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Turning to the “Dark Side”

COORDINATION, EXCHANGE, AND LEARNING
IN CRIMINAL NETWORKS*Michael Kenney*

Much of what we think we know about networks is based on research about legally sanctioned interactions and institutions. Until recently, the teeming body of scholarship on social and organizational networks has largely overlooked the work of researchers that study criminal associations. Perhaps understandably, mainstream scholars have preferred to focus on more accessible networks of affiliation. But in doing so, they have missed an important insight: illicit entrepreneurs exploit network forms of organization to engage in criminal activity, while avoiding government efforts to destroy them. No less than their lawful counterparts, criminals have found networks to be useful for coordinating behavior, sharing information, and building relationships among conspirators. And no less than their conventional colleagues, but with a lot less fanfare, scholars of organized crime have used network analysis to enhance their understanding of these enterprises, illustrating how criminal networks promote collective action in hostile environments.

Today, illicit networks' marginalization in ivory towers and power corridors appears to be eroding. In yet another indication of how 9/11 changed the way we view the world, scholars and policymakers now proclaim that network forms of governance, with their embedded social ties and structural malleability, can be found in legal and illegal enterprises. But if the study of criminal networks is edging toward the academic and policy mainstream, our understanding of these phenomena, victimized by the secrecy of illegal exchange and the politicization of law enforcement and counterterrorism, remains inadequate.

Beyond the methodological difficulties in studying organized crime, scholars have contributed to the problem by creating discrete bodies of literature that, intentionally or not, hinder cross-pollination. Although students of illicit

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networks have long observed the ways in which criminals exploit networks to engage in collective action, and the collusive relationship that exists between political power and organized crime, international relations scholars and organization theorists have largely ignored these insights. Meanwhile, in spite of a large body of literature on organizational learning, criminal network scholars have not mined this research to deepen their understanding of how lawbreakers acquire information and how they adapt their operations in response to feedback. In dynamic, hostile environments, where criminals and terrorists (see Kahler, chapter 6) face intense pressure from law enforcers, the evolution of illicit networks is a relevant, if understudied, concern.

This book provides an opportunity to explore, and bridge, these fissures. Like other contributors, I study networks to comprehend social phenomena of direct relevance to world politics. In this chapter, I exploit insights from network scholarship to analyze one case ripe for such treatment: Colombian drug trafficking enterprises. In doing so, I aim to validate the analytical value that network theory holds for international relations. Networks matter, both as objects of reality that influence world politics—and as subjects of inquiry that deepen our understanding of that reality.

Why “Colombian” traffickers?¹ Few conflicts more dramatically signal the importance of clandestine transnational actors to American foreign policy than Colombia’s decades-old war on drugs. During this protracted struggle, substate criminals have persistently challenged states’ ability to prevent their citizens from consuming psychoactive drugs they have declared illegal and stop traffickers from operating, indeed flourishing, within their sovereign shell. Along the way, illicit “economic” networks have emerged as important political actors in world politics, undermining the legitimacy and authority not only of weak states like Colombia but hegemons such as the United States. As the drug epidemic in the United States worsened in the 1980s, fueled by the widespread availability of cheap crack cocaine, politicians and policy-makers effectively securitized the issue, insisting that the United States was at war with the criminal networks coordinating the cocaine trade and channeling greater resources toward this effort. Yet the growing involvement of military and intelligence agencies in what was conventionally a public health and law enforcement matter did not prevent criminals in Colombia from smuggling more than enough cocaine to satisfy American consumers.

The evolution of the Colombian drug industry in the face of escalating law enforcement underscores the resilience of network forms of organization in competitive environments. Over the past several decades, Colombian traffickers have evolved from being relatively minor players in the international

1. These transnational criminal networks are “Colombian” in the sense that core nodes and network leaders are based in Colombia. However, peripheral nodes are located in numerous countries and network participants represent a variety of nationalities. In this chapter, I use the modifier “Colombian” as shorthand to refer to illicit networks that are often multinational enterprises.

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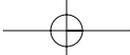
drug trade to becoming major suppliers of cocaine and heroin to world markets. These changes were driven by the rise and fall of organizational networks that responded to environmental pressures while producing, transporting, and distributing illegal drugs. Networks that failed to adapt sufficiently to local conditions were often removed from the trafficking system by government authorities—or their illicit competitors. Along the way, the structure of the system coevolved with the criminal networks and law enforcement bureaucracies that sustained it. When U.S. and Colombian law enforcers cracked down on the largest, most successful smuggling enterprises in the 1990s, Colombia's industry decentralized as smaller, organizationally flatter "chain" networks arose on the institutional residues of the relatively centralized "wheels" targeted by the state. If chain networks were not as efficient or as powerful as the wheel networks they replaced, they still maintained Colombia's prominent position in the international trade, even in the face of increasingly hostile law enforcement. The power of criminal networks to adapt to ecological stresses by recombining into new organizational forms helps explain the resilience of Colombia's drug industry—and the limitations of state power over these enterprises.

In this chapter I examine the "dark side" of political networks: transnational criminal syndicates that defy government authority. In writing about such a secretive, methodologically challenging subject, I have chosen to focus on the criminals I know best, from having studied them over the past decade. Between 1997 and 2003 I conducted extensive fieldwork in Colombia and the United States, interviewing dozens of law enforcement officials from both countries and a small sample of former traffickers, all of whom were convicted of drug-related offenses and openly discussed their involvement in criminal activity.² In a tentative effort to generalize beyond this sole, if surprisingly rich, case I also consider other illicit networks, drawing on insights provided by contributors to the relevant, if traditionally marginalized, literature on this topic.³

Corresponding to the interlocking themes of network structure, power,

2. Like all research on criminal networks, my data should be interpreted with caution. Although I have sought to minimize problems with data reliability and informant deception by cross-checking information from my respondents, I do not claim to have eliminated all potential sources of measurement error. Miles Kahler's observation about selection bias among successful terrorist networks is relevant here (chapter 6, this volume). My sample privileges criminal enterprises that were successful enough, at least initially, to receive the attention and opprobrium of state authorities. However, the fact that I interviewed former traffickers in jail, where they were serving lengthy sentences for drug-related crimes, suggests that they made critical mistakes, contributing to their eventual apprehension by law enforcers. In other words, my sample likely underrepresents both the failed criminal groups that never got off the ground *and* the most successful ones that left the business before the authorities caught them.

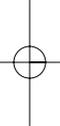
3. However, readers should not disabuse themselves of the inductive nature of my approach. I make inferences to general theory by "unpacking" one case and drawing reference to others. The generality of my findings will have to be established through systematic comparisons to parallel cases (Padgett 2001, 213).



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and evolution that guide this book, my analysis unfolds in three sections. First, I examine secrecy as the driving force behind network structure, highlighting how criminal entrepreneurs exploit strong ties and “structural holes” to manage the concealment-coordination dilemma. Second, I stress the value of political power for illicit enterprises, illustrating how traffickers seek to reduce their exposure to risk and uncertainty by forming social connections with government officials. The ability of criminals to survive hostile law enforcement often depends on their access to political power, what I call the power principle. Finally, I explore how traffickers exploit “weak ties” and flat decision-making hierarchies to share information and adapt to external pressure, demonstrating the power of illicit networks to resist law enforcement crackdowns, while shaping the evolutionary trajectory of the Colombian drug trade.

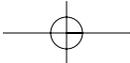
Secrecy and Network Structure



Whether they exchange drugs, weapons, antiquities, or any number of commodities that command robust demand in black markets, illicit entrepreneurs confront a dilemma based on their competing needs for concealment and coordination (Baker and Faulkner 1993). To protect their operations from exposure by law enforcers and competitors, they must conduct their activities in secret. The need for concealment encourages criminals to minimize personal contact and limit information sharing on a need-to-know basis. Yet, to make decisions, perform tasks, and acquire new ideas criminals must communicate with each other and coordinate their activities. The need for collective action encourages criminals to communicate with colleagues and share sensitive information that could undermine, even destroy, their operations, if it falls into the wrong hands.



Even a cursory review of the literature suggests that criminals specializing in a variety of vices exploit network forms of organization to help them manage the concealment-coordination dilemma. In their study of Chinese human smuggling networks, Sheldon Zhang and Ko-Lin Chin argue that secrecy is paramount, leading some smugglers to segment their workers into ad hoc, task-specific working groups and to restrict information sharing among participants to a need-to-know basis (Zhang and Chin 2002, 757). Jean Marie McGloin shows how loosely coupled street gangs in New Jersey use “cut-outs,” or intermediaries, to link individuals and groups within otherwise disconnected networks (McGloin 2005, 622). Similarly, Carlo Morselli demonstrates how one transnational trader opportunistically filled structural holes between nonredundant contacts in the marijuana industry by brokering deals between exporters and importers (Morselli 2001, 205). And numerous scholars have shown how Italian mafiosi and Italian American mobsters rely on strong ties within close-knit family networks to coordinate their activities, while protect-



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ing themselves, if not always successfully, from police informants (Albini 1971; Arlacchi 1986; Blok 1974; and Ianni 1972).

Like other organized criminals, Colombian traffickers have found network forms of organization to be useful for facilitating illicit transactions among different groups. Traffickers exploit networks to share information, coordinate activity, and resolve disputes between interdependent groups that perform different services, including processing raw materials into refined drugs, transporting them to consumer countries, distributing them to wholesalers, and laundering profits from drug sales. These networks contain numerous mechanisms to protect participants from unwanted interlopers, reflecting entrepreneurs' concern with operational security. Rather than forming a single corporate hierarchy, participants work in different groups, with their own leaders and decision rules. Within and across these nodes information sharing may be restricted, with workers told only what they need to know to perform their activities. To prevent infiltration by law enforcers and other adversaries, and to limit the damage of penetration when it does occur, entrepreneurs limit contacts between nodes, creating structural holes in the network topology. Entrepreneurs exploit these holes to control the flow of information and resources across nodes and to buffer themselves from direct complicity in criminal activity. They turn to trusted intermediaries and independent brokers to span these holes by connecting different nodes, including exportation and transportation groups or distribution rings and wholesalers, and arranging transactions between them (Burt 1992, 2001; Williams 2001, 78).

Entrepreneurs also rely on social networks, embedded within and across organizational networks, to manage relationships among conspirators. In drug trafficking and other forms of organized crime, where participants lack access to the state's dispute resolution mechanisms, mutual trust is essential (Arlacchi 1986, 198–201). Consequently, traffickers in Colombia and elsewhere often entrust sensitive tasks to those with whom they enjoy "strong," emotionally salient ties—family members and close friends—to protect their operations from theft and police penetration (Granovetter 1973; Centola and Macy 2007). Similarly, network entrepreneurs exploit their participants' strong ties to build social capital, and check misbehavior, among participants. Strong ties allow leaders to recruit people "of confidence" they can depend on to perform illegal activities without harming the enterprise, while increasing the costs of errant behavior by holding loved ones accountable for the actions of wayward employees. Strong ties are a critical resource in Colombian trafficking networks, helping entrepreneurs manage their exposure to risk and uncertainty.

As these examples suggest, the need to maintain secrecy in hostile environments exerts a compelling influence on Colombian trafficking networks, shaping how entrepreneurs exploit strong ties and structural holes to recruit

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participants, build trust, and share information among conspirators. These network theory concepts, often missing in discussions of international security, help us understand how traffickers engage in collective action in secret settings—and their resilience in the face of state efforts to destroy them.

Wheel and Chain Networks

Viewed from an organizational level of analysis, the Colombian drug trade contains two types of networks, which exhibit distinct coordination patterns and authority relations. The first type, wheel networks, resemble scale-free networks. Both contain relatively few hubs linked to many peripheral nodes, which are themselves poorly connected (Barabási 2002; Watts 2003). However, unlike scale-free networks, wheel networks in the Colombian drug trade are not scalable, for reasons I will describe below.

Wheel networks are built around a hub or core node that coordinates the overall network and peripheral nodes that perform specific tasks, sometimes for different core groups. Core nodes are multitask enterprises. They organize transactions among different nodes; they supply money, equipment, and other resources; they arrange financing for large drug shipments; they resolve disputes among participants; they suborn police, prosecutors, politicians, and military personnel; they gather intelligence about law enforcement activities and criminal competitors. In sum, core nodes serve as the steering mechanism for wheel networks, channeling communication and coordinating relations among nodes. If something goes wrong with a transaction, the core node's ability to monopolize force throughout the network ensures that participating nodes will answer to the core, protecting leaders and investors from theft and other uncertainties (see figure 5.1 below).

In wheel networks, capabilities are not evenly distributed: core groups, as Phil Williams observes, enjoy a preponderance of "power, influence, and status within the network" (Williams 2001, 72). Not surprisingly, core groups and the entrepreneurs that lead them also enjoy a preponderance of the profits when they crown, or successfully complete, drug shipments. Core group leaders use their resources not only to enrich themselves but to resolve disputes that inevitably arise in illicit transactions and to build redundancy in their operations. Dispute resolution is a persistent challenge for trafficking networks. As clandestine enterprises that operate outside the rule of law, criminal networks cannot rely on written contracts and government courts to settle conflicts between disputants (Reuter 1983). Instead, core groups resolve disputes by threatening to exclude participants from future transactions and monopolizing force throughout the network. When peripheral nodes cannot settle a conflict among themselves, core node leaders will be called upon to mediate. The decision of core group leaders is binding on the disputants, and en-

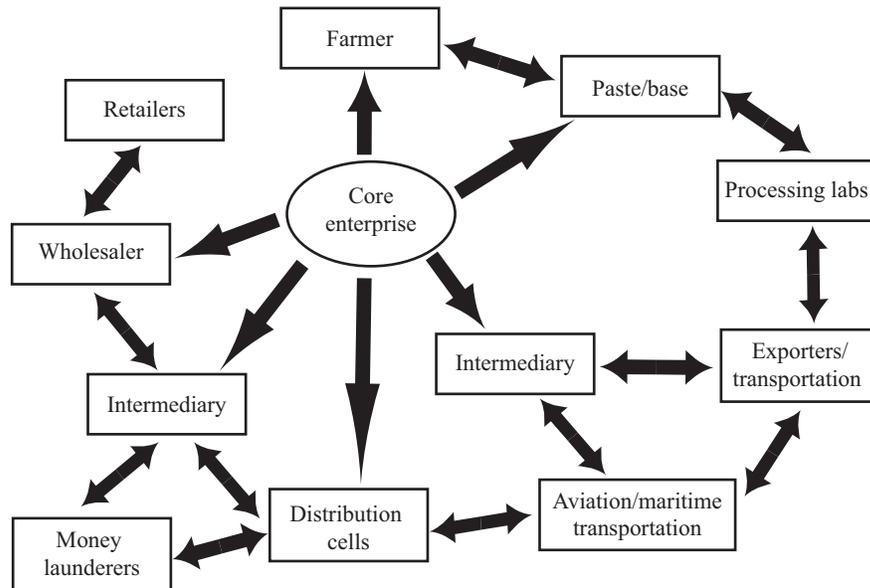


Figure 5.1. Drug trafficking "wheel" network
Source: Kenney 2007.

forced by the threat and, if necessary, actual use of force by armed actors on their payroll.

Core enterprises build redundancy into their operations by exploiting the services of multiple peripheral nodes that perform the same task. Typically, core enterprises based in Colombia transact with different processing labs, transportation rings, distribution groups, and money launderers to avoid concentrating their resources in a single set of service providers. Such redundancy builds network resilience by preventing law enforcers from immobilizing the entire enterprise by dismantling a single transportation route, distribution system, or money laundering scheme. It also increases the power of core groups by allowing them to avoid peripheral nodes that have not accepted entrepreneurs' dispute resolution decisions or honored their commitments from previous transactions.

The core node's power, however, is not absolute. Like the core, many peripheral nodes build redundancy into their operations by transacting with multiple partners. Drug processors, transporters, distributors, and money launderers often provide their services to different, even competing wheel networks, belying the popular notion that a monolithic association, such as the Medellín "cartel," ever controlled Colombian, much less international,

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cocaine production. Peripheral nodes that transact with different core groups increase their power by maintaining viable delinking or exit options. If a transportation ring or money launderer is unsatisfied with one core node, it may choose to transact with other wheel networks that provide more reliable, and rewarding, network externalities. Although some core groups may seek to prevent peripheral nodes from exiting through the threat or use of force, there is a reputational cost for doing so. Contrary to stereotypes of the blood-thirsty kingpin, many core group leaders are reluctant to use violence too liberally for fear of alienating business partners. Peripheral nodes that complete their transactions without pilfering entrepreneurs' money or putting the larger wheel network at risk often enjoy the autonomy to conduct business with other enterprises. Those that do increase their ability to survive law enforcement crackdowns that target specific core groups. For both core nodes and peripheral ones, maintaining multiple business partners builds resilience into their operations.

Even in relatively centralized wheel networks, where core groups seek to hold service providers accountable for botched transactions, peripheral nodes are largely independent. They have their own leaders, workers, and authority relations. In short, peripheral nodes contain their own corporate hierarchies, embedded within the larger interorganizational network. Although some core groups use the threat of violence and intimidation to prevent peripheral nodes from stealing or cooperating with the police, such coercion shapes relations between *different* organizations, some of which have more capabilities than others. Consistent with Podolny and Page's definition of networks, wheels resemble fluid sets of interdependent groups that "pursue repeated, enduring exchange relations with one another" rather than following a monolithic command structure (Podolny and Page 1998, 59).

However, given core groups' ability to "arbitrate and resolve disputes," wheels ultimately diverge from Podolny and Page's view of networks (*ibid.*, 59). In fact, wheels do not fit the ideal type of networks or hierarchies. Instead, like the terrorist networks examined by Miles Kahler in the next chapter, wheels represent an organizational hybrid, mixing elements of both. Not only do they count hierarchical "organizations" among their nodes, but some nodes, in particular core groups, enjoy the authority to settle disputes that arise during transactions. In secret societies, and in collective action more generally, boundaries between organizations, networks, and markets are often ambiguous. Consequently, we should resist the temptation to reify the three ideal types into "essentialist" categories. In practice organizational networks "combine some of the incentive structures of markets with the monitoring capabilities and administrative oversight associated with hierarchies" (Powell and Grodal 2005, 60). Even as the ideal types prove difficult to apply, the trichotomy remains useful, if only as a heuristic device, because it provides distinct models for thinking about how human beings coordinate their behavior and engage in social relations.

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Chain networks, which lack the steering and dispute resolution mechanisms provided by core groups, more closely resemble organizational networks, as understood by Podolny and Page and other social scientists (Powell 1990; Keck and Sikkink 1998). In chain networks autonomous nodes exchange directly with other nodes, sans the mediation and oversight provided by the core. While both wheel and chain networks are organizationally "flat," containing two to four management levels, chains are more diffuse and self organizing than wheels. In chain networks, drug shipments proceed through a series of transactions among independent nodes that coordinate their activities, largely on an ad hoc basis. Over time and repeated interaction, participants from different groups build trust and reciprocity, distinguishing social relations in chains from those of markets.

Like wheel networks, however, even chains contain hierarchy, both within nodes and throughout the intergroup network. Individual nodes contain a division of labor among participants, with workers that perform tasks on behalf of leaders, whose authority stems from informal, yet collectively agreed on, norms. Nodes may be quite small, with a single boss that directs the group, and one or more workers that carry out his or her orders. But within the group, decisions flow downward and accountability flows upward. In addition, the leader has the authority to resolve disputes among workers. When disagreements arise between separate nodes, chain networks rely on horizontal, if not necessarily peaceful, relations of accountability among relatively coequal nodes. Nodes may seek to solve their differences through negotiation, and some nodes may use coercion to influence others. However, unlike wheel networks, there is no core group that monopolizes violence within the network, exploiting this capability to resolve disputes.

As we might expect, power is more evenly distributed in chain networks than within wheels. But even in chains some nodes are more equal than others. Without a core group to coordinate transactions between nodes, independent brokerage becomes even more decisive in chain networks. With their ability to bridge structural holes by linking previously unconnected individuals and groups, including transportation specialists and distribution cells, or money launderers and investors, brokers create network externalities. They also enjoy a measure of influence over other nodes. But in chains the power of brokers depends more on their ability to facilitate exchange than to resolve disputes. The most influential brokers maintain the most nonredundant contacts, allowing them to span structural holes and to create entrepreneurial opportunities that other brokers cannot (Burt 2001). The willingness of brokers rich in nonredundant contacts to generate transactions can spell the difference between fantastic profits and financial ruin. Such brokers are rewarded handsomely for their efforts. Conversely, brokers that enjoy fewer nonredundant contacts provide smaller externalities and, by extension, enjoy less influence and affluence within their networks.

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The Power Principle

Organized criminals possess an intensely ambivalent relationship with political authorities (Blok 1974, 6). On the one hand, they often ignore the law and seek to avoid or harm government officials intent on disrupting their activities. On the other hand, as illegal actors that operate in hostile environments, they understand the value of political connections and seek to co-opt police officials and politicians willing to protect them. Illicit entrepreneurs may operate outside the rule of law, but they exist within the realm of power. Their ability to remain beyond the purview of law enforcers often depends on their access to resources only authorities can supply. This is the power principle of criminal networks: illicit entrepreneurs' ability to survive hostile environments correlates with their own accumulation of power. Access to political power is essential to illegal networks. Without it they cannot long survive social systems where state security agencies and other competitors seek to weaken them and disturb their operations.

The need for power encourages illicit entrepreneurs to build mutually supportive relationships with state authorities. Entrepreneurs must convince upper-world partners they can fulfill some essential, usually material, need. If there's no reason for officials to cooperate, they will be reluctant to accept the costs that accompany illicit partnerships, even if the risk of detection is low. But criminals do not enter into these relationships empty-handed. In exchange for access to political power, they provide their partners with a range of resources, including money, votes, property, and other enticements. In this manner, underworld criminals establish symbiotic relationships with upper-world authorities. These exchange relationships distinguish organized crime from common delinquency, banditry, even some forms of substate terrorism, where illicit actors' power clashes directly with government authority (Blok 1974, 6). In drug trafficking and other forms of organized crime, entrepreneurs seek to co-opt public officials, exploiting state power to create an alternative political space that tolerates, even supports and legitimizes, their activities.

Criminal network scholars have long privileged the role of power and political connections in their research. In his classic study of organized crime in western Sicily, Anton Blok defines mafiosi as "power brokers" that mediate patron-client networks between national-level politicians and rural peasants. Mafiosi managed the estates of absentee landlords, selling land to local peasants in exchange for electoral support for legislative representatives, who often happened to be the owners of the estates run by the mafiosi. In recognition of the valuable service they provided, urban patrons protected mafiosi "against the demands of the law" (Blok 1974, 177). In his research on organized crime in New York City, Alan Block suggests that the "pursuit of power in one guise or another was the cement holding together under- and upper-worlds" (Block 1980, 239). Politicians, labor leaders, and criminals formed

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opportunistic "alliance networks," allowing them to penetrate local industries, including the garment, restaurant, and waterfront trades, and to neutralize the criminal justice system (*ibid.*, 240). Similarly, William Chambliss shows how a "coalition of businessmen, politicians, law enforcers, and racketeers" ran a prosperous crime network in Seattle that dominated local vices for years, including gambling, prostitution, loan-sharking, and drug distribution (Chambliss 1988, 73). The enterprise was broken, as the power principle would suggest, only after rival politicians gained control of key government positions, such as the county prosecutor's office, and began investigations culminating in the indictment of more than fifty government officials (*ibid.*, 146). So effectively had the illicit network manipulated political resources to its advantage, undermining the authority of city and state institutions, that it took a fundamental change in the distribution of political power to destroy the coalition.

Knowingly or not, drug traffickers in different countries and time periods also follow the power principle of criminal networks. Illicit entrepreneurs establish mutually supportive relationships with public officials so they can pursue their trade with minimal interference from honest authorities, enhancing their ability to survive otherwise hostile settings. In Imperial China, personal connections to state officials were essential for opium traffickers, particularly after the government formally banned the drug trade early in the twentieth century. Although the shift to opium prohibition did not create vice markets in China, it did generate a new business climate in which "illicit entrepreneurs and criminal gangs" gradually replaced traditional businessmen, according to Kathryn Meyer and Terry Parssinen. Essential to success in the new environment was traffickers' ability to "reach accommodations with men in power" (Meyer and Parssinen 1998, 4–5). Over time, entrepreneurs with strong political connections came to dominate the opium trade by providing money, weapons, and information to their patrons in exchange for political protection and assistance with sundry "business difficulties." Similarly, drug traffickers in San Diego before World War II built webs of influence with "corrupt politicians, law enforcement agents, customs brokers, civil servants, and businessmen, not to mention other professional criminals," observes Jeffrey Scott McIllwain. Smugglers lacking such connections were more vulnerable to police crackdowns and illicit competitors that enjoyed "the proper protection of underworld allies" (McIllwain 1998, 47–48). To operate effectively in this environment, criminals required access to political power.

Drug traffickers in Colombia have also established relationships with men in power to reduce their exposure to risk and uncertainty. Over the years, many traffickers have cultivated connections with Colombian politicians and state officials to help them avoid or co-opt those intent on disrupting their activities. Although drug prohibition did not create organized crime in Colombia, police pressure did encourage traffickers, like opium smugglers in China, to form ties with officials who were willing to protect their interests or at least

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tacitly condone their activities. Ironically, the power states wield over illicit networks, exemplified in the spirited efforts of U.S. and Colombian police in the “war on drugs,” provides criminals the need, and the opportunity, to increase the power of their networks by building collusive relationships with upper-world authorities. In this sense, prohibition and counter-drug law enforcement helped transform economic networks into political-economic ones that manipulate state authority for pecuniary gain.⁴

Drug prohibition also generates resources that facilitate networking among lawmakers and lawbreakers by artificially inflating the price of, and the profits from, illegal drugs. Many smugglers have adroitly exploited these resources to form mutually beneficial ties with a range of Colombian officials. In exchange for money, gifts, votes, and lucrative investment opportunities, politicians provide traffickers with social acceptance, political protection, and influence on certain questions of public policy; judges and prosecutors subvert criminal justice proceedings against prominent smugglers; and police and military officials selectively enforce the law and share intelligence about counter-drug efforts with their putative adversaries (Krauthausen and Sarmiento 1991; Betancourt and García 1994).

These exchanges are mediated not through markets or hierarchies but through social networks based on bonds of friendship and norms of reciprocity. Over time and repeat exchange, traffickers and their upper-world partners trade “favors” and build social capital, transforming transient exchanges into enduring relationships, at the expense of the larger societal interests that authorities are supposed to serve. Critical to these social networks are the ubiquitous brokers who, for a cut of the action, span structural holes between both worlds (Williams 2001). Brokers include well-connected lawyers and journalists that link traffickers to sympathetic decision makers in the government, influential politicians that connect traffickers to other members of the ruling class and support their interests in the Colombian Congress, and former police and military officials that tie traffickers to old colleagues who are willing to share information about law enforcement operations.

Once intermediaries establish the essential link to upper-world figures, entrepreneurs may rely on *plata* (money) and personal rapport to fortify the connection. However, they willingly resort to the threat—and use—of *plomo* (lead—as from a bullet) to compel their “friends” to provide the necessary favors. In this manner, relationships entered into voluntarily, or even rejected initially, may become coercive if they fail to satisfy traffickers’ expectations

4. Even in select areas of the Colombian countryside, where until recently the national government ceded its monopoly on force to armed substate actors, drug traffickers followed the power principle of criminal networks, forming alliances with right-wing paramilitaries or left-wing guerrillas that protected their operations from hostile interlopers. In this chapter, my focus is on Colombia’s more “governable” urban spaces, where national authorities exert their authority, more or less effectively. However, for discussion of Colombia’s larger “war system,” see Richani 2002.

of reciprocity. For government officials, and intermediaries themselves, involvement in these social networks is often a hazardous undertaking, replete with lucrative payoffs when things go right, and tragic consequences when they do not.

And things do not always go right in these relationships. In spite of their best efforts, many traffickers have discovered that there are significant limitations to the amount of influence that *plata*, or even *plomo*, can buy in Colombia. Indeed, the country’s status as an alleged “narco-democracy” is profoundly misleading. Although many politicians and public officials have willingly lined their pockets with largesse from drug traffickers, they are quick to turn against their allies when their own interests are threatened by the association. After Pablo Escobar was elected as an alternate member of the Colombian Congress in 1982, he was publicly attacked by members of his own party and forced to resign his seat in disgrace. Despite contributing more than \$6 million to Ernesto Samper’s 1994 presidential campaign, several prominent Cali traffickers were targeted in a police crackdown once their generosity was exposed, creating a sweeping political scandal and subjecting the Samper administration to intense diplomatic pressure from the United States.⁵ While Samper struggled to save his presidency, the Colombian police and military, in close cooperation with the U.S. Drug Enforcement Administration, hunted down his erstwhile benefactors. These examples, as Francisco Gutiérrez Sanín suggests, “do not convey the image of a ‘narco-state,’ but rather a torn and precarious, but no less real, pluralism—different state agencies responding on the basis of varying motivations, to different pressures and interests” (Gutiérrez Sanín 2000, 78).

Flexible Operations, Learning Networks

One of the major themes in the sociological literature on networks is that they facilitate learning. Organizations learn when their participants acquire, analyze, and act on information and experience, changing existing practices or creating new ones (Argyris and Schön 1996; Levitt and March 1988). Learning requires information: if there is no knowledge for participants to acquire and share among their colleagues, learning will not occur. Networks provide access to new information through “weak ties”; they facilitate information sharing through structural holes and flat decision-making hierarchies (Gra-

5. Ironically, around the same time that the Clinton administration, under pressure from congressional Republicans, reacted to the drug money scandal by decertifying the Colombian government in the “war on drugs” and denying President Samper a U.S. travel visa, prominent Democrats and Republicans were allegedly committing their own campaign finance abuses, leading one scholar to suggest that they were implicated in separate political-criminal networks based on extensive patron-client ties among “legitimate” businessmen, fund-raisers, party officials, and politicians. See Liddick 2001.

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novetter 1973; Centola and Macy 2007; Burt 2001). This is important in competitive environments where the demand for fast, reliable information is high, as in many of today's legal—and extralegal—business environments.

Although criminals operate in competitive settings that demand rapid information and swift action, the learning abilities of illicit networks have been largely ignored. One possible reason for this is that, unlike the legal business networks studied by Powell and others, criminals do not learn. After all, to protect their operations from law enforcers and competitors, many entrepreneurs compartmentalize their operations, organizing workers in semi-isolated cells and restricting communication within and between them. Given the segmented, clandestine nature of drug trafficking, where information sharing is restricted, there are compelling reasons to believe that smugglers do not learn and are condemned to commit the same mistakes repeatedly.

What students of criminal networks do emphasize is the fluid nature of illegal transactions, where entrepreneurs and organizations interact according to market opportunities and regulatory constraints. In volatile black markets, supply sources and distribution venues change regularly, encouraging the formation of “flexible, adaptive networks that readily expand and contract to deal with the uncertainties of the criminal enterprise” (Mastrofski and Potter 1987, 275). Hence, cocaine trafficking in Progressive Era New York, according to Alan Block, was coordinated by different networks of “criminal entrepreneurs who formed, re-formed, split, and came together again as opportunity arose and when they were able” (Block 1979, 94). Likewise, organized crime in Seattle during the 1960s was dominated by flexible networks of criminals that adapted in response to the city's shifting political currents. When rival politicians and honest officials dismantled the original crime network, another one soon appeared in its place, “more subtle than the older one, less open . . . but in most important respects different from the older one only in the faces that ran the enterprises and shared the profits” (Chambliss 1988, 149). When Chinese authorities outlawed the opium trade in the early twentieth century, smugglers responded by creating clandestine delivery systems, developing new sources of supply, and co-opting politicians that provided protection and resolved disputes (Meyer and Parssinen 1998, 4–5). More recently, immigrant smugglers in Germany, Mexico, and China have adapted to law enforcement pressure by changing their routes, professionalizing their services, and suborning government officials (Heckmann 2004; Andreas 2000; Zhang and Chin 2002). Some scholars assume that police pressure inevitably weeds out inefficient or incompetent criminal enterprises, leaving more capable groups in their wake. Although this may be true in select cases, we should avoid elevating it to a general principle, lest we ascribe teleology where there is none.

Whether such “flexible, adaptive” enterprises foster learning along the lines suggested above has received scant attention. Scholars that have addressed the question have been content to equate behavioral change in crim-

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inal networks with "learning," implying that this necessary condition is also a sufficient one. However, there are many sources of change in organizations that have little to do with knowledge sharing and application. These include leadership turnover, group and coalition dynamics, and pressure from powerful external actors (Tetlock 1991, 22–23). Just because an organization has changed a practice does not mean it has learned, in a cognitive or behavioral sense.

In spite of these challenges, my own research on Colombian drug traffickers suggests that some illicit networks do indeed learn. Like other organizations, trafficking groups learn when their participants learn for them: collecting information about their activities, interpreting this knowledge with their colleagues, and enacting these interpretations in practices that produce satisfactory, if not necessarily optimal, results. Traffickers gather information about drug smuggling and counter-drug law enforcement from different sources, including fellow smugglers, the news media, transcripts of criminal trials, and police reports. They interpret information in meetings, social gatherings, and everyday interactions through which participants share past adventures, discuss ongoing challenges, and brainstorm potential solutions. And they change their practices in response to interpretation and experience at virtually every stage of the production, transportation, and distribution of illicit drugs. Processing labs develop better methods for refining cocaine and learn how to recycle acetone and other scarce inputs. Smuggling rings move their transportation routes and switch among different ships, planes, and automobiles to counter government interdiction efforts. Financial consultants develop new schemes for laundering drug profits, exploiting developments in electronic commerce to transfer currency through complex webs of international finance.⁶

Network forms of organization facilitate learning among Colombian drug traffickers. Social networks aid learning by providing entrepreneurs with access to new ideas and innovations, often through weak ties that connect socially distant nodes in the network topology (Granovetter 1973; Centola and Macy 2007, 704). Although strong ties based on kinship and friendship are important for building trust and facilitating high-risk activity, like drug trafficking and terrorism, they are not optimal for diffusing new information among participants. Strong ties tend to contain redundant sources of information, inhibiting the spread of innovations. If close friends "all know the same things," explain Centola and Macy, this "will not help them learn about opportunities, developments, or new ideas in socially distant settings" (2007, 704). This weakness of strong ties applies to drug trafficking, where access to new ideas is complicated by entrepreneurs' need to manage the concealment-coordination dilemma. To protect their activities from unwanted expo-

6. For additional discussion and examples of the trafficker learning process, see Kenney 2007, especially chapter 2.

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sure, entrepreneurs prefer to rely on trusted confidants for information. However, entrepreneurs already know most of what their family members and closest friends know about their business. They have little to learn from their strongest ties.

To learn quickly about novel business opportunities, smuggling innovations, and counter-drug law enforcement entrepreneurs need information from people who move in different circles and have access to different information. Weak ties among acquaintances that share few network “neighbors” offer shortcuts to such knowledge (Centola and Macy 2007). Traffickers leverage their own and their participants’ weak ties to fellow criminals, corrupt officials, and consultants that “beat a path to their door with new ideas, technologies, techniques, and investment opportunities” (Lupsha 1996, 34). Through such ties entrepreneurs learn about new maritime and aviation smuggling routes, innovations in transportation and communications technologies, such as the use of semisubmersible vessels to transport cocaine in the Caribbean, and ongoing criminal investigations targeting network leaders. This information is vital, providing entrepreneurs with opportunities to improve existing operations and avoid government efforts to disrupt them. The search for such knowledge may be intentional, as when traffickers seek to resolve specific problems, or merely fortuitous, as when they gain useful information through everyday conversations not directed toward criminal ends (Van Calster 2006). What matters in both cases is the strength of traffickers’ weak ties, which connects them to nonredundant sources of knowledge and increases the rate at which information spreads in the network (Centola and Macy 2007, 704).

If social networks foster learning through weak ties, organizational networks promote it through flat decision-making hierarchies. This is true of both wheel and chain networks, irrespective of their different coordination patterns and mutual tendency toward compartmentation. In wheel and chain networks, unlike government hierarchies, information flows through relatively few layers of management. Flat decision-making hierarchies limit the number of administrative bottlenecks that can slow information sharing. Flat decision-making hierarchies also limit opportunities for information distortion or suppression because there are fewer managers that, whether due to self-interest or human fallibility, manipulate, misplace, or withhold information from others.

Wheel networks combine the flatness advantage with another: network centralization. In wheels, core groups channel communication between nodes, acting as a central conduit that quickens knowledge diffusion and fosters learning. Peripheral nodes learn from other nodes when core groups propagate information, often through intermediaries that bridge structural holes. However, as we have seen, in wheel networks entrepreneurs exploit brokers to control the flow of information and protect themselves from direct complicity in criminal activity. Core group leaders may not always wish to encour-

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age information sharing, particularly if this increases their exposure to risk and uncertainty. If they decide to restrict information sharing, entrepreneurs will limit the ability of compartmentalized nodes to obtain new information that could improve their operations. This imposes a significant opportunity cost on enterprises that rely on their adaptability to survive hostile environments. On the other hand, if entrepreneurs allow robust information sharing, they can mitigate the effects of compartmentation by directing intermediaries to span structural holes between nodes, increasing participants' access to new ideas and innovations. In this manner, entrepreneurs' competing needs for concealment and coordination shape the learning that transpires in wheel networks. Entrepreneurs can influence whether learning remains localized in nodes with direct access to the innovation or experience, or whether these ideas and lessons will diffuse to other nodes in the network.

In chain networks, there is no “kingpin” to steer the flow of information through the enterprise. Communication between nodes occurs laterally, without the mediation of a core group. In these networks, as we saw earlier, the influence of independent brokers is decisive. Brokers that are skilled in spanning structural holes are a primary source of information diffusion—and learning. In connecting socially distant nodes, brokers provide shortcuts in network topology that allow new ideas to spread faster than would otherwise be possible in chain networks. Similar to core group leaders, they alleviate the impact of compartmentation on information sharing by increasing information flows between otherwise disconnected nodes. Brokers' value as facilitators of learning increases with the number of structural holes they bridge, and the number of transactional opportunities they provide. Brokers rich in nonredundant contacts will have access to more diverse sources of knowledge and exchange and be able to transmit these opportunities faster than less well-connected intermediaries (Burt 2001).

To be sure, brokers and kingpins are not the only sources of nonredundant contacts in chain and wheel networks, and we should be careful not to overemphasize their significance as facilitators of learning. Core group leaders and brokers influence, but do not determine, learning in trafficking enterprises. Managers and workers also possess weak ties from their own professional and social circles, including connections to people that work in different nodes or for separate enterprises. By design or happenstance, these people occasionally meet, in social venues or when conducting transactions, where they share information about their activities and local smuggling conditions. In doing so they effectively bridge structural holes, creating opportunities for improving their operations. Arturo, a U.S. distribution manager for a Colombian trafficking network, describes how his group adopted the idea of a “suicide” car (for crashing into police cars conducting surveillance on drug traffickers) by interacting with members of another criminal enterprise: “The suicide car, we learned that . . . from Pablo [Escobar]'s organization. We would share information. We would not share information as to exactly how

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we did things, but we would share information like, for example, the cars you use.”⁷ Significantly, Arturo’s group was independent from and, in some respects, a competitor to Escobar’s enterprise. Yet, contacts between workers from both two groups allowed them to share knowledge, with or without the consent of their respective leaders.

**The Evolution of Trafficking Networks:
From Chains to Wheels and Back Again**

If drug traffickers learn, does their ability to modify practices in response to experience account for larger, macrolevel changes in the Colombian drug industry? In evolutionary terms, what explains the development of Colombia’s illicit trade, and the organizational forms that sustain it: adaptations to local conditions or variation among existing populations generated by environmental selection? After all, the structure of the Colombian drug trade did not crystallize overnight or in a vacuum, devoid of social relations and historical context. Rather, it emerged over time, through interactions among real-world actors that shared and enacted ideas and practices. Change has been a persistent feature in Colombia’s decades-old drug trade. The industry, and the illicit networks that coordinate it, have coevolved through different periods of activity and organization.

In the 1950s and 1960s, drug trafficking was a minor industry in Colombia.⁸ Most of the country’s professional smugglers worked in more prosaic black market commodities: coffee, cigarettes, emeralds, whiskey, and domestic appliances. Those that did dabble in drugs took advantage of Colombia’s long tradition in export contraband and its geographic location between drug-producing areas and consumer markets to serve as redundant suppliers and transporters of marijuana, cocaine, and heroin for organized crime networks directed in other countries. To perform these services, Colombian entrepreneurs formed small, hierarchical groups based on strong family and friendship ties. These enterprises represented peripheral nodes in transnational wheel networks coordinated by U.S., Cuban, and Chilean “gangsters.” Due to their superfluous status, Colombian traffickers enjoyed minimal affluence and power in these operations.

In the late 1960s and early 1970s, a handful of Colombian entrepreneurs began transporting marijuana and cocaine directly into the United States, where it was distributed by family members and friends. Although the amount

7. Author interview with “Arturo” [pseudonym], former drug trafficker, Atlanta, Georgia, August 29, 2000.

8. My evolutionary analysis of the Colombian drug trade draws on historical work by several scholars, including Arango and Child (1984), Betancourt and Garc a (1994), Castillo (1987), Cervantes (1980), Krauthausen and Sarmiento (1991), Rold n (1999), Salazar and Jaramillo (1996), and Thoumi (1995).

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of cocaine smuggled by these enterprises was quite small, often four kilograms or less, their forward integration in the international trade represented a critical juncture in the evolution of Colombia's industry. For the first time, Colombian traffickers developed their own distribution networks in New York, Miami, and other cities, exploiting their social ties to the Colombian diaspora in the United States. In doing so, these entrepreneurs surpassed their traditional role as suppliers for Cuban and U.S. criminals. Colombian traffickers now received a greater proportion of the profits from smuggling ventures, whetting their appetite for additional transactions. They also established ties with local wholesalers, who shared their desire for bigger shipments and better cocaine to satisfy the growing American demand.

These developments laid the institutional foundation for the emergence of Colombia's infamous wheel networks a decade later, during the 1980s. However, like the wheels that would later dominate Colombia's cocaine trade, these enterprises were not new organizational forms, but variations on pre-existing ones. Experienced smugglers, sensing lucrative opportunities driven by rising drug consumption in the United States and Europe, diversified their criminal repertoires, expanding first into marijuana trafficking and then into cocaine. In doing so, they drew on the contacts, knowledge, and experience they gained from exchanging other contraband. Enterprising *contrabandistas* discovered that smuggling practices for coffee, emeralds, and later marijuana transferred well to cocaine. The "new" class of cocaine traffickers also developed their own innovations, packing small amounts of the drug in condoms for human couriers to swallow and carry, and hiding cocaine in everything from false-bottomed wine bottles and picture frames to customized bras and girdles. Corruption of public authorities, as in contraband smuggling more generally, was often necessary and therefore common. But given the small size of their operations, traffickers paid off local politicians and police officials with jurisdiction in their area of operations. Different groups contained their own decision-making hierarchies, and relations between groups resembled chain networks. Small-scale traffickers based in Colombia typically purchased several kilograms of cocaine from independent suppliers in Colombia, Ecuador, and Peru and transported them to the United States through human couriers. In the United States, the cocaine was sold to loosely affiliated, but essentially autonomous, distribution groups. Missing from these arrangements were core groups to steer the overall enterprise and fix disputes between different nodes.

This began to change as entrepreneurs secured the contacts and capital to produce, transport, and distribute first dozens, then hundreds, and finally thousands of kilograms of cocaine to the United States. The resources required for such large transactions developed gradually, as traffickers crowned profitable shipments that grew in volume over time. By the early 1980s a number of Colombian entrepreneurs were organizing multi-ton cocaine shipments from South America to the United States and Europe. As the size of

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their shipments grew, so did their information processing needs and coordination challenges. To manage these increasingly complex transactions, while protecting their investments, entrepreneurs centralized their operations, similar to price-fixing conspiracies in the heavy electrical equipment industry (Baker and Faulkner 1993) and al Qaeda following its decision to target the “far enemy” (Kahler, chapter 6). In the Colombian drug industry, entrepreneurs used their buying power and ability to bridge structural holes to increase their leverage over service nodes, including processing labs, transportation rings, distribution groups, and money launderers. In some cases, entrepreneurs established their own processing labs in Colombia and distribution cells in the United States; in others, they transacted with formally independent groups over which they enjoyed considerable influence. What was common to the emerging wheel networks was leaders’ ability to monopolize violence throughout the enterprise. Entrepreneurs hired former soldiers, policemen, even gang members to do their violent bidding, both to resolve disputes between nodes and to eliminate nettlesome competitors and government officials.

Entrepreneurs also weaved webs of influence with corrupt officials. Predictably, as the size of their criminal operations expanded, so did their economic—and political—interests. Leaders of the most successful wheel networks increasingly found it necessary to suborn not just local authorities but regional and national-level figures to protect their growing operations and to shape public policies of interest, such as outlawing the extradition of Colombian nationals to the United States. A number of entrepreneurs went beyond interest group politics to become political patrons in their own right, financing public works and social welfare programs to win acceptance from their communities and votes for politicians that supported their interests.

Although wheel networks with substantial weak ties attracted people with new ideas, practices, and skills, network scalability was constrained by entrepreneurs’ desire to protect their illicit operations. In spite of their best efforts to purchase social acceptance and political protection, core group leaders realized that every new node added to their enterprise increased the chance that honest officials could damage their operations. Although economically desirable, the rapid expansion of network ties was potentially hazardous. Weak ties might provide entrepreneurs access to new information and business opportunities, but strong ties were safer. Savvy entrepreneurs managed the liabilities of largeness by privileging, to the extent that they could, strong ties with dependable family, friendship, and professional connections. While the need for coordination (and information) compelled wheel networks to expand through weak ties, the need for concealment prevented many potential weak ties from linking with well-connected hubs, irrespective of their “preferential attachment” to do so (Barabási 2002). Unlike scale-free networks, the wheel networks that emerged in Colombia were not scalable, at least not to an infinite degree. Scale-free networks may be as prevalent among

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movie stars, Internet websites, and airline transportation systems as scholars of the mathematical literature on social networks suggest, but their applicability to clandestine networks that operate in hostile environments, where the need for secrecy often trumps the desire for efficiency, remains uncertain.

Drug trafficking wheel networks may not have been scale free, but they were successful. For much of the 1980s and 1990s, Colombia's drug trade was led by several wheel networks, including the infamous, and misnamed, cocaine "cartels" based in Medellín and Cali, that evolved from earlier contraband smuggling operations. With their ability to coordinate large drug shipments, manipulate state power, and minimize their exposure to risk and uncertainty, wheel networks flourished. Eventually, however, they paid the price for their success, as U.S. and Colombian authorities became increasingly alarmed about their political influence and violent tactics. Following a rash of bombings, kidnappings, and assassinations by the Medellín network in the late 1980s and early 1990s, and Cali traffickers' ill-fated attempt to purchase a Colombian president several years later, the alternative political space entrepreneurs built to protect their operations collapsed, providing earnest law enforcers the opportunity to apprehend their adversaries. Unable to avoid challenging Colombia's political elites or to shield their activities from the pealing bells of public scandal, traffickers destroyed the symbiotic relationship they enjoyed with upper-world allies that supported their activities. In failing to persistently follow the power principle of criminal networks, these entrepreneurs sowed the seeds of their own demise.

In close cooperation with U.S. agencies, Colombian police and military units initiated a series of crackdowns against the Medellín and Cali enterprises. These operations, part of broader effort that American officials dubbed the "kingpin strategy," exploited wheel networks' centralized structure by attacking their hubs: core group leaders and their closest associates. The strategy produced results. Law enforcers arrested hundreds of suspected traffickers, destroyed dozens of drug processing labs, and seized hundreds of kilograms of cocaine. Most significantly, between 1989 and 1996 law enforcers apprehended or killed virtually all of the Medellín and Cali "kingpins," and degraded their illicit operations.

Rather than destroying the Colombian drug industry, however, the kingpin strategy decentralized it, as dozens of chain networks emerged in the wake of the few wheels targeted by the state. These enterprises were smaller, flatter, and less hierarchical than the wheels they replaced. Individual nodes transacted through ad hoc support networks, sans the mediation and oversight provided by the core. Some chains arose from the institutional residues of the former wheels, while others had been quietly coordinating drug shipments for years without attracting the attention of U.S. and Colombian law enforcers. As Miles Kahler illustrates in the next chapter, al Qaeda underwent a similar metamorphosis in response to the U.S.-led war on terrorism. In both cases, relatively centralized wheel networks responded to increasingly hostile

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environments by decentralizing their operations, becoming more amorphous—and resilient—than before.

To answer the evolutionary questions raised earlier, the reemergence of chains in Colombia's drug trade was due to organizational adaptation, as surviving criminals adjusted to law enforcement crackdowns by changing their operations, and to environmental selection, as numerous enterprises were removed from the system by police pressure, only to leave smaller, low-profile enterprises behind. A number of chains were led by former wheel network managers that avoided capture. These entrepreneurs drew on their contacts and experience to reengineer their activities. Some apparently learned from the mistakes of their old bosses and downsized their operations to avoid unwanted attention. They reduced the size of their loads, and developed new smuggling routes, communications practices, and money laundering schemes in response to police pressure. Some traffickers formed close ties with different paramilitary organizations and guerrilla fronts that increased their participation in the trade, while others pursued alliances with "new" armed actors that themselves evolved from older paramilitary groups that demobilized in response to government pressure. Like their predecessors, these next generation paramilitaries supplied drugs or protection in their area of operations (International Crisis Group 2007). Corruption remained prevalent, but entrepreneurs directed their bribes toward local authorities, rather than to national politicians and administrators (Bagley 2004). Meanwhile, millions of Americans continued to enjoy ample access to their drugs of choice thanks to the adaptability of Colombian production, transportation, and distribution networks.

Colombian drug traffickers exploit network forms of organization to further their activities in multiple ways, each of which speaks to a different "face" of network power explored in this book. Traffickers use organizational networks to facilitate economic transactions prohibited by national governments, undermining the normative and material power that states enjoy *over* them. They use networks to govern relations, share information, and mediate disputes between nodes, exercising power *within* networks. And they use social networks to span structural holes and learn from fellow conspirators and public officials, increasing the power *of* networks that build trust, reciprocity, and honor among thieves.

At a time when scholars trumpet the virtues of transnational networks in spreading human rights norms, protecting the environment, and promoting international trade, the evolution of the Colombian drug trade provides a sobering reminder that not all networks are engaged in benevolent pursuits. The ability of criminal networks to manage the concealment-coordination dilemma, access political resources, and learn from knowledge and experience helps explain the resilience of Colombia's decades-old trade—and states' limited ability to defeat it.

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Change has been a persistent feature in the “recombinatorial history” of this illicit industry (Padgett 2001, 213), which has evolved through different periods of development. The dominant organizational form during each period, to the extent that there was one, reflected the aspirations and capabilities of different social actors operating within environmental constraints and opportunities. During the 1970s, a few smugglers exploited their family and friendship ties to develop their own distribution networks in the United States. Several years and numerous transactions later, some entrepreneurs leveraged their brokerage position and capacity for violence to build large, relatively centralized wheel networks. By the late 1990s, many of these so-called cartels were selected out of the system, only to be replaced by an apparent evolutionary throwback: smaller, flatter enterprises that more closely resembled the chain networks of the 1970s than the wheels they succeeded.

Revealingly, each “new” phase was marked less by “speciation,” the birth of completely new organizational forms, than by “sedimentation,” the emergence of recombined forms arising “on the shoulders of older historical ‘residues’” (Padgett 2001, 215–16). The chain networks of the 1970s emerged from the peripheral nodes of the 1960s, the wheels of the 1980s emerged from the chains of the decade before, the chains of today emerged from the wheels of yesterday. During each period, at least some traffickers learned from those that went before them, drawing on their predecessors’ practices, experiences, and mistakes. At the heart of these path-dependent processes stood organic social networks that formed, grew, and folded into larger organizational networks, providing entrepreneurs with contacts, capital, and know-how.

Expressed sequentially, this narrative evokes a sense of progress, and we might be tempted to view the history of the Colombian drug trade in teleological terms, with each new phase characterized by the ascendancy of superior adaptive forms. In fact, however, the evolution of Colombia’s trade is marked by the unpredictable process of historical contingency rather than the steady drumbeat of progress (Gould 1989, 283). Wheel networks arose from chains’ experiential sediment, but they were not necessarily superior to them. Indeed, wheels contained a critical vulnerability, core node centralization, which allowed U.S. and Colombian officials to attack them successfully, once they mustered the political will to do so.

Chain networks have proven more impervious to head-hunting drug control strategies, fulfilling an ecological niche that makes them well fitted to hostile law enforcement systems. But chains, which contain their own vulnerabilities, do not represent the pinnacle of adaptive superiority, any more than the wheels did before them. Lacking a central node to steer communications and resources, chains often fail to coordinate action and share information efficiently. And without core groups to monopolize violence, they are susceptible to internal theft and other shenanigans. In short, survival in the Colombian drug trade does not demonstrate optimality, neither in form nor function. Many traffickers survive environmental pressures not because they

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are inherently “smarter” than their predecessors, or because their network forms of organization are superior to markets or bureaucracies. They survive because their adaptations, simple as they often are, are sufficient to keep them out of harm’s way, or because bounded police agencies focus limited resources on targets they have already identified, or because (notions of evolutionary progress be damned) they are simply lucky.

Today, organizational networks, buttressed by their participants’ social networks, remain a basic feature of the Colombian drug trade. Although some wheels continue to function, chains appear ascendant. These enterprises are frequently less efficient—and less powerful—than the wheel networks they replaced, a striking rejection of the evolutionary ladder of progress, and a victory of sorts for the United States and Colombia in the war on drugs. However, before proclaiming the superiority of law enforcement hierarchies, we should remember that even as the government of Colombia captures more drugs, destroys more drug crops, and extradites more traffickers to the United States than ever before, chain networks stubbornly maintain the country’s prominent position in the global drug trade. Nor is there any reason to believe that wheels, or some other network variation, won’t (re)emerge as a dominant organizational form in the future. For now at least, criminals’ persistent ability to learn ensures that Colombia’s illicit industry remains a productive, if not necessarily a progressive, one.