

INTELLECTUAL PROPERTY LAW AND POST-SCARCITY SOCIETY

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Rapid technological progress has shifted discussion of the possibility of “post-scarcity society” from science fiction novels and utopian manifestoes to the pages of our newspapers and now to our law reviews. Commentators imagine a world in which three-dimensional printing, advanced robotics, synthetic biology, and artificial intelligence will enable the low-cost at-home manufacture of nearly all commodities and provision of nearly all services. This lecture considers the implications of post-scarcity society for law and specifically for intellectual property law. It focuses on the likely social role of intellectual property law in a post-scarcity society and on the ways in which intellectual property law will likely work to undermine the socially progressive promise of post-scarcity.

“A century ago, scarcity had to be endured; today, it has to be enforced.”
—Murray Bookchin, *Post-Scarcity Anarchism*¹

I. INTRODUCTION

As the title of my talk suggests, one of the main topics I’d like to address this evening is the concept of “post-scarcity society”. And it seems to me there may be no better place to do so than the Republic of Singapore. On the one hand, this is an extraordinarily wealthy, technologically-advanced, highly-educated city-state some proportion of whose citizens may already be experiencing aspects of post-scarcity in various ways. On the other hand, the reality is, or so I’ve read, that in this island city-state, there are severe (though manageable) scarcities of a few very basic things, such as fresh water, fresh oil, and fresh land.

I thus propose that Singaporeans may be uniquely well-positioned both to recognise the perennial dream of post-scarcity society and yet also quickly to understand its significant limits.

The other main topic I’d like to address is intellectual property law, and specifically, the relation between intellectual property law and post-scarcity society. What will the effect be of each upon the other?

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¹ Murray Bookchin, *Post-Scarcity Anarchism* (Montreal: Black Rose Books, 1971) at 59.

Depression, when, in 1930, John Maynard Keynes penned the essay *Economic Possibilities for Our Grandchildren*.⁴ There he explained that his purpose was “not to examine the present or the near future, but to disembarass myself of short views and take wings into the future. What can we reasonably expect the level of our economic life to be a hundred years hence? What are the economic possibilities for our grandchildren?”⁵ Keynes described the Great Depression and the “enormous anomaly of unemployment in a world full of wants”⁶ as “a temporary phase of maladjustment”⁷—and in the long run, this turned out to be fairly accurate. His diagnosis of the times, quite prescient in some respects, was that “[w]e are being afflicted with a new disease of which some readers may not yet have heard the name, but of which they will hear a great deal in the years to come—namely, technological unemployment.”⁸ But this development “means in the long run that mankind is solving its economic problem. I would predict that the standard of life in progressive countries one hundred years hence will be between four and eight times as high as it is today.”⁹ More generally, he wrote: “The course of affairs will simply be that there will be ever larger and larger classes and groups of people for whom problems of economic necessity have been practically removed.”¹⁰ This would be “our destination of economic bliss”.¹¹

And yet Keynes recognised that this new stage of economic development would create new challenges. One of these I will detail more fully below. But in general, Keynes predicted that those who have solved the problem of economic necessity will face the ultimate, ethical question of how properly to pursue the art of living: “Thus for the first time since his creation man will be faced with his real, his permanent problem—how to use his freedom from pressing economic cares, how to occupy the leisure, which science and compound interest will have won for him, to live wisely and agreeably and well.”¹²

Four decades after Keynes’ *Economic Possibilities* essay, a decidedly different political-economic thinker took up the theme of post-scarcity society. The American anarchist theorist Murray Bookchin declared in stirring terms that “for the first time in history we stand on the threshold of a post-scarcity society.”¹³ For Bookchin, this was not a matter of Keynes’s “hundred years hence”. Bookchin saw even in what may now strike us as the primitive technologies of the 1960s “a technology of abundance that is capable of providing for the first time in history the material basis for liberation”.¹⁴ But Bookchin emphasised that even though technological developments had

⁴ John Maynard Keynes, “Economic Possibilities for our Grandchildren” in John Maynard Keynes, *Essays in Persuasion* (New York: Harcourt Brace, 1932) 321.

⁵ *Ibid* at 322.

⁶ *Ibid*.

⁷ *Ibid* at 325.

⁸ *Ibid*.

⁹ *Ibid* at 325, 326.

¹⁰ *Ibid* at 331.

¹¹ *Ibid*.

¹² *Ibid* at 328.

¹³ Bookchin, *supra* note 1 at 12.

¹⁴ *Ibid* at 14.

already established the material preconditions for post-scarcity, a true “post-scarcity society” had not yet been achieved.¹⁵ With Keynes, he recognised that the condition of post-scarcity was fundamentally not an economic but an ethical, even aesthetic condition: “scarcity is more than a condition of scarce resources: the word, if it is to mean anything in human terms, must encompass the social relations and cultural apparatus that foster insecurity in the psyche.”¹⁶ For Bookchin the post-Marxist anarchist, this insecurity was a function of the “exploitative class structure”¹⁷ and the hierarchical property and power relations entailed by such a structure. Only when these were eliminated would post-scarcity society be achieved: “By the same token, the word ‘post-scarcity’ means fundamentally more than a mere abundance of the means of life: it decidedly includes the kind of life these means support. The human relationships and psyche of the individual in a post-scarcity society must fully reflect the freedom, security and self-expression that this abundance makes possible.”¹⁸

III. LEGAL COMMENTARY ON POST-SCARCITY SOCIETY

Keynes spoke in 1930 of “a hundred years hence”, which is 2030 and not far off. Are we on schedule to have solved our “economic problem” by then? Recent legal commentators seem to think so. Indeed, with Bookchin, some believe that we have already established the technological preconditions for post-scarcity.

I focus here on two leading examples of post-scarcity legal commentary, both part of the recent wave of legal writing on the development of 3D printing technology. The first is Mark Lemley’s article “IP in a World Without Scarcity”.¹⁹ In it, he predicts a “coming economy of plenty”,²⁰ an “economics of abundance”,²¹ and the emergence of inexpensive, local 3D printing and bioprinting “not next year, but certainly in our lifetimes”.²² Lemley focuses on four technologies, “the Internet, 3D printing, robotics, and synthetic biology”,²³ and proposes that “it is entirely plausible to envision a not-too-distant world in which most things that people want can be downloaded and created on site for very little money—essentially the cost of raw materials”.²⁴ Such things would include not just standard industrial goods, but also biotechnological goods: “it is certainly possible to imagine a time in which every

¹⁵ *Ibid* at 12. See also *ibid* at 14, “The word ‘threshold’ should be emphasized here for in no way has the existing society realized the post-scarcity potential of its technology.”

¹⁶ *Ibid* at 13.

¹⁷ *Ibid*.

¹⁸ *Ibid*.

¹⁹ Mark A Lemley, “IP in a World Without Scarcity” (2015) 90:2 NYUL Rev 460.

²⁰ *Ibid* at 496.

²¹ *Ibid* at 466.

²² *Ibid* at 471. See also *ibid* at 504, “We are still a long way from a post-scarcity world.”; *ibid* at 507, “[T]he technologies I am discussing are still in their infancy.”

²³ *Ibid* at 462.

²⁴ *Ibid*.

doctor's office can generate custom genes to order".²⁵ Lemley is quick to emphasise that "[t]his future is not a utopia. None of the technologies I have described is perfect, and each requires physical inputs that will in turn be subject to the laws of scarcity."²⁶ But a rhetoric of technological optimism, even boosterism, runs through his article, as does a strain of what might be termed 'threshold rhetoric', consisting of urgent affirmations, as we saw in Bookchin, that we stand just on the threshold of a new technological age.²⁷ Such rhetoric is typical of legal futurist writing.²⁸

A second leading example of post-scarcity legal commentary is Deven Desai and Gerard Maglioca's article "Patent Meet Napster: 3D Printing and the Digitization of Things"²⁹. They assert that "advances in 3D printing technology are launching an Industrial Counter-Revolution...The promise of 3D printing is that people will be free to make almost anything they want themselves."³⁰ Like Lemley, Desai and Maglioca draw heavily on analogies to internet technology and digital reproduction in describing the implications of 3D printing. They explain: "3D printing is a general-purpose technology that will do for physical objects what MP3 files did for music."³¹ And like Lemley, they are given to threshold rhetoric: "[I]n the not-too-distant future, your cell phone will be able to scan objects and produce 3D printer files."³²

There are many such articles now in the American law reviews and elsewhere.³³ And there are a few extra-legal sources that they often cite. One is Jeremy Rifkin's 2014 book *The Zero Marginal Cost Society*,³⁴ whose title speaks for itself. Another is Ray Kurzweil's 2006 book *The Singularity is Near*.³⁵ Kurzweil predicts that the

²⁵ *Ibid* at 479.

²⁶ *Ibid* at 502.

²⁷ Cf Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (New York: Viking, 2006), "At the onset of the twenty-first century, humanity stands on the verge of the most transforming and thrilling period in its history."

²⁸ See also Barton Beebe, "Law's Empire and the Final Frontier: Legalizing the Future in the Early Corpus Juris Spatialis" (1999) 108:7 Yale LJ 1737 at 1751 providing examples of such threshold rhetoric. See generally Barton Beebe, "Fair Use and Legal Futurism" (2013) 25:1 Cardozo Stud L & Lit 10 discussing legal futurist analyses of copyright fair use.

²⁹ Deven R Desai & Gerard N Magliocca, "Patents, Meet Napster: 3D Printing and the Digitization of Things" (2014) 102 Geo LJ 1691.

³⁰ *Ibid* at 1692, 1693.

³¹ *Ibid* at 1691.

³² *Ibid* at 1696.

³³ See Mehra, *supra* note 2 at 2-4, 7-10.

³⁴ Jeremy Rifkin, *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism* (New York: Palgrave Macmillan, 2014). For examples of citations to Rifkin in the legal literature, see Frank Pasquale, "Law's Acceleration of Finance: Redefining the Problem of High-Frequency Trading" (2015) 36 Cardozo L Rev 2085 at 2121; Alexander Peukert, "Fictitious Commodities: A Theory of Intellectual Property Inspired by Karl Polanyi's 'Great Transformation'" (2019) 29 Fordham IP Media & Ent LJ 1151 at 1155; Olivier Sylvain, "Network Equality" (2016) 67 Hastings LJ 443 at 463.

³⁵ See Kurzweil, *supra* note 27. For only a few examples of the many citations to Kurzweil in the legal literature, see James A Dator, "Futures and Trial Courts" (2009) 18:2 Widener J Pub L 517 at 521; Deven Desai, "Privacy? Property?: Reflections on the Implications of a Post-Human World" (2009) 18:2 Kan JL & Pub Pol'y 174; Debora J Halbert, "Intellectual Property in the Year 2055" (2018) 59:1 IDEA 117 at 128; John McGinnis, "How Innovation Makes Us More Equal" (2016) 39:1 Harv JL & Pub Pol'y 47 at 55.

“singularity” will arrive in the 2040s.³⁶ What is this “singularity”? As Kurzweil explains, it is the time “when we will multiply our effective intelligence a billion fold by merging with the intelligence we have created”.³⁷

I should admit that I myself have previously addressed the possibility of post-scarcity society and engaged in the same threshold rhetoric. In a 2010 article, I queried whether a “universal printer” was “not simply imaginable, but an increasingly realistic possibility”.³⁸ I further speculated that “[i]n such an economy of universal printers, printing out a rhetoric of expressions and of things, all goods would be essentially intellectual goods (that is, embodiments of intangible designs) and all property, excluding space and the self, would be essentially intellectual property”.³⁹ And I wondered what role, if any, intellectual property law and policy would play in such a world. In a moment, I will wonder some more about that question.

But before doing so, allow me briefly to register some degree of scepticism about the recent wave of legal writing, including my own, on 3D printing and similar emerging technologies. The Gartner Hype Cycle, unscientific (and a bit melodramatic), is a helpful heuristic for thinking about how expectations regarding new technologies tend to progress over time.⁴⁰ (See Figure 2). The Hype Cycle suggests that soon after a new technology is introduced, there follows a “Peak of Inflated Expectations” characterised by widespread media attention to the perceived enormous potential of the technology. The bubble then typically bursts as expectations for the technology descend into the “Trough of Disillusionment” in which “[i]nterest wanes as experiments and implementations fail to deliver” and “[p]roducers of the technology shake out or fail”.⁴¹ Current legal writing on 3D printing and other technologies that herald post-scarcity arguably reflects the “Peak of Inflated Expectations” phase of legal thinking on such technology, even as media accounts have already entered the phase of disillusionment.⁴² No doubt as these technologies mature, expectations will gradually recover along the Hype Cycle’s “Slope of Enlightenment” until they someday level off at the “Plateau of Productivity”.⁴³ Nevertheless, the widespread adoption of such technologies—widespread to the degree to constitute a qualitatively new era, a true “Industrial Counter-Revolution”—now appears to be a far-off prospect.

³⁶ Christiana Reedy, “Kurzweil Claims That the Singularity Will Happen by 2045”, *Futurism* (5 October 2017), online: Futurism <<https://futurism.com/kurzweil-claims-that-the-singularity-will-happen-by-2045>>.

³⁷ *Ibid.*

³⁸ Barton Beebe, “Intellectual Property Law and the Sumptuary Code” (2010) 123:4 Harv L Rev 809 at 836.

³⁹ *Ibid.*

⁴⁰ See “Gartner Hype Cycle”, online: Gartner <<https://www.gartner.com/en/research/methodologies/gartner-hype-cycle>>. See also Jackie Fenn & Mark Raskino, *Mastering the Hype Cycle: How to Choose the Right Innovation at the Right Time* (Boston: Harvard Business Press, 2008).

⁴¹ See *ibid.*, “Gartner Hype Cycle”.

⁴² See *eg.*, Signe Brewster, “Whatever happened to 3D printing?”, online: Techcrunch <<https://techcrunch.com/2016/07/10/whatever-happened-to-3d-printing/>>; Nick Allen, “Why 3D Printing Is Overhyped (I Should Know, I Do It For a Living)”, online: Gizmodo <<https://gizmodo.com/why-3d-printing-is-overhyped-i-should-know-i-do-it-fo-508176750>>.

⁴³ There is obviously a rough similarity between the Google Ngram graph of the usage of the term “post-scarcity” and the Gartner Hype Cycle.

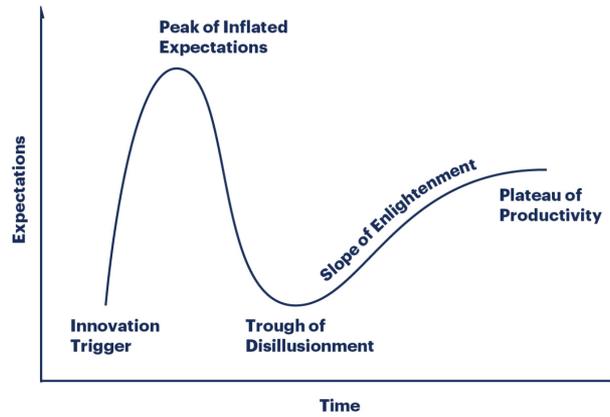


Fig. 2. The Gartner Hype Cycle.⁴⁴

And yet, it may be worthwhile to be sceptical of one's own scepticism. When assessed retrospectively, most predictions of the future turn out to be laughably wrong. But they are laughable both for what they say will happen that did not and what they say cannot possibly happen that did. This is all to say that I am not embarrassed finally to ask, if Keynes, Bookchin, Lemley, Desai, Rifkin, and Kurzweil (and countless others) are correct (and who am I to question them?), if we are in fact on the verge of a post-scarcity society, what would its implications be for law, and specifically for intellectual property law?

IV. THE ROLE OF INTELLECTUAL PROPERTY LAW IN POST-SCARCITY SOCIETY

The current conventional method of answering this question focuses on the economy and on technology. Specifically, scholars focus on how, in a post-scarcity society, intellectual property law may foster or impair further economic and technological progress. I will eventually suggest in this Part that the more interesting—and also more difficult—question is what social role intellectual property law would play in a post-scarcity society.

A. Conventional Views: Intellectual Property Law as Spoiler

Lemley provides a good example of the scholarship's typical focus on economic and technological progress. With many others, he predicts that current major intellectual property owners will, as he puts it, “fight the death of scarcity”.⁴⁵ Old incumbents will fight the new market disrupters that threaten to institute post-scarcity because these old incumbents profit from scarcity; more essentially and importantly, a regime of scarcity is a regime in which these incumbents have power, and they will seek to hold on to that power by maintaining the conditions of scarcity on which their power is based.⁴⁶ These incumbents will try to use restrictive forms of intellectual property

⁴⁴ See “Gartner Hype Cycle”, *supra* note 40.

⁴⁵ Lemley, *supra* note 19 at 497.

⁴⁶ *Ibid* at 497-502.

law to do so. Specifically, they will seek to strengthen intellectual property laws to inhibit 3D and bio-printing technology.⁴⁷ They will seek to impose severe forms of secondary liability on the producers of such technology, and severe forms of primary liability on those who use this technology to infringe protected designs.⁴⁸

To ward off this possibility, Desai and Magliocca call for statutory reforms that would limit (or even eliminate) personal liability for 3D printing⁴⁹—though, to be fair, they recognise significant difficulties with such a reform.⁵⁰ They also call for a DMCA for patent infringement.⁵¹ Here they are referring to the *Digital Millennium Copyright Act* of 1998⁵² in the United States of America (“US”), and specifically to section 512(c)(1) of the Act.⁵³ In short, they are calling for a notice and take down system that would limit the liability of digital intermediaries that serve as repositories of patent-infringing 3D printing files. Their proposal is that such intermediaries would not be liable if, upon notice, they expeditiously take down the infringing content.

In essence, the view of these scholars is that in a post-scarcity society, intellectual property law will largely just be a spoiler. It will just get in the way of innovation, and we should seek to make sure that it does not.

B. *Social Role of Intellectual Property Law*

The conventional view is thus that in a post-scarcity society, intellectual property law will be at least less important to innovation. I remain ambivalent, maybe even pessimistic about this. But set that aside.

1. *Intellectual Property Law and Social Scarcity*

Instead, I’d like to talk about a different role that intellectual property law might play in a post-scarcity society. And it is not all that different from an important role that intellectual property law is already playing in some neighbourhoods in New York City, or Hong Kong, or Paris, or, I suspect, Singapore, neighbourhoods where many very affluent individuals already live in something like a post-scarcity world. If food is a problem for them, it is a problem because there is too much of it. And it may be that they have such an abundance of resources (and wisdom) that the only thing they truly feel a scarcity of is time.

But there is perhaps something else that may nevertheless always remain scarce for them. In his essay *Economic Possibilities for Our Grandchildren*, Keynes made an important qualification in his depiction of post-scarcity society:

Now it is true that the needs of human beings may seem to be insatiable. But they fall into two classes—those needs which are absolute in the sense that we feel them whatever the situation of our fellow human beings may be, and those

⁴⁷ *Ibid.*

⁴⁸ *Ibid.*

⁴⁹ Desai & Magliocca, *supra* note 29 at 1716, 1717.

⁵⁰ *Ibid.*

⁵¹ *Ibid.* at 1718, 1719.

⁵² 17 USC 101 (1998).

⁵³ See *ibid.* at § 512(c)(1).

which are relative in the sense that we feel them only if their satisfaction lifts us above, makes us feel superior to, our fellows. Needs of the second class, those which satisfy the desire for superiority, may indeed be insatiable; for the higher the general level, the higher still are they. But this is not so true of the absolute needs—a point may soon be reached, much sooner perhaps than we are all of us aware of, when these needs are satisfied in the sense that we prefer to devote our further energies to non-economic purposes.⁵⁴

Keynes imagined a world where our absolute needs would be met. Left to us would be the problem of relative needs, of what he apparently saw as an innate human need to express superiority or at least rank.

One standard way by which humans do so is through the possession of scarcity, or in its aestheticised form, rarity.⁵⁵ But how would this work in a society that has overcome scarcity and indeed rarity as well? How would it work in a society where at-home production technologies can easily scan and reproduce an item (or through robots, a service)? How do we distinguish ourselves if much of what is owned and done exists in effectively infinite supply?

Of course one way is through conduct, through work, through production of what we create and give away, and indeed this is how social distinction is established in the open-source software world (and I think also in the academic world).⁵⁶ But at present we live in a global consumer society, where many (certainly not all, but many) distinguish themselves by what they consume rather than by what they produce. And post-scarcity would take this form of consumer society to a whole other level.

How will consumption-based social distinction survive in such a post-scarcity consumer society? Perhaps you will say that it simply will not. Individuals will no longer seek status through the possession of scarcity. But I think this view is one miscalculation of post-scarcity thinking. Here is an example: “IP has allowed us to cling to scarcity as an organising principle in a world that no longer demands it.”⁵⁷ My intuition is that the world will always demand scarcity. If through our technology we eradicate the scarcities that beset us, we will no doubt seek to invent new ones, and we will do so very much to maintain an “organising principle”.

But even if that were true, even if we would give up on the pursuit of rank, I put it to you that consumers will still seek something more essential than status, or superiority, or rank. They will seek in the things they consume some form of individuality, identity, some degree of difference as against the crowd, and to do so, they will seek out things that somehow remain rare. Economists (for example Keynes

⁵⁴ Keynes, *supra* note 4 at 326.

⁵⁵ Beebe, *supra* note 38 at 814, 815.

⁵⁶ See Yochai Benkler, “‘Sharing Nicely’: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production” (2004) 114:2 Yale LJ 273. See generally Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven: Yale University Press, 2006).

⁵⁷ Lemley, *supra* note 19 at 465. In Lemley’s defence, he recognises the possibility that post-scarcity society may “recreat[e] scarcity by declaring certain luxury goods to be off limits to most” (*ibid* at 514). The crucial point, however, is that individuals in such a society may seek, like individuals in our own society, to differentiate themselves through the possession of commodified scarcities that take forms other than “luxury goods.” Differentiation is not always hierarchical; for example, street fashion rarely seeks to assert superior wealth. Intellectual property law is what will make such socially-differentiating scarcities possible beyond the realm simply of Veblen goods.

in his talk of the search for “superiority”⁵⁸ seem always to conceive of society as a single vertical, lock-step status hierarchy that everyone is trying to climb. And you will not be surprised that American lawyers (and legal academics), given their obsession with US News & World Report rankings, tend to subscribe to a similar social theory.⁵⁹ But far more common, I think, particularly in massively multicultural global societies, is the individual’s pursuit not of superiority, but simply of difference, of distinction understood not hierarchically but more broadly distinction understood qualitatively, as differentiation from sameness—as differentiation from what the French social theorist Jean Baudrillard called “the hell of the same”.⁶⁰ To achieve such difference and individuation in a consumer society, consumers will still turn to rarities and scarcities wherever they can find them. (I cannot emphasise this enough, particularly to legal readers. Our habitual focus on hierarchical, ordinal status competition and on “Veblen goods”⁶¹ can blind us to something far more essential, which is individuals’ efforts through their consumption somehow to assert difference in a modern consumer society of mass-produced sameness).

What I am driving at (and if you are in the fashion industry, you already know what I am going to say, because you already live it) is the *social* role of intellectual property law in a post scarcity society. I refer not to its role in incentivising innovation, but rather its potential role in perpetuating consumption-based social difference, and thereby in facilitating identity within a mass global consumer society.

Consider that intellectual property law is the one area of law that at its core is designed to maintain artificial scarcities in the face of superabundance. Intellectual property law is built to restrict access to often near-zero-marginal-cost physical embodiments of intangible works, designs, inventions, or trademarks. We have built it in this way to incentivise innovation. But it turns out that intellectual property law is meanwhile perfectly suited to supplying post-scarcity society with the scarcities that individuals in such a society will continue to seek out.⁶²

It is as if intellectual property law in its technologically progressive guise, in which it incentivises new technologies, has all along been pushing us toward a post-scarcity society, which is the very form of society where intellectual property law will finally assume a dominant role in social ordering (if not also in technology policy). I am reminded of De Tocqueville comment on one of the peculiar characteristics of the Americans: “There is hardly any political question in the United States that sooner or later does not turn into a judicial question.”⁶³ That was the nineteenth century. In the twenty-first century, if the heralds of post-scarcity society are correct, there may hardly be any question that does not ultimately turn into a question of intellectual property and intellectual property law.

⁵⁸ Keynes, *supra* note 4 at 326.

⁵⁹ See Beebe, *supra* note 38 at 827, 828.

⁶⁰ Jean Baudrillard, *The Transparency of Evil: Essays on Extreme Phenomena* (New York: Verso Books, 1993).

⁶¹ For a thorough and sophisticated critique, grounded in part in First Amendment values, of the role trademark law plays in regulating hierarchical status goods, see Jeremy Sheff, “Veblen Brands” (2012) 96 *Minn L Rev* 769.

⁶² See Beebe, *supra* note 38 at 815, 816.

⁶³ Alexis de Tocqueville, *Democracy in America* (Indianapolis: Liberty Fund, 2012).

2. Intellectual Property Law Already Performs this Role

In essence, then, I am arguing that a primary role of intellectual property law in a post-scarcity society will be to perpetuate consumption-based social difference by facilitating the creation of various forms of artificial scarcity. Indeed, it will not just facilitate; it will incentivise the creation of artificial scarcity. Here, intellectual property law will very much be a spoiler. It will restore scarcity to a world that we will have thought could transcend scarcity. If technology is going to strip nature of its ability to enforce scarcity, then culture will do what nature no longer can, and culture will use intellectual property law to do so.

At this point, some proportion of readers may be thinking: this is crazy talk, science fiction, video game thinking, just like talk of post-scarcity society. But on reflection, I do not think that it is.

The social role that I am describing for intellectual property law in a post-scarcity society is very much one of the roles that intellectual property law is already performing in our own society, at least in the economies and cultures of the Global North. As I have explained in much more detail elsewhere,⁶⁴ a variety of cases and court opinions from around the world demonstrate intellectual property law's differentiating function.

Take for example one of the earliest of such cases, from the US. In the 1955 case of *Mastercrafters Clock & Radio Co v Vacheron & Constantin-LeCoultre Watches Inc*,⁶⁵ the declaratory plaintiff Mastercrafters produced an electric-powered simulation of the Atmos clock. An Atmos clock is an ingenious device in which the clock is perpetually wound by changes in atmospheric pressure. Apparently, in its day, it was a status symbol—perhaps it still is. Vacheron had threatened suit against Mastercrafters for making electric-powered knockoffs. The cause of action at issue was trademark infringement, and the form of infringement was what is now called in some trademark systems “post-sale confusion”.⁶⁶ No purchaser of the electric-powered clock, costing \$30, was confused into thinking it was an authentic Atmos clock, costing \$175 (or \$1,500 in today's dollars).⁶⁷ Still, in the post-sale context, there could be confusion, and the court found that this post-sale confusion would be harmful to Vacheron and its consumers. The American judge reasoned: “[S]ome customers would buy plaintiff's cheaper clock for the purpose of acquiring the prestige gained by displaying what many visitors at the customers' homes would regard as a prestigious article.”⁶⁸ The judge condemned Mastercrafters' “intention thus to reap financial benefits from poaching on the reputation of the Atmos clock”⁶⁹ and enjoined Mastercrafters' conduct.

There are many such cases like this in American trademark law as well as in American copyright law and design protection law.⁷⁰ We also see a plenitude of such

⁶⁴ See Beebe, *supra* note 38 at 845-877.

⁶⁵ 221 F (2d) 464 (2d Cir, 1995) [*Mastercrafters*].

⁶⁶ See Stacey L Dogan & Mark A Lemley, “The Merchandising Right: Fragile Theory or Fait Accompli?” (2005) 54 Emory LJ 461 at 491-493.

⁶⁷ *Mastercrafters*, *supra* note 65 at 465.

⁶⁸ *Ibid* at 466.

⁶⁹ *Ibid*.

⁷⁰ See Beebe, *supra* note 38 at 845-868.

cases in European intellectual property law, most notably *L'Oréal SA v Bellure NV*,⁷¹ in which the European Court of Justice (as it then was) explicitly sought to protect L'Oréal's efforts to create and preserve the artificial scarcity of its goods.

We also see such "post-scarcity cases" in Singapore, though in the most prominent of these cases, *City Chain Stores (S) Pte Ltd v Louis Vuitton Malletier*,⁷² the ultimate result, I am happy to say, was altogether different from the American or European case law. In brief, since 2004 Louis Vuitton had been selling in Singapore a watch bearing Louis Vuitton ("LV")'s so-called "flower quatrefoil" design, which many consumers may recognize from LV's repeating pattern logo. In 2006, City Chain began selling a watch with a very similar design, but at a substantially lower price. The Singapore High Court found trademark infringement, passing off, and trademark dilution.⁷³ Its decision reads very much like the American cases I've just mentioned, particularly when, as the Court of Appeal explained, the trial court took "judicial notice of the fact that people do get put off certain luxury brands simply because there were so many fakes and cheap look-alikes in the market".⁷⁴

The Court of Appeal decision, by contrast, reads like a line by line repudiation of the American and European cases. In finding no likelihood of confusion, the Court of Appeal noted, among much else, that luxury goods "are bought after careful inspection and deliberation",⁷⁵ that the substantial price difference between the two watches meant that no LV consumer would be confused into buying a City Chain watch,⁷⁶ and more broadly, that the public's mere association between the two products could not form the basis of a finding of likelihood of confusion where there was no confusion as to source.⁷⁷ In rejecting LV's passing off claim, the Court of Appeal characterised as "wholly irrelevant" the possibility that "the Solvil Flower pattern could be easily mistaken for the Respondent's watches at a glance when worn on the wrist as people do not generally scrutinise another person's watch at close range".⁷⁸ As for the dilution claim, the Court of Appeal found, among other things, that that the flower quatrefoil design was not well-known to the public at large in Singapore.

All in all, it was a wonderfully wise opinion—though its wisdom would no doubt not be appreciated by purveyors of artificial scarcity, such as LV and other luxury fashion brands. City Chain benefited not just from what was clearly some excellent lawyering, but also from a court that was unwilling just yet to endorse an emerging social role of intellectual property law, and particularly trademark law, in an emerging post-scarcity society.

⁷¹ C-487/07, [2010] RPC 1 (ECJ).

⁷² [2010] 1 SLR 382 (CA). See also David Tan, "Differentiating Between Brand and Trade Mark: *City Chain v Louis Vuitton Malletier*" [2010] Sing JLS 202; David Tan & Benjamin Foo, "The Extraneous Factors Rule in Trademark Law: Avoiding Confusion or Simply Confusing?" [2016] Sing JLS 118. For a discussion of the antidilution issue in *City Chain Stores*, see Wee Loon Ng-Loy, "The *Sense and Sensibility* in the Anti-Dilution Right" (2012) 24 Sing Ac LJ 927.

⁷³ *Louis Vuitton Malletier v City Chain Stores (S) Pte Ltd* [2009] 2 SLR (R) 684 (HC).

⁷⁴ *City Chain Stores (S) Pte Ltd v Louis Vuitton Malletier* [2010] 1 SLR 382 at para 61 (CA).

⁷⁵ *Ibid* at para 56.

⁷⁶ *Ibid* at para 60.

⁷⁷ *Ibid* at para 58.

⁷⁸ *Ibid* at para 77.

V. CONCLUSION

In brief conclusion, I should say a few words in the nature of review. You will recall that I began by talking about the dream of post-scarcity society, particularly as envisioned by John Maynard Keynes and Murray Bookchin. I then focused on two leading examples of legal commentary on post-scarcity society and the conventional view that intellectual property law would either be a spoiler or just become irrelevant in such a society. Finally, I proposed that intellectual property law would actually become even more important—more relevant—in a post-scarcity society, not for its impact on technological progress, but rather for the social function it would play (and that it already does play) in preserving the artificial scarcities that such a society would continue to demand.

We may someday solve Keynes's "economic problem". But what will remain is a social problem, the problem that the economist Fred Hirsch called "social scarcity".⁷⁹ Though intellectual property law has long played a technologically progressive role in modern societies, it may be that its long term role, as a social matter, will be essentially reactionary. It will function to preserve those structures and habits of social differentiation in our consumer society that are based on the consumption of scarcities. It will be used, as it already is being used, to restore scarcity to post-scarcity society.

⁷⁹ Fred Hirsch, *Social Limits to Growth*, 2d ed (London: Routledge, 1999).