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**Living Properties: Making Knowledge and
Controlling Ownership in the History of Biology**

*NATURE AND THE COMMONS:
THE VEGETABLE ROOTS OF INTELLECTUAL PROPERTY*

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Many of the papers presented at the conference on “Living Properties” have looked at how people articulate ways to codify and protect the value they see in living organisms, and how, depending on the context, such arrangements may result in either tangible or intangible properties. In some ways, my essay looks at things from the other end, that is, it tries to analyze the role that images of living natural resources (prairies, wild animals, fish, fruit, etc.) are playing in new articulations of IP, and especially in the discourse of the “knowledge commons” of which science is a prime example.

Much attention has been paid in recent years to the creative arrangements that scientists are developing to counter the constraints that intellectual property has on their research activities.¹ Typical of these proposals is a reliance on the figures of the commons and the public domain, which are usually exemplified by images of free green pastures, public lands, and other shared natural resources.² There is a striking contrast, however, between the sense of naturalness associated with these images and the highly technological and infrastructural commons the scientists and cultural producers are trying to develop and inhabit – scenarios that are distinctly not natural.

These tensions would not be problematic if the association between nature and the commons or the public domain were accidental or metaphorical, but that does not seem to be the case. Because the logic of intellectual property posits a dichotomy between nature and artifact and then attaches IP rights to new humanly-produced artifacts, it is to be expected that its critics would gravitate toward the nature side of the nature/property divide. James Boyle, a prominent advocate of Creative Commons and Science Commons, frames his proposals as literally “the opposite of IP” and then analogizes the commons and the public domain to the environment – a shared cultural resource endangered by excessive privatization.³

I strongly support the general political stance behind cultural environmentalism, and the profound rethinking of intellectual property it promotes.⁴ I believe, however, that the naturalistic

¹ Michael Heller and Rebecca Eisenberg, “Can Patents Deter Innovation? The Anticommons in Biomedical Research,” *Science* 280 (1998), No. 5364, pp. 698-701; John Walsh, Ashish Arora, Wesley Cohen, “Science and the Law: Working Through the Patent Problem,” *Science* 299 (2003), No. 5609, p. 1021; John Walsh, Charlene Cho, Wesley Cohen, “View from the Bench: Patents and Material Transfers,” *Science* 309 (2005), No. 5743, pp. 2002-3; Fiona Murray and Scott Stern, “Do Formal Intellectual Property Rights Hinder the Free Flow of Scientific Knowledge? An Empirical Test of the Anti-Commons Hypothesis,” (Cambridge, Mass.: NBER, 2005), NBER Working Paper No. W11465; Wesley Cohen and John Walsh, “Real Impediments to Academic Biomedical Research,” in Adam Jaffe, Josh Lerner, and Scott Stern (eds), *Innovation Policy and the Economy*, Vol.8, (Chicago: University of Chicago Press, 2008), pp. 1-30.

² Since the early 90s, various scholars have moved toward a reconceptualization of intellectual property by looking at the dynamics of multi-author collaborations taking place in environments comparable to the “commons.” The earliest proposals came from Yochai Benkler, who has recently rearticulated them in his *The Wealth of Networks* (New Haven: Yale University Press, 2006). The commons discussed by Benkler, however, are not analogized to nature or natural resources. They are explicitly presented as infrastructural.

³ James Boyle, “The Opposite of Property?” *Law and Contemporary Problems*, 66 (2003): 1-32.

⁴ James Boyle, Yochai Benkler, and Lawrence Lessig have been the main promoters of the knowledge commons and, subsequently, of cultural environmentalism. The contours of the movement are hazy, but themes, participants, and genealogies can be grasped by reading two key publications: the papers from the founding conference on the public domain (“The Public Domain”, James Boyle (ed), *Law and Contemporary Problems* 66 (2003), nos 1 & 2), and the ten-

images of the commons and the public domain invoked to exemplify the collaborative character of science and cultural production are actually part of the very problem the cultural environmentalists are trying to solve. That is, while concepts of the commons and the public domain are mobilized as critiques of IP and as remedies for the so-called “anticommons,” their use ends up reinforcing or even reifying the crucial (and, in my view, problematic) binary opposition that IP posits between discovery and invention, nature and society.

Reviving the Public Domain

The main argument of the cultural environmentalists is that, if in the past the public domain appeared sufficiently large and healthy to support the production of more innovation and more IP in all fields, it is now shrinking fast, threatened by a “second enclosure movement” that fences off not land but intangible intellectual property. The problem, they say, is not so much with privatization per se, but with the fact that a smaller public domain will not be able to nourish innovation in the long term. A lot of privatization now may mean less property production later.

Calls to restore and protect the public domain come with an explicit attempt to rethink it not as that which is left out or behind by IP, but more positively as the absolutely necessary reservoir of shared free knowledge from which future IP will emerge.

Much of the current discourse about the public domain has assumed a distinct organicistic and environmental tone – one that can be traced back to David Lange’s remarks in his 1981 paper that:

In certain useful respects, the public domain in the field of intellectual property today can be compared to the public grazing lands on the Western plains of a century ago [...]. If it is fair, as we seem to have decided in this century it is, to require the users of public lands to prepare impact statements as a condition of their use, then perhaps it is also fair to require similar assurances before we permit the outright appropriation of the territory of the creative subconscious.⁵

He then concluded:

The field of intellectual property law at large sometimes seems to be beyond the possibility of exhaustion. But then, that was the view taken by the public toward the buffalo as they were being hunted one hundred years ago. And where are the buffalo now?

Cultural environmentalism has literally reversed Hardin’s statement about the inevitable “tragedy of the commons.” His classic 1968 *Science* article invoked the image of grazing land held in common by many herders as an example of the depletion of natural resources that is bound to happen unless such resources are controlled and cared by specific individuals as their private property.⁶ But rather than presenting private property as the solution to the depletion of the public domain by communal usage, cultural environmentalism casts the public domain as being dangerously depleted (rather than saved) by private property.

Boyle has also argued, quite convincingly, that the commons and the public domain were a vastly under-articulated legal categories, but that, for that very reason, they provided the opportunity for progressive articulations – the same way that the “environment” was a nearly legally empty category until it was picked up and articulated by the environmental movement.⁷ In particular, the

year anniversary issue on cultural environmentalism in the same journal (“Environmentalism @ 10”, James Boyle and Lawrence Lessig (eds), *Law and Contemporary Problems* 70 (2007), no. 2).

⁵ Lange, “Recognizing the Public Domain,” pp. 175-6.

⁶ Garrett Hardin, “The Tragedy of the Commons,” *Science* 13 December 1968, Vol. 162. no. 3859, pp. 1243-8.

⁷ James Boyle, “The Second Enclosure Movement and the Construction of the Public Domain.” Some of the many different meaning of public domain” and “commons” are

newly articulated notion of the public domain makes possible to visualize and think about the costs of aggressive IP use in the same way the environment provided a conceptual space for thinking about the costs of economic development – costs that were instead almost invisible within the economists' discourse.

Troubles with nature & land

Natural images seem to work extremely well for cultural environmentalism, but some serious and intriguing problems follow from the fact that images of nature, the environment, and organic growth have always been directly involved in creation narratives about property -- especially intangible property. The cultural environmentalists are obviously conscious of the genealogies and political stakes attached to some of the images they use, as when they analogize the privatization of publicly shared knowledge to the "fencing of the commons".⁸ Still, they may be less aware of the extent to which their environmental metaphors may be reifying (rather than questioning) the logic through which intellectual property has been developed over time in relation not just to notions of land property but especially in analogy to organic processes of growth connected to the land – both wild and cultivated.

Starting with Locke, the creation of private property has been presented as the result of applying labor to nature (either land or other natural resources) thus transforming them into something artificial:

[...] Every Man has a Property in his own Person. This no Body has any Right to but himself. The Labour of his Body, and the Work of his Hands, we may say, are properly his. Whatsoever then he removes from the State that Nature hath provided, and left it in, he hath mixed his Labour with, and joined to it something that is his own, and thereby makes it his Property.⁹

Looking for conceptual and rhetorical tools, the proponents of copyright in 18th-century England took land as the paradigm for property. Those who wished to construe literary property as permanent and not term-bound argued for a near identity between copyright and land property, while those favoring more limited term-based literary property rights construed copyright as different from (but still articulated in relation to) landed property.¹⁰

Being the most established form of property, it is not surprising that land would provide the choice analogy for the proponents of literary property. But what has received little attention by historians and theorists of IP (with the exception of Mark Rose) is the fact that the analogies between literary property and laYnd were articulated well beyond issues of property and title. Those struggling to develop that peculiar notion we now call intellectual property looked at the land not just as an image of property but one of *production*.

Things grew from the land, and the establishment of literary property hinged not on blunt analogies between land and texts but on the development of a discourse about the production of literary works –

discussed in the essays gathered in the special issue of *Law and Contemporary Problems* on the public domain (Winter/Spring 2003, Vol. 66, Nos. 1&2). Other meanings are presented in Julie E. Cohen, "Copyright, Commodification, and Culture: Locating the Public Domain" in L. Guibault and P. B. Hugenholtz (eds), *The Future of the Public Domain* (Dordrecht and Boston: Kluwer, 2006), pp. 121-166 (esp. 124-135); and Brett Frishmann, "An Economic Theory of Infrastructure and Commons Management" *Minnesota Law Review* 89 (2005): 917-1030.

⁸ James Boyle, "The Second Enclosure Movement and the Construction of the Private Domain," *Law and Contemporary Problems* 66 (2003): 33-74.

⁹ John Locke, *Two Treatises of Government*, (Cambridge: Cambridge University Press, 1967), pp. 305-6.

¹⁰ The various 18th-century discussions in England about the relationship between literary and tangible property are discussed in Mark Rose, *Authors and Owners* (Cambridge: Mass.: Harvard University Press, 1993); and Brad Sherman and Lionel Bently, *The Making of Modern Intellectual Property Law: The British Experience* (Cambridge: Cambridge University Press, 1999), pp. 9-59.

what made them distinct or similar to others, who could be credited from producing them, through what capacities and processes, etc. More than just an image of property, land and organic growth provided a whole framework of concepts and processes from which to narrate the *making* of literary property. (This is the same role, I believe, that ecology now plays in the discourse of cultural environmentalism).¹¹

For instance, originality and imitation (not just property) could be translated into land-based terms by comparing imitators to renters:

The ancient patriarchs of Poetry are generous, as they are rich: a great part of their possessions is let on lease to the moderns. *Dryden*, besides his own hereditary estate, had taken a large scope of ground from *Virgil*, Mr. *Pope* held by copy near half of *Homer's* rent roll [...]. His [Shakespeare's] possessions were very near as extensive as *Homer's*, but in some places had not received sufficient culture. But even there spontaneous flowers shot up, and in the *unweeded garden, which grows to seed*, you might cull lavender, myrtle, and wild thyme.¹²

Literary production was then described as a “mental harvest,”¹³ an analogy that could also be used to discuss the nature of individual creativity: “the mind of a man of Genius is a fertile and pleasant field” or, as another author put it, “His Brain, which was his Estate, had as regular and different Produce as other Men's Land.”¹⁴ Along the same lines, different kinds of soil could be used to distinguish between natural and learned genius:

The Genius of both these Classes of Authors may be equally great, but shews itself after a different Manner. In the first it is like a rich Soil in a happy Climate, that produces a whole Wilderness of noble Plants rising in a thousand beautiful landskips without any certain Order or Regularity. In the other it is the same rich Soil under the same happy Climate, that has been laid out in Walks and Parterres, and cut into Shape and Beauty by the Skill of the Gardener.¹⁵

Similar figures helped to make the case that that derivative literature could be tolerated because, “The Field of Knowledge is large enough for all the World to find Ground in it to plant and improve...”¹⁶ In 1774, during the landmark *Donaldson v. Becket* case, these images were mobilized once again on behalf of the London booksellers:

In this various world, different men are born to different fortunes. One inherits a portion of land; he cultivates it with care, it produces him corn and fruits and wool: another

¹¹ I give “making” a double meaning, to encompass both the production of literary texts as literary property as well as narrative justifications of literary property.

¹² Arthur Murphy, *The Gray's-Inn Journal*, 11 November 1752 (emphasis in the original), emphasis in the original, cited in Rose, *Authors and Owners*, “Preface”. Murphy was directly involved in the legal battles surrounding the literary property debate, having served as counsel in two landmark cases: *Millar v. Taylor* (1769) and *Donaldson v. Becket* (1774).

¹³ Catherine Macaulay, *A Modest Plea for the Property of Copyright* (Bath: Crutwell, 1774), p. 14, cited in Rose, *Authors and Owners*, p. 106.

¹⁴ Edward Young, *Conjectures on Original Composition* (London: Millar, 1759), p. 9; Anonymous, *Tatler*, no. 101, November 29 - December 1, 1709, p. 1. (The author is identified as Joseph Addison in Rose *Authors and Owners*, p.40).

¹⁵ Anonymous, *Spectator*, no. 161, Monday, September 3, 1711, p. 2. (The author is identified as Joseph Addison in Rose, *Authors and Owners*, p. 41).

¹⁶ Anonymous, *Letter from an Author to a Member of Parliament occasioned By a late letter concerning the BILL now depending in the House of Commons, For the Encouragement of Learning, &c.*, (London, 1735), p. 2.

possesses a fruitful mind, teeming with ideas of every kind; he bestows his labor in cultivating that: the produce is reason, sentiment, philosophy.¹⁷

More than just metaphors, land and organic growth have always been inside the logic of IP (through the nature/society or discovery/invention divide) and constitutive of some of its legitimating narratives. From the perspective of 18th-century foundational discourses about literary property, therefore, modern cultural environmentalism could appear to be another phase in the development of the “agricultural logic” of intellectual property. And, exactly like early conceptualizations of IP, cultural environmentalism continues to rest on a dichotomy between nature and society. (The ecological thinking adopted by the “cultural environmentalists is, in fact, traditional and does not question the nature-society divide as, for instance, does Bruno Latour’s *Politics of Nature*).¹⁸

That cultural environmentalism is caught in the same discourse it is trying to question finds confirmation in the fact that it stereotypes the commons the way that Hardin did, but from the opposite direction. Hardin misrepresented the commons as natural (ignoring the existence of social norms against their overuse) to argue that only privatization could save them from doom. Cultural environmentalists too naturalize the commons (admitting but then forgetting that they are often infrastructural), but do so to put forward an idealized image of fruitful and collective knowledge-making practices happily thriving outside of the constraints posed by privatization.¹⁹ They turn Hardin’s “tragedy of the commons” into a “comedy of the commons.” While loudly criticizing Hardin’s narrative, cultural environmentalists are trapped within his same discursive logic, one that opposes nature and property within an environmental framework.

The Nature/Society divide in IP and Science Studies

The current state of the debate on IP reminds me of the predicament of science studies about twenty years ago, before the field started to confront the fact that several of the methodological problems we were contending with were actually produced by our assumption of a dichotomy between nature and society, or between human and non-human agency.²⁰ Similarly, I believe that the dichotomy between nature and society that is assumed by both the supporters and critics of IP may be the root problem here.

¹⁷ William Enfield, *Observations on Literary Property*, (London: Jonhston, 1774), pp. 21-22, cited in Mark Rose, “The Author as Proprietor: Donaldson v. Becket and the Genealogy of Modern Authorship,” *Representations* 23 (1988), p. 65.

¹⁸ Bruno Latour, *The Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge, Mass.: Harvard University Press, 2004).

¹⁹ This is a somewhat complicated point whose articulation would exceed the space and narrative flow of this essay. But, briefly, when I say that cultural environmentalism simultaneously acknowledges and forgets the partially social (rather than just natural) dimensions of the commons, I refer to the remarkably different meanings that public domain and commons are attributed by the cultural environmentalist literature, and the equally murky discussions of the relations between the two. This, I believe, has to do with the fact that the commons are typically analogized to the *res publicae* of Roman Law (things held in common), while the public domain is commonly analogized with Roman *res nullius* (things owned by no one and to be taken by anyone). The former belongs near the society end of the nature-society spectrum, while the latter is definitely close to the nature end. The discourse of cultural environmentalism juggles these two poles with little clarity but obvious needs. It needs to cast them as natural because the environmental logic of its argument requires that. At the same time, it also needs to acknowledge the fact that the most successful types of knowledge commons are highly infrastructural, regulated by a variety of licenses and norms. Depending on the context, one move takes precedence over the other.

²⁰ The work of Bruno Latour, Hans-Jeorg Rheinberger, and Andrew Pickering (and others) marks this shift.

I'll make my case by going back to a text -- Edward Young's 1759 *Conjectures on Original Composition* -- that has been presented as the birthplace of the "romantic author."

Starting with Martha Woodmansee's 1984 essay on "Genius and Copyright," the historiography on copyright has established that the fundamental notion of the author's original "personal expression" was developed in the late 18th century by drawing from the notion of genius, especially romantic genius.²¹

An early modern legal fiction, genius managed to achieve a crucial double effect: to cast an original composition as an uniquely original artifact different from anything available in the public domain, and to do so in a way that minimized the visibility of what the author was actually borrowing from the public domain. The image of the flash of genius recast the production of a work as something instantaneous, erasing the traces of the many hours spent reading, borrowing, and drafting. There is now a consensus that the so-called romantic author is a founding myth of modern intellectual property -- a view widely shared by cultural environmentalists.²²

I argue, however, that while genius is obviously a discursive figure rather than a descriptor of the process of cultural production, it is not merely a "myth of origin" if by myth one means a self-serving fictional narrative. In other words, I do not think we can say that the image of the natural flash of individual genius is a false representation of the process of literary production while the collective material production of a text is the true one. Rather than debunk one side of the dichotomy and declare the truth of the other, we should question the dichotomy itself, and especially the foundational role it is attributed.

I cannot discuss in detail Woodmansee's careful tracing of the genealogy of literary genius back to Young's *Conjectures*. I will instead keep my focus on a key concept that went from Young to Fichte and eventually into the first German copyright laws of 1794.²³

According to Young:

An original [work] may be said to be of a vegetable nature; it rises spontaneously from the vital root of genius; it grows, it is not made. Imitations are often a sort of manufacture

²¹ Martha Woodmansee, "The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the Author," *Eighteenth-Century Studies* 17 (1984): 425-448.

²² Among others, see Woodmansee, "The Genius and the Copyright"; Peter Jaszi, "Toward a Theory of Copyright: Metamorphoses of 'Authorship,'" *Duke Law Journal*, April 1991, pp. 455-502; Martha Woodmansee & Peter Jaszi, *The Construction of Authorship: Textual Appropriations in Literature and Law* (Durham: Duke University Press, 1993); Rose, *Authors and Owners*; James Boyle's *Software, Shamans, and Spleens* (Cambridge, Mass.: Harvard University Press, 1995); Rosemary Coombe, *The Cultural Life of Intellectual Properties: Authorship, Appropriation, and the Law*, (Durham: Duke University Press, 1998). The role of the romantic author as a legitimizing topos in patent law is discussed in Mark Lemley, "Romantic Authorship and the Rhetoric of Property," *Texas Law Review* 75 (1996-7): 873-906. See also Jessica Silbey, "The Mythical Beginnings of Intellectual Property," *George Mason Law Review* 15 (2008): 319-379.

²³ *Conjectures* was not nearly as influential in Britain as it was in Germany. It was informed by and referred to the British debates on literary property -- "His work will stand distinguished; his the sole property of them; which property alone can confer the noble title of an *author*, that is, of one who [...] *thinks*, and *composes*; while other invaders of the press, how voluminous and learned soever, [...] only *read*, and *write*" (p. 54), and "Sacred be their [authors'] rights, and inviolable their fame" (p. 20). His main concern, however, was not the law per se but literary originality. Furthermore, many of his arguments about originality could be found in more attenuated and fragmentary form in some of the many pamphlets, briefs, and treatises produced within literary property debates and related law suits. While *Conjectures* may have appeared too literary (and its legal dimensions only mildly original) to British participants in the literary property debates, it fit well German literary and philosophical interests and sensibilities.

wrought up by those mechanics, art, and labor, out of pre-existent materials not their own.²⁴

Young's representation of an original composition as a plant (and, elsewhere, as a flower) is contiguous to traditional images of literary property and land. And yet the ways in which he articulates it shows that such imagery could and did frame the conceptualization of other more complex issues about intellectual property. His focus, in fact, is not on land as property, but on originality as a process of growth taking place on the land, and thanks to the land.

But something strange happens as Young articulates land-related images of literary property and originality. All or most of the metaphorical associations between literary and landed property had a fairly simple goal: to legitimize the new notion of literary property by establishing a direct analogy with a traditional form of property. Those analogies assumed and reiterated that literary works had human authors who could be analogized to landowners or farmers who cultivated their mental harvest.

Young's text, however, is more ambitious: it tries to capture in images the process through which an original composition (and, consequently, literary property) may be produced. But, in doing so, Young ends up presenting the emergence of an original work as a process of vegetable growth rather than the result of human imagination or husbandry. Young's genius is neither the owner of the field in which the original composition grows, nor the farmer that cultivates it, nor the method of cultivation. Genius is part of the plant itself.

The vegetable nature of originality, or the fact that genius, like a plants, has nourishing roots are not isolated remarks, but fit a theme that reoccurs throughout Young's text: Genius always belongs to nature and never to artifact.²⁵

This allows Young to cast genius not only as vegetable but also as external to human consciousness. Genius is not conscious of itself in the same way an oyster does not know it holds a pearl, or a rock does not know it contains a diamond.²⁶ Not only genius grows by itself like a plant, but the process through which it grows remains hidden to the human host (so that s/he cannot do anything to influence it – an intervention that might turn it into an artifact).

Being consciousness-free, genius may hold other authors' work somewhere within itself and still be categorically unaware (either consciously or unconsciously) of that work. Genius can "absorb" other works through its roots, but such absorption does not at all imply influence or, worse, plagiarism. Whatever is absorbed by genius is absorbed as a "chemical" – nature, not culture; nutritive juices, not texts.²⁷ The roots of genius function as culture-laundry devices.

More generally, the slow absorption of nutrients through the roots of genius plays exactly the same role as the more famous image of the flash of genius. In very different ways – one excruciatingly slow, the other instantaneously fast – both make invisible what the author has borrowed from other cultural productions.

Young's genius is an image of the virgin birth of original artifacts – artifacts that, in order to be original and copyrightable, cannot be born of other artifacts or produced by predictable routine

²⁴ Young, *Conjectures*, p. 12.

²⁵ This theme can be found in other texts from the literary property debates such as, Anonymous, *Spectator*, no. 161, Monday, September 3, 1711, p. 2.

²⁶ Young, *Conjectures*, pp. 49-51. At p. 50: "Nor are we ignorant of the dimensions of the human mind in general, bute eve of our own. That a man may be scarce less ignorant of his own powers, than an oyster of its pearl, or a rock of its diamond; that he may possess dormant, unsuspected abilities, till awakened by loud calls, or stung up by striking admiration, or the strong impulse of some animating occasion; not more to the world's great surprise, than their own. Few authors of distinction but have experienced something of this nature, at the first beamings of a yet unsuspected genius on their hitherto dark Composition: The writer starts at it, as at a lucid meteor in the night; it is much surprised; can scarce believe it true. During this happy confusion, it may be said to him, as to Eve at the lake, *What there you seest, fair creature, is thyself.* [Milton]"

²⁷ Young, *Conjectures*, p. 75.

artisanal practices.²⁸ As he put it, an original work grows but cannot be made.²⁹ Originality stems only from the variability and copiousness of nature: “No two faces, no two minds are just alike; but all bear nature’s evident mark of separation on them.”³⁰

I take Young’s discursive acrobatics to be a sign of the predicament faced by anyone who wants to defend copyright (and, *mutatis mutandis*, patents) by defining creativity and invention. As he struggles to come up with a notion of originality that could both demarcate authorial artifacts from nature while also distinguishing one author’s artifact from others, Young turned genius into a plant. His struggle is a familiar one, and his discursive choices may be surprising but certainly not accidental. Like personal expression in today’s copyright doctrine, Young does not articulate an argument based on the aesthetic qualities of an original composition, but on originality alone. He simply tries to find a way to establish a mark of irreducible difference to safely set apart original compositions from imitative ones – what he terms “nature’s mark of separation,” “mental individuality,” or that which makes original authors “singulars.”³¹

At one level, his comparing genius to a plant or to a face is a smart move because organisms of the same species never look the same. The differences may be tiny, but what matters is that you can be sure that there will be some difference. We should notice that such a definition of genius is quite distinct from customary definitions of human creativity because it has no room or role for the notion of choice. Genius cannot consciously produce something different from other cultural productions by exercising its genius capacities since it has no consciousness of having them. Actually, like oysters, rocks, and plants, genius does not have any consciousness at all. Genius produces works that are bound to display irreducible differences, but not differences than can be traced to authorial choices. Young’s discussion of genius draws an analogy between the uniqueness of plants and human faces. Far from being accidental, the analogy between the uniqueness of individual human faces and the that of original works matches well the logic of copyright and is found, in fact, in Francis Hargrave’s 1774 *Argument in Defence of Literary Property*: “A literary work [that is] *really* original, like the human face, will always have some singularities, some lines, some features, to characterize it, and to fix and establish its identity.”³² Interestingly, both Young and Hargrave present the face as human, and yet that image does not establish a connection between humanity, genius, and originality. The face may be the face of a human, but it is unique because it has been produced by nature, not by the human being who owns it (or, rather, by the human being whose body that face is part of). The topos of the face, therefore, is functionally analogous to that of the plant: originality can be only a product of nature, not a human artifact.

To wrap up, while Young saves genius by casting it as a vegetable, he also kills it with and during the very same discursive move. He saves genius as a vegetable or a natural face, but the logic of copyright would require a genius that is human, not vegetable or animal. The kind of genius needed to justify IP would have to be an exemplar of artifactuality so as to draw the sharpest possible line (indeed

²⁸ Young, *Conjectures*, pp. 12, 26, 36, 42.

²⁹ Similarly, “the mind of a man of genius is a fertile and pleasant field” (Young, *Conjectures*, p. 9).

³⁰ Young, *Conjectures*, p. 42: “[...] *Nature* stands absolved, and our inferiority in Composition must be charged on ourselves. Nay, so far are we from copying with a necessity, which nature lays us under, that, *Secondly*, by a spirit of *Imitation* we counteract nature, and thwart her design. She brings us into the world all *Originals*: No two faces, no two minds, are just alike; but all bear nature’s evident mark of separation on them. Born *Originals*, how comes it to pass that we die Copies? That meddling ape *Imitation*, as soon as we come to years of *Indiscretion* (so let me speak), snatches the pen, and blots out nature’s mark of separation, cancels her kind intention, destroys all mental individuality, the letter’s no longer consists of singulars, it is a medly, a mass; and a hundred books, at bottom, are but One.”

³¹ Young, *Conjectures*, p.42. On the notion of personal expression see Wendy Gordon, “A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property”, *Yale Law Journal*, Vol. 102, No. 7 (May 1993): 1533-1609.

³² Francis Hargrave, *An Argument in Defence of Literary Property. The Second Edition: To which is added...* (London: Otridge, 1774), p. 6.

a dichotomy) between the authorial work and the public domain, between nature and human artifact. But in the end Young can save the originality-producing features of genius only by attributing them to a vegetable, that is, to something belonging to nature, not humanity and its artifacts. As he tries to provide an image of invention, he keeps slipping back toward its opposite: discovery.

Conclusions

There is no reason to assume that modern intellectual property doctrine has been cured from the aporias found in Young's concept of genius. To the contrary, a deconstructive reading of Young's text (and, by extension, of the discourse of cultural environmentalism, the public domain, and the commons) shows that dichotomies between nature and society, discovery and invention, or idea and expression are inherently unstable.

It would be more productive to un-think those dichotomies. That would send us toward a virtually uncharted territory, but luckily there are a handful of "slips" the law makes here and there -- slips we can use as starting points. Interestingly, some of them concern the protection of precisely those entities that Young saw as the paradigms of genius: plants.

For instance, in both the US Plant Patent Act (PPA) of 1930 (about asexually reproduced plants) and the International Convention for the Protection of New Varieties of Plants (UPOV) of 1961 (which concerned sexually reproducible plants as well) we find that the breeder is not required to disclose the ways s/he has produced the plant variety s/he wishes to protect. What replaces that traditional requirement is a detailed description and illustration (typically a photograph) of the plant itself. To obtain a patent or "breeder's rights," the applicant also needs to show that such a variety is new, distinct, and stable, and that the breeder can reproduce it.³³

Such a radical departure from patent law's central emphasis on the inventive step and its specification means that, in these cases, the crucial distinction between invention and discovery has been effectively dismissed. In turn, this means that the inventive step is not expected to be the result of human agency alone. If what creates the patent or the breeder's right is the distinctiveness of the variety rather than how its distinctiveness came to be, then it does not matter whether the production of that variety should be credited to nature's random mutations or to the breeder's selective interventions.

In fact, UPOV bypasses discussions of the nature of the inventive step altogether, limiting itself to defining "breeder" as "a person who *bred*, or *discovered* and developed a variety."³⁴ Similarly, the PPA states that, "Whoever *invents or discovers* and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings [...] may obtain a patent" for that.³⁵

The breeder has to be human in order to apply for breeder's rights, but there is no pretence that what s/he may gain protection for was ever the exclusive product of human inventiveness. The varieties protected by UPOV and PPA are certainly not Young's vegetable geniuses, but they still end up destabilizing notions of authorship and inventorship conceived in strictly human terms.³⁶

³³ Glenn Bugos and Daniel Kevles, "Plants as Intellectual Property: American Practice, Law, and Policy in World Context," *Osiris* 7(1991):75-104; Alain Pottage & Brad Sherman, "Organisms and Manufactures: on the History of Plant Inventions." *Melbourne University Law Review* 31(2007): 539-568.

³⁴ UPOV, Article 1 at: <http://www.upov.int/en/publications/conventions/1991/act1991.htm>.

³⁵ US Plant Patent Act, Amended September 3, 1954, 68 Stat. 1190, at: <http://www.uspto.gov/web/offices/pac/plant/index.html#3>.

³⁶ There is a further analogy between the two cases. Like Young's ineffable genius that produces novelty without knowing or being able to describe how, at the time that PPA and UPOV were first introduced, it seemed unreasonable or even impossible to ask the breeders to describe the genetic changes that had rendered their varieties new and distinct. There might, therefore, be a relation between the implicit partial crediting of the inventive step to

[The doctrine of Geographical Indicators (GIs) provides another case in which intellectual property law “slips” and seems to forget or dismiss the nature/society divide].

These are only a few examples, but hopefully sufficient to point to the fact that the nature/society dichotomy and the figure of the individual author has already broken down in some branches of IP and that, at the same time, such breakdowns have not rendered protection impossible. To the contrary, one could say that it is precisely because in these instances the law has let its foundational concepts and assumptions be ignored or even openly violated that more forms of IP protection could be developed to cover things that, because of their hybrid human-natural genealogy, would have not otherwise become the object of intellectual property.

While I do not support the trend established by PPA and UPOV – that is, the granting of IP rights despite the absence of the traditional conditions for doing so – they provide striking examples of the de facto breakdown of some of the conceptual foundations of intellectual property.

Rather than continuing down that path of increasing and increasingly incoherent IP protection, it could be rewarding to articulate a different notion of ecology from that used by both Hardin and the cultural environmentalists. Unhinged from the opposition between nature and society, such an ecology may provide the conditions of possibility for unthinking intellectual property as we know it, and to rethink it otherwise.

nature (that is, the blurring of discovery and invention), and the fact that, in those cases, the inventive step could not be fully described.

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