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Music, Software, and Sustainable Culture

"A Nation that destroys its soil destroys itself."

President Franklin D. Roosevelt
A letter sent to Governors on February 26, 1937

If we are to discuss the limits of intellectual property in the age of a new cultural economy (or *vice versa,* the question of what new cultural economy can exist within the limits of modern-day intellectual property), we must first define the nature of these two subjects before we can describe and then reason about their relationships and interactions with one another.
The definition of culture given by *Wikipedia* provides an excellent starting point:

> Culture (from the Latin *cultura* stemming from *colere,* meaning "to cultivate,") generally refers to patterns of human activity and the symbolic structures that give such activities significance and importance. Cultures can be "understood as systems of symbols and meanings that even their creators contest, that lack fixed boundaries, that are constantly in flux, and that interact and compete with one another." Different definitions of "culture" reflect different theoretical bases for understanding, or criteria for evaluating, human activity.
> Culture is manifested in music, literature, lifestyle, food, painting and sculpture, theater and film and similar things. Although some people identify culture in terms of consumption and consumer goods (as in high culture, low culture, folk culture, or popular culture), anthropologists understand "culture" to refer not only to consumption goods, but to the general processes which produce such goods and give them meaning, and to the social relationships and practices in which such objects and processes become embedded. For them, culture thus includes art, science, as well as moral systems.[1]

We can see that by its very etymology, the concept culture is rooted in a concept of land. Land, in turn, is governed by laws of *real property,* which is a subclass of *property.* It remains a subject of great debate whether *intellectual property* is a proper term or one designed to promote confusion[2], but it certainly becomes obvious that at an etymological level the concepts of cultural economy and any theory of property (intellectual or otherwise) are incestuously related by thousands of years of symbolic and legal history. Nevertheless, as farmers adapt to global climate change in their cultivation of agricultural land, we who farm ideas must also be sensitive to the effects of legal climate change and how we might adapt our methods of creative cultivation in order to survive.
The most important aspect of understanding culture, and thus a cultural economy, is to understand *"the general processes which produce such goods and give them meaning, and the social relationships and practices in which such objects and processes become embedded."* This suggests that a cultural economy should be understood not in terms of maximizing consumption or profits, but in terms of *sustainability,* for without sustainability the long-term prospects of cultural achievement is ruin.

Let us now consider the question of sustainability more concretely by focusing on two cultural sub-domains, music and software, and we will quickly see the challenges and complexities of both the context and the subjects we have chosen.

Any attempt to define what music *is* necessarily attempts to define also what music *is not*. Herbie Hancock deftly escapes this paradox by explaining that to him, music represents *possibilities*[3]. This same idea was expressed by Wagner to Liszt in 1850 (as reported by Alex Ross in *The Rest is Noise*[4]*):*

> I have felt the pulse of modern art and know that it will die! This knowledge, however, fills me not with despondency but with joy … The monumental character of our art will disappear, we shall abandon our habit of clinging firmly to the past, our egotistical concern for permanence and immortality at any price: we shall let the past remain the past, the future—the future, and we shall live only in the present, in the here and now and create works for the present age alone.

In the context of sustainability it is understood that death is merely the end of life (dust to dust), whereas extinction is the end of birth. In Wagner's message to Liszt, Wagner makes clear that death is not to be feared as long as there is birth. Conversely, any system that trades the possibility of birth for the prolongation of life is making a serious error, for it is irreversible.

Indeed, one of the major themes of Ross's book is the extent to which artists of the 20th century would defy convention, even the limits of aesthetic appreciation, in order to declare the possibility of birth. This journey led to entirely unpredictable offspring: from the harmonic and melodic roots of traditional classical music emerged the chromatic of syntax of Liszt, Wagner, Mahler, and Strauss. Chromatic extremes led to compositions of extreme dissonance. (Mahler considered *Salome* "one of the greatest masterworks of our time" and could not understand why the public took an immediate liking to it[5].) Beyond dissonance, the atonal works of Schönberg gave birth to a whole new school where musical mathematics and the 12-tone row replaced melody[6]. Béla Bartók moved classical music beyond the confines of the 12-tone system by incorporating folk music devices, such as bent notes, to the repertoire[7]. Jazz was another new invention of the 20th century—a collaborative form in which the music was never fixed until the moment it was played[8]. New technologies, new instruments, new genres tested the very limits of what could be considered music. "Beauty of sound is beside the point" Paul Hindemith instructed the player in his *Second Sonata for Solo Viola*[9]. John Cage's *4'33'* is a work of pure silence in three movements[10]. And so ranged the birth-possibilities of music, unfettered.

But there was much more to the evolution of music than merely schools and theories of composition or performance. Consider this excerpt from an essay written by Greg Sandow[11]:

> Slowly, though, the genres [of popular music and classical music] started to blend. Each side found something to envy in the other. People who loved classical music (I'm using this term, of course, with its early 19th century meaning) envied the far more accomplished performances in popular music concerts. And as the prestige of classical music spread, popular musicians, like Liszt, began to be rebuked because they didn't play enough Beethoven. As the 19th century progressed, concerts concentrated more and more on the music of the past. Between 1815 and 1825, at concerts

by one of Vienna's leading musical organizations, 77 percent of the music was by living composers and only 18 percent by dead ones (nobody knows the death dates of the composers who wrote the remaining five percent of the music). By 1849, the percentages had almost exactly reversed.

Far be it from me to advocate what sort of music people *should* listen to—whether by composers now dead or living—but one cannot deny the enormous effect on culture and the composer when the cultural economic cycle exceeds the composer's lifetime.

One of the first responses to this desperate state of affairs was to look at these percentages as negative correlates of quality. In Thomas Mann's *Doctor Faustus: The Life of the German Composer Adrian Leverkühn as Told by a Friend,* the devil informs Leverkühn that he will never be popular in his lifetime but that his time will come[12]: "You will lead, you will strike up the march of the future, boys will swear by your name, and thanks to your madness they will no longer need to be mad."

Ross puts this Faustian bargain into a larger context as he explains:

> Yet Mann knew what he was doing when he put his composer in league with the devil. Faust's pact is a lurid version of the kinds of stories that artists tell themselves in order to justify their solitude. Eisler, when he read Mann's novel, connected it to the perceived crisis of classical music in modern society. "Great art, as the Devil maintains, can now only be produced, in this declining society, through complete isolation, loneliness, through complete heartlessness . . . [Yet Mann] allows Leverkühn to dream of a new time, when music will again to a certain extent be on first-name terms with the people." Other composers of the *fin de siècle* similarly conceived their situation as a one-man fight against a crude and stupid world.

Schönberg took this a step further when he declared "[i]f it is art, it is not for all, and if it is for all, it is not art"[13]. In this context, any discussion of the fairness of a copyright bargain seems utterly absurd, like trying to establish the market value of one's offspring.

Meanwhile, new theories of the nature of art and music took root. Schönberg wrote to Kandinsky "Art belongs to the *unconscious!* One must express *oneself!* Express oneself *directly!* Not one's taste, or one's upbringing, or one's intelligence, knowledge or skill." To the composer-pianist Ferruccio Busoni he wrote: "I strive for: complete liberation from all forms, from all symbols of cohesion and logic."[14] Gustav Mahler is credited with saying "If a composer could say what he had to say in words, he would not bother trying to say it in music,"[15] which tells us that these composers were thinking culturally, not economically.

It might be convenient to blame the decline of the livelihood of living composers on some new-fangled technology the way that mp3 files and p2p filesharing networks have been blamed for the decline of commercially recorded music, but the timeline doesn't support that. The shift in musical taste documented in 1849 predates the invention of the recording cylinder by 28 years[16], and predates John Phillip Sousa's famous testimony before the US Congress that "talking machines are going to ruin the artistic development in this country"[17] by nearly 60 years. Instead this decline was a function of cultural change, as when a forest matures from fast-growing soft woods to slow-growing hardwoods.

In fact, while Sousa saw recorded music as competition for his own big-band productions, he completely missed the many ways that technology was giving birth to new musical forms. Béla Bartók used recording cylinders and hours of painstaking analysis to decode the DNA of Magyar folk music, opening new pathways in both classical and jazz music[18]. Amplification (before it became completely over-used[19]) made possible new configurations of musical performance. Broadcast made possible entirely new venues, such as a kitchen table, for experiencing musical performance, greatly democratizing what had been the exclusive domain of the elite. High-fidelity, long-playing records (and later CDs) further democratized the opportunity to experience music, transcending both space and time. This explosion of creativity and technology led to a corresponding increase in the diversity of our cultural stores, a new range of economic opportunity, and an inevitable upset to the *status quo*.

The question of sustainability therefore turns on the question of what is to be sustained. Ross writes about Boston's Symphony Hall, where the name BEETHOVEN is carved in stone where a crucifix might be if the hall were a church, and he describes the common practice of carving the names of other European masters all around the circumference of auditoria, signifying unambiguously that the buildings are a cathedral for the worship of imported musical icons. Ross asks, "How could your name ever be carved alongside Beethoven's or Grieg's when all available spaces were filled?"[20] What sort of sustainability is that? Not one of a living culture, but of a limestone quarry. It is a cowardly museum that can only be sure of significance after its subjects are long dead.

In the world of agriculture, a remarkable discovery concerning sustainability is emerging: the quality of soil is more than the sum of its parts. Topsoil accrues in nature at the rate of 25mm per 500 years[21]. Intensive farming practices deplete topsoil at 10x to 50x times that rate[22]. We now know (scientifically at least) that the chemical replacement of nutrients stripped by row crops like corn and soybeans does not reconstitute the full nature of the soil. The question of soil sustainability is thus not an exercise of chemical stoichiometry but an ongoing organic process that must remain in fair balance. So, too, the question of cultural sustainability is not limited to taxing one population for the remuneration of another, nor of declaring one class of people to be in service of another (whether for just compensation, national interests, or both), but of permitting the unfettered processes of creativity and discovery to give birth and evolve as nature herself would allow. Historically there was seldom any comfort for those who most depended upon the processes of cultural development, but the whole of culture was sustained by their efforts, rather than depleted for their convenience. This is the balance now in flux.

Music and software are alike in that both can be represented by notations which, interpreted as pure data, result in a functional output. Indeed, player-piano rolls were as much a form of software as punch cards and paper-tape were for early computers. Moreover, the syntax of music, its phrasing, and the formal structures of many classical styles that exhibit recursive (ABA, ABBA, ABA CDC ABA) or serial thematic patterns are highly reminiscent of recursive and sequential software algorithms. Musical quotations function like software subroutines—a shorthand reference that can recall, recontextualize, or transform the meanings and emotions of that which was referred. Jazz standards define a set of standard interfaces and conventions that permit wide ranges of possible interpretation, not unlike the mash-ups that can be achieved with interoperable software services.

But software has overtaken music in one fundamental and culturally relevant way: software cul-

ture has moved beyond mere function (Gebrauchsmusik)[23], meaning[24], or object[25], and into the realm of self-sustaining governance,[26, 27] which is the subject of a new book by Christopher Kelty, *Two Bits: The Cultural Significance of Free Software.* Kelty argues, and I agree, that the major breakthrough of free software culture is the fundamental principle of the *recursive public.* As Kelty explains[28]:

> Recursive publics seek to create what might be understood, enigmatically, as a constantly "self-leveling" level playing field. And it is in the attempt to make the playing field self-leveling that they confront and resist forms of power and control that seek to level it to the advantage of one or another large constituency: state, government, corporation, profession. It is important to understand that geeks do not simply want to level the playing field to their advantage—they have no affinity or identity as such. Instead, they wish to devise ways to give the playing field a certain kind of agency, effected through the agency of many different humans, but checked by its technical and legal structure and openness. Geeks do not wish to compete qua capitalists or entrepreneurs unless they can assure themselves that (qua public actors) they can compete fairly.

By adopting a set of principles that allow arbitrary modification and amendment by any self within the public—the agency of many different humans—the recursive public of free software gets around both the fixed conventions literally carved in stone (Beethoven, *et al)* and it avoids the morally questionable assertion by Stravinsky that "lesser artists borrow, but great artists *steal!"* In the world of free software, there is no need to steal *per se,* but merely the right to cultivate as one sees fit. Richard Stallman knows well the loneliness that Mahler and Schönberg bemoaned, but he did not invent a recursive public to be popular. He did so to make his life possible.

How might one apply the teachings of software to the community of music? It is simple, almost: adopt the principles necessary to support a *recursive public.* Musical conventions define tempo, key signature, tuning, etc., but the musical community defaults on questions of law and legal use, and thus defaults its own destiny. As multinational constituencies of rights-holders seek to level the playing field to their advantage, they enlarge the scope and lengthen the duration of their powers as rights-holders. The evidence is overwhelming. Consider the evolution of US Copyright Law[29]:

> From 1790–1909, copyright was 14 years plus 14 year renewal
> From 1909–1976, copyright was 28 years plus 28 year renewal
> From 1976–1998, copyright was 75 years, or 50 years beyond the death of the author
> From 1998–present: copyright was 95/120 years, or 70 years beyond the death of author
> And starting in 1998, ever-increasing criminal penalties for what was "fair use."

While composers and performers may have first believed that these additional restrictions accrued some benefits to themselves, there is increasing evidence that these legal changes are largely tilting the field to postpone the end of life (of Mickey Mouse as a creative work protect-

ed by copyright) at the cost of preventing new birth, at the cost of allowing new names to be carved into new venues. How else can we explain the fact that in 2006, 44 years after forming their band, the Rolling Stones would be called to play a concert for which they themselves were judged to be too old to attend?[30] The field of music has become like a farm whose topsoil has been so completely abused with pesticides and fertilizer, an environment so hostile to culture and so unsustainable that the only future options are government-sponsored GMOs or the planting of a cemetery.

I said that the teachings of software for music were simple, almost. The "almost" part is that while the free software community has successful bent the notes of copyright to create infinite possibilities of birth, the courts and the governments have "gifted" to us a new set of rights we are not permitted to refuse: software patents. Since at least the 1980s, software patents have been likened to legal landmines[31], and this analogy fits well the framework of culture and cultivation. Whereas the copyright expansions and extensions have overtaxed the soil, software patents create fear and destruction among the cultivators by their random, invisible, and unpredictable behavior. It is a legal application that makes no sense, an accident that has become a sinister agenda.

I will close with this excerpt from Greg Sandow:

> Here's a striking vignette that shows popular music merging with classical music. It comes from the chapter on 19th century listening that opens Peter Gay's book *The Naked Heart:*
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> [Berlioz] recalled that he had once heard Liszt ruining Beethoven's *Moonlight Sonata* with extraneous trills, tremolos, and embellishments. But in a later recital, Liszt showed himself more pious as he performed the same piece for a small group of friends. It was late in the afternoon, and the lamp was going out. Berlioz welcomed that; he thought the dim twilight would be right for the opening adagio movement of the C-sharp minor sonata. But Liszt went him one better: he asked that all the lights be extinguished and the fireplace covered. Then, in total darkness, Berlioz remembered, after a moment's pause, rose in sublime simplicity the noble elegy he had once so strongly disfigured; not a note, not an accent was added to the notes and the accents of the author. When the last chord had sounded no one spoke—we were in tears.
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> So where did this lead? Directly to the classical music world we know today, in which the old-time classical music rules have completely taken over. We listen in silence; we worship the great composers; we think concert music ought to be complex and lofty. There's just one thing, though. Somehow we've brought the popular music of the 19th century—insanely silly Rossini operas, flashy Paganini concertos—into the classical pantheon, and this doesn't make any sense. Our classical music world hasn't just lost touch with the culture around it; it's forgotten its own past.

We should celebrate the taste, empathy, and artistry that Liszt demonstrated in his total performance, but we should recognize that it is up to us to make our own decisions, to perform according to our own context, and we should be free to explore every aspect of creativity—from

concept to performance, in any media, for any purpose, lest we become trapped in the absurdity of our own ignorance. The Free Software, Open Source and Creative Commons[32] show the way, but we must be bold enough to treat the recursive amendment of our artistic work as the most important artistic and cultural statement we can make. It is how we will make music and our culture sustainable. And we can only hope that as more people understand the nature of music, the nature of culture, and the nature of creativity, we will rewrite the laws to favor sustainability over statis.

1 *http://en.wikipedia.org/wiki/Culture*
2 *http://en.wikipedia.org/wiki/Criticism_of_intellectual_property*
3 *http://www.herbiehancock.com/music/discography/?aid=48*
4 Ross, Alex, *The Rest Is Noise*, pp 13–14
5 Ibid, p. 9
6 *http://en.wikipedia.org/wiki/Atonality*
7 *http://en.wikipedia.org/wiki/B%C3%A9la_Bart%C3%B3k*
8 *http://en.wikipedia.org/wiki/Jazz*
9 Ross, p. 182
10 *http://en.wikipedia.org/wiki/4%2733%27%27*
11 *http://www.artsjournal.com/greg/2006/10/_october_11_2006_greg.html*
12 Ross, p. 34
13 Ross, p. 39
14 Ross, p. 57
15 *http://en.wikiquote.org/wiki/Gustav_Mahler*
16 *http://en.wikipedia.org/wiki/Phonograph_cylinder*
17 Ibid
18 *http://forums.allaboutjazz.com/showthread.php?t=32769*
19 *http://blog.miraverse.com/?p=87*
20 Ross, p. 129
21 United States Department of Agriculture, Soil Conservation Service, "Fact Sheet" (USDA, April 1993).
22 *http://www.culturechange.org/cms/index.php?option=com_content&task=view&id=107&Itemid=1*
23 *http://en.wikipedia.org/wiki/Gebrauchsmusik*
24 *http://www.people.carleton.edu/~jlondon/musical_expression_and_mus.htm*
25 Ross, p. 108
26 *http://opensource.org/definition.php*
27 *htp://gnu.org/*
28 Kelty, Christopher, *Two Bits: The Cultural Significance of Free Software*, Duke University Press, Durham 2008, p. 10
29 *http://en.wikipedia.org/wiki/United_States_copyright_law*
30 *http://news.bbc.co.uk/2/hi/entertainment/4584858.stm*
31 *http://www.gnu.org/philosophy/fighting-software-patents.html*
32 *http://creativecommons.org/*