manifested themselves in every society; other, more complex organizational types have also emerged but, again, the concern here is solely with Anglo-American history. For a brief review of gang history in the United States, see, e.g., Lou Savelli, *Introduction to East Coast Gangs* (2000), at National Alliance of Gang Investigators Associations, at http://www.nagia.org/east_coast_gangs.htm (on file with the North Carolina Journal of Law & Technology).

³⁷ See, e.g., IRVING SPERGEL, YOUTH GANGS: PROBLEMS AND RESPONSES ch. III (1991), National Criminal Justice Reference Service, available at <http://www.ncjrs.org/txtfiles/d00027.txt> (on file with North Carolina Journal of Law & Technology); Tony Lee, *The Triad Myth*, U.S. Department of State International Information Programs, at <http://usinfo.state.gov/regional/ea/chinaaliens/triadmyth.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). See generally George W. Knox et al., *The Facts About Gang Life in America Today: A Study of Over 4,000 Gang Members*, ch. 7 (1997), National Gang Crime Research Center, at <http://www.ngcrc.com/ngcrc/page9.htm> (on file with the North Carolina Journal of Law & Technology).

³⁸ This type of two-tiered organization is, of course, not peculiar to criminal endeavors. It is the oldest, simplest mode of organization, and is therefore found in every human society; as a tribal structure, it constituted the earliest form of

offers for miscreants is the directed, combined efforts of many individuals in carrying out criminal activity. Like Robin and his Men, the robber gangs that roamed English highways in the seventeenth century were effective because they had the personnel needed to intimidate targets into surrendering their valuables; the size of the gang was especially important given that armed guards accompanied many travelers. The same was true of robber gangs in the American West, the pirate gangs of the seventeenth and eighteenth centuries,³⁹ and the urban street gangs that operated in the nineteenth and early twentieth centuries.⁴⁰ The gang's strength

socio-political organization. See, e.g., DAVID RONFELDT, TRIBES, INSTITUTIONS, MARKETS, NETWORKS: A FRAMEWORK ABOUT SOCIAL EVOLUTION 5-6 (1996), available at

<http://www.rand.org/publications/P/P7967/P7967.pdf> (on file with the North Carolina Journal of Law & Technology).

³⁹ "[U]ntil the seventeenth century, [high-seas piracy] was widely sanctioned in most countries...." It was not outlawed until the nineteenth century, and persists today. See, e.g., Marc D. Goodman & Susan W. Brenner, *The Emerging Consensus on Criminal Conduct in Cyberspace*, 2002 UCLA J. L. & TECH. 3 (2002), at

http://www.lawtechjournal.com/articles/2002/03_020625_goodmanbrenner.php (on file with the North Carolina Journal of Law and Technology); Ethan A.

Nadelmann, *Global Prohibition Regimes: The Evolution of Norms in International Society*, 44 INT'L ORG. 479-556 (1990), available at

<http://www.criminology.fsu.edu/transcrime/articles/GlobalProhibitionRegimes.htm> (on file with the North Carolina Journal of Law & Technology).

⁴⁰ See, e.g., ASBURY, THE GANGS OF NEW YORK, *supra* note 7; ASBURY, GEM OF THE PRAIRIE, *supra* note 7. The same is also true of other robber gangs, such as the bank robbery gangs that proliferated in Depression-era America. It is also true of the Sicilian Mafia, the progenitor of the American version, the Yakuza, the tongs and triads, and all the other pre-twentieth-century criminal organizations.

This model tends to take on a little more complexity with the urban street gangs of the nineteenth and early twentieth centuries. Unlike robber gangs which, as their name implies, were concerned only with perpetrating armed theft, these gangs tended to garner profits from multiple activities, such as robbery, pocket-picking, prostitution, and arson. See, ASBURY, THE GANGS OF NEW YORK, *supra*. They still maintained the simple structure of the "gang" model, however, because instead of operating these various activities themselves they utilized the intimidating effect of their personnel to extort profits from those who conducted the activities. These groups conform to the "gang" model articulated above, therefore, because the advantage organization offers is the

is its size.⁴¹ It functions because there is a leader who provides direction and is obeyed because his legitimacy is established by certain organizing principles, which can be as simple as the fact that he can physically intimidate others.⁴²

The gang organizational model persisted for centuries and will, no doubt, always be with us. It is the simplest model. It is, in effect, a group's starting point on the road to more complex criminal organization. The American Mafia, for example, which long ago surpassed this simple organizational structure, began as a gang organization.⁴³

The evolution of the American Mafia, as an example, raises the question: why do criminal organizations evolve beyond the gang model? Since criminal organizations do not leave records documenting their strategic decisions, it is necessary to answer the evolutionary question by reference to the anecdotal information that has emerged concerning the evolution of the American Mafia, the historical context in which this shift occurred, and influential civilian organizational structures of the time.

From its establishment in the nineteenth century until the 1930's, the American Mafia essentially conformed to the gang model. Indeed, in its earliest Black Hand incarnation, the

ability to call upon the direct, combined efforts of many individuals. *See, e.g., id.*

⁴¹ *See, e.g., Lee, supra* note 37.

⁴² The legitimating principle can also be tradition, seniority or any of several other options. In a traditional system, leadership is allocated according to familial relationships, so that members of certain "families" are always the gang's leaders; this is simply the reiteration of a pattern than has been endemic to human history. This pattern still evidences itself in the American Mafia. Notwithstanding the complex hierarchical organization which has evolved over the last seventy years, the constituent units of the American Mafia – the local "families" – still tend to be dominated by individuals from a particular biological family. *See, e.g.,* PETER MAAS, UNDERBOSS: SAMMY THE BULL GRAVANO'S STORY OF LIFE IN THE MAFIA 33-36, 107-12 (1997). The identity of the group that controls a specific "family" can, of course, be changed, usually by violence, but blood ties continue to play an important part in dictating Mafia leadership.

⁴³ *See, e.g., The Mafia*, at <http://www.bestofsicily.com/mafia.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). *See* Hearings, *supra* note 5 (statement of Joseph Valachi).

American Mafia was little more than a robber “gang that exploited its ability to command men who were willing to engage in violent acts to steal and extort money from others.”⁴⁴ This defining characteristic might well have continued to the present date had Prohibition not occurred.

Prohibition offered those willing to violate the law opportunities to make enormous profits, but doing so required engaging in a commercial activity. The profit-making aspect of Prohibition lay in one’s ability to satisfy the American public’s desire to consume liquor illegally.⁴⁵ To satisfy that desire, it was necessary to supply liquor, which meant either importing it from abroad or manufacturing it domestically.⁴⁶ As the potential profit in Prohibition became apparent, gangs across the country moved to take advantage of the opportunity offered and, in so doing, shifted from simply preying on others to becoming criminal entrepreneurs.⁴⁷ Exploiting the public’s desire to drink required

⁴⁴ See, e.g., ASBURY, GEM OF THE PRAIRIE, *supra* note 7. See, e.g., Salerno, *supra* note 19, at ¶ 17.

⁴⁵ See, e.g., Craig M. Bradley, *Racketeering and the Federalization of Crime*, 22 AM. CRIM. L. REV. 213, 226 (1984).

⁴⁶ See, e.g., Henry W. Anderson, *Separate Report of Henry W. Anderson*, in REPORT ON THE ENFORCEMENT OF THE PROHIBITION LAWS OF THE UNITED STATES (Jan. 7, 1931), Schaffer Library of Drug Policy, at <http://www.druglibrary.org/schaffer/Library/studies/wick/anderson.htm> (on file with the North Carolina Journal of Law & Technology); William S. Kenyon, *Separate Report of William S. Kenyon*, in REPORT ON THE ENFORCEMENT OF THE PROHIBITION LAWS OF THE UNITED STATES (Jan. 7, 1931), Schaffer Library of Drug Policy, at <http://www.druglibrary.org/schaffer/Library/studies/wick/kenyon.htm> (on file with the North Carolina Journal of Law & Technology). See also DAVID KYVIG, REPEALING NATIONAL PROHIBITION 20-35 (2d ed. 2000) (1979), available at Schaffer Library of Drug Policy, at <http://www.druglibrary.org/schaffer/history/rnp/RNP2.html> (on file with the North Carolina Journal of Law & Technology).

⁴⁷ See, e.g., Mark Gribben, *The Purple Gang: Bootlegger’s Paradise* (2000), at <http://www.crimelibrary.com/gangsters/purple/purplemain.htm> (on file with the North Carolina Journal of Law & Technology). See also Nora V. Demleitner, *Organized Crime and Prohibition: What Difference Does Legalization Make?*, 15 WHITTIER L. REV. 613, 622-23 (1994):

Prohibition changed the structure of organized crime and America’s attitude towards it. Loosely organized groups turned into well- organized and structured enterprises. During

developing and sustaining an organization that could either bring liquor into the country in a reliable manner or manufacture it domestically and then distribute it to outlets in territory the gang controlled.⁴⁸ Importing liquor required the development of complex organizational structures, but manufacturing it required much more in terms of organizational evolution. While importation continued throughout the era of Prohibition, domestic manufacturing dominated the market because it was cheaper and more reliable.⁴⁹

The successful bootleg gangs, such as the Capone operation in Chicago and the Olmstead operation in Seattle,⁵⁰ therefore evolved from robbers who merely stole from others into complex criminal organizations with hierarchical divisions of labor analogous to those found in civilian corporations.⁵¹ While bootleg

Prohibition most gangs were organized along kinship ties and ethnic lines with the most prominent being Italian, Irish, and Jewish.

⁴⁸ See, e.g., ALBERT ROSENBERG & CINDY ARMSTRONG, *THE AMERICAN GLADIATORS: TAFT VERSUS REMUS*, 8-20 (1995). It also required developing security systems which were designed to ensure that neither the liquor nor the patrons who purchased it from the gangs fell into the hands of law enforcement officers who were dedicated to enforcing the Prohibition laws. See *id.* See also *infra* note 51. This adds another layer to the evolving division of labor described above. See *infra* note 51.

⁴⁹ Aside from transportation costs and the risks of losing shipments in transit, importing liquor was a more expensive proposition because the liquor that was imported was of better quality. Some of the liquor manufactured in the United States was of good quality, but much of it was distinctly inferior to the imported alternatives and to the liquor that had legitimately been produced in the United States before Prohibition. See, e.g., William S. Kenyon, *Separate Report of William S. Kenyon*, in *REPORT ON THE ENFORCEMENT OF THE PROHIBITION LAWS OF THE UNITED STATES* (Jan. 7, 1931), Schaffer Library of Drug Policy, at <http://www.druglibrary.org/schaffer/Library/studies/wick/kenyon.htm> (on file with the North Carolina Journal of Law & Technology). Not having much in the way of alternatives, American citizens drank what the gangs provided. See *id.*

⁵⁰ See, e.g., *Olmstead v. United States*, 19 F.2d 842, (9th Cir. 1927), *aff'd* 277 U.S. 438 (1928).

⁵¹ See, e.g., Frank J. Loesch, *Separate Report of Frank J. Loesch*, in *REPORT ON THE ENFORCEMENT OF THE PROHIBITION LAWS OF THE UNITED STATES* (Jan. 7, 1931), Schaffer Library of Drug Policy, at <http://www.druglibrary.org/schaffer/Library/studies/wick/loesch.htm> (on file

gangs were not as organizationally sophisticated as the Mafia would become, they represented a change in criminal organization.⁵² Simple organization is advantageous because of

with the North Carolina Journal of Law & Technology):

A strong reason . . . why I favor immediate steps being taken to revise the [Eighteenth] Amendment is in order to destroy the power of the murderous, criminal organizations flourishing all over the country upon the enormous profits made in bootleg liquor traffic. Those profits are the main source of the corruption funds which cement the alliance between crime and politics and corrupt the law enforcing agencies in every populous city.

Those criminal octopus organizations have now grown so audacious owing to their long immunity from prosecutions for their crimes that they seek to make bargains with law enforcing officers and even with judges of our courts to be allowed for a price to continue their criminal activities unmolested by the law.

Those organizations of murderers and arch criminals can only be destroyed when their bootleg liquor profits are taken from them. So long as the Eighteenth Amendment remains in its present rigid form the nation, the states, the municipalities, the individual citizen, are helpless to get out of reach of their poisonous breaths and slimy tentacles.

If not soon crushed those criminal organizations may become as they are now seeking to become supergovernments and so beyond the reach of the ordinary processes of the law.

See also Kenyon, *supra* note 49. Indeed, Charles “Lucky” Luciano modeled the Mafia Commission and the hierarchical structures it controlled on modern corporate structure. *See, e.g.,* FBI, *supra* note 7 (noting that Luciano ran the Mafia “like a major corporation”). *See also* JEFFREY ROBINSON, *THE MERGER: THE CONGLOMERATION OF INTERNATIONAL ORGANIZED CRIME* 31 (2000).

⁵² *See, e.g.,* Craig M. Bradley, *Racketeering and the Federalization of Crime*, 22 AM. CRIM. L. REV. 213, 226 (1984):

While America had organized crime before prohibition, it was more diverse, loosely structured, and primarily involved with prostitution, gambling and political corruption on a local level. These activities did not require large organizations. In contrast, prohibition created a need for large-scale distribution networks comprising smugglers, distillers, bottlers, warehouses and trucks as well as numerous retailing outlets. . . . [T]his required far more organization than did operating a house of prostitution or a bookie joint, and

the manpower, the sheer physical force the group commands; the utility of this force lies in the fact that it can be used to appropriate wealth generated by others. More complex organization is advantageous because it enables criminal groups to carry out more complex activities that generate wealth independently of the activities of others; the group becomes an entrepreneurial enterprise possessing the capacity to control its revenues. The more effectively a group conducts its criminal enterprises, the more wealth it generates; increased profitability is the primary utility of increased organizational complexity.

During the Prohibition era, the Mafia and other gangs followed this path by concentrating on improving the efficiency with which they conducted their illegal enterprises in order to maximize profits.⁵³ One finds the same level of evolving organizational complexity in all the historically successful bootleg gangs, including identifiably ethnic Italian, Irish, and Jewish gangs as well as more generic operations like the Olmstead and

organized crime, as we know it today, was born . . .

See also Salerno, *supra* note 19, at ¶ 17.

Bootlegging became an enormous industry. It was a fascinating complex, involving domestic manufacture (running the gamut from home stills and bathtub gin to sophisticated full-size clandestine breweries); a complicated, illicit distribution system; and large-scale rumrunning--champagne and brandies from France, Scotch from the British Isles, whisky from Canada, and native brews from the Caribbean. Such an industry required large numbers of people willing to break the law, a stable and specialized labor force, a tightly disciplined organization, and strong leadership. It was logical for established groups of organized criminals to step. [sic] in to meet the need, and foremost among these were the Italian criminal societies. They expanded to the extent that they entered into associations with people of other ethnic backgrounds, but the core unit was still Italian. . . . The Italian groups, however, came to dominate the bootleg industry, amassing tremendous wealth and gaining invaluable experience in business that was put to good use after Prohibition ended.

⁵³ *See supra* note 52.

Cincinnati operations.⁵⁴ Their paths diverged, however, when Prohibition ended. Many of these gangs seem to have been products of Prohibition, and when it ended, so did they.⁵⁵

The Mafia, however, was different. It had existed long before Prohibition and was determined to continue operating when it ended.⁵⁶ Having tasted greater profits generated by entrepreneurial criminal activity, mob bosses had no desire to go back to the older, robber-gang operational model. This forced those who led various Mafia groups to figure out how to sustain their entrepreneurial model of criminal activity when the original reason for its existence ceased to exist. With liquor sales legalized at the federal level,⁵⁷ Mafia bosses realized that while they could continue in the liquor business, the level of profitability would be far below Prohibition era levels because it was now a commercially competitive environment.

⁵⁴ See *supra* note 47. See, e.g., Richard C. Lindberg, *The Mafia In America: Traditional Organized Crime in Transition* (2001), at <http://www.search-international.com/Articles/crime/mafiaamerica.htm> (on file with the North Carolina Journal of Law & Technology); Ralph Salerno, Testimony Before the House Select Committee on Assassinations (September 28, 1978), at <http://mcadams.posc.mu.edu/russ/jfkinfo2/jfk5/saler.htm>. See also Henry W. Anderson, *Separate Report of Henry W. Anderson*, in REPORT ON THE ENFORCEMENT OF THE PROHIBITION LAWS OF THE UNITED STATES (Jan. 7, 1931), Schaffer Library of Drug Policy, at <http://www.druglibrary.org/schaffer/Library/studies/wick/anderson.htm> (on file with the North Carolina Journal of Law & Technology); Kenyon, *supra* note 49. See also DAVID KYVIG, REPEALING NATIONAL PROHIBITION 20-35 (2d ed. 2000) (1979), available at Schaffer Library of Drug Policy, at <http://www.druglibrary.org/schaffer/history/rnp/RNP2.html> (on file with the North Carolina Journal of Law & Technology).

⁵⁵ See, e.g., Demleitner, *supra* note 47 (noting that “only the most successful” bootleg gangs survived the repeal of Prohibition). See also John J. Binder, *The Chicago Outfit*, at <http://www.americanmafia.com/Cities/Chicago.html> (2001) (on file with the North Carolina Journal of Law & Technology).

⁵⁶ See, e.g., Demleitner, *supra* note 47, at 626-27.

⁵⁷ Prohibition laws were still in place in some states, so the Mafia could continue to supply bootleg liquor in those areas. This alternative, however, simply did not offer the profits that were available during national Prohibition; local Prohibition laws tended to be enacted in more rural states, not in the cosmopolitan areas – New York, Chicago, San Francisco – where there was a greater demand for liquor.

The Mafia's inability to rely on bootlegging activities upon which it had relied for essentially a decade resulted in the evolution of the modern Mafia. During the 1930's, the American Mafia began the process of developing a highly complex organizational structure.⁵⁸ The process culminated in the recognition of a number of Mafia families, each assigned a territory,⁵⁹ and the creation of the National Commission, which presided over the families.⁶⁰ One advantage of this global hierarchical structure is that it offers a means of resolving familial disputes without bloodshed.⁶¹ While this alternative has not always proven successful, it, along with the allocation of territory

⁵⁸ See, e.g., Jacobs & Gouldin, *supra* note 6; Sara Jankiewicz, *Glasnost and the Growth of Global Organized Crime*, 18 HOUS. J. INT'L L. 215 (1995); Salerno, *supra* note 54. See also Lindberg, *supra* note 54:

The . . . Mafia is . . . structured much like a modern corporation in the sense that duties and responsibilities are disseminated downward through a 'chain of command' that is organized in pyramid fashion. . . .

1. Capo Crimini/Capo de tutti capi (super boss/boss of bosses)
2. Consigliere (trusted advisor or family counselor)
3. Capo Bastone (Underboss, second in command)
4. Contabile (financial advisor)
5. Caporegime or Capodecina (lieutenant, typically heads a faction of ten or more soldiers comprising a 'crew.')
6. Sgarista (a foot soldier who carries out the day to day business of the family. A 'made' member of the Mafia)
7. Piciotto (lower-ranking soldiers; enforcers. . . .)
8. Giovane D'Honore (Mafia associate, typically a non-Sicilian or non-Italian member).

See also James O. Finckenauer, *La Cosa Nostra in the United States*, National Institute of Justice, at

<http://www.ojp.usdoj.gov/nij/international/lcn.html> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology).

⁵⁹ See, e.g., Lindberg, *supra* note 54. See generally 26 *Family Cities*, AmericanMafia.com, at http://www.americanmafia.com/26_Family_Cities.html (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). See also KEFAUVER, *supra* note 4, at 13-14.

⁶⁰ See, e.g., FBI, *supra* note 7 (noting that Luciano ran the Mafia "like a major corporation"). See also Lindberg, *supra* note 54 ("Patterned after the hierarchical structure of modern corporations, the Commission was a tightly controlled bureaucracy of crime based on patriarchy").

⁶¹ See, e.g., Salerno, *supra* note 19, at ¶ 23-24 (noting prior level of violence).

among the families, has in recent decades essentially eliminated the internecine wars that used to plague Mafia operations in this country.⁶² The families built upon their global organizational structure by evolving individual structures that let them carry out entrepreneurial and other activities.⁶³ For each family, development of individual structures results in the creation of criminal divisions that carry out specific entrepreneurial activities, such as drug-dealing, prostitution, loan-sharking, and illegal gambling, as well as security.⁶⁴ FBI monitoring of Mafia families over the years has confirmed that each has evolved a complex, hierarchical organizational structure analogous to that found in civilian corporations.

Although, to a lesser degree, the same is true of other domestic, late twentieth-century criminal organizations, such as the

⁶² See, e.g., Salerno, *supra* note 19, at ¶ 26. See also Lindberg, *supra* note 54; Salerno, *supra* note 54. See generally Testimony of Angelo Lonardo Before the Permanent Subcommittee on Investigations of the Senate Committee on Government Affairs (April 4, 1988), at http://americanmafia.com/lonardo_testimony.html (on file with the North Carolina Journal of Law & Technology).

⁶³ See 26 *Family Cities*, *supra* note 59.

⁶⁴ See, e.g., Testimony of Joseph D. Pistone Before the Permanent Subcommittee on Investigations of the Senate Committee on Government Affairs (1988), at http://americanmafia.com/pistone_testimony.html (on file with the North Carolina Journal of Law & Technology). "Security" involves (a) ensuring the physical safety of Mafia family members as they carry out their various activities and (b) attempting to ensure that these activities do not come to the attention of police and prosecutors. See, e.g., Dave Haskell, *Jury Convicts ex-FBI Agent of Corruption*, WASH. TIMES (May 28, 2002), at <http://www.washtimes.com/upi-breaking/28052002-052937-4868r.htm> (on file with the North Carolina Journal of Law & Technology); James Ridgway de Szigethy, *In the Money: Congressman James Traficant and His Campaign Contributors* (Feb. 2001), at http://www.americanmafia.com/Feature_Articles_121.html (on file with the North Carolina Journal of Law & Technology).

The entrepreneurial efforts can be a mix of old and new. That is, they can combine truly entrepreneurial activities such as prostitution, loan-sharking, drug-dealing, and illegal gambling with more traditional forms of banditry such as theft and extortion. See, e.g., Pistone, *supra*. The latter are merely lucrative survivals from the Mafia's prior incarnation as a pure "robber" gang; they no longer dictate the organizational structure of its constituent entities, the five families. See generally *id.*

El Rukn gang, the Crips and Bloods, the Latin Kings, and the Hell's Angels.⁶⁵ It is also true of many foreign criminal organizations, such as the Colombian drug cartels,⁶⁶ the Yakuza,⁶⁷ the Chinese tongs and triads organizations,⁶⁸ and the Russian Mafiya.⁶⁹ In the latter part of the 1990's, another phenomenon

⁶⁵ See, e.g., George W. Knox, *Gang Profile Update: The Black P. Stone Nation (BPSN)*, National Gang Crime Research Center, at <http://www.ngrc.com/bpsn2002.html> (last visited Nov. 6, 2002); David Starbuck, James C. Howell & Donna J. Lindquist, *Hybrid and Other Modern Gangs*, U.S. Department of Justice Juvenile Justice Bulletin, at http://www.iir.com/nygc/acgp/bulletins/hybrid_and_other_modern_gangs.pdf (Dec. 2001) (on file with the North Carolina Journal of Law & Technology); George W. Knox, *Gang Profile: The Latin Kings*, National Gang Crime Research Center, at <http://www.ngrc.com/ngcrc/page15.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Steve Tretheway, *Motorcycle Gangs or Motorcycle Mafia?*, National Alliance of Gang Investigators Associations, at http://www.nagia.org/Motorcycle_Gangs.htm (1998) (on file with the North Carolina Journal of Law & Technology). But see Dave Starbuck, *Breaking All the Rules: Hybrid Gangs* (2000), National Alliance of Gang Investigators Associations, at http://www.nagia.org/Hybrid_Gangs.htm (on file with the North Carolina Journal of Law & Technology).

⁶⁶ See, e.g., *The Columbian Cartels*, PBS Frontline, at <http://www.pbs.org/wgbh/pages/frontline/shows/drugs/business/inside/colombia.html> (2000) (on file with the North Carolina Journal of Law & Technology).

⁶⁷ The Yakuza has two different organizational structures: "freelance Yakuza," which uses the traditional gang structure, and "clan-yakuza," which has a hierarchical structure similar to that of the Mafia. See, e.g., *The Yakuza Structure, Oldmind*, at <http://w1.313.telia.com/~u31302275/yakuza6.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). See also *History of the Yakuza—Feudal Japan*, at <http://www.clanyakuza.com/modules.php?name=Historia> (2002) (on file with the North Carolina Journal of Law & Technology); *The Yakuza*, Okinawan Shorin-Ryu Matsubayashi-Ryu Karate-Do, at <http://www.okinawan-shorinryu.com/okinawa/yakuza.html> (last modified Apr. 7, 2002) (on file with the North Carolina Journal of Law & Technology).

⁶⁸ See, e.g., James O. Finckenauer, *Chinese Transnational Organized Crime: The Fuk Ching*, National Institute of Justice, at <http://www.ojp.usdoj.gov/nij/international/chinese.html> (2000) (on file with the North Carolina Journal of Law & Technology). See also Lee, *supra* note 37.

⁶⁹ See, e.g., State of California Office of the Attorney General, *Russian Organized Crime: Organization and Structure*, Federation of American Scientists, at <http://www.fas.org/irp/world/para/docs/rusorg3.htm> (Mar. 1996) (on file with the North Carolina Journal of Law & Technology); James O.

emerged: these groups began cooperating among themselves, thereby affecting an incremental division of labor, which, in turn, increases efficiency in generating revenue.⁷⁰ The global drug trade, for example, is characterized by increasing cooperation among organized crime groups from various parts of the world.⁷¹ These cooperative efforts represent a lateral organizational layer superimposed upon the groups' own hierarchical structures.

The evolved organizational structure of these late twentieth and early twenty-first-century criminal groups is the product of a shift in focus. So long as a criminal group contents itself with preying upon others, it can maintain a simple organizational structure. The two-tiered gang structure described earlier, for

Finckenauer, *Russian Organized Crime in the United States*, National Institute of Justice, at <http://www.ojp.usdoj.gov/nij/international/russian.html> (1999) (on file with the North Carolina Journal of Law & Technology); Caspar Fithin, *Russian Mafiya* (Nov. 9, 2000), Oxford Analytica, at http://www.oxan.com/columns/wkcol_09112000.html (on file with the North Carolina Journal of Law & Technology). See also James O. Finckenauer & Elin Waring, *Challenging the Russian Mafia Mystique* (Apr. 2001), National Institute of Justice Journal, at <http://www.ncjrs.org/pdffiles1/jr000247b.pdf> (on file with the North Carolina Journal of Law & Technology).

⁷⁰ See, e.g., INTERNATIONAL CRIME THREAT ASSESSMENT ch. 1, at <http://clinton4.nara.gov/WH/EOP/NSC/html/documents/pub45270/pub45270chap1.html#4> (Dec. 2000) (on file with the North Carolina Journal of Law & Technology):

Much more than in the past, criminal organizations are networking and cooperating with one another, enabling them to merge expertise and to broaden the scope of their activities. Rather than treat each other as rivals, many criminal organizations are sharing information, services, resources, and market access according to the principle of comparative advantage. By doing so, they can reduce their risks and costs and are better able to exploit illicit criminal opportunities.

Id.

⁷¹ See, e.g., Bernard Castelli, *The Globalization of the Drug Trade*, at <http://www.unesco.org/most/sourdren.pdf> (Apr. 1999) (on file with the North Carolina Journal of Law & Technology); Testimony of Louise Shelley, Director, Center for Transnational Organized Crime and Corruption, Before the House Committee on International Relations (October 1, 1997), at http://www.fas.org/irp/congress/1997_hr/h971001ls.htm (on file with the North Carolina Journal of Law & Technology).

example, suffices for this purpose.⁷² Once a criminal group moves into entrepreneurial, revenue-generating activities, however, this simple structure no longer suffices for precisely the same reasons a simple organizational structure proves inadequate when conducting legitimate, revenue-generating activities. Preying on others is a simple, interactive process, since overcoming victim resistance is the only necessity to gaining those victims' possessions. Entrepreneurial activity, on the other hand, depending upon its complexity, requires a fairly complex division of labor to produce wealth.⁷³ At least, this is true of real-world crime. The next section considers whether it will likely hold true for cybercrime.

III. Criminal Organization: The Virtual World

*"Will we see the emergence of cybercrime
cartels?"*⁷⁴

This article is concerned with the emergence of new types of organized criminal activity specific to cyberspace, not with the migration of real-world organized crime to cyberspace.⁷⁵ To date, almost nothing has been written about whether organized criminal activity will emerge in cyberspace and, if so, what forms it may take. This lack of speculation can be attributed to cybercrime's relative novelty; the perception that cybercrime is perpetrated by hackers, who are loners, and are therefore not inclined to engage in group criminality; and the fact that, to date, most documented cybercrime reveals that a majority of incidents involve individuals,

⁷² This is not to say that some organizational complexity cannot emerge in a "robber" criminal group which is dedicated to preying on others.

⁷³ The same is true of terrorist organizations that are dedicated to pursuing complex goals, such as the carrying out of large-scale attacks on the populace of nations with whose values and goals they disagree. Al-Qaeda, for example, has a highly evolved organizational structure, or at least it did prior to the war in Afghanistan.

⁷⁴ Question posed at Interpol's Fourth Cybercrime Conference (Lyon, France, December 6, 2000).

⁷⁵ The latter is being written about. See, e.g., Phil Williams, *Organized Crime and Cyber-Crime: Synergies, Trends and Responses* (August 2001), Global Issues, at <http://usinfo.state.gov/journals/itgic/0801/ijge/gj07.htm> (on file with the North Carolina Journal of Law & Technology).

not groups.⁷⁶ Although there are a few reported instances of organized cybercrime,⁷⁷ there is generally no indication that cybercriminals have attained the gang level of organization.⁷⁸

The current absence of organized cybercriminality makes a consideration whether organization will likely become an aspect of crime on the virtual frontier particularly topical and appropriate. Logically, the first issue to consider when analyzing forms criminal organization may take in cyberspace is the extent to which already-evolved forms of criminal organization are likely to migrate to the virtual frontier. Since the already-evolved forms of criminal organization have proven successful in the real world, it is reasonable to expect that they will enjoy at least a measure of success in the cyberworld. The section immediately below undertakes this analysis. It is possible, however, that empirical differences between the real world and the cyberworld will prevent the effective transfer of existing forms of real-world criminal organization modalities into cyberspace. If such is the case, one must speculate about alternative forms of criminal organization that may emerge in cyberspace. These issues are considered in section III (B).

⁷⁶ See, e.g., Williams, *supra* note 75 (“In the virtual world, as in the real world, most criminal activities are initiated by individuals or small groups and can best be understood as ‘disorganized crime’”).

⁷⁷ See, e.g., RICHARD POWER, TANGLED WEB 102-113 (2000) (describing the Phonemasters case).

⁷⁸ See *supra* § II. There are reports of cyber-gangs – notably, Russian hacker gangs – operating in cyberspace. See, e.g., Russia Arrests “Grandfather of Cybercrime,” BBC News, at <http://news.bbc.co.uk/1/hi/world/europe/1353092.stm> (May 26, 2001) (on file with the North Carolina Journal of Law & Technology); Alex Salkever, *A World Wide Web of Organized Crime* (March 13, 2001), Business Week, at http://www.businessweek.com/bwdaily/dnflash/mar2001/nf20010313_967.htm (on file with the North Carolina Journal of Law & Technology). These gangs, however, are very small, informal groups that have not developed the type of formal structure necessary to qualify as a gang under the model developed earlier; they are more accurately characterized as hacker groups. See, e.g., *China’s Hackers and Blockers*, China IT & Telecom Report (September 6, 2002).

A. Migration of Hierarchical Models

As section II explains, real-world criminal organization has so far assumed one of two hierarchical forms: the two-tiered gang structure or the complex, layered structure epitomized by American Mafia families.⁷⁹ Section II also explained that a group's structure is determined by the nature of its activities: a robber group that concentrates on appropriating wealth from others, for example, operates quite satisfactorily with the two-tiered gang structure and has no need for complex levels of organizational structure. Once a group turns to entrepreneurial activities and generates its own wealth by conducting multiple criminal endeavors, however, it requires a more complex structure, characterized by a sophisticated division of labor.

1. The Two-Tiered Gang Structure

The simpler organizational structure was the first to emerge for real-world criminality and required less personnel and resources to manifest itself. Will the twenty-first century witness the emergence of cyber-gangs that prey upon legitimate citizens of cyberspace, appropriating wealth through terror and intimidation? As section II explained, gangs emerged in the real world because they offered a more effective way of making profits by taking wealth from others. Real-world gang effectiveness lies in the directed efforts of several individuals to overcome victim resistance. In effect, the gang is a force multiplier.⁸⁰

Is a force multiplier needed to prey effectively upon the citizens of cyberspace? The answer to this question may lie in the empirical differences between the real world and the cyberworld. In the real world, especially in the historical real world in which the traditional gang structure emerged, victims, often aware of

⁷⁹ See *supra* § II. The differentiating feature of the gang structure, versus the modern Mafia structure, is that the chain of command in the gang structure tends to be direct. That is, there are few, if any, intermediaries between the leader and subordinates. This is distinctly not true of the layered, intensely hierarchical structures found in modern mob families.

⁸⁰ See, e.g., Lee, *supra* note 37.

their vulnerability, sought to avoid victimization by arming themselves, building walls, and joining forces with others to resist banditry. Bandits responded by organizing a force of sufficient power, the gang, which could overwhelm victim resistance, either by intimidation or actual physical attack.⁸¹ As to the latter, bandit gangs could overcome walls and other defenses and, if strong enough, could defeat victim and victim supporters' physical resistance. Force, however, was essential.

Is force essential in the cyberworld? In a sense, it is. If, for example, a Russian hacker wants to profit by victimizing an American business, a type of force is needed to overcome the victim's electronic defenses to either appropriate the victim's funds or intimidate the victim into paying for abatement of the harassment. The force needed, however, has nothing to do with assembling the combined strength and efforts of other hackers. Rather, the force needed to complete these depredations is a function of technology, of automation. In the cyberworld, physical strength is insignificant; a hacker surmounts a victim's defenses, not by summoning combined efforts of ten or twenty hackers, but by using technology, automated techniques that enable one to bypass electronic defenses.⁸² In the cyberworld, strength is in software, not in numbers of individuals.

⁸¹ The use of force is a defining characteristic not only of robbery but of extortion, as well.

⁸² Perhaps the best example of this is the distributed denial of service attack. In February of 2000, a fifteen-year-old Canadian known only as "Mafiaboy" used a distributed denial of service attack to shut down websites operated by CNN, eBay and Amazon.com, causing billions of dollars in damage. See, e.g., *Mafiaboy's Pre-Trial Guilty Plea*, Wired News, at <http://www.wired.com/news/politics/0,1283,41287,00.html> (Jan. 18, 2001) (on file with the North Carolina Journal of Law & Technology); *Hacker Saga Continues: Mounties Nab 15-Year-Old Canadian*, IT World, at <http://www.itworld.com/Sec/3834/ITW384/> (Apr. 19, 2000) (on file with the North Carolina Journal of Law & Technology). Mafiaboy acted alone, using innocent computers—"zombies"—to mount the attack; as in any denial of service attack, he used easily available programs to seize control of the computers he would use as zombies, often without the knowledge of their owners. See, e.g., *What Is A Distributed Denial of Service (DDoS) Attack?*, Fox News, at <http://www.foxnews.com/story/0,2933,55382,00.html> (June 15, 2002) (on file with the North Carolina Journal of Law & Technology); Eric J. Bowden,

The unimportance of numbers of hackers needed to commit crimes in the cyberworld suggests that the base rationale for development of the gang structure will play little, if any, role in structuring cybercrime.⁸³ Put differently, since cybercriminals can do so quite successfully on their own, they need not join forces to extort money from online victims.

Are there other reasons why cybercriminals might find the gang structure an attractive device? It is difficult to answer that question at this point in time. There have been such few documented instances of complex cybercrime activity that it is difficult to speculate on what forms it might take in the future. Logically, the attractiveness of the gang structure lies in its ability to concentrate the efforts of a number of individuals toward achieving a single goal. In the real world, these efforts tend to involve the threat or application of physical force, but there is reason to ask why they are limited to that. The two-tiered gang structure is, after all, a device for concentrating and directing the efforts of a number of individuals. It seems, then, the gang structure might be attractive when cybercriminals want to combine efforts to accomplish a task more complex than victimizing a single person or entity.

The gang structure might be useful if a group of cybercriminals decides to undertake a series of mostly simultaneous depredations targeting multiple victims instead of individually pursuing the sequential exploitation of isolated

DoS vs. DDoS Attacks, ZD Net, at

<http://www.zdnet.com/products/stories/reviews/0,4161,2645417-2,00.html> (Oct. 30, 2000) (on file with the North Carolina Journal of Law & Technology). In 2001, a thirteen-year-old Wisconsin boy used a denial of service attack to shut down a California computer security site. In the real world, adolescents cannot mount solo attacks that cripple multi-million dollar businesses, but it is not particularly difficult in the cyberworld. See Steve Gibson, *The Strange Tale of the Denial of Service Attacks Against GRC.COM*, Gibson Research Corporation, at <http://iso.grc.com/dos/grcdos.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). We can only speculate as to the form cyberattacks may take in the future, since it is reasonable to assume that they will become even more sophisticated in nature and devastating in effect.

⁸³ The gang model may prove attractive to other groups, such as terrorist organizations, since they may want to mount concerted activity against certain targets, such as governments or agencies of state infrastructures.

victims. In other words, the gang structure might be attractive to cybercriminals who speculate they can more efficiently enrich themselves by joining together to pursue multiple victims in synchronized attacks. For the structure to be attractive, however, there would have to be some circumstance that would differentiate this scenario from the simple, albeit effective, one-on-one type of victimization described above.

The rationale for such an effort might be that many prospective victims would be demoralized by the coincident attacks on others and, therefore, would surrender more readily to cybercriminals' demands. A scenario such as this might be predicated on an extortion scheme whereby cybercriminals destroy data and other valuables belonging to some victims to extort protection money from a larger group of victims.⁸⁴ Hypothesizing an extortion scheme of this type, in effect, continues the emphasis on the gang structure as a way to concentrate physical force. The impetus for the gang's association in this scenario is destruction, virtual destruction, but, nonetheless, activity of a type common to real-world gangs. The more interesting question remains whether scenarios will evolve whereby the concentration of criminal effort to reach ends other than destruction make the utilization of the gang structure an attractive proposition for cybercriminals.

Clearly, however, the migration of the gang structure to cyberspace is to some extent problematic because a gang's structural advantage in the real world, the concentration of effort, may be of little importance in the cyberworld. Whether this holds true of the highly complex, "criminal-organization-as-entrepreneur" model also warrants consideration.⁸⁵

⁸⁴ This scenario suggests that the gang structure may well prove attractive whenever a group's goal involves the destruction or disruption of items in the cyberworld. If that is true, then the gang structure should prove attractive to groups that are animated by other than "criminal," profit-seeking motives; this would include terrorist and other ideologically-motivated groups.

⁸⁵ See *supra* § II.

2. The Highly-Complex Criminal Organization

As section II explained, this model emerges when criminal groups move away from generating profits by taking wealth from others to operating revenue-generating activities. The principal advantage that highly-complex organization offers is the ability to synchronize the extensive, complex division of labor needed to carry out large-scale, diversified, criminal activity. This model is an adaptation of a hierarchical model that evolved long ago to structure the operations of government and military organizations.⁸⁶ It evolved in response to the difficulties involved in maintaining control of diverse activities spread over a wide geographical area.⁸⁷ In the gang structure, the leader maintains control by directly monitoring and overseeing gang activities. Monitoring and oversight are adequate so long as the gang confines its efforts to a single endeavor, robbery, for example, conducted in a limited territory. Once the gang moves into multiple endeavors, especially multiple entrepreneurial endeavors, however, the gang model no longer suffices. The scope of the operation makes it difficult, if not impossible, for the leader to be everywhere and supervise everyone. This difficulty is exacerbated when the gang's diversified activities are conducted over a large territory, because greater distance enhances the problem of maintaining direct, individual supervision.⁸⁸

The evolved hierarchical model found in the modern Mafia resolves the problem of exerting control by establishing multiple

⁸⁶ See, e.g., Vince Juliano, *Review: John Arquilla & David Ronfeldt, Network and Netwars: The Future of Terror, Crime and Militancy* (2001), Connecticut Libraries, at <http://cla.uconn.edu/reviews/netwars.html> ("Traditionally, humankind's most powerful organizations have been hierarchical in structure. Hierarchy evolved over the centuries to provide large enterprises with efficient communications and centralized command and control") (on file with the North Carolina Journal of Law & Technology). See also RONFELDT, *supra* note 38, at 6-8.

⁸⁷ See, e.g., RONFELDT, *supra* note 38.

⁸⁸ The difficulty of maintaining control as the activities of a gang expand, and as its personnel expands, is the reason why gangs often fracture into discrete entities, each competing for the same endeavors. See, e.g., Lee, *supra* note 37. Gang fracturing, for example, was quite common during Prohibition.

tiers of leadership roles and delegating a measure of authority to each tier.⁸⁹ Organization becomes hierarchical, and supervision becomes sequential, for example, from Mafia soldier to captain to capo.⁹⁰ As explained in section I, this model originally evolved to carry out bootlegging activities during Prohibition, which was American organized crime's first true venture into illicit entrepreneurial activities.⁹¹ The complex model subsequently evolved into the organizational structure the modern Mafia uses to operate a criminal organization that engages in a variety of entrepreneurial activities.⁹²

This history raises a question about the likelihood that this model will migrate into cyberspace. Assuming illicit entrepreneurship appears in cyberspace, will it require the same operational structure such entrepreneurship requires in the real world? Put differently, will it entail a series of differentiated steps necessary to assemble the substance of the entrepreneurship, the product or services supplied, and distribute it to customers? To the extent cybercrime entrepreneurship requires this type of articulated organizational structure, it is likely to incorporate a version of this hierarchical organizational mode. To the extent it does not, it is unlikely to rely upon this organizational model.

It is difficult to project, at this time, what forms cybercrime entrepreneurship might assume. The only simulacrum of such activity at the moment consists of illegally distributing copyrighted material, such as software, music, and videos.⁹³ Copying and distributing materials someone else has created is a relatively simple process; it does not require the differentiated, sequential

⁸⁹ See *supra* note 58.

⁹⁰ *Id.*

⁹¹ Prohibition was not, strictly speaking, crime's first venture into entrepreneurship. Pre-twentieth-century activities such as prostitution were entrepreneurial in that they independently generated revenues. None of these activities, however, involved the differentiated task structure needed to supply illegal liquor to the American public.

⁹² See *supra* notes 59 – 65 and accompanying text.

⁹³ See, e.g., *Prosecuting Intellectual Property Crimes Manual* § III(E), U.S. Department of Justice – Computer Crime and Intellectual Property Section, at <http://www.cybercrime.gov/ipmanual/03ipma.htm> (last updated April 23, 2001) (on file with the North Carolina Journal of Law & Technology).

organization of discrete tasks that was needed to provide illegal liquor during Prohibition and that is needed to provide illegal drugs during the current era of drug prohibition.

Suppose cybercrime entrepreneurship resulted in the emergence of a “virtual drug.” The attraction of currently available recreational chemical substances lies in their capacity to alter one’s experience of physical reality in certain ways.⁹⁴ Current experiments with virtual reality already suggest the emergence of modes of virtual reality experiences that have the same effect and consequences as recreational drugs.⁹⁵ These virtual reality experiences can alter one’s perception of reality and could conceivably become addictive.⁹⁶ Because of the addictive nature and detrimental consequences stemming from use, authorities could conceivably outlaw virtual reality experiences, using rationales similar to those used to outlaw real-world drugs, such as the fact that they impede normal functioning and could

⁹⁴ See, e.g., *Responsibilities of the Recreational Drug User* in D.F. DUNCAN & R.S. GOLD, DRUGS AND THE WHOLE PERSON, at http://www.angelfire.com/realn2/duncanian_theory/ResponsibleDrugUse.html (1982) (on file with the North Carolina Journal of Law & Technology).

⁹⁵ See, e.g., Meme, at <http://www.immersive.com/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Active Worlds, at <http://www.activeworlds.com/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Ultima Online, at <http://www.uo.com/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). See also guardianbooya, *Virtual Addiction*, PlanetPapers, at <http://www.planetpapers.com/Assets/4191.php> (2001) (on file with the North Carolina Journal of Law & Technology); Cyberhobbit, *Mediatheory: A Postmodern Cosmology of Virtual Reality* § 2.7.1, at <http://www.cyberhobbit.de/diss/diss15.htm> (1997) (on file with the North Carolina Journal of Law & Technology); Sandra E. Calvert, *The Social Impact of Virtual Reality*, at

<http://vehand.engr.ucf.edu/handbook/Chapters/chapter38.PDF> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). For an account of how one can become immersed in a virtual world, see JULIAN DIBBELL, MY TINY LIFE: CRIME AND PASSION IN A VIRTUAL WORLD (1998).

⁹⁶ See, e.g., WILLIAM SHATNER, TEKWAR (1990) (describing the battle against cartels which distribute Tek, a highly-addictive virtual-reality “drug;” set in 2120). See also Edward Gross, *Designing Tek World*, RetroVision, at <http://www.retrovisionmag.com/tekworld.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology).

perhaps have a deleterious effect on health, in this case, on users' mental health.

Imagine that four years in the future a virtual reality drug which has become quite popular among a large section of society is outlawed. As occurred during Prohibition, the illegality of use should create a profitable, illicit entrepreneurial opportunity. It is therefore reasonable to assume that cybercriminals would quickly move to take advantage of this opportunity. The critical question is whether cyber-entrepreneurs would find it advantageous to employ a modern, Mafia-style hierarchical organizational structure in carrying out activities. It is logical to assume that their entrepreneurial venture would have to perform the same functions as a real-world, illicit, entrepreneurial endeavor, as they would have to obtain a consistent, reliable supply of the "virtual drug." Presumably, this would involve manufacturing it, purchasing quantities of it from a manufacturing source, or, perhaps, stealing it. Since neither of the last two options seem calculated to provide a reliably consistent source,⁹⁷ it is probable they would choose to manufacture it themselves. These cyber-bootleggers would also have to have a marketing and distribution network, a way to let potential customers know they could supply the virtual drug and some way to deliver it to customers.

In the real world, a hierarchical organization featuring a complex division of labor is needed to do these things because they must be done by people, for the most part, and because they involve the organization and coordination of physical activity in the real world. Bootleg gangs operating during Prohibition, for example, had to establish, equip, and maintain breweries and distilleries. They had to arrange for a reliable supply of the grains

⁹⁷ Since the drug has been outlawed, purchasing quantities of it is likely to be difficult, just as, and for the same reasons that, purchasing beverage alcohol domestically was not a viable option for bootleggers during Prohibition. Once the virtual drug has been outlawed, manufacturers will either stop making it or will manufacture it in limited quantities for "authorized" uses, such as psychiatric treatment. If the virtual drug is no longer manufactured, would-be virtual drug bootleggers cannot purchase it, nor, for that matter, can they steal it. If the virtual drug is manufactured in limited quantities and its distribution carefully monitored, it would not be possible for these would-be virtual bootleggers to purchase or steal quantities sufficient to meet their needs.

and other raw materials needed to manufacture liquor. Prohibition-era bootleg gangs had to recruit, pay and ensure the loyalty of individuals who possessed the skills needed to manufacture and bottle the liquor. They established outlets, speakeasies, and places where bottled liquor could be sold and arranged for the transportation of liquor to these establishments. They kept track of inventory, demand, revenues, and, perhaps, at least some level of quality control. They also had to ensure security for themselves and their customers. It would have been impossible to accomplish all these tasks effectively and efficiently with a simple gang structure. The impossibility of accomplishing all this with a gang structure is why the complex, hierarchical structure currently found in modern American mob families emerged once the antecedents of those families got into bootlegging.

The hypothetical cyber-entrepreneurs who take on the task of supplying the hypothetical virtual drug to its users must also perform these functions, but in a very different context. Assume, for example, the virtual drug would take the form of a software program. The program contains a set of coded instructions that would operate a reader, a device that translates the code into a virtual reality experience or, more accurately, a variety of virtual reality experiences. To simplify the analysis, we shall assume that the readers are not outlawed, indeed, are in wide distribution because they also have legitimate uses. Therefore, the cyber-entrepreneurs only need to supply the virtual drug itself, that is, the software. If cyber-entrepreneurs merely clone extant versions of the software, their production process should be relatively straightforward, a matter of simply duplicating the virtual drug. They should be able to automate the process, meaning that, unlike their Prohibition era counterparts, they would have no need for a large production facility and production employees. This would eliminate the need for an entire organizational layer. The cyber-entrepreneurs would still need to market and distribute the virtual drug, but it is logical to assume that these processes, as well, could be accomplished primarily, if not entirely, through automated techniques. This would eliminate yet another organizational layer. Automated techniques would replace the large numbers of humans who would otherwise have to be assigned to perform discrete tasks

as part of a large organization. It seems, then, that cyber-entrepreneurs could operate quite effectively without a formal, hierarchical structure.⁹⁸

This conclusion is limited to a scenario in which the cyber-entrepreneurs content themselves with simply reproducing already-extant versions of the virtual drug. While this strategy might prove effective for a while, it is quite probable that users would come to demand new and, perhaps, more sophisticated versions of the virtual drug.⁹⁹ To satisfy this demand, cyber-entrepreneurs would have to establish some means of creating new versions of their product, which could then be copied and distributed using the automated processes described in the scenario above. It might be possible to automate this process as well by having computer systems that created new versions of the virtual drug. This scenario would leave the conclusion above intact, that the use of automation means there is no need to organize a large number of people to carry out the fabrication, production, marketing, and distribution processes. But what if it was not possible to automate the creative process? What if humans were the only ones who could perform it? Would that require the incorporation of some structured, hierarchical organizational modes? It might if the cyber-entrepreneurs followed the bootlegger's lead and permanently employed a group of designers and engineers. It seems more reasonable to assume cyber-entrepreneurs would use independent contractors with the requisite skills on an as-needed basis to provide new versions of the virtual drug. This would be cheaper and would enhance security. By dealing with independent

⁹⁸ The conclusion would no doubt be different if cyberspace were used to supply a real-world product such as a new designer drug. Some sort of hierarchical organizational structure would be required, just as it is required for contemporary online retailers, like Amazon.com, who wish to distribute tangible products.

⁹⁹ A "virtual drug" of the type hypothesized above would be an amalgam of recreational chemical substance and computer game. It would couple the perception-of-reality-altering capacities of the former with the latter's capacity to evolve into new and more complex forms. Indeed, exploiting the latter capacity might be essential to keep users of such a drug hooked, since there would presumably not be the physiological addiction common to recreational chemical substances.

contractors, cyber-entrepreneurs could mask their identities and thereby reduce the risk that the creative people would help law enforcement find and dismantle their illicit venture.

It seems as though cyber-entrepreneurs purveying illegal goods and services should be able to operate effectively without utilizing the type of formal, hierarchical organizational structure employed by real-world criminal entrepreneurs. Consequently, it appears that neither of the organizational models that have evolved to structure real-world criminal activities is likely to be a necessary and inevitable component of group criminality in cyberspace.

B. New Models?

Although the discussion has tended to characterize only the modern Mafia-style organizational model as hierarchical, in fact, both models of real-world criminal organization are hierarchical. While the Mafia model is a multi-tiered hierarchical model, the gang model has only two hierarchical levels, leaders and followers.¹⁰⁰ The hierarchical nature of these models is not surprising, as hierarchical organization has been the dominant model in Western culture since the Middle Ages.¹⁰¹

Hierarchical organization is the most effective method to structure human activities, both legitimate and illegitimate, in the real world. The physical constraints of the real world such as distance, terrain, climate, and resources, that is, the general fixed, predetermined nature of reality, mean there are many activities individuals cannot accomplish alone. These activities require group effort. Hierarchical organization evolved as an effective way of organizing group effort for the accomplishment of activities such as these.¹⁰² It utilizes a division of labor and a chain of command to deploy individuals among the series of discrete tasks needed to accomplish specific activities and to ensure that their efforts are effectively directed toward that end. In their own ways, both the Mafia-style complex organizational model and the gang model are designed to achieve this.

¹⁰⁰ See *supra* §II(A).

¹⁰¹ See, e.g., RONFELDT, *supra* note 38.

¹⁰² *Id.*

The Mafia-style model is a true hierarchical model with a complex division of labor and supervising structure. The gang model is a simple hierarchical structure in which the leader assigns tasks which followers perform. The gang model suits the accomplishment of relatively uncomplicated activities and is ideal for the accomplishment of the activities discussed in section II, the appropriation of others' wealth.¹⁰³ It is, perhaps, accurate to characterize the gang model as an organizational structure that evolved to organize human-to-human interactions.¹⁰⁴ In this regard, it is analogous to similar structures that have been used to carry out war,¹⁰⁵ which is also an activity directed at other humans. The Mafia-style model, on the other hand, evolved to deal with more abstract endeavors, namely, the production of wealth.¹⁰⁶

As section II(A) explained, hierarchical organizational models are products of the real world, as they evolved to structure human activity in ways that were effective given the constraints of the physical world. Cyberspace differs from the real world in this regard. It is not a fixed, predetermined reality operating according to principles and dynamics that cannot be controlled or altered by man. The cyberworld is a constructed world, a fabrication. Because it is a construct, cyberspace is mutable; much of it can be modified and transformed.¹⁰⁷ Even as to cyberspace-as-given,¹⁰⁸ the constraints of the real world are, for the most, part irrelevant. In the real world, it takes a great orchestration of human effort to

¹⁰³ See, e.g., Lee, *supra* note 37.

¹⁰⁴ See *supra* notes 36 – 41 and accompanying text.

¹⁰⁵ See, e.g., PHILLIP BOBBITT, *THE SHIELD OF ACHILLES: WAR, PEACE, AND THE COURSE OF HISTORY* (2002).

¹⁰⁶ See, e.g., Salerno, *supra* note 54. See also Lindberg, *supra* note 54.

¹⁰⁷ It is true that much of what we experience in the real world – streets, buildings, stores, vehicles, furniture, and electronic devices – is also contrived, the product of human intelligence and effort. In the real world, these contrivances necessarily operate within certain externally-dictated constraints; pool tables, for example, must have legs as well as tops. In the virtual world, however, these constraints do not hold; pool tables do not require legs in a “place” where gravity does not exist, and a pool table can be transformed into a dining table or a buffalo. See, e.g., NEAL STEPHENSON, *SNOW CRASH* 50 (1992) (in the virtual world, known as the Metaverse, tables only have tops, not legs).

¹⁰⁸ I use this term to denote aspects of cyberspace that are effectively fixed, that cannot be transformed by casual users.

send a hard copy file halfway around the world. In cyberspace, one can send an electronic version of the same file halfway around the world with only a few keystrokes.

This essential absence of physical constraints is one factor that differentiates the cyberworld from the real world. Another differentiating factor is the way we experience the two realities. Physical reality has a fixed empirical structure; this structure itself is not hierarchical, but we necessarily experience it through the filter of socially-organized hierarchical structures. If we want to send a hard copy of a file to someone halfway around the world, speak to that person on the telephone, or travel to visit, we must rely upon and participate in hierarchical structures to do so. It would be impossible for us to do any of these things unilaterally. The lack of physical constraints in cyberspace, however, means that our experiences there do not have to be mediated through hierarchical structures.¹⁰⁹ Indeed, the very nature of cyberspace is

¹⁰⁹ It is true that we still have to participate somewhat in external hierarchical structures in order to experience cyberspace. Most of us, for example, obtain an account from an Internet service provider and use that account as our point of access to the Internet. One can bypass this step by using cybercafés and other publicly available portals, but they, too, still involve a reliance on an external, no doubt hierarchically organized, service provider. The inevitability of this circumstance in no way diminishes the validity of the observations made in the text above for at least two reasons. First, the service provider may not have to be hierarchically organized. Most probably are, but that may be attributed to the fact that extant service providers evolved in the context of real-world activity, for which hierarchical organization is advantageous. As cyberspace matures, we may see the evolution of lateral access structures or, indeed, the disappearance of service providers as such; individuals may come to enjoy essentially unmediated access to cyberspace.

The second reason why the contemporary reliance on a service provider does not undermine the validity of the observations made above is that this factor is irrelevant to our experience of cyberspace. Our experience of cyberspace is distinct and unprecedented because we have, even at this early stage in its evolution, the sense that we “go into” a different place, that cyberspace is a world other than the real world to which we are accustomed. We do not have this experience when, for example, we make a telephone call. When we make a telephone call, we do not “enter telephone space;” we remain in the real world, fully aware that we are utilizing a real-world artifact to communicate with someone who is situated at another physical point in the real world. When we “enter” cyberspace, on the other hand, we leave real-world constraints behind, we communicate with people as to whose identities,

inconsistent with hierarchy. Cyberspace is a network or, more properly, a network of networks.¹¹⁰ Networks are lateral, diffuse, fluid, and evolving. Hierarchies are vertical, concentrated, and tend to be rigid and fixed.

These characteristics of cyberspace, the absence of fixed, empirical constraints and a diffuse, fluid, evolving environment, indicate that hierarchical organizational structures are at once not needed in and not appropriate for activities conducted in cyberspace. What, then, will criminal organization look like in cyberspace? Perhaps it is necessary to begin the analysis with a more fundamental question: will organized criminal activity in cyberspace ever actually exist?

Earlier, this article defined organization as relationships structured according to certain principles. Organizational structures in the real world tend to be rigid for the reasons given above. Organizational structures in cyberspace will tend to be fluid and dynamic, also for the reasons outlined above. But organization will be needed, as it is already needed, in cyberspace.

To demonstrate why organization will be needed, as well as the forms it may take, it is useful to consider the current hacker subculture. The media portray hackers as social isolates, individuals to whom any type of organized activity, indeed, any kind of social interaction, is anathema.¹¹¹ There have been and are, no doubt, hackers who tend to be reclusive with regard to real-world group involvements. What the media overlooks, however, is

citizenship and physical location we may be happily ignorant. Even at this early stage in the evolution of cyberspace, our experience of it is not hierarchical, is not self-consciously mediated through hierarchical organizations.

¹¹⁰ See, e.g., Kevin Hughes, *What Is the Internet?*, ENTERING THE WORLD-WIDE WEB: A GUIDE TO CYBERSPACE (May, 1994), at <http://www.maths.tcd.ie/local/JUNK/guide/guide.03.html> (on file with the North Carolina Journal of Law & Technology); *ACLU v. Reno*, 1996 WL 311865, 830 (E.D. Pa. 1996) (findings of fact detailing "The Nature of Cyberspace").

¹¹¹ See, e.g., Posting of Lynn Weinberger, law1555@purpleturtle.com, to Wi2600.org (June 12, 2000), Wi2600.org, at <http://lists.wi2600.org/pipermail/2600/2000-June/000164.html> (responding to on-line article about former prosecutor Marcia Clark's criticism of hackers, Kevin Poulsen, *Modern Psychiatry Takes Another Crack at "Diagnosing" Hackers* (June 12, 2000)) (on file with the North Carolina Journal of Law & Technology).

that hackers, good hackers, in any event, are actively involved with groups, primarily in the form of online hacker activities.¹¹² Hackers who are interested in illicit activities, such as breaking into computer systems and disseminating viruses and other malicious programs, can collaborate online with others who share similar interests.¹¹³ This collaboration can encompass the exchange of views and information, as well as the supplying of mutual encouragement and support. It can also involve the exchange of software and tools that can be used to break into systems, mount denial of service attacks, and disseminate malicious code.¹¹⁴ Indeed, the availability of these tools online has already produced a subculture of the hacker subculture.¹¹⁵ Known

¹¹² See, e.g., 2600, at <http://www.2600.com> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); TizEK, at <http://www.tizek.com/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); The Hacker's Choice, at <http://www.thehackerschoice.com/forums/index.php> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Hacker Network, at <http://www.hackernetwork.com/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). Hackers also interact in the real world, notably at conferences like DefCon, "the largest hacker convention on the planet." DefCon, at <http://www.defcon.org/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology).

¹¹³ See, e.g., Virus Creation Tools, at <http://vx.netlux.org/vx.php?id=vct> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Virus Constructors, at <http://www.avp.ch/avpve/constr.stm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology).

¹¹⁴ See, e.g., David McCandless, *Warez World*, Telepolis, at <http://www.heise.de/tp/english/inhalt/te/9170/1.html> (July 26, 2001) (on file with the North Carolina Journal of Law & Technology). See also BiW Reversing, at <http://biw.rult.at/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Crackwar, at <http://kickme.to/crackwar> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Lawina, at <http://www.lawina.tv/forum/> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology).

¹¹⁵ See, e.g., Denis Dion, *Script Kiddies and Packet Monkeys: The New Generation of "Hackers,"* SANS Institute, at <http://rr.sans.org/hackers/monkeys.php> (January 29, 2001) (on file with the North Carolina Journal of Law & Technology); Robert Lemos, *Script Kiddies: The Net's Cybergangs*, ZDNet News, at <http://zdnet.com.com/2100-11->

pejoratively as script kiddies, the members of this sub-subculture tend to be juveniles who use the tools they obtain online to carry out somewhat malicious, more or less effective, but still technically unsophisticated, hacks.¹¹⁶ This hacker subculture may well be a model for the evolution of online organized criminal activity. It is organized; hacker sophisticates, and even script kiddies, know where to go to find information, collaboration, and tools.¹¹⁷ They may very well not know the real-world identities of those with whom they interact, but that is unimportant.¹¹⁸ What is important are signs, indicators, bona fides which establish the other's expertise and trustworthiness.¹¹⁹

So, where does all this leave us in speculating about how criminal organization will evolve in the cyberworld? While it is impossible to know precisely what the future of online cybercriminal organization holds, it is possible to extrapolate certain trends from what has already emerged in the cyberworld

502632.html?legacy=zdn (July 11, 2000) (on file with the North Carolina Journal of Law & Technology).

¹¹⁶ See, e.g., *supra* note 115.

¹¹⁷ See, e.g., Brian Martin, *A Note on Security Disclosures*, LOGIN: THE MAGAZINE OF USENIX AND SAGE, Dec. 2000, at 43, at <http://www.usenix.org/publications/login/2000-12/pdfs/martin.pdf> (Dec. 2000) (on file with the North Carolina Journal of Law & Technology); Avina Lobo, *The Changing Profile of a Hacker*, ZDNet India News (Dec. 11, 2000), at <http://www.zdnetindia.com/news/features/stories/9157.html> (on file with the North Carolina Journal of Law & Technology).

¹¹⁸ See, e.g., Guy L. Steele, Jr., *Confessions of a Happy Hacker*, Foreword to ERIC S. RAYMOND, *THE NEW HACKER'S DICTIONARY* (2d ed. 1992), available at <http://www.instinct.org/texts/jargon-file/jargon.html> ("On the net, people are usually known by their logins and addresses. Thus, I have many friends whom I know only by login name; I have no idea what their real names are.") (on file with the North Carolina Journal of Law & Technology).

¹¹⁹ See, e.g., Ikonoklast, *Technophilia*, Underground eXperts United, at <http://www.skepticfiles.org/ezone/uxu-148.htm> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology); Alan C. Robles, *Keep the Infection Alive – Inside the Dark, Weird World of Virus Writers*, Hot Manila, at <http://www.hotmanila.ph/specialr/hackersworld.html> (last visited Nov. 6, 2002) (on file with the North Carolina Journal of Law & Technology). See also Tim Jordan & Paul Taylor, *A Sociology of Hackers* 1998, Proceedings of the Internet Society, at http://fc.vdu.lt/Conferences/INET98/2d/2d_1.htm (on file with the North Carolina Journal of Law & Technology).

and from the differences between the real world and the virtual world.

The extrapolation draws upon work that is being done in another context, military strategy. John Arquilla and David Ronfeldt, both analysts with the RAND Corporation's National Defense Research Institute, have analyzed the effects information technology is having, and will have, on military and other types of combat.¹²⁰ They conclude that the rise of cyberspace and other information technologies is altering "the ways people fight" by "improving the power and performance of small units, and by favoring the rise of network forms of organization, doctrine, and strategy while making life difficult for large, traditional hierarchical forms."¹²¹ Arquilla and Ronfeldt believe "swarming" will emerge as the new model for military and other forms of conflict and replace the "brute-force massing" model that has dominated for the last several centuries.¹²² They define swarming as:

a deliberately structured, coordinated strategic way to strike from all directions, by means of a sustainable pulsing for force and/or fire, close-in as well as from stand-off positions. It will work

¹²⁰ See JOHN ARQUILLA & DAVID RONFELDT, IN ATHENA'S CAMP: PREPARING FOR CONFLICT IN THE INFORMATION AGE, (1997) available at <http://www.rand.org/publications/MR/MR880> (on file with the North Carolina Journal of Law & Technology); John Arquilla & David Ronfeldt, *Swarming & the Future of Conflict* (2000) [hereinafter *Swarming*], available at <http://www.rand.org/publications/DB/DB311.pdf> (on file with the North Carolina Journal of Law & Technology).

¹²¹ Arquilla & Ronfeldt, *Swarming*, *supra* note 120, at 4.

Today, the key form of organization on the rise is the network. . . . The new information technologies render an ability to connect and coordinate the actions of widely distributed 'nodes' in almost unprecedented ways. Whoever masters this form will accrue advantages of a substantial nature.

Id. at 5.

¹²² See *id.* at vii-viii. See also *id.* at 1-6.

best . . . if it is designed mainly around the deployment of myriad, small, dispersed, networked maneuver units. . . .¹²³

Arquilla and Ronfeldt note that, unlike prior modes of conflict, swarming occurs in a “nonlinear battlespace” which is characterized not by focused confrontation between clearly delineated, homogeneous opposing groups but by a widely distributed field of conflict “in which friendly and enemy forces are intermingled.”¹²⁴ Because the conflict is distributed among widely dispersed autonomous battle units, “a great deal of command and control authority” will devolve from the current hierarchical military structure to the swarm units.¹²⁵ Organization becomes lateral, not hierarchical.

As the hacker subculture demonstrates, the organizational model of swarming developed by Arquilla and Ronfeldt is likely to be as valid for online criminal activity as it will be for real-world conflicts.¹²⁶ This is not to say that it will be employed to the same ends of achieving a coordinated pulsing of force against one or more targets. In the online world of illicit criminal activities, swarming will manifest itself as a series of shifting coalitions among variously-populated, variously-structured entities. These entities will be individuals or small, associative criminal groups. Arquilla and Ronfeldt call the “maneuver units,” that will carry out military swarming, “pods.”¹²⁷ In the world of cybercrime, these

¹²³ *Id.* at vii. See also *id.* at 8-9 (swarming emphasizes “forces or fires that can strike at will—wherever they will”).

¹²⁴ *Id.* at 46.

¹²⁵ *Id.* at 45.

¹²⁶ This is not to characterize the hacker subculture as a “criminal” organization. Hacker subculture has both legitimate and illegitimate aspects, though by reputation the latter tend to overshadow the former. It is instructive to analyze hacker subculture because its concern with illegal intrusions into computer systems and the dissemination of malicious code mean that it displays some of the elements of a criminal organization. For example, it employs structures and procedures designed to frustrate law enforcement monitoring and preserve the anonymity and freedom of those involved in the subculture. In the real world, structures and procedures such as these are embedded in formal organizational structures, but in the cyberworld they become part of the web of a fluid associative network.

¹²⁷ See, e.g., Arquilla & Ronfeldt, *Swarming*, *supra* note 120, at vii.

“maneuver units” will consist of individual actors and, probably, small gang-like structures, groups that consist of a very few, anywhere from two to six, individuals but have some defined leadership structure. These “units” will operate in a networked environment. The network will offer points of contact the “units” can utilize to assemble collaborative action, that is, coalitions to carry out specific criminal endeavors and, if necessary, take retaliative action against rivals or overly-intrusive government agencies.

The leadership structures utilized by these “unit” groups will no doubt be more egalitarian than those found in their real-world counterparts because it is likely that the online groups will be composed of individuals who have roughly equivalent technical skills. In the cyberworld, after all, one’s aptitude as a cybercriminal is a function of his or her technical expertise. Having such expertise means that every cybercriminal has the ability to become an independent illicit entrepreneur.¹²⁸ While there may be opportunistic reasons to affiliate with a cybercriminal group, such an affiliation is not essential for the pursuit of a criminal career, as it is for members of real-world gangs.¹²⁹ The

¹²⁸ Indeed, it is likely that membership in the hypothesized, online gang-like structures will be transient and situational. That is, cybercriminals will affiliate for periods of time, perhaps to concentrate on achieving certain illicit goals, and then disaffiliate, each going his or her own way.

The individual cybercriminal’s ability to operate independently is in some ways analogous to the small-scale criminal activities Mafia soldiers operate to generate personal revenue. A Mafia soldier may, for example, run a small numbers operation or use a “legitimate” business to aggregate fraudulent profits. The cybercriminal will, however, be far more autonomous, since a Mafia soldier’s ability to conduct such operations is dependent upon his good standing within the larger criminal organization. The Mafia organization not only sanctions his ability to engage in such activities, it provides needed support, in the form of capital, drugs, enforcement structures, etc. Because the cybercriminal operates in a world free of physical constraints, he or she is not dependent upon this type of support structure and can therefore operate independently.

¹²⁹ As section II explained, the advantage real-world gangs offer is their ability to concentrate physical force of gang members. A gang member is valuable only insofar as he or she contributes such force. It is rare for gang members to leave the gang and become independent contractors in violence and

transient member's ability to quit the group at any time will militate against a rigid, hierarchical leadership structure. While the group will require some type of leadership, it will probably tend toward a consensus model both because of the autonomy of the members and because of the emphasis on collaborative action, not on a regimented concentration of physical effort.¹³⁰

Online criminal organization will tend to de-emphasize formal, hierarchical organizational structures. At the same time, it will emphasize a broader, lateral contextual structure. Online criminal organization has no reason to be circumscribed, in its membership or in its operations, by national, territorial boundaries or by cultural differences because cybercriminals, like all citizens of the cyberworld, share a culture that transcends national borders and context. So, as opposed to the localized, rigid, and often provincial hierarchical organizations that have so far characterized criminal groups, regional, or even global, coalitions will develop. These coalitions will be composed of sole cybercrime entrepreneurs and members of diffuse, loosely-structured opportunity groups, criminal associative entities that come together to exploit specific types of entrepreneurial activities or for other purposes, such as retaliating against government groups. The coalitions will come into existence for specific purposes and survive for as long as it takes to accomplish those purposes and dissolve. Since the coalitions will be transitory and goal-specific, online cybercriminals, both individuals and groups, will probably belong to several coalitions at once.

This shift into a diffuse, fluid, and geographically and culturally diverse organizational model will pose challenges for law enforcement, which retains a traditional, hierarchical organizational structure.¹³¹ Law enforcement will no longer be

intimidation. For most gang members, the group offers more security and stability.

¹³⁰ See *supra* § II. See, e.g., Arquilla & Ronfeldt, *supra* note 120, at 280, available at <http://www.rand.org/publications/MR/MR880/MR880.ch12.pdf> (on file with the North Carolina Journal of Law & Technology).

¹³¹ See, e.g., Richard M. Ayres, *So You Want to Be a Leader?*, National Executive Institute Associates, Major Cities Chiefs Association and Major County Sheriff's Association, at <http://www.neiassociates.org/leader.htm> (Apr. 1994) (on file with the North Carolina Journal of Law & Technology). See also

able to compile and maintain genealogical charts of crime families and their operations, for what is a criminal group today may melt away tomorrow, as members move on to individual efforts or other criminal alliances. Indeed, this may well prove to be one reason why online criminals will evolve this type of “disorganized” criminal organization. This new model means there are no set, fixed, easily identified and easily tracked criminal organizations. There are “Mafias of the moment,” not geographically, nor genetically fixed Mafia entities. It also means online criminals can collaborate as necessary but run relatively little risk that their colleagues in crime will be able to inform on them to law enforcement because partners in crime will no longer know who their collaborators are or where they are located.

On the other hand, if law enforcement discards its adherence to the hierarchical model it developed to deal with traditional crime and adapts to this new model of criminal organization, it might actually find its effectiveness enhanced, at least in certain respects. For instance, it is difficult for officers to infiltrate certain real-world criminal organizations because of the ethnicity or other qualities one must have to join the group. These requirements may survive, to some extent, in the online world of criminal organization. They might, for example, serve as a condition for joining one of the small gang-like structures hypothesized above. Requirements such as these, however, will not assume the importance in the online world that they do in the real world. In the real world, these qualifying criteria serve a distinct function. A common ethnic background or act of self-mutilation serves as a guaranty of trustworthiness, an indicator that the person is committed to the group and the ends it pursues.¹³²

Edward Chemerinsky, *An Independent Analysis of the Los Angeles Police Department's Board of Inquiry Report on the Rampart Scandal*, at http://lawweb.usc.edu/faculty/chemerinsky/rampart_finalrep.html (2000) (on file with the North Carolina Journal of Law & Technology).

¹³² See, e.g., Testimony of Joseph D. Pistone, Former Special Agent, Federal Bureau of Investigation (1988) (testifying as a witness before the U.S. Senate Permanent Subcommittee on Investigations of the Committee on Government Affairs), at http://americanmafia.com/pistone_testimony.html (Nov. 15, 2002) (on file with the North Carolina Journal of Law & Technology). See generally Finckenauer, *supra* note 58.

This is important for some real-world criminal organizations, especially Mafia-style organizations, because they emphasize personal commitment to the group and contemplate a stable, long-term membership.¹³³

Neither personal commitment nor stable, long-term membership will be characteristic of online criminal organization. Online criminal organization will be a matter of the moment or of situation-specific association. The transient nature of online criminal organizations will mean that traditional indicia of commitment, and of membership, will decline in importance. Instead of multi-generational criminal enterprises, cybercriminal organization will emphasize arm's length, instrumental associative alliances. What will matter is whether someone is willing and available to join forces for a particular criminal endeavor, what their qualifications are, and whether they exhibit the level of trustworthiness needed for a transitory collaboration. The latter will prove less important in the online context than in the real world because of the greater opportunities the cyberworld offers for shielding one's identity, thereby minimizing the risk of exposure and apprehension.

IV. Conclusion

This article is a speculation: it reflects upon the evolution of criminal organization in the real world and hypothesizes about how the incorporation of cyberspace into illicit activities may result in the development of new and more fluid types of organized crime.

Specifically, this article traces the development of real-world organized crime from the emergence of the gang to the relatively recent appearance of complex, hierarchical structures. It explains that each of these real-world organizational models evolved for a specific purpose. The gang structure evolved long ago as a way of concentrating and directing the efforts of a number of individuals; it is optimally suited for orchestrating simultaneous collective activity involving the utilization of or threatened

¹³³ See, e.g., *id.*

utilization of physical force. The gang structure typically is used in a parasitical fashion by allowing its members to profit by preying upon others. Complex hierarchical structures, on the other hand, are a product of the twentieth century, a response to the post-Prohibition emergence of complex entrepreneurial criminal activity. As with legitimate endeavors, hierarchical organization lets lawbreakers orchestrate and synchronize the extensive, complex division of labor that is needed to carry out large-scale, income-generating criminal activities.

Both of these organizational types evolved in the context of real-world endeavors, mankind having lived exclusively in the real world until quite recently. The Internet is still in its infancy, but we have already seen large segments of human activity migrate wholly or partially into cyberspace, a trend that will only accelerate. Criminal activity has also moved into cyberspace, and this, too, is a trend that will only accelerate; lawbreakers will shift much of their activity into cyberspace because it will increasingly be the venue where illicit profits are to be made and because it offers operational advantages.¹³⁴

This article considers how crime's movement into cyberspace will affect the structure of organized criminal activity. It explains that because cyberspace frees individuals from many of

¹³⁴ As to the former, consider the following:

"Willie Sutton said that he robbed banks because that's where the money was," says Richard Hunter of Gartner, which recently conducted a study of cybercrime. "Today's Internet criminals don't have to rob banks. With currently available technology, they can just as easily rob tens of thousands of individuals, with less chance of being caught."

Greg Farrell, *Police Have Few Weapons Against Cyber-Criminals. Problem Stems from Lack of Funds, Training*, USA TODAY, Dec. 6, 2000, 5B, available at <http://www.usatoday.com/life/cyber/tech/cti880.htm> (on file with the North Carolina Journal of Law & Technology). Cyberspace, in other words, will become the marketplace in which online offenders can prey on legitimate citizens as well as conducting their own income-generating activities. As to the operational advantages cyberspace offers, it gives criminals the chance to conduct their activities with a fair degree of anonymity, to exploit gaps in the laws of various countries and to exploit the lack of resources and other constraints many law enforcement agencies suffer under when trying to deal with online offenders. *See id.*

the constraints that apply to activities in the real world, neither of the extant forms of criminal organization will likely make the transition to online crime. The gang structure evolved to concentrate the efforts of numerous individuals in the real world, a more or less stable, more or less permanent organization, especially when the efforts involved the application or threat of physical force. In the cyberworld, however, processes can be automated, which may mean there will be little premium put on the ability to concentrate the efforts of individuals, especially since real-world physical force is unlikely to play a significant role in online criminal activities. Even if occasions arise that require concentrating the efforts of discrete individuals, this can no doubt be accomplished situationally by recruiting individuals to collaborate in a specific endeavor. Situational concentrations of effort are far more easily achieved in cyberspace than in the real world. Activity in cyberspace is not constrained by geography or other temporal limitations. Indeed, even time is less of a constraint in cyberspace, where processes can be automated and monitored only sporadically. It seems, then, that the gang structure is unlikely to make the transition to cyberspace, at least not in the form it has assumed in the real world.

The same is likely to be true of the complex, hierarchical structure. As the previous section explains, the hierarchical structure evolved to allow criminal groups to carry out large-scale, complicated entrepreneurial activities in the real world. Miscreants will probably engage in illicit entrepreneurial activities in cyberspace, but the organization of these activities may take very different forms than they do in the real world. In the real world, hierarchy is used to orchestrate the efforts of discrete individuals into a relatively seamless process that is directed toward achieving certain ends, for example, manufacturing, bottling, shipping, marketing, and collecting revenues from illegal liquor. In the real world, processes such as these tend to rely heavily on individual effort. In cyberspace, however, many processes can be automated, which may mean that the hierarchical mode of organization will not make the transition into the cyberworld. Consequently, as the previous section explains, online

criminal activity will almost certainly emphasize lateral relationships, networks instead of hierarchies.

This, in turn, means that we will see the evolution of new and different modes of criminal organization in cyberspace; indeed, criminal organization in cyberspace may well be a situational concept. Specifically, instead of assuming stable configurations that persist for years, online criminal organization may incorporate the “swarming” model, in which individuals coalesce for a limited period of time in order to conduct a specifically defined task or set of tasks and, having succeeded, go their separate ways. If cybercrime adopts this organizational model, law enforcement’s task will become much more difficult; in the real-world, the stability and consistency of organized criminal groups gives law enforcement a fixed target upon which to focus its efforts. Police concentrate on identifying a permanent group of participants who engage in a set of routine illicit activities. This predictability, in itself, enhances law enforcement’s ability to combat organized crime. If online criminal organization evolves into the “Mafia of the moment” or the “cartel of the day,” police will lose this advantage, which will only contribute to the success of organized cybercrime.