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INTEGRATING DIVERSE THEORIES FOR PUBLIC HEALTH LAW EVALUATION

Scott Burris, JD

Professor, Temple Beasley School of Law, College of Public Health; Director, Center for Public Health Law Research

Alexander C. Wagenaar, PhD

Research Professor, Emory University Rollins School of Public Health; Professor Emeritus, University of Florida College of Medicine

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Summary

Theory illuminating mechanisms of legal effect has at least three important benefits for public health law research and practice: defining the phenomena to be observed, supporting causal inference, and guiding reform and implementation. The choice of what theory or theories to draw upon is a practical one based on research questions and designs, types of law or regulatory approach under study, and state of current knowledge about the matter being investigated. Legal epidemiology researchers can draw upon a variety of theories developed by sociolegal scholars to explain how laws are put into practice and how they influence environments and behaviors. Similarly, it is possible to integrate laws within general social and behavioral theories. And it is in fact possible to do both at the same time. These methods make it possible to substantially improve the validity, utility, and credibility of health research on effects of laws and legal practices.

Compliance theories explain why people obey the law. The threshold question in any compliance theory is whether people actually know what the law is. Both deterrence theorists and economic theorists posit that people will behave rationally (i.e. optimize their own net gain) given what they know about the law and the consequences of disobedience. Labeling theory posits that criminal law works by defining proscribed behaviors as "wrong" and people who engage in it as "criminals." Procedural justice theory focuses on the internal motivation to comply, and how it is influenced by the perceived fairness of legal authorities. In the public health tradition, law is often used to change social and physical environments to reduce exposure to risks, rather than to directly regulate individual behavior itself.

Rather than construct the question in a framework of how law influences behavior, a researcher also could start with a general behavioral theory in which law is simply added as one of many factors, and not treated as the preeminent effect to study. The theory of triadic influences (TTI) presents a detailed scheme for understanding the many factors that produce an intention to behave in a certain way and, ultimately, the behavior itself. Economics places the law and the phenomena it

regulates within a framework of markets. Finally, research in the law and society tradition provides powerful theoretical and research methods for getting at how both legal agents and legal subjects understand their roles, their ability to act within a legal framework, and the nature of that legal framework itself.

Learning Objectives

- Recognize how theorizing mechanisms of legal effect can support causal inference.
- Use evidence on the mechanisms of legal effect to explain the basis for legal reform and innovation to others.
- Combine concepts from various theories of how laws operate to illustrate specific hypotheses regarding legal effects on population health.

The preceding chapters have introduced a variety of theoretical frameworks and practical tools for studying *how* laws and legal practices influence behavior, environments, and, ultimately, health outcomes in a population. Theory that illuminates mechanisms of legal effect has at least three important benefits for legal epidemiology:

- *Defining the phenomena to be observed.* Theories of how law influences structures, behaviors, and environments help identify effects to measure – tell us where to look, at what point in time we might expect to see effects, how effects might evolve over time, and what sort of intended and unintended effects to look for.
- *Supporting causal inference*. Theories of how law works provide evidence of plausible mechanisms that can be used to assess causation. They help unpack a law into regulatory components that may have varying contributions to the overall effect and help identify dose-response relationships between specific legal components or dimensions and health-related outcomes.
- *Understanding implementation and guiding reform.* Assuming confidence that law is causing an effect, theories of how it does so provide important guidance on ways to study the magnitude of the effect, reduce unintended consequences, or produce the effect more efficiently. Implementation research in turn can suggest changes in practice or in the law itself to enhance the effectiveness of the law.

As the preceding chapters show, we draw on a rich and diverse literature to understand mechanisms of law. There is no single correct theory, and therefore no need to make an exclusive choice. Likewise, "no one causal approach should drive the questions asked or delimit what counts as useful evidence. Robust causal inference instead comprises a complex narrative, created by scientists appraising, from diverse perspectives, different strands of evidence produced by (a) myriad (of) methods" (Krieger & Davey Smith, 2016). The choice of what theory or theories to draw upon is a practical one based on research questions and designs, types of law or regulatory approach under study, and the state of current knowledge about the matter being investigated. This

chapter first elaborates on why it is so important to investigate *how*, as well as *whether*, law is having an effect on health, using safety belt laws as one example. It then uses a second example in greater detail – the health effects of criminal laws regulating HIV exposure through sex – to illustrate how diverse theories of legal effect can be productively used.

The Value of Opening the Black Box

The stick-figure picture of law is that lawmakers issue a rule, and people obey it. A causal diagram for a public health law evaluation study based on this simple equation might start with no more than three boxes: one for law, one for the required behavior, and one for the health outcome. If the behavior is an established, good-enough proxy for a health outcome (such as safety belt use in relation to crash morbidity and mortality), we could even dispense with a box for health outcome. Or, if we were correlating the law with crash outcomes, we could use the health outcome as a proxy for the required behavior. In studies so conceived, the chain of events between issuance of a rule and its health outcomes is hidden within a black box. For some laws, and for some research purposes, this may be fine: the news of a law may be rapidly and widely disseminated, the rate of compliance may be quite high, or the relationship between the required behavior and a health outcome may be very strong. In some cases, local differences in the events unfolding in the black box (for example, the level of enforcement) may be small, or have little impact, so that with enough other data points they do not significantly influence the result in the aggregate. Or perhaps there is no empirical research on a particular new law, and an initial "black box" study linking the law to an important health outcome represents an important contribution. Thus, it is not always essential to know what is happening within the black box to accurately measure effects of a law on health. But the black box in which law unfolds is, at best, a placeholder for further development in a causal model, and at worst a sign of theoretical imprecision and a source of potential causal misattribution.

DEFINING THE PHENOMENA TO BE OBSERVED

Law is just one of many factors that shape health outcomes. Although we often speak of a "chain" of causation, in which one event leads to another, a more apt metaphor is a causal web. As Swanson and Ibrahim explain in Chapter 10, one way to open the black box is to place the law within a simplified causal diagram that depicts one or more plausible processes through which law is expected to have its effect, and the relation of law to *other* potential causes. In quantitative studies, measurement decisions and data interpretation may depend upon assumptions concerning how quickly or evenly a law will have an effect. In these processes, the researcher necessarily states hypotheses – falsifiable propositions about legal effects – and identifies candidate variables for observation and measurement. Generating testable hypotheses is greatly facilitated by an underlying theory of how law works. And articulating a theory of the mechanism of effect makes clear underlying (and often hidden or imprecise) assumptions regarding why a given law is expected to have an effect or not.

Consider a mandatory safety belt law. A change in safety belt use after the passage of a law could be conceptualized as the result of deterrence: the causal diagram begins with the law, then proceeds through rational choices by drivers to compliance or non-compliance based on the likelihood and cost of detection. This theory would direct researchers toward an inquiry into drivers' risk aversion, or their perceptions of the likelihood and cost of detection. It is also plausible, however, that the law works by signaling the official adoption of an existing social norm of safety belt use. On this theory, the causal diagram would highlight variables related to drivers' beliefs about the legitimacy of government authority or their beliefs about what people whose regard they value would expect them to do. A researcher could then test multiple theories, by, for example, surveying drivers about both their perceptions of punishment risk and their beliefs relevant to a normative theory. Or the researcher may make a reasoned choice about which theory to investigate further. For example, if the researcher is aware that the law has a trivial fine and is not being enforced, she may elect not to prioritize deterrence as a subject of investigation. In this way, theory makes it possible to systematically generate and test explanations of how law is working.

In a quasi-experimental study of the impact of a new safety belt law, the researcher will need to decide how long to observe crash outcomes before and after the law, and at what interval (daily, weekly, monthly, annually; see Chapter 14). If we theorize that the law works solely via deterrence, we might predict a lag between the effective date of the law and increased compliance due to the time it takes for enforcement to ramp up and word to naturally spread. The expected pattern of gradual effect would shape study decisions about length of follow-up data collection and width of observation intervals. A slowly evolving deterrent effect might suggest a wider time resolution and a longer period of observation. If, on the other hand, we theorize that the law works largely by publicizing and reinforcing an existing social norm, and if the law includes funds for a substantial publicity campaign that begins even before the effective date, we might use a narrower time interval and a shorter period of observation after the law takes effect.

SUPPORTING CAUSAL INFERENCE

Causal inference is both empirically and philosophically challenging. Much of the research on how law influences health is observational. It may demonstrate a correlation between a law and a health outcome, but has a limited capacity to demonstrate that law *caused* the outcome. In making causal inferences about law, we typically are confronted with a complex system, only some of the elements and outcomes of which have been or can be observed, and in which law is just one element. As we discuss elsewhere in this volume, experimental and quasi-experimental research designs can help us attain a high degree of confidence in causal inference, but in any sort of study of causation in a complex system, both observational and experimental evidence of causation is bolstered by evidence that reveals more of the system's elements. Evidence of the mechanism through which law might have caused the effects – defining and even observing a chain of events between the law and the effect – can help us decide whether an inference of causation is warranted and how confident we should be. Filling in the black box is, in legal epidemiology, closely analogous to the "evidence of

biological plausibility" criterion that is a widely accepted heuristic for assessing causation in epidemiology (Hill, 1965; for a discussion of criteria approaches to causal inference, see Ward, 2009). If one has a robust association between the proposed cause and the observed effect, an inference of causation is bolstered by evidence documenting the links between them in a theory-based causal web – even more so if the association is consistent with multiple theories or causal models (Krieger & Davey Smith, 2016). Populating the causal web requires good theorizing within a solid understanding of the phenomenon and existing and analogous evidence.

We return to the safety belt question. There are many possible explanations for a correlation between safety belt use and a law requiring it. A safety belt law may have caused a change in use, but it is also possible that increasing use of safety belts changed social norms, leading to legislation as a sort of endorsement or signal of what had already occurred. Or both the rise in use and the law could be independent results of some other factor, such as a privately funded educational campaign to increase safety belt use. Research that showed that drivers who feared detection and punishment were significantly more likely to use safety belts would support the inference that law was having an effect via deterrence. By contrast, a finding that there was no connection between wearing a safety belt and knowing about the law or regarding safety belt use as the right thing would undermine the inference that law was driving the change in behavior. In neither case is the mechanism research conclusive, but in connection with other data it supports better judgments by researchers and policy actors.

UNDERSTANDING IMPLEMENTATION AND GUIDING REFORM

Having confidence that a law is having an effect on health outcomes is not the end of the legal epidemiology inquiry. We also need to understand what is producing the effect, through what process, so we can work to ensure the law has the largest positive effect it can possibly have, with the fewest negative side effects, and that it works optimally wherever it is adopted. Lawmakers will want to know not just whether the law works but at what cost. Along with cost-benefit and cost-effectiveness analysis, research that documents the mechanisms of legal effect can make a valuable contribution to making law work better. Explicit and implicit theories of the legal mechanism can both guide and then be tested by policy implementation research and implementation science methods to identify practices that enhance or reduce the law's impact (Nilsen, Ståhl, Roback, & Cairney, 2013). Some enforcement strategies may be better than others, or may cost more than others that are equally effective. Negative side effects may be largely the result of how the law is enforced or implemented, rather than an inevitable consequence of the law's terms or design.

Safety belt law again offers an example. As states began to pass these laws, two different enforcement strategies were used. In some states, failure to wear a safety belt was deemed a *primary* traffic violation, giving police officers the authority to stop and ticket drivers for that reason alone. In other states, the enforcement was "secondary," meaning that police officers could only issue a ticket for a safety belt violation if the driver were being stopped for some other violation. We would not expect the difference in enforcement to make much difference in

compliance if what drove compliance was normative agreement with the rule, or the legitimacy of the government. All states had better outcomes with safety belt laws than without. Over time, however, researchers showed that compliance was significantly higher, and crash outcomes better, in states that adopted primary enforcement. In this instance, the deterrent effect of primary enforcement seems to have made a difference to a sufficiently large number of drivers. Knowing this allowed lawmakers to make a change in enforcement provisions that improved the beneficial effects of the rule.

Also important is that different segments of the population may be differentially affected by particular legal mechanisms, and effects of particular mechanisms likely vary over time as society changes. Differential effects across groups and time reinforce the importance of theory, and illustrate how selecting a single theory is often unnecessary and possibly inappropriate. In the case of safety belt laws, about 15% of drivers used belts voluntarily when they were made available in cars (after some educational campaigns). Compulsory use (even with only secondary enforcement) then increased belt use to the majority of drivers. Once the prevalence leveled off at approximately 60% to 70%, more active primary enforcement was needed to reach the remaining non-users. Apparently, normative effects of the law achieved a large part of the first major improvement in belt use and associated safety gains, while deterrence effects increased in importance for those starting to use belts later.

Keep in mind that the field of public health has firmly found that it is almost always easier and more effective to eliminate the need for individual (especially repetitive) behavior change (see Chapter 3). In the case of safety belts, public health professionals also worked on a parallel strategy to help protect car occupants from injuries without requiring individuals to engage in the behavior of using a safety belt every day – advocating for and achieving the mandatory installation of air bags in all automobiles sold in the United States. The design of airbag technology drew strongly on the sciences of physics and biomechanics, and advocacy caused regulatory tools to then be used to ensure the devices were universally installed in cars. This change in the environment around occupants of vehicles automatically protected all people in cars every day, advancing safety beyond that afforded by belts alone and providing significant protection also to those who remained non-users of belts despite the normative and deterrence effects of compulsory belt use laws.

Integrating Diverse Theories in Public Health Law Research

As the preceding chapters have shown, there are many tools available for opening the black box. Legal epidemiology researchers can draw upon a variety of theories developed by sociolegal scholars to explain how laws are put into practice and how they influence environments and behaviors. Similarly, it is possible to integrate laws within general social and behavioral theories. And it is in fact possible to do both at the same time. These methods make it possible to substantially improve the validity, utility, and credibility of health research on effects of laws and legal practices. There is no simple single theory, no easy way to integrate all theories into a single

grand theory, and no prescribed way to use theory. We now illustrate this diversity in detail by applying multiple theories to another example.

Thirty-four states in the United States have statutes that explicitly criminalize sexual behavior of people with HIV under at least some circumstances (Centers for Disease Control and Prevention, 2021). In the remaining states, people with HIV have been prosecuted under various general criminal laws for exposing others to HIV or transmitting the virus (Lazzarini, Bray, & Burris, 2002). "Criminalization of HIV," as this phenomenon is known, has been criticized on a number of grounds (Hoppe, McClelland, & Pass, 2022). There are many cases of the criminal law being used to severely punish assaultive behavior by people with HIV – spitting or biting, for example – that does not pose a significant risk of transmitting HIV. Similarly, many of the statutes are written broadly (or poorly) enough to cover sexual behavior, such as kissing, that has no realistic prospect of transmitting the virus (Galletly & Pinkerton, 2004; Wolf & Vezina, 2004). As applied to sexual behavior that does pose a significant risk of HIV, the laws generally require disclosure, safer sex (for example, condom use), or both. Here we focus on the main question for public health law research: whether criminal laws requiring disclosure of HIV status to partners lead to fewer instances of sexual HIV exposure and a reduction in the incidence of HIV in the population.

This is a difficult question to answer, for many reasons. There is no way to randomize exposure to the treatment (law). And in this case, quasi-experimental designs are also difficult. To begin with, we lack an objective measure of the outcome. Data on incidence of HIV infection are lacking. Incidence is estimated on the basis of statistical analysis of HIV tests, which may come months or years after infection. Although technologies now exist that make it possible from a test to determine whether the person being tested was recently infected or not, generally we cannot attribute HIV infection events to specific times or places. Studies of the impact of criminal law on HIV therefore use self-reported sexual behavior as the main outcome measure (Burris, Beletsky, Burleson, Case, & Lazzarini, 2007; Delavande, Goldman, & Sood, 2007; Horvath, Weinmeyer, & Rosser, 2010). Even if a better outcome measure were available, we would be faced with the problem that many factors influence HIV infection and HIV risk behavior aside from the law. These range from population prevalence of HIV (the higher the prevalence the greater the likelihood that a given partner will have HIV) to availability and use of antiretroviral treatment (which reduces infectivity) to local norms of condom use to perceptions of risk about HIV. Widespread treatment could reduce HIV incidence even if no one practiced safer sex or disclosed infection; people in a low-prevalence population could practice unsafe sex against the law yet incidence would not change.

There are also challenges in defining the exposure to law across many jurisdictions. The laws differ from state to state, sometimes substantially; places without statutes are not places where law is absent – everywhere the same behavior may be charged as a crime under a general heading such as assault. Finally, accurately measuring whether people even know what the law is can be difficult to do in a way that does not bias later responses by prompting people to think about law. Moreover, because of the overlap between beliefs about law and preexisting social norms and beliefs, people

may know about the law without knowing about it—a person who states correctly what the law is may have actual knowledge of the law, or merely assume that the law exists because of beliefs about what is the right thing to do. We end up with observational research that can correlate attitudes about what is right and legal with self-reported behavior and various demographic characteristics, but that has very limited ability to explain whether or how law is causing behavior change (Horvath et al., 2010). Or we resort to mathematical modeling that can test logical hypotheses but ultimately relies on unverifiable assumptions about behavior (Galletly & Pinkerton, 2008). This is precisely the sort of case in which theory about how law could lead to changes in health and health behavior can help us design studies that can shed credible light on the impact of law.

COMPLIANCE MODELS

Since we are interested in whether a law is influencing behavior, it makes sense to start with theories that explain why people obey the law. We will use the theories canvassed in the preceding chapters to generate testable hypotheses that will allow researchers to fill in the black box between an HIV-specific criminal law and sexual behavior.

Knowledge of Law

The threshold question in any compliance theory is whether people actually know what the law is. If they are not aware of the law at all, then their behavior can hardly be said to entail "complying" with it. The first hypothesis follows:

1. Sexually active people are aware of the law regulating the sexual behavior of people with HIV.

Generally speaking, evidence suggests that specific knowledge of the law in the general population is low. That is, most people are not lawyers and could not locate a specific provision in the code or define the elements of a crime. At the same time, people may have a pretty good idea of what is "against the law" simply on the assumption that behavior they regard as bad is also illegal. Applying this heuristic to HIV works pretty well, in that most people (including most people with HIV) seem to believe that it is right to protect or disclose to a partner (Horvath et al., 2010), and failure to do so under at least some circumstances could be prosecuted in every state in the union. Burris and colleagues used two measures in their study: the belief of the respondent that the law prohibited sexual behavior without disclosure of sero-positive status or use of a condom, and the actual law in the state of residence (Burris et al., 2007). That approach allowed the researchers to explore both objective and subjective pathways for legal effect. In contrast, Galletly and colleagues surveyed people with HIV in one state to find out not only whether they were aware of a specific law but also how well they understood its provisions and where they had learned of it (Galletly, DiFranceisco, & Pinkerton, 2008). Armed with a reasonable measure of legal knowledge or belief, we can explore compliance.

Criminology: Deterrence

In Chapter 5, Jennings and Mieczkowski explain that criminological theories of compliance – deterrence and labeling – begin with the assumption of rationality. The individual, aware of the law and having some beliefs about its enforcement, will make behavioral choices on the basis of a "utilitarian assessment of pain and pleasure." In our case, the law proposes to punish people with HIV who have sex without disclosing their status or using a condom. The deterrence hypothesis holds that a person will comply with the law if he or she believes that detection and punishment are sufficiently likely and severe enough that the prospect of future pain outweighs the attraction of current pleasure. For example, in Klitzman's qualitative study of attitudes toward these laws, one participant described "how the threat of such a law had altered his own actions after he made 'a fatal mistake' by not disclosing to a woman who later said that he was trying to kill her and that she could report him to the police. He explained that this legal threat motivated him to alter his behavior with future partners" (Klitzman, Kirshenbaum, Kittel, et al., 2004).

In this model, rational choice is not a hypothesis but a premise. We assume that people who know about the law will make a rational choice. The causal diagram (see Figure 5.1) posits that these beliefs will be influenced by "direct and indirect exposure" to law – some combination of personal experience with law enforcement, such as being warned about unsafe behavior, and indirect experience, such as reading about prosecutions in the news. These experiences contribute to core beliefs about the certainty, celerity, severity, and equity of punishment for violating the law. This in turn produces two hypotheses to test:

2. People who have had more experience with the law are less likely to report sexual behavior inconsistent with the law.
3. People with positive beliefs about certainty, celerity, severity, and equity will be less likely to report sexual behavior inconsistent with the law.

Chapter 5 discusses both scenario-based and survey methods for assessing these elements. In the case of HIV criminalization, the latter are illustrated by Burris and colleagues (2007). To measure experience with law, subjects were asked whether they were aware of people being arrested for various acts covered by the law, and how much they knew about these cases. The perceived likelihood of being caught was measured by a set of Likert-scaled items about the likelihood of being caught for activities such as unprotected sex. The perceived severity of the sanction was measured with a set of Likert-scaled items such as "I'm not worrying about jail when I have sex or shoot drugs." The responses were then scaled to create variables for each concept. No significant relationship was found between experience and compliance, and the finding as to certainty or severity was intriguing: people who scored higher on the severity and certainty scales were more likely to report compliance with the law, but with some minor exceptions knowledge of the law was not associated with compliance. Thus people who were generally more concerned about being punished for a variety of actions were more likely to practice safer sex or disclose HIV to a partner, but this was not apparently a product of the specific law at issue.

Economics

Criminological deterrence theory is virtually identical to standard economic analysis of why people obey criminal law. Like criminology, economics assumes a rational person who will seek pleasure and avoid pain (that is, maximize utility) on the basis of an objective assessment of the probabilities of each. Following the theory, people who are "risk-neutral" – that is, who neither seek risky engagements nor prefer to avoid them – will act rationally by assessing whether the expected value of punishment is equal to the expected benefit to be gained from the behavior (Becker, 1976). These individuals will comply with the law, therefore, if the expected punishment is set higher than the expected value of benefit gained. These expectations are influenced by the probability of detection, the certainty of punishment, and the magnitude of the sanctions (Polinsky & Shavell, 2007).

Delavande, Goldman, and Sood used this assumption in a paper that also tried to account for the chances of a person actually getting into trouble. Their basic formula illustrates how economics can be used to state a set of deterrence hypotheses:

> Consider a representative risk-neutral HIV+ person who resides in a state that prosecutes HIV-infected individuals for exposing others to the virus through sexual contact. Let $\Pi > 0$ denote the disutility from being prosecuted and P (pros) be the probability of being prosecuted. The probability of being prosecuted in turn depends on the likelihood that a potential partner would report the sex act to the state and the probability that the state would prosecute conditional on receiving a report:
>
> $$P(Pros) = \mathrm{P}(reported) \times P(presecuted\ reported) = P(reported) \times \rho$$

The parameter ρ is a key policy of interest – states with higher values of ρ have more stringent law enforcement against HIV+ individuals (Delavande, Goldman, & Sood, 2007, p. 5).

Using this formulation of deterrence, they applied data on sexual behavior to test whether more stringent law enforcement increases safe sex, decreases disclosure of HIV-positive status, and decreases the probability of a sexual encounter. (Unlike other studies discussed here, this one found that aggressive prosecution had all these effects, which, if nothing else, reminds us that methodological and theoretical choices matter.)

Criminology: Labeling

Deterrence in criminology and economics assumes a rational actor calculating risks and benefits. There are plausible reasons for applying this rationality assumption to sexual behavior, but sex can also be seen as the product of social forces. Labeling theory has immediate plausibility in analyzing the effect of criminal laws governing sex because of the basic question of whether having unsafe sex or failing to disclose should be considered "wrong," or whether people who engage in unsafe sex should be considered "criminals." The labeling theory causal diagram (see Figure 5.2) suggests that some individuals with HIV may respond to the label of criminal by defining themselves as rebels or

deviants, or that a social-level view of people with HIV (or gay men or sexually active people) as criminal may feed the development of an offender subculture or may deter people from disclosing their HIV status or seeking behavioral health services. Labeling theory suggests a number of interesting hypotheses, including the following:

4. People who internalize the label of criminal will be more likely to report sexual behavior inconsistent with the law.
5. People who perceive that society regards their behavior as deviant will be more likely to report sexual behavior inconsistent with the law.
6. The more people are aware of prosecutions or other negative societal reactions to the "deviant subculture," the stronger the effect of the label.

Although studies of HIV criminalization have not yet explicitly deployed labeling theory, a number of studies suggest ways these hypotheses could be tested. Dodds, Bourne, and Weait (2009) used semi-structured interviews with sexually active gay men in Britain to investigate the effects of criminalization on attitudes and behaviors. Some men, they found, reacted to the labeling of sexual behavior as a crime by, as it were, acting more like criminals, "maximizing their anonymity, and being less open about their HIV status, avoiding disclosure" (p. 141). Also using interviews, Mykhalovskiy (2011) found that the labeling of sexual behavior as criminal might influence behavior along another, unexpected pathway: HIV risk-reduction counselors reported concerns about openly discussing questions of disclosure and condom use out of fear their records might be subpoenaed in a criminal case. Social attitudes toward unsafe HIV sexual behavior, or people with HIV generally, can be measured through survey research, such as Herek's studies of HIV-related stigma (Herek, 1988, 1993; Herek, Capitanio, & Widaman, 2002).

Procedural Justice

The challenge with sex is that it is usually conducted in private. Likewise, only an extremely small percentage of sexually active people with HIV are arrested or prosecuted (Lazzarini et al., 2002), so the objective chance of detection and punishment is small. Moreover, as labeling theory suggests, people's views on the "rightness" of the law or the fairness of its implementation could also influence compliance. Procedural justice theory offers a way to get to at least two important subjects: internal motivation to comply, which matters a good deal when we are talking about what is in essence an uncontrolled social behavior conducted in private, and the fact that government regulation of sex, not least gay sex, is highly contentious. It is possible that compliance of people subject to the law will be influenced by their views about whether the government should even be making these rules, or by their experiences with the "system." Procedural justice theory provides a way to understand and study these possible effects (Tyler, 1990).

Figure 6.1 is a causal diagram of the effect of procedural justice on compliance with law. For our purposes, we focus on the segment of the pathway linking the experience of procedural fairness, "legitimacy" (defined in terms of "obligation" and "trust and confidence"), and compliance. Chapter

6 explains, "[w]hen people ascribe legitimacy to the system that governs them, they become willing subjects whose behavior is strongly influenced by official (and unofficial) doctrine. They also internalize a set of moral values that is consonant with the aims of the system." Perceptions of procedural fairness – "fairness of decision making (voice, neutrality) and fairness of interpersonal treatment (trust, respect)" – are strong predictors of people's sense of governmental legitimacy.

Both legitimacy and fairness resonate in interesting ways when it comes to criminalization of HIV. It is easy to fall into the error of assuming that people at elevated risk of HIV – people who use drugs, men who have sex with men, or people who sell sex – are, by virtue of those behaviors, fundamentally different from other people in society. At the same time, it is plausible that people engaging in illegal acts such as drug use or prostitution may be more likely to have experienced what they feel is unfair treatment at the hands of authorities, and that they may not be as willing as others to accept an official view that drug use or prostitution is wrong. Similarly, gay men as a group may be more likely than others to reject a role for government in regulating sexual behavior, and to perceive laws that do so as a product of an unfair political system. The procedural justice perspective supports a number of interesting hypotheses about compliance with HIV-specific criminal laws, including the following:

7. People who have had positive experiences of procedural justice in their encounters with authority will be more likely to regard the law regulating the sexual behavior of people with HIV as legitimate.
8. People who regard the government as legitimate will be more likely to comply with laws regulating sexual behavior among people with HIV.

Qualitative research suggests that concerns about intentions behind these laws and fairness of their implementation resonate with gay men. Klitzman's interviewees had complex feelings about these laws. Some endorsed the mandate for responsibility, while others were concerned about effects on safer sex and testing. Others feared unfair prosecutions and believed that bedroom behavior was properly a private, not governmental, domain (Klitzman et al., 2004). And perceived fairness may interact with perceived effectiveness of the law – if the law does not reduce HIV transmission, it is not fair to burden certain people with obligations or restrictions that do not apply to others. The closest thing to a test of these hypotheses in the literature can be found in the study by Burris and colleagues (2007). The study adapted items from Tyler (1990) to investigate both the experience of procedural justice and the extent to which respondents regarded the government as a legitimate regulator of sexual behavior. As a group, respondents (a convenience sample of people recruited at high-risk sex and drug-use venues) did not have strong feelings on either issue. Most of them did believe that it was morally right for people with HIV to disclose or practice safer sex, and this belief was consistent with their self-reported behavior – but expressing these beliefs was not related to beliefs about the law or whether a specific law actually applied to the respondent. The authors inferred from these results that norms did matter to sexual behavior,

but that they were operating independently of the law. Law, in other words, was not playing a major role in sexual choices (Burris et al., 2007).

Public Health

There are many examples of public health laws directed at individual behaviors. In public health, however, changing the environment is often a more expeditious and effective way to promote health than intervening directly with individuals to change their behavior. Law can be a means of inducing changes in social, physical, and economic environments that change people's behavior or reduce individuals' exposure to unhealthy products or conditions (see Figure 3.1). Because law may also be a factor in exacerbating risk – for example by causing high levels of incarceration in some communities that expose many people to higher-prevalence prison environments and disrupt sexual networks – removing a law can be an important environmental intervention. A public health model of legal intervention suggests many hypotheses, including the following:

9. Laws and regulations that reduce the cost to consumers and increase ease of access to condoms will increase condom use and decrease rates of unprotected sex, unplanned pregnancy, STIs, and HIV transmission.
10. Laws that alter the physical layout and operating rules for public sex venues will reduce unsafe sex.
11. Laws that raise income among young Black and Latinx men will reduce incarceration rates, reduce HIV among the populations, and reduce subsequent transmission to others.

Law might be used to require specific locations to provide condoms at no cost to the user, for example, requiring condoms be readily available in bathhouses. Regularly seeing condoms in a sex venue could change social norms around condoms and their acceptability, as well as increasing their use simply because of ease of physical access to them at a moment when they might be needed. Such an intervention in New York City bathhouses was associated with a significantly greater likelihood of consistent condom use during anal sex in venues receiving the intervention compared to control venues (Ko, Lee, Hung, et al., 2009). The basic logic applies to other locations, with regulations potentially requiring condom vending machines in rest rooms at high schools, colleges, gas stations, convenience stores, and so on. Ending legal practices that discourage condom use could also be effective. For example, police implementing laws against prostitution in some places reportedly treat a woman's possession of a condom as evidence of illegal activity, discouraging sex workers and other women from possessing them (Blankenship & Koester, 2002).

Law may also promote safer sex by requiring changes in the layout or operating rules of establishments that cater to people looking for sexual encounters. Courts and city councils have taken this approach over the course of the HIV epidemic, issuing orders and ordinances variously requiring public sex venues to remove doors from cubicles, enhance lighting, post safe-sex rules or warnings, and eject patrons having unsafe sex (Burris, 2003). William Woods and colleagues

(Woods, Binson, Pollack, et al., 2003; Woods, Euren, Pollack, & Binson, 2010) surveyed 75 gay bathhouses and sex clubs across the United States and reported that all were engaged to some degree in offering HIV prevention, and that most clubs that allowed sexual behavior among patrons had instituted one or more environmental interventions. Unfortunately, there are no published studies of the effectiveness of these efforts.

Thinking about how environments influence behavior tends to shift the focus from the way individuals cope with a given set of stimuli (that is, promoting "good choices") to promoting environments that maximize good options. Thus, in a public health framework, a researcher might be less likely to ask whether criminal law encourages safer sex than to investigate the "social determinants" of HIV transmission. For example, unemployment and lack of opportunities for full participation in society (along with other related factors) result in very high incarceration rates among US Black young men. In prison, many of those men acquire HIV – prisons appear to be a major "hot spot" for HIV transmission (World Health Organization, United Nations Office on Drugs and Crime, & UNAIDS, 2007). Social networks are important factors in the spread of HIV (Ward, 2007). Incarceration disrupts networks as those left behind in the community form new relationships (Khan, Wohl, Weir, et al., 2008). A variety of laws and regulations affect employment, business investment, and education and skills development in ways that increase or decrease employment opportunities for this population. A quasi-experimental study of 73 metropolitan areas over 8 years estimated that a $1 higher minimum wage at baseline was associated with a 27% lower rate of new HIV cases among heterosexual Black residents (Cloud et al., 2019). Such economic policies, targeting the social determinants of health rather than a specific prohibition of unsafe sex, may be the most important focus of legal epidemiology.

Modeling Law Within Broader Social and Behavioral Theory

Our discussion thus far applies well-developed theories about how law works. They are quite rich, and provide many insights for public health law researchers. At this point, however, the reader may notice the bias in the foregoing inquiry: we have implicitly assumed that law is a significant, or at least detectable, driver of behavior. Rather than construct the question in a framework of how law influences behavior, a researcher could start with a general behavioral theory in which law is simply added as one of many factors and not treated as the preeminent effect to study.

The Theory of Triadic Influences

The theory of triadic influences (TTI) presents a detailed scheme for understanding the many factors that produce an intention to behave in a certain way and, ultimately, the behavior itself (see Chapter 8). It integrates and expands upon other theories that have shown the importance of three proximal factors to a behavioral intention: the individual's attitudes toward the behavior, the individual's perception of social norms and beliefs concerning the behavior; and the actor's sense of self-efficacy or behavioral control in reference to the behavior. Figure 8.1 highlights main pathways along which law may be hypothesized to influence these constructs.

A law can influence an individual's attitudes toward a behavior along two substreams. In the "cognitive-rational" substream, law provides information about the behavior society expects or regards as desirable. This information may also be experienced more emotionally or affectively in interactions with social institutions. In both instances, the streams lead to an attitude toward the behavior composed of both conscious/rational elements, and more emotional/affective ones. And of course, the legal inputs in this process are interacting with other ones as well, such as information about safe sex and HIV.

Law may influence behavior via self-efficacy or behavioral control if it makes a behavior easier to adopt. In our example, a law requiring universal condom use the first-time people have sex with one another, as Ayres and Baker (2004) have proposed, could in theory reduce the emotional and social barriers to proposing condom use when approaching sexual relations. Here, too, the broader behavioral science framework easily accommodates other possible influences on condom use, such as sex education or the provision of condoms in sex venues.

Finally, law can work via the social-normative stream. The theory posits that people will be influenced by how others perceive their behavior. We are sensitive to general social norms and the values of our important associates. Law may be taken as a reflection or reinforcement of social disapproval of unsafe sex, bolstering the norm of safer sex or disclosure. The innate desire to please others in relationships and to avoid conflict may promote safer behavior or disclosure, though of course the social milieu may send quite contradictory signals. A perceived norm of disclosure may be blunted in its effect on behavior by the perception that people with HIV are not considered desirable sex partners.

A great variety of hypotheses about HIV criminalization and sexual behavior can be generated and tested within this framework. One strategy is to embed standard compliance theory within the TTI. For example, one can conceptualize deterrence as operating via knowledge and expectancies; certainty, celerity, severity, and equity become variables within the pathway of rational responses to the environment. Or one can treat law as a distal influence on the social-normative stream, influencing others' behaviors and attitudes and the actor's perceived norms. The richness of the model makes it possible to test hypotheses about direct legal effects or to link tests of law to broader behavioral questions. Examples include the following:

12. People who know about the law are more likely to perceive a norm against having sex without disclosing HIV status or using a condom.
13. People who perceive a norm requiring safer sex or disclosure of HIV status are more likely to disclose or practice safer sex.

Hypotheses of this sort can be explored in interviews. Several of the respondents in the study conducted by Dodds and colleagues (2009)

> feared condemnation from their local gay community should it become known that they had engaged in unprotected sex as a diagnosed man.... A criminal prosecution case had the potential to make public such behaviour and raised the fear of judgment from peers and the negative social consequences of being identified as morally reprehensible. As a result they were particularly cautious about avoiding the circumstances that might lead to such an accusation. "I'm very, very acutely aware of kind of where the law is on it, you know? And although I could say that he knew I were positive there, [pause] I could possibly still be ostracized if it came out in the community that I was the one who infected him and all of this sort of stuff. I didn't want that really and I didn't fancy being prosecuted" (Late 30s, diagnosed 18 years) [Dodds, Bourne, & Weait, 2009, p. 140].

An advantage of the TTI and several of the theories it integrates is that there are well-developed measurement approaches to eliciting information, scaling, and quantifying the results for purposes of predicting behavioral intentions and behavior. The survey designed by Burris and colleagues drew on the theory of planned behavior (Burris et al., 2007). In addition to a variety of items that explored people's own attitudes toward safer sex and disclosure, perceived behavioral control used true-false statements such as, "If I am sexually aroused I can stop before sex to use a condom." Perceived social norms were investigated with true-false statements such as, "People I know best expect that I will always discuss my HIV status with partners before having sex." The integration of behavioral theory and legal compliance avoids the assumption that law is a primary driver of behavior while at the same time allowing law to be investigated along the many plausible pathways of effect.

Economics

Economic theory rests on "rational actors" who seek to maximize their own wellbeing subject to constraints, such as income and time, thereby naturally weighing the perceived benefits and costs of different actions. Chapter 7 offers a more complex account of the operation of law in an economic framework. For most economists, a perfectly competitive market generates the most efficient allocation of society's resources and is therefore optimal, and the sole (or at least predominant) rationale for legal intervention in the market is to ameliorate market failures that prevent a perfectly competitive market from operating. Some might feel uneasy about applying market language to choices and actions involving intimate encounters between individuals, but a longstanding closely related theory in sociology does exactly that. Social exchange theory (Blau, 1964; Cook, Cheshire, Rice & Nakagawa, 2013; Homans, 1958) deems all social interactions (not just economic transactions) to be characterized by persons attempting to maximize their gain for a given investment, and has long been applied to human mate selection processes (Goode, 1970, 1971). The theory is not without its critics (Rosenfeld, 2005), but our purpose here is merely to illustrate application of such theory to the example before us.

Assuming that individuals seeking sex and other dimensions of an intimate relationship attempt to maximize their return on investment, for this "market" to work well everyone must have full

information about the relevant dimensions under consideration in the transaction. Information on HIV status of potential partners is one such relevant data element, and laws requiring disclosure of sero-positivity are attempting to improve the operation of this market by improving information availability. The objective could be furthered by related regulations, such as requirements for regular automatic HIV testing at all preventive health care visits. As always, possible side effects of such efforts to improve information in this market must be considered, such as the risk that disclosure of HIV status, and reliance on that (potentially incorrect) disclosure by others might increase risk of HIV spread by reducing condom use, an outcome suggested by some recent studies (Butler & Smith, 2007). Likewise, fear of prosecution may influence the decision to be tested by raising the "cost" of knowing one's status (Kesler et al., 2018).

"Law and Society" Research

The theories we have seen so far all tend to treat law as a distinct thing, a piece of information with an objective set of characteristics that acts, in a causal chain, on environments and people that are separate and distinct from the law. The law and society tradition moves beyond how people "use" or "obey" law to bring critical empirical attention to how the rule of law is socially constructed, enacted, contested, and perpetuated in social fields (Cooper, 1995). While there is certainly a body of evaluation research in the law and society literature, "the unique contribution of the law and society approach," Robin Stryker writes in Chapter 4, "is to suggest mechanisms of legal effect emphasizing *meaning-making*." This literature provides powerful theoretical and research methods for getting at how both legal agents and legal subjects understand their roles, their ability to act within a legal framework, and indeed the nature of that legal framework itself (Yngvesson, 1988).

The law and society approach doesn't just allow researchers to ask about the effect of laws in different ways, it suggests different questions. If law is within society and inside people's heads – a way of thinking, a form of meaning – the question is not so much how law influences individual behavior as how law shapes the meaning of acts and the identities of people, from which behavior flows. Law isn't just a set of expressed rules that instruct people specifically how to act in particular situations. "Law" is a repertoire of strategies for getting by, or an alien intrusion to be contested, or just one possible script for understanding one's situation (Ewick & Silbey, 1998). Laws more broadly contribute to the social structuring of expectations of what should and will happen, and how all that can be explained. So, for example, Musheno (1997) used case studies of people with HIV at the margins of society – welfare beneficiaries, drug users—to show how "[p]revailing ideologies and belief systems serve to codify what a person in a given position is likely to perceive or expect to accomplish when confronted with trouble. . . ." (Musheno, 1997, p. 103).

Law and society research, with its focus on meaning, often draws upon qualitative methods, including interviews and participant observation, that allow people the opportunity not simply to explain law in their own words but to come to law when they are ready to see it. The concern that the researcher not define the law for the subject has produced some interesting methodological refinement. In their work on how law was influencing the lives of people with disabilities, for

example, Engel and Munger (1996) used an "autobiographical" approach in which subjects told and repeatedly edited their life stories. Rather than starting with knowledge of law, or even asking specific questions about law, the researchers waited for the law to emerge on its own in the stories. Law, they found, was not just important when a formal claim or command was made. "Rights may be interwoven with individual lives and with particular social or cultural settings even when no formal claim is lodged. Rights can emerge in day-to-day talk among friends and co-workers; their very enactment can subtly change the terms of discussion or the images and conceptual categories that are used in everyday life. Such subtle yet profound effects may be overlooked in traditional studies of legal impact, yet they can be detected through the analysis in depth of life stories" (Engel & Munger, 1996, p. 14).

Law and society methods are well-suited to understanding how law operates as a meaning-making and meaning-expressing social activity. Public health generally has had its greatest success in interventions that work by changing the social and physical environment, which can both influence individual behavior and reduce exposure to toxic unhealthy conditions (see Figure 3.1). A sociolegal perspective could be deployed to investigate how the legal classification of homosexual behavior as a crime, or the long exclusion of gay people from marriage, might be shaping sexual relationships and the risk of HIV (Burris, 1998a; Chauncey, 1994). Here we consider two narrower hypotheses in the law and society vein:

14. The meaning and implementation of HIV criminalization laws and court decisions will be mediated by how HIV service organizations interpret them and integrate their interpretations into behavioral counseling.
15. Court proceedings and decisions in HIV criminalization cases will be shaped by underlying beliefs about race, nationality, class, and gender.

Working in an interpretive tradition, law and society research often is not framed in terms of testing a specific hypothesis. Nonetheless, researchers pursue specific questions within clearly stated theoretical parameters. Mykhalovskiy (2011) studied HIV criminalization as a case of "the social organization of knowledge," focusing on how criminal law shaped the environment of HIV testing and counseling organizations and the people within that environment. He used interviews and focus groups "designed to elicit experiential narratives in which participants reflected on the topic of criminalizing HIV nondisclosure in ways grounded in their actual, day-to-day experiences" (p. 3). His "[a]nalysis of interview data was focused on bringing into view how an abstract criminal law obligation is made meaningful and expresses itself in people's lives through multiple social and institutional channels" (p. 3).

The work added insights into compliance. Mykhalovskiy (2011) found a great deal of confusion among his subjects about the meaning of the legal concept of "significant risk," which the courts in Canada used to create the dividing line for criminal liability in a sexual encounter. People with HIV seemed to have fairly precise knowledge of the rule – but didn't understand what it meant for

actual behavior. For their part, counselors interviewed were equally confused, and for them the problem was compounded by having to offer guidance based on some resolution of the legal and public health advice on risks. Many felt that what they would endorse from a public health point of view as "safer sex" might be criminal under the "significant risk" approach used by courts. But beyond the difficulties of "counseling with an eye on the law" (p. 5), Mykhalovskiy found signs of a process in which law changed the purpose and contents of risk reduction counseling, which in turn seemed to be changing the law: counselors were starting to promote disclosure as a way to avoid legal trouble, beyond its utility as a risk-reduction strategy, and in turn lawyers were noting that prosecutors and judges were "citing to the fact that this person was counseled by public health nurse X on these three occasions to disclose and use a condom and then that becomes used to sort of bootstrap the criminal law obligation into you have an obligation to disclose and to use condoms, which in fact is not what the Supreme Court said. . . ." (p. 7). In this instance, law was not just influencing compliance—compliance was influencing law.

Law and society approaches can be used to explore in a richer way how law is shaping meaning and behavior. It can also be deployed to understand how a variety of social factors and processes influence how law is made and used. Matthew Weait (2007), who conducted close textual analysis of court opinions, found that notions of risk and responsibility interacted with gender roles, race, and nationality to shape how judges applied legal rules in HIV exposure cases. His work illustrates how a public health law may actually be doing very different kinds of work, policing moral and ethnic boundaries. Many of the most influential social analyses of HIV have explored law's role in the mediation of HIV's shame, stigma, and inter-group conflict (Altman, 1986; Bayer, 1989; Patton, 1990). Social theory can help researchers explore the many legal influences on health and health behavior that do not work through specific behavioral rules directed at individuals.

Conclusion

This chapter illustrates the use of theory and tools from a range of social and behavioral sciences and legal research traditions to study mechanisms of legal effect in legal epidemiology research. Such theory largely addresses how law shapes health-relevant behaviors, but theory also guides investigation of legal mechanisms that influence health by changing institutions and environments. Scientists and legal scholars can and should draw upon theory to clarify and guide research questions, shape the design of studies, increase specificity of hypotheses to investigate, and improve the data collected or used to directly test those hypotheses. Results from such studies then can better illuminate what happens between the passage of a law and changes in institutions, environments, and behaviors that enhance the health of the population. Better understanding of mechanisms of effect in any specific case, that is, confirming a theory in one situation, also substantially improves the generalizability of a successful public health law in one area to other times, places, settings, and other public health problems.

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