

Copyright and innovation

How to establish whether copyright works¹

Christian Handke Hardly anyone seems satisfied with the current copyright system. Some complain that widespread unauthorized copying is simply immoral, or that without further public investment in stronger copyright protection, creators will suffer and the supply of new creative works will dry up. Others worry that the copyright system is associated with excessive centralized control over culture, hindering artistic development and technological change. How can copyright be used as a means to foster innovation, and how we can determine whether copyright fulfils this function?

Copyright is a puzzling issue from a liberal market perspective, which permeates the contemporary social discourse well beyond academic economics. On the one hand, clear property rights are an essential aspect of efficient markets. Intellectual property arrangements like copyright define exclusive rights, at least according to the letter of the law. On the other hand, it is the very point of effective copyright that it endows rights holders with market power, and market power is a standard villain in economics. There is great ambiguity about copyright among economists as well.

What is copyright supposed to achieve?

According to the seminal European Directive on Copyright in the Information Society (DIR 2001/29/EC, §4), the official aim of copyright is to promote ‘innovation and creativity’ in the regulated sector. Unfortunately, there is no universally accepted way to assess whether copyright policy achieves this objective without excessive unintended consequences.

Innovation and creativity are multifaceted concepts. Innovation refers to the generation, diffusion and adaptation of new products and production processes. Successful product innovation means that better, more valuable products become available. Successful product innovation means that the costs of producing and delivering a given product fall. Last but not least, innovation can also refer to the novel aspects of products or processes. In any case, innovation is widely regarded as the main source of growth in the long run.

Creativity is a more contested term. On the one hand, creativity can refer to the ability to generate novel ideas, which would make it a precondition of innovation. For example, only a minority of novel ideas ever lead to new products that are appreciated by those who have not created them. Therefore, the realm of creativity would be broader than innovation under this definition. Innovations would be that subset of creations which develop some wider social significance beyond the enjoyment

of the creator. On the other hand, creativity is sometimes referred to as that aspect of innovation that generates new works in the creative industries, for example new literary texts, software, musical recordings or films. According to the latter definition, creativity is a subset of innovation, and this is how I use the term in this article.

What is innovation in the creative industries?

The extensive literature on innovation is largely focused on manufacturing, patents and new technical artefacts fulfilling well-defined functions. This type of innovation does affect the creative industries, for example, when new media carrier formats such as e-books or mp3 players are introduced to the market.

However, to develop a comprehensive assessment of innovation in the creative industries, we need to expand on standard definitions of innovation. An essential aspect of innovation in creative industries is 'content creation' that gives rise to a unique unit of content, the first fixation of a work referred to in copyright legislation.

Video games, literature, music or art works have substantial market value. The predominant source of their value escapes precise definition and measurement, however. Kretschmer Klimis and Choi (1999) illustrate this well. They point out that for creative works, there are no formal guarantees as there are for other types of consumer goods. In contrast to a car that does not go or a computer that does not process data, there simply is no way to document that a creative work falls below some specific level of performance.

Keeping things simple, this leaves us with two types of innovation in the creative industries: content creation and 'humdrum innovation'. The latter conforms more closely to standard concepts of innovation and

encompasses the entire range of administrative, organizational and material tasks associated with the reproduction and dissemination of creative works.

To illustrate why both these types of innovation matter, let us imagine two record companies. One decided during the 1950s to focus entirely on content creation, such as novel musical recordings. The other focused entirely on technological innovation, such as new media technologies to capture and disseminate music as well as new ways of marketing music. In essence, the result would very probably be the same in both cases. The first record company would have been relegated to a small niche with its traded musical content (say Rockabilly). The second record company would have fallen behind its competitors because of its reliance on vinyl records.

This is not to say that enterprises in the creative industries would have to generate innovations regarding media technology. Innovative goods and services can be bought. They will regularly have to be adapted to specific situations, however, and using them effectively will often require extensive know-how. To be sustainable, most creative enterprises will have to acquire sufficient capabilities to adapt to broader technological change.

Whereas in economics, content creation has largely been ignored, there is a tendency in the cultural sector to dismiss humdrum innovations as secondary or even as threatening. This position is very questionable, and I am convinced that over time the social value generated in creative industries depends on successful humdrum innovation as well as content creation. Humdrum innovation also matters because the value of creative works is a function of the utility each user derives from them and the number of users. Again, the principle can be illustrated with an extreme example: imagine a fine Frans Hals

painting completely forgotten and located where it can never be recovered. From a social science perspective, this painting would not be worth anything. It needs to be known, accessible and appreciated to be of value. If that holds, humdrum innovation that makes the existing stock of creative works more easily accessible increases the social value of creative works.

How do we measure innovation?

Measuring innovation is tricky. It is also essential in order to assess whether copyright fulfils its function. In principle, innovation processes can be measured by the amount of inputs devoted to the development of new products and processes. Innovation results can be measured by the number of new products released on the market, their market share and market value.

However, economists familiar with the creative industries tend to agree that the market value of cultural products (the number of units sold multiplied by the unit price) is an incomplete measure of the total social value of creative works. This may be due, for instance, to an extensive consumer surplus or positive external effects, so that spending on creative works may be much lower than the value of these products. Unauthorized copying of

copyright works via file-sharing networks illustrates consumer surplus and external effects. On the one hand, the utility of users from accessing creative works at very low costs is not directly captured in terms of a monetary exchange. With unauthorized copying and 'free access', much of the market value 'disappears' into greater consumer surplus, which is much harder to measure. On the other hand, some of this value may be appropriated by suppliers of related goods

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and services, which facilitate access to creative works. Demand for Internet access and related computer hardware and software probably increases when creative works are available at very low costs to users of these products. If so, the IT sector derives commercial advantages from positive external effects generated in the cultural sector.

It is extremely challenging to measure innovation output including non-market value. The task is quite similar to assessing the value of arts and culture more generally, but the focus is not on the stock of existing works but on the flow of new works. Arguably, it is still better to consider the empirical evidence that can be made available, rather than to rely entirely on gut feelings in devising public policy.

Digital copying and content creation

For more than a decade, one of the most prominent topics regarding creative industries has been the diffusion of digital

copying technology. More extensive copying and unauthorized use means that effective copyright protection decreases. Many economists have sought to gauge the impacts of this relatively sudden and substantial change in copyright protection. For a survey of the empirical literature on copyright see Handke (2011).

So far, most econometric work concerns the effect of digital copying on sales of authorized copies of musical sound recordings. For the record industry, most studies find a significant depressing effect on sales. Assuming other things stay the same (as economists are prone to do for the sake of the argument), falling revenues should be associated with lower investments in content creation. The supply of new works would dry up somewhat, and users' short-term benefits of easy and cheap access through file-sharing would probably not be sustainable. To sustain a vibrant and adaptive cultural sector, it could thus be justified to spend public resources on fostering copyright protection.

A couple of studies on the effects of copying on content creation speak a different language, however. None finds evidence that the supply of new works would have diminished with the diffusion of digital copying technology. On a descriptive level, Oberholzer-Gee and Strumpf (2009) observe that the variety of copyright works supplied in the USA has not decreased in the presence of file-sharing. In my own recent work I document that the supply of new albums in Germany has increased in absolute terms since the diffusion of digital copying technology and that there is no significant deviation from a long-term upward trend since the mid-1990s. Furthermore, the consumption time of recorded music has increased over the last 13 years, which suggests there has not yet been a large loss in the quality of creative works supplied. (Handke 2012) A widely discussed working

paper by Waldfoegel (2011) focuses entirely on quality. It investigates the share of music albums released in the presence of digital copying in 'best of all times lists' as a measure of quality, at least of the top hits. He finds a downward trend over time but no acceleration of this trend in the presence of file-sharing technology and decreasing record industry revenues. Content creation seems not to have suffered with the diffusion of digital copying technology.

These findings are certainly preliminary. It is imaginable that any adverse effect of digital copying on the supply of new works will take a long time to transpire. What is more, things might have been even better as digital ICT lowers the costs of creating and disseminating copyright works. Nevertheless, for the time being there is no evidence that digital copying would have adversely affected the flow of new creative works.

Copyright and humdrum innovation

The impact of copyright on humdrum innovation is even harder to assess. Whereas content creation is a constant aspect of creative industries, other types of innovations tend to occur in fits and starts. For example, markets for media hardware tend to bring about a predominant standard, say printed books, music on CDs and films on DVDs. There have been long periods of relative stability regarding media hardware. Occasionally, however, a new technical standard emerges, which tends to culminate in a relatively swift and near-complete replacement of the previous technology. To establish exactly how changes in copyright strength affects technological change of this sort remains almost impossible.

Regarding swift technological change in many contemporary creative industries, it might seem improbable that digital copying will undermine incentives for humdrum innovation. It is noteworthy in this

context, however, that the switch from CDs to downloads and streams as the predominant carrier format for music recordings is taking longer than previous changes in standards, say from vinyl to music cassette and CD. Furthermore, much humdrum innovation might come about in order to mitigate adverse effects of more unauthorized copying. Successful humdrum innovation of this type could curtail losses, but it might not increase the productivity of the creative industries in an absolute sense. In any case, it is far from clear how less copyright protection affects humdrum innovation.

On a theoretical level, unauthorized copying could deplete rights holders' resources and thus their ability to invest in humdrum innovation. Unauthorized copying could also undermine the market power of rights holders and drive them to endorse radical changes, which they would otherwise have resisted to avoid the cannibalization of traded business models.

Furthermore, the very point of copyright is to strengthen those investing in content creation relative to users. Too little copyright protection could mean that content creation will fall below its socially desirable level. This will have ambiguous effects on incentives for humdrum

innovation regarding new ways of disseminating existing copyright works. On the one hand, less content creation will eventually mean less demand for complementary goods and services, new and old. On the other hand, under weak copyright protection, users could appropriate more of the remaining value of creative works when developing complements.

There is only very preliminary evidence of how this works out in real markets. For

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example, Leung (2009) estimates from a US student survey that 22 percent of all iPod sales were due to the availability of unauthorized copies. In another working paper, Adermon and Liang (2010) find that Internet traffic dropped by 18 percent with the extension of copyright protection in Sweden. It seems very probable that under current market conditions, suppliers of ICT services and hardware appropriate some of the value of creative copyright works. As argued above, that could increase incentives for humdrum innovation as long as the supply of creative works does not diminish too much.

Conclusions

The official reasoning behind copyright is that this institution fosters innovation where incentives to innovate would otherwise fall below a socially desirable level. If we take this reasoning seriously, we need to assess the impact of copyright protection on innovation. Aesthetic innovation or content creation is an

essential aspect of innovation in creative industries. There is surprisingly little evidence that copyright increases content creation under real market conditions. The preliminary evidence is that less effective copyright protection with the diffusion of digital copying technology has had little impact on the supply of new, valuable copyright works. There are indications that overall, we are currently dealing with a boom in the creative industries. That is not always reflected in the debate on copyright. We need to further monitor this situation to understand what drives innovation and growth besides copyright protection, and also to track more protracted effects of digital copying on content creation.

Innovation in the creative industries also concerns more humdrum types of activities, such as new carrier formats, new financing models or new ways of conducting user-producer interaction or managing user-user interaction related to creative works. The social value of creative products does not only depend on their mere existence but also on the extent to which they are used. Copyright is rarely addressed in this broader context, and it remains unclear how it affects incentives for humdrum innovation.

The public debate on copyright seems to be in a stalemate. It often revolves around principled arguments, and there is no agreement whether the case for property or the moral rights of those investing in culture outweigh concerns for competition, technological innovation or freedom of expression. Many ambitious plans to resolve the issue have been announced in EU member states, often with little practical effects. Rather than providing a stable framework, this seems

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to add to the notorious uncertainty in creative industries. It is unclear for what type of copyright system stakeholders need to prepare.

Empirical research may help to bring about a more stable, widely accepted compromise. One key question is how copyright affects innovation. A better understanding of how this works in practice could help with fine-tuning the many scalable aspects of copyright – from the duration of rights, the scope of ‘fair use’ exemptions and limitations, or the scope and public control of copyright collectives. Better empirical evidence should also help us to strike a balance between incentives to generate novel creative works and new ways of disseminating them. To sustain vibrant creative industries over time, we need to combine a good performance in content creation with humdrum innovation.

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References

- Adermon, A. and C.Y. Liang (2010) *Piracy, music, and movies: a natural experiment*. Uppsala: Uppsala University, Department of Economics. (Working Paper no. 2010:18)
- Handke, C. (2010) *The creative destruction of copyright: innovation in the record industry and digital copying*. Rotterdam: Erasmus University Rotterdam. Doctoral dissertation.
- Handke, C. (2011) *Economic effects of copyright: the empirical evidence so far*; report for the National Academies of the Sciences, Washington DC. Available on <http://sites.nationalacademies.org/PGA/step/copyrightpolicy/index.htm>.
- Handke, C. (2012) 'Digital copying and the supply of sound recordings.' In: *Information Economics and Policy*, vol. 24, 15-29.
- Kretschmer, M., G.M. Klimis and J.C. Choi (1999) 'Increasing Returns and Social Contagion in Cultural Industries.' In: *British Journal of Management*, vol. 10, 61-72..
- Leung, T.C. (2009) *Should the music industry sue its own customers? Impacts of music piracy and policy suggestions*. Chinese University of Hong Kong Working Paper.
- Oberholzer-Gee, F. and K. Strumpf (2009) 'File-sharing and copyright.' In: *Policy*, vol. 10, 1-46.
- Waldfogel, J. (2011) *Bye, bye Miss American Pie? The supply of new recorded music since Napster*. National Bureau of Economic Research Working Paper Working Paper no. 16882.

Note

- 1 This article draws on Handke's doctoral dissertation (2010).