

Is the Knockoff Economy a Knockout for Intellectual Property?

Reflections on Kal Raustiala and Christopher Sprigman, *The Knockoff Economy: How Imitation Sparks Innovation*, Oxford, Oxford University Press, 2012, 272 p.; ISBN 978-0195399783

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A. Introduction

- 1 Conventional wisdom has it that copyright is essential to ensure that creative efforts will be directed at producing cultural creations of various kinds. Without this or some other stimulus, creative talent would be deployed elsewhere in endeavours where it will earn proper rewards. In the course of history various techniques have been used to create such a stimulus: first mover advantage, secret, favouritism by the powerful, employment contracts, pensions, state procurement contracts, state subsidies, sponsorships, lotteries, to name just a few.¹
- 2 As a stimulus, copyright, which will concern us here, and intellectual property generally, are thought to outperform these other techniques. Copyright is meant to be granted without discretion once its predefined conditions are fulfilled, is entirely decentralised (does not depend on any one person's view of the value of the creation) and procures a reward that is a function of how much different consumers are willing to pay for the product or service it protects. For this scheme to work, copyright holders have to have control over who can use their creation. Without such control, consumers would free ride, i.e. consume without paying for it. All cultural creations are information goods which can be used by many persons without diminishing their utility for anyone else – a feature which economists refer to as characteristic of “public goods”. Information goods are not naturally scarce in the economic sense, though the talent to create them is.
- 3 For physical goods, whose consumption by one person prevents consumption by another, control over usage is ensured by some form of “fence” that shuts out anyone but the title holders and persons admitted by them. Fences can take a variety of forms: ditches, locks, armoured doors, electronic registration for software that triggers automatic updating, contractual schemes, etc.² Where no effective fence can be put in place, the objects in question risk being left in open access and hence over-consumed and under-produced, as the examples of fish in the open sea and unpolluted air illustrate. This risk is known as the “tragedy of the commons” following Hardin's article of that title.³
- 4 For information goods, “fences” are more difficult to put in place because of their “public good” character. Once you share an information good with someone else, there is little to stop it from spreading to third persons: copying it is becoming ever cheaper and does not deprive the original holder of use. Besides the danger of consumers free riding, one must also expect competitors to copy the good and bring to market a lower-priced version of it competing with the original, thus undermining the client base of the

original creator. The two effects combine to lead to a risk of shortfall in revenue and hence to a reduced incentive to create: talents would tend to be directed elsewhere. For this reason it is felt that the law needs to step in to shore up the fences as required to create an exclusive right for the original creator and so to ensure that more creative work will be forthcoming.

- 5 Raustiala and Sprigman's book under review here confronts this conventional wisdom head on.⁴ It points to a number of industries and activities, such as stand-up comics, haute cuisine cooking recipes, databases, in which the absence of a formal intellectual property right does not appear to stand in the way of a flourishing and innovative industry. In Section I we look at why this works with the informal fences specific to these industries.
- 6 Raustiala and Sprigman also discuss the fashion industry, whose importance in the US alone is a multiple of that of all cultural industries combined and yet which functions without effective intellectual property rights on the fashion designs, and indeed with widespread copying amongst competitors. We look at this industry in Section II.
- 7 In an Epilogue, Raustiala and Sprigman reflect on the future of the music industry, where the internet has led to widespread consumer copying, decried by industry spokespersons as "piracy" and as the cause of declining record sales and the death knell for musical creation ("copying kills creativity").⁵ Yet evidence shows that new music creators and new musical creations appear unabated. We look at this in Section III.

B. Industries with informal fences and no direct formal IP right

- 8 The recipes of haute cuisine. The first phenomenon to be discussed is that of haute cuisine. Fine cooking is an industry doing \$604 billion in the US alone.⁶ Recipes for fine food cannot be directly protected and so can be freely copied. The number of eateries is too large for community norms to stop copying, although within the narrow community of top chefs, unduly "stealing" someone else's recipes may be sanctioned, not very effectively, by blacklisting and denial of access to further creations.⁷ How then do the best chefs succeed in getting rewarded for their creativity?
- 9 Chefs may make their recipes sufficiently sophisticated so as to defy easy copying. They also use a variety of other strategies. The essential point of them is that what the consumer buys is not so much the recipe of a chef, as the total experience of consuming the dish in the restaurant where the chef prepares it or supervises its preparation. The

recipe is "fenced in" by being tied to the restaurant where it is served. The restaurant itself is protected more easily by its physical location, its trademark and (under the American Trademark Act of 1946) its "trade dress", i.e its appearance, decoration and so on, constituting the "look and feel" of the restaurant. The Chef's reputation can be used as a booster: if chefs publish their recipes, this may draw people to the restaurant, where they may vary their own recipes served there.

- 10 Essentially what happens here is that an information good which is not itself easily fenced in is tied to another good that is. Rewards for creativity are collected by "selling" the two jointly. Essentially the same formula is used to collect on the creation of new formulas for (alcoholic) cocktail drinks.
- 11 Stand-up comedians⁸. For stand-up comedians, fresh jokes and routines are the stock in trade. They must be invented; once told to an audience they can be freely retold and lose their value quickly as they are repeated. So the driving force in this trade is the ability to invent or get one's hands on fresh jokes. This makes it imperative to stop competing comedians from copying these jokes for their own shows ("plagiarism")
- 12 How is "plagiarism" dealt with? Within the small community of stand-up comedians, there is a norm against mounting a show consisting of other persons' jokes. If one person is transgressing the norm by stealing a particular other performer's material, the latter may in the first instance take this up with the plagiariser. Should they be unable to settle their differences, community sanctions of attacks on reputation (with third persons who could employ the performers for their shows) and refusals to deal may follow.
- 13 The industry as a whole is subject to great pressure continually to come up with new jokes and routines. Within the small community of stand-up comedians, fencing against outright plagiarism is successfully accomplished by community norms.
- 14 Sports strategies.⁹ In any sport, competition for the top consists in part in inventing new strategies that take the opponent by surprise and allow one to win. This advantage is temporary because the frustrated opponents or their supporters will figure out the magic formula and implement it, possibly improved or "tweaked", as well. So the protection required to cash in on one's creativity stems here from (1) keeping the formula secret, where that is possible (2) first mover advantage for as long as it takes opponents to figure it out. On the whole, competitive sports are quite innovative. Competition for the prizes drives continual innovation in strategies.

- 15 Type fonts¹⁰. Until a century and a half ago, typefaces were extremely costly to develop (in lead metal, by professionals) and equally costly to copy. As a result, there were few of them and protection was not a problem. Advances in technology made it possible in the early twentieth century to photograph a font and then to transpose it onto metal and thence onto lead type letters. Copying became less costly. With the advent of computers, the cost of designing new typefaces came down radically as did the cost of copying them (a click away). Copying typefaces was no longer an activity restricted to professionals, but could be done by anyone with a computer.
- 16 Ease of copying creates an “open access” space and might signal the need for some form of fencing to secure reward for the efforts involved in designing a type font. Legal protection was not available because of the functional character of type fonts, excluded in copyright legislation. No effective private form of fencing arose, probably due to the huge community of potential copyists. Did this mean the death knell for creativity in typefaces? Not at all. Raustiala and Sprigman report¹¹ current estimates that put the total number of typefaces in circulation at a quarter of a million. How can this work? In part, it is due to the cost of developing a new typeface being radically reduced by computer technology. This weighs all the more as most new fonts are minor variations (“tweaks”, as the authors call them) on existing ones. Fonts are often provided with computer operating systems or design software (Adobe), in which case tied sales logic operates to reward the creators.
- 17 Financial innovations¹². The financial industry develops new financial “products” (derivatives) and new computerised ways of managing financial portfolios. The latter are patentable in the US following a Court of Appeals decision in *State Street Bank and Trust Co. v. Signature Financial Group Inc.*¹³ There has been debate about the advisability of allowing patents on software, but, according to the authors, allowing it has not changed much within the financial industry. New financial products, in any event, cannot be protected by intellectual property. So how is innovative spirit rewarded here? The authors contend that industry relies on two mechanisms: trade secret within very large firms (backed-up by protective clauses in employment contracts) and first mover advantage.
- 18 Databases¹⁴. These are huge electronic collections of materials organised for easy search and retrieval. Generally they are regularly updated with new material so as to keep current. Databases are not protected by copyright in the US and in Canada, where court decisions have judged that the facts they assemble do not pass the test of originality required for such a right to arise.¹⁵ In both cases, the contents of telephone directories were considered to be out of bounds for copyright and in the public domain. By contrast, the European Union has adopted a Directive obliging member states to enact legislation protecting databases with a *sui generis* right less encompassing than copyright.¹⁶
- 19 Significantly, the lack of copyright or similar protection did not spell the (slow) death of the American database industry, as industry spokespersons feared. On the contrary, the database industry is growing in North America and stagnant in Europe. The database industry in part protects itself against copying by clauses in the contracts with users. Users will want to subscribe to have on-line round-the-clock access to up-to-date material. As users log on, the validity of their contract granting them access is checked on the fly. Behind this apparently simple procedure lies an important logic: because copying cannot be prohibited, the industry protects itself by continuing to innovate in order to keep customers happy.
- 20 Altogether, the brief survey of different non-copyright industries by Raustiala and Sprigman shows that where the law is not available to shore up fences thought necessary for innovators to get their reward, innovation does not necessarily grind to a halt. The innovators protect themselves by a variety of informal fences: first-mover advantage, secret, community norms, contractual norms and electronic fencing. In some instances, they seek their reward by innovating faster than competitors, thereby ensuring niche market superior revenues until competitors catch up, which may take a while. Competition, rather than stifling innovation by shaving away the innovator’s reward, may on the contrary be the very condition that stimulates it most.

C. The fashion industry

- 21 In a 2006 paper, Raustiala and Sprigman reported that the fashion industry then sold more than more than \$750 billion worth of apparel in the US alone.¹⁷ This is more than the cultural and software industries combined. The fashion industry is continuously innovating, very competitive and highly segmented, with a high end, where designer dresses sell for prices in the six figures, through upscale ready-to-wear designs to mass produced confection and cheap knock-offs. Many firms operate within this industry; older ones disappear and new ones appear all the time.
- 22 Fashion designs are not protected by copyright nor another intellectual property right in most countries. What is remarkable about the industry is that it is vibrant in spite of widespread and very rapid copying or imitation: an attractive and possibly trend-setting dress shown at the Oscar ceremonies may be copied and imitated in short order to

appear in less expensive form offered to a different segment of the apparel market. The industry itself has adjusted to this rapid copying phenomenon and is as innovative and competitive as any.

- 23 In an earlier age, upscale American clothiers attempted to protect their designs from cheap knock-offs by setting up a wholesalers coalition that would only sell to retailers if they refrained from selling cheaper knock-offs and maintained certain prices for the coalition's upscale wares. Inspectors for the coalition would visit retail outlets to ensure the conditions were observed and, if not, would trigger blacklisting of the infringer. By the late 1930s, the Federal Trade Commission looked into the scheme and brought suit for violation of antitrust legislation. In 1941, the Supreme Court of the United States declared the scheme in violation of anti-trust laws.¹⁸
- 24 End of creative fashion design? Not at all. The industry changed its business model to stress the value of owning a designer dress or one that is part of a fashion trend set by a conspicuous designer dress. While the trend is building up, it becomes desirable for the fashion conscious to join the movement. Once the trend has reached all corners of the market, it loses its appeal and is replaced by a newer trend. Freedom to copy accelerates the spreading of a trend (and the demise of the preceding one) and thereby promotes innovation in the industry. This in itself will promote sales for the industry as a whole. It is what Raustiala and Sprigman call the "piracy paradox".¹⁹
- 25 In this set-up, having one's design copied by knock-off operators may be, paradoxically, a quality signal for fashion designers. It may bring them new wealthy customers for new, possibly trend-setting designs. Fashion operators may actually encourage copying in as much as it contributes to setting a new trend. But the real money is made with the lower-priced mass produced knock-offs of these designs, when the trend takes off. In a sense, the haute couture serves as advertising for the knock-offs. Of course, it is important to keep the reputation for top-level design separate from that relating to lesser-priced designs. The fashion industry operators may be active in all segments of the market, but under different brand names. Hence, whilst no intellectual property right is available for the designs, the trademarks protecting brands in different segments in the market are extremely important and strictly enforced. The haute couture designer may sell its own designs in slightly modified form and under a different brand name in knock-off markets, where it faces competitors doing the same thing.
- 26 The fashion industry's business model appears to work quite well. In a graph displayed at p. 46 of their book, Raustiala and Sprigman show how the

price of top-level women's dresses has doubled over the period of 1998 till 2010, whereas for all other segments of the market the price of dresses has remained relatively stable or declined. To explain the phenomena we observe here, Barnett and co-workers have proposed a model in which low level copying could lead to a stable equilibrium in the industry, with high revenues and lively competition.²⁰

- 27 What should be noted about the fashion industry is that, whilst highly innovative and fiercely competitive, it is less concentrated than the cultural industries (book, music, film), where there is formal IP protection for creations. Could IP protection, when too strong, lead to higher concentration within the industry than would be desirable for maximising welfare?

D. The music industry²¹

- 28 Musical creations are normally subject to copyright, automatically granted upon creation in countries that have adhered to the Berne Convention.²² The traditional business model provided that revenue for musical creations would be secured through royalties on physical recordings or printed sheet music and through admission charges to live performances. Production of physical records involved substantial capital outlays, first for the recording (in specialised studios, with specialised personnel) and then for the printing of the records and for advertising and distribution amongst an extensive network of retailers. Until a few decades ago these "fences" would be secure enough to guarantee such revenue as the work could fetch, without much concern for unauthorised copying or recording. Copying such as it was resulted in copies of lesser quality – and hence desirability – than the original.
- 29 The advent of digital recordings of music and of broadband internet radically changed this setting. Music could be shared amongst consumers simply and without quality loss. As a result it became quite common. The fences that were effective in the earlier period no longer worked so well. The watershed, in the eyes of the industry, was the advent, in 1999, of Napster, the system that allowed consumers worldwide to find and share music peer-to-peer in a radically simplified way.²³ The formula was wildly successful with consumers. Record sales, which in 1999 stood at a high of \$20 billion, no doubt boosted by the recent conversion from records to CDs, steadily declined from thereon to \$7 billion, in 2011, which is below the level attained in 1985.²⁴
- 30 The industry did not hesitate to attribute the decline to unauthorised file sharing or "piracy". Whether this causality can be proven empirically is disputed in the scientific literature.²⁵ Quite possibly shared music whets the appetite and leads to purchase of

records. Be that as it may, the industry reasoned that an unauthorised copy represents a lost sale and that lost sales lead to lost revenue and in turn to lessened incentive to create. It sued the initiators of Napster and was successful in shutting the service down in 2001.²⁶ This led to the development of peer-to-peer sharing software without a central server and harder to trace: Aimster, Grokster, Gnutella and others. The industry sued their operators as well and won again. But consumers kept sharing files. So the industry sued individual consumers who shared files, and it won these battles too, obtaining cease-and-desist orders.²⁷ As this still did not stop file sharing, the industry then tried to enlist Internet service providers to shut out customers who it deemed to be engaging in piracy activity.

- 31 All this did not, however, make a serious dent in file sharing amongst consumers. Based on Cisco data, Lunney estimates file sharing in 2012 to amount to the equivalent of 7.5 billion CDs per month, with the expectation that it would triple over the next four years.²⁸
- 32 If revenue from record sales is down, one may expect artists to change their business model and turn to other sources of revenue.²⁹ They could self-publish and sell on the internet (all the more successfully as the internet allows one to reach the “long tail”³⁰); rely on sales by convenient and simple on-demand services, initiated by Apple’s iTunes³¹ in 2001 and now offered by Amazon, Spotify, Netflix for films and many others; live performances, where access can be more easily fenced in and for which the records act as advertising;³² merchandising;³³ endorsement deals; contributions from fans wishing to favour particular artists specifically³⁴; or they could exit music creation altogether.
- 33 There is evidence that revenues from these sources have gone up.³⁵ We do not know directly whether additional income from these sources is sufficient to offset the decline in record sales, and neither do we know whether the total amount of music consumed has increased. But if industry doomsayers are correct, one would expect reduced incentive to lead to fewer new creators entering the market and fewer new creations being offered. On these we do have data.
- 34 As regards new albums being brought out, it should be noted that the cost of recording music and of distributing it has dramatically gone down. Scale economies are no longer a *conditio sine qua non*: home recording with ordinary software does the job.³⁶ This in itself would tend to increase the number of new albums brought out.
- 35 As regards new artists attempting entrance into the highly competitive world of music, revenues from creative endeavour are distributed in a very skewed manner, with top performers earning fortunes, some others earning a living and the tail end of the distribution losing their shirt.³⁷ By all accounts, it is an “unfair lottery”. One must presume artists attempting entrance into this unfair lottery to be driven by the idea of a “pot of gold” if successful.³⁸ If revenue drops as a result of piracy, one may expect the pot of gold to be less rich and so its incentive potential to be smaller, and hence to see some potential music creators direct their talents elsewhere. In this regard, it would be particularly significant to find new creators making hits on first trial, outclassing established creators.
- 36 Several field studies have attempted to measure new musical creations in the post-Napster era.³⁹ Various dimensions may be relevant. For established artists lesser revenue might lead to renewed creative effort, reversing a tendency to substitute leisure for work as they raked in revenue earlier.⁴⁰ If new creations and new creators are less numerous, one might expect more musicians to resort to producing new renditions of existing success numbers, the so-called “covers”.
- 37 The tricky part of the measurement is that, because of widespread copying, one cannot rely on sales figures supplied by the industry. Copying is likely to focus most on popular hits. In his fieldwork Lunney relied on songs that appeared in the Top 50 of the Billboard Hot 100, played by radio stations, over the period 1985–2013. Over this period the proportion of new artists appearing in the Top 50 with their first creation remained relatively constant,⁴¹ as did the proportion of new artists appearing on the Top 50 list with a second or later creation.⁴²
- 38 As regards “cover songs”, which might be substitutes for original creations where incentives are insufficient for the latter, Lunney finds a clear and steady decline over the period studied.⁴³ The proportion of new songs in the post-Napster area remains relatively constant and in the same range as before Napster.⁴⁴ And the number of new artists appearing on the hit list remains roughly the same between pre- and post-Napster, with an increase in very recent years.⁴⁵ To this it should be added that the number of new albums brought out more than doubled between 2000 and 2007, a third of which appeared as digital albums in 2007.⁴⁶
- 39 Taken together, this evidence suggests that significant new music creation and widespread filesharing can coexist.⁴⁷ In a sense, widespread filesharing might be seen as a natural experiment reducing the scope of copyright.⁴⁸ Looked at this way, it suggests that for significant music creation to take place, we do not need as extensive a copyright as we now have on paper. In particular, there is little reason to think that extending copyright duration from fifty years after the creator’s death to seventy

years has any useful effect in bringing forth more original creations.⁴⁹ All these copyright extensions seem to result from highly successful lobbying by the cultural industries in the face of unorganised consumer interests.⁵⁰

- 40 What a too long lasting copyright does was brought to light in a recent study by Heald dealing with the book industry and incidentally with the music industry.⁵¹ Heald looked at a random sample of 2000 books available on Amazon.com. As expected, he found that availability decreased steadily with the age of the book. But books published in the United States before 1923 were placed in the public domain. In the sample studied, the availability curve took a significant upturn for books originally published in the 1850s till 1923. This suggests that copyright prevents republication even though there appears to be a market for reissuance of older titles, as entrepreneurial initiatives in the public domain reveal. For older music, the availability is much better, thanks to Amazon and Youtube amongst others and in part no doubt because the pieces are shorter, the conversion simpler and the commercial risk smaller.

E. Conclusion

- 41 The fields of creative endeavour reviewed here show that where formal copyright is not available or is not working as well as hoped, industry participants adapt their business model to focus on activities sufficiently “fenced in” for revenues to be effectively secured. How this is done, how well it works and how this affects competition varies from industry to industry: fashions and trends, community norms, first mover advantage, brand name protection, live performances, open content (reducing the cost of creation) and other ways. Industry specificity is not normally considered in IP law, as it is in competition law.⁵² The absence or ill-functioning of IP does not mean the death of creativity. Activities may be reoriented towards forms in which reward can be better ensured. In some instances, copying may actually stimulate innovation. In the case of Wikipedia, content is made entirely by volunteer effort and is explicitly offered free for copying under a creative commons licence. Without any IP protection, it is by far and away the most consulted encyclopedia in the world. It competed Microsoft’s Encarta encyclopaedia, protected by copyright, out of existence.⁵³
- 42 Whether the resulting set-up is optimal as regards reward for existing creations as well as openness to future creations, in other words whether we have the optimal amount of innovation, is an open question. We know that this involves a trade-off,⁵⁴ but reliably

measuring the costs and benefits involved has so far eluded us.⁵⁵

- 43 The studies reviewed here do not authorise the conclusion that we can do without IP.⁵⁶ A recent historical study looks at the creation and performance of operas in Italian states between 1780 and 1821, comparing those that introduced copyright during Napoleonic occupation to those that did not.⁵⁷ It finds that the copyright states had more and better opera and that composers born elsewhere moved to those states. Introducing copyright had a perceptible incentive effect on creation there.
- 44 Our review also shows, however, that IP has non-negligible drawbacks. Industrial concentration in the cultural industries is higher than in the fashion industry, which has no formal IP protection. Industrial concentration makes for effective lobbies and one may surmise that the continual extension of copyright in duration and scope is the result of lobbying where the forces opposing such extension are dispersed and unorganised. Too extensive copyright would lead to lock-up of cultural creations beyond what is necessary to motivate the initial creators in the first place. The study of the “disappearing” books provides some indication that we have reached this stage.
- 45 The studies on the effects of music “piracy” show that music sharing has not killed musical creation, quite the contrary. With the cost of creation coming down quickly, we have all at once more albums produced, more new creations, fewer “covers” and widespread copying. This raises the question of whether what we see is the existing distribution formula being questioned and new formulae being explored.
- 46 If intellectual property has a role to play in stimulating innovation, we must find ways to prevent lobbying efforts from extending it well beyond this role, where it becomes rent-seeking and leads to unnecessary lock-up. As for the duration of copyright, a 14-year term, renewable upon demand, might be a good starting point, as *The Economist* put it.⁵⁸ Raustalia and Sprigman, although insisting that intellectual property still has an essential role to play⁵⁹ and that there are instances where “copying is neither benign nor beneficial”,⁶⁰ do not offer precise advice on where that role lies and should be enforced. They offer ample evidence that copying does not kill creativity and indeed may stimulate it. They document changes in business models adopted by those seeking revenues and being unable to stop copying. The key to focus on, they insist, is return on innovation, not restrictions on copying.⁶¹

1 Mackaay 2013a, 303f.

2 Mackaay 2013a, 239f.

3 Hardin 1968.

- 4 Raustiala 2012, 7. The book synthesises arguments developed in earlier papers in 2006 and 2009.
- 5 Raustiala 2012, 171; Levine 2011 .
- 6 Raustiala 2012, 58, quoting numbers given by the (US) National Restaurants Association.
- 7 See also Fauchart 2008.
- 8 Raustiala 2012, 105 ff.
- 9 Raustiala 2012, 126 ff.
- 10 Raustiala 2012, 145 ff.
- 11 Raustiala 2012, 150.
- 12 Raustiala 2012, 155 ff.
- 13 149 F.3d 1368 (Fed. Cir. 1998), leave to appeal to the US Supreme Court denied 119 S Ct 851 (1999).
- 14 Raustiala 2012, 162 ff.
- 15 US: *Feist Publications Inc v. Rural Telephone Service Company*, 499 U.S. 340 (1991), 113 L.Ed.2d 358, 18 U.S.P.Q.2d 1275; Canada: *Tele-Direct (Publications) Inc. v. American Business Information Inc.*, (1994) 58 C.P.R. (3d) 10 (CF); [1998] 2 CF 22 (CFA); leave to appeal to the Supreme Court of Canada denied.
- 16 *Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases*. OJ L 77, 27.3.1996, p. 20–28; <http://old.eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1996:077:0020:0028:EN:PDF>
- 17 Raustiala 2006, 1693.
- 18 *Fashion Originators' Guild v. FTC*, 312 US 457 (1941).
- 19 Raustiala 2012, 38, 44.
- 20 Barnett 2010.
- 21 Raustiala 2012, 213 f. (Epilogue).
- 22 *Berne Convention for the Protection of Literary and Artistic Works* of 1886, http://www.wipo.int/treaties/en/text.jsp?file_id=283698
- 23 <http://en.wikipedia.org/wiki/Napster>
- 24 Lunney 2014a, text at nt 21 f.; Lunney 2012, 2; Raustiala 2012, 216.
- 25 Rob 2006; Peitz 2006; Liebowitz 2006; Oberholzer-Gee 2007, 2010; Waldfoegel; for Canada, Andersen 2010, contradicted by Barker 2012.
- 26 Lunney 2014a, text at nt 9 f.; Carrier 2012.
- 27 Lunney 2014a, text at nt 11 f.
- 28 Lunney 2014a, text at nt 18 f.; see also Oberholzer-Gee 2010.
- 29 Darling 2014 documents such a shift for the adult entertainment industry.
- 30 Anderson 2007.
- 31 <https://en.wikipedia.org/wiki/iTunes> ; Raustiala 2012, 220. Apple's iPod and the associated iTunes store were a runaway success. They still occupy 75% of the market for paid downloaded music.
- 32 Oberholzer-Gee 2010; Lunney 2014a, text at nt 24.
- 33 Lunney 2014a, text at nt 9.
- 34 Lunney 2009; this paper (25) relates how Stephen King used this method for his book *The Plant*.
- 35 Raustiala 2012, 222.
- 36 Raustiala 2012, 215.
- 37 Scherer 2001.
- 38 Raustiala 2012, 204; Oberholzer-Gee 2010, 22; Scherer 2001.
- 39 See Rob 2006; Waldfoegel 2011a, 2011b, 2012; Oberholzer-Gee 2007, 2010; Lunney 2012, 2014a and b.
- 40 Leonard Cohen, having been swindled by his manager, had to engage in new creation and new touring efforts. These turned out to be extremely successful, in terms of live performance

attendance as well as record sales, and largely sufficient to wipe out the losses suffered from swindling. Scherer reports that Verdi reduced creative effort when, as a result of the introduction of copyright, he could maintain his income with less effort. (Scherer 2008, 11). See also Lunney 2014a, 13 for the same substitution effect by the contemporary artist Garth Brooks.

- 41 Lunney 2014a, Fig. 3.
- 42 Lunney 2014a, Fig. 4.
- 43 Lunney 2014a, Fig. 5.
- 44 Lunney 2014a, Fig. 6.
- 45 Lunney 2014a, Fig. 7.
- 46 Oberholzer-Gee 2010, 24; see also Waldfoegel 2012.
- 47 Raustiala 2012, 7; Lunney 2014b, 296.
- 48 Lunney 2014a, 7; Waldfoegel 2011.
- 49 Lunney 2012, 19, 23-24; Mackaay 2013b.
- 50 Lunney 1996, 629.
- 51 Heald 2014.
- 52 Hovenkamp 2015.
- 53 Raustiala 2012, 185.
- 54 Mackaay 2013a, 342-343.
- 55 Darling 2014, 708.
- 56 Raustiala 2012, 9, 202; Darling 2014, 660; contra: Boldrin 2008.
- 57 Giorcelli 2014.
- 58 *The Economist* 25 January 2003, p. 15; repeated *The Economist* 2 July 2005, p. 14; and again 8 April 2010
- 59 Raustiala 2012, 203.
- 60 Raustiala 2012, 211.
- 61 Raustiala 2012, 203.

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