

Patents as Scientific
Information 1895-2020
[PASSIM]

Welcome!

...to the second and third workshops of the ERC-funded project “Patents as Scientific Information, 1895-2020,” (PASSIM www.passim.se) in collaboration with The International Society for the History and Theory of Intellectual Property (ISHTIP www.ishtip.org).

Workshop 2: Patents as Capital, May 11-13.

Workshop 3: Patents in the Service of War and Peace, May 16-17.

Venue: Louis De Geer Konsert and Kongress, Norrköping
<https://louisdegeer.se>



European Research Council
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Dear colleagues,

since the spring of 2020, academic workshops and conferences have been put on hiatus. Meetings and discussion have taken place via zoom and other digital platforms. Travel has been non-existent, with fieldwork and archival visits cancelled or modified. For PASSIM, as indeed for any research project, the past two years have meant rethinking, rescheduling, and reshuffling both in terms of research and in terms of activities that had been carefully set out and planned. During this time we have all of us longed for the possibility to brainstorm and exchange ideas in real life, to listen to and see each other face to face. And now we will. When workshop 2 was postponed twice because of Covid-19 we decided to try something new and ended up with the back-to-back workshop(s) you'll now attend. It will be an intense week. Some of you will stay with us for both workshops, some of you will come in for just one. Regardless of which, I'm delighted to welcome you to Norrköping, and I promise that we'll do everything we can to ensure that your stay here will be creative and inspiring.

A warm welcome to the Industrial landscape and PASSIM!

Eva Hemmungs Wirtén

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ABSTRACTS

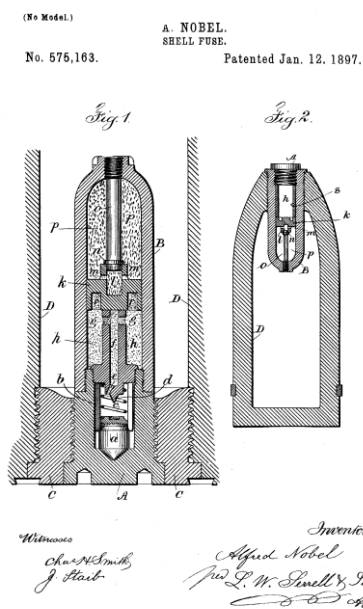
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PRACTICAL INFORMATION



MAY 11-13

PATENTS AS CAPITAL



Patents are regarded as central techniques and indicators of value in the 'knowledge economy' by linking immaterial knowledge to capital. In intellectual property scholarship, particularly that approaches law as economics or as a regulatory tool, patents are commonly studied as means of commercial and economic strategies. But this focus leaves out the other ways in which patents act as both instruments and representations of diverse kinds of capital: intellectual, cultural, scientific and financial capital(s). The concrete processes by which patents are implicated in and give rise to various practices of capitalisation and valuation remain relatively underexplored. Rather than equating patent with value, or presuming that patents generate intellectual capital, this workshop aims to examine and delineate the workings of patents as capital in their multiple manifestations: as personal privilege, scientific credit, cultural symbol, instrument of credibility and as financial proxies. These are some examples of the queries that we are looking forward to. We are delighted to present cross-disciplinary and interdisciplinary contributions that problematise and analyse the promises and failings of patents as capital and that study the role of patents in such capitalisation processes.

Special commentators are **Charlotte Abney**, Science History Institute USA, **Jerome Baudry**, Swiss Federal Institute of Technology, Switzerland, and **Adam Bisno**, U.S. Patent and Trademark Office, USA.

DAY 1: PATENTS AS CAPITAL

Date	Day	Time	Event
11/5	Wed	11.00-11.15	<i>Eva Hemmungs Wirtén, Linköping University and PASSIM</i> Welcome and brief presentation of the PASSIM-project
11/5	Wed	11.15-12.00	<i>Hyo Yoon Kang, University of Kent, Björn Hammarfelt, University of Borås, Gustav Källstrand, Nobel Center</i> Introduction to Workshop.
11/5	Wed	12.00-13.15	Lunch
11/5	Wed	13.15-14.00	<i>Susi Geiger, University College Dublin</i> “War on patents: Politized, professionalized – and popularized?”
11/5	Wed	14.00-14.45	Discussion
11/5	Wed	14.45-15.15	Coffee
11/5	Wed	15.15-16.00	<i>Vitor Ido, South Centre Geneva</i> “Modernity and Nation Building: The politics of patents “with Chinese characteristics””
11/5	Wed	16.00-16.45	Discussion
11/5	Wed	19:00	Dinner @Tullhuset SeaClub

DAY 2 AND 3: PATENTS AS CAPITAL

Date	Day	Time	Event
12/5	Thu	10.15-11.00	<i>Janice Denoncourt, Nottingham Trent University</i> “Patents as Capital: Prioritising business model, intangibles and IP rights records and ownership information to support legally mandated corporate reporting”
12/5	Thu	11.00-11.45	Discussion
12/5	Thu	11.45-13.00	Lunch
12/5	Thu	13.00-13.45	<i>Erkan Gürpınar, University of Ankara</i> “Thorstein Veblen on Capital as Knowledge: Some Implications for the Knowledge Economy”
12/5	Thu	13.45-14.30	Discussion
12/5	Thu	14.30-15.00	Coffee
12/5	Thu	15.00-15.45	<i>Hyo Yoon Kang, University of Kent and PASSIM</i> “Patents as Capitalist Aesthetic Forms”
12/5	Thu	15.45-16.30	Discussion
12/5	Thu	17.30	Food served at the workshop venue
DAY 3			
13/5	Fri	10:15-12:00	Summing up: impressions, ideas and plans.
13/5	Fri	12:00-13:00	Lunch and end of workshop*

***For those of you staying in Norrköping over the weekend in waiting for Workshop 3, please see Practical Information in the end of the program for suggestions on how to pass the time.**

ABSTRACTS: PATENTS AS CAPITAL

Susi Geiger

War on patents: Politized, professionalized – and popularized?

This paper describes the conditions for the successive politicisation, professionalization and (very recent) popularization of patent-oriented healthcare activism from the global HIV/AIDS movement of the late 1990s to the current pan-European networked transparency and vaccine equity movements. In doing so, the paper continues, updates and critically engages with earlier works on patient activism that have highlighted how these groups often coalesced with pharmaceutical companies in their “war on diseases” (Raberahisoa and Doganova 2021), contributing to drug development through regulatory and epistemological activism. This paper contends that although “war on diseases” was dominant until the mid-2010s and continues to exist, other healthcare activist groups that historically framed their relationship with pharmaceutical companies in a more system-critical way have now become much more prominent. These groups engage in what we call the “war on patents”. As distinct from previous waves of activists questioning exorbitant pharmaceutical prices, the current movement critically engages with and voices concerns about the root causes of these high prices, for instance in the global intellectual property regime (ossified through the 1995 TRIPS agreement) and the set-up of the European pharmaceutical market. With these shifting balances also comes a shift in the ways activists engage in pharmaceutical markets epistemically, with activist lawyers, economists, and other professional knowledge workers coming to the fore in suggesting radical alternatives to received pharmaceutical business practices, including patent sharing, a decoupling of upstream/ R&D and downstream/medicines markets, new forms of not-for-profit

Vitor Ido

Modernity and Nation Building: The politics of patents “with Chinese characteristics”

The paper addresses the political economy of a Chinese official discourse: the creation of an intellectual property system “with Chinese characteristics”. In particular, it focuses on how this narrative is embedded in a broader nation building process and the country’s aspirations to become a global economic leader. China rapidly developed a full intellectual property system in about 40 years (Yu, 2017; 2019). In recent years, new stringent legal provisions in favour of IP holders such as data exclusivity and the creation of IP specialized courts (including the Supreme Court) that concentrate civil, criminal and administrative measures (Matthews, 2019) attempt to show China’s commitment towards a robust IP system. It is supposed to address the interests of international applicants as well as the demands of national players who now rely heavily on intangible assets, including world-leaders Huawei and Tencent, among others. It is however unclear – or questionable – how this newly established socio-legal system really differs from the existing systems of industrialized countries. In other words, it is complex to delineate what are the “Chinese characteristics” of the Chinese IP system. While the majority of scholarship focuses on the mismatch between law and practice in China, it may be more relevant to analyse why and how it fits China’s current development project.

I would like to argue that the “with Chinese characteristics” proposition is a rhetorical-discursive idea(l) as much as it is a product of State’s craftsmanship. Binding modernity and nation building within IP, but including alleged local elements, China applies to IP the broader notion – now formally adopted by the Chinese Communist Party and by president Xi Jinping – of “capitalism with Chinese characteristics”. It fits China’s geopolitical narrative of respect of sovereignty in international relations and aims at consolidating China as a unique model – from democracy to human rights to intellectual property.

Rather than purely developing Bourdieusian cultural and economic capitals, this overarching attempt of China has more to do with the consolidation of an imagined community (Anderson, 1983) and even with reshaping sociality relations, creation of persons and expansion – or creation – of new languages (following Strathern, 1996; 1999). In other words, patents in China are not only individual prestige symbols nor proxies of financial value, but a whole interconnected network of people and social relations under a common technique of power and modernity (with all its caveats), the “IP with Chinese characteristics”.

Janice Denoncourt

Patents as Capital: Prioritising business model, intangibles and IP rights records and ownership information to support legally mandated corporate reporting

The legal domains of IP and corporate law, each deeply embedded in national legal frameworks, are the result of historical legal traditions, philosophies and theory. The corporate and IP law domains are beginning to cross reference each other given the rise of IP-reliant business models which appear to treat patents as capital or a corporate asset or resource.

This paper explores patents as scientific documents from the point of the information they provide for management, shareholders, investors and external stakeholders in the context corporate disclosure and reporting reform.

IP information and records are critically analysed to elucidate a new function when publishing corporate reports for sustainable development in which non-financial information is of commensurate importance to traditional financial information.

The freely available databases that contain the patent specifications published by patent offices around the world such as Esp@cenet, for example, provides a transparent and increasingly valuable source of advanced technical information which can be accessed anywhere in the world and even translated.

For example, shareholders, investors and stakeholders can assess scientific credibility of the patent or patent portfolio and whether or not they have scientific information value, which together with legally mandated corporate disclosures (quantitative financial information and qualitative business strategy information) will inform intangibles and IP-related decision-making.

Previously, patent databases were more likely used mostly by the scientific community, patent attorneys and business competitors. This deeper approach to patent information. By prioritising patent information, we may overcome the relatively high degree of information asymmetry published in mandated corporate reports e.g. annual reports, quarterly reports, directors strategic reports. In other words, placing more reliance on scientific granted patent information (high value knowledge) for example is very useful for predicting future company activities. Currently, modern corporate reports mostly gloss over patent information.

In the past, patent specification and claim information was much less accessible and more difficult to transmit. One had to physically attend a patent office to search records and request patents files to inspect on the premises. The public information function of patents and “openness” of scientific patent information has greatly advanced due to digital technology. This unpublished paper argues that such increased accessibility to high value intangibles and IP rights information is beginning to shape the perception of IP rights as capital. There is a need for corporate reporting reform to better capture material, timely, accurate and relevant intangibles and IP information to inform corporate stakeholders. How could company law reform shape the ‘patent as capital’ debate? Dr Denoncourt draws on her understanding of intellectual property, finance and corporate governance to inform her legal analysis.

Hyo Yoon Kang

Patents as Capitalist Aesthetic Forms

Patents as documents serve different informational functions: as legal deed, they establish intellectual property rights; from a historical angle, they may represent a highly formalised ‘inventory’ of past inventions; from policy perspective, they may serve to collect data and identify techno-economic trends. In this paper, I explore other layers of meanings of patents and their documentary practices: their cultural reception and representations that are *not* related to its originally intended scientific or legal informational uses.

The paper considers these divergent receptions and uses by analysing three modes of representations of patent information: patent document, the core of which textual; the use of patent drawings without the legal diagrammatic context of the patent document; and imitations of a patent document by way of speculative patent ‘hacks’. Drawing on readings in sociology of finance, cultural economy and aesthetic theories, the paper discusses the divergent ways in which patents act as specific aesthetic forms that reveal and sustain different visions of capitalist economy.

Erkan Gürpınar

Thorstein Veblen on Capital as Knowledge: Some Implications for the Knowledge Economy

Veblen, over a century ago, pointed out that the term capital was mistakenly treated as a physical phenomenon by economists. The definition neither includes immaterial wealth, nor does the capital theory seek an explanation for the evolution (genesis, growth and variation) of the concept itself. Close examination into the origins of the concept, however, shows that it is only with the relative growth of material equipment in industrial societies that tangible assets became important in the definition of capital. By extending Veblen's approach on capital to knowledge-based economies, we can re-define the term capital to include not only patents but also trade secrets and restrictive (non-compete) covenants. Moreover, the analysis could further be developed to explain changes triggered by knowledge-based economies. If, as Taylor suggests, corporation is about transferring workplace knowledge to the managerial authority, increase in the skill content of work erodes the central pillar of corporation in knowledge-based economies. Besides, the extension of patents to basic research, the expansion of different forms of intellectual property to include tacit knowledge in the hands of knowledge workers, and ongoing attempts to codify (tacit) knowledge (Foray 2004) are all novel developments in intellectual property and technology. The evolution of the term capital, i.e. what is to be included in its definition is crucial, since different legal regimes can empower either knowledge workers or business firms with contrasting implications regarding production organization in the future. Debates on the success of Silicon Valley (Hyde 2003), the role of legal regulations in economic growth (EU, 2019) as well as implications of the rise of smart machines (the so-called fourth industrial revolution) can all be addressed by such an analysis.

MAY 16-17

PATENTS IN THE SERVICE OF WAR AND PEACE

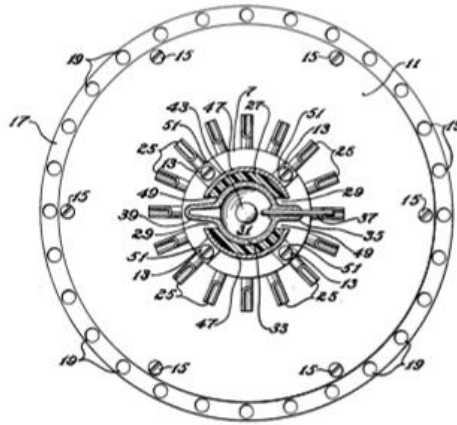


Fig. 2

Patents are part of a cultural and political history of diplomacy, in times of peace *and* war. Although legal historians and humanities scholars have studied patent law and its histories beyond their economic effects, it is surprising that they have devoted less attention to their military entanglements. The workshop focuses on patents, relating to the theme of ‘war and peace’. In this sense, patents are understood as both legal documents and property rights, and conceptualised in a variety of disciplinary ways, ranging from legal tools to secure economic monopolies, to ‘weapons’ protecting national interests. In so doing, the workshop aims to explore patents as devices that create and redistribute power, and as active protagonists fuelling and constituting so-called “patent wars”. We wish to draw to attention, the historical relationships between patents and war and peace as well as international crises. The workshop is based on interests in the relationships and roles of secrets, licenses and patents in a cultural and political history of war and peace, as well as interests in public relations and media representations of patents, peace and war.

Special commentators are, **Charlotte Abney**, Science History Institute, USA, **Gabriel Galvez-Béhar**, University of Lille, France, **Michael Birnhack**, Tel Aviv University, Israel, **Adam Bisno**, U.S. Patent and Trademark Office, USA, **Jacques Gillen**, archivist at Mundaneum, Belgium and **Guido Noto La Diega**, University of Stirling, UK

DAY 1: PATENTS IN THE SERVICE OF WAR AND PEACE

Date	Day	Time	Event
16/5	Mon	10:00-10.15	<i>Eva Hemmungs Wirtén, Linköping University and PASSIM</i> Welcome and brief presentation of the PASSIM-project, round of introductions
16/5	Mon	10:15-11.00	<i>Johanna Dahlin, Martin Fredriksson, Johan Larson Lindal, Linköping University, and Jose Bellido University of Kent.</i> Introduction to Workshop.
16/5	Mon	11.00-11.30	Coffee
16/5	Mon	11.30-12.00	<i>Jocelyn Bosse, King's College London</i> "Keep it Secret, Keep it Safe: On the Development of Secret Patents"
16/5	Mon	12.00-12.30	Discussion
16/5	Mon	12.30-13.45	Lunch, followed by walk-and-talk (weather permitting)
16/5	Mon	13:45-14:15	<i>Christoph Rodrigo de la Torre, University of California, San Diego</i> "Patenting Atomic Vision"
16/5	Mon	14.15-14.45	Discussion
16/5	Mon	14.45-15.15	Coffee
16/5	Mon	15.15-15.45	<i>Katrina Jungnickel & Katja May, Goldsmiths, University of London</i> "The Enemy Has Many Faces": Insects, Invasions & Inventive Clothing in War and Peace"
16/5	Mon	15:45-16.15	Discussion
16/5	Mon	16.15-17:00	Discussion: Common themes from day 1
16/5	Mon	19:00	Dinner @Urbane Goat

DAY 2: PATENTS IN THE SERVICE OF WAR AND PEACE

Date	Day	Time	Event
17/5	Tue	10:00-10.30	Introduction
17/5	Tue	10.30-11.00	<i>James Parish, University of Cambridge</i> “Wartime Licensing: A Blueprint for ‘Suspending’ Patent Rights as a Response to Trade Violations Under the TRIPS Agreement?”
17/5	Tue	11.00-11.30	Discussion
17/5	Tue	11.30-12.00	Coffee
17/5	Tue	12.00-12.30	<i>Andrew Ventimiglia, Illinois State University</i> “Figures of Mind: Spiritual Innovation and Military Influence in the Patenting of Neurofeedback Devices”
17/5	Tue	12.30-13.00	Discussion
17/5	Tue	13.00-14.00	Lunch
17/5	Tue	14.00-15.30	PASSIM presentations
17/5	Tue	15.30-16.00	Coffee
17/5	Tue	16:00-17.00	Summing up: conclusions and thoughts
17/5	Tue	19:00	Dinner: Buffé served at Tema Q department, @Kopparhammaren

ABSTRACTS: PATENTS IN THE SERVICE OF WAR AND PEACE

James Parish

Wartime Licensing: A Blueprint for 'Suspending' Patent Rights as a Response to Trade Violations under the TRIPS Agreement?

The UK has a long history with of licensing 'enemy-owned' patents. The UK Parliament introduced legislation during both World Wars that operated by 'suspending' (rather than invalidating or confiscating) enemy-owned patents (and, perhaps surprisingly, some of this legislation is still on the books today). The wartime licensing system evolved during the wars, but, in a nutshell, once a patent was suspended, the UK government could licence the use of the protected invention to British manufacturers. These licences would contain terms and conditions set by the government, which normally required British manufactures to pay a 5 per cent royalty of the selling price of the patented article. The government would hold such royalties on trust on behalf of the enemy-patentee until the end of the war. It announced that if enemy states reciprocated in kind, the UK government would reinstate the enemy-owned patents after the war and pay the collected royalties to enemy-patentees, minus any debts owed to the Crown.

The wartime legislation led to a huge increase in state sanctioned licensing. The Board of Trade (the government department that oversaw the Patent Office at the time) processed 892 applications and approved 669 licences during the First World War, compared to receiving only one compulsory licence application under the Patents Act 1907 Act before the outbreak of war. The Second World War saw even more activity, with the Patent Office receiving 1,938 applications for new licences and 512 applications for variations of pre-war licences. Of these, 1,523 new licences were granted and 418 pre-war licences varied. Covid-19 has renewed historians' interests in the mechanics of the wartime licensing. This presentation, however, argues that wartime licensing is more than an artefact of history. Wartime licensing could provide a blueprint for how the UK government might 'suspend' patent rights under the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement. As part of dispute resolution, a World Trade Organisation (WTO) country that complains of trade violations can seek to suspend intellectual property rights as an alternative remedy to raising tariffs. For example, in 2009, Brazil was permitted to suspend certain US pharmaceutical patents as a remedy for US trade violations in the cotton industry. Ultimately, Brazil and the US agreed a settlement, avoiding the suspension. Yet, Brazil's strategy of suspending patent rights has sparked interest among IP scholars interested in international trade.

What might the 'suspension' of rights look like in Britain if the UK government sort to remedy excessive WTO tariffs? The wartime licensing system may tell us how such patent suspension could work, including: (i) who could apply; (ii) how quick a licence might be granted; (iii) and how the UK government may be able to keep a proportion of collected royalties to pay off any trade violation debts owed to the Crown.

Katrina Jungnickel & Katja May

The Enemy Has Many Faces': Insects, Invasions, and Inventive Clothing in War and Peace

Practices of colonial expansion by Europeans in the Americas, the African continent and Australasia often involved wars being fought against the native inhabitants of the lands they were brutally trying to take over. Clothing patents over time clearly reveal how nation states have historically equipped soldiers to go to war at home and abroad. In contrast, the native people of these lands are more likely to be entirely absent in inventive records.

Rather than focus on these normative and dominant military entanglements, we share ongoing research into historic clothing patents concerning another invading force -insects. The war against insects – the enemy with many faces—is a seemingly universal concern in patent archives. Insects attacked and occupied the bodies of soldiers and settlers as well as their livestock, just as they themselves invaded new and unknown places. Clothing became another barrier of defence and weapon against hostile alien worlds. Along with local inhabitants, insects were regarded as evidence of “tropical decay, disease and death” in contrast to ideas of European order and sophistication (Sheller 2012, 199). Mastering nature, via clothing inventions, was thus an important way of asserting control in colonial contexts.

In this paper we explore a range of insect protection clothing: for activities such as soldiering, hunting and fishing; for people who are sedentary or sleeping; for women walking or sitting in a garden; for children and for labourers. As such, we draw attention not only to the many acts of wars and violence endemic to

colonial expansion but also to the ongoing everyday practices involved in the mundane maintenance and violent control of indigenous peoples, fauna and lands.

Overall, we seek to argue that attitudes towards insects, materialised in historic clothing patents, reveal alternate perspectives on “war and peace”. Power and privilege are axiomatic to patenting –who gets to patent, what gets patented and for whom. We argue that it is crucial not only to examine what is in the archive but also what is excluded and systematically erased. These inventions provide a way to engage with the colonial legacy of the patent archive as well as its “telling blanks and perversely willful holes” (Bryan-Wilson and Dunye 2013, 82). Our paper will involve talk, text and materials. We will demonstrate a collection of clothing inventions reconstructed from the archive and discuss interdisciplinary ways of engaging in and with patent research.

Jocelyn Bosse

Keep It Secret, Keep It Safe: On the Development of Secret Patents

One of the more popular justifications for the patent system is the patent bargain, whereby the temporary monopoly afforded by a patent is portrayed as an incentive for inventors to disclose their invention through publication of a specification. The disclosure theory conceptualises patents as a quid pro quo, premised on the compounding assumptions that without patents inventors would keep information secret, and that published patent specifications disclose useful technical information to the public (Ouellette 2012). Therefore, the “real enemies of public knowledge, we are told, are not patents but trade secrets” (Biagioli 2006). However, this justification for the patent system is weakened by the prevalence of secrecy orders, which prohibit the publication of a patent specification if disclosure of the invention may threaten national security. Indeed, as one British judge in 1948 remarked, “This is one of the most extraordinary contradictions in terms you can possibly imagine—a Secret patent” (quoted in O’Dell 1994; see also Turchetti 2013).

While secrecy orders have their origins as ad hoc executive powers that arose during wartime (O’Dell 1994; Epstein 2018), the mid-twentieth century saw the emergence of permanent invention secrecy regimes in the United States of America (USA), United Kingdom (UK), and the Union of Soviet Socialist Republics (Soviet Union), which continued to operate long after the conclusion of the Second World War. The paper undertakes a comparative study of the patent secrecy laws in the USA, UK, and Soviet Union. It explores why the Soviet Union was the first jurisdiction to establish a permanent mechanism for imposing secrecy orders over both patents and авторское свидетельство (inventors’ certificates). The paper compares the institutional structures that governed Soviet invention secrecy (Martens 2010) with those in the USA and UK, which emerged after the Second World War and were especially motivated by the development of the atomic bomb (Wellerstein 2021; Gordin 2009; Turchetti 2003). This comparative approach is necessitated by the subject matter itself: a key purpose of secret orders is to control the exchange of information and technologies across borders, hence the paper demonstrates how these measures were shaped by the allegiances and hostilities of the time, as well as highlighting the instances where these secrecy orders failed to achieve their objectives (Balmer 2012; Williams 1987).

In tracing the history of permanent invention secrecy regimes, the paper shows that it is unhelpful to frame secret patents as an oxymoron, whose existence is antithetical to the disclosure theory. Rather, the paper argues that invention secrecy regimes are indicative of the general role of patents in controlling the circulation of scientific and technical information (Nelkin 1982; Vogel 2017) and provide useful insights into the relationship between patents and the nation-state (Ghosh 2004).

Andrew Ventimiglia

Figures of Mind: Spiritual Innovation and Military Influence in the Patenting of Neurofeedback Devices

Nielsen Company – the world’s premier audience research and ratings corporation – has recently become the industry leader in neurotechnology. In the last few years it has amassed a patent portfolio that includes a range of devices designed to monitor and interface with the brain for a variety of applications. Nielsen’s IP investment strategy positions itself as a leader in the emerging field of consumer neuroscience: the study (and manipulation) of non-conscious consumer behavior through a variety of tools including electroencephalographs, biometrics, facial coding, and eye tracking. In a contemporary media ecosystem

that is singularly driven by audience data and metrics, Nielsen has shifted focus from the analysis of conscious decision-making to this new frontier of non-conscious data, neurometrics, and psychometrics.

Patented neurofeedback devices and methods promise a radical revisioning of the human brain, particularly in relation to its fundamental plasticity as understood within the world of consumer research. This process is evident in the patent applications themselves, populated as they are with crosshatched figures of the brain, images of individuals harnessed to baroque measuring devices, diagrams proving the ‘inventive step’ in the transformations of brain waves effected by new technologies. This reconfiguration of mind did not appear solely with the development of contemporary consumer neuroscience. Rather, its emergence can be located in the unique confluence of military and spiritual/experimental efforts that spawned the emergence of biofeedback and neurofeedback technologies in the middle of the 20th century. Biofeedback and neurofeedback technologies were developed through an unexpected alliance between spiritual practitioners of self-improvement, transpersonal psychology, and parapsychological investigation on one hand and military agencies and institutions on the other. Both spiritual innovators and military personnel shared a unique interest in both expanding human capacity through the cultivation of mental powers as well as a concern with the possible subconscious manipulation of individuals from afar, theories of animal magnetism reemerging in the crucible of intractable and existential Cold War conflict.

For the PASSIM workshop, I hope to present an introductory paper in which I develop the framework for this book-length project based on funded historical research at key sites for the development of neurofeedback, including archival materials on the Stanford Research Institute at Stanford University and the Parapsychology Collection at UC-Santa Barbara. In turn, this project contributes to PASSIM’s goals by focusing on patent applications not only as documents tracking technological innovation but also as an important site for understanding historical conceptualizations of selfhood, human agency, and mind. Further, this work is relevant to the ‘Patents in the Service of War and Peace’ call because it focuses on an unexpected entanglement between military and spiritual actors who found temporary alignment as they sought to understand the limits and possibilities of the human mind. More broadly, the project contributes to several intersecting fields of inquiry including the interdisciplinary study of innovation; media studies research into audiences, data science, and analytics; the study of American religion; and finally the intersection of law, science, and technology as it relates to underexplored history of neurofeedback patents.

Christoph Rodrigo de la Torre

Patenting Atomic Vision

The atomic bomb is an invention that many wish had never seen the light of day. But after the unthinkable had been thought and built, the unimaginable also had to be imaged. Existing photographic technology, however, was neither able to capture the critical moments of the detonations nor to withstand the excessive forces of heat, pressure, light and radiation released during the event. A team of MIT engineers around Harold E. Edgerton begun developing and patenting a new, powerful flash-producing device in the 1930s that allowed images to be made at the speed of microseconds. Their stroboscope became crucial to the military documentation efforts and operations at the nuclear test sites. This paper demonstrates how the photoelectric patents of Edgerton, Germeshausen and Grier (incorporated as EG&G in 1947) made possible a new kind of vision to picture the hitherto unseen. In doing so, patents will be considered as distinctly legal artifacts of modern visual culture that shape not only how images are produced through the technology they describe but also how they visualize the technology itself.

The connection between EG&G’s photographic patents and nuclear testing runs, as Ned O’Gorman and Kevin Hamilton have pointed out, deep: Stroboscopic flashing circuits used to photographically halt bullets in flight also provided the precision for “timing, firing, and exposing” nuclear explosions, merging both “into a single synchronous machine.” This paper seeks to interrogate the role of patents in “deep media” by contextualizing the engineering of vision with the developments in patent law and practice during the first half of the 20th century.

After the use of patent models had been abandoned, line drawings in the forms of circuit diagrams and isometric perspectives became the standard way of visualizing inventions in patent applications. As a result, the inventions for picturing a falling droplet of milk were “reduced to practice” in the same way as picturing the drop of a nuclear warhead. The *raison d’être* of the United States Patent and Trademark Office (USPTO) mandates the disclosure of patents by way of reproduction and dissemination. Inventions had to be visualized in a way that most efficiently served the process and technology used to copy patents. To that

end, the distinct visual genre of patent drawings became governed by the Code of Federal Regulations (CFR) – suggesting a legislative relationship between word and image that is yet to be examined.

EG&G's photos of nuclear blast spheres might be paradoxical icons of the promise of peace by the invention of annihilation or, as James Elkins wrote, "nearly unbearable, insistently present, and perfectly resistant to the pressure of meaning." But the patents for their photographic technology that challenge and expand the parameters of the very notion of images and image-making, warrant a closer look.

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PRACTICAL INFORMATION

Arrival and departure. All workshop participants are staying at Elite Grand Hotel, <https://goo.gl/maps/xp2FNJSS2medVU5b8>
<https://www.elite.se/en/hotels/norrkoping/grand-hotel/>.

The hotel is just a five-minute walk from the train station and a further five-to-seven-minute walk from the workshop venue. On the day of departure, 18 May, the PASSIM team will have a project meeting between 10-12, which ends with lunch. Those remaining in Norrköping are welcome to join us for lunch, just let us know when you arrive.

Workshop venue: Louis de Geer, Dalsgatan 15, Norrköping. <https://louisdegeer.se/>

For the introduction and reception on the mornings of 11 and 16 May, a PASSIMer will meet you in the lobby of the Elite Grand Hotel 30 minutes before the beginning of the day's first event and walk with you up to the venue. Everything during the workshop will be within walking distance. All lunches are served at the workshop venue. <https://g.page/louisdegeernkpg?share>

Dinner locations: Tullhuset Sea Club: <https://goo.gl/maps/r7xvu6L69QH7Uwo99>

Urbane Goat: <https://goo.gl/maps/X7DpZzBfhWLwSLiSA> Tema Q Department: <https://goo.gl/maps/qBGWhLewsTFG1cNx7> If you have yet to inform us of allergies or special requests in regards to food, please inform Mattis as soon as possible.

Staying over the weekend?

PASSIM covers the hotel cost over the weekend if you are attending both workshops. All other expenses for non-scheduled days are for the participants to cover on their own. For suggestions on weekend activities see the distributed guide from the Norrköping tourist office or links to museums in Norrköping below. Stockholm is roughly 1,5 hours away by train. Tickets are usually available for around 20-30 euros. Book at <https://www.sj.se/en/home.html#/>

Norrköping Museum of Work: <https://www.arbetetsmuseum.se/about-the-museum/>

Norrköping Museum of Art: <https://www.norrkopingskonstmuseum.se/in-english/>

Visualiserings Center C, Science exhibits <https://visualiseringscenter.se/en>

If you have any questions about activities, pubs or restaurants, all members of PASSIM are happy to help!

If there is an emergency of any kind, call Mattis (+ 46 705 533 942) or Eva (+ 46 700 896050).

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