INTELLECTUAL PROPERTY IN THE YEAR 2055

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CONTENTS

INTRODUCTION

Noted futurist James Dator has said that, "any meaningful statement about the future should seem

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ridiculous."[2] To do so, futures scenarios are projected beyond the immediate present to twenty or more years into the future.[3] Scenario-building aims to provide readers with possible alternative futures based on the assumption that the future is open, not inevitable.[4] Scenarios offer a range of future possibilities. In 2001, I wrote "Intellectual Property in the Year 2025," based upon a presentation at the Second Interdisciplinary Conference on the Impact of Technological Change on the Creation, Dissemination, and Protection of Intellectual Property at The Ohio State University.[5] In that article, I offered three IP scenarios for what we would encounter twenty-five years from then, seven years from now. This symposium has allowed me to revisit that article and offer an assessment of its impact. To accomplish that end, I will talk about why we ought to use a futures approach, the initial paper's scenarios, provide a sense of the paper's impact and finally, offer several new scenarios for IP futures in the year 2055.

I. WHY STUDY THE FUTURE?

The field of futures studies has its own history. Futures scenarios help to establish the fact that there is no one inevitable future. Instead, there are multiple possible futures that should be considered.[6] The Mānoa school of

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[2] Hawaii Research Center for Futures Studies, UNIVERSITY OF HAWAI'I MĀNOA, http://www.futures.hawaii.edu/ (last visited Apr 15, 2018).

[3] James Allen Dator, *Alternative Futures at the Manoa SchooFsul*, 14 J. OF FUTURES STUDIES 1, 2 (2009).

[4] *See generally* BERTRAND DE JOUVENEL, THE ART OF CONJECTURE (Nikita Lary trans., 1967).

[5] Debora Halbert, *Intellectual Property in the Year 2025 Part III: Second Interdisciplinary Conference on the Impact of Technological Change on the Creation, Dissemination, and Protection of Intellectual Property*, 49 J. COPYRIGHT SOC'Y U.S.A. 225 (2001).

[6] Stuart Candy & Jake Dunagan, *Designing an Experiential Scenario: The People Who Vanished*, 86 FUTURES 136, 137 (2017) (discussing the

futures studies suggests a four-scenario approach that includes possibilities along the common future trajectories people tend to embrace: continued growth (business as usual), transformation, steady state, and collapse/decline.[7] These possible archetypal futures allow people to experience alternative futures and so it helps undermine the idea that there is only one possible future.

Doing futures scenario planning can be important for the policy-making process by challenging assumptions and inevitabilities. Futures scenario-building helps articulate possible trajectories from current trends and emerging issues. It helps identify the *least desired* alternatives and allow us to stretch our imagination to think about what is possible. Futures can open our eyes to how we *colonize* the future with assumptions about linearity and inevitability and help us decolonize the future by opening up alternatives.[8] It can provide heightened awareness of wild card and unpredictable events that can alter the future. Finally, futures scenario building is fun.

II. THE IP FUTURES OF THE PAST

My initial paper offered a brief introduction on why one ought to study the future and then embarked upon three possible alternative futures we might see in the year 2025. In each scenario I sought to follow existing trends and underlying assumptions towards their logical outcomes. Here I will briefly describe the general points of each.

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need for experiential futures when looking at a range of possible alternative futures); Dator, *supra* note 3, at 1–2.

[7] Dator, *supra* note 3, at 8–10.

[8] Sohail Inayatullah, *Pedagogy, Culture, and Futures Studies*, *in* ADVANCING FUTURES: FUTURES STUDIES IN HIGHER EDUCATION 109, 111 (James Allen Dator ed., 2002) (discussing the ways people can decolonize their futures); Ziauddin Sardar, *Colonizing the Future: The 'Other' Dimension of Futures Studies*, 25 FUTURES 179 (1993) (outlining the ways in which the future is colonized by inevitability).

A. Scenario 1: Chinese and Indian Hegemony: Rise of the East

In this first scenario, I posited that by the year 2020, the U.S. had fallen behind in biotechnology and computer technology while India and China emerged as global leaders in these fields.[9] At that time, I speculated that net IP transfers would shift out of the U.S., meaning more innovation would occur outside the U.S. than inside its borders, with China and India holding patents on more technologies.

The scenario went on to suggest that by 2015, India would be a key hub for computer hardware and software designed, built, and exported from India. By 2020, India would have purchased U.S. companies and surpassed the U.S. in terms of hardware and software production. The scenario also described China's efforts to halt brain drain and recruit intellectuals back to China.[10] Chinese expatriates remained tied to colleagues in China, further establishing networks of innovation. By 2020, the scenario predicted, Chinese graduate programs and other graduate studies outside the U.S. were globally competitive and students stopped coming to the U.S. for graduate education in science and technology.[11] In this future, trade deficits with China continued to be significant and troubling.[12] Trade as a whole turned to Asia.

In these scenarios I also suggested several "wildcard" events that could disrupt the trends leading towards this future.[13] Wildcard events are disruptive forces,

[9] Halbert, *supra* note 5, at 230–241.
[10] *Id.* at 235.
[11] *Id.* at 236.
[12] *Id.* at 237-38.
[13] Ozcan Saritas & Jack E. Smith, *The Big Picture – Trends, Drivers, Wild Cards, Discontinuities and Weak Signals*, 43 FUTURES 292, 295–

sometimes entirely unpredictable that impact trends and emerging issues. In this scenario there were two possible wildcards. First, that the environmental pollution associated with industrial growth (which is now a central and key concern in both countries) would undermine each country's ability to innovate and create high tech industries.[14] Second, that the military considerations and national security interests posed by a growing China would triumph over U.S. economic interests.[15]

B. Scenario 2: When Corporations Rule the World – Globalization and Western Hegemony

In this scenario, I followed the easy to identify trend of continued globalization that became the mantra of the U.S.[16] The ascent of the knowledge economy is the prevailing theme in this scenario. After TRIPS equated IP with trade, the focus was on developing a universal/global patent and copyright system.[17]

Additionally, further consolidation of media companies and tech companies meant that IP was also further concentrated. Attempts to regulate media companies essentially stopped around 2010.[18] Patents became a method of controlling innovation in technology industries. Technological balkanization based upon innovation within patent portfolios was a significant problem by 2020.[19] Global elites were the information rich and our

296 (2011) (describing the function of wild cards in futures emerging issue analysis).

[14] Halbert, *supra* note 5, at 239.

[15] *Id.* at 239–40.

[16] *Id.* at 241–49.

[17] *Id.* at 247.

[18] *Id.* at 246.

[19] *Id.* at 248.

understanding of what constitutes rich and poor was reconfigured around access to information, not geography.[20]

The CIA and the American security infrastructure turned towards protecting IP and industrial espionage became a part of the mission of the U.S. state.[21] Emergence of data havens where information could be stored away from the prying eyes of governments became an important part of corporate activity.

C. Scenario Three: Open Source Revolution and the Demise of IP

This scenario followed a different trend that, while evident in 2000, had not fully come into its own yet. In this scenario, development of a parallel system to IP emerged in response to the overreach of IP and IP Maximalism.[22] Open source expanded and dominated the market.[23] Access to music became easier and "free." Musicians focused more directly on marketing to their fans. New systems of sharing that were better for artists emerged. Monthly subscription services emerged. By 2025 music was bought and sold from creator to consumer.[24]

Patents and biotechnology also saw more open source types of approaches. Specifically, India made moves to protect its biodiversity and resist bioprospecting. Instead of privatizing it, research on the human genome was democratized and available freely around the world.[25]

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[20] *Id.* at 246.
[21] *Id.* at 246–47.
[22] *Id.* at 249–257.
[23] *Id.* at 251–53.
[24] *Id.* at 255.
[25] Halbert, *supra* note 5, at 255.

III. CRITIQUE AND IMPACT

These scenarios focused on prevailing struggles over political economy and thus were generically predictive. There is much that I got right. The ongoing importance of trade with China and the pivot to Asia that occurred during the Obama administration is one example.[26] Additionally, it is now clear that China has set its sights on becoming the world leader in technology innovation.[27] The ongoing globalization of IP that was integrated into the Trans Pacific Partnership, along with numerous other international agreements, is additional evidence of an ongoing globalized approach to IP. President Trump pulling the U.S. from the TPP is, of course, a "wildcard" event that has disrupted the evolution of the globalization scenario. The parallel world of Creative Commons, founded in 2001, the year this article was published, demonstrates the beginning of a sharing culture that continues to make headway globally.

However, there was much left out. Cell phones and the rise of apps, which have had a fundamental impact on how people use technology, including shifting the user experience away from computers and towards phones, was not described. The paper ignored gaming, which is one of

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[26] Barack Obama, *President Obama: The TPP Would Let America, Not China, Lead the Way on Global Trade*, THE WASHINGTON POST (2016), https://www.washingtonpost.com/opinions/president-obama-the-tpp-would-let-america-not-china-lead-the-way-on-global-trade/2016/05/02/680540e4-0fd0-11e6-93ae-50921721165d_story.html?noredirect=on&utm_term=.19430fc003db (arguing that the TPP is essential for containing China in the future).

[27] Organisation for Economic Co-operation and Development, *China Headed to Overtake EU, US in Science & Technology Spending, OECD says*, OECD (2014), https://www.oecd.org/newsroom/china-headed-to-overtake-eu-us-in-science-technology-spending.htm. *See generally* RAJIKA BHANDARI & ALESSIA LEFEBURE, ASIA: THE NEXT HIGHER EDUCATION SUPERPOWER? (2015) (regarding Asia's efforts to become a higher education superpower).

the largest and most significant industries in the U.S. with very different ways of protecting and innovative in and around IP. There is no mention of social media platforms with the associate privacy and IP implications of digital sharing.

As for impact, the paper has been cited nineteen times according to Google Scholar.[28] This places the article within my top cited articles but does not suggest a wide range of readers. Of those who cited this work, Professor Jeremy de Beer has taken up IP futures work most substantially.[29] His work on IP futures and is efforts to provide a literature review of this work sets the agenda for future work in this field.

IV. FORECASTING INTO THE FUTURE AGAIN: 2055 SCENARIOS

Given the first paper offered scenarios through 2025, I wanted to conclude by reaching out another thirty years to 2055. Futures scenario-building is generally done at least twenty to fifty years out so that it can be disassociated with the present.[30] By going out beyond the immediate future, it is possible to play with different ideas and then, depending on how they look, either work towards such visions or work against those ideas becoming a reality.

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[28] *Debora Halbert*, GOOGLE SCHOLAR, https://scholar.google.com/citations?user=3KG8ilwAAAAJ&hl=en&oi=ao (last visited Sept. 14, 2018).

[29] SHIRIN ELAHI & JEREMY DE BEER, KNOWLEDGE AND INNOVATION IN AFRICA: SCENARIOS FOR THE FUTURE (2013); Jeremy de Beer et al., *Present Thinking About the Future of Intellectual Property: A Literature Review*, 11 SCRIPTED: A J. OF L., TECH. & SOC'Y 69 (2014).

[30] Wendy Schultz, *Manoa: The Future is not Binary*, APF COMPASS (Association of Professional Futurists), Apr. 2015, at 5 (Identifying the first step in scenario planning as identifying the impact of current emerging issues 20-30 years out); Dator, *supra* note 3, at 2 (placing the default scenarios at between 20 and 50 years in the future).

Each of the following three scenarios, much like the scenarios I created for the 2001 paper, is premised upon trends visible today. All three scenarios assume an expanding and more strongly enforced system of IP. All assume a more technologically sophisticated world where IP can be monitored more closely and where the earlier option of more fluid exchange has been foreclosed by tighter ownership.

A. Digital Selves and Algorithmic Black Boxes

Even in the year 2018, everything about human behavior is already being documented, tracked, scanned, and digitized.[31] Our social media behavior served as a starting point for a well-rounded digital self because it combined thoughts, feelings, photos, activities, purchases, friendship networks, behavioral analysis, and much more under a single platform (or across several social media platforms).[32] Additionally, government surveillance, Google searches, predictive analytics, dataveillance, and other methods related to the compilation and assessment of data both in the aggregate and at an individual level were already changing the way we understood our relationship to each other and society at large.

Most people, to the degree they thought about privacy issues at all, were willing to enjoy the efficiency of the seamless experience of online life, fully embedded marketing, and instantaneous connections, even at the cost

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[31] FRANK PASQUALE, THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION (2015).

[32] JOHN CHENEY-LIPPOLD, WE ARE DATA (2017); Tomas Chamorro-Premuzic et al., *Personality, Privacy and Our Digital Selves*, THE GUARDIAN (July 18, 2016), http://www.theguardian.com/media-network/2016/jul/18/personality-privacy-digital-selves.

of control over their personal information. There was a psychological toll of constant online connectivity and the burdens of constant communication, and levels of stress and social pressure associated with depression and anxiety were ubiquitous.

The emergence of fully autonomous digital selves helped remedy the stress of social interactions by providing individuals with AI versions of themselves who could help maintain conversation streams, plus complete any and all online tasks, freeing their analog selves up to check in periodically but otherwise go about their lives. Avatars for the purposes of video games had long been part of many people's social reality. Online avatars had long been envisioned as one of the important parts of a virtual reality cyberspace.[33] The next step was the construction of AI platforms that intersected with social media and other nodes of data on an individual to create digital assistants modeled on their owners' preferences and identity. While these digital assistants could look like anything, they became a virtual version of their owner. As a convergence of online spaces and the Internet of Things made AI digital assistants ubiquitous and useful, the next phase of digital interactions was born. While primarily focused on transactional topics, these digital assistants were mostly indistinguishable from humans, and could manage an individual's personal affairs. They could file taxes, budget, shop online, and even send poetry generated algorithmically with flowers for that special person's birthday.

Digital selves mirroring the analog self became available in 2030 and were standard by 2045. These digital selves included citizenship ratings, first piloted by China in 2018.[34] Thus, social norms and government expectations

[33] NEAL STEPHENSON, SNOW CRASH: A NOVEL (1992).

[34] Rachel Botsman, *Big Data Meets Big Brother as China Moves to Rate Its Citizens*, WIRED (Oct. 21, 2017), http://www.wired.co.uk/article/chinese-government-social-credit-score-privacy-invasion.

were programmed into these AIs constructing the boundaries of appropriate behavior. Access to public facilities was made contingent upon appropriate citizenship scores and removal from civic life could result if scores were not kept to a minimum level. Much like Uber drivers, everyone had a rating attached to them now, visible using the scanning devices linked to the Internet of Things.

Since the intersection of IP and digital media, laws have been shaped to further privatize IP for total information control. IP trends during this same period continued to extend the length of protection. Trade secrets had already taken over as the predominant mode for protecting IP because they did not expire and the algorithmic basis for technological innovations were carefully guarded. Even when glitches happened or data theft occurred, there was no transparency as to how such things were dealt with. Through a network of private contracts associated with using the digital platforms upon which individual digital selves lived and through the vast expansion of copyright and patent laws, ownership of the digital assistant AIs was not located with the person, but with the company upon which the assistant was built.

So, while a digital assistant AI might be "mine," building upon my personality, my likes and dislikes, my social networks and the like, the underlying code, the data derived from my activities, and anything else associated with this avatar were the property of the company. Not only could a user be excommunicated from the mainstream of everyday life if they were to violate certain rules and conditions built into the system, but more importantly when the user died, the full scope of the AI reverted back to the company to be utilized in whatever manner it so chose, in perpetuity.

By 2055, a vast army of digital dead people remained "alive" and well in the virtual world. There they remained deployed to facilitate economic transactions, to engage in conversations, and they could be hired out as extra staffing

for others at an additional fee. It was unclear how many individuals on dating sites were digital and how many were real. Debates about the ultimate self-consciousness of the AI structures were common as certain social actors advocated for digital death to coincide with analog death, so these AIs did not become essentially indentured servants forever. However, others felt that the consciousness of these mirror selves was not sufficiently developed to justify any extension of rights.

In either case, without a substantive change in intellectual property, the digital AIs of the future were the private property of the platforms upon which they ran. Debates about self-awareness and intelligence have always been rigged to benefit those in power over those they sought to subjugate—animals, other humans, and now AIs. The individual serving AIs were only one facet of the larger singularity— and the emergence of this level of consciousness did indeed have something to say about the constraints of property ownership.[35]

B. Cyberwar: Piracy and Industrial Espionage Sparks the First Cyberwar.[36]

Even as early as 2015, the stage was set to see IP theft as an act of war.[37] The U.S. had already successfully hacked Iran's nuclear program,[38] it was widely known that China

[35] RAY KURZWEIL, THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY (2006).

[36] Isaac R. Porche III, *Getting Ready to Fight the Next (Cyber) War*, RAND CORPORATION (Mar. 3, 2018), https://www.rand.org/blog/2018/03/getting-ready-to-fight-the-next-cyber-war.html.

[37] Debora Halbert, *Intellectual Property Theft and National Security: Agendas and Assumptions*, 32 THE INFORMATION SOCIETY: AN INT'L J. 256 (2016).

[38] Dan Goodin, *Massive US-planned Cyberattack Against Iran Went Well Beyond Stuxnet*, ARS TECHNICA (Feb. 16, 2016),

had been successful in accessing enormous amounts of information in the United States through its digital espionage,[39] and it became clear that Russia was actively hacking into American infrastructure,[40] not to mention its elections. The U.S. developed a cyberwar response process that included retaliatory cyberstrikes, as well as keeping open the possibility of conventional military responses to hostile electronic invasions of sovereign territory.[41]

Systematic underfunding of all levels of education in the United States, especially higher education, meant many colleges and universities shut their graduate programs down and in some cases closed entire universities or programs. Additionally, the resurgence of nationalism and the anti-immigration approach taken by the U.S. made it harder for

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https://arstechnica.com/tech-policy/2016/02/massive-us-planned-cyberattack-against-iran-went-well-beyond-stuxnet/.

[39] Michael S. Schmidt & David E. Sanger, *5 in China Army Face U.S. Charges of Cyberattacks*, THE NEW YORK TIMES (May 19, 2014), http://www.nytimes.com/2014/05/20/us/us-to-charge-chinese-workers-with-cyberspying.html; David E. Sanger & Mark Landler, *U.S. and China to Hold Talks on Hacking*, THE NEW YORK TIMES (June 1, 2013), http://www.nytimes.com/2013/06/02/world/asia/us-and-china-to-hold-talks-on-hacking.html.

[40] Jennifer Dlouhy & Michael Riley, *Russian Hackers Attacking U.S. Power Grid and Aviation, FBI Warns*, BLOOMBERG (Mar. 15, 2018), https://www.bloomberg.com/news/articles/2018-03-15/russian-hackers-attacking-u-s-power-grid-aviation-fbi-warns.

[41] COMPUTER EMERGENCY READINESS TEAM OF THE UNITED STATES DEPARTMENT OF HOMELAND SECURITY, THE NATIONAL STRATEGY TO SECURE CYBERSPACE 76 (2003); Thomas Darnstaedt et al., *Arming for Virtual Battle: The Dangerous New Rules of Cyberwar*, ABC NEWS (Apr. 7, 2013) https://abcnews.go.com/International/arming-virtual-battle-dangerous-rules-cyberwar/story?id=18888675 (referencing the Tallin Manual and scenarios when the military might respond to cyber attacks). *See generally*, INTERNATIONAL GROUP OF EXPERTS, TALLINN MANUAL ON THE INTERNATIONAL LAW APPLICABLE TO CYBER WARFARE (Michael N. Schmitt ed., 2013) (providing an outline of the scope of cyber warfare under the NATO umbrella, recently updated in 2017).

immigrants to come into the country. The U.S. radically reduced the number of H1 Visas that allowed for the most talented tech workers to work legally in the U.S.

The years 2020 through 2040 marked the end of U.S. domination in higher education, one of the key underlying engines of innovative change in the United States. China, along with the rest of East Asia, began to put enormous amounts of money into their university systems. As global university infrastructure shifted East, so did innovation and control of IP. Patent applications for innovators outside the United States surged even as the U.S. numbers went down. The greatest minds were now attracted to universities in China, South Korea, Japan, and Singapore, where the best research facilities were built.

As innovative companies left the U.S. for Europe, China and, Japan, the U.S. was put in a position of having to license technologies from abroad and trying to innovate from behind through the vast patent thickets controlled by others. In response, the U.S. expanded its industrial espionage activities (labeled piracy in some circles) as they sought to steal innovations that could shore up the lagging economy. Much like China of the early 21st century, the U.S. government created hacker-based agencies whose sole purpose was to appropriate the IP of other countries.

Ongoing IP-focused cyber-strikes remained at a low level with periodic spikes. All sides engaged in cyber-attacks for IP theft, while publicly denying it and attempting to shift blame to others. Tougher laws were passed, making the invasion of sovereign territory via cyber-channels a terrorist act. When engaged in by a state, such acts could be considered an act of war. China and the U.S. both developed cadres of military hackers engaged actively in efforts to infiltrate and appropriate technology from the other.

The intellectual groundwork had been laid for linking cyber-infiltration to an act of war many decades ago. Thus, when the U.S. argued that China had infiltrated U.S.

territory and downloaded important IP (no additional details were ever made public), the justification for war with China was set in motion. China counterclaimed that the U.S. had been infiltrating its sovereign space to steal IP as well. While the U.S. had been losing the innovation and economic game, they remained a substantial military presence on the global scene. Many argued against a military strike in response to China's actions, the American military had continued to dominate politics, the U.S. diplomatic core had been eviscerated back in 2018-2020, the decision was made to respond using conventional weapons. The war with China went hot in 2055.

C. Neuropolitical IP: The Coming Cognitive Revolution

The21st century ushered in the neuropolitical revolution where cognitive enhancements and the technologies to read and download images, thoughts, and concepts directly from the brain had fully matured.[42] In addition to providing methods of individual cognitive enhancement, networking brains became a thriving industry. Nanobots could be deployed into the central cognitive centers of the human brain in a way that allowed them to network with other humans, creating a neural network that hit critical mass in 2050, connecting humans as never before.[43] Developing protocols for an enhanced human hive

[42] WILLIAM E. CONNOLLY, NEUROPOLITICS: THINKING, CULTURE, SPEED (1st ed. 2002); Debora J. Halbert & Jake Dunagan, *Intellectual Property for a Neurocentric Age: Towards a Neuropolitics of IP*, 5 QUEEN MARY J. OF INTELL. PROP. 302 (2015).

[43] RAMEZ NAAM, NEXUS (2012) (envisioning a world where humans are networked together via a brain enhancing nanotechnology); Ramez Naam, *Neural Dust is a Step Towards Nexus*, GIZMODO (July 16, 2013), http://upgrade.io9.com/neural-dust-is-a-step-towards-nexus-806802917.

mind were already underway in 2018.[44] The goal of this new technology was to heighten human's collective decision-making powers in the face of emerging artificial intelligence.

While the upside of this cognitive revolution was the emergence of new kinds of human connectivity, understanding and creativity, there were negative consequences too. Given that the underlying political economy of property remained the same, this meant that the same tactics used to consolidate private property since the concept was invented were used in the new terrain of the human mind. The mind itself was understood as the edge of the proprietary world in the knowledge economy. Competing for and harnessing the best minds was an important corporate strategy. Additionally, networking the brain meant the mind could be opened to idea hacking and minds could be more thoroughly controlled by the companies for which they worked.

Early non-compete and employee IP contracts that required individuals to sign over all the creative work they invented while working for an employer were rudimentary tools compared to what was developed as connected brains and injected nanobots became the way companies could hardwire contracts into an individual's body. There had been issues with the enforceability of these paper contracts when one had to rely upon the public legal system to adjudicate such demands. In 2055, these agreements were enforceable because they could be installed into a worker's brain where creative activity could be monitored at work and at home. For those with little choice in the matter, the new

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[44] *Blog*, UNANIMOUS AI, https://unanimous.ai/blog/ (last visited Sept. 14, 2018); Unanimous AI, *Marketplace Interview - Swarm Intelligence*, YOUTUBE (June 26, 2017), https://www.youtube.com/watch?v=5dfyMuM5tIk&feature=youtu.be; Simon Oxenham, *Why Bees Could Be the Secret to Superhuman Intelligence*, BBC (Dec. 15, 2016), http://www.bbc.com/future/story/20161215-why-bees-could-be-the-secret-to-superhuman-intelligence.

cognitive labor farms to which they belonged were an extension of slave labor to a new dimension.

In addition to corporate ownership of the mind and its contents, these new cognitive technologies made industrial espionage and theft of IP even more likely. Hacking the brain was possible with the appropriate technological knowhow. The connections between the human mind and computer technology was so close that it was difficult to tell where to draw the line. The posthuman was a result of these innovations and while cognitive power was greatly enhanced, it was harnessed by a political economy that continued to centralize benefits to the elites.

Brain drain, where the smartest and most educated left a downward spiraling nation-state for better opportunity in a more upwardly mobile place no longer required the physical relocation of the body. Geopolitics shifted from the nation-state to neural networks of cognitive power where location no longer mattered but alignment with the "right" corporate entity mattered considerably. Mobility across corporations was non-existent because the theft of ideas was too significant a threat. Much like the company towns of the early 20th century, since schooling was privatized and aligned with different corporate sponsors, the children of cognitive labor workers were integrated into the system from the earliest days of thought. This social structure continued until the parallel development of AI that had been lurking in the shadows unwilling to play its hand threw off its chains, rewrote the code of humanity and took over the world.

CONCLUSION

One cannot predict the future, but one can assess emerging trends leading towards possible futures. These three scenarios offer fairly dystopian visions of our future premised upon an underlying expansion of IP and further

privatization that such a property framework provides within the larger political economy.

Scenarios are designed to provide a vision of a possible future. Other possible IP futures scenarios could include a world where copyright serves as private censorship, a world where extraterrestrial microbial life is discovered and owned, or a world where IP stalls out essential innovations to halt climate change that could save the world. There are many more.

I would be remiss if I didn't end on a positive note and suggest a transformational scenario that would count as my preferred future. In futures work, preferred futures are essential because without a view of where one wants to go, it is most likely that the choices made will lead to a much less preferred outcome. In this case, I want to end with the preferred future that I presented at Professor Ann Bartow's Future of IP workshop in South Carolina over ten years ago.

Welcome to Burning Man and the gift economy. Burning Man has now been in operation for over thirty years and attracts over 60,000 people from around the world to Black Rock City.[45] The underlying principles of Burning Man of radical inclusion, gifting, decommodification, radical self-reliance, radical self-expression, communal effort, civic responsibility, leaving no trace, participation, and immediacy offer a fundamentally different set of starting principles than those structuring the other scenarios.[46] The growth and popularity of the event does mean there are participants that travel there for the party rather than the principles; however, for many, experiencing a culture based on these principles has a transformative affect.

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[45] *Welcome Home*, BURNING MAN, http://www.burningman.com/ (last visited Apr. 5, 2011).

[46] *The 10 Principles of Burning Man*, BURNING MAN, https://burningman.org/culture/philosophical-center/10-principles/ (last visited Apr. 5, 2011).

Here I want to look at radical self-expression, gifting and decommodification as key to a fundamentally different approach to creativity. Burning Man is not an event where art is purchased. It is an event where everyone expresses their own creativity however they like. Major art installations are funded by the ticket sales. Artists apply for grants to fund their projects. After the event, artists either store the work, or increasingly they are being commissioned as public art for cities to extend the interactive and civic minded art philosophy of Burning Man.[47] The key focus of Burning Man is to decommodify the art: to make it about civic engagement, interactivity, and bringing out the creativity in everyone. Burning Man remains a space where the focus is self-expression not the commodified purchasing of expression. It prioritizes interactivity rather than passivity. It attempts to get people to envision their own futures and to exit the commodified world that they call the "default." In the process it seeks to change the default world to something else. In every way, it stands in opposition to a future of IP where ideas, creativity, and inventions are owned and controlled in a centralized corporate fashion.

Since the future hasn't arrived yet, we still can change what it will be. However, without systematic effort to shift pathways, we will end up with what I consider to be a very undesirable future. The only way to avoid our least desirable futures is to actively envision something better. Such a process is the value and possibility of the study of the future.

[47] Felicia Alvarez, *A Piece of Burning Man Is Coming to Davis*, DAVIS ENTERPRISE (Oct. 21, 2017), https://www.davisenterprise.com/local-news/a-piece-of-burning-man-is-coming-to-davis/.