



Herkko Hietanen LL.M.,
researcher, Lappeenranta
University of Technology
and Helsinki Institute for
Information Technology.
herkko.hietanen@hiit.fi

Currently Herkko teaches law and technology at Lappeenranta University of Technology and conducts p2p research at Helsinki Institute for Information Technology with the p2p Fusion project. His publications include several academic papers and a book "Community Created Content, Law, Business and Policy". Herkko will defend his PhD dissertation on Creative Commons -licensing in the coming fall.

Herkko Hietanen has been the CC-Finland leader since 2004. He has worked with the Creative Commons team in San Francisco and as a visiting scholar at UC Berkley School of Information.

Herkko is also a partner in Turre Legal law firm and has extensively worked with user created and open content projects. Herkko has counseled several media companies and productions in open content licensing.



This paper was submitted to iSummit 2008 conference as work in progress.

HONEY, I TOOK OUT THE TRASH

Curbside Recycling Motivations and Free Culture Movement

Herkko Hietanen

A man walks up to a computer in a wall and asks it for a cup of Earl Grey tea. The computer responds with a beep and a cup of tea materializes in front of the man's eyes. In the science fiction world of Star Trek computer replicators can produce food and clothes for the spaceship's crew. Sci-fi has a lot in common with the social sciences. Sci-fi looks at technology changes and their impact on social structures. Lately, copyright scholars have done the same. Even though we are far from the science fiction world of Star Trek, the disappearing constraints of sharing copyrighted works brings the scarcity-less or *post scarce* -world closer.¹ Illegal file sharing has become the focus of discussion, but at the same time a lot of legal sharing is taking place. Shared works are not just the material that has fallen off the copyright wagon in to the public domain, but is also valuable new content donated to the public as software and culture commons. New content is created more than ever with new cheap sophisticated devices that are present in our

¹ Chris Anderson, *The Tragically Neglected Economics of Abundance*, THE LONG TAIL BLOG (March 06, 2005), http://longtail.typepad.com/the_long_tail/2005/03/the_tragically_.html.

everyday life. Much of this content is shared online. Some of the content is further refined and remixed by online communities. This is where many run into problems as copyright may prohibit the acts which technology enables. People are slowly starting to see how the licenses of software and content affect the freedoms of communications, consuming and collaboration. The replicators of Star Trek are not possible as we have not managed to solve the mystery of physics to enable replication. The problem of copyright might already be solvable as the scarcity is manmade.

Several scholars have noted that the current property system that maximizes the protection creates waste due to under use and non-use of rights.² Private waste imposes social harms.³ Waste of property can be seen as an inefficiency of society. Free Software- and Creative Commons movements can be seen as attempts to minimize the waste by optimizing and automating copyright licensing.⁴ Nevertheless, using licenses requires active decisions to be made to change the default exclusivity that copyright provides. This paper looks at the reasons why people are voluntarily taking steps to create cultural commons. This is done by first examining the economics of commons production. Then the paper seeks analogies from the unlikely source of curbside recycling studies. This is performed to see if there are similarities with the unselfish behaviors of trash and copyright recycling.

² E.g., Edgar J. McCaffery, *Must We Have a Right to Waste*, in NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 76 (Stephen R. Munzer ed., 2001); Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970).

³ McCaffery, *supra* note 2, at 77 (“as fungible capital has replaced land as the chief carrier of social value, waste has become the more important threat to the collective welfare of a reasonable society.”).

⁴ See *Creative Commons*, <http://www.creativecommons.org>; Lawrence Lessig, *Re-Crafting a Public Domain* 18 YALE J.L. & HUMAN. 56 (2006); Lawrence Lessig, *The Creative Commons*, 65 MONT. L. REV. 1 (2004).

Scarcity, spoilage and transaction costs

Economists examine people as rational beings who are driven by self-interests. Copyright is often seen as a way to balance the interest of the creator and the interest of society. The creator gets a chance to dictate the rules for the use of the work. This control then enables the creator to collect rent for the work in a form of licenses. The very idea of owners giving up exclusive rights without reciprocity seems counter intuitive.

Much of economics research involves dividing scarce resources, and economics is sometimes called the science of scarcity.⁵ If there is no scarcity for resources, there is no need for economics. Luckily physical resources are not the only scarce resources. Even if the property system would collapse overnight, time, labor, attention,⁶ and knowledge remain scarce. Some of the contributions to commons may be explained as barter for these scarcities. Chris Anderson proposes that many new successful businesses are based on giving away free services and products in exchange for attention or future business.⁷ Businesses are not the only ones profiting from freely available information. Many of the collaboration platforms like Wikipedia rely on freely available and modifiable pieces of information.⁸ There is a demand for

⁵ ROGER A. ARNOLD, *ECONOMICS 2* (4th ed. 1998) (“*More completely, economics is the science of how individuals and societies deal with the fact that wants are greater than the limited resources available to satisfy those wants.*”).

⁶ RICHARD A. LANHAM, *THE ECONOMICS OF ATTENTION: STYLE AND SUBSTANCE IN THE AGE OF INFORMATION* (2007) *see also* CORY DOCTOROW, *DOWN AND OUT IN THE MAGIC KINGDOM* (2003) (describes a futurist society which is based on attention economy).

⁷ Chris Anderson, *Free! Why \$0.00 Is the Future of Business*, 16.03 *Wired Magazine* (2008).

⁸ *SAI 25: The World’s Most Valuable Digital Startups*, *Silicon Alley Insider* (April 2008) <http://www.alleyinsider.com/sai25/> (estimated that the value of the Wikipedia asset would be at least \$7 billion if it would change its operation model to a for-profit company).

free content. At the same time people are creating and sharing copyrighted works more than ever.

Economics has tried to maximize rights owners' ability to reap benefits from their protected works. While the outcome of maximization for works that are valuable may be desirable, the level of protection creates areas where under-use and no-use are realities. Finding a balanced protection to maximize profits for rights owners, who are looking to monetize their valuable works, and at the same time providing access to works, which have minimal monetary value, would be the optimal situation. But isn't all property worth protecting?

Lockean "*labour of body and the work of hands*" property theory has been popular with creative industries where the "worker deserves his wage" has been a sacred mantra.⁹ Nevertheless, Locke also recognized the need for efficiency, and that no one should hoard more than can be used as the rest of the property would spoil.¹⁰

*"'God has given us all things richly.' Is the voice of reason confirmed by inspiration? But how far has He given it us- 'to enjoy'? As much as anyone can make use of to any advantage of life before it spoils, so much he may by his labour fix a property in. Whatever is beyond this is more than his share, and belongs to others. Nothing was made by God for man to spoil or destroy."*¹¹

There are only a few norms that ban the wasting of property. In fact, the full property right is seen to include a *jus abutendi* right to destroy or injure the

⁹ See Luke 10:7 ("*And in the same house abide, eating and drinking such things as they give; for the workman is worthy of his hire.*").

¹⁰ JOHN LOCKE, SECOND TREATIES ON GOVERNMENT 17-20, Arlington heights (III): Harlan Davidson, cop. (1982 orig. 1690).

¹¹ *Id.*

property as well. Any reasonable property owner would rather obtain profit from a work than let it spoil - correct?¹² This would be the case in a frictionless world. According to Coase's theorem property rights will end up to the party who values the property most if the transaction costs are low enough and the property is properly defined.¹³ While copyright law may have helped to define property rights it has also raised the transaction costs. A typical copyright license goes on for pages and was drafted by a copyright specialist. There are institutions, such as collecting societies, that manage the micro licensing transactions efficiently, but many of the protected works fall outside such systems; especially works that are not created for direct economic benefit. While financial incentive is often important, creators have several other incentives.¹⁴ Douglas C. North's notion that new institutional arrangements will emerge when there is a need for change that is not supported by the current institutions¹⁵ have been true for software and culture commons movements. A crucial element of the institutional structure of an economy is the method of enforcement of property rights and contracts.¹⁶ Our copyright system, where the majority of works have a low value and transaction costs are high, creates massive amounts of copyright waste.¹⁷ There are simply no effective markets for such works.¹⁸ The

¹² ARISTOTLE, *POLITICS*, BOOK II, Sections 5-6 (argues that private property is needed to ensure that property is cared for properly).

¹³ Ronald Coase, *The Problem of Social Cost*, 3 J. LAW & ECON. 1 (1960).

¹⁴ William M. Landes and Richard, A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEG. STUD. 325 (1989).

¹⁵ DOUGLAS C. NORTH, *STRUCTURE AND CHANGE IN ECONOMIC HISTORY* (1981); DOUGLAS C. NORTH, *UNDERSTANDING THE PROCESS OF ECONOMIC CHANGE* (2005).

¹⁶ DOUGLASS C. NORTH, *INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE* (1991).

¹⁷ See McCaffery, *supra* note 2 at 76.

¹⁸ See e.g., Dennis W. K. Khong, *Orphan Works, Abandonware and the Missing Market for Copyrighted Goods*, 15 INT'L J.L. INFO. TECH., 54.

copyright waste does not produce anything for its owner and at the same time it blocks other people from utilizing it. Copyrights non-use creates inefficiency and waste for society, which would be more productive in such cases without the copyright protection.

Waste management and commons

Scandinavian countries have shown that turning much of the private property into limited commons may yield positive results for the community at large. Finland, Sweden and Norway have an open access policy known as “every man’s right”. The policy’s idea is that the transaction costs in obtaining a permit to access private land would mean that fewer people would enjoy nature. The loss to society of a strict trespassing law would be greater than the profit that land owners could collect for permissions. The arrangement can also be seen as a form of *waste management*. By giving access to natural berries and mushrooms on private land society makes sure that the waste of resources is minimized. While the cultivated plants are exclusive property, natural berries and mushrooms do not enjoy the same protection. The land owners simply would not be able to pick all the berries and mushrooms and much of the resources would be wasted. The same idea applies to fair use restrictions of copyright. Enforcing costs for a ban on private copying would be greater than the benefits that the users obtain from it. Most of the value gained from fair use would be lost if the use required obtaining a license every time. Fair use helps to prevent the waste of copyrights. Nevertheless, sometimes copyright owners can place a price on private use. This is the case with copyright levies on empty recording platforms.¹⁹ The system reduces the transaction costs as negotiations are not

¹⁹ See e.g., Finnish levy collection agency: Remuneration for private copying,
http://www.hyvitysmaksu.fi/Teosto/hymysivut.nsf/wpages/index_en.html

required. At the same time it provides rights owners some remuneration for the use of the copyrights.

One way to react to the ever broadening range of protected works is to simply ignore the copyrights. As the excludability is artificial, ignoring is easy. File sharing services are full of people who do not respect copyright law's restrictions. Copyright owners are worried that a whole generation may learn that "stealing" records, TV-shows and motion pictures is ok. The fear is, that when people do not pay for the works, the incentive to create will also disappear; or at least the capital that is invested into the finding and marketing of talent will be directed somewhere else. At the same time there are whole subcultures that somewhat disrespect copyrights: jazz, hip-hop, and Brazilian Techno Brega consider sampling and borrowing from other people normal.²⁰ While the pirate movement and remix culture have little in common they both rely on the fact that copyrighted works are non-excludable by their very nature.

For a long time research has focused on the tragedy of commons. The tragedy occurs when the division of commons resource is ineffective and overuse of a resource depletes it. Lately, research has shifted to studying the comedy of commons and tragedy of anti-commons.²¹ The comedy has to do with the positive externalities of the use of resources such as the use of road systems that increase commerce and spreads wealth to the community at large. The change in the way the commons are seen has to do with technology. While more traffic leads to congestion and gridlocks the digital

²⁰ See Open Business blog,
<http://www.openbusiness.cc/2005/09/26/tecno-brega>

²¹ See e.g., Kalevi Kyläheiko, *From Comedy of Commons to Tragedy of Anti-commons*, in EINKOMMENSVERTEILUNG, TECHNISCHER FORTSCHRITT UND STRUKTURELLER WANDEL (Huber, G., Krämer, H. & Kurz, H.D. (eds)) 191(2005) (overview of scientific publishing).

domain is less prone to the problem of overuse. Networked goods provide the network effect where more users create more wealth for the network.²²

The comedy of commons theory only partly explains the success of the free culture movement. It explains why the donated commons resources stay alive but it does not explain why they are donated in the first place. The same kind of altruistic behavior that benefits society has been studied in environment studies. My assumption is that the people who make the decision to donate their works or their attention to commons share motivations with the environmental movement and especially with recyclers.

The current copyright system favors the creation of new works. Commenting and criticizing works is fairly well covered by the fair use exceptions. Public performance of music is made easy by collecting societies that sell public performance licenses. However, recycling, remixing and changing works are generally not encouraged by copyright law or institutions that support it. The alteration of works requires permission and even if such permission is granted the integrity right further limits it.²³ Creating new, performing old and commenting works do not require individual negotiations with the rights owner; changing the work typically does. This has led to a waste of works. The waste is clearly visible in the education sector. For example, there are dozens of basic economics textbooks which are almost identical. The authors could have used the time spent on

²² See e.g., CARL SHAPIRO AND HAL VARIAN, INFORMATION RULES, A STRATEGIC GUIDE TO THE NETWORK ECONOMY, 45-46 (1999); YOCHAI BENKLER, THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM (2006).

²³ See Dane S. Ciolino, *Rethinking the Compatibility of Moral Rights and Fair Use*, 54 WASH. & LEE L. REV. 33, 46 (1997); Berne Convention for the Protection of Literary and Artistic Works, September 9, 1886, art. 6bis, S. Treaty Doc. No. 27, 99th Cong., 2d Sess. 41 (1886).

rewriting the chapters for producing new knowledge or even better for improving their quality of life with their families.

Copyright law does have a built-in method of recycling –*public domain*. Works fall into the public domain for a certain period after their creation. Unfortunately, the automatic recycling system is somewhat broken.²⁴ The protection period has seen several extensions in the past century. The extensions have meant for rights owners longer terms in which to charge rent for the use of their rights, but at the same time the public has had to keep waiting to get its share of the bargain.

Public domain works have less *private value* than copyrightable works, because they cannot be appropriated. Work that has not had any value for its owner still has some expected value in the future. A long forgotten tune might not produce any revenue for its rights owner, but may suddenly become a hit if it is discovered and remixed by a famous artist. If the work is given to the public domain the rediscovered work would not produce any royalties for the rights owner. While there are some exceptions of late blooming copyrights, the majority of the works have no economic value to their owners.²⁵ Landes and Posner have measured the average commercial life of a work to be less than 15 years.²⁶ After that copyright becomes mere waste that produces very little for the rights owner but still restricts non-owners access to it. Many works are abandoned and no one knows if these orphan works can be used or not.²⁷ Nevertheless such works may have great

²⁴ See e.g., James Boyle, *A Politics of Intellectual Property: Environmentalism for the Net?*, 47 DUKE L. J. 87, 111-2 (1997); Pamela Samuelson, *Toward a New Politics of Intellectual Property*, COMMUNICATIONS OF THE ACM 44:98 (2001).

²⁵ *Contra* CHRIS ANDERSON LONG TAIL, WHY THE FUTURE OF BUSINESS IS SELLING LESS OF MORE (2006).

²⁶ William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, U Chicago Law & Economics, 154 Olin Working Paper, 4 (2002).

²⁷ See, e.g., Khong, *supra* note 18.

social value for the community.²⁸ Capturing the value requires either changes to the law or changing the economics of recycling and getting the rights owners to voluntarily share their works.

James Boyle has compared the environmental movement to the movements that are worried about the state of copyrights.²⁹ Some analogies can be found as both movements strive to create a better environment without waste. On the other hand problems of comparing copyright and physical waste are obvious. Copyrights do not cause storage problems to the rights owner like physical waste does. Nevertheless, the productive treatment creates value to society in both cases. Both share the problem that recycling costs are typically carried by the recycler. This is because sorting out trash and licensing unproductive works takes work. Recycling is a public good in the way that people who benefit from it do not have to contribute to enjoy the benefits. They are typical free riders. Nevertheless, there are clear benefits that typically exceed the cost of recycling. By recycling paper, the paper industry does not have to cut down woods, landfills do not fill up so fast and who knows whose neighbor might find an interesting magazine to read during his commute. None of the benefits come to the recycler instantly.

So how do you get people to voluntarily recycle? Several studies have examined the problem of garbage recycling³⁰ and found that:

²⁸ WILLIAM M. LANDES & RICHARD A. POSNER, *THE POLITICAL ECONOMY OF INTELLECTUAL PROPERTY LAW*, 16 (2004) available at <http://aei-brookings.org/admin/authorpdfs/redirect-safely.php?fname=../pdffiles/phptH.pdf>

²⁹ Boyle, *supra* note 24.

³⁰ E.g., Linda Derksen & John Gartrell, *The Social Context of Recycling*, 58 AM. SOC. REV., 434 (1993); see also Richard Osbaldiston & Kennon M. Sheldon, *Promoting internalized motivation for environmentally responsible behavior: A prospective study of environmental goals*, 23 J. ENVTL. PSYCHOL., 349 (2003) ("People benefit when they feel that their perspective upon the problem is understood, that their right to choose is respected, and that they are being provided with a meaningful rationale when choice is restricted."). Edward L. Deci &

-People who are aware of the benefits of recycling participate in it more fully.³¹ They perceive the benefits of recycling as greater than the cost.

-People who are concerned about the environment are more likely to recycle than people who do not care.³²

-Social pressure from family and friends as well as appealing to community norms increases recycling.³³

-Financial motives for empty containers and sanctions for littering help to motivate recycling.³⁴

-Inconvenience, lack of time and space as well as lack of knowledge³⁵ are the main reasons why people do not recycle.

Richard M. Ryan, *The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior*, 11 PSYCHOL. INQ., 227 (2000) (describing the self determination theory in general).

³¹ Raymond J. Gamba & Stuart Oskamp, *Factors Influencing Community Residents' Participation in Commingled Curbside Recycling Program*, 26 ENVTL. & BEHAV., 587 (1994) (relevant recycling knowledge was the most significant predictor of observed recycling behavior); Deborah Simmons & Ron Widmar, *Motivations and Barriers to Recycling: Toward a Strategy for Public Education*, 22 J. ENVTL. EDUC., 13 (1990) (people must be both motivated and capable of overcoming barriers to recycling); Stuart Oskamp, Rachel L. Burkhardt, Wesley Schultz, Sharrilyn & Hurin, Lynnette Zelezny, *Predicting Three Dimensions of Residential Curbside Recycling: An Observational Study*, 29 J. ENVTL. EDUC., 37 (1998).

³² Gamba & Oskamp, *supra* note 31; Oskamp, et. al., *supra* note 31.

³³ *Id.*; Carol M. Wernera & Eeva Mäkelä, *Motivations and Behaviors That Support Recycling*, 18 J. ENVTL. PSYCHOL., 373-386 (1998); (even knowing that neighbors recycle increases recycling); Wesley Schultz, Jessica M. Nolan, Robert B. Cialdini, Noah J. Goldstein, Vladas Griskevicius *The Constructive, Destructive, and Reconstructive Power of Social Norms*, 18 PSYCHOL. SCI., 429 (2007) (combining descriptive normative message detailing average neighborhood usage with an injunctive message (conveying social approval or disapproval) produced the best results).

³⁴ Raymond De Young, *Expanding and Evaluating Motives for Environmentally Responsible Behavior*, J. SOC. ISSUES, 56 (3) 509-526. (2000); Gamba & Oskamp, *supra* note 31 ; Oskamp, et. al., *supra* note 31 (lotteries do not help) .

³⁵ Gamba & Oskamp, *supra* note 31.

The findings seem rather trivial but maybe those found in garbage recycling could be applied to copyright recycling? Let us look at each motivation more closely.

Analogies of recycling

a) The condition of the environment The environment studies have found out that person who is aware of the condition of the environment is willing to act against his own self-interest and is more likely to recycle. This applies to the Creative Commons movement as well. The early adopters of free licenses knew the problems that copyright restrictions created for sharing and collaboration.³⁶ They were artists like Negativland whose art is made from bits and pieces combined into a collage. Negativland took part in creating the special CC-remix licenses.³⁷ One of the famous enlightenments that lead to actions was experiences by a hacker who was frustrated that he could not fix a problem with a printer as he had no access to the source code. The hacker was Richard Stallman, who started a free software movement, which has successfully helped to change the nature of the software environment.³⁸

³⁶ Negativland website <http://www.negativland.com/> see also Matthew Rimmer, *The Grey Album: Copyright Law and Digital Sampling*, 114 MEDIA INT'L AUSTRALIA 40, 44-45 (2005) (discussing Negativland's history of litigation); Negativland, *Two Relationships to a Cultural Domain*, 66 LAW & CONTEMP. PROBS. 239 (2003) (explaining Negativland's view on culture and sharing).

³⁷ Matt Haughey, *Creative Commons and Negativland Begin Work on Free Sampling and Collage* (May 30th, 2003) <http://creativecommons.org/press-releases/entry/3707>.

³⁸ SAM WILLIAMS, FREE AS IN FREEDOM, RICHARD STALLMAN'S CRUSADE FOR FREE SOFTWARE 4-12 (2002).

b) Seeing the benefits The people who see the benefits of recycling are more likely to recycle, meaning that recycling has a network effect. More people recycle the more visible the results are -this is especially true with the open content movement. As the amount of articles in Wikipedia grows it also receives more new contributors. Many of the users who have used the CC-Mixer website³⁹ to download remixable music to create their own versions upload their remixed versions to the common pool. The phenomenon is truly the comedy of commons.

c) Social Norms and Pressure The social pressure to recycle may explain the recent open access publishing movement where authors are paying to get their works made available.⁴⁰ The scientific community has reacted fairly strongly to the high cost and low accessibility to scientific publishing. Harvard's faculty decided that Harvard receives a non-exclusive copyright over all articles produced by any current Faculty member, allowing for the creation of an online repository that would be freely available.⁴¹

[E]ach Faculty member grants to the President and Fellows of Harvard College permission to make available his or her scholarly articles and to exercise the copyright in those articles. In legal terms, the permission granted by each Faculty member is a nonexclusive, irrevocable, paid-up, worldwide license to exercise any and all rights under copyright relating to each of his or her scholarly articles, in any medium, and to authorize others to do the same, provided that the articles are not sold for a profit. The policy will apply to all scholarly articles

³⁹ ccMixer, <http://www.ccmixer.org>.

⁴⁰ See e.g., JOHN WILLINSKY, THE ACCESS PRINCIPLE: THE CASE FOR OPEN ACCESS TO RESEARCH AND SCHOLARSHIP 214 (2006).

⁴¹ Maxwell L. Child & Christian B. Flow, *Faculty Meeting Notebook, Motion To Allow Free Online Access To All Harvard Scholarly Articles*; New VES Ph.D. THE HARVARD CRIMSON 13.2.2008 <http://www.thecrimson.com/article.aspx?ref=521861>.

*written while the person is a member of the Faculty except for any articles completed before the adoption of this policy and any articles for which the Faculty member entered into an incompatible licensing or assignment agreement before the adoption of this policy. The Dean or the Dean's designate will waive application of the policy for a particular article upon written request by a Faculty member explaining the need.*⁴²

The faculty's decision changes the economics of sharing. After the adoption of the open access policy the faculty members have to choose between the costs of spending time to deposit their works to the repository or the time of writing a request to justify why their publication should not follow the community norm of sharing. The option "do nothing", which previously was the least costly option, carries social and possibly even labor law sanctions.⁴³

d) Financial motives Recycling is somewhat inconvenient and costly. The costs include storage costs, transportation costs, sorting costs and general labor costs compared to just dumping everything with regular trash. The environment policy has dealt with the problem of costs by rewarding for recycling and punishing for non-recycling.

The rewards include deposits that are refunded for the empty containers. While for many the financial incentive to recycle is still smaller than the benefits of spending the extra time performing paid work, the deposit system reduces the cost of recycling compared to non-recycling. Research

⁴² *Harvard Adopts 38th Green Open Access Self-Archiving Mandate*, Budapest Open Access Initiative: BOAI Forum Archive <http://threader.ecs.soton.ac.uk/lists/boaiforum/1258.html>

⁴³ See also Robert B. Cialdini, *Crafting Normative Messages To Protect The Environment*, 12 *Current Directions in Psychological Science*, 105 (2003) (describing how to convey the message effectively to the recyclers).

shows that people tend to waste less if their garbage fee is directly relational to the amount of waste they produce.⁴⁴

Society could reduce the copyright waste with similar incentives. Lessig has suggested tax breaks for authors who donate their works to commons.⁴⁵ Lessig's proposition follows the idea of recycling deposit. The major problem with the idea is defining the value of donated works. Even if there is no tax break, public donations may help to raise the goodwill of the rights owner. This has been the case with IBM whose image as an anti-competitive patent hoarder has changed into being a co-operation building open source donator.

Another solution is offered by Landes and Posner who have proposed⁴⁶ a renewable copyright system, which would require rights owners to once in a while consider the value of the works. The valuable works could be renewed every ten years. The rights that are not renewed would fall into the public domain. Such a system would without doubt reduce the waste of orphan and financially unimportant works and take into account the dynamic nature and value of copyrights. The system would maximize the rents for economically important works whose owner has an interest to seek rents. At the same time the proposed system would fix the built in recycling mechanism of copyright.

⁴⁴ *E.g.*, Gamba & Oskamp, *supra* note 31.

⁴⁵ LAWRENCE LESSIG, *THE FUTURE OF IDEAS – THE FATE OF THE COMMONS IN A CONNECTED WORLD* 255 (2001) *see also* at 256 (punishments for fraudulent copyright claims).

⁴⁶ Landes & Posner, *supra* note 26.

Conclusions

Consumers have grown more aware in the past ten years of environmentalism. Environment in economic terms is one of the limits to production. We cannot drive our cars if our oil reserves are depleted or enjoy swimming in a lake if it is pumped full of toxic waste. The externalities of production limit other actors' choices. Similar limitations are reached in a creative environment. We ought to develop our copyright environment as an environment where living is pleasant not just to maximize private profits. An environment where private value is maximized creates unpleasant waste. The waste is generated when transaction costs are too high in comparison to the value of works. We cannot use resources effectively if there are no market mechanisms for trading. It is easy to ignore the low value works and concentrate copyright policy to foster commercial creativity. Nevertheless copyright is not just about economics; it is also about ecology. We need a copyright policy that enables all sort of creativity.

In part, the problems have been solved by institutions like fair use, and collecting societies, but new institutions like Creative Commons licensing schemes are needed to further optimize the creative environment. The institutions are not enough. A lot is left to service designers who can support the recycling by encouraging, facilitating, rewarding and informing the future commons contributors. We can hope that attitudes do change slowly, but surely, as the environmental movement and especially the climate change movement has shown.