

Integrating Diverse Theories for Public Health Law Research

A Methods Monograph

PHLR

Making the Case for Laws that Improve Health

PUBLIC HEALTH LAW RESEARCH

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A Methods Monograph
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Summary

Theoretically grounded research 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. PHLR researchers can draw upon a variety of theories developed by socio-legal 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 and economic theorists posit that people will behave rationally 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 risky exposures, 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 be 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.

INTRODUCTION

The Methods Monographs 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. Theoretically grounded research illuminating mechanisms of legal effect has at least three important benefits for public health law research and practice:

- **Defining the phenomena to be observed.** Theories of how law influences structures, behaviors and environments helps 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.** Study of how law works provides evidence of plausible mechanisms that can be used to assess causation. Theory helps unpack a law into regulatory components that may have varying contributions to the overall effect, and helps identify dose-response relationships between specific legal components or dimensions and health-related outcomes.
- **Guiding reform and implementation.** Assuming confidence that law is causing an effect, research on how it does so provides important guidance on ways to influence the magnitude of the effect, reduce unintended consequences or produce the effect more efficiently.

As the other Monographs 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. Rather, 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. This monograph 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, compliance 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, and/or the relationship between the required behavior and a health outcome may be very strong. In some cases, local differences in the event unfolding in the black box (for example, the level of enforcement) may be small, or have little impact, so that with enough 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, one way to open the black box is to place the law within a causal diagram that depicts the process 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 expected to have no effect.

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, 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 [Wagenaar & Komro](#)). 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 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 a social norm, and if it 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 are typically 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 a demonstrable 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 in PHLR is 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 in a causal web between them. And, understanding the causal web requires good theorizing.

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.

Guiding Reform and Implementation

Having confidence that a law is having an effect on health outcomes is not the end of the PHLR inquiry. Logically we should desire that law have the largest positive effect it can possibly have, with the fewest negative side effects. 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. Documentation of implementation can identify practices that enhance or reduce the law's impact. Some enforcement strategies may be better than others, or 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 was 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 impact 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 60-70%, 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 [Komro, O'Mara and Wagenaar](#)). 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 Monographs have shown, there are many tools available for opening the black box. PHLR researchers can draw upon a variety of theories developed by socio-legal 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 by applying multiple theories to a single example.

Thirty-four states in the United States have statutes that explicitly criminalize sexual behavior of people with HIV under at least some circumstances (Bennett-Carlson, Faria, & Hanssens, 2010). 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 (Burris & Cameron, 2008; Csete, Pearshouse, & Symington, 2009). 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 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: Do 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 or impossible. To begin with, we lack an objective measure of the outcome. Data on HIV incidence are lacking. Incidence is estimated based on 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 et al., 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 like 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 pre-existing 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, Weinmeyer, & Rosser, 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 Monographs 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, Weinmeyer, & Rosser, 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: (1) the belief of the respondent that the law prohibited sexual behavior without disclosure of sero-positive status or use of a condom, and (2) 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, Galletley 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, Difrancesco, & Pinkerton, 2008a, 2008b). Armed with a reasonable measure of legal knowledge or belief, we can explore compliance.

Criminology: Deterrence. 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 based on 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 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 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 (Figure 1.1 in [Swanson & Ibrahim](#)) 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 newspaper. 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; and**
- 3) People with positive beliefs about certainty, celerity, severity and equity will be less likely to report sexual behavior inconsistent with the law.**

The Monograph by [Jennings and Mieczkowski](#) discusses both scenario-based and survey methods for assessing these elements. In the case of HIV criminalization, the latter are illustrated by Burris et al. (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 finding as to certainty/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) based on an objective assessment of the probabilities. Following the theory, people who are “risk-neutral” – that is, who treat the value of punishment as equal to the benefit to be gained from the behavior -- will comply with the law if the punishment is set higher than the value of benefit gained divided by the probability of detection (Polinsky & Shavell, 2007).

Delevande and colleagues (2007) 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 positive 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 $P(\text{pros})$ be 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:

$$P(\text{pros}) = P(\text{reported}) \times P(\text{prosecuted reported}) = P(\text{reported}) \times \rho$$

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

Based on this formulation of deterrence, they used 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 4.2) 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 sub-culture or may deter people from disclosing their HIV status or seeking behavioral health services.

Labeling theory suggests a number of interesting hypotheses, including:

- 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; and**
- 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 and colleagues (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, may 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, Bray, & Burris, 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 offers a way to get at least two important questions: internal motivation to comply, which matters a good deal when we are talking about what is in essence an uncontrolled social behavior, 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 1.1 in the Monograph by [Tyler and Mentovich](#) 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. [Tyler and Mentovich](#) explain that "[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 like 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 are 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:

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 et al. (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 behavior, like wearing seat belts. In public health, however, changing the environment is often seen as 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 1.1 in [Komro, O'Mara and Wagenaar](#)). 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:

- 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, other STDs and HIV transmission.**
- 10) Laws that alter the physical lay-out and operating rules for public sex venues will reduce unsafe sex.**
- 11) Laws that improve employment among young African-American men will reduce incarceration rates, reduce HIV among this population, 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 that 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 et al., 2009). The basic logic applies to other locations, with regulations potentially requiring condom vending machines in restrooms at high schools, colleges, gas stations, convenience stores, etc. 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 lay-out or operating rules of establishments that cater to people looking for sexual encounters. Courts and city councils have taken this approach throughout 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 (2003; 2010) surveyed 77 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 (i.e. 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) results in very high incarceration rates among young black men in the United States. 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 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. These policies, rather than a specific prohibition of unsafe sex, may be the most important focus of public health law research.

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 be 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 [Flay & Schure](#)). It integrates and expands upon other theories that have shown the importance of three proximal factors to a behavior 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 1.1 of [Flay and Schure](#) 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 sub-streams. In the "cognitive-rational" sub-stream, 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 comprised of both conscious and rational elements, and more 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 have proposed (Ayres & Baker, 2004), 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 (Pathways 6, 12 and 18 in Figure 1.1 of [Flay and Schure](#)). 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 as depicted in pathways d and 10 in Figure 1.1 of [Flay and Schure](#). 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. For example:

- 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; and**
- 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:

“...[F]eared 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 judgement 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 ostracised 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 questions like: "If I am sexually aroused I can stop before sex to use a condom." Perceived social norms were investigated with questions like: "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 a "rational actors" who seeks to maximize utility as they see it. That bedrock explanation for how law influences behavior has already been discussed. The Monograph by [Chaloupka](#) offers a more complex account of the operation of law in an economic framework. For most economists, a fully free market is by definition optimum, and the sole (or at least predominant) rationale for legal intervention in the market is to ameliorate market failures that prevent a truly free market. 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; 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; Goode, 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 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).

“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 her [Monograph](#), “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 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).

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 1.1 in [Komro, O'Mara and Wagenaar](#)). A socio-

legal 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 (Burriss, 1998; 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” (Mykhalovskiy, 2011, 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” (Mykhalovskiy, 2011, p. 3).

The work added insights into compliance. Mykhalovskiy 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 more richly explore 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, 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 (Weait, 2007). 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 Monograph 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 public health law 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, and increase specificity of hypotheses to investigate. 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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