

## INNOVATION AND INEQUALITY: THE SEPARABILITY THESIS

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The topic of this Essay concerns the interaction between innovation in areas of intellectual property on the one hand and the demand for greater equality of income and wealth in society on the other. Whatever one thinks of the latter objective, I think that it is a social mistake to link these two separate topics together. The correct approach is instead sequential. First, develop a set of rules that promotes the maximum level of innovation. Once that innovation question is settled, address inequality in income and wealth from a broader perspective—one that does not develop special rules to deal with intellectual property issues. I call this the “separability thesis.”

In making this claim, I do not wish to insist that the problem of inequality, which for many people is the dominant social challenge of our time, does not matter. Instead I want to address the related question of whether inequality is addressed better by private or public means—to which my own answer is that decentralized private activity, buttressed by a charitable contribution deduction, will on balance work better than any modification of intellectual property rights. Hence I would argue that inequality matters but is better addressed separately from the question of innovation.

I think that the Essays of Professor John McGinnis<sup>1</sup> and Beth Kregor<sup>2</sup> strengthen the case for the separability thesis.

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1. John McGinnis, *How Innovation Makes Us More Equal*, 39 HARV. J.L. & PUB. POL'Y 47 (2016).

In his presentation, Professor McGinnis speaks about the huge power of intellectual property to speed up the leveling of wealth and opportunities across people in different social strata. His central point is that the rapid reduction in the costs of standard technologies—think smartphones and social media—increases the opportunities for personal advancement of those who are at the bottom of the income distribution. Lower prices give greater access to all, producing higher levels of overall social satisfaction, even if, as Adam Smith’s invisible hand reminds us, that consequence was not part of the innovator’s intention.<sup>3</sup> The innovator’s own self-interest aligns with a desirable social objective.<sup>4</sup>

The more controversial portion of McGinnis’s thesis is that the pace of innovation will insulate the new technological industries from the heavy hand of government innovation. In general, I think that his prognosis is overly optimistic, because resourceful and determined governments can always initiate anti-competitive regulations no matter what the present level of technology by focusing on its most vulnerable components. To give a simple example, companies like Uber and Airbnb do not just operate in an online environment. They have to deliver their rides and their accommodations in physical space, where they are vulnerable to regulations. Hence, it is possible for a single mid-level administrative official to attack the Uber business model that treats its drivers as independent contractors and not as employees—a status that is right now under serious legal challenge.<sup>5</sup> Airbnb must arrange for its customers to have rooms, which in turn could subject individual owners to various restrictions and hotel taxes, which Airbnb actually wants to

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2. Beth Kregor, *Innovation & Inequality: Conservative & Libertarian Perspectives*, 39 HARV. J.L. & PUB. POL’Y 39 (2016).

3. ADAM SMITH, THE WEALTH OF NATIONS ¶ 4.2.9 (1776) (“By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.”).

4. *Id.*

5. See Dave Jamieson, *Uber Driver Is An Employee, Not An Independent Contractor, Rules California Labor Official*, HUFFPOST BUS. (June 17, 2015), [http://www.huffingtonpost.com/2015/06/17/uber-independent-contractors\\_n\\_7604366.html](http://www.huffingtonpost.com/2015/06/17/uber-independent-contractors_n_7604366.html) [<http://perma.cc/HM4T-BJ3B>].

collect itself in order to gain legal legitimacy.<sup>6</sup> And, of course, it must worry about serious issues such as zoning laws and landlord restrictions as it runs its business.<sup>7</sup>

It is not possible here to comment at length on the soundness of these various taxes and regulations. But that lack of specificity does not in my view undermine the essential argument for the separability thesis. Do not use regulation of specific firms or industries to secure redistributive ends. Indeed, it is critical to note that innovation can be socially valuable even if it does *not* result in higher levels of income equality. The argument runs as follows: Greater access is a byproduct of greater innovation, as are the benefits to those at the bottom of the income distribution. Yet by the same token, it is not clear that greater equality follows. It could well be that the informational elites gain more than individuals at the bottom of the income distribution. But therein lies the rub: any consistent Pareto improvement is less problematic than any forced redistribution, and these Pareto improvements often occur by increasing inequality.<sup>8</sup> Somebody who buys a computer may go from ten to a thousand, but the computer manufacturer may go from a million to a billion dollars. Both are improvements. If the inequality barrier is pushed too hard, it dampens the entire improvement cycle. Even for the foes of inequality, industry-specific interventions are always a mistake because the issue can be addressed separately without destroying this Pareto improvement.

The concern that Ms. Kregor voices goes in the opposite direction, for she talks about the displacement effect that innovation has on those persons who are at the bottom of the economic ladder. Again, this topic is not unique to the area of intellectual property. Anyone who has paid the slightest attention to the debates over tariffs and unions knows that this fun-

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6. Dara Kerr, *Airbnb: Let Us Pay Hotel Taxes in New York*, CNET (Apr. 15, 2015), <http://www.cnet.com/news/airbnb-let-us-pay-hotel-taxes-in-new-york/> [<http://perma.cc/G7YC-VB3D>].

7. Stephen Fishman, *Legal Restrictions to Renting Your Home on Airbnb or Other Rental Services*, NOLO, <http://www.nolo.com/legal-encyclopedia/legal-restrictions-renting-your-home-airbnb-other-rental-services.html> [<http://perma.cc/W2VR-Q32J>] (last visited Oct. 20, 2015).

8. A Pareto improvement is an incremental improvement that improves the well-being of at least one person while not harming the well-being of anyone. See NICHOLAS BARR, *THE ECONOMICS OF THE WELFARE STATE* 45 (5th ed. 2012).

damental tension plays itself out whenever there is a change in relative wages and prices.<sup>9</sup> In some cases, it comes from new sources of goods and services, and, in others, it comes from innovation that displaces jobs. But here, too, it is important to note that any study of displacement that looks only at the negatives seriously underestimates the complexity of the overall situation. The displacement of some jobs results in the ability to produce a new (and improved) suite of products at lower prices than before, which in turn opens up opportunities for entrepreneurs and businesses to enhance their own competitive positions, not only in domestic markets but in foreign markets as well. The loss of jobs comes as a hard blow to many, but the opportunities that they receive for employment in new industry sectors cannot be ignored in the larger scheme of things. Nor is there any reason, if displacement does justify some form of transitional aid, that the case is more compelling in the context of displacement through innovation in intellectual property than it is in the context of foreign competition in goods or services that comes from the dismantling of tariff barriers, import quotas, or other protectionist legislation.

In many cases, the concern with inequality does not express itself as the difference between the top one percent and the rest of society. Instead, in good populist fashion, the challenges are against those few “billionaires” who have acquired their massive wealth through innovation.<sup>10</sup> What is striking about these innovators is the quickness with which they amass their fortunes—often only in a matter of months or years. But there are again several points that ease the ostensible pain in these issues. First, it is generally the case today that the billionaires are the innovators and not their children or other descendants. Lest anyone doubt that conclusion, it is well to reflect that John D. Rockefeller was hugely rich—indeed far richer relative to his

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9. Josh Bivens, *The TPP Debate: Never Real and No Longer Polite*, ECON. POL'Y INST.: WORKING ECON. BLOG (May 15, 2015, 12:15 PM), <http://www.epi.org/blog/the-tpa-debate-never-real-and-no-longer-polite/> [<http://perma.cc/22JM-Q26L>].

10. Anne Gearan & Philip Rucker, *Democracy Not 'Just For Billionaires,' Hillary Clinton Tells Crowd in N.Y.*, WASH. POST (June 13, 2015), [http://www.washingtonpost.com/politics/democracy-not-just-for-billionaires-hillary-clinton-tells-crowd-in-ny/2015/06/13/346e3318-11fb-11e5-a0fe-dccfea4653ee\\_story.html](http://www.washingtonpost.com/politics/democracy-not-just-for-billionaires-hillary-clinton-tells-crowd-in-ny/2015/06/13/346e3318-11fb-11e5-a0fe-dccfea4653ee_story.html) [<http://perma.cc/58FP-KPTX>].

time than any billionaire is today.<sup>11</sup> Yet time takes its toll. A look at the Forbes list of the top 500 wealthiest individuals in the United States contains no Rockefeller, as the original John D.'s huge fortune has been spread by inheritance over multiple generations across a large number of individuals.<sup>12</sup> Indeed, the top places on the list are all occupied by individuals like Bill Gates, Larry Page, Sergei Brin, and Mark Zuckerberg, who have made their own fortunes after starting from relatively modest circumstances.<sup>13</sup> Clearly, the great wealth at the top of the distribution increases inequality of wealth. But in my view that profound change is a reason to rejoice rather than to lament. I see several reasons for doing so.

The first point in this analysis is that wealth, especially wealth at those great levels, is a very poor proxy for human well-being. The point is missed, for example, in Thomas Piketty's *Capital in the Twenty-First Century*,<sup>14</sup> which enjoys a hero's welcome from such Nobel Laureates as Paul Krugman and Joseph Stiglitz,<sup>15</sup> only to have lost its popular cachet in recent months.<sup>16</sup> The key question is how well the inequality of wealth correlates with the inequality of overall well-being. On this measure it is critical in all these cases to take into account the various forms of nonpecuniary benefits that people have—for these can never be concentrated in the few fortunate individu-

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11. Carl O'Donnell, *The Rockefellers: The Legacy Of History's Richest Man*, FORBES (Jul 11, 2014, 11:52 AM), <http://www.forbes.com/sites/carlodonnell/2014/07/11/the-rockefellers-the-legacy-of-historys-richest-man/> [<http://perma.cc/Y3KC-CYRD>].

12. See *Forbes Billionaires: Full List of the 500 Richest People in the World 2015*, FORBES (Mar. 2, 2015), <http://www.forbes.com/sites/chasewithorn/2015/03/02/forbes-billionaires-full-list-of-the-500-richest-people-in-the-world-2015/> [<http://perma.cc/YQS2-VGCK>].

13. See *id.*

14. THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* (2014).

15. See, e.g., Paul Krugman, Op.-Ed., *Wealth over Work*, N.Y. TIMES (Mar. 23, 2014), [http://www.nytimes.com/2014/03/24/opinion/krugman-wealth-over-work.html?\\_r=0](http://www.nytimes.com/2014/03/24/opinion/krugman-wealth-over-work.html?_r=0) [<http://perma.cc/82DF-3LKM>].

16. See, e.g., Mervyn King, *Capital in the Twenty-First Century by Thomas Piketty*, *Review*, THE TELEGRAPH (May 10, 2014), <http://www.telegraph.co.uk/culture/books/bookreviews/10816161/Capital-in-the-Twenty-First-Century-by-Thomas-Piketty-review.html> [<http://perma.cc/B27M-MUSR>].

als at the top.<sup>17</sup> In its simplest form, the observation is that good health is as important to happiness as is great wealth. As a rough guess, it is not unreasonable to say that these full sets of nonpecuniary advantages are at least as important as the pecuniary ones, so that severe deprivations in social companionship or health count as much in their own way as high levels of poverty. On this score, life expectancy is of huge importance, as is infant mortality and a host of other measures. Quite happily, it is not possible to confine these critical benefits to any thin fraction of the population. The first round of major modern advances, say between 1850 and 1900, constructing sewers and fighting contagious diseases, and the close connections between them, were chiefly financed by the wealthy because the poor lacked the financial resources to contribute much to these infrastructure improvements.<sup>18</sup> But the benefits of these activities are widely dispersed throughout society as one of the most vital public goods. There is no way that average life expectancy in the United States, for example, could go from about 46 in 1900 to about 79 today<sup>19</sup> without some broad-scale distribution of the social benefits from increased longevity.

It is, of course, still better to be rich than to be poor when it comes to gaining access to healthcare services. But it is important to note that inequality *ratios* matter little in the face of net overall *improvements* of health care levels. What matters are the total savings in numbers of lives.<sup>20</sup> For instance, suppose that poor Americans are about 2.5 times as likely to suffer from infant mortality as the richest ones. It is a difference that matters. It is imperative to keep such differences in perspective.

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17. For discussion, see Richard A. Epstein, *The Piketty Fallacy*, HOOVER INST. (May 5, 2014), <http://www.hoover.org/research/piketty-fallacy> [<http://perma.cc/48XD-S6R4>].

18. For an overview of how select moguls used their wealth to promote societal welfare in this era, see Shanaz Musafar, *Past philanthropists: How giving has evolved*, BBC (Sept. 17, 2012), <http://www.bbc.com/news/business-19272109> [<http://perma.cc/DK3F-WP9Q>].

19. For some general statistics, see Max Roser, *Life Expectancy*, OUR WORLD IN DATA (2015), <http://ourworldindata.org/data/population-growth-vital-statistics/life-expectancy/> [<http://perma.cc/YY2K-LU9W>].

20. For just this overemphasis on relative position, see Michael Marmot, *The Influence of Income on Health: Views of an Epidemiologist*, HEALTH AFF. 31 (March/April 2002), available at [http://www3.nd.edu/~wevans1/class\\_papers/marmot\\_health\\_affairs.pdf](http://www3.nd.edu/~wevans1/class_papers/marmot_health_affairs.pdf) [<http://perma.cc/U5U6-7GG8>].

Those numbers carry one message if, as was roughly the case in 1900, ten percent of the children of the wealthy die, as compared to twenty-five percent of the children of the poor.<sup>21</sup> But they have quite another when the first number goes down to less than one percent, and the latter to less than 2.5 percent, similar to numbers today, so that the absolute gap narrows by tenfold.<sup>22</sup> Clearly poorer people gain more from these initiatives because, starting from their poor position, they have more to gain.

Nor does the good news stop there. As noted, today's high-prized technology improvements are spread rapidly as costs decrease.<sup>23</sup> For example, the rate of injuries from industrial accidents has rapidly declined, perhaps by an order of magnitude<sup>24</sup> so that one of the most burning issues from 1900 is a second-order question today relative to the fierce controversies

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21. See *id.* at 34; see also *Achievements in Public Health, 1900-1999: Healthier Mothers and Babies*, CDC (Sept. 30, 1999), <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4838a2.htm#fig1> [<http://perma.cc/6FK3-9PY3>] (finding that the infant mortality rate in certain urban areas approached 30% in 1900, yet the average infant mortality rate decreased to 10% by 1915 when public health conditions improved across America).

22. For complete infant mortality statistics, see GOAPL K. SINGH & PETER C. VAN DYCK, U.S. DEP'T HEALTH & HUMAN SERVS., *INFANT MORTALITY IN THE UNITED STATES, 1935-2007: OVER SEVEN DECADES OF PROGRESS AND DISPARITIES* at 2 (2010), [http://www.hrsa.gov/healthit/images/mchb\\_infantmortality\\_pub.pdf](http://www.hrsa.gov/healthit/images/mchb_infantmortality_pub.pdf) [<http://perma.cc/My2C-T3TZ>] (indicating that the infant mortality rate was 0.67% in the U.S. in 2009). For a detailed study on the effect of poverty on infant mortality rates, see Lucy Westbott, *Washington's Poorest Infants Are Ten Times More Likely to Die Than Richest*, NEWSWEEK, May 4, 2015.

23. For discussion of cost-reducing innovation in and outside of the health care sector, see James C. Robinson & Mark D. Smith, *Cost-Reducing Innovation In Health Care*, HEALTH AFF. 1353-54 (Sept./Oct. 2008), <http://content.healthaffairs.org/content/27/5/1353.full.pdf+html> [<http://perma.cc/Z8NX-FE5A>]. For an example of the decreasing costs in consumer electronics, see, for example, Damon Darlin, *Falling Costs of Big-Screen TV's to Keep Falling*, N.Y. TIMES, Aug. 20, 2005. For a discussion of the decline in shipping costs leading to rapid growth in trade and the subsequent spread of innovation, see David Hummels, *Transportation Costs and International Trade in the Second Era of Globalization*, 21(3) J. ECON. PERSP. 131, 139 (2007).

24. There is no single database that explores this issue, but a number of different accounts all support the same story of rapid declines. A CDC Morbidity and Mortality Weekly Report from 1999 reports a 90% decline, from 37 per 100,000 workers in 1933 to 4 per 100,000 workers from in 1997. The rate has continued to fall thereafter to 3.3. by 2013. CDC Morbidity and Mortality Weekly Report 461 (1999).

that it generated a century ago.<sup>25</sup> The rate of progress has accelerated in these dimensions. It is important that no one, progressive or conservative, lose sight of the other.

Yet another way to get a sense of the distributional consequences of technological advance is to take a look at consumer surplus, that is, the difference between the reservation price of the consumer and the market price.<sup>26</sup> Every time the price of some product is driven down, somebody who spends \$200 for something that he paid \$1,000 for in the past gets \$800 worth of surplus. In addition, the people who stayed out at \$1000 but who came in later also get consumer surplus, so that the new entrant who would have paid \$600 for that product enjoys a \$400 surplus. The size of the consumer surplus is huge. Yet the surplus on the producer side cannot be higher than the price and is obviously far lower than that. So again, routine market surpluses, both in technology and otherwise, tend to allocate an unobservable source of human gain to consumers, especially those with limited wealth who cannot remain in the market if the prices are raised too high.<sup>27</sup>

There is yet another nice feature about huge concentrations of wealth. The people who have acquired that wealth cannot possibly consume it. I recall that Robert Barro, now at Harvard University, observed that the good thing about hugely wealthy people is that they cannot consume more than a tiny fraction of the wealth they create, no matter how self-indulgent they become.<sup>28</sup> Fine wines and luxurious cruises can only go so far. But the moment the rich start to buy capital assets like houses or

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25. See generally Richard A. Epstein, *The Historical Origins and Economic Structure of Workers' Compensation*, 16 GA. L. REV. 775 (1982).

26. For an explanation of how the Internet increases consumer surplus, see *Net Benefits: How to quantify the gains that the internet has brought to consumers*, THE ECONOMIST, Mar. 9, 2013.

27. For an example of how technology advancements allow for increased consumer surplus and participation in the book market, see, for example, Erik Brynjolfsson et al., *Consumer Surplus in the Digital Economy: Estimating the Value of Increased Product Variety at Online Booksellers*, 49(11) MGMT. SCI. 1580, 1588–89, 1591–92 (2003).

28. For the benefits of high concentrations of wealth, see Robert A. Barro, *Inequality, Growth, and Investment*, in INEQUALITY AND TAX POLICY 1, 34 (Kevin A. Hassett & R. Glenn Hubbard eds., 2001) (explaining how inequality encourages growth in richer places, while also decreasing over time as a part of the process of economic development).



fine art, they are no longer in the consumption business. They have now acquired durable capital assets that hold their value longer than a year—usually much longer. Those assets will survive their death and will therefore necessarily help fund ventures that can increase the wealth of others, either by going to charitable foundations or by descending to the next generation, who will also invest a large fraction of their wealth, even as the wealth per capita declines (again, no Rockefeller alive today is in the top 500 wealthiest persons in the United States).<sup>29</sup> Indeed, their financial capital will go into markets where it will lower the market rate of interest across the board. Now that consumption is not an option, redistribution becomes a kind of accrued physical necessity. Indeed, in the eyes of many wealthy persons (like those who take the Buffett-Gates Giving Pledge—a commitment by the world’s wealthiest individuals and families to dedicate the majority of their wealth to philanthropy)<sup>30</sup> it also becomes something of a crusade or a moral duty. The most successful entrepreneurs end up spending their wealth on all sorts of things that actually have widely-diffused benefits like universities, hospitals, orphanages, disease prevention and the like.

In the late nineteenth century and the early twentieth century, *laissez-faire* methodology was at its zenith.<sup>31</sup> Yet this was also the period in which voluntary giving to help the poor in one form or another through churches, organizations, formal insurance, and setting up charitable institutions was at its high.<sup>32</sup> Society had, roughly speaking, only ten or fifteen percent of the average wealth today, and the number of people who starved in the streets in those times was still virtually ze-

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29. See *Forbes Billionaires*, *supra* note 12.

30. For an overview of the pledge program and list of contributors, see *Current Pledgers*, THE GIVING PLEDGE (2015), <http://givingpledge.org/index.html> [<http://perma.cc/92N6-APAT>].

31. See H. SCOTT GORDON, *THE HISTORY AND PHILOSOPHY OF SOCIAL SCIENCE* 246 (1st ed. 1993).

32. For a discussion on philanthropy during the Gilded Age, see BENJAMIN SOKIS, HUDSON INST., *BOTH MORE AND NO MORE: THE HISTORICAL SPLIT BETWEEN CHARITY AND PHILANTHROPY* at 12 (Oct. 15, 2014), [http://www.hudson.org/content/researchattachments/attachment/1433/both\\_more\\_and\\_no\\_more\\_the\\_historical\\_split\\_between\\_charity\\_and\\_philanthropy.pdf](http://www.hudson.org/content/researchattachments/attachment/1433/both_more_and_no_more_the_historical_split_between_charity_and_philanthropy.pdf) [<http://perma.cc/PMG8-2PQE>].

ro.<sup>33</sup> To make the point concrete, it is important to connect the name with the place. John D. Rockefeller founded the University of Chicago and the Rockefeller Institute.<sup>34</sup> Johns Hopkins founded Johns Hopkins. Leland Stanford Junior University was founded by his father.<sup>35</sup> Sloan-Kettering was founded by Alfred Sloan and Charles Kettering, who worked with cars and batteries.<sup>36</sup> Andrew Carnegie and Andrew Mellon founded Carnegie-Mellon,<sup>37</sup> and so the beat goes on with every school within every university and every program within every school. The level of voluntary redistribution is high, and those who spend their money helping others take care to see that it is spent well. These effects are of course most profound at the top, and they should give warning to anyone who thinks that the distribution of consumption benefits closely tracks the distribution of income. In fact, it is always less skewed, given the gifts to charity and, to a lesser extent, informal gifts within families. Beware of any efforts to measure social inequality solely by income figures.

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Let us now turn quickly from inequality to innovation. One point of note is the distinction between innovation and entre-

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33. Compare CLARENCE D. LONG, NAT'L BUREAU ECON. RES., WAGES AND EARNINGS IN THE UNITED STATES, 1860-1890 at 144, 155 (1960) (estimating that—in terms of 1914 dollars—the average annual income of all American non-farm employees was \$375 in 1870, which computes to \$8,950 in 2015 dollars) with CARMEN DENAVAS-WALT & BERNADETTE D. PROCTOR, U.S. CENSUS BUREAU, INCOME AND POVERTY IN THE UNITED STATES: 2013 at 7 (Sept. 2014) (reporting that the average household income in the U.S. is now \$51,939); therefore, the average household income during the Gilded Age—after adjusting for inflation—was approximately 15% that of what it is today).

34. *John D. Rockefeller*, HISTORY.COM (2010), <http://www.history.com/topics/john-d-rockefeller> [<http://perma.cc/QPE3-ZAKY>].

35. *History of Stanford*, STANFORD UNIV., <https://www.stanford.edu/about/history/> [<http://perma.cc/4PCW-SJLN>] (last visited Oct. 8, 2015).

36. *Alfred P. Sloan Jr. Dead at 90; G.M. Leader and Philanthropist*, N.Y. TIMES (Feb. 19, 1966), <http://www.nytimes.com/learning/general/onthisday/bday/0523.html> [<http://perma.cc/9S9M-3CYR>]; Stuart W. Leslie, *Kettering, Charles Franklin*, AMERICAN NATIONAL BIOGRAPHY ONLINE, <http://www.anb.org/articles/13/13-00910.html> [<http://perma.cc/R8BY-W85H>] (last visited Oct. 8, 2015).

37. *History & Traditions*, CARNEGIE MELLON UNIV., <http://www.cmu.edu/about/history/index.shtml> [<http://perma.cc/7XEY-46ST>] (last visited Oct. 8, 2015); *Mellon Institute of Industrial Research, Carnegie Mellon University*, AMERICAN CHEMICAL SOCIETY, <http://www.acs.org/content/acs/en/education/whatischemistry/landmarks/mellon-institute.html> [<http://perma.cc/XJ97-LJ9J>] (last visited Oct. 8, 2015).

preneurial behavior. These two desirable sets of skills do not function in the same way and do not require the same kinds of traits. They are not funded in the same way. Innovation is about trying to figure out, through bits and pieces, a technology, a process, an idea, or a program that essentially nobody has ever thought about before. Entrepreneurship is about setting up a restaurant or a laundry or other business in places where other people have not yet entered.

So consider the young Fred Smith who wanted to put together a company called FedEx. He claims to have gotten his usual C at Yale College for proposing the Federal Express business model.<sup>38</sup> But it turns out that it is a good idea for people to use Memphis, Tennessee, as a hub for the collection and distribution of packages, both for speed and cost.<sup>39</sup> There is no technological innovation in discovering that catchment basins work better than point-to-point shipping plans. It is not a deep subject. It is hub-and-spoke technology carried out on a very high level.<sup>40</sup>

Now a business like Federal Express will also be an avid consumer of technology, which helps it to organize its tracking and delivery systems. But then the question becomes how to actually put a technology together? And that is a very complicated process, which goes through multiple iterations, twists and turns. After the fact, a technological advance may look self-evident. But in the middle of the cycle it is chaotic in the extreme and therefore not easily subject to direct regulation. Indeed, the initial steps usually take place outside any regulator's ken, when the initial rounds of financing come from the three Fs: family, friends, and fools.<sup>41</sup>

Innovation is often subject to high rates of error and hence high rates of failure, so the initial rounds of funding come chiefly from individuals with an affective interest in the inno-

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38. *Online Extra: Fred Smith on the Birth of FedEx*, BLOOMBERG (Sept. 19, 2004), <http://www.bloomberg.com/bw/stories/2004-09-19/online-extra-fred-smith-on-the-birth-of-fedex> [<http://perma.cc/8QJ6-PBV6>].

39. *The History of FedEx*, FEDEX CORP., <http://about.van.fedex.com/our-story/history-timeline/history/> [<http://perma.cc/56VK-CZS7>] (last visited Oct. 8, 2015).

40. *Id.*

41. Robert Cooter, *Innovation, Information, and the Poverty of Nations*, 33 FLA. ST. U. L. REV. 373, 377 (2005).

vator.<sup>42</sup> The few individuals who survive the first part of the cycle then have to confront the question of whether they have something distinctive that justifies heavy investments by outside investors who ask this question: “What is it that you’ve got that nobody else has, by way of an intellectual property patent or copyright or trade secret, which will allow you to get some kind of a super-competitive profit?” The venture capital types understand that they have to invest in a large number of distinct ventures, most of which will ultimately fail.<sup>43</sup> Their theory is, as with oil wells, that if an innovator hit a gusher in one or two cases, he has done very well even if the rest of his ventures failed. The investors in Google in 1997 are very rich, even if they lost everything on all their other investments.

Now, how do these organizations get their start? In a word, erratically. Their principals hire and fire staff with great rapidity. They plan mission statements that go first this way and then that way. Looking at it from the outside with the eyes of a central planner would be like watching a bunch of dodo birds moving in random sequence. But if you could actually understand as an insider what is going on, it would turn out that some of these entrepreneurs are making adjustments and corrections that actually work.

The financing in all of these ventures is commonly through multiple rounds of equity, because there is no lending arrangement that makes any sense.<sup>44</sup> When there is a high failure rate, people receive no share of the upside with respect to the venture and are guaranteed to lose money. So instead there are rounds of equity financing and participation. The earlier an investor gets into the business, the higher the rate of return, to offset the

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42. Mitch Free, *Entrepreneurs: If You Love Your Family, Don't Let Them Invest in Your Startup*, FORBES (Apr. 22, 2013), <http://www.forbes.com/sites/mitchfree/2013/04/22/entrepreneurs-if-you-love-your-family-dont-let-them-invest-in-your-startup/> [<http://perma.cc/W2NK-2ZK5>].

43. Deborah Gage, *The Venture Capital Secret: 3 Out of 4 Start-Ups Fail*, WALL ST. J. (Sept. 20, 2012), <http://www.wsj.com/articles/SB10000872396390443720204578004980476429190> [<http://perma.cc/6CCI-DC8F>].

44. Bob Zider, *How Venture Capital Works*, HARV. BUS. REV., Nov. 1998, at 131, 132, available at <https://hbr.org/1998/11/how-venture-capital-works> [<http://perma.cc/CV5N-Z3ZD>].

greater risk.<sup>45</sup> As the risk starts to go down, the return goes down with it.<sup>46</sup> It is a perfectly rational system run by pros.

So now we ask this troubling question: If this is how the innovation process works, what possible way is there to equalize opportunities for people regardless of—and fill in the blank—class, race, age, sex, sexual orientation? It does not matter which. The need for having highly firm-specific contracts and for constant re-contracting means that any external constraint on how these businesses hire and fire, or how they compensate their employees, can easily stifle the flexibility they need to thrive. The intelligent government official in this context needs sufficient humility to say: “Frankly, I don’t understand what’s going on in these beehives of disjointed activity. It is probably a good thing, because if I understood what these guys are doing, their activities would have little social value, because someone else would already have it figured out. So let them work. In time, some of these will attract venture capital and go public for the benefit of us all.” Patience among regulators is a prized frame of mind. In the context of innovation, the fight is to prevent regulations aimed at reducing inequality from stifling the growth in the first place.

In the context of entrepreneurship, the fight is different. The entrepreneurs supported by the Institute for Justice (IJ) are in a different line of business altogether. These entrepreneurs are not innovators seeking to develop novel technologies. Instead IJ has a different but still vital mission: it tries to assist those populations that have been systematically shut out from the overall system, typically by a whole range of inexcusable, indescribable, and indefensible regulations.<sup>47</sup> Most of these regulations could become things of the past if the Supreme Court resurrected the key constitutional doctrines protecting economic liberties that

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45. *Venture Capital*, U.S. SMALL BUSINESS ADMIN., <https://www.sba.gov/content/venture-capital> [<http://perma.cc/K5R4-6RYB>] (last visited Oct. 8, 2015).

46. Larry Light, *How to Find Low Risk, High Return Investments*, FORBES (Jan. 7, 2013), <http://www.forbes.com/sites/lawrencelight/2013/01/07/how-to-find-low-risk-high-return-investments/> [<http://perma.cc/3JFN-KHV9>].

47. For a description of The Institute for Justice, see *Case Information*, THE INSTITUTE FOR JUSTICE, <https://www.ij.org/cases> [<http://perma.cc/D4QM-STNJ>] (last visited Oct. 8, 2015).

went down in flames in the New Deal in 1937.<sup>48</sup> But these doctrines were far more attuned for an entrepreneurial spirit prior to the point where the misnamed Progressive Era managed to stunt innovation.

The peril is that every single political economy that relies exclusively on democratic processes that destroy private property rights will produce degenerate results because the power of faction means that the parties who are in favor of stifling innovation will gain power. Once they get their way, it is exceedingly difficult to displace. The recent decision in *Horne*<sup>49</sup> is more than a conceptual mess. It is a testimony that once various acreage and quota programs are put into place it becomes ever so difficult to dislodge them, even with prolonged litigation that produces only equivocal results. It is therefore critical to note that the strong protection of economic liberties, which makes it harder to attack entrepreneurs by new entry restrictions, also works to protect innovators from parallel forms of regulation.

It is no coincidence therefore that sustained levels of economic growth were associated with the strong judicial philosophy of *laissez-faire* present not only in *Lochner v. New York*,<sup>50</sup> but more importantly, *Adair v. United States*<sup>51</sup> and *Coppage v. Kansas*<sup>52</sup>—all of which held that the government monopolization of any kind of market, such as labor or agriculture, which could be operated competitively, did not pass constitutional muster. But that system failed in light of the inordinate appeal of German-type corporatist thinking, which leads to the creation of government-sponsored monopolies.<sup>53</sup> So my suggestion for general improvement on entrepreneurship is not exclusively technology-

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48. For one such account, see RICHARD A. EPSTEIN, *HOW PROGRESSIVES RE-WROTE THE CONSTITUTION* (2006). For a case that hems and haws on the question of state regulation, see *Horne v. Dep't of Agric.*, 133 S. Ct. 2053 (2015).

49. *Horne*, 135 S. Ct. 2419 (2015) (holding the Fifth Amendment requires that the government pay just compensation when it takes personal property).

50. 198 U.S. 45 (1905).

51. 208 U.S. 161 (1908).

52. 236 U.S. 1, 16–17, 26 (1915) (state laws invalid which infringe upon freedom of contract between employer and employee).

53. See Michael L. Wachter, *Labor Unions: A Corporatist Institution in a Competitive World*, 155 U. PA. L. REV. 581, 588–91, 613 (2007) (explaining how corporatism often leads in practice to government-sponsored monopolies through unions, and tracing the decline of union power to a decline in general corporatist policies).

based. Rather, it goes back to the strong insistence that no government action should ever be allowed to convert a competitive industry into a monopolistic one. That view allows, but only cautiously, the regulation of large industries through a mix of antitrust and common carrier regulation. During the period between 1890 and 1937 this system was not perfect, but it was markedly more sophisticated than the strong hands-off attitude that the Supreme Court takes on these issues today.<sup>54</sup>

It is at this point that the value of the work of IJ is so valuable. What Ms. Kregor and her colleagues do is attack those state-created entry barriers in state and local law.<sup>55</sup> The enemy of IJ's drivers turns out to be protectionism. That is also an obstacle that many innovators face, but at one level, as Professor McGinnis said, the technologist *may* be better off by opening up territory where no one has entered before, where it is less likely that there is some built-in constituency to block development.

Yet the relative immunity of technology from regulation tends to disappear when high doses of technology are introduced into new entrepreneurial ventures. The most obvious illustration to which Ms. Kregor alluded was Uber, whose disruptive technology has spurred strong efforts by existing transportation companies to get it out, and by many activists to break its business model by denying them the status of independent existing cab drivers.<sup>56</sup> And it is actually a very complicated question because it raises at least one serious problem of the second-best: what adjustments should be made in reaction to an initial mistake in the allocation of the rights to run taxicabs on public streets.

In what I regard as a quite indefensible series of maneuvers, virtually every local government says: "We own the public roads. Therefore we can exclude people. Therefore we can make

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54. See generally Richard A. Epstein, *The History of Public Utility Regulation in the United States Supreme Court: Of Reasonable and Nondiscriminatory Rates*, 38 J. SUP. CT. HIST. 345 (2013); see also *Continental TV v. GTE Sylvania*, 433 U.S. 36, 58–59 (1977) (reinstating the less demanding rule of reason standard, and making a historical turn towards a more hands-off approach in antitrust).

55. ELIZABETH KREGOR, *SPACE TO WORK: OPENING JOB OPPORTUNITIES BY REDUCING REGULATION* 1–2 (2013), available at [http://www.bigideasforjobs.org/wp-content/uploads/2013/07/Kregor\\_Institute-of-Justice\\_Entrepreneurship\\_REPORT.pdf](http://www.bigideasforjobs.org/wp-content/uploads/2013/07/Kregor_Institute-of-Justice_Entrepreneurship_REPORT.pdf) [<http://perma.cc/8RZK-RCXZ>].

56. *Id.* at 6–7.

their entry subject to conditions. Therefore we can issue limited licenses for taxi cabs, charge them for their medallions and then say to them that they're going to be able to keep their wealth by giving them exclusives with the applicable territory."

Once the government has taken that first decisive step, the industry in which the privilege has been granted is no longer competitive. Now it is what Gordon Tullock many years ago called the "transition gains trap."<sup>57</sup> There is now a regime of legal protection, which was undesirable but is nonetheless now in place. What should be done when it turns out these people have sold their medallions or mortgaged them on the promise, often explicit, that they could keep their preferred system because the government will not issue new licenses or, in the case of taxi cabs, new medallions?<sup>58</sup>

The challenge in this situation is to think about how to operate transitions. On this matter it is best to consider the allocative question first so as to increase the size of the pie.<sup>59</sup> Once that is answered, it is then necessary to examine the distributive question, which asks something about the size and ownership of each slice.

On allocation, the key question is whether the world is a better place with new firms like Uber, Lyft, and Airbnb. And the answer to that question is an unambiguous "yes." The Uber system, for example, supplies all sorts of information that standard cab services cannot supply.<sup>60</sup> It gives location and time of arrival. It sets up a telephone connection to allow corrections. It has an easy billing system that allows for continuous re-pricing reflecting scarcity conditions on the ground. Unlike taxicab drivers, who operate under a constant-rate schedule, price adjustments bring forth a new supply of driv-

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57. Gordon Tullock, *The Transitional Gains Trap*, 6 BELL J. ECON. 671 (1975).

58. See Katrina Miriam Wyman, *Problematic Private Property: The Case of New York Taxi Cab Medallions*, 30 YALE J. ON REG. 125, 168–170 (2013) (explaining how New York City limited the total number of available taxi medallions with the Haas Act of 1937).

59. See CAMPBELL R. MCCONNELL ET. AL., *ECONOMICS: PRINCIPLES, PROBLEMS, AND POLICIES* 195 (Ann Hilbert et al. eds., 18th ed. 2009) (explaining that maximum allocative efficiency is reached when the price of a product equals the marginal cost it took to produce that product).

60. UBER, <https://www.uber.com/> [<http://perma.cc/LMT4-YNX5>] (last visited Oct. 8, 2015).



ers, so that the formerly rocky transportation system corrects the distortions that arise in the low-information systems that predated Uber. Indeed, casual conversation taught me that cab drivers often do both traditional rides and Uber transactions, which shows that even the traditional players can benefit from the new technology. And it should be possible for taxi regulators to authorize new services that will help narrow the technological gap with the new entries.

Yet we cannot ignore the distribution question. The new arrival of Uber undermines the traditional medallions that have either been sold or mortgaged. These rights were issued by a state that made a solemn promise to protect them, so that there are indeed constitutional claims for the protection of these rights under the Contracts Clause of the U.S. Constitution.<sup>61</sup> But that clause cannot be said to allow the early incumbents to keep out the newcomers forever. Rather, it should be read to allow for the abrogation of these rights on payment of just compensation for their sustained losses.<sup>62</sup> So perhaps the best thing to do is to make sure that the newcomers have to pay some fee that the state then transfers to the incumbents to cover their losses. This task is not easy to do because it would be a mistake to assume that the holders of existing medallions will not gain from the new system, which may well be the case. But it does indicate that oftentimes the greatest cost to regulation is that it grandfathers in parties who now have a legitimate beef against technological change.

Speaking more generally, it is important to compare regulation with deregulation strategies. Where competitive markets are attainable, deregulation leads to higher output and lower administrative costs.<sup>63</sup> These both cut in the same direction. It is

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61. U.S. CONST. art. I, § 10, cl. 1 (“No state shall pass any law impairing the obligation of contract.”).

62. See Michael B. Rappaport, *A Procedural Approach to the Contracts Clause*, 93 YALE L.J. 918, 928–29, 933 (1984) (explaining that even on the most absolutist approach to the Contracts Clause, contracts may be broken through law if the victim is given just compensation).

63. See Richard A. Epstein, *Greece on the Brink*, DEFINING IDEAS (Feb. 23, 2015), <http://www.hoover.org/research/greece-brink> [<http://perma.cc/P8RE-EA2H>] (suggesting that the answer to the Greek debt crisis is deregulation because of its tendency to increase output, and to minimize administrative costs); see also U.S. DEP’T OF TRANSP., *THE CHANGING FACE OF TRANSPORTATION* 2-39 to 2-48 (2000),

a very easy program to implement if the political will to do it can be gathered, but since it knocks out monopoly rents, it is extremely difficult unless the judges start to help out from time to time. So, to return to our original theme, there is a deep tension on the social welfare theory between inequality on the one hand and the standard definition of a Pareto improvement on the other. The fundamental maxim should be “Northeast Ho!!” That simple exhortation means that in any two-person game, ideally we want to improve the lot of both by moving to the northeast, so that both are better off and none worse.<sup>64</sup>

But what should be done about separability on the grand question of inequality, even for private firms and individuals? Well, consider the perspective of a company like Google. The last thing it wants to do is to gunk up its innovation process by trying to handle an inequality constraint. So what it should do is create a separate pool of money and endow a charter school or run a special school for minority children, for women, or whatever group it wants to assist. Their choice, strictly, not mine. Ultimately, Google’s best strategy is to separate redistribution from production, leaving it to decide how much to redistribute, who should get it, and on what conditions.

That is a lot to ask of any single company. But the good news about this approach is that Google is not the only player in town. Anybody who has a pile of money, with or without a technology company, can also start its own distinctive program, helping to address either the monopoly problem or inequality problem in whatever space it enters.

At this point, the war against inequality does not disappear from view. Quite the contrary, inequality really does matter to a lot of people, including lots of innovators and entrepre-

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[http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/the\\_changing\\_face\\_of\\_transportation/html/chapter\\_02.html](http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/the_changing_face_of_transportation/html/chapter_02.html) [http://perma.cc/ZV5W-DXLD] (tracking how deregulation increased output and decreased prices in the transportation industries).

64. See ANDREW SHOTTER, MICROECONOMICS: A MODERN APPROACH, 524–527 (Jack W. Calhoun et al. eds., 1st ed. 2009) (explaining that Pareto Optimality is when no person’s index function can increase without decreasing that of another, and further explaining how the Edgeworth Box can be used to track efficient contract-based resource allocations); F.Y. EDGEWORTH, MATHEMATICAL PSYCHICS: AN ESSAY ON THE APPLICATION OF MATHEMATICS TO THE MORAL SCIENCES 28–29, 106, 114 (1881) (first establishing the Edgeworth Box).

neurs. But separability leads to the best of all possible worlds by coupling high levels of private innovation with the socially conscious attack on the sources of inequality by people who are keen on the right answer. That is the exact way in which we should go. Innovation has its own sphere. And the people who can innovate in technology may have a lot to teach us about the best ways to combat inequality.