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Chapter 5
The End(s) of Judicial Process

"But what of the Castle in the Air?" the bug objected, not very pleased with the arrangement.
"Let it drift away," said Rhyme.
"And good riddance," added Reason, "for no matter how beautiful it seems, it's still nothing but a prison."
-- Norton Juster, *The Phantom Tollbooth*

We begin with institutions for resolving disputes and vindicating (or declining to vindicate) claims about harm. Within the industrial-era legal system, civil litigation was the principal mechanism for dispute resolution. Over the past several decades, however, the landscape of remedial litigation has undergone a number of much-remarked shifts. Liberalized institutional features dating from an earlier, more reformist era—including the pleading standards inaugurated by the Federal Rules of Civil Procedure, federal class action procedures, standards of tort liability capable of reaching the manufacture of complex consumer products, and statutory regimes intended to help courts reach and remedy a variety of marketplace harms—have been systematically ratcheted back. Alternative dispute resolution systems have proliferated. Meanwhile, due in part to the volume of case filings and in part to the increasing complexity of some types of litigation, the judicial system now seems to function principally to funnel disputes toward settlement. The judicial pursuit of efficiency has produced the model that Judith Resnik, over three decades ago, labeled "managerial": a system focused on processing mass claims efficiently through its various stages and largely disinclined to entertain questions about structural or systemic injustice.[1]

This chapter recontextualizes those familiar stories. Courts are one piece, albeit the most visible and contested one, of a larger puzzle that concerns the design of dispute resolution systems and institutions for the era of informational capitalism. As we saw in Part I, the movement to informational capitalism puts new resources, new economic logics, and new technological affordances into play. There is no particular reason to think either that the kinds of disputes requiring resolution should remain the same or that information-era dispute resolution mechanisms should function the same way that their predecessors did. But there is also no reason to think that the patterns now emerging are the fairest or most effective. The ongoing processes of judicial retrenchment and reconfiguration are the products of a complex encounter between the liberal-individualist paradigm underlying the traditional, court-centered system of procedural justice, the affordances that networked digital technologies offer for large-scale information aggregation and processing, and the ascendant ideology of neoliberal governmentality.

The gradual but accelerating movement to informational capitalism has confronted the judicial system with two large and interrelated problems: a proliferation of asserted harms that are intangible, collective, and highly informationalized; and an

unmanageably large and ever-increasing number of claimants and interests. I will call these problems, respectively, the *problem of harm* and the *problem of numerosity*. In the abstract, both problems might seem easy enough to solve. For example, confronted with an accelerating proliferation of complex, intangible harms, one might systematically investigate whether and how current doctrines limiting the justiciability of those harms should evolve in response, equipping courts to respond more effectively to the patterns of power and vulnerability that characterize the contemporary, informational economy. Similarly, one might logically conclude that an effective response to the problem of numerosity should entail the development of wholly new mechanisms for aggregating, sequencing, and processing disputes and attempt to develop such mechanisms. But judges cannot simply proclaim that courts are to be remade as institutions for resolving mass disputes involving intangible, collective harms without colliding headlong with longstanding institutional traditions. For some commentators, meanwhile, the logics of information-driven modernization have seemed fundamentally irreconcilable with the traditional emphasis on individualized claims, harms, and remedies.

Other factors shaping the evolution of judicial processes are much newer, however, and here the critique of judicial managerialism merits very careful consideration. As understood by its proponents, the critique also signifies intellectual dismissal. The label "managerial" denotes a stance toward procedural justice that is simultaneously totalizing and theoretically lightweight.[2] That is a great mistake. Managerialism is not simply an orientation but rather a flourishing discipline that has been called "the first neo-liberal science."[3] It is founded on a specific body of knowledge that is the subject of large and growing literatures in fields such as management theory and organization studies, and both managerial theories and the knowledge practices that they have elicited are deeply entangled with ideologies of neoliberal governmentality.

More specifically, *management* is the practice of deploying informational techniques to reshape organizations along competitively efficient lines; *managerialism* refers to the ideological framework that both posits such reshaping as desirable and prescribes how it may best be achieved.[4] Managerial theories incorporate both ideologies about the nature of effective governance and assumptions about the universe of feasible institutional strategies and practices. Such theories both presume and work to reproduce a particular type of subjectivity; the ideal subject of managerialism is self-interested but understands his or her self-interest to be aligned with the organization's larger goals. Such theories also presume and privilege managerial elites with the skills needed to coordinate productive competition, to discipline participant subjectivity in the interest of efficient production, and to keep wasteful bureaucracy in check.[5] The tradition of critical legal studies, which equates managerialism with bureaucracy, overlooks or elides this last point, but it is fundamental to understanding the implications of the managerial turn for the design of dispute resolution systems. Neoliberal managerialism does not value bureaucracy but rather efficient administration of lean and nimble production, a very different thing.[6]

We will see in this chapter that the turn toward neoliberal managerialism in dispute resolution reinforces certain aspects of the liberal-individualist procedural tradition and undermines others, producing hybrid doctrinal and procedural formations that resonate with one another in unexpected and potent ways. Most notably, the

traditional emphasis on individualized claims and individuated process resonates with neoliberalism's emphasis on marketized, individualized choice. Reconceiving judicial process within the ideology of neoliberal governmentality thus appears as a reassertion of tradition while at the same time drastically narrowing the courts' ability to address the conditions of contemporary market and commercial life. Judicial retrenchment also lends momentum to informationalized processes of organizational innovation occurring both within the court system and elsewhere in the dispute resolution landscape. Through those processes, courts are being decentered and repositioned as components within a larger assemblage for dispute resolution that also incorporates other major systems.

In short, a process of institutional reinvention is underway. The judicial system—conceived throughout the industrial era as a monolithic dispenser of one-size-fits-all justice—is being reconceived and reengineered along streamlined and diversified lines. Fundamental to that process is the conviction—incoherent from the traditional, procedural-justice perspective but pellucid from a managerialist perspective—that different kinds of disputes should be managed differently. At the same time, the rules that govern the sorting, classification, routing, and processing of disputes are being optimized to the interests of powerful information-economy actors. Some kinds of claims—most notably those for recognition and enforcement of intellectual property rights and similar proprietary interests—are afforded extensive and creative process, while others—most notably those for recognition and vindication of information privacy, data protection, consumer, and worker claims—are afforded only minimal or notional process. Scholarly critiques of judicial retrenchment and differentiation in the quality of procedural justice have remained largely court-centric and nostalgic, thereby effectively ceding questions about what an effective and just dispute resolution system for the political economy of informationalism ought to look like.

Who's Harming Who? Legal Constructions of Injury and Justiciability

Litigating information-era harms requires framing them as justiciable injuries—that is, injuries that courts can recognize and redress. According to current doctrine, to establish standing to litigate in federal court, a would-be plaintiff must establish "injury in fact," which requires a showing of harm that is concrete and particularized, actual or imminent rather than conjectural or hypothetical, fairly traceable to the defendant's activity, and likely to be redressed by a favorable decision.[7] Although state courts don't impose identical requirements, would-be plaintiffs still must allege cognizable injury. Finally, in either court system, litigants who succeed in establishing standing must establish harm if they want to recover.

As Seth Kreimer has shown, the injury-in-fact doctrine is a mid-twentieth-century invention, constructed by the Supreme Court in response to cases in which the claimed injuries were predominantly informational and seemed too general and intangible to count as redressable wrongs.[8] Put differently, the injury-in-fact doctrine is a generally reactionary (i.e., noninterventionist) institutional response to the problem of harm. Confronted with a variety of situations involving complex, informationally mediated activities and correspondingly complex harms, the judicial system erected jurisdictional bulwarks against certain kinds of claims.

In operation, the injury-in-fact construct functions as a black box, simultaneously regulating access to the courts and deflecting attention from its own internal logics. Its constituent propositions about harm, imminence, causal connection, and redressability rest on tightly constructed syllogisms that verge on circularity—a justiciable "controversy" requires actual, concrete injury; the requirement of actual, concrete injury enables courts to avoid issuing advisory opinions; courts should avoid issuing advisory opinions because their core competence lies in the resolution of actual controversies; and so on. Whether or not that reasoning can stand on its own regarding what actually qualifies as a "controversy" is not really the point, however. Like the processes of entitlement redefinition explored in Part I, the injury-in-fact inquiry is performative; it redefines the appropriate institutional role of courts at a moment of economic transformation even as it denies the possibility that courts themselves might participate in such reshaping.

We will see in this section that the injury-in-fact inquiry enshrines a distinctively neoliberalized conception of the judicial role in which courts function principally to discipline deviations from marketplace norms rather than to correct more systematic marketplace excesses. That stance foregrounds harms that are discrete, individuated, and preferably monetizable. (As we will see later in the chapter, emerging resolutions of the problem of numerosity then systematically devalue such harms, effectively reducing them to operating costs.) It positions more diffuse, systemic market and sociotechnical dynamics as presumptively normal—an approach that is calculated to leave most complaints about accountability for economic activity at the courthouse door. For courts, that approach promises a reliable strategy for avoiding the uncertainties that attend intervention in complex, far-flung activities. For litigants, it underscores the sociotechnical intractability and "facts on the ground" character of economic power. And so judicial consensus about the nonjusticiability of certain kinds of claims begins to harden in ways that appear neutral and inevitable but cannot help being ideologically inflected.

Concreteness and the Problem of Intangibility

One set of objections to justiciability concerns the asserted intangibility and generality of many information-era legal claims. Suits asserting environmental claims and, more recently, information privacy claims have been frequent targets of this objection. Citizen claims alleging environmental harm often fail because environmental protection statutes define harms that are collective and difficult to personalize.[9] In information privacy litigation, defendants argue that the ordinary acts of information collection and use that have become routine background conditions in the information environment create no cognizable injury both because tiny bits of personal information have no inherent value and because the asserted consequences of personal data processing and profiling are too nebulous. Information privacy claims, they conclude, are really no more than generalized claims about the perceived unfairness of economic and technological processes that people have not yet learned to accept.[10]

Whether such assessments are right, of course, depends importantly on baselines. Therefore, it is useful to begin by reconsidering the kinds of injuries that serve as implicit (and sometimes explicit) reference points for the managerial project of narrowing access to the courts. Over the years we have come to think of the theories of recovery commonly

employed in more traditional tort contexts involving bodily injury as concrete and precise, and in the process we have learned to overlook the fact that they are neither.[11] Both bodily injury and the seemingly more nebulous categories of "pain and suffering" and "mental anguish" serve as proxies for other types of harms that are inherently anticipatory: lost wages, loss of consortium, lost future happiness, and so on. Over time, inquiries about impairment and suffering have come to function conceptually as ways of black-boxing complex processes by which an unknowable future is translated into a calculable present.[12]

One certainly could do at least as well (if not better) at valuing and compensating privacy injury. For example, data-driven predictive profiling offers employers tools designed to predict which prospective employees will be difficult to retain for personal reasons and which current employees may be looking for work elsewhere. Armed with that information, employers can decline to hire candidates characterized as high turnover risks and can use the pool of money available for raises to retain those employees most at risk of leaving.[13] In a suit for employment discrimination, breach of contract, or violation of other applicable labor and employment laws, a court could instruct the jury to consider what an individual's services would be worth if the factors suggesting turnover risk had not been considered or if raises were distributed solely based on performance. We saw in Chapter 2 that data-driven predictive profiling enables merchants and lenders to target particular consumer populations and tailor pricing for goods and services to different kinds of attributes.[14] In a suit for violation of the consumer protection or fairness-in-lending laws, the jury could consider evidence about the services offered and the prices charged to consumers with different attributes.

These suggestions are neither far-fetched nor hypothetical; in fact, courts attempting to quantify damages in copyright and patent infringement cases already engage in very similar reasoning. They assign damages based on hypothesized reasonable licensing fees for imagined transactions and posit menus of licensing rates for nascent or nonexistent markets.[15] They determine the profits attributable to infringing activity by means of arithmetically convenient fictions—for example, awarding one-seventeenth of the profits earned by an entire album as damages for sampling a few bars of a copyrighted song on one of the album's 17 tracks.[16]

Some types of asserted intellectual property harm are impossible to quantify with any accuracy, but the copyright system has an answer for that, too: It provides statutory damages as an alternative measure for the rightholder to elect. For ordinary (i.e., nonwillful) infringement, a court may in its discretion award up to $30,000 for "all infringements involved in the action, with respect to any one work"; for willful infringement, the upper bound increases to $150,000.[17] Courts have exercised their discretion broadly, awarding damages that often seem to be based on little more than their intuitive sense of the rightness or wrongness of the challenged conduct. And the courts of appeal have uniformly rejected the argument that some such awards are so excessive that they violate due process, reasoning that even very large awards simply serve the deterrence function that Congress intended.[18]

Statutory damages also feature in many twentieth-century remedial schemes, including statutes that regulate electronic surveillance, consumer credit reporting, health information privacy, and government information practices. When interpreting these

statutes, however, courts have been notably less generous. For example, the Supreme Court has read the statutory damages provisions of the federal Privacy Act as authorizing awards only to plaintiffs who can prove actual pecuniary or economic harm.[19] More recently, in a lawsuit against data aggregator Spokeo for statutory damages under the Fair Credit Reporting Act, the Court vacated and remanded an appellate judgment recognizing standing to sue, ruling that although violations of statutorily-defined individual interests may be sufficiently particularized, some such violations—including both "bare procedural violations" and putatively small data quality errors—still may not be "concrete" enough to count.[20]

Again, one certainly could derive an account of concrete information privacy injury that meets the lenient standard set in copyright cases awarding statutory damages to plaintiffs who cannot prove actual damages. Just as the copyright plaintiff whose works are included in a karaoke DVD has lost a licensing opportunity (though the defendant might never have taken the license and it's impossible to say with any certainty how much it would have paid), so the FCRA plaintiff whose profile contained errors has lost appropriate employment opportunities (though he may never have been offered the job and it's impossible to say with any certainty what he would have earned).[21]

As these examples illustrate, both particularity and concreteness are socially constructed attributes. Judgments about the sufficiency of a claim reflect conclusions about both the locus of experienced harm and the extent of desirable accountability. Some types of asserted harms to copyright interests are extraordinarily abstract, yet the legal system assigns them concrete and particular value. We can tell both that data processing generates consequences of some sort—if it didn't, nobody would spend the resources to engage in it—and that the market considers collected reservoirs of personal data to be valuable, yet the legal system treats the possibility of harm skeptically. Both conclusions, moreover, reflect the gravitational pull of the distributive baselines explored in Part I of this book. The logic of fiat interdiction militates in favor of liability for defendants in intellectual property disputes, while the logics of appropriative privilege and innovative and expressive immunity militate against liability for information privacy defendants

Imminence and the Problem of Risk

Another set of objections to justiciability concerns whether the plaintiff can state a plausible connection to some actual or reasonably imminent harm. In the federal courts the bar is framed as jurisdictional, but state courts also are reluctant to assign liability based on risk alone. The idea is that courts should not be called upon to issue advisory opinions about problems that may never materialize. So, for example, defendants in cases involving exposure to toxic chemicals argue that exposure does not invariably lead to illness, and defendants in information privacy cases argue that plaintiffs who object to the harvesting and exploitation of their personal data have alleged no more than generalized fears about possible future events that may never occur.

To evaluate the argument that risk is not injury, it is important to begin by acknowledging the extent to which the injury-in-fact doctrine is itself oriented toward the future. The "imminence" formulation implicitly recognizes that there may be categories of harms that are felt before they have finished arriving. It opens the door to addressing at

least some claims about nascent harm and at the same time designates such claims as a focal point for judicial anxiety. In so doing, it underscores the doctrine's dual character as simultaneously reactionary and thoroughly modern.

The heightened sensitivity to nascent harm that the imminence prong of the injury-in-fact doctrine both expresses and attempts to police is in turn the product of a more general conceptual shift toward risk awareness and risk management that has occurred over the course of the modern era. In the eighteenth and nineteenth centuries, developments in statistical and actuarial modeling began to give governments and businesses new tools for measuring, defining, and profiting from populations.[22] Those developments both expressed a newly abstract, probabilistic sensibility toward concepts such as harm and loss and promised to offer ways of making such concepts more concrete and tractable. As constructs based on probability and risk crystallized, they also began to reshape the law, infusing the operation of both old and new legal institutions. We will consider administrative responses to risk sensibility in Chapter 6. In the courts, risk sensibility gave rise to new categories of damages that signified new understandings of harm. We have already seen one small example of this, in the idea of damages for "pain and suffering," discussed previously.

The promise of probabilistic reasoning about harm and liability has never been fully realized within the judicial system, however, and the problem of heightened risk remains one of the flashpoints.[23] Efforts to infuse risk sensibility into tort law have been hotly contested. Over the second half of the twentieth century, as awareness of nascent, systemic harms became more widespread, litigants began to assert new theories of injury predicated on heightened risk of future disease and/or earlier death. In a number of states, courts ruled that exposure to a toxic chemical with a known and sufficiently predictable risk profile can create liability for the costs of ongoing medical monitoring. Other courts, however, declined to follow suit, and the defense bar assailed the development of risk-based liability for toxic tort exposure as unprincipled and potentially ruinous.[24]

Decisions in information privacy cases have begun to follow the pattern established in the toxic exposure cases. The federal courts have cautiously begun developing an account of standing to sue following a data breach based on determinate levels of increased risk. Plaintiffs in data breach cases typically allege not only that they have lost time and money resolving fraudulent charges and instituting credit monitoring but also that they face heightened risk of future fraudulent charges and identity theft. Reasoning that "customers should not have to wait until hackers commit identity theft or credit-card fraud," courts increasingly have allowed both kinds of claims to proceed in cases manifesting an "objectively reasonable likelihood" of future harm.[25] They tend to think, however, that asserted risks flowing from increased vulnerability to data-driven predictive profiling are too remote and speculative to count as actionable injuries.[26]

At the same time, though, following the pattern described previously, courts have been consistently more receptive to risk-based reasoning about injury to digital property interests. In cases about unauthorized access litigated under the federal Computer Fraud and Abuse Act, which defines "loss" as including "any reasonable cost to any victim, including the cost of responding to an offense [or] conducting a damage assessment," courts have allowed recovery for the costs of evaluating and mitigating the risks created by system intrusions.[27] The test for injunctive relief in intellectual property cases is

predicated in part on the threat of continuing harm that cannot be remedied adequately by a monetary award. Although courts no longer presume irreparable harm from the mere fact of infringement, they have been especially willing to weigh the risk of future infringement in cases with large structural implications.[28]

I will return to the objection about the nonredressability of structural harms, which is fundamentally about institutional competence, at the end of this chapter; for now, I simply want to highlight the way in which this pattern of reasoning about risk frames the background sociotechnical landscape—including all of the factors that embed vulnerability systemically—as risk-neutral. The purported difference between data breach cases and other cases about data collection and processing is that a data breach requires immediate, discrete mitigation measures, whereas in other cases there is nothing (yet) to mitigate. But the sense of emergency that surrounds data breaches has been carefully manufactured in a particular way. Large data breaches now receive widespread media coverage, and entire industries have sprung up to serve the needs of data breach victims.[29] Media coverage of data breaches also tends to point fingers at particular culprits—the data custodian, its purportedly ham-fisted employees, and/or the nameless hackers that perpetrated the theft—rather than at the background condition of widespread, "ordinary" data harvesting and processing. There are no vested interests in creating a comparable sense of emergency about processes that underlie a multibillion-dollar industry. And yet many instances of payment fraud and identity theft do not stem from mass data breaches. Rather, they are the foreseeable results of design choices that privilege convenience and speed over data integrity and security.[30]

The problem, in other words, is that framing the data breach or the exposure to a chemical with a known risk profile as the exception warranting emergency response has enabled courts to ignore the extent to which background norms and design practices work to enshrine vulnerability as a marketplace norm. That result gives the logics of productive appropriation and innovative and expressive immunity broad preemptive scope, categorically foreclosing accountability for entire categories of marketplace activity.

Traceability and the Problem of Causation

A third argument sometimes levied against litigants asserting informational-era harms, as an objection either to standing or to liability, concerns causation. A hallmark of many information-era harms is their causal complexity. When someone develops cancer ten years after exposure to a known carcinogen but also after exposure to many other potential contributing factors, or when the stock of a company about which false information has been circulated later declines in price, it can be difficult (and often impossible) to trace the harm precisely to one cause rather than another. This seems to stand in stark contrast to the precision of the causal connection that exists when, for example, automobile brakes fail or a defective tire explodes. Time exacerbates the problem of attribution; cancers and other diseases may develop many years after harmful exposure, and in the interim many other potentially contributing factors may have come into play. Here again, courts have been more willing to innovate in some contexts than in others, and the contingent solutions under construction reflect the imperatives of the managerial turn.

Like the problem of risk, the dilemma of probabilistic causation has been one of the defining challenges of the modern era. The two problems are, of course, related; conduct that is linked to harm probabilistically may be difficult to link to particular cases of harm that has materialized. In both cases, the link between the conduct and the harm requires modeling to understand, and the impossibility of gaining unmediated access to the relevant relationships opens the way for politicization of the problem and possible responses.

To appreciate the fact that causation, like concreteness, is a constructed concept, it is useful to begin by reconsidering the examples of defective brakes and tires with which this section began. The causal connection was not always so obvious. In the earliest days of the product liability revolution, the conventional ways of framing causes of action insulated mass-market manufacturers from claims brought by both end-users and unlucky bystanders injured by their products. Theories of privity foreclosed claims by parties lacking a prior commercial relationship with the manufacturer.[31] More fundamentally, as noted in the previous section, the tort system had little experience thinking through the issues of complex, probabilistic harm raised by industrial processes and distribution chains. The traditional tort paradigm demanded an individualized inquiry into cause and effect, but many industrial-era injuries were predictable only in the aggregate.[32] Eventually, in a pair of influential opinions, then-Judge Cardozo constructed a now-familiar doctrinal device—foreseeability—for bridging the gap between statistically predictable harms and particular claimants. Following Cardozo's lead, courts gradually learned to understand industrial processes as amenable to inspection with regard to notions of fault and later also to see those processes as appropriate sites for interventions directed toward risk-spreading.[33]

Later in the twentieth century, the court system began to confront cases in which individuation and aggregation could not be so easily reconciled using legal fictions like foreseeability because the identity of the proper defendant was also unclear. In a series of cases involving asserted manufacturing defects in generic pharmaceutical products that could not be traced with certainty to a particular manufacturer, courts in some states concluded that participation in a well-defined market could justify assigning partial liability based on overall market share.[34] Most courts, however, have balked at extending enterprise liability theories to cases in which different manufacturers' products contain different amounts of the substance challenged as harmful, or in which epidemiological modeling implicates both the challenged substance and other causes.[35] Concurrently, defendants in antitrust litigation and in fraud-on-the-market lawsuits filed under the federal securities laws have challenged sophisticated econometric models developed to identify and isolate price effects, arguing that price fluctuations in consumer and securities markets reflect the influence of too many factors to permit precise attribution.[36] Most recently, information privacy claims have seemed to present extreme iterations of both kinds of traceability problems. Many such claims present both probabilistic plaintiffs (i.e., plaintiffs as to whom discrete privacy injuries, such as loss of job opportunities, are absolutely certain in aggregate but difficult to predict on an individual level) and probabilistic defendants (i.e., defendants whose conduct contributes in an epidemiological sense to those injuries). Defendants argue that plaintiffs cannot link the asserted injuries to the actions of any particular firm, and courts usually agree.[37]

As these disputes have unfolded, theories of probabilistic causation also have engendered ever more intense political and ideological pushback against the very idea of broadly distributed liability for harms flowing from economic development. Political pressure by powerful industries has produced legislation designed to limit the tort system's reach. Additionally, firms seeking to minimize their own liability have deliberately and systematically exploited the overlap between their self-interest and individualized paradigms of procedural justice, working to discredit the evidentiary value of scientific conventions for communicating about probabilistic knowledge and inviting policymakers, judges, and the public to understand judicial insistence on atomistically precise causal explanations as natural and proper.[38] Legal scholars, for their part, have been both uncertain about how tort understandings of cause-in-fact might better accommodate contemporary realities and divided as to the wisdom of such accommodation.[39]

Yet resistance to assigning liability in cases involving complex, probabilistic causation is not uniform. And here again, the intellectual property system may be leading the way toward a more expansive approach to judicially-enforced accountability. Consider *Columbia Pictures v. Fung*, a copyright case involving allegations of contributory infringement against a defendant who maintained BitTorrent sites. The court of appeals observed that "where other individuals and entities provide services identical to [the defendant's], causation . . . cannot be assumed, even though fault is unquestionably present."[40] That did not end the matter, however. Instead, the court indicated that the plaintiff still might manage to show a "sufficient causal connection" between the defendant's conduct and infringement of the plaintiffs' copyrights. It left open what that showing would need to entail but noted other evidence clearly suggesting that the defendant knew of and encouraged the use of his sites for infringement.[41] *Fung* raises the prospect of something akin to enterprise liability for (some types of) information intermediaries that threaten major copyright interests. The question of traceability did not arise, and does not even appear to have been contemplated, as an objection to standing to sue.

As these disputes about complex causation illustrate, a decision that a claimed injury is fairly traceable to the defendant's conduct is only partly about causation in the cause-in-fact sense. More generally, such decisions are about how to interpret and reconcile competing instincts about accountability and fairness. Today, those decisions often must be made in the context of emerging categories of networked, probabilistic harms that cannot be traced to any single cause to the exclusion of all others. Societal understandings of harm have evolved to encompass the long-term, systemic effects of industrial development and the growing informationalization of economic activity, but judicially defined constructs of causation often continue to operate at cross-purposes to those changes.

Alone/Together: The Evolving Institutional Forms of Mass Justice

In addition to questions about harm and injury, courts—and the judicial system more generally—now routinely confront questions about how to adapt a predominantly individuated model of procedural justice to a world in which justice must deal in large

numbers. The judicial system has already undergone one process of partial retrofitting as an institutional vehicle for mass justice claims. That process began in the early twentieth century and gathered momentum later when new class action procedures were devised to handle claims of injury stemming from mass-manufactured and mass-marketed consumer goods. As both consumer products and services and related theories of personal and economic harm have become more complex, however, and as the number of complaints has mushroomed, the judicial system has come under acute logistical and political strain. The orientation that Resnik has labeled "managerial"—including expedited discovery rules and an orientation toward settlement—is a response, in part, to the problem of numerosity.[42]

Among legal scholars and policymakers, reactions to the emergence of managerial justice have been mixed. Some have celebrated the new emphasis on efficiency; some, including Resnik, lament the demise of the aspiration to provide individualized justice but have appeared to hold out hope for the possibility of reinvigorating the traditional paradigm. Others argue the system is simply broken—too expensive, too slow, too focused on the needs of the few and wealthy and unable to serve the needs of the many.[43]

My project in this section is different and entails taking managerialism seriously as a form of institutional discipline that has gradually but inexorably swept the judicial system into its orbit. Through the lens of managerialism, the traditional scholarly focus on litigation of disputes is too limited. The judicial system is one component (albeit a very visible and important one) of a larger landscape that also includes other significant mechanisms and processes. Dispute resolution problems are problems of production at scale, to be addressed using techniques for input sorting and supply chain management.

In what follows, I tell three interrelated stories about the management of scale in processes of dispute resolution. Broadly speaking, each story involves reoptimization of the dispute resolution supply chain for systemically significant classes of disputes. But the stories also reveal that dispute resolution processes have evolved very differently for different types of disputes, in ways that reflect the imprint of emergent economic power. High-volume, low-value claims and ancillary knowledge production issues associated with those claims increasingly are regarded as non-core competencies to be managed via outsourcing. Claims for vindication of large-scale, aggregate harm are handled internally but in ways that increasingly route around the relatively rigid class action framework in favor of alternative production methods that are flexible and highly informationalized, Claims for enforcement of intellectual property rights, meanwhile, have elicited creative experimentation with processes for modular production of important intermediate outputs.

Outsourced Production: Boilerplate and Beyond

The first story involves a set of procedural devices that are designed to remove certain kinds of disputes and ancillary knowledge production issues from the judicial system and assign responsibility for managing them to other actors. One controversial and much-remarked feature of the contemporary litigation landscape is the increasing use of private dispute resolution mechanisms as substitutes for judicial process. Legal scholars have focused primarily on the use of boilerplate waivers to deflect civil

complaints away from courts and into arbitration. Many high-volume, low-dollar-value disputes, however, are resolved via wholly privatized processes that do not involve either judges or arbitrators, and privatization has begun to reshape the landscape of criminal dispute resolution as well. Other kinds of high-volume, low-dollar-value disputes are delegated to specialized tribunals with narrow but deep expertise in the particular questions requiring resolution, and still others are managed by courts using knowledge frameworks developed partly or wholly outside the judicial system. The literatures in management theory and organization studies supply a perspective on those developments that moves beyond the objections typically raised by legal scholars and suggests the need for more comprehensive, systemic redesign.

We begin with civil litigation. In a wide variety of contexts ranging from employment contracts to service contracts to one-off consumer transactions, courts have become increasingly willing to enforce boilerplate clauses that constrain access to judicial process.[44] Some courts initially resisted such arrangements, but as form contracts became both more ordinary and more central to information-economy business arrangements, they gradually allowed themselves to become reeducated. Economic arguments about the efficiency of such arrangements came to seem familiar and unremarkable, and judges confronted with unthinkable numbers of transactions and relationships mediated by boilerplate lost interest in parsing their terms. Emboldened by judicial inattention, businesses of all sorts now routinely use boilerplate terms to rearrange default entitlements and obligations covering a wide variety of matters relating to their dealings with both consumers and workers.[45]

The current climate of extreme deference to (presumed) individual waiver has produced a powerful historical irony. As noted earlier in this chapter, at the dawn of the mass manufacturing age, firms seeking to minimize their liability to those injured by defective products used privity of contract as a mechanism of exclusion. Today, a new generation of firms deploys a radically reenvisioned concept of privity to keep consumers and workers close, invoking narratives about consent to bar them from asserting a variety of claims that the law otherwise might support. As in the data sensing and harvesting arrangements studied in Chapter 2, the underlying conception of individual agency is vanishingly thin, consisting of little more than the ability to decline a transaction or employment relationship.

Critiques of waiver-based litigation avoidance strategies by legal scholars have emphasized their distributive justice and rule-of-law implications. As a practical matter, boilerplate waivers effectively instantiate private regulation of employment relationships and consumer rights and remedies. Systematic removal of certain kinds of claims from the courts also freezes the gradual, iterative evolution of legal doctrine. Even when such claims proceed to arbitration, arbitral decisions generally are not published, and so it becomes increasingly difficult to know how the law in practice corresponds to the law on the books.[46]

The lens of managerialism, however, suggests a complementary perspective that situates boilerplate waivers of judicial process within the contemporary turn to outsourcing in the interest of lean and nimble production. Business and other organizations now routinely identify various functions for outsourcing to contract providers. Generally speaking, outsourcing involves obtaining inputs to production that a

firm previously produced internally from external suppliers in order to realize some sort of competitive gain.[47] That summary definition, however, elides the influence of a variety of sociotechnical, ideological, and cultural factors. To begin with, outsourcing will be efficient only if the savings in production costs outweigh the increase in communication and coordination costs; the turn to outsourcing therefore both assumes the availability of networked information and communication technologies to coordinate farflung production and deepens reliance on such technologies. Increased informational complexity in turn necessitates increased investment in capabilities for monitoring and oversight; the shift to outsourcing therefore also reflects neoliberal managerialism's emphasis on coordination of production and extraction of rents by elite management. Lastly, the turn to outsourcing reflects the influence of theories of firm value that prize lean organization over various countervailing considerations—such as, for example, shallower carbon footprints or more robust duties of care toward employees—and that rely on market-based shareholder action as the principal disciplinary mechanism. From that perspective, the functions that are ripest for outsourcing are those that lie outside the firm's core extractive competencies.[48] As a practical matter, that category often includes support functions that can be purchased as commodities, including both those performed on site, such as custodial and food services work, and those capable of being performed remotely in time and space, such as customer support. The increasingly routine outsourcing of such functions both relies upon and intensifies the informationalization of labor described in Chapter 1.[49]

Legal scholarship on managerial judging has applied the outsourcing label to boilerplate litigation waivers but has not carefully considered the lessons the analogy has to teach for the study of dispute resolution systems more generally.[50] From a supply chain management perspective, consumer and employee disputes have many of the attributes that the theoretical and critical literatures on outsourcing identify: they represent significant cost centers, they have many features that are amenable to routinization using networked information and communication technologies and elite management, and their resolution involves discrete and mundane competencies that elite judges may be inclined to view as largely outside their core domains. The logics underlying those judgments are self-reinforcing. Once a particular kind of dispute has been outsourced, any larger policy issues that such disputes implicate may seem irrelevant, extraneous, or simply above the pay grade of the managerial employees to whom oversight is assigned, and such issues may therefore persist unaddressed unless other internal controls are in place.

When changes in the dispute resolution landscape are considered through the lens of outsourcing as managerial discipline, moreover, boilerplate litigation waivers are just one aspect of a much larger movement toward functional disaggregation and reconfiguration of institutional mechanisms for resolving high-volume, low-dollar value disputes. For the vast majority of consumers who become involved in disputes with providers of goods and services, the first and last stop is the provider's internal process for resolving customer complaints. Corporate customer relations personnel follow customized procedural templates that include both scripts for responding to complaints and quasi-appellate processes for escalating more difficult matters up the chain of command; human resources personnel follow similar templates for dealing with employment matters.[51] A similar process of disaggregation and reconfiguration is

underway in the criminal justice system. Many businesses that confront repeated, low-level criminal conduct—for example, theft by employees or shoplifting by customers—resolve such matters using privatized processes that do not involve the law enforcement system. Like privatized customer relations proceedings, privatized quasi-criminal dispute proceedings are simple, standardized, and administered by specialized personnel.[52]

Significant private-sector investments in dispute resolution might appear to pose something of a conundrum for the outsourcing framework. From the firm's perspective, privatization represents a significant insourcing of complexity and cost. Developing and implementing regularized dispute resolution processes for customer relations and human relations disputes is a resource-intensive project. For that reason, such processes typically involve a second layer of outsourcing to contract providers of customer relations and human resourcesservices.[53] The processes established by platform firms to handle content removals, discussed in Chapters 3 and 4, follow a similar pattern.[54] Double outsourcing, however, exacerbates the systemic fairness and accountability problems that privatized dispute resolution raises.

The outsourcing rubric also illuminates a diverse set of trends in the contemporary dispute resolution landscape that involve the production and application of specialized knowledge for judges and quasi-judicial officers to apply. From the managerialist perspective, the questions surrounding the optimal use of outsourcing in knowledge production are complex. Certain inputs that are both knowledge-intensive and discrete have long been considered prime candidates for outsourcing. So, for example, firms other than technology firms often hire document management and information technology specialists on a contract basis. Firms also hire outside auditors and lawyers, although the "outsourcing" label generally is not applied to such highly professionalized functions (and, notably, outsourcing financial and legal oversight also serves broader public accountability concerns). The wisdom of outsourcing research and development processes that are more central to the firm's mission is hotly disputed, however. Some argue that, for any firm wishing to remain competitive, research and development are and should remain core competencies. Others take a more nuanced view, arguing that in the globalized information economy, decisions about the optimal allocation of knowledge production should consider both the availability of skilled researchers in lower-cost locations and the extent to which knowledge production processes can be modularized and codified to facilitate exchange within and across organizational boundaries.[55]

Consistent with these trends, the U.S. legal system increasingly relies on specialty tribunals to hear certain kinds of high-volume, low-dollar value cases requiring expertise outside the core competency of generalist judges. They include, among others, administrative tribunals for adjudicating benefits claims, employment disputes, and immigration and tax enforcement matters, administrative bodies charged with distributing mass tort awards and judgments collected in agency enforcement actions, and specialty criminal courts for hearing drug and mental health cases.[56] These systems differ from each other in a variety of ways, but all perform explicitly managerial and biopolitical functions. They employ population-based frameworks to evaluate claims to government benefits and private payouts and to determine appropriate responses to certain common pathological or disfavored behaviors.

Consider next uses of specialized, externally-developed information frameworks to streamline criminal dispute resolution. Like legal scholars who study changes in civil dispute resolution, those who study shifting patterns of criminal dispute resolution have been preoccupied principally with the disappearing trial; most criminal charges today result in plea arrangements entered before trial proceedings have begun.[57] Increased reliance on plea bargaining, however, is only one piece of a larger puzzle that also includes substitutes for and supplements to judicial production of criminal justice. In the federal system, the use of such substitutes in sentencing has been routine for many decades. The United States Sentencing Commission, however, is a public entity overseen by current and former criminal justice officials, so its sentencing guidelines represent only a flirtation with outsourced knowledge protection. More recent initiatives using privately designed analytic systems to guide policing, charging, bail, sentencing, and parole decisions are different and raise the prospect of more comprehensive functional disaggregation.[58]

Last but not least is a group of initiatives that involve new electronic systems for resolving high-volume, low-dollar disputes. In Canada, Australia, Europe, and the U.S., public programs for alternative dispute resolution increasingly are experimenting with platforms for online dispute resolution. Some such platforms are designed and provisioned with public funding. Mirroring the trend toward outsourcing of knowledge production by the criminal justice system, however, other experiments involve systems designed and furnished by private contractors.[59]

My purpose in developing this account of outsourcing processes now underway in the production of civil and criminal dispute resolution is neither to signal endorsement of any of the developments just described nor to express opposition to the very idea of functional differentiation. Rather, it is to situate the systematic decentering of litigation for certain categories of disputes within the neo-Polanyian framework of institutional change that this book has developed. From that perspective, the problem is not that legal institutions are changing, but rather that they are changing in ways that leave systemic justice issues and associated problems of institutional design unaddressed. Without question, it is neither feasible nor desirable to convene a full-dress judicial proceeding for every instance of consumer dissatisfaction, every employment-related disagreement, every benefits dispute, or even every instance of alleged theft or fraud. That observation, though, should not end discussion of the possibility of designing procedures that are efficient and scalable but also justice-affording.

Flexible Production: Aggregate Litigation Reconsidered

The second story is about the aggregation and management of claims for asserted large-scale harm. Within the model of remedial litigation developed early in the twentieth century, the principal device for pursuing aggregate relief was the class action, but the primacy of the class device is waning, and newer multidistrict litigation procedures afford judges powerful, flexible tools for managing and resolving aggregated tort and statutory claims. Meanwhile, in both aggregate litigation and public enforcement actions, versatile templates for consent-based structural relief have emerged. Juxtaposing the two sets of developments—once again in light of perspectives afforded by developments in management theory and organization studies—yields valuable insights into emerging systems for the production of legibility and finality in mass dispute resolution.

The American class action device is cited enviously by consumer advocates in other countries, but over the past half century it has been under sustained attack. The courts and Congress have systematically restricted access to class action procedures, and those procedures also have proved insufficiently adaptable to new kinds of claims for networked, intangible harm. The result, as Maria Glover has explained, is a distribution of outcomes that belies aspirations to transsubstantive procedural uniformity.[60] Claims for violation of remedial statutes that define specific wrongs and prescribe uniform remedies have a relatively smooth road to certification, and plaintiffs may use statistical evidence to fill certain types of well-defined gaps in the evidentiary record. Putative class claims involving "the invocation of markets as the source of some common wrong" also achieve certification relatively easily, but only to the extent that the economic harm to each individual plaintiff is relatively easy to calculate.[61] Certification may be avoided if the market is complex and the plaintiff's expert economic report does not isolate the alleged harm with sufficient precision. Class complaints asserting broader, structural theories of civil wrongdoing not specifically delineated by statute face an uphill battle to both certification and admission of statistical evidence. Notably, those outcomes also reflect the influence of the atomistic approach to causation and responsibility explored in the first half of this chapter.

Contests over standards for class certification and uses of statistical evidence to substantiate claims and calculate remedies are becoming increasingly irrelevant, however, because class action litigation has gradually been subsumed within a different and more flexible rubric for managing and resolving mass claims. The federal courts increasingly rely on consolidated multidistrict litigation (MDL) proceedings to aggregate certain types of individual claims for more efficient processing. Relative to class actions, MDL proceedings allow courts more flexibility in identifying common issues, grouping cases, and crafting comprehensive settlement decrees, a comparative advantage that has steadily grown as access to class actions has narrowed. MDL proceedings also are far more opaque than class action proceedings, which are subject to regularized procedural rules.[62] Once inside the MDL process, even formerly headline-grabbing lawsuits have seemingly vanished. Many putative class actions move into MDL before being certified and most cases settle while still in the preliminary stages, so the certification decision is made, if at all, in the context of a motion to certify a settlement class.

Mass tort litigation has been a significant driver of the turn to MDL, but in recent years new types of information-economy disputes—in particular data breach and information privacy litigation—also have become significant drivers, and platform defendants in particular have developed a suite of powerful strategies for avoiding or drastically limiting both class certification and the scope of available remedies. Those strategies exploit the narratives about entitlement and disentitlement that Part I explored, leveraging the logics of performative enclosure and appropriative privilege to minimize possible monetary exposure and deflect meaningful structural relief.[63] Aggregate litigation against platform firms also confronts obstacles stemming from the technologically opaque nature of data-driven algorithmic processes. Interactions involving consumers' personally identifying information often are embedded deeply within the operating protocols of a mobile phone or web browser, and may involve complex commercial relationships among multiple companies. That enables platform

firms to argue both that the methods proposed for ascertaining the group of consumers affected by any particular practice are just too imprecise and that including all users of a particular service would threaten crippling liability—an objection that ultimately boils down to the argument that some classes are just "too big to certify."[64] Courts reject some such arguments, but they also routinely decline requests to define classes broadly and refuse to craft discovery orders far-reaching enough to enable plaintiffs to understand the challenged patterns of information flow.[65]

Consider now a very different group of examples that also involve the attempted use of litigation to produce large scale-structural reform. Beginning in the mid-twentieth century, courts charged with resolving constitutional claims against government entities for large-scale equal protection violations improvised on the relatively limited remedial forms available to them, developing templates for ongoing oversight that were formally injunctions but that extended far into the future and asserted an interest in the day-to-day operation of the entities under supervision. Beginning with the enforced desegregation of school districts and continuing with orders designed to remedy civil rights violations by other government entities, courts imposed remedial orders on a wide variety of public institutions. Subsequently, litigation under new federal civil rights statutes extended the model of the supervisory injunction to private corporations as well. Initial academic assessments credited the resulting model of public law litigation with enormous upside potential for reform of entrenched structural inequality and argued that direct judicial supervision was the key ingredient for producing institutional transformation.[66]

But there is a parallel story about public law litigation, in which the supervisory injunction—eventually restyled as the consent decree—gradually began to impose a new form of institutional discipline on the courts as well. Like claims asserted as putative class actions, most viable claims for injunctive relief against both corporate and public defendants now eventually settle, producing lengthy consent decrees that specify the details of commitments to come into compliance with the applicable requirements. Along the way, the project of structural transformation has gradually been subsumed within more prosaic managerialist rubrics. Structural reform orders styled as consent decrees incorporate standard time periods, benchmarks for improvement, and methods of compliance monitoring, and compliance monitoring is intensively informationalized.[67] In parallel with those changes, contemporary reappraisals of the efficacy of structural-reform litigation as a catalyst for institutional transformation have become far less glowing. In particular, critics argue that, after the publicity generated by the initial filing and the settlement has died away, reappraisals to track durable institutional change are rare.[68]

The same general pattern—an initial wave of litigation successes followed by a shift toward settlement and a concomitant shift toward routinization, diminishing returns, and heightened informational complexity and opacity—has characterized public enforcement practice involving corporate defendants. Like public law litigation, most enforcement actions for violation of securities, antitrust, and consumer protection laws tend to culminate in consent decree proceedings. Such decrees generally require changes to certain business practices and impose obligations to submit to periodic or ongoing audits of those practices. Although the defendants sometimes agree to pay fines, they generally need not admit fault. Advocates of such arrangements argue that changing firm

behavior is more important than extracting formal acknowledgment of responsibility. Judges and academic commentators studying such no-fault arrangements, however, have raised pointed questions about their efficacy as catalysts for longer-term behavioral change.[69]

Information-economy bellwether firms—platform companies such as Google and Facebook and financial firms such Citigroup and JP Morgan Chase—have proved particularly adept at incorporating consent decree compliance into their regular business practices with only minimal disruption. A few additional managerial controls are imposed; additional consumer disclosures are incorporated into the already-existing documents that most consumers do not read; and the necessary reports are generated, reviewed by auditors, and filed with regulators. The occasional fines levied in civil and criminal proceedings are relatively small compared to annual revenues and can be lumped with other expenses of doing business.[70]

Together, these trends—the de facto marginalization of the class action device, the emergence of MDL as the principal vehicle for awarding monetary relief in aggregate litigation, and the routinization of consent decree practice in both aggregate litigation and public enforcement actions—exemplify another prominent theme in management and organization studies, which has to do with changing approaches to mass production over the course of the twentieth century. Even as the justice system has been pressed to assume greater and greater responsibility for the mass production of litigation outcomes, the conventional wisdom about the optimal design of mass production processes has undergone a revolution. Over the course of the twentieth century, the lock-step system of industrial production pioneered by Frederick Winslow Taylor and embraced by industrial giants such as Ford, General Motors, and U.S. Steel gradually gave way to the flexible production system developed by W. Edwards Deming and pioneered in practice by the Toyota Motor Corporation in Japan. The "Toyota Production System" envisions a production process that is lean, flexible, and motivated by pursuit of both continual product improvement and continual cost reduction. As firms worldwide have moved to adopt more flexible workflow configurations, moreover, those configurations often have prioritized finance-based "innovation" and improved organization for maximum surplus extraction as principal goals.[71]

From the traditional legal perspective, the emerging solutions to the production of mass dispute resolution are "unorthodox."[72] As the label suggests, however, that perspective is itself the product of a particular, historically and ideologically contingent understanding of the nature and purpose of judicial process. Class actions, MDL proceedings, and consent decrees are modern inventions, but so is the underlying ideal of individualized justice against which unorthodox instrumentalities for affording collective justice have been defined.[73]

From a managerialist perspective, the emergence of MDL and the routinization of consent decree practice embody parallel shifts toward flexible production of legibility and finality in the resolution of mass claims. In contrast to the class action framework, which favors standardized production of common outcomes, both MDL settlements and consent decrees use common templates as points of departure for more tailored resolutions that can be produced on a just-in-time basis. Emerging conventions for processing and accounting for mass claims and settlement payouts and conducting

ongoing monitoring and compliance reporting enable flexible production practices practices to be tracked and subjected to regularized cost accounting.[74] The flexible production of compensation and structural reform also reflects neoliberal managerialism's commitment to supervision of production by (and for the benefit of) managerial elites. Even as aggregate litigation now largely fails to achieve meaningful structural reform, it has become structural in a different sense, comprising the principal revenue model for burgeoning and profitable practices in aggregate litigation and corporate compliance.[75]

Here again, in theory there is nothing wrong with the use of flexible procedures for producing tailored litigation outcomes in situations involving large numbers of parties, large structural implications, or both. To the contrary, both the theory and the practice of flexible production have revealed considerable transformative potential, and it is reasonable to consider what the lessons learned from and about flexible production in other contexts might teach the law. Writing about emergent systems for transnational regulation, William Simon has invoked the Toyota method as metaphoric inspiration for the project of producing new governance structures that are both democratically responsive and critically reflexive.[76] One might envision an analogous pathway for the project of complex litigation reform.

In practice, however, the flexible production of compensation and oversight has played out toward quite different ends, evolving in ways that have systematically minimized the likelihood of meaningful structural reform of market and public institutions. The growing practices of settlement without responsibility and oversight without accountability valorize market institutions as the principal source of structural discipline in the informational economy. Bargain-basement resolution of claims for aggregate monetary relief expresses and reinforces managerialism's commitment to reproducing the neoliberal subject, who practices self-expression principally through consumptive choice and who has been disciplined to stand alone in the marketplace.

Modular Production: Intellectual Property Experimentalism (and Its Limits)

The third and final story, which concerns intellectual property litigation, showcases a third (and overlapping) family of managerial solutions to dispute resolution problems. In disputes involving enforcement of intellectual property rights, which generally do not involve the MDL system, courts have devised a variety of strategies for sequencing issues and aggregating and streamlining claims. The landscape of intellectual property dispute resolution also includes various nonjudicial intermediaries, including specialty administrative tribunals and collective rights organizations, but outsourcing strategies cover only certain kinds of issues, and courts generally have retained high-level oversight.

Consider first decisions about the sequencing of issues and claims in litigation. As we have just seen, shifting aggregate litigation into MDL proceedings gives courts more flexibility to determine the order of proceedings and to experiment by defining bellwether parties and claims. Both trends have excited cautious interest on the part of commentators but also a fair amount of criticism, in large part because the MDL system is opaque and unaccountable. In contrast, both courts and commentators have openly embraced a variety of strategies for sequencing and streamlining intellectual property

litigation. In litigation involving large numbers of patents or copyrights, they encourage the parties to select representative patents, patent claims, or copyrights to use in evaluating the parties' arguments.[77] In software copyright litigation, they conduct detailed preliminary proceedings to evaluate the copyrightability of the programs in suit.[78] Patent litigation has gradually been restructured around the *Markman* hearing, a preliminary proceeding in which the court construes the claims of the patents in suit and determines their scope.[79]

Consider next decisions about the aggregation of parties and claims. Intellectual property class action litigation is relatively rare, although class claims alleging large-scale unauthorized exploitation of copyrighted works have become somewhat more common in the networked digital era. In stark contrast to the relatively restrictive approach to class definition in information privacy disputes, the courts have been generous toward putative copyright class claimants. Although an individual plaintiff must obtain a federal registration before filing suit for infringement, a putative class claim for injunctive relief may encompass unregistered copyrights.[80] More importantly, copyright litigation also regularly involves a different kind of aggregation strategy. In suits against platform firms, distributors of circumvention technologies, and other new information intermediaries, joinder of plaintiffs that together represent entire industries has become routine. The result is effectively class litigation as to the copyrights involved, but without the restrictions that the requirements for class certification would impose.[81]

Specialized administrative tribunals also do important work within the intellectual property system, but courts monitor the outputs of such tribunals more closely than they do the outputs of the various specialty tribunals that handle benefits determinations, mass tort payouts, and so on. Administrative patent and trademark judges and copyright examiners apply specialized expertise to questions about patent grants and the issuance of federal trademark and copyright registrations, but their determinations are subject to judicial review.[82] Most members of the Federal Circuit, a specialized federal appellate court that has exclusive jurisdiction of patent appeals, have some technical expertise, but patent litigation originates in the federal district courts and may return to the Supreme Court after the experts have had their say. In the copyright system, specialized rate courts determine statutory licensing rates for certain activities involving large-scale uses of copyrighted works, but the federal courts retain ultimate authority to interpret the scope of the statutory licenses.[83]

Last but not least, licensing intermediaries play key roles in the copyright and patent systems. Collective rights organizations, patent pools, and other licensing intermediaries administer standardized menus of rights and obligations, processing large numbers of low-dollar-value transactions covering certain uses of copyrighted works and coordinating and pricing industry-wide uses of certain patented inventions. Such systems are primarily transactional, but they also eliminate entire categories of repetitive litigation. Here too, however, courts retain basic supervisory capabilities. The performance rights intermediaries ASCAP, BMI, and SESAC are subject to continuing antitrust oversight pursuant to consent decrees entered in the mid-twentieth century, and antitrust law sets outer limits on the activities of patent pools as well.[84]

An apt lens through which to explore these and other trends in intellectual property litigation is the enthusiasm for modular production that has dominated corporate

boardrooms and management theory scholarship for the last two decades. The theoretical framework underlying modular production derives from the work of Herbert Simon, who observed that modular organization can facilitate efficient performance of complex activities because it obviates the need for direct supervision of many constituent processes.[85] He argued, moreover, that modular organization also facilitates both gradual improvement and more dramatic innovation for the same reason; some modules can change while others remain stable. Modules cannot be fully autonomous. Managers must receive enough information and retain enough oversight authority to ensure that the interaction between modules furthers the organization's overall goals. Simon therefore characterized modular organization as "nearly decomposable."[86] The challenge for managers is to design oversight processes that permit optimal information flow while ensuring that individual modules have sufficient adaptive leeway. Modularity has become the gold standard in the design of networked digital products and services.[87] The turn to modularity also has accelerated some of the less salutary trends described in Part I, reinforcing extractive strategies based on the datafication of important resources and lending additional normative heft to labor outsourcing arrangements in particular.

Taken as a whole, the complex assemblage of institutions and procedures for intellectual property dispute resolution and collective licensing approximates a system for modular production of outcomes in which the federal courts play the central managerial role. Just as the growing body of scholarship on modular management would recommend, the intellectual property dispute resolution system makes strategic use of both outsourcing and flexible production arrangements. Particularly where outsourcing is involved, courts generally do not concern themselves much with the operational details of the processes in question. At the same time, the principle of near decomposability dictates that an indissoluble quantum of control be retained at the center.

The modularization of intellectual property dispute resolution is also emergent, incomplete, and contested, however. In part that reflects perceived limits on the institutional authority of courts to produce modular outcomes. So, for example, in litigation over Google's Book Search service, the district court refused to approve a settlement agreement that purported to cover future claims, works, and authors and that included provisions regarding so-called orphan works whose copyright owners could not be located. It did so on the ground that it lacked authority to approve forward-looking changes in entitlement configuration.[88] A subsequent fair use ruling sheltered the Book Search program comprehensively from infringement liability, but at the cost of the institutional texture that the settlement would have provided. Although Google voluntarily implemented measures to restrict the size of search results returned to users, it chose not to implement some of the other arrangements for safeguarding both authors' interests and the public interest that had been included in the proposed settlement.[89]

Other reasons for contesting the turn to modular production in intellectual property dispute resolution relate to broader concerns about whether the system as a whole inappropriately elevates enforcement and licensing over other goals. So, for example, a persistent criticism of the *Markman* hearing is that claim construction cannot proceed in a vacuum but rather must consider matters of context, tacit knowledge, and ordinary practice that may appear only on a full development of the evidentiary record. *Markman* sequencing militates against such development and instead invites

gamesmanship.[90] In copyright infringement cases involving programmatic institutional copying, the use of bellwether works and claims to narrow the issues similarly advances the goal of concreteness while downplaying larger considerations of intellectual exploration and creative flow.[91]

The modularization of intellectual property dispute resolution also has systematically marginalized the interests of individual users of copyrighted works and patented inventions. As already noted, modularization and outsourcing strategies complement one another, and outsourcing has become the principal method of managing users and their asserted needs. Boilerplate waivers circumscribe permitted uses of copyrighted content and prohibit repair, resale, and sometimes reuse of patented inventions.[92] As Chapter 4 described, disputes about online copyright infringement are managed using an array of procedures that includes the statutory notice-and-takedown process but also automated filtering and purely private enforcement programs. Although critics have raised persistent and significant rule-of-law objections to such procedures, so far there has been little creative thinking about how to design integrated dispute resolution systems that are more transparent and accountable not only to rightholders but also to users and the public generally.[93] In copyright industry litigation with online intermediaries, users and their concerns typically go unrepresented. Notably, courts also have largely rejected attempts by so-called copyright trolls to file so-called "reverse class actions" against large numbers of asserted online infringers with the purpose of encouraging waiver into settlement. Their objections have sounded principally in abuse of process but may also reflect a sense of institutional mismatch, born of a growing conviction that disputes involving individual users or groups of users simply do not belong in the courts.[94]

My purpose in drawing attention to the modular production of dispute resolution in intellectual property cases, however, is not to express blanket disapproval of modularity-based strategies. As with the other strategies discussed in this section, it is simply to note that a great deal more work is needed before those strategies can fairly be said to be effective ways of advancing the full range of relevant goals.

Reimagining Dispute Resolution for the Era of Networked Harms and Large Numbers

Emerging resolutions of the problem of harm and the problem of numerosity are framed as the neutral results of existing doctrines and rules, but they also map neatly to distributions of power within the emerging political economy of informational capitalism. In particular, arguments from tradition and institutional competence sit uneasily alongside the ongoing managerial reconfiguration of systems for dispute resolution. As we have seen in this chapter, powerful information-economy actors have seized upon traditional tropes of discreteness and individuation to deflect claims about intangible collective harms while advancing creative new claims for enforcement of informational property rights, and they have worked to develop new managerial structures for dispute resolution that advance both goals. Under the circumstances, exhortations to rally behind traditional divisions of institutional authority ring more than a little hollow. The questions on the table should concern the best paths for institutional evolution now.

As we saw in the first half of this chapter, the *conceptual* challenges now confronting the courts are less unfamiliar than they appear. It is true that the patterns of harm and benefit in the networked information economy are complex and difficult to unravel. But both the products liability revolution and the emergence of mass torts also required courts to develop facility with new types of inquiries, and their decisions helped to produce a societal shift toward a thicker notion of industrial responsibility that also included regulatory components.[95] We will consider the conceptual and institutional challenges surrounding regulatory settlements of information-era problems in Chapter 6; for present purposes, the point simply is that remedial litigation is—or can be—an important catalyst of institutional change in its own right.

The *structural* challenges confronting courts are more difficult. The traditional, individuated model of procedural justice and its narrowly-defined mass-justice exceptions are simply ill-suited to a world in which processes for dispute resolution must deal in large numbers. As we have seen in this chapter, disputes about information-economy problems are calling forth a variety of new solutions to the problem of numerosity. Those solutions are best understood and evaluated as contingent institutional formations. Casting about for new ways of handling unfamiliar logistical and conceptual problems, courts are responding to strategic interventions by powerful repeat players interested first and foremost in shielding their business models and information processing practices from judicial oversight. Through their efforts, a new model of procedural justice is taking shape—one that comports in some respects with the demands of the networked information economy but that also reflects both the more parochial concerns of information capitalists and the pervasive influence of managerial logics.

Charting the course of a Polanyian countermovement for the courts, and for the landscape of dispute resolution more broadly, requires more careful attention to a wider range of values. How, for example, might one design processes for alternative dispute resolution to flag and escalate systemic questions about harm and responsibility for judicial attention? In contexts involving claims for aggregate relief and/or structural reform, how might one harness principles of flexible production to allocate judicial attention most effectively? In both contexts, how might one structure information flows to deepen institutional accountability and ensure access to justice?[96] While these and other important questions remain unanswered, invoking traditions about form to take options off the table is a mistake. If the emerging, functionally differentiated landscape of dispute resolution is to yield institutions for the production of *justice*, a more comprehensive process of institutional reinvention will be necessary.

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[1] Judith Resnik, "Managerial Judges," *Harvard Law Review* 96 no. 2 (1982): 374-442; see also J. Maria Glover, "The Federal Rules of Civil Settlement," *New York University Law Review* 87 no. 6 (2012): 1713-1778.

[2] See, for example, Todd D. Peterson, "Restoring Structural Checks on Judicial Power in the Era of Managerial Judging," *U.C. Davis Law Review* 29 no. 1 (1995): 41-114; Elizabeth G. Thornburg, "The Managerial Judge Goes to Trial," *University of Richmond Law Review* 44 no. 4 (2010): 1261-1326; Stephen C. Yeazell, "The Misunderstood Consequences of Modern Civil Process," *Wisconsin Law Review* 1994 no. 3 (1994): 631-678.

[3] Gerard Hanlon, "The First Neo-Liberal Science: Management and Neo-Liberalism," *Sociology* 52 no. 2 (2018): 298-315. To my knowledge, the only works of procedure scholarship that engage more deeply with management theory are Orna Rabinovich-Einy & Yair Sagy, "Courts as Organizations: The Drive for Efficiency and the Regulation of Class Action Settlements," *Stanford Journal of Complex Litigation* 4 no. 1 (2016): 1-46 and Brian Z. Tamanaha, *A Realistic Theory of Law* (New York: Cambridge University Press, 2017), 118-150. The argument presented in this chapter is the obverse of that in Lauren B. Edelman, *Working Law: Courts, Corporations, and Symbolic Civil Rights* (Chicago: University of Chicago Press, 2016). Edelman defines the managerialization of law as symbolic colonization of legal logics via internalized judicial deference to corporate compliance structures. I am concerned with the emergent managerial reconfiguration of institutions for the production of dispute resolution catalyzed by interrelated sociotechnical and ideological shifts.

[4] Hanlon, "The First Neo-Liberal Science," 7-11; Robert R. Locke & J.-C. Spender, *Confronting Managerialism: How the Business Elite and Their Schools Threw Our Lives Out of Balance* (New York: Zed Books, 2011), 1-21.

[5] Hanlon, "The First Neo-Liberal Science"; see also Locke & Spender, *Confronting Managerialism*; Alexander Styhre, *Management and Neoliberalism: Connecting Policies and Practices* (New York: Routledge, 2014). On neoliberal subjectivity more generally, see Todd May & Ladelle McWhorter, "Who's Being Disciplined Now? Operations of Power in a Neoliberal World," in *Biopower: Foucault and Beyond*, eds. Vernon W. Cisney & Nicolae Morar (Chicago: University of Chicago Press, 2016), 245-258.

[6] For extended development of this point, see Corinne Blalock, "Neoliberalism and the Crisis of Legal Theory," *Law and Contemporary Problems* 77 no. 4 (2015): 71-103; see also Gane, "The Governmentalities of Neoliberalism."

[7] Lujan v. Defs. of Wildlife, 504 U.S. 555, 560-61 (1992).

[8] Seth Kreimer, "Spooky Action at a Distance: Intangible Injury in Fact in the Information Age," *University of Pennsylvania Journal of Constitutional Law* 18 no. 3 (2016): 745-796.

[9] Jan G. Laitos, "Standing and Environmental Harm: The Double Paradox," *Virginia Environmental Law Journal* 31 no. 1 (2013): 55-101.

[10] See, for example, Dwyer v. Am. Express Co., 652 N.E.2d 1351, 1356 (Ill. App. Ct. 1995) ("[A] single, random cardholder's name has little or no intrinsic value to defendants (or a merchant). Rather, an individual name has value only when it is associated with one of defendants' lists. Defendants create value by categorizing and aggregating these names."); Brief for Experian Info. Sols., Inc. as Amicus Curiae Supporting Petitioners at 1–2, First Am. Fin. Corp. v. Edwards, 132 S. Ct. 2536 (2012) (No. 10-708) ("Such suits are possible because the [Fair Credit Reporting] Act permits plaintiffs to sue for . . . what may be a wholly technical violation. Indeed, it is not uncommon in these cases for significant numbers of class members to have actually *benefited* from the alleged violations.").

[11] Privacy claims can seem especially vague by comparison to claims for bodily injury, but it is not clear that bodily injury cases should be the touchstone when so many other kinds of intangible claims (tort and otherwise) are cognizable. For discussion, see Danielle Keats Citron "Reservoirs of Danger: The Evolution of Public and Private Law at the Dawn of the Information Age," *Southern California Law Review* 80 no. 2 (2007): 241-298, 289-96; Kreimer, "Spooky Action at a Distance," 754-57; see also Ryan Calo, "Privacy Harm Exceptionalism," *Journal of Telecommunications and Technology Law* 12 no. 2 (2014): 361-364.

[12] Randall R. Bovbjerg, Frank A. Sloan, & James F. Blumstein, "Valuing Life and Limb in Tort: Scheduling 'Pain and Suffering,'" *Northwestern University Law Review* 83 no. 4 (1989): 908-976; Philip L. Merkel, "Pain and Suffering Damages at Mid-Twentieth Century: A Retrospective View of the Problem and the Legal Academy's First Responses," *Capital University Law Review* 34 no. 3 (2006): 545-580. For good general introductions to the sociological processes by which forms of economic and quantitative knowledge are constructed, see Karin Knorr Cetina & Alex Preda, "The Epistemization of Economic Transactions," *Current Sociology* 49 no. 4 (2001): 27-44; Peter Miller, "Governing by Numbers: Why Calculative Practices Matter," *Social Research* 68 no. 2 (2001): 379-396.

[13] See Pauline T. Kim, "Data-Driven Discrimination at Work," *William and Mary Law Review* 58 no. 3 (2017): 857-936, 861-64.

[14] See discussion in Chapter 2, pp. 69-70.

[15] On hypothesized per-transaction rates, see Jonathan S. Masur, "*The Use and Misuse of Patent Licenses*," *Northwestern University Law Review* 110 no. 1 (2015): 115-158; David Nimmer, "Investigating the

Hypothetical 'Reasonable Royalty' for Copyright Infringement," *Boston University Law Review* 99 no. 1 (2019): 1-57. For examples of courts positing menus of rates, see Bridgeport Music, Inc. v. Dimension Films, 410 F.3d 792, 804 (6th Cir. 2005); Princeton Univ. Press v. Mich. Document Servs., Inc., 99 F.3d 1381, 1386–88 (6th Cir. 1996); Am. Geophysical Union v. Texaco Inc., 60 F.3d 913, 929–31 (2d Cir. 1995).

[16] Bridgeport Music, Inc. v. Justin Combs Publ'g, 507 F.3d 470, 483 (6th Cir. 2007).

[17] 17 U.S.C. § 504(c)(1)–(2) (2012).

[18] Capitol Records, Inc. v. Thomas-Rasset, 692 F.3d 899, 907–08 (8th Cir. 2012), *cert. denied*, 133 S. Ct. 1584 (2013); Sony BMG Music Entm't v. Tenenbaum, 660 F.3d 487, 509 (1st Cir. 2011). For a comprehensive review of the case law on statutory damages, see Pamela Samuelson & Tara Wheatland, "Statutory Damages in Copyright Law: A Remedy in Need of Reform," *William and Mary Law Review* 51 no. 2 (2009): 439-512.

[19] FAA v. Cooper, 132 S. Ct. 1441, 1453 (2012); Doe v. Chao, 540 U.S. 614, 618 (2004).

[20] Spokeo, Inc. v. Robins, 136 S. Ct. 1540, 1548-50 (2016).

[21] On the award of damages in the karaoke case, see Zomba Enters., Inc. v. Panorama Records, Inc., 491 F.3d 574, 583–84 (6th Cir. 2007).

[22] Ian Hacking, *The Taming of Chance (Ideas in Context)* (New York: Cambridge University Press, 1990).

[23] Kim Lane Scheppele, "Law Without Accidents," in *Social Theory for a Changing Society*, eds. Pierre Bourdieu & James S. Coleman (Boulder, Colo.: Westview Press, 1991), 267-93.

[24] See George W.C. McCarter, "Medical Sue-Veillance: A History and Critique of the Medical Monitoring Remedy in Toxic Tort Litigation," *Rutgers Law Review* 45 no. 2 (1993): 227-284; Victor E. Schwartz & Cary Silverman, "The Rise of 'Empty Suit' Litigation. Where Should Tort Law Draw the Line?," *Brooklyn Law Review* 80 no. 3 (2015): 599-676; see also James A. Henderson, Jr. & Aaron D. Twerski, "Asbestos Litigation Gone Mad: Exposure-Based Recovery for Increased Risk, Mental Distress, and Medical Monitoring," *South Carolina Law Review* 53 no. 4 (2002): 815-50.

[25] Remijas v. Neiman Marcus Grp., LLC, 794 F.3d 688, 693 (7th Cir. 2015) (quoting Clapper v. Amnesty Int'l USA, 133 S. Ct. 1138, 1147 (2013)). For a detailed exploration of the ways that heightened risk and anxiety following a data breach translate into real, concrete, and present harms, see Daniel J. Solove & Danielle Keats Citron, "Risk and Anxiety: A Theory of Data Breach Harms," *Texas Law Review* 96 no. 4 (2017): 737-786.

[26] Some scholars agree. See M. Ryan Calo, "The Boundaries of Privacy Harm," *Indiana Law Journal* 86 no. 3 (2011): 1131-1162, , 1139–40, 1156–61; see also Jane R. Bambauer, "The New Intrusion," *Notre Dame Law Review* 88 no. 1 (2012): 205-276, 242; Adam Thierer, "The Pursuit of Privacy in World Where Information Control Is Failing," *Harvard Journal of Law and Public Policy* 36 no. 2 (2013): 409-456, 417-21.

[27] 18 U.S.C. § 1030(e)(11) (2012); see, for example, EF Cultural Travel BV v. Explorica, Inc., 274 F.3d 577, 584–85 (1st Cir. 2001); United States v. Middleton, 231 F.2d 1207, 1213 (9th Cir. 2000).

[28] eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 391 (2006); see, for example, Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 518 F. Supp. 2d 1197 (N.D. Cal. 2007).

[29] Harland Clarke & Javelin Strategy & Research, Fee Income Growth Opportunities in the Identity Protection Market (2011), https://perma.cc/TD2W-Y4FJ; see also James P. Nehf, "A Legislative Framework for Reducing Fraud in the Credit Repair Industry," *North Carolina Law Review* 70 no. 3 (1992): 781-821.

[30] Sasha Romanosky, Rahul Telang, & Alessandro Acquisti, "Do Data Breach Disclosure Laws Reduce Identity Theft?," *Journal of Policy Analysis and Management* 30 no. 2 (2011): 256-286; Erika Harrell, U.S. Bureau of Justice Statistics, "Victims of Identity Theft, 2014," at 2 (Sept. 2015), https://perma.cc/D3TT-6CNF.

[31] Vernon Palmer, "Why Privity Entered Tort—An Historical Reexamination of *Winterbottom v. Wright*," *American Journal of Legal History* 27 no. 1 (1983): 85-98; see also Robert L. Rabin, "The Historical Development of the Fault Principle: A Reinterpretation," *Georgia Law Review* 15 no. 4 (1981): 925-962. For an important mid-century judicial discussion of the privity requirement's unsuitability to the modern economy, see Henningsen v. Bloomfield Motors, Inc., 161 A.2d 69, 80–84 (N.J. 1960).

[32] Scheppele, "Law Without Accidents," 269-72.

[33] George L. Priest, "The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law," *Journal of Legal Studies* 14 no. 3 (1985): 461-528. For the two opinions, see Palsgraf v. Long Island R.R. Co., 162 N.E. 99, 100 (N.Y. Ct. App. 1928); MacPherson v. Buick Motor Co., 111 N.E. 1050, 1051 (N.Y. 1916).
[34] George L. Priest, "Market Share Liability in Personal Injury and Public Nuisance Litigation: An Economic Analysis," *Supreme Court Economic Review* 18 (2010): 109-133; Aaron D. Twerski, "Market Share—A Tale of Two Centuries," *Brooklyn Law Review* 55 no. 3 (1989): 869-882.
[35] M. Stuart Madden & Jamie Holian, "Defendant Indeterminacy: New Wine into Old Skins," *Louisiana Law Review* 67 no. 3 (2007): 785-822; Allen Rostron, "Beyond Market Share Liability: A Theory of Proportional Share Liability for Nonfungible Products," *UCLA Law Review* 52 no. 1 (2004): 151-216. Notable judicial experiments with epidemiological modeling in tort cases are Zuchowicz v. United States, 140 F.3d 381 (2d Cir. 1998) (Calabresi, J.); Alder v. Bayer Corp., AGFA Div., 61 P.3d 1068, 1086-90 (Utah 2002).
[36] Jill E. Fisch, "Cause for Concern: Causation and Federal Securities Fraud," *Iowa Law Review*, 94 no. 3 (2009): 811-872; American Bar Association, Section of Antitrust Law, "Proving Antitrust Damages: Legal and Economic Issues, 3rd ed. (Chicago: ABA Book Publishing, 2017).
[37] Here again, data breach cases are emerging as the exception. See Remijas v. Neiman Marcus Grp., LLC, 794 F.3d 688, 696 (7th Cir. 2015); In re Anthem Data Breach Litig., No. 15-MD-02617-LHK, 2016 WL 589760, at *20 (N.D. Cal. Feb. 14, 2016).
[38] On legislation, see Thomas O. McGarity, *Freedom to Harm: The Lasting Legacy of the Laissez Faire Revival* (New Haven: Yale University Press, 2013). On scientific knowledge in court, see Lisa Heinzerling, "Doubting *Daubert*," *Journal of Law and Policy* 14 no. 1 (2006): 65-84.
[39] The most sustained academic flirtation with a more complex understanding of causation has been Richard Wright's proposed "necessary elements of a sufficient set" test. See Richard W. Wright, "Causation in Tort Law," *California Law Review* 73 no. 6 (1985): 1735-1828. After criticism by some of the academy's most preeminent tort logicians, Wright later abandoned some of the more far-reaching implications of his own theory. See Richard W. Wright, "Liability for Possible Wrongs: Causation, Statistical Probability, and the Burden of Proof," *Loyola Los Angeles Law Review* 41 no. 4 (2008): 1295-1344. For a sampling of other perspectives on probabilistic causation, see Kenneth Abraham, "Self-Proving Causation," *Virginia Law Review* 99 no. 8 (2013): 1811-1854; Danielle Conway-Jones, "Factual Causation in Toxic Tort Litigation: A Philosophical View of Proof and Uncertainty in Uncertain Disciplines," *University of Richmond Law Review* 35 no. 4 (2002): 875-942; Steve C. Gold, "When Certainty Dissolves into Probability: A Legal Vision of Toxic Causation for the Post-Genomic Era," *Washington and Lee Law Review* 70 no. 1 (2013): 237-340; Alex Stein, "The Domain of Torts," *Columbia Law Review* 117 no. 3 (2017): 535-612.
[40] Columbia Pictures Industries v. Fung, 710 F.3d 1020, 1038-39 (9th Cir. 2013).
[41] *See id.* at 1037-39 ("[I]f one provides a service that can be used to infringe copyrights, with the manifested intent that the service actually be used in that manner, that person is liable for the infringement that occurs through the use of the service."); see also Mark Bartholomew & Patrick F. McArdle, "Causing Infringement," *Vanderbilt Law Review* 64 no. 3 (2011): 675-746.
[42] See Resnik, "Managerial Judges," 386-414.
[43] On the beneficial efficiencies of managerial justice, see Nancy J. King & Ronald F. Wright, "The Invisible Revolution in Plea Bargaining: Managerial Judging and Judicial Participation in Negotiations," *Texas Law Review* 95 no. 2 (2016): 325-398; Steven Baicker-McKee, "Reconceptualizing Managerial Judges," *American University Law Review* 65 no. 2 (2015): 353-398; Barry R. Schaller, "Managerial Judging: A Principled Approach to Complex Cases in State Court," *Connecticut Bar Journal* 68 no. 1 (1994): 77-97; Robert F. Peckham, "A Judicial Response to the Cost of Litigation: Case Management, Two-Stage Discovery Planning and Alternative Dispute Resolution," *Rutgers Law Review* 37 no. 2 (1985): 253-278; Robert F. Peckham, "The Federal Judge as a Case Manager: The New Role in Guiding a Case from Filing to Disposition," *California Law Review* 69 no. 3 (1981): 770-805. For arguments by Resnik and others urging a return to a more traditional approach to litigation, see Judith Resnik, "Reinventing Courts as Democratic Institutions," *Daedalus*, 143 no. 3 (2014): 9-27; Thornburg, "The Managerial Judge Goes to Trial," 1324-1325; Peterson, "Restoring Structural Checks on Judicial Power in the Era of Managerial Judging," 43-46. For more recent work by Resnik probing the managerial reconfiguration of

courts along the dimensions of both access to justice and access to information about mechanisms for dispensing justice, see Judith Resnik, "Diffusing Disputes: The Public in the Private of Arbitration, the Private in Courts, and the Erasure of Rights," *Yale Law Journal* 124 no. 8 (2015): 2804-2939; Judith Resnik, "A2J/A2K: Access to Justice, Access to Knowledge, and Economic Inequalities in Open Courts and Arbitrations," *North Carolina Law Review* 96 no. 3 (2018): 605-678; Judith Resnik, "The Functions of Publicity and of Privatization in Courts and Their Replacements (from Jeremy Bentham to #MeToo and *Google Spain*)," in *Open Justice: The Role of Courts in a Democratic Society*, eds. Burkhard Hess & Ana Koprivica Harvey (Baden-Baden: Nomos, 2019). On the need for reinvention from the ground up, see Gillian K. Hadfield, *Rules for a Flat World: Why Humans Invented Law and How to Reinvent It for a Complex Economy* (New York: Oxford University Press, 2017).

[44] For comprehensive discussions of this trend, see Myriam Gilles, "The Day Doctrine Died: Private Arbitration and the End of Law," *University of Illinois Law Review* 2016 no. 2 (2016): 371-424; J. Maria Glover, "Disappearing Claims and the Erosion of Substantive Law," *Yale Law Journal* 124 no. 8 (2015): 3052-3093; J. Maria Glover, "The Structural Role of Private Enforcement Mechanisms in Public Law," *William and Mary Law Review* 53 no. 4 (2012): 1137-1218.

[45] Conventional economic wisdom holds that such strategies benefit both firms and consumers because they limit potentially ruinous litigation costs and therefore enable companies to offer a wide variety of goods and services on a more cost-effective basis. See, for example, Christopher R. Drahozal, "Arbitration Costs and Forum Accessibility: Empirical Evidence," *University of Michigan Journal of Law Reform* 41 no. 4 (2008): 813-842; Jason S. Johnston, "The Return of Bargain: An Economic Theory of How Standard-Form Contracts Enable Cooperative Negotiation Between Businesses and Customers," *Michigan Law Review* 104 no. 5 (2006): 857-898; Steven J. Ware, "Paying the Price of Process: Judicial Regulation of Consumer Arbitration Agreements," *Journal of Dispute Resolution* 2001 no. 1 (2001): 89-100. For preliminary efforts to collect numbers on uses of boilerplate waivers in various contexts, see Alexander J.S. Colvin, "The Growing Use of Mandatory Arbitration," Economic Policy Institute (Sept. 27, 2017), https://perma.cc/RFB9-X3HY; Jean R. Sternlight, "Disarming Employees: How American Employers Are Using Mandatory Arbitration to Deprive Workers of Legal Protection," *Brooklyn Law Review* 80 no. 4 (2015): 1309-1356, 1310 n.9, 1344–45; U.S. Consumer Financial Protection Bureau, "Arbitration Study: Report To Congress, pursuant to Dodd-Frank Wall Street Reform and Consumer Protection Act § 1028(a)" (March 2015), https://perma.cc/7SY7-VW9V.

[46] On the legal and moral effects of boilerplate, see Margaret Jane Radin, *Boilerplate: The Fine Print, Vanishing Rights, and the Rule of Law* (Princeton, N.J.: Princeton University Press, 2013); see also Nancy S. Kim, *Wrap Contracts: Foundations and Ramifications* (New York: Oxford University Press, 2013).On the arrested development of law, see Gilles, "The End of Doctrine"; Glover, "Disappearing Claims and the Erosion of Substantive Law." In parallel with these developments, an increasing number of judicial opinions are designated as unpublished and nonprecedential. David C. Vladeck & Mitu Gulati, "Judicial Triage: Reflections on the Debate over Unpublished Opinions," *Washington & Lee Law Review* 62 on. 4 (2005): 1667-1708.

[47] Ronan McIvor, *The Outsourcing Process: Strategies for Evaluation and Management* (New York: Cambridge University Press, 2005), 7-10.

[48] On the theoretical underpinnings of outsourcing and its implications for firm value, see McIvor, *The Outsourcing Process*, 40-59.

[49] Lauren Weber, "Some of the World's Largest Employers No Longer Sell Things, They Rent Workers," *Wall Street Journal* (Dec. 28, 2017), https://perma.cc/D268-RLEM; Don Lee, "Behind Shrinking Middle Class Jobs, A Surge in Outsourcing," *Los Angeles Times* (June 30, 2016), https://perma.cc/G2H6-KVJF; Deloitte's 2016 Global Outsourcing Survey (May 2016), https://perma.cc/E9MC-3VT6.

[50] Resnik's recent work undertakes more systematic appraisal of outsourcing-based strategies for dispute resolution. See Resnik, "A2J/A2K"; Resnik, "The Functions of Publicity and of Privatization in Courts and Their Replacements."

[51] Lauren B. Edelman & Mark Suchman, "When the 'Haves' Hold Court: Speculations on the Organizational Internalization of Law," *Law and Society Review* 33, no. 4 (1999): 941-92; Rory Van Loo, "The Corporation as Courthouse," *Yale Journal on Regulation* 33 no. 2 (2016): 547-602.

[52] John Rappaport, "Criminal Justice, Inc.," *Columbia Law Review* 118 no. 8 (2018): 2251-2321.

[53] Rappaport, "Criminal Justice, Inc.," 2272-76; Michael Graf, et al., Outsourcing of Customer Relationship Management: Implications for Customer Satisfaction," *Journal of Strategic Marketing* 21 no. 1 (2013): 68-81; Howard Gospel & Mari Sako, "The Unbundling of Corporate Functions: The Evolution of Shared Services and Outsourcing in Human Resource Management," *Industrial and Corporate Change* 19 no. 5 (2010): 1367-1396.

[54] Adrian Chen, "The Laborers Who Keep Dick Pics and Beheadings Out of Your Facebook Feed," *Wired* (Oct. 23, 2014), https://perma.cc/QB2T-YEKR; Nick Statt, "Facebook Pledges to Improve Oversight of Contractor Firms Amid Rising Criticism," *The Verge* (Feb. 25, 2019), https://perma.cc/U88J-KJ4A.

[55] For discussion of the various considerations and of trends in R&D outsourcing, see Farok J. Contractor, et al., eds. *Global Outsourcing and Offshoring: An Integrated Approach to Theory and Corporate Strategy* (New York: Cambridge University Press, 2011).

[56] On administrative courts generally, see Kent Barnett, "Against Administrative Judges," *U.C. Davis Law Review* 49 no. 5 (2016): 1634-1718; Chris Guthrie, Jeffrey J. Rachlinski, & Andrew J. Wistrich, "The Hidden Judiciary: An Empirical Examination of Executive Branch Justice," *Duke Law Journal* 58 no. 7 (2009): 1477-1530. On administrative supervision of enforcement payouts, see Michael D. Sant'Ambrogio & Adam S. Zimmerman, "The Agency Class Action," *Columbia Law Review* 112 no. 8 (2012): 1992-2067; Adam S. Zimmerman, "Distributing Justice," *New York University Law Review* 86 no. 2 (2011): 500-572; Administrative Conference of the United States, "Aggregation of Similar Claims in Agency Adjudication" (June 10, 2016), 3-6, https://perma.cc/4525-V9F7. On administrative hybrids in mass tort litigation, see Richard A. Nagareda, "Future Mass Tort Claims and the Rule-Making/Adjudication Distinction," *Tulane Law Review* 74 no. 5-6 (2000): 1781, 1788-92; Richard A. Nagareda, "Turning from Tort to Administration," *Michigan Law Review* 94 no. 4 (2009): 899-981. On specialty criminal and drug courts, see James L. Nolan, Jr., ed., *Drug Courts in Theory and in Practice* (New York: Routledge, 2002); Allegra M. McLeod, "Decarceration Courts: Possibilities and Perils of a Shifting Criminal Law," *Georgetown Law Journal* 100 no. 5 (2011): 1587-1674.

[57] A recent, large-scale study situating contemporary plea bargaining practice within the managerial paradigm is Nancy J. King & Ronald F. Wright, "The Invisible Revolution in Plea Bargaining: Managerial Judging and Judicial Participation in Negotiations," *Texas Law Review* 95 no. 2 (2016): 325-398.

[58] U.S. Sentencing Commission, "2016 Guidelines Manual" (Nov. 1, 2016), https://perma.cc/B8PR-GFR6; John Logan Koepke & David G. Robinson, "Danger Ahead: Risk Assessment and the Future of Bail Reform," *Washington Law Review* 93 no. 4 (2018): 1725-1807; Jeff Larson, Surya Mattu, Lauren Kirchner and Julia Angwin, "How We Analyzed the COMPAS Recidivism Algorithm," *ProPublica* (May 23, 2016), https://perma.cc/JPR7-GMNY; Rebecca Wexler, "Life, Liberty, and Trade Secrets: Intellectual Property in the Criminal Justice System," *Stanford Law Review* 70 no. 5 (2018): 1343-1429.

[59] Ethan Katsh & Orna Rabinovitch-Einy, *Digital Justice: Technology and the Internet of Disputes* (New York: Oxford University Press, 2017), 158-165, 178-79..

[60] J. Maria Glover, "The Supreme Court's Non-Trans-Substantive Class Action," *University of Pennsylvania Law Review* 165 no. 7 (2017): 1625-1668.

[61] Richard A. Nagareda, "Class Certification in an Age of Aggregate Proof," *New York University Law Review* 84 no. 1 (2009): 97, 133-35. Class claims for violation of statutory information privacy rights generally are treated as falling within this category. Julie E. Cohen, "Information Privacy Litigation as Bellwether for Institutional Change," *DePaul Law Review* 66 no. 2 (2017): 535-578, 562-70.

[62] Elizabeth Chamblee Burch, "Judging Multidistrict Litigation," *New York University Law Review* 90 no. 1 (2015): 71-142; J. Maria Glover, "Mass Litigation Governance in the Post-Class Action Era: The Problems and Promise of Non-Removable State Actions in Multi-District Litigation," *Journal of Tort Law* 5 no. 1 (2014): 3-46; Samuel Issacharoff, "Private Claims, Aggregate Rights," *Supreme Court Review* 2008: 183-222. For a thought-provoking exploration of MDL as institutional innovation, see Abbe Gluck, "Unorthodox Civil Procedure: Modern Multidistrict Litigation's Place in the Textbook Understandings of Procedure," *University of Pennsylvania Law Review* 165 no. 7 (2017): 1669-1710.

[63] Cohen, "Information Privacy Litigation", 562-70.

[64] For example, in litigation alleging that media streaming service Hulu's technical protocols violated the Video Privacy Protection Act by disclosing viewing selections and personally identifying information to third parties, the arguments about class definition required detailed expert analysis of the technical protocols used by both Hulu and Facebook to keep track of users. In re Hulu Privacy Litig., 2014 WL

2758598 (N.D. Cal. Nov. 18, 2014). For a more theoretical analysis of the argument against certifying very large classes, see Bert I. Huang, "Surprisingly Punitive Damages," *Virginia Law Review* 100 NO. 5 (2014): 1027-1060.

[65] Cohen, "Information Privacy Litigation," 562-67.

[66] The most well known exposition of this argument is Abram Chayes, "The Role of the Judge in Public Law Litigation," *Harvard Law Review* 89 no. 7 (1976): 1281-1316.

[67] For a general description of this process—and an optimistic assessment of its transformative potential—see Charles F. Sabel & William H. Simon, "Destabilization Rights: How Public Law Litigation Succeeds," *Harvard Law Review* 117 no. 4 (2004): 1016, 1069-72.

[68] See, for example, Jason Parkin, "Aging Injunctions and the Legacy of Institutional Reform Litigation," *Vanderbilt Law Review* 70 no. 1 (2017): 167-220; Margo Schlanger, "Civil Rights Injunctions Over Time: A Case Study of Jail and Prison Court Orders," *New York University Law Review* 81 no. 2 (2006): 550-630; Michael Selmi, "The Price of Discrimination: The Nature of Class Action Employment Discrimination and Its Effects," *Texas Law Review* 81 no.5 (2003): 1249-1336. For more equivocal assessments, see Nancy Levit, "Megacases, Diversity, and the Elusive Goal of Workplace Reform," *Boston College Law Review* 49 no. 2 (2008): 357-430; Zachary Powell, Michele Bisaccia Meitl, & John L. Worrall, "Police Consent Decrees and §1983 Civil Rights Litigation," *Criminology and Public Policy* 16 no. 2 (2017): 575-606.

[69] For an overview of the aggregate settlement phenomenon, see David M. Jaros & Adam S. Zimmerman, "Judging Aggregate Settlement," *Washington University Law Review* 94 no. 3 (2017): 545-606. For an influential judicial critique of securities enforcement consent decrees, see SEC v. Citigroup Global Markets, Inc., 827 F. Supp. 2d 328 (S.D.N.Y. 2011) (Rakoff, J.). On the provisions of consent decrees entered in information privacy enforcement actions brought by the FTC under its general consumer protection authority, see William McGeveran, "Friending the Privacy Regulators," *Arizona Law Review* 68 no. 4 (2016): 959-1026; Daniel J. Solove & Woodrow Hartzog, "The FTC and the New Common Law of Privacy," *Columbia Law Review* 114 no. 3 (2014): 583-676.

[70] See, for example, David Kravets, "Judge Approves $9.5 Million Facebook 'Beacon' Award," *Wired* (Mar. 17, 2010), https://perma.cc/UZ3M-BQ5Y; Sewell Chan & Louise Story, "Goldman Pays $550 Million to Settle Fraud Case," *New York Times* (July 15, 20100, https://perma.cc/6VN7-HJ98; James B. Stewart, Convictions Prove Elusive in 'London Whale' Trading Case, *New York Times* (July 16, 2015), https://perma.cc/9DXF-FA3H; Damon Darlin, "Google Settles Suit over Buzz and Privacy," *New York Times* (Nov. 3, 2010), https://perma.cc/A489-5GHN; see also Selmi, "The Price of Discrimination."

[71] Darius Mehri, "The Darker Side of Lean: An Insider's Perspective on the Realities of the Toyota Production System, *Academy of Management Perspectives*, Vol. 20, No. 2 (2006): 21-41; Hans Pruijt, "Teams Between Neo-Taylorism and Anti-Taylorism," *Economic and Industrial Democracy* 24 no. 1 (2003): 77-80; Paul Thompson, "Financialization and the Workplace: Extending and Applying the Disconnected Capitalism Thesis," *Work, Employment and Society* 27 no. 3 (2013): 472-88.

[72] Gluck, "Unorthodox Civil Procedure."

[73] See Resnik, "Reinventing Courts as Democratic Institutions"; Judith Resnik, "The Democracy in Courts: Jeremy Bentham, 'Publicity', and the Privatization of Process in the Twenty-First Century," *NoFo* 10 (2013): 77-119; Resnik, "The Functions of Publicity and of Privatization in Courts and Their Replacements."

[74] Abbe Gluck reports that judges who preside over MDL proceedings resist the idea of developing new rules to standardize them on the ground that each MDL proceeding is different. See Gluck, "Unorthodox Civil Procedure," 1702-03. On the FTC's use of flexible templates for information privacy consent decrees, see McGeveran, "Friending the Privacy Regulators," 998-99. On conventions for processing and accounting for mass claims and payouts, see Paul D. Rheingold, Litigating Mass Tort Cases, vol. 1, § 9:11-17 (Washington, DC: AAJ Press, 2018).

[75] For discussion of the emergent model of aggregate litigation conducted and supervised by elites, Brooke D. Coleman, "One Percent Procedure," *Washington Law Review* 91 no. 3 (2016): 1005-1071; Schlanger, "Civil Rights Injunctions Over Time," 616-21; see also Gluck, "Unorthodox Civil Procedure," 1693-99 (discussing MDL judges' perceptions of themselves as judicial elites).

[76] William Simon, "Toyota Jurisprudence: Legal Theory and Rolling Rule Regimes," in *Law and New Governance in the E.U. and in the U.S.*, eds. Grainne de Burca & Joanne Scott (Portland, Ore.: Hart Publishing, 2006), 37-64.

[77] On patent litigation using representative works and/or claims, see Mark A. Lemley, "The Changing Meaning of Patent Claim Terms," *Michigan Law Review* 104 no. 1 (2005): 101, 114; P. E. Campbell, "Representative Patent Claims: Their Use in Appeals to the Board and in Infringement Litigation," *Santa Clara Computer & High Technology Law Journal*, 23 no. 1 (2006): 55-87. For examples of copyright litigation using representative copyrights, see American Geophysical Union v. Texaco, Inc.., 60 F.3d 913 (2d Cir. 1994), Princeton University Press v. Michigan Document Services, Inc., 99 F.3d 1381 (6th Cir 1996) (en banc). But see Cambridge University Press v. Patton, 769 F.3d 1232, 1259-60 (11th Cir. 2014) (holding that "the fair use analysis is highly fact-specific and must be performed on a work-by-work basis") (citing Cariou v. Prince, 714 F.3d 694 (2d Cir. 2013) (same)).

[78] For two high-profile examples, see Oracle America Inc. v. Google Inc., 872 F. Supp. 2d 974 (N.D. Cal. 2012), *rev'd and remanded*, 750 F.3d 1339 (Fed. Cir. 2014); Computer Associates International, Inc. v. Altai, Inc., 775 F. Supp. 544 (E.D.N.Y. 1991), *aff'd in part and vacated in part*, 982 F.2d 693 (2d Cir. 1992).

[79] See, for example, Dan L. Burk & Mark A. Lemley, "Fence Posts or Sign Posts? Rethinking Patent Claim Construction," *University of Pennsylvania Law Review* 157 no. 6 (2009): 1743-1800; David L. Schwartz, "Pre-*Markman* Reversal Rates," *Loyola Los Angeles Law Review* 43 no. 3 (2010): 1073-1108.

[80] Reed Elsevier, Inc. v. Muchnick, 559 U.S. 154 (2010).

[81] For some high-profile examples, see Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 545 U.S. 913 (2005); A&M Records, Inc., v. Napster, Inc., 239 F.3d 1004 (9th Cir. 2001); Universal City Studios, Inc. v. Reimerdes, 273 F.3d 429 (2d Cir. 2001).

[82] There is an ongoing debate about whether the standards of review that apply to administrative actions in other contexts apply in the same way in intellectual property contexts. For discussion, see Stuart Minor Benjamin & Arti K. Rai, "Administrative Power in the Era of Patent *Stare Decisis*," *Duke Law Journal* 65 no. 8 (2016): 1563-1599; Dan L. Burk, "DNA Copyright in the Administrative State," *U.C. Davis Law Review* 51 no. 4 (2017): 1297-1350. The emergence of different and somewhat less deferential standards supports the modularization thesis.

[83] See, for example, Arista Records, LLC v. Launch Media, Inc., 578 F.3d 148 (2d Cir. 2009).

[84] See Robert P. Merges, "Contracting into Liability Rules," *California Law Review* 84 no. 5 (1996): 1293-1394. For a recent, much-publicized example of active judicial oversight of the collective licensing of music rights, see Pandora Media, Inc. v. American Society of Composers, Authors, & Publishers, 785 F.3d 73 (2d Cir. 2015); In re Pandora Media, Inc., 6 F. Supp. 3d 317 (S.D.N.Y. 2014).

[85] Herbert A. Simon, "The Architecture of Complexity," in *Managing in the Modular Age: Architectures, Networks, and Organizations*, eds. Raghu Garud, Arun Kumaraswamy, & Richard N. Langlois (Malden, Mass.: Blackwell, 2003), 15-38.

[86] Simon, "The Architecture of Complexity," 23-28.

[87] Carliss Y. Baldwin & Kim B. Clark, *Design Rules: The Power of Modularity* (Cambridge, Mass.: MIT Press, 2000), 236-241; Raghu Garud, Arun Kumaraswamy, & Richard N. Langlois, *Managing in the Modular Age: Architectures, Networks, and Organizations* (Malden, Mass.: Blackwell, 2013); Andrew L. Russell, "Modularity: An Interdisciplinary History of an Ordering Concept," *Information and Culture: A Journal of History*," 47 no.3 (2012): 257-287.

[88] Authors Guild v. Google, Inc., 770 F. Supp. 2d 666 (S.D.N.Y. 2011); on the quasi-legislative character of the proposed settlement, see Pamela Samuelson, "The Google Book Settlement as Copyright Reform," *Wisconsin Law Review* 2011 no. 2 (2011): 479-562.

[89] Authors Guild v. Google, Inc., 804 F.3d 202 (2d Cir. 2015), *cert. denied*, 136 S. Ct. 1658 (2016).

[90] See, for example, Burk & Lemley, "Fence Posts or Sign Posts?," 1751-61.

[91] On the importance of exploration and flow and the ways that atomistic copyright definition and enforcement jeopardizes those values, see Julie E. Cohen, *Configuring the Networked Self: Law, Code and the Play of Everyday Practice* (New Haven, Conn.: Yale University Press, 2012), 80-104.

[92] Joshua Fairfield, *Owned: Property, Privacy, and the New Digital Serfdom* (New York: Cambridge University Press, 2017); Aaron Perzanowski & Jason Schultz, *The End of Ownership: Personal Property in the Digital Economy* (Cambridge, Mass.: MIT Press, 2016).

[93] On notice and takedown processes, see Laura Quilter & Jennifer Urban, "Efficient Process or 'Chilling Effects'? Takedown Notices under Section 512 of the Digital Millennium Copyright Act," *Santa Clara Computer and High Technology Law Journal* 22 no. 4 (2005): 621-694; Wendy Seltzer, "Free Speech

Unmoored in Copyright' Safe Harbor: Chilling Effects of the DMCA on the First Amendment," *Harvard Journal of Law and Technology* 24 no. 1 (2010): 171-230. On the due process implications of private-sector automated enforcement initiatives in copyright and other areas, see Annemarie Bridy, "Graduated Response and the Turn to Private Ordering in Online Copyright Enforcement," *Oregon Law Review* 89 no. 1 (2010): 81-132; Annemarie Bridy, "Internet Payment Blockades," *Florida Law Review* 67 no. 5 (2015): 1524-1568.

[94] On absent users in infringement litigation, see Julie E. Cohen, "The Place of the User in Copyright Law," *Fordham Law Review* 74 no. 2 (2005): 347-374. On attempted aggregation of user-defendants, see Greg Reilly, "Aggregating Defendants," *Florida State University Law Review* 41 no. 4 (2014): 1011-1066.

[95] On the ways that litigation and regulation can facilitate complementary processes of knowledge production about risk of harm, see Mary L. Lyndon, "Tort Law and Technology," *Yale Journal on Regulation* 12 no. 1 (1995): 137-176. For an extended exploration of efforts over the last four decades to undo the mid-twentieth-century regulatory settlements in the domains of product safety, worker safety, and consumer protection, see McGarity, *Freedom to Harm*.

[96] On the particular importance of the openness and transparency questions and the new obstacles that managerial processes now present, see Resnik, "A2J/A2K"; Resnik, "The Functions of Publicity and of Privatization in Courts and Their Replacements."