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DELIMITING INTELLECTUAL PROPERTY: DISTINCT APPROACHES TO SPILLOVERS

Paul Edward Geller¹

I. INTRODUCTION

For over fifteen years, I have had the pleasure of working with Janusz Barta and Ryszard Markiewicz². Their theoretical finesse and practical wisdom are always edifying. I hope that my essay here will do them honor.

In a comment also applicable to copyright and related laws, Michael Polanyi doubted that patent law could rationally “parcel up a stream of creative thought into a series of distinct claims”³. Extending this doubt to the law of intellectual property as such, we may question whether this law, in arbitrarily “parceling” its claims, might risk obstructing the “stream” of creativity itself. I shall then ask: how best to delimit these claims?

Let me mix still another metaphor into this inquiry: “spillovers” that, in the stream of creativity, flow from some creations into others. In our context, we shall understand this term as including texts, images, techniques, information, and ideas, among other things, that culture carries forward across history. Here we shall ask: how to delimit intellectual property to govern such spillovers of cultural contents? Of the laws habitually treated as assuring such property, let us focus on copyright and patent laws⁴. In asking how to delimit intellectual property, we shall seek criteria for claims to control spillovers.

¹ Attorney, Los Angeles: <http://www.pgeller.com/>. For their comments on prior drafts, I thank François Dessemontet, Ejan Mackaay, Emil Markov, and Michael Shapiro. For the contents of this essay, I take full responsibility. © Paul Edward Geller 2013

² They contribute *Poland* (in:) *International Copyright Law and Practice*, ed. P.E. Geller, updated annually, Matthew Bender and LexisNexis 2012, vol. 2.

³ M. Polanyi, *Patent Reform*, Review of Economic Studies 1944, vol. 11, pp. 61–76, at p. 70.

⁴ For critical analysis of related laws, see J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, Columbia Law Review 1994, vol. 94, pp. 2432–2558.

We may begin by drawing criteria from the critical analysis of law as a whole. Lawmakers often superficially ask: how to direct a specific rule of law toward reaching its intended goals? At deeper levels, critical [> p. 294] analysis has to deal with increasingly diverse values that tend to motivate any developing body of laws as a whole. Some analysts ask: how to realize as many of our diverse values as possible by having an entire body of laws optimize our welfare collectively? Others ask: how may such a body of laws enable us each to realize our respective values autonomously while acting in a community⁵? We need not here resolve tensions between such utilitarian and deontological approaches to law generally. Rather, we shall ask: how can each approach help to delimit intellectual property in particular?

Start with economic analysis to optimize our welfare. Such analysis leads to a key argument for intellectual property, that of providing incentives for the creation and dissemination of cultural goods. But it will leave us with our question: once such property is instituted, how to delimit it, specifically to govern spillovers of such goods? To frame this inquiry, turn to critical analysis that assesses how law may help us to assure our respective autonomies. Such analysis will lead us to distinguish a pair of questions: how far ought the law of intellectual property let spillovers flow from private circles into ever-larger networks linking more and more subjects?⁶ And: what contents should this law disentangle, and let spill over, from objects otherwise protected by intellectual property?

II. HOW FAR TO ALLOW SPILLOVERS GENERALLY?

Economic analysis is supposed to help us optimize welfare. In such analysis, we presuppose property in most goods we possess. Consider my property, for example, in the watch which I wear on my wrist. That property entitles me, *inter alia*, to have others stopped from wearing the watch without my consent; it also entitles me to sell the watch on the marketplace. But if I do not hide the dial of the watch from others, my property in the watch does not allow me to control what others do with the time of day readily visible on the dial⁷. Just as this information is free to spill over for use by others, products of mind, such as works and [> p. 295] inventions, once disclosed, could be freely used by others if rights were not

⁵ For further analysis, see F.A. Hayek, *Law, Legislation and Liberty: 1. Rules and Order*, University of Chicago Press 1973, pp. 106–115.

⁶ Note that I shall here use the term *subject* for any holder of rights, as well as for anyone against whom rights may be asserted, and the term *object* for anything relative to which a right entitles its holder to have other subjects' conduct enjoined or trigger liability.

⁷ Trade-secret issues could arise, for example, if I hid the dial and if it held relatively unknown and valuable information that others took unfairly. For further analysis, see F. Dessemontet, *The Legal Protection of Know-How in the United States of America*, trans. H.W. Clarke, 2nd ed., Rothman & Co. 1976, pp. 323–353 *passim*.

enforceable in them. Starting from the fact that the law recognizes such rights, that is, intellectual property, our inquiry asks: how to delimit such property?

Before trying to respond with economic analysis, let us briefly retrace the historical roots of such analysis. Both Hobbes and Locke faced the question: under what conditions could we optimize our welfare? Hobbes started with the “*war of every one against every one*” for scarce resources and asked how to achieve a “commonwealth”⁸. To move beyond the worst-case scenario of anarchy, Hobbes reasoned, a sovereign had to impose law on its subjects, inescapably impairing their autonomy⁹. By contrast, Locke presupposed plentiful rather than scarce resources, speculating that “in the beginning all the world was *America*”, that is, unsettled and fertile lands¹⁰. After observing that our labor makes resources into goods, Locke reasoned that law had to be instituted at least to protect the property we asserted in goods against “the invasion of others”¹¹. Only then would we optimize our welfare by focusing our labors on such goods as we each best make and by exchanging varied goods on the marketplace to satisfy our wants¹².

Economic analysis may then critically ask: how ought the law frame the marketplace to optimize welfare? Adam Smith’s metaphor of the “invisible hand” has come to stand for market processes that help achieve that goal by leading us to divide our labors and to market resulting goods¹³. Smith also contemplated granting a temporary monopoly “of a new book to its author” or “of a new machine [...] to its inventor” such as could be accorded to entrepreneurs who undertook any “experiment, of which the publick is afterwards to reap the benefit”¹⁴. Smith was willing to admit special rights allowing for partial monopolies in literary works or technological inventions in order to counter the tendency of such cultural goods to become what we now call *public goods*. Public goods are typically defined as non-excludable and as non-rival, effectively as prone to [> p. 296] spillovers in that they are hard to fence off from takings and readily available no matter how much they are

⁸ T. Hobbes, *Leviathan, or The Matter, Forme and Power of a Commonwealth Ecclesiasticall and Civil* (1651), ed. M. Oakeshott, Macmillan Publishing Co. 1962, p. 100.

⁹ See *ibid.*, chs. 17, 18, and 21 *passim*.

¹⁰ J. Locke, *Second Treatise of Government* (1698), § 49, ed. C.B. Macpherson, Hackett Publishing Co. 1980, p. 29.

¹¹ See *ibid.*, §§ 30–36 and 123, at pp. 20–22 and 65–66.

¹² See *ibid.*, §§ 37–50 *passim*, at pp. 23–50 *passim*.

¹³ For this metaphor, see A. Smith, *The Theory of Moral Sentiments* (1790), IV.i.10, ed. D.D. Raphael and A.L. Macfie, Liberty Fund 1982, p. 184.

¹⁴ Adam Smith, *An Inquiry Into the Nature and Causes of the Wealth of Nations* (1791), V.i.e.30, ed. Edwin Cannan, also R.H. Campbell, A.S. Skinner and W.B. Todd, Liberty Fund 1981, vol. 2, p. 754.

consumed¹⁵. The tendency of cultural goods to become public goods accelerated in modern times as print made texts and images easy to republish and applied science made trade secrets easy to reverse-engineer. Hence the key economic argument for intellectual property: rights to prevent others from such free-riding would give potential creators incentives to make and market more, and more varied, cultural goods¹⁶.

This argument leads to reconsidering spillovers and incentives in terms of *externalities* and *internalization*. Externalities can appear in the costs that entrepreneurs do not fully recoup from goods they provide or in the benefits for which users of goods do not fully pay. Internalization can take place as costs and benefits find prices on the marketplace and as sellers and buyers then take account of such prices to allocate resources more efficiently in producing and purchasing goods¹⁷. As we just saw, cultural goods, such as works and inventions, tend to become public goods, escaping market processes as spillovers because they are easy for others to continue to enjoy or use after their embodiments are consumed. For example, externalities that result from the free republication of texts or from the free use of reverse-engineered techniques could leave authors or inventors with impaired prospects of profits and, to that extent, with fewer incentives that would otherwise prompt them to provide such products of mind¹⁸. To allow for internalization, economic analysis supports instituting property in such goods, so that holders of rights can take better account both of the costs of making and marketing the goods and of the benefits that others take from them. Thus economic analysis reconsiders spillovers of cultural goods in terms of optimizing welfare by “guiding incentives to achieve a greater internalization of externalities”¹⁹.

In this light, how far can economic analysis help to delimit intellectual property? Economic analysis might have difficulties here to the extent [> p. 297] that it focuses on the marketplace for cultural goods while ignoring the historical dynamics of culture. On the supply side, it is gratuitous to assume that purely economic incentives of entrepreneurs

¹⁵ Some analysts stress and refine the latter of this pair of defining traits, for example, as follows: “it is possible at no cost for additional persons to enjoy the same unit of a public good”: H. Demsetz, *The Private Production of Public Goods*, Journal of Law and Economics 1970, vol. 13, pp. 293–306, at p. 295.

¹⁶ See R.A. Posner, *The Law & Economics of Intellectual Property*, Daedalus 2002, no. 2, pp. 5–12.

¹⁷ See F.A. Hayek, *The Use of Knowledge in Society*, American Economic Review 1945, vol. 35, pp. 519–530.

¹⁸ For further analysis, see K.J. Arrow, *Economic Welfare and the Allocation of Resources for Invention* (in:) *The Rate and Direction of Inventive Activity: Economic and Social Factors*, ed. R.R. Nelson, Princeton University Press 1962, pp. 609–626.

¹⁹ H. Demsetz, *Toward a Theory of Property Rights*, American Economic Review 1967, vol. 57, pp. 347–359, at p. 348.

always coincide with motives that historically drive creators of cultural goods.²⁰ Consider, for example, Van Gogh and Dr. Semmelweis who, each struggling in his field without prospects of profits, gave us breakthrough creations, respectively new paintings and disinfection techniques. There is little reason to think that either would have been more motivated to create if he had held broad rights to constrain followers from basing further creations on spillovers from his own. On the demand side, go back to Smith, who noted: “The desire of food is limited in every man by the narrow capacity of the human stomach; but the desire of the conveniencies and ornaments [...] seems to have no limit or certain boundary”²¹. Elastic demands for cultural goods raise the suspicion that prices paid for them vary according to factors that might not always be relevant for delimiting intellectual property to have it enhance culture²². It also remains unclear what other indices economic analysis might use to sort out spillovers that historically feed culture²³.

More crucially, the economic argument for intellectual property, taken to its logical conclusion, raises a doubt at the heart of our inquiry. In entitling prior creators to internalize the benefits that further creators could otherwise take from prior cultural goods, would lawmakers risk obstructing spillovers that enhance culture itself²⁴? According to Ronald Coase, parties can negotiate efficient allocations of spillovers of all types of costs or benefits across property lines to the extent that they do not have costs of transacting with each other, notably if their properties [> p. 298] have clear-cut boundaries²⁵. Unfortunately,

²⁰ One might distinguish between, on the one hand, inputs that market-based incentives lead entrepreneurs to make into the economy and, on the other, inputs that diverse motives push creators to make. See J.A. Schumpeter, *The Creative Response in Economic History*, Journal of Economic History 1947, vol. 7, pp. 149–159, reprinted in *Essays on Entrepreneurs, Innovations, Business Cycles, and the Evolution of Capitalism*, ed. R.V. Clemence, Transaction Publishers 1997, pp. 221–231.

²¹ A. Smith, *The Wealth of Nations*, I.xi.c.7, vol. 1, 181.

²² For critical analyses, see J.E. Cohen, *Copyright and the Perfect Curve*, Vanderbilt Law Review 2000, vol. 53, pp. 1799–1819; R.J.R. Peritz, *Patents and Competition: Toward a Knowledge Theory of Progress*, ATRIP Congress, Parma, 4 Sept. 2006, available at <http://www.atrip.org/Activity/5ecf540c-fa96-451b-a0be-02e889ee6851/annual-congress> (2 Nov. 2012).

²³ For further analyses, see P.A. David, *Intellectual Property Institutions and the Panda's Thumb: Patents, Copyrights, and Trade Secrets in Economic Theory and History* (in:) *Global Dimensions of Intellectual Property Protection in Science and Technology*, ed. M.B. Wallerstein, M.E. Moge, and R.A. Schoen, National Academy Press 1993, pp. 19–62; E. Mackaay and S. Rousseau, *Analyse économique du droit*, 2nd ed., Dalloz and Éditions Thémis 2008, pp. 306–325.

²⁴ See B.M. Frischmann and M.A. Lemley, *Spillovers*, Columbia Law Review 2007, vol. 107, pp. 257–301.

²⁵ See R.H. Coase, *The Problem of Social Cost*, Journal of Law and Economics 1960, vol. 3, 1–44, reprinted (in:) *The Firm, the Market, and the Law*, University of Chicago 1988, pp. 95–156.

transaction costs tend to increase as parties deal with spillovers of cultural goods, especially with the spillovers of what we call “ideas” that, being hard to define, complicate the task of drawing legal boundaries around such goods²⁶. In response, market-players might try to take account of resulting transaction costs, here of dealing in intellectual property, by factoring corresponding expenditures into their “judgment about what is, and what is not, efficient” for them²⁷. But if market-players alone can do so, ostensibly only deal by deal, we learn little for delimiting intellectual property with legal rules. We are left without conclusive help from economic analysis for governing spillovers of cultural goods²⁸.

III. DELIMITING RIGHTS AMONG SUBJECTS

Reconsider Locke, who tried to avoid the Hobbesian alternative of welfare *versus* autonomy. Locke conceived of autonomy as arising out of control that we each have of our own persons and that we extend into the world by appropriating resources with our labor²⁹. Not only, as we have seen, did Locke argue that property law helps us to optimize welfare in the marketplace, but he also saw autonomy supported by the same law insofar as it protects the fruits of our labors³⁰. In addition, Locke formulated his proviso to the effect that no claim to property should be enforced if it fails to leave “enough, and as good” resources for others to appropriate with their labors³¹. It has been argued that this proviso has to be “individualized” to decide when one creator may or may not assert any right against another creator for using his product of mind in this other’s product³². [> p. 299]

Critical analysis thus leads us to ask: how to govern spillovers from one creation into another? In this and the next part of my essay here, I shall undertake distinct inquiries with regard to such spillovers. In this part, I shall ask: how to govern the flow of such spillovers

²⁶ See W.M. Landes and R.A. Posner, *The Economic Structure of Intellectual Property Law*, Harvard University Press 2003, ch. 4 *passim* and pp. 305–306.

²⁷ H. Demsetz, *Transaction Cost and the Organization of Ownership – An Introduction*, Arizona Law Review 2011, vol. 53, pp. 1–7, at p. 6.

²⁸ For further analysis, see B.M. Frischmann, *Spillovers Theory and its Conceptual Boundaries*, William & Mary Law Review 2009, vol. 51, pp. 801–824.

²⁹ See Locke, *Second Treatise of Government*, §§ 4 and 44, at pp. 8 and 27.

³⁰ See *ibid.*, § 27, at p. 19, with context discussed in Part II *supra*.

³¹ *Ibid.*, § 33, at 21. C.B. Macpherson questioned whether Locke intended this proviso to assure equality among subjects: *The Political Theory of Possessive Individualism*, Clarendon Press 1962, pp. 211–214.

³² See W.J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, Yale Law Journal 1993, vol. 102, pp. 1533–1609, at pp. 1570–1572. For examples, see *ibid.*, pp. 1581–1605 *passim*.

from private circles into ever-larger networks? In the next part, I shall return to the question which I have already broached: how should the law deal with the spillovers of ideas and other such contents³³? In pursuing inquiry into spillovers in both regards, I shall not abandon Locke's insights that condition the argument for intellectual property based on welfare, but I shall try to sharpen them with Kant's critical analysis that appeals more systematically to considerations of autonomy³⁴. My turn to Kant's critiques has diverse reasons: Kant's critique of norms, applying across all law, illuminates the legal rules that help frame the marketplace³⁵. Further, this critique does lead Kant to contemplate rights, but not property, in cultural goods. Finally, his normative analysis of law can be read in the light of his aesthetic analysis of creativity³⁶.

While Hobbes posited coercive law as a *sine qua non* of social order, Kant asked more specifically what normative rules may serve as law. For such rules, Kant proposed this criterion: would a course of conduct, following a rule, allow for my freedom to be exercised along with everyone else's freedom under universal law³⁷? For Kant, while we start with freedom as our ability each to act without encountering external constraints from others, we approach autonomy as we act according to rules that we set for ourselves, albeit subject to universal law. That is, Kant in theory posited an innate right to freedom for each of us, but he insisted that in practice such freedom could only be assured for all of us by coordinating our conduct with coercive law to keep us each from preventing others from acting freely³⁸. Kant's criterion for law tells us how to test rules to [> p. 300] see whether they would on the whole govern our respective courses of conduct within a community so that we may all

³³ See Part II *in fine supra* and Part IV *infra*.

³⁴ For an earlier attempt on my part, see P.E. Geller, *Toward an Overriding Norm in Copyright: Sign Wealth*, *Revue Internationale du Droit d'Auteur* 1994, no. 159, pp. 3–109. For a more recent and rather different attempt, see R.P. Merges, *Justifying Intellectual Property*, Harvard University Press 2011, especially chs. 2–3.

³⁵ For further analysis, see F.A. Hayek, *Law, Legislation and Liberty: 2. The Mirage of Social Justice*, University of Chicago Press 1976, pp. 42–44.

³⁶ For further analysis, see H. Arendt, *Lectures on Kant's Political Philosophy*, ed. and interp. essay R. Beiner, University of Chicago Press 1992, pp. 62–77 *passim*.

³⁷ This criterion is called, in German, the *Allgemeines Prinzip des Rechts*: I. Kant, *Metaphysische Anfangsgründe der Rechtslehre – Metaphysik der Sitten: Erster Teil* (1797), Ak. 6:230, ed. B. Ludwig, Felix Meiner Verlag 1986, p. 39.

³⁸ See I. Kant, *The Metaphysics of Morals*, Ak. 6:230–234 (in:) *Practical Philosophy*, ed. and trans. M.J. Gregor, Cambridge University Press 1996, pp. 365–506, at pp. 387–390. For further analysis, see A. Ripstein, *Authority and Coercion*, *Philosophy and Public Affairs* 2004, vol. 32, pp. 2–35.

coherently realize our respective autonomies together³⁹. Of course, whether individually or in groups, we have to assess how our rules of conduct, while systematically subject to universal law, might pragmatically help us to achieve our ends in given historical circumstances⁴⁰. Kant himself outlined a strategy for enlightenment, in which freedom of investigation and of expression would be historically key⁴¹.

How would Kant's criterion for law, coupled with his strategy for enlightenment, apply to creators' claims in their products of mind⁴²? Kant only began to apply critical analysis to authors' rights, leaving us to apply it further to that and other branches of intellectual property⁴³. Before we try to extend Kant's thought to the field as a whole, let us consider his analysis of creativity: it will complement economic analysis, which we found narrowly focused on creations as mere commodities⁴⁴. To get the flavor of Kant's analysis of creativity, contrast types of genius that he was likely to have had in mind or did mention, for example, Shakespeare or Rembrandt, on the one hand, and Newton, on the other. One type of genius, Kant explained, creates literature or fine art in which we find embedded new aesthetic rules for forming works; the other type creates science from which we derive new technical rules that can be implemented in inventions⁴⁵. Spillovers from the achievements of genius feed ongoing culture: Kant acknowledged that we copy works of genius before improvising on these as exemplars of rules for creating our own works, and he implied that

³⁹ In understanding autonomy here, we need not invoke creators' claims that, based on personality rights, live on in the positive law as authors' moral rights. For background, see S. Strömholm, *Le droit moral de l'auteur en droit allemand, français et scandinave avec un aperçu de l'évolution internationale. Étude de droit comparé*, P.A. Norstedt & Sönners Förlag 1966, vol. I:1, pp. 184–379 *passim*.

⁴⁰ For further analysis, see A.K. Bierman, *Life and Morals: An Introduction to Ethics*, Harcourt Brace Jovanovich, 1980, ch. 10 *passim*.

⁴¹ See I. Kant, *What is Enlightenment* (1784), Ak. 8:35-8:42 (in:) *Practical Philosophy*, pp. 17–22; *On the common Saying: That may be correct in theory, but it is of no use in practice* (1793), Ak. 8:307-8:313, *ibid.*, pp. 273–309, at pp. 304–309.

⁴² For further analyses, see M. Borghi, *The Public Use of Reason: A Philosophical Understanding of Knowledge Sharing*, *International Journal of the Humanities* 2005, vol. 3, pp. 179–186; A. Barron, *Kant, Copyright and Communicative Freedom*, *Law and Philosophy* 2012, vol. 31, pp. 1–48.

⁴³ For further analysis, see A. Drassinower, *Authorship as Public Address: On the Specificity of Copyright vis-à-vis Patent and Trade-Mark*, *Michigan State Law Review* 2008, pp. 199–232.

⁴⁴ See Part II *supra*.

⁴⁵ See I. Kant, *Critique of Judgment* (1790), Ak. 5:303-5:309, trans. W.S. Pluhar, Hackett Publishing Co. 1987, pp. 170–176.

we apply scientific knowledge in developing rules [> p. 301] for inventions⁴⁶. Subsequent commentators have differently detailed this analysis: for example, Polanyi argued that tacit knowledge, roughly defined as what we learn by doing, forms bases for creation in all fields⁴⁷. Such debates leave intact the truism for which Kant clarified the critical bases: culture unfolds as we elaborate each others' creations in ever-larger networks⁴⁸.

Kant recognized each author's right to control the publication of his own discourse, but declined to consider any such right as property⁴⁹. To conform such rights to Kant's criterion for law, each author's right would have to be delimited to avoid impairing others' freedom to create and disseminate their works. By parity of reasoning, any prior author's right ought not be enforced to constrain such spillovers from one work into another as would be necessary for any further work to be created and disseminated. For example, Van Gogh, fascinated by Japanese prints that he collected, could copy such prints and improvise on them in his private studies in oil paints and thus adapt Japanese compositional schemes to European art forms⁵⁰. Though the positive laws of copyright now include rights of reproduction that broadly prohibit most forms of copying, they also include limitations and exceptions that exempt copying and communication in private, but they do not always do so uniformly or clearly⁵¹. Against that background, imagine that Van Gogh had succeeded in his plan to set up an artists' community, where he could have shared his Japanese prints with his colleagues, who

⁴⁶ See *ibid.*, Ak. 5:309-5:319, at pp. 176–188. Kant speaks of *Nachahmung* or *Nachfolge* of any creation: *Kritik der Urteilskraft*, ed. K. Vorländer, Felix Meiner Verlag 1924, pp. 161–174, especially the editor's footnote b at p. 163.

⁴⁷ See M. Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy*, University of Chicago Press 1962, especially ch. 6.

⁴⁸ For examples, see G. Kubler, *The Shape of Time: Remarks on the History of Things*, Yale University Press 1962, chs. 2–3 *passim*; T.S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed., University of Chicago Press 1970, chs. 9–13 *passim*.

⁴⁹ See I. Kant, *On the Wrongfulness of unauthorized publication of Books*, Ak. 8:79-8:87 (in:) *Practical Philosophy*, pp. 29–35, translated from *Von der Unrechtmässigkeit des Büchernachdrucks*, Berlinische Monatschrift 1785, vol. 5, pp. 403–417, available at http://copy.law.cam.ac.uk/record/d_1785 (2 Nov. 2012).

⁵⁰ For further analysis, see P.E. Geller, *Hiroshige vs. Van Gogh: Resolving the Dilemma of Copyright Scope in Remediating Infringement*, Journal of the Copyright Society of the USA 1998, vol. 46, pp. 39–70. [For samples of these works, see the exhibits at the end of this article available at https://pgeller.com/Paul_Geller-Scope_Copyright-Remediating_Infringement.pdf.]

⁵¹ For one model of such rights and exemptions, see Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, arts. 2–5, O.J. L 167, 22 June 2001, pp. 10–19, at pp. 16–17.

could have in turn recopied [> p. 302] and reworked these prints⁵². To what extent should copyright laws allow such spillovers of an author's works to flow beyond his or others' private spaces, but within collaborative networks? One French decision has suggested that an outsider's work could be freely reworked and retransmitted within the firewalled intranet of a research group⁵³.

Kant also contemplated rights in know-how, but considered them only "as if" they "were property" for limited purposes. He saw such rights take on the guise of property only insofar as technicians or scientists could determine how their work-products reached their clients⁵⁴. But Kant's criterion for law would lead us to ask: may any holder of rights in a technique hamper others' freedom to develop new techniques in their workshops or to use them in their professions? Such a concern was not pressing in Kant's time; only later did technicians and scientists have their work organized in large-scale industrial firms to develop inventions that patents were to protect⁵⁵. The industrialization of applied science has, in the last two centuries, increased rates of innovation in more and more fields, so that improved inventions, key to multiple technologies, have proliferated. The positive laws of patents, entitling patentees to block the use of their inventions, now sometimes give rise to so-called patent thickets that risk obstructing the development of new inventions and uses⁵⁶. It is true that this blocking effect is sometimes mitigated by patent laws insofar as they exempt private or experimental uses of others' inventions, but such exemptions are subject to conditions that can vary from law to law⁵⁷. German case law, for example, has construed one such condition

⁵² On this plan, see *The Letters of Vincent van Gogh*, ed. R. de Leeuw, trans. A. Pomerans, Penguin Books 1996, pp. 366–421 *passim*.

⁵³ *Queneau c. Boue*, TGI Paris, réf., 10 June 1997, *Juris-Classeur Périodique* 1997, II, 22974, note Olivier, translated (in:) *European Copyright and Design Reports* 2000, p. 343.

⁵⁴ See Kant, *On the Common Saying: That may be correct in theory, but it is of no use in practice*, Ak. 8:295–296, *loc. cit.*, pp. 295–296, especially the author's footnote at p. 295.

⁵⁵ For background, see C. MacLeod, *Inventing the Industrial Revolution: The English Patent System, 1660–1800*, Cambridge University Press 2002, ch. 7; B.Z. Khan, *The Democratization of Invention: Patents and Copyrights in American Economic Development, 1790–1920*, Cambridge University Press 2005, ch. 7.

⁵⁶ For further analysis, see C. Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting* (in:) *Innovation Policy and the Economy*, ed. A.B. Jaffe, J. Lerner, and S. Stern, National Bureau of Economic Research and MIT Press 2001, vol. 1, pp. 119–150.

⁵⁷ For one model of such exemptions, see Council Agreement 89/695/EEC relating to Community patents – Done at Luxembourg on 15 December 1989: Convention for the European Patent for the Common Market, art. 27(a)–(b), O.J. L 401, 30 Dec. 1989, pp. 1–27, at p. 15.

[> p. 303] to allow experimental uses of a patented invention “insofar as” the uses were “aimed directly at the acquisition of knowledge”⁵⁸.

Let us recapitulate. On the one hand, creations arise, not only in private circles, but in larger networks that eventually feed the public sphere. On the other hand, rights of intellectual property entitle creators to control certain acts, such as the dissemination of works and the industrial use of inventions, that tend to impair public markets for such products of mind. Unfortunately, from jurisdiction to jurisdiction, statutory provisions do not coherently exempt more or less private uses, but often allow claimants to assert intellectual property to interfere with spillovers of cultural goods at varying levels of private to quasi-public networks. Rather than defusing the tensions that we just recapitulated, the law now often threatens to frustrate participants in increasingly global networks that, with the advent of the internet, facilitate creative collaboration⁵⁹. Lawmakers then have to face the challenge of rethinking the relations among subjects holding rights and those elaborating new creations within ever-growing networks.

IV. DELIMITING THE OBJECTS OF RIGHTS

Turn to the objects of intellectual property. Kant defined any property right as entitling its holder to dispose of a singular object such as a parcel of land or a tangible thing, say, to return to our initial example, my watch, but not the time showing on its dial⁶⁰. In refusing to treat authors’ rights as property, Kant noted that these rights, eventually copyrights, do not concern singular objects, but rather texts considered as sets of “visible linguistic signs” that can be multiplied in printed copies⁶¹. Technicians’ rights in their know-how, eventually patents in techniques, are also not [> p. 304] referable to singular objects, but rather concern repeatable industrial processes or products.

⁵⁸ The *Klinische Versuche I* decision, BGH, X ZR 99/92, 11 July, 1995, pt. 5 *in fine*, Gewerblicher Rechtsschutz und Urheberrecht (GRUR) 1996, p. 109, translated (in:) International Review of Industrial Property and Copyright Law (IIC) 1997, vol. 28, p. 103, affirmed, BVerfG, 1 BvR 1864/95, 10 May 2000, GRUR 2001, p. 453.

⁵⁹ See Y. Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, Yale University Press 2006, chs. 3–5 *passim*.

⁶⁰ See Kant, *The Metaphysics of Morals*, Ak. 6:245-6:270 *passim*, *loc. cit.*, pp. 401–421 *passim*. For our initial example, see Part II *supra*.

⁶¹ See Kant, *The Metaphysics of Morals*, Ak. 6:289-6:290, *loc. cit.*, at pp. 437–438. Kant limits this right to texts, excluding *objets d’art*, because these are singular objects. See Kant, *On the Wrongfulness of Unauthorized Publication of Books*, Ak. 8:85-8:87, *loc. cit.*, pp. 34–35. As Kant there admitted, however, *objets d’art* can also correspond to sets of reproducible signs. For further analysis, see U. Eco, *A Theory of Semiotics*, Indiana University Press 1979, pp. 178–183.

Where to find criteria for disentangling unprotected contents from what is to be protected in the proliferating objects of intellectual property? While Kant did not develop explicit criteria on point, Fichte began to distinguish between unprotectible ideas and protectible forms in objects of creators' rights⁶². With notions only marginally more precise, the positive laws of intellectual property have continued to struggle with this task, for example, by excluding information and ideas from the protection of copyright works, as well as relatively abstract ideas from the protection of patented inventions⁶³. One rationale for these exclusions lies in our consensus that some ideas, however hard to define, represent contents of products of mind indispensable for guiding further creation⁶⁴. Thus such exclusions could help to preserve autonomy, starting with freedom of investigation and expression, in line with Kant's strategy for enlightenment⁶⁵.

But how to define ideas to be excluded from the protection of intellectual property? Historically, philosophers have tried to conceptualize ideas, leaving us with some lessons. Aristotle began to unpack the idea for writing tragedies with this rule of thumb: have a great person act with *hubris* and fall after a reversal of fortune⁶⁶. In developing this general idea in *Oedipus Rex*, Sophocles had to weave specific characters, diction, spectacle, and music into the plot of the play. As we saw Kant point out, [> p. 305] authors of genius impose new

⁶² See J.G. Fichte, *Beweis der Unrechtmässigkeit des Büchernachdrucks. Ein Raisonement und eine Parabel*, Berlinische Monatschrift 1793, vol. 21, pp. 443–482, available at http://copy.law.cam.ac.uk/record/d_1793 (2 Nov. 2012). For background, see B. Edelman, *Le Sacre de l'auteur*, Éditions du Seuil 2004, pp. 311–336.

⁶³ See, for example, TRIPs Agreement, art. 9.2 (excluding from copyright “ideas, procedures, methods of operation or mathematical concepts as such”); Convention on the Grant of European Patents (E.P.C.) (as revised 29 Nov. 2000), art. 52.2 (excluding from patent protection “(a) discoveries, scientific theories and mathematical methods; (b) aesthetic creations; (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers; (d) presentations of information”).

⁶⁴ For background, see I. Cherpillod, *L'Objet du droit d'auteur*, CEDIDAC 1985, pp. 143–184 *passim*; P. Samuelson, *Why Copyright Law Excludes Systems and Processes From the Scope of Its Protection*, Texas Law Review 2007, vol. 85, pp. 1921–1977; K.E. Collins, *Bilski and the Ambiguity of “An Unpatentable Abstract Idea”*, Lewis & Clark Law Review 2011, vol. 15, pp. 37–69.

⁶⁵ See Kant, *What is Enlightenment*, *loc. cit.*, as discussed in Part III *supra*. For further analysis, see M.C. Pievatolo, *Freedom, ownership and copyright: why does Kant reject the concept of intellectual property?*, Rivista elettronica della Società Italiana di Filosofia Politica 2010, available at <http://www.sifp.it/articoli-e-libri-articles-and-books/freedom-ownership-and-copyright-why-does-kant> (30 Nov. 2012).

⁶⁶ See Aristotle, *Poetics*, 1452a-1453b, trans. I. Bywater (in:) *The Complete Works of Aristotle*, ed. J. Barnes, Princeton University Press 1984, vol. 2, pp. 2323–2328.

aesthetic rules on their works⁶⁷: for example, in *Romeo and Juliet*, Shakespeare had his “star-cross’d” lovers fall, not to *hubris*, but to young passion trapped in a family feud. By contrast, turn to abstract ideas that are implemented in inventions, for example, the idea of making gases expand or contract within machines that convert resulting pressures into rotary motion. In an early engine, devised by the Hellenistic engineer Hero, steam issuing from spouts all bent one way and attached to a boiler set on an axle made the boiler, when heated, revolve on the axle⁶⁸. Such ideas, as Gilbert Simondon explained, are crystallized into technical rules for inventions that meet ever-more exacting specifications, for example, better ratios of input to output of energy⁶⁹. In Watt’s engine, more efficient than prior steam engines, steam was channeled into a cylinder to move a piston and then routed back to a condenser⁷⁰.

Taking this analysis further, I shall define *generative ideas*, not as mental figments, but as operations for elaborating products of mind, albeit differently in literature and the fine arts than in science and technology⁷¹. This functional approach might help to explicate how, in many but not all hard cases of alleged infringement, courts have excluded some ideas from protection in delimiting objects of intellectual property. In a classic U.S. case, the plaintiff had transformed the story of the lovers in *Romeo and Juliet* into the plot of a comic play by having the love of an ethnically mixed couple highlight and triumph over the silliness of their feuding parents. Defendant’s film itself varied Shakespeare’s story-line and characters still further, albeit along lines suggested by plaintiff’s play, but the court found that the defendant did not infringe copyright in the play at issue because the film specifically differed in significant regards from the play⁷². In still another classic U.S. case, the inventor of the telegraph successfully asserted patent claims in keys and related devices to vary and transmit electric current to communicate coded messages through wires at a distance, but not his claim for generally varying any such current to communicate messages at a distance. The court found that this general [> p. 306] claim set out an idea too abstract to protect in that

⁶⁷ See Kant, *Critique of Judgment*, Ak. 5:303-5:319, at pp. 170–188, as discussed in Part III *supra*.

⁶⁸ See R.H. Thurston, *A History of the Steam Engine*, D. Appleton & Co. 1878, ch. 1 *passim*, available at <http://archive.org/details/historyofgrowth00thuriala> (2 Nov. 2012).

⁶⁹ See G. Simondon, *Du Mode d’existence des objets techniques*, preface John Hart and postface Y. Deforge, expanded ed., Aubier 1989, ch. 1 *passim*.

⁷⁰ See Thurston, *A History of the Steam Engine*, chs. 2–3 *passim*.

⁷¹ For the methodology prompting this definition, see C.S. Peirce, *How to Make Our Ideas Clear*, *Popular Science Monthly* 1878, vol. 12, pp. 286–302, reprinted in *The Essential Peirce*, ed. N. Houser and Ch. Kloesel, Indiana University Press 1992, vol. 1, pp. 124–141.

⁷² *Nichols v. Universal Pictures Corp.*, 45 F.2d 119 (2d Cir. 1930), cert. denied, 282 U.S. 902 (1931).

it failed to teach any specific technique and because any monopoly in it could have rather obstructed the use of an open-ended set of techniques⁷³.

There remain other spillovers of cultural goods, such as texts or techniques, that courts may be reluctant to stop. For example, Dashiell Hammett, in his novel *The Maltese Falcon*, created tight dialogue and a suspenseful plot, which John Huston copied in his now-classic *film noir* with the same title. Huston gave fresh life to the novel, thanks to his creativity in casting, in directing actors, in visually articulating the story, and in otherwise dramatizing it on screen. As a matter of fact, Huston's studio had obtained Hammett's consent to film the novel⁷⁴; otherwise, if the author of the novel had brought suit against the film maker, a court would have had to consider stopping spillover from the novel into a gripping and popular film. Consider in turn the internal-combustion motor, but as improved in the diesel engine, in which gas is injected into air heated at a compression ratio high enough for the gas-air mixture to be ignited without a spark plug⁷⁵. Before the end of the nineteenth century, priority issues had undercut Otto's patent claims in his internal-combustion motor, so that Dr. Diesel was at least sheltered from suit for spillovers from Otto's invention into his⁷⁶. In this last pair of cases, then, if defenses had not been available, as they were historically, courts might have had the hard choice: enjoin or not a new creation, such as a great *film noir* or a fuel-efficient engine⁷⁷?

We again face tensions, but this time at a conceptual level. Only in theory is it possible to draw sharp analytic lines between, on the one hand, unprotected ideas and, on the other, the protected substance of creations. In practice, such distinctions become hard to apply, not only in cases of derivative works and of improvement inventions, but as well in cutting-edge fields such as informatics and biotechnology⁷⁸. Lawmakers then face the challenge of further disentangling unprotected from [> p. 307] protected contents of both traditional and new objects of protection and of adjusting the scope of protection accordingly.

⁷³ *O'Reilly v. Morse*, 56 U.S. 62 (1853).

⁷⁴ See *Warner Bros. Pictures, Inc. v. Columbia Broad. Sys., Inc.*, 216 F.2d 945 (9th Cir. 1954), cert. denied, 348 U.S. 971 (1955).

⁷⁵ See Simondon, *Du Mode d'existence des objets techniques*, pp. 43–44.

⁷⁶ For background, see C.L. Cummins, Jr., *Internal Fire*, revised ed., Society of Automotive Engineers 1989, especially ch. 14.

⁷⁷ Compare the *Germania 3* decision, BVerfG, 1 BvR 825/98, 29 June 2000, GRUR 2001, p. 149 (overturning injunction on constitutional grounds), with *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (allowing injunctions to be declined on equitable grounds).

⁷⁸ For examples, see J.H. Reichman, *Electronic Information Tools: The Outer Edge of World Intellectual Property Law*, IIC 1993, vol. 24, pp. 446–475; V. Di Cataldo and E. Arezzo, *Scope of the Patent and Uses of the Product in the European Biotechnology Directive*, Italian Intellectual Property 2006, pp. 11–52.

V. CONCLUSION

We habitually follow the analogy of tangible property in thinking about the law of intellectual property. Polanyi doubted whether, on that analogy, such law could rationally “parcel up” claims in any “stream of creative thought”. I have here asked: what criteria should apply in delimiting claims to control spillovers within this stream⁷⁹?

Economic analysis has led to the argument that property in cultural goods, considered as marketable commodities, would furnish incentives to increase our wealth of such goods. We have noted, however, difficulties that economic analysis has in delimiting such property in order to govern spillovers among creations to enhance culture⁸⁰.

Critical analysis, with autonomy as its aim, has helped us frame inquiry into this problem. On the one hand, we have asked how far the law may let spillovers of products of mind flow from creators’ or others’ private circles into larger networks⁸¹. On the other hand, we have identified some contents, notably generative ideas, that the law ought to let spill over from prior into further creations, even publicly⁸².

⁷⁹ See Part I *supra*.

⁸⁰ See Part II *supra*.

⁸¹ See Part III *supra*.

⁸² See Part IV *supra*.