STS Center, European University at St Petersburg

Garages, Kitchens, and Hackerspaces: Spaces and Narratives of the New Innovation

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Informal and often communal spaces of innovation like garages, kitchens and hackerspaces have recently eclipsed both the university and corporate laboratory in the eyes of a growing number of scholars and commentators, possibly pointing to important changes in the very notion of innovation and its practices. They have also provided a corrective to a tendency to see innovation as migrating completely into cyberinfrastructure, leaving everything but keyboards behind.

This new focus on garages, kitchens, and hackerspaces has also been accompanied by new narratives about the production of technology and the changing notion of entrepreneurship. These trends are not completely without precedent -- ham radio builders and operators and other amateurs have always played a role in engineering and the physical sciences. What we see today, however, is the spread of these modes or innovation to a much wider range of fields and disciplines, and to the emergence of new figures of the practitioner that cannot be captured by the role of the traditional bricoleur. What we also see, in some cases, is a shift from an exclusive concern with new modes of production (as in the case of more traditional user innovation that relied on "activated consumers") to new constructions of the producer itself (as in the case of the "recursive publics" instantiated by hackers, DIY biology, and other emergent and often temporary configurations).

In this conference, we want to bring together scholars who have studied some of the new spaces of innovation as well as the narratives that have been developed about them by both practitioners and commentators. We also want to move back and forth between the worlds of hackers and activists and those of Silicon Valley entrepreneurs, looking at the different roles that new informal spaces of innovation play (or are represented to play) in these different economies and cultures.

The conference is organized by the STS Center at the European University at St Petersburg and sponsored by a Megagrant from the Russian Ministry of Education for a study of Russian Computer Scientists, Hackers, and their Diasporas.

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Lilly Irani (Department of Communication, UC San Diego)
Denisa Kera (Department of Communications and New Media, National University of Singapore)
Vincent Lepinay (Department of Sociology (Sciences Po, Paris) and STS Center (EUSP))
Silvia Lindtner (The School of Information, University of Michigan)
Josef Nguyen (Department of English, UC Davis)
Sophia Roosth (Department of the History of Science, Harvard University)
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TITLES & ABSTRACTS (in alphabetical order):

Mario Biagioli (UC Davis & EUSP)
Celebrating Garages, Mythifying Silicon Valley
Garages are ubiquitous in the more popular literature about innovation, especially American, of the Silicon Valley variety. Centrally featured in a recent television advertisement for Cadillac cars, innovation garages are also being quickly memorialized: the Palo Alto backyard shack where William Hewlett and David Packard started their company is now listed on the US National Register of Historic Places as "the birthplace of Silicon Valley", while the garage of Steve Jobs' parents house (where he and Steve Wozniak built the first batch of Apple I computers) has been recently designated as a "historical site" by the city of Los Altos. According to the next door neighbor, the Hewlett Packard garage gets about 50,000 gazers a year (onlookers and photographers only because no actual visits are allowed). Some come in small groups, but others with organized tours buses -- mostly Chinese, apparently. Also inaccessible (Jobs' mother still lives in the house), the "Apple garage" attracts a steady stream of drive-by-photographers, to the substantial annoyance of the neighbors. My first goal is to understand the features of the garage as a space of innovation and knowledge-making, and to assess whether the analogy that is often drawn between the garage and the laboratory is an appropriate one. The second goal is an analysis of the garage as a rhetorical figure in contemporary

discourse of innovation – especially information-based innovation of the Silicon Valley kind. Engaging with, but not stopping at, the discourse of "garage innovation", I want to look at the function of the museification and memorialization of the garage (specifically those of Hewlett-Packard and Steve Jobs) to understand what "place of memory" the Silicon Valley garage has become, and how that helps mythify a certain kind of innovation.

Alessandro Delfanti (UC Davis)
Citizen biology: from kitchens to institutions
Despite recurrent rhetorics that depict citizen and do-it-yourself biology as a phenomenon that happens outside or even against institutions, the everyday reality of biohacking is often closely linked to existing institutions in which biology is performed, negotiated, and regulated. This interaction between citizen biology and academic, governmental and corporate institutions signals a process of ongoing co-evolution. Indeed, scientific institutions appear to have a growing interest in funding and directing do-it-yourself practices. Here I propose a series of spatial metaphors to help position citizen biology in relation to institutions: is it ahead, behind, inside, or outside institutions? Where is it directed? Citizen biology's genealogies, as well as its evolving trajectory with respect to academia, the market and the state, might help understand broader transformations of the role of innovation in contemporary societies.

Lilly Irani (UC San Diego)
Hackathons: Doing Politics in Entrepreneurial Time
Today, the halls of TED and Davos reverberate with optimism that hacking, brainstorming, and crowdsourcing can transform citizenship, poverty alleviation, and education alike. This paper examines these claims ethnographically through the case of a hackathon in Delhi, India with an eye towards the kinds of social orders these practices produce. The cultural politics of hacking play out not only in the technologies hacking produces, but the models of politics these production practices rehearse and celebrate as vehicles for social change. First, we might ask what kinds of social change and political work are amenable to quick bursts of technical hacking. Second, we might ask where and how quick bursts of work become favored modes of mobilization. Third, we might ask what kinds of political subjects are valorized in these practices. This approach turns attention from the technologies coming out of this site of production to the forms of social life and individual agency produced and valorized through the production.

Denisa Kera (National University of Singapore)
Hackerspaces : Embodying Leibniz's Academy of Games and Pleasures, Prototyping Drebbel's Living Instruments, Reviving the Folly of Empiricism, and Mocking Plato's Republic
Based on the photo documentation of hackerspaces I visited between 2009 - 2014

around the world I will discuss the various metaphors I borrowed from the history of science to describe these grassroots, alternative, often open and mobile R&D labs. From discussing examples of novel, more pragmatic forms of interaction between science, technology and the public, to policy oriented discussions of open science and development issues and present concerns with geopolitics and science diplomacy, my methodology evolved into a form of para-ethnography with prototypes and philosophical enquiry into the figure of demiurgos (or rather demiurgoi) , which embody the contempt of tinkering and making through the history of philosophy. My original insight (2009 - 2011) emphasized how the community organized and financed science and technology labs revive the original ideas about the interaction between science, technology and the public envisioned by G. W. Leibniz in his famous "Odd Thought Concerning a New Sort of Exhibition (or rather, an Academy of Sciences; September, 1675)". Leibniz ceases to discuss the advancement of sciences and technology in terms of metaphysical and philosophical issues of truth, limits of human mind and reality, and defines science and technology by their ability to generate new ecologies of interest and influence, new institutions, networks and relations between different actors. Science, technology, business, art, entertainment, tourism, and simply everything that can raise human curiosity and wonder connect and transform the society in often playful and unexpected ways. The various functions of the hackerspaces, from popularization and presentation to investment in innovation or more creative and experimental projects, perform the ability of science and technology to bring together new actors and create heterogeneous (cosmopolitical) networks. In the second phase (2011 - 2012), I started following more closely the international networks surrounding the hackerspaces, especially the North - South dynamic around open science in the hackerspaces, which especially in Indonesia incorporate indigenous knowledge and crafts. The pre-modern and pre-colonial concepts of science refuse the idea of development and progress, which is still modeled after Francis Bacon's instauratio, and emphasize the importance of tinkering as a practice, which back in the 16.century as well as today enables original engagements between politics and science over prototypes. The prototypes are never just useful tools resolving a particular problem or serving pre-defined goals, but they are what the historian science, Vera Keller, identified as "living instruments" expressing scientific as much as cosmological, political and social ideals and insights, or what Giorgio Agamben calls "paradigms". After 2012, I start following more closely the emergent makers culture and open hardware movement, the material bases of the prototypes, which brought me to Shenzhen, China, and present interests into circuits, minerals and artistic PCBs, which I views as manifests reclaiming the power of demiurgoi over Plato's Republic. I am interested in Polanyi's "community of explorers", but also Woolgar's more recent notion of "ontological disobedience", and whether making, tinkering and hacking could be defined as a form of ontological and political disobedience, a commitment "to be constantly unsettling, challenging, destabilizing but with no specific end in mind" (Woolgar), which leads to a form of experimental policy around prototypes, where deliberation and iteration can happen simultaneously.

Silvia Lindtner (University of Michigan)

Hacking with Chinese Characteristics. The Making of a Powerful Vision of Change

In a 2013 State of the Union address president Barack Obama lauded open-source 3D printing as "carrying the potential to revolutionize the way we make almost everything" and to help guarantee "that the next revolution in manufacturing is made in America." A year later, in June 2014, the White House hosted its first Maker Faire, with the hopes to "inspire a new wave of innovation, generating new jobs and new industries to help rebuild America's economy." The US president, here, speaks to a growing interest in the potential impact of the so-called maker movement on technological innovation as well as social and economic development. Around the globe, governments, venture capitalists, and corporates are investing in the open hardware creations of makers including but not limited to wearable technologies, robotics, smart home devices and biotech. This mode of open and collaborative technology production is celebrated simultaneously as a return to the "made in America" brand, driving forward what the Atlantic's Charles Fishman has called "the insourcing boom"[3], and as the rejuvenation of "made in China" away from its image of low-cost manufacturing towards the future hub of innovation.
It is China, however, that has come to play an increasingly central role in the implementation of the promises of the maker movement. In particular, the Southern region of China, around the manufacturing hub of Shenzhen, has witnessed over the last 5 years a dramatic rejuvenation. Drawing from ethnographic research in Shenzhen and other parts of China since 2010, I will explore in this paper how China's makers are refitting the ideal of hacking as tool for individual empowerment and liberation, simultaneously challenging and adopting Western stories of what counts as hacking and innovation. I will provide a critical analysis of the hype that surrounds the vision of a maker movement as harbinger of the next industrial revolution, its pitfalls as well as opportunities. I will be examining in particular how China came to figure in people's imaginary as a new innovation hub, where small- and large-scale entities such as bottom-up hackerspaces, hardware start-ups, tech giants like Intel and Foxconn forge new relationships in their quest for a future of making. Through an analysis of the birth and proliferation of China's maker scene, its intersections with the global maker movement as well as with manufacturing and industry development in the Southern part of China, I develop an analytical framework that goes beyond common theorizations of making and hacking as either a site of resistance/counterculture or as a-political. I argue that contemporary maker culture is better understood as a collective force of conservative radicals, who build institutions, businesses and technological innovation in parallel (rather than in opposition) to existing structures of research and development such as university research labs, corporations, and funding agencies

Josef Nguyen (UC Davis)

MAKE Magazine and the Reproduction of DIY Science Workshops

My analysis of MAKE magazine focuses on its imagined program of open and democratized science as it intersects neoliberal politics. I show how the discourse constructs a future of makers who perform science in millions and millions of garages, kitchens, backyards, and other spaces converted into amateur science workshops. Because these space are performing scientific work without the same legal and governmental standardization and oversight as is expected of academic and industrial laboratories, concerns around competency, risk, and safety at various scales arise throughout the magazine. Since the magazine seeks to transform private domestic spaces into DIY workshops, analysis of MAKE renders visible tensions between the reproduction of the laboratory and the reproduction of the domestic, social reproduction through what I call the workshop-function. If conventional laboratory spaces reproduce themselves and the scientists that operate them through the material production that Hans-Jorg Rheinberger calls the laboratory-function, then the workshop-function accounts for the creation of and reproduction of amateur, DIY, hacker, and maker scientists and their workshop spaces. To explore MAKE's workshop-function, I focus on the magazine's content as standardized instructions for makers to undertake acts of making safely at home and thereby seeking to enable participation in scientific work with self-governance of risk by producing makers as a corresponding kind of scientific subject. MAKE's workshop-function, then, render visible how the laboratory reproduction enabled by the laboratory-function entangles with domestic social reproduction, since the workshop-function demands that the reproduction of the workshop, the domestic laboratory, is essential to domestic social reproduction.

Sophia Roosth (Harvard University)

Life Makes Itself at Home: The Rise of Biohacking as Political Action

Ten years ago, émigrés from mechanical and electrical engineering and computer science resolved that if the aim of biology were to understand how life works, then making life would yield better theories than would experimentation. These synthetic biologists advocate not experiment but manufacture, not reduction but construction, not analysis but synthesis. In this paper, I examine “DIYbio,” a congruent movement that arose in Cambridge, Massachusetts in 2008. This collective of biohackers chooses to conduct bioengineering in non-academic locales; they capitalize on synthetic biology, orienting themselves both within synthetic biology and simultaneously opposed to it. Based on ethnographic research, I observe how amateurs and hobbyists try to engineer living systems, using the same genetic parts developed by synthetic biologists to manufacture functional biological systems in kitchens, garages, and community hobby workshops. I arrive at the conclusion that, in occupying ambiguous territory between experimentation and manufacture, synthetic biology has allowed bioengineering to leave the laboratory. Today dilettantes dabble in synthetic biology in order to argue against the large-scale, deskilled, and highly proprietary status of industrial synthetic biology (and “Big Biology” and biotechnology more broadly). Doing biological work at home, these biohackers subvert and critique this state of affairs, arguing that bioengineering may be a domestic enterprise.

Steven Shapin (Harvard University)

Breakfast at Buck's: Informality, Intimacy, and Innovation in Silicon Valley

Silicon Valley technoscientific innovation typically involves a coming-together of entrepreneurs (with an idea) and venture capitalists (with private capital to turn the idea into a commercial reality). Some of these comings-together are face-to-face, and I draw attention to a well-publicized type of meeting that tends to occur early in the relationships between VCs and entrepreneurs. These are a large number of breakfast meetings that have happened over the past twenty-five years or so at a modest restaurant called Buck's in Woodside, California. I talk about why it's this restaurant, what it is about Buck's that draws these people, what happens at these meals, and why it's breakfast (as opposed to other sorts of meal). Finally, I discuss historical changes in the patterns of daily meals and accompanying changes in the modes of interaction that happen at meal-times. Considering Buck's breakfasts may be a small thing, but it's a way of understanding the quotidian processes of Silicon Valley innovation.

Alexandra Simonova (EUSP)

Why Are Hackerspaces Good for Business?

This paper looks at the emergence of collaborative business ecologies in hackerspaces -- sites that are rarely associated with business mentality. Hackerspaces are typically seen as stemming from the free software and open-source movements and the hacker ethics they embodied. These spaces have enabled new models of not-for-profit collaborations among programmers, while also fostering the mythology of the "garage" as the birthplace of many hi-tech companies that allegedly became so successful precisely because they were driven by a desire to "change the world" rather than maximize their revenues. I argue, however, that the connection between hackerspaces and businesses may be more direct, at least in some cases. Even though the development of hackerspaces is rarely driven by profit-making and market values, they have ended up providing hackers with an ecology of innovation that promotes their business – a process I describe based on fieldwork in a non-commercial hackerspace in Moscow.

Johan Soderberg (University of Gothenburg and IFRIS (Paris))

Novelty Against the Law: The Role of Innovation in Circumventing Sovereignty

By way of a comparison between two subcultures/communities that both assert their autonomy vis-à-vis the State through a 'flight into the future', hackers and psychonauts, the former innovating around intellectual property law, the latter around controlled substance acts, a reflection is made on the limitations of instituted, sovereign power. The entire face of the earth having been mapped out and divided up between instituted powers, the last remaining no-mans-land is the ever-evasive near future. Providing a hideout for occasional "social bandits", the legal grey zone is concurrently being turned into an incubator for corporate

innovation, placed right at the centre of the innovation driven, high-tech economy, and much lauded by EU policy makers. In management discourse, the intimate relation between innovation and illegality is suggested by the much talk about "Shenzhen innovation". Here "Shenzen" does not designate just an industrial region in China, but the historical state of being outside-the-law, constitutive of its innovativeness. As filesharing and hacking provides numerous examples of, the "open" innovation model is fine-tuned as a model for procuring innovation from users, out of which some may even be hostile to the corporations, and find themselves on the "wrong" side of law. Their illegal status does not gainsay that corporations can make a profit from them, on the contrary, illegality lays down the base-line for negotiating the labour conditions of pirates. Labouring in the legal greyzone, subject to the punitive side of law but not to its protective, consumer-regulative clauses, hackers and psychonauts are pioneering new forms of citizenship in the Schumpeterian-Shenzen innovation state.

Gleb Suvorov (Teplitza for Social Technologies)
Anti-cafes, Co-workings, and Hackspaces in Russia: Audiences, Activities, and Interests
ABSTRACT TO FOLLOW

Zinaida Vasilyeva (EUSP)
NTTM: A State-Sponsored "Garage"
In the discourse on innovation, "the garage" is usually described as an informal place where technological innovations and successful businesses are born. Thus, it refers to both a concrete physical space and social context favorable for the entrepreneurial activity. In my presentation, I use the notion "garage" rather in the second sense. More specifically, I understand "the garage" as a specific social context (social place) empowering for transformation and enabling an idea to be transformed into a business. Exploring the genealogy of contemporary Russian capitalism, one can find a set of successful "garages" established in the late USSR within the planned economy. An interesting example of such a "garage" is the NTTM movement - the movement for the youth technical creativity - a state-sponsored program designed to promote scientific and technical creativity of the youth. Due to the tax-heaven policy offered to "young innovators in science and technology", the NTTM institutional framework paradoxically provided a safe and legal shortcut to business activities within the Soviet planned economy and even under the auspices of the official ideology and popular socialist morality. Unintentionally, the NTTM was a kind of "state-sponsored garage", a space of entrepreneurial experimentation and place of birth of a new Soviet personage - a "Soviet entrepreneur".