

Five Hypotheses on Intellectual Property and Inequality

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[A brief note: Below are some preliminary thoughts on how we might conceive of the relationship between IP law and inequality. Your reactions will be very helpful as I determine where to take the project.]

Deep inequality is a central fact of our contemporary political and economic order. This is, of course, far from a new phenomenon, but evidence that inequality has increased along certain dimensions in recent decades has brought renewed focus to the issue, both politically and intellectually.

The most notable contribution in this vein is Thomas Piketty's recent bestselling book, *Capital in the Twenty-First Century*.¹ Piketty's insight is premised on a simple equation, which is supplemented with an immense amount of historical data.² As Piketty points out, if the average annual rate of return on capital (r) is higher than the average rate of growth of the economy as a whole (g), then existing inequalities in wealth are very likely to increase over time.³ Piketty shows that over

¹ The scholarly literature For two earlier important academic treatments, see AMARTYA SEN, *INEQUALITY REEXAMINED* (1992), and RICHARD WILKINSON & KATE PICKETT, *THE SPIRIT LEVEL: WHY MORE EQUAL SOCIETIES ALMOST ALWAYS DO BETTER* (2009).

² THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* (Arthur Goldhammer trans., 2014). The data are drawn primarily from the US and Europe, where financial and tax records are most readily available.

³ *Id.* at 25.

the past three centuries⁴ the rate of return on capital has indeed been persistently higher than growth, with the exception of the years immediately following World War II.⁵ He calls the tendency the “fundamental force of divergence” of capitalism.⁶

Piketty thus challenges the earlier view in economics, which relied upon data from the post-World War II period to make the claim that under capitalism, inequality initially increases, but then decreases. Instead, Piketty concludes, capitalism will over time tend to produce increasing inequality, though likely plateauing at a certain point.⁷ Famously, Piketty and his co-authors have also documented a recent and significant increase in wealth and income inequality across a broad range of countries since the 1970s. The trend is particularly sharp in the U.S., but is present in Europe too, as well as in key “emerging economies” such as South Africa, Brazil, Argentina, and India.⁸

It is less clear whether, measured globally and interpersonally (instead of within nations), global inequality has increased in recent years. Recent scholarship on the topic suggests that there may have been modest decreases in inequality over the last two decades, but given the difficulty of accessing reliable wealth and income information around the world, the caveats to the conclusion are substantial.⁹

⁴ *Id.* At 354. The data are only extensive as regards the most recent century. For some important notes about the reliability of the data and extrapolations to earlier centuries, see David Grewal, *The Laws of Capitalism* (Book Review PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY*), 128 HARV. L. REV. 626, 642 (2014).

⁵ *Id.* at 25.

⁶ *Id.* at 25, 27. He also at times casts it more modestly as a force that produces “an extremely high level of inequality.”

⁷ See PIKETTY AT 354; see also Grewal at 641-42.

⁸ PIKETTY at 316, 327.

⁹ Christoph Lakner & Branko Milanovic, *Global Income Distribution: From the Fall of the Berlin Wall to the Great Recession*, World Bank Econ. Rev. 1 (pub. Aug. 12, 2015) (concluding, with many provisos, that the global Gini coefficient may have fallen by two points, to 70.5, over the last two decades, largely driven by growth in India and China). The conclusion also of course depends on the

Whether or not global interpersonal inequality is incrementally shrinking, it remains undeniably vast. Global inequality today exceeds the degree of inequality within any individual nation.¹⁰ The top 1.7%, for example, has as large a share of global income as the bottom 75%.¹¹

The notion that capitalism will produce increasing inequality has been called Piketty’s “law of capitalism,” but it is more a predication based upon historical data than an inevitability.¹² Indeed, Piketty is careful to note that the basic equation of $r > g$ is a “contingent historical proposition,”¹³ and concludes his book with a set of policies, such as a progressive global tax on capital, that would counter the trend.¹⁴

The mounting evidence that modern capitalism generates persistent and even accelerating inequality brings to the fore an important set of questions for legal scholars, namely: What is the role of law in these dynamics? And how might changes to our legal order help redress them? At least since the work of early realists such as Robert Hale, Karl Llewellyn, and Felix Cohen, legal scholars have called attention to how legal forms undergird the “natural” order of markets. How, then, do different legal regimes and domains work to accelerate or mitigate current

metric used. If inequality is measured by the share of growth captured by the top 1%, inequality has risen around the world since 1980. ALVAREDO ET. AL, *WORLD INEQUALITY REPORT 2018* at 7. Milanovic and his co-authors have also argued that inequality is likely to rise again in the future, because it is likely to rise within the countries that have rapidly developed. [Add cite, After Piketty book]

¹⁰ Milanovic describes the comparison in approachable terms: “What does the Gini of about 70, which is the value of global inequality, mean? One way to look at it is to take the whole income of the world and divide it into two halves: the richest 8% will take one-half and the other 92% of the population will take another half. So, it is a 92-8 world. Applying the same type of division to the US income, the numbers are 78 and 22. Or using Germany, the numbers are 71 and 29.” Branko Milanovic, *Global Income Inequality by the Numbers: in History and Now* 8-9, World Bank Policy Research Working Paper 6259 (Nov. 2012).

¹¹ Each have one-fifth of the total. *Id.*

¹² Piketty at __; Grewal at 641.

¹³ Piketty at 358.

¹⁴ Piketty, p. 27, Part IV.

structures of economic inequality, or refract such inequality into inequality in multiple domains?

The question opens out into relatively uncharted territory, at least as regards private law scholarship in the United States. A certain strand of law and economics has exiled conversations about equity from the domain of US private law on the theory that equity issues are better – and more efficiently – dealt with outside of private law, through systems of tax and transfer.¹⁵ Critics of this trend have pointed to numerous reasons that efficiency concerns might indeed lead us to take distribution into account in the private law.¹⁶ Normative commitments could also, of course, lead us to prioritize equity on its own terms, independent of (or even as it might conflict with) efficiency. The rising importance of inequality in the political spheres and across different disciplines today creates a new opportunity to make good on these critiques, and to explore the relationship between equity and private law anew.¹⁷

This essay is an attempt to contribute to the systematic consideration of the relationship between prevailing private law regimes and inequality, by focusing on one area of private law in particular: intellectual property (IP) law. It is also a contribution to the emerging scholarly literature that I and others have begun to call “law and political economy” (LPE). Political economy approaches characteristically

¹⁵ See, e.g. Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667 (1994).

¹⁶ Many powerful critiques of the claims of Kaplow and Shavell have, of course, been levied. See, e.g., Zachary Liscow, *Reducing Inequality on the Cheap: When Legal Rule Design Should Incorporate Equity as Well as Efficiency*, 127 Yale Law Journal 2478 (2014). (Add also Kennedy, Kronman, others)

¹⁷ For other works in this vein, see Grewal at 659 (noting, for example, the importance of understanding how “formal equality of contract is compatible with widening economic inequality”). [add cites]

treat questions of equality and democracy as of primary rather than secondary importance; acknowledge the political foundation and political consequence of market structures; and seek to illuminate the role of law in creating – and revising – particular kinds of markets and distributions, and thereby particular political orders.¹⁸

IP (typically understood as exclusive rights in information,¹⁹ with patent law, copyright law, trademark, and trade secrecy law all commonly grouped under this heading.²⁰) is of particular interest from an LPE perspective because it is a profoundly important form of legal ordering on both political and economic terms.²¹ For one, information is a key resource in the global economy: as scholars like Manuel Castells have shown, in recent decades, our economy has become “informational.”²² The most dynamic sectors in global perspective are those that involve the action of information on itself – sectors such as the IT sector, biotechnology, and finance.²³ This shift in the global economy relates to the recent emergence of information and communications technologies that permit

¹⁸ See David Grewal, Amy Kapczynski & Jed Purdy, Law and Political Economy: Toward a Manifesto, Nov. 6, 2017, LPEBlog.org, at <https://lpeblog.org/2017/11/06/law-and-political-economy-toward-a-manifesto/>.

¹⁹ It is perhaps worth noting here that the conventional conception of IP is, in property terms, a form of *private* intellectual property, though it is almost never noted. Just as in the real property context, we could – and should – speak of more than one form of property in information. Private property is one, but public property (either inalienable, as in the public domain, or state-owned, as with state owned patents) and common property (for example, goods governed by licenses that mandate sharing, such as FOSS licenses, CC-BY-NC, etc.) are others. In what follows, when I say “IP” I really mean private, market-based IP. Common or public IP for example, could have very different effects on inequality.

²⁰ Many more forms can be grouped under this heading, such as data protection for pharmaceuticals, geographical indications, and *sui generis* protection for traditional knowledge, to name a few.

²¹ See also Amy Kapczynski, Why “Intellectual Property” Law?, Nov. 6, 2017, LPEblog.org, <https://lpeblog.org/2017/11/06/why-intellectual-property-law/>.

²² MANUEL CASTELLS, THE RISE OF THE NETWORK SOCIETY (2D ED. 2000).

²³ *Id.*

accelerating feedback loops of innovation and information processing. Under contemporary conditions, as Castells puts it, the human mind is “the direct productive force, not just a decisive element of the production system.”²⁴ Manufacturing and agriculture of course do not disappear, but information processing—for example, regarding new inventory management techniques or just-in-time production—decisively determines their productivity.

The phenomenon reaches across the world, because the economy increasingly functions as a unit in real time on a planetary scale.²⁵ And, countries in the global South that have long labored under a trade imbalance with regard to manufactured goods and raw materials (and the unequal distributions of wealth generated by these) now labor under a “new form of imbalance” regarding “the trade between high-technology and low-technology goods, and between high-knowledge services and low-knowledge services, characterized by a pattern of uneven distribution of knowledge and technology between countries and regions around the world.”²⁶

A significant reason for this is the fact that, as the value of information in the world economy has grown, IP law grown and expanded too. The trend is particularly notable at a transnational level: In 1995, when the WTO was created, IP obligations were included as a core part of the commitments that countries had to agree to in order to participate in the new world trading order.²⁷ With 161 members to date, as well as a highly legalized dispute settlement system and a relatively

²⁴ Id. at 13-21.

²⁵ Id. at 101.

²⁶ CASTELLS, p. 108-09.

²⁷ See, Trade-Related Aspects of Intellectual Property Agreement.

powerful sanctions mechanism, the WTO has anchored a sea change in the IP laws of many countries around the world.²⁸ Subsequent “free trade” and investment agreements have substantially added to the WTO’s IP requirements. Inside the wealthy countries that have set the IP agenda of the WTO, IP laws have become stronger too, with longer terms and new subject areas, and with diminished requirements for the establishment and enforcement of such rights.²⁹

IP deserves attention because it is a central legal tool mediating accumulation and distribution in our global information economy. It is of course not the only such tool. (Both the rise of the importance of data aggregation as a source of market power around the world, and the importance of non-IP based forms of innovation, demand we do more to acknowledge and investigate the power of other legal tools, and especially contract, in the information age.³⁰) But IP is clearly *one* important tool, in part because where it exists it gives legal powers to its holder that far exceed those available under ordinary contract or conditions of competition. IP is also of interest in the conversation about inequality because it is a key mediator: it critically shapes how income inequality manifests in other domains,

²⁸ See, e.g., CAROLYN DEERE, *THE IMPLEMENTATION GAME: THE TRIPS AGREEMENT AND THE GLOBAL POLITICS OF INTELLECTUAL PROPERTY REFORM IN DEVELOPING COUNTRIES* (2009); ROCHELLE DREYFUSS AND CÉSAR RODRÍGUEZ-GARAVITO, EDS., *BALANCING WEALTH AND HEALTH: THE BATTLE OVER INTELLECTUAL PROPERTY AND ACCESS TO MEDICINES IN LATIN AMERICA* (2014); Amy Kapczynski, *Harmonization and its Discontents: A Case Study of TRIPS Implementation in India’s Pharmaceutical Sector*, CAL. L. REV. 2007.

²⁹ [add cites about the extension of copyright to software and other new forms, e.g. architectural drawings and choreography; recent extensions of copyright terms; patent “restoration” data exclusivity in pharma; the diminished thresholds for utility and obviousness and for imposition of injunctions in US patent law imposed by the Federal Circuit (and now in part being reversed by the Supreme Court).] [describe also the recent, though limited, reversals of the trend]

³⁰ For more on the importance of contract in understanding intellectual production without IP, see Amy Kapczynski, *Order Without Intellectual Property Law: A Case Study of Open Science in Influenza*, CORNELL L. REV. (2017).

such as those of health, education, and citizenship.³¹ IP governs the production of a vast range of informational goods, and one implication of informationalism is that such goods are increasingly important to well-being across many dimensions of human life.³² Finally, IP scholarship has been characterized by the same focus on efficiency, and default to law and economics reasoning, that has characterized private law scholarship generally over the past several decades – making this a good location from which to investigate the logic and arguments that we must confront if we wish to bring equity back to the fore.

In the pages that follow, I will set forth five hypotheses regarding the relationship between the IP regimes that currently prevail around the world (indeed, with a fair degree of uniformity)³³, and the deep inequality that characterizes the contemporary economic and political order. The arguments are exploratory, and face a double challenge: the first, to conceptualize how we might relate distinct legal choices to a set of phenomena that are overdetermined, and the second, to draw generalizations across a field as large and diverse as that of “property” in information. (For this latter reason, I focus my examples on copyright and patent, leaving to further exploration the degree to which other forms of IP have

³¹ [Describe further: This is the result of IP’s influence on the creation and distribution of knowledge and technologies –including knowledge for health, for education (e.g. textbooks, literary and scientific works), and of media.]

³² For a discussion of the importance of attention to the translation of income and wealth inequality to other domains, and the inadequacy of attempting to use income or wealth as a single index number for the normative implications of inequality, see Grewal at 647-50. See also *id* at 649 (“the meaning of . . . inequality requires . . . interpretation: whether citizens are unequal in normatively or politically salient ways cannot be determined based on the simple perusal of a distribution table without asking what greater wealth or income can command in one social context as against another.”)

³³ But see Kapczynski, *Harmonization and its Discontents*, *supra* (describing the degree of formal flexibility in one domain of the TRIPS Agreement, as well as the difficulties countries face implementing such flexibilities, via a case study of India’s pharmaceutical sector).

the same implications.)

Why might IP regimes amplify inequality within and between nations, and particularly the inequality at the very top that is associated with Piketty's work? First, I suggest, information typically exhibits strong returns to scale, and especially as IP rights become stronger, they create their own additional returns to scale. Second, information is also "scalar" as that term is used in the business literature, meaning that it tends toward winner-take-all results, particularly in the presence of strong IP law. Third, although in theory IP as a mode of property is available to all, IP regimes as currently configured in fact make IP a mode of power that tends to be particularly inaccessible to those with few resources. Fourth, IP tends to concentrate political as well as financial power, as public choice theory predicts, and as evidenced by the recent and almost unimpeded expansion of IP law in the US and around the world. That power can be, and has been, used to defend and extend existing exclusive rights, and to bring additional returns to those who have gained the most (for example, via lobbying around tax bills, legislation on campaign finance, and so forth).

Lastly, I will suggest that IP is also a promising domain for distributive politics. Some of the very aspects – its globalized nature, and relative dissociation from material constraints – that make IP an accelerant of inequality under contemporary conditions could be leveraged to the opposite effect. This is of particular importance on the global scale, because here more general tax and transfer schemes do not exist. Indeed, one way to understand the recent evidence of modest decreases in global interpersonal inequality is through the lens of IP. That

trend, if it is indeed a trend, is almost entirely due to growth in China and India – two countries that, not by chance, have in law and fact adapted their IP regimes to look quite different from those of the North, in an attempt to explicitly promote transfer of technology and local growth, and in some cases to directly protect values such as health. If we are interested in politically plausible measure to impact distribution positively, IP may be an important domain of action.

First Hypothesis: IP Amplifies Inequality Because it Facilitates Returns to Scale

IP as a form of legal regulation is meant to tie the production and dissemination of information goods to markets. Governments grant IP rights to creators in order to permit them to exclude others from copying their creations. The theory of public goods provides a justification for this government-led deviation from direct market competition: The theory is that competitive markets will underproduce information, because information is typically expensive to create but cheap to copy. Without exclusive rights, firms will be purportedly unable to recoup investment in information, because the information can be copied by competitors who do not bear the cost of its creation.

Since Kenneth Arrow's early work, information economists have known that exclusive rights in information generate inefficiencies, because they lead to prices that necessarily exceed marginal cost (because the marginal cost of information is zero – once it has been produced once, it need not be produced again and can most efficiently be used at the marginal cost of distribution alone). Arrow preferred

government provisioning as an alternative to IP, on the grounds that government could cover investment costs and allow information to be more efficiently distributed.³⁴ The justification for IP as a modality of information production is centrally its relationship to markets, and in particular, the purported informational superiority of markets. Markets, a la Demsetz and Hayek, will do better than governments at directing investment efficiently, towards ends and via means that will do most to promote social welfare.³⁵

Of course, this standard account assumes that market value closely tracks social value. Whether social value here is understood in welfarist terms (as a matter of preference satisfaction), or in more deontic terms (via a concept like capabilities),³⁶ there is simply no reason to think that this is often the case. Market ordering allocates goods according not simply to willingness to pay but also ability to pay. So, market ordering will allocate a loaf of bread to a rich person who is “willing” to pay \$6 for it, rather than to a poor person who is “willing” (read: able) only to pay \$1 for it, even if the poor person would get far more pleasure from it, or indeed would need it to survive. Market ordering thus often will produce perverse outcomes from an efficiency perspective (if efficiency is understood as Kaldor-Hicks welfare maximizing), as well as from a distributive perspective.

Existing attempts to articulate the implications of IP for equality have focused on this feature of market ordering. So, critics have noted that because IP raises the costs of information-embedded goods, it can undermine distributive

³⁴ Kenneth Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *Rate and Direction of Inventive Activity*, 1962.

³⁵ See Harold Demsetz, *Information and Efficiency: Another Viewpoint*, *J. L. & Econ.* (1969).

³⁶ See Amartya Sen, *Development As Freedom*; Sen, *Equality of What?*

justice.³⁷ In previous work, I’ve shown that IP also tends to encourage unequal innovation. Because it is directed by market signals, IP prioritizes innovations that are highly valued by the wealthy, over those that are highly valued by the poor, in a way that diverges from what a welfarist account would require.³⁸ The problem is easily illustrated in the domain of pharmaceuticals. As a market-led strategy of information production, IP tends to overproduce information goods for the rich (baldness cures), and underproduce cures for diseases of the world’s poor (TB, or sleeping sickness).³⁹ And, as a system that allocates the results of research through markets, IP supports sometimes astronomical prices for information goods. Medicines again provide a ready example: patented HIV/AIDS medicines cost around \$10,000 per person per year, while generics can be obtained for less than \$100 per person per year.⁴⁰

This criticism of IP is not strictly limited to IP. All market-oriented means of allocating goods will reflect existing inequalities in wealth. More interesting, then, is the possibility that IP as a legal form also has qualities that make it not merely capable of reproducing and refracting preexisting inequalities, but also capable of dynamically *accelerating* them over time.

What are the dynamic implications of different types of property, and

³⁷ See, e.g., Margaret Chon, Intellectual Property and the Development Divide, 27 CARDOZO L. REV. 2821, 2894-95 (2006); Amy Kapczynski, The Cost of Price, 59 UCLA L. Rev. at 978 (2012).

³⁸ See *supra*, Kapczynski, The Cost of Price.

³⁹ In fact, only 10% of the world’s R&D resources are spend on health problems that primarily affect 90% of the world’s population. Global Forum for Health Research 2004. See also Patrice Trouiller et al., Drug Development for Neglected Diseases: A Deficient Market and a Public-Health Policy Failure, 359 LANCET 2188, 2189–90 (2002) (showing that only 1 percent of medications introduced between 1975 and 1999 targeted tuberculosis and tropical diseases).

⁴⁰ See, e.g., <http://www.msfaaccess.org/content/untangling-web-antiretroviral-price-reductions-17th-edition-%E2%80%93-july-2014>.

different property regimes, on the concentration of wealth over time? As Piketty describes, if wealth differences exist, and if rate of return on capital (r) exceeds the rate of growth (g), then inequality will tend to grow over time. A key influence on this equation, as we begin to think about the relative contribution that different kinds of resources and legal regimes make to inequality, relates to returns to scale. Different forms of capital (which are dependent upon the various legal regimes that help to make them capital) plausibly can work to ameliorate or intensify inequality, depending on whether or not these forms of capital exhibit increasing or diminishing returns to scale.

Adam Smith, for example, long ago posited that agriculture exhibits diminishing returns to scale.⁴¹ If this is so, then *ceteris paribus*, an initially unequal distribution of wealth in agricultural assets will become less unequal over time. (Another way to put this would be that “ r ” for this particular asset decreases over time. If g remains the same, this works Piketty’s law in reverse, at least for this asset.) IP assets, however, likely typically exhibit increasing returns to scale. There are two key reasons for this: one is that there are commonly important economies of scale in information sector operations; and the other is that IP as form of legal regulation has features that would also seem to increase returns to scale.

As a resource, information itself seems to have tendencies that increase returns to scale. As Eli Noam notes, this follows from the classic economic understanding of information. High fixed costs and low marginal costs mean that average costs drop with size, and these “cost characteristics mean substantial

⁴¹ [add reference]

economies of scale and incentives for each competitor to expand in order to gain them.”⁴² Digital technology amplifies the returns to size, because it decreases the marginal cost of distributing information and of making copies.⁴³ Network effects are also commonly present in the information sector, which creates additional returns to scale.⁴⁴

As a legal regime, IP creates opportunities to capture value from these returns to scale. And, especially as IP rights become stronger, they create their own additional returns to scale. As Yochai Benkler has pointed out, IP law tends to benefit those entities that produce information via an exclusionary paradigm. Strengthening IP law, in other words, will benefit the Walt Disneys and Monsantos of the world more than, say, open source software firms.⁴⁵ IP law also creates incentives for the Disneys of the world to “vertically integrate new production with management of large-scale owned inventories of existing information.”⁴⁶ Stronger IP law increases the costs of information inputs, and (assuming inputs are heterogeneous) the larger the stock of information a company owns, the more varied are the inputs that are internally available for deployment by the firm’s

⁴² ELI NOAM, *MEDIA OWNERSHIP AND CONCENTRATION IN AMERICA* at 36 (2009); see also *id.* at 35 (“[d]igital technology raised the ratio of fixed cost of investment and the variable costs of serving people. Incremental costs are very low relative to fixed costs in a digital environment, and the average costs therefore keep dropping with size. This translates into growing economies of scale.”).

⁴³ See, e.g., Noam, at 36 (“Technology keeps making reproduction and distribution cheaper, whereas the greater choosiness of users and the slower technical progress in information creation makes production often more expensive. These cost characteristics mean substantial economies of scale and incentives for each competitor to expand in order to gain them.”).

⁴⁴ *Id.*

⁴⁵ Yochai Benkler, *Intellectual property and the organization of information production*, 22 *Int’l Rev. L. & Econ.* 81, 83 (2002). RedHat is a firm that customizes open source software as a service and does not profit from exclusion of others from source code. This is what Benkler refers to as market non-exclusionary production. *Id.*

⁴⁶ *Id.*

employees.⁴⁷

As Coase long ago noted, transaction costs also influence the structure of firms: higher transaction costs will impel firms to bring more factors of production in house, rather than buy them in the market.⁴⁸ As concerns about the efficiency of IP licensing markets has mounted, scholars have enumerated many reasons to think that transaction costs are a particularly acute problem for property in the informational domain. For example, it can be much more difficult to establish the bounds of patents and copyrights than it is the metes and bounds of a plot of land.⁴⁹ Bargaining costs are increased by uncertainty of this sort, as well as uncertainties in the value of assets – and by its nature, IP covers innovative goods that tend to be particularly hard to value.⁵⁰ Patents typically take years and many thousands of dollars to secure, and are also expensive to enforce: the average patent infringement suit in the U.S. today costs several million dollars.⁵¹

One important next step would be to explore the empirical evidence for these

⁴⁷ *Id.* at 88. See also *id.* at 89 (“Two organizations that combine their creative workforces and give each member of the combined workforce access to the joint inventory are likely to have better suited information inputs available at marginal cost to use in a given project than the same two organizations when each workforce utilizes only its organization’s independently-owned inventory.”) As Benkler notes, this relies both on assumptions of heterogeneity of inputs, and on “the assumption that the probability of a given input’s utility to new production is independent of whether that input is owned or unowned, by the firm or another firm.” *Id.* at 89.

⁴⁸ Coase, *The Nature of the Firm*.

⁴⁹ See, e.g., Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 274–75 (2007) (noting the profound uncertainties that surround patent claims, as well as legal standards such as fair use). IP rights can be assigned partially, and that they may require especially expensive monitoring to enforce. Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1053 (1997).

⁵⁰ Cf. Robert Merges, *Intellectual Property Rights and Bargaining Breakdown: The Case of Blocking Patents*, 62 TENN. L. REV. 75, 83–84 (1994). Cognitive biases may also be more extreme in the IP domain. See e.g. Christopher Buccafusco & Christopher Sprigman, *Valuing Intellectual Property: An Experiment*, 96 CORNELL L. REV. 1, 4 (2010).

⁵¹ This is so even though these costs have recently begun to decline. See BNA News, *Cost of Patent Infringement Litigation Falling Sharply*, Aug. 10, 2017 (noting that “The median overall cost for a patent infringement case with \$1 million to \$10 million at stake declined 47 percent from 2015 to \$1.7 million in 2017”).

posited concentration effects. And indeed, existing evidence suggests that there is a high degree of concentration in many information intensive industries. Eli Noam, for example, carefully traces the concentration of a wide variety of media sectors in the US over several decades, and concludes that even though digital technologies have reduced barriers to entry, the pro-competitive effects of this are eventually subverted by the phenomenon of returns to scale.⁵² As he shows, it has become easier for firms to enter various media sectors, but simultaneously more difficult for new entrants to contest the largest firms. His theoretical analysis is bolstered by historical data, which reveals an S-shaped curve of consolidation in a wide variety of media sectors, in which lower entry barriers facilitate entrance, a period of instability follows, and then the industry reconcentrates in a consolidation phase.⁵³ Though similarly comprehensive reviews of sectors such as pharmaceuticals and biotechnology are more difficult to come by, there is some evidence that sectors such as these are also relatively concentrated (and still more so in more recent years), with a small set of large firms capturing a high proportion of the value of the industry.⁵⁴

⁵² Noam, *supra* note __, at 36-37. See also Neil Netanel, *Copyright's Paradox*, 131-32 (2008).

⁵³ Noam, *supra*, at 38-39.

⁵⁴ See, e.g., Henry G. Grabowski and Margaret Kyle, *Mergers, Acquisitions, and Alliances*, THE OXFORD HANDBOOK OF THE ECONOMICS OF THE BIOPHARMACEUTICAL INDUSTRY (Patricia M. Danzon & Sean Nicholson eds. 2012) (“There has been a trend toward increased concentration in pharmaceuticals from M&As and other factors. Global shares for the top 10 firms increased to 45 percent by 2009, compared with 28 percent in 1989”); *see also* <https://biopharmadealmakers.nature.com/users/9880-biopharma-dealmakers/posts/13880-trends-in-pharmaceutical-mergers-and-acquisitions> (noting increased M&A deals in pharma since 2013); GAO, *Profits, Research and Development Spending, and Merger and Acquisition Deals* 21 (Nov. 2017) (the “number of mergers and acquisitions involving one of the largest 25 companies (by 2015 pharmaceutical and biotechnology revenue) increased from 29 transactions in 2006 to 61 transactions in 2015”); *id.* at 24-25 (noting that the top 10 companies have a smaller overall share of the market than in 2007, but noting that “Competition in the drug industry generally is examined at the level where products are viewed as substitutes” and noting that within class, “concentration in shares of sales can be higher than in the overall industry”);

Second Hypothesis: IP Amplifies Inequalities Because Information is a Scalable Good

My second hypothesis draws upon the concept of “scalable” goods as that term is used in the business and computer science literature.⁵⁵ Scalability generally refers to the ability of a mode of production to increase volume without increasing marginal contributions of labor or capital. Nassim Taleb gives an approachable introduction to the concept: “Some professions, such as dentists, consultants, or massage professionals, cannot be scaled: there is a cap on the number of patients or clients you can see in a given period of time. . . . Other professions allow you to add series to your output (and your income) if you do well, at little or no extra effort.”⁵⁶ As he described it, if one is interested in earning enormous wealth (as he was), one should choose “professions in which one can add zeros of income with no greater labor from those in which one needs to add labor and time (both of which are in limited supply.)”⁵⁷

The informational sector of the economy seems inherently highly scalable, and particularly so as digital technology continues to reduce the cost of reproducing and disseminating information. This follows as a simple consequence of the

id. at 17-18 (noting that “[d]rug companies’ average profit margins also grew from 2006 to 2015” and that “profit margins were higher for the largest 25 companies (20.1 percent in 2015) than for all others (8.6 percent in 2015)”). For our purposes, such figures would be best disaggregated to isolate the concentration in the IP-driven pharma sector, as distinct from the generic sector. This would be complex, because there are several leading firms that act in both capacity.

⁵⁵ See, e.g., Mark D. Hill. What is scalability?. *ACM SIGARCH Computer Architecture News* **18** (4): 18 (1990)

⁵⁶ NASSIM NICHOLAS TALEB, *THE BLACK SWAN* 27 (2007).

⁵⁷ Id. at 28. See also Grewal at 659 (discussing the implications of labor surplus for the bargaining power of labor, and ultimately for inequality).

nonrivalrous nature of information. As Taleb puts it, J.K. Rowling (the author of the wildly popular *Harry Potter* series) “does not have to write each book again every time someone wants to read it,” unlike a baker, who must “bake every single piece of bread in order to satisfy each additional customer.”⁵⁸

The implications of scalability for equity, though, may be quite negative. Taleb suggests that more scalable professions are also “more competitive, produce monstrous inequalities, and are far more random, with huge disparities between efforts and rewards—a few can take a large share of the pie, leaving others out entirely at no fault of their own.”⁵⁹ He offers another vivid example here, which links scalability to reduced demand for labor: Before recorded music, anyone wanting to hear opera had to go to a performance. The advent of recording created the possibility that all opera fans could now listen to any opera singer anywhere, putting local opera singers out of business. And in the process, “someone perceived as being marginally better,” says Taleb, suddenly “gets the whole pie.”⁶⁰ We know from contemporary scholarship on the music industry that this account is somewhat overdrawn, in part because recorded music does not fully substitute for live performances. But we also know that a kind of power-law appears to operate across the culture industries, at least in the US, with “the lion’s share of consumer demand at any given time [being] for a relatively small number of works.”⁶¹

⁵⁸ TALEB at 28.

⁵⁹ Id. at 28-29.

⁶⁰ Id. at 30.

⁶¹ Netanel, *supra*, at 131. Netanel notes, for example, that fewer than 5% of all movies earn about 85% of the profit in the US movie industry, and that this kind of power law operates also in books, video games, music recordings, and even digital distribution platforms such as the Internet. Id. He suggests that the trend is related not simply to nonrivalry and the diminishing costs of copying and

What is the role of IP here? Scalability in this sector plausibly only results in the kind of outsized private returns for the performer in the presence of strong IP law. If there were no exclusive rights in recorded performances, we would anticipate fewer recordings, but these recordings could be enjoyed at the marginal cost of their distribution – which is to say, nearly free. Absent some additional means of state subsidy, artists would be limited to revenues from monetizable activity such as performances. The overall efficiency effects of these kinds of move are hotly debated in IP scholarship. But the equity implications are also important, and have not yet systematically been explored.

This leads to a second hypothesis about IP as an accelerant of inequality: IP today likely amplifies inequality, especially at the top, because information is a scalable good, and because IP helps secure extremely skewed returns in the wake of this scalability.

Third Hypothesis: IP is Unequally Available to All

One key determinant of the justice as well as the equity implications of any property regime relate to the distribution of property. As Jeremy Waldron has suggested, justice in the domain of material property may require that everyone owns some.⁶² IP is sometimes described as form of property that is especially easy

dissemination, but also to the fact that cultural goods often have qualities of “solidarity goods” or “associative goods,” that have value for people because they are consumed by others.

⁶² [Waldron]

to normatively justify, because it is thought to have potential to be unusually widely distributed. And, given that IP resources are created, IP is sometimes said to do particularly well at fulfilling the Lockean proviso that there be “enough, and as good, left in common for others.”⁶³

If IP were in fact substantially available to all, in practice as well as in theory, this could have important effects on equity. IP is constantly created, and awarded to new creators. Does that make it plausibly available even to those with few resources? These creators have to buy certain inputs in markets, but some inputs are available in the public domain. IP ownership appears, at least formally, to be a form of possession that may be especially open to those with few resources.

The mythology of the “garage inventor,” as well as rags-to-riches stories of authors like JK Rowling, are suggestive here. But they are also far from dispositive. The garage inventor is increasingly an anomaly, at least in the US: In 1885, only 12% of US patents were issued to corporations,⁶⁴ but by 1998, 88% went to corporations and only 12% to independent inventors.⁶⁵ This corresponds with the corporatization of industrial R&D, a trend supported by dynamics described above (i.e. the returns to industrial scale organization, for example in raising capital and building large research teams).⁶⁶ On a global scale, there is extraordinary

⁶³ See, e.g., Nozick; Justin Hughes, “Philosophy of Intellectual Property”; see also William Fisher, *Theories of Intellectual Property* (describing and dissecting this view).

⁶⁴ DAVID F. NOBLE, *AMERICA By DESIGN: SCIENCE, TECHNOLOGY, AND THE RISE OF CORPORATE CAPITALISM* 87 (1977).

⁶⁵ Robert Merges, *100 Years of Solicitude: IP Law 1900-2000*, p. 2216. A similar percentage appears to hold today, though the patent office does not make the compiled statistics readily available.

⁶⁶ See e.g., Merges *supra* at 2215-16.

concentration in patent applications by nationality, and also by corporate status.⁶⁷

In 2016, only 18 patent applications out of a total of 233,000 processed by the international PCT system came from residents of low income countries.⁶⁸

The trends associated with copyright law are more difficult to trace, in part because of the lesser role that registration plays in the copyright system. Copyrights are certainly more readily available to all than are patents, and that may make them more egalitarian. But they also must be defended, and enforcement is difficult in the digital age. Some aspects of our copyright system reduce enforcement costs, such as “notice and takedown” regimes like the one created by the DMCA. Big players, however, have an advantage in using notice and takedown, particularly given the growing influence of bots upon the system.⁶⁹ If copyright helps concentrate media markets, as suggested above, this also puts small rights-holders at a disadvantage when seeking to license their works. The evidence of concentration in the media industries cite above also suggests that the relatively low cost of entry to cultural production may not systematically undermine concentration effects associated with informational property.

Both patent and copyright regimes (though perhaps more clearly the former) are clearly more useful to the well-resourced than they are to the resource-poor. All

⁶⁷ See WIPO, PCT Annual Report 2017. Over 76% of patent applications through the international PCT system in 2016 came from just five countries: the US, Japan, China, Germany, and the Republic of Korea. *Id.* at 17. In 2017, business applicants accounted for 85.5% of published PCT applications, followed by individuals (7.5%), universities (5%), and government and research institutions (1.9%). *Id.* at 19.

⁶⁸ *Id.* at 17. As for the trend, over the last few years, it is downward. In 2013, there were 20 such applicants out of a total of out of 205,3000. See WIPO, PCT Annual Report 2014, at 31.

⁶⁹ See Jennifer Urban, Joe Karaganis & Brianna Schofield, Notice and Takedown in Everyday Practice, UC Berkeley Public Law Research Paper, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2755628.

legal tools probably share this feature, of course, but there are things about IP that make it more difficult to enforce than, say, the ordinary law of trespass. These include the high cost of securing (particularly for patents), monitoring, and enforcing rights in immaterial goods. Transaction costs also matter here: as noted above, they disproportionately disadvantage those who lack the resources needed to overcome them (and who want to serve disadvantaged markets, since those are less remunerative). In addition, as IP expands, the cost of purchasing inputs grows, imposing more barriers for new entrants.⁷⁰ Finally, of IP tends toward concentration of industries, this too disadvantages smaller entrants even if formally exclusive rights are available to all.

There is also a substantial literature that criticizes IP as excluding “poor people’s knowledge.” The argument here is that IP is inequitably structured because its definition of protectable invention and creativity often exclude so-called “traditional knowledge,” as well as other raw materials of the informational economy, including naturally occurring genetic resources.⁷¹ These, of course, are resources in which the global South is relatively rich. On this account, many of the world’s poor – farmers, indigenous groups, and other local and poorly-resourced communities – are unable to claim returns from their innovative activities, simply because the innovations to which they contribute are excluded from the scope of IP law.

This is a powerful critique, one that has had the strong support of many

⁷⁰ See Benkler, above.

⁷¹ See, e.g., Anupam Chander and Madhavi Sunder, *The Romance of the Public Domain*, Cal L Rev.; VANDANA SHIVA, *BIOPIRACY: THE PLUNDER OF NATURE AND KNOWLEDGE* (1997).

developing countries. Modest institutional changes have followed in its wake. The recent Nagoya Protocol to the Convention on Biological Diversity, for example, that entered into force in 2014, generates binding obligations for signatories regarding benefit sharing and informed consent. We do not yet have much experience with its implementation, but it may provide an interesting example of a reform in IP law that could have a progressive cast. There is of course much more to say about the possible equity or efficiency implications of this move. But it does helpfully illustrate one of the boundaries of IP law that help to construct its relationship to inequality, here through definitions of what is protectable in the first place.

Fourth Hypothesis:

There is a rich scholarly literature documenting the outsize political influence of IP rights-holders, particularly in the domain of copyright. Jessica Litman has made important contributions in this vein, tracking the influence of rights-holders on major copyright legislation.⁷² Litman has shown, for example, that most of the language of the 1976 Copyright Act “was not drafted by members of Congress or their staffs at all. Instead, the language evolved through a process of negotiation among authors, publishers, and other parties with economic interests in the property rights the statute defines.”⁷³ It is not a coincidence that perhaps the best-known legal scholar of copyright, Larry Lessig, has turned his focus in recent

⁷² Jessica D. Litman, Copyright, Compromise and Legislative History, Cornell L. Rev. (1987).

⁷³ Id. at 860-61.

years away from copyright and toward the question of money and corruption in politics.⁷⁴

Opponents to strong IP have themselves become better organized in recent years.⁷⁵ Still, there is good reason to think, theoretically, that IP does tend to concentrate political power. The point stems from both experience and from public choice theory, which suggests that small groups with intense interests are likely to have more political influence than large groups with diffuse interests (because the former will have an easier time organizing and lobbying).⁷⁶ Those who benefit from exclusive rights are generally smaller in number, and more acutely impacted by legislative reforms than those who are harmed by them. Rights-holders also have a greater financial stake in the outcome and more resources to lobby: they stand to earn supra-marginal cost returns, unlike competitors who rely on non-exclusionary strategies, or the public at large that benefits from the public domain.⁷⁷

More broadly, the most plausible reason that returns on capital have tended to be higher than growth in recent decades, as commentators on Piketty have described, is that those who have economic capital also enjoy tend to enjoy outsized political influence.⁷⁸ As political economy approaches insist, market structures have political implications. When law permits firms to have monopolies, whether via IP

⁷⁴ [Lessig book on corruption.]

⁷⁵ Kapczynski, *Access to Knowledge Mobilization*, *supra*.

⁷⁶ The foundational text here in Mancur Olson; for a longer description of the application of public choice theory to IP law – as well as some cautions about the limits of public choice accounts, see Amy Kapczynski, *The Access to Knowledge Mobilization and the New Politics of Intellectual Property*, Yale L.J. (2008) (noting, for example, that public choice theory ignores the importance of ideas and framing to politics).

⁷⁷ See *id.*, see also Benkler.

⁷⁸ Suresh Naidu, *A Political Economy Take on W / Y*, in *After Piketty* (Heather Boushey J. Bradford DeLong, & Marshall Steinbaum eds., 2017).

or other means, it also creates a risk of disproportionate political influence. This power can be used to both extend existing exclusive rights, and to bring additional returns to those who have gained the most, for example, via lobbying around tax bills, legislation on campaign finance, and so forth. (IP rights can also give individuals and firms direct influence over politics by giving them control over speech. This is also a critical means by which rights-holders may enjoy disproportionate political power. But it has been the subject of sustained scholarly attention, and I will not elaborate on it further here.⁷⁹) A fourth way that IP law likely accelerates inequality, therefore, is via the influence that IP ownership has on our politics.

Fifth Hypothesis: We Should Look to IP and Information Policy Also for Remedies

Existing IP regimes, I suggest above, plausibly have the power not merely to reflect existing inequalities, but also to amplify them. If this is indeed so, what if anything might we do to address it? Remedies need not come from IP law. With Piketty, for example, we might look instead to post-hoc tax and transfer schemes and leave the existing infrastructure of wealth creation as we find them. Politically, however – as Piketty himself acknowledges⁸⁰ – post-hoc redistribution is likely to be very difficult to achieve, particularly given the implications of wealth concentration

⁷⁹ [add list of references on this topic; Nimmer, Netanel, work on fair use, also connect this to Kate Klonick's new work on the private power of tech platforms on speech]

⁸⁰ Piketty at 39.

for politics.⁸¹ Conceptually, if inequality itself cannot properly be understood through the single index of wealth or income inequality, then measures to address inequality solely through income may also fall short.

If we are concerned, for example, about the neglected health needs of the poor, action in this domain may be much more readily and effectively (even efficiently) obtained through policies related to IP and scientific funding, than through tax and transfer generally. And of course, we have no existing mechanisms for tax and transfer on a planetary scale, and there seems little chance we will soon see them. As noted above, there is also reason to think that dissident IP strategies have been critical to the growth in India and China, themselves the main force working to bring about a more robust global middle class.

I will close with a final hypothesis, then: we should as scholars consider the role of the private law, and IP in particular, not merely in its capacity to generate or accelerate inequality, but also in its capacity to moderate it. Indeed, without remedies both internal to IP law, and “external” to it but in the related domain of information policy,⁸² it may be difficult to address inequality today, particularly across borders.

⁸¹ Naidu, *supra* note 1.

⁸² See Kapczynski, *Cost of Price*, UCLA L Rev 2012 (describing the difference between reforms “internal” to IP law, that change its contours and doctrines, and reforms “external” to IP law, for example that use the state or the commons to promote the production of goods that are important to human capabilities.)