Prototyping cultures: social experimentation, do-it-yourself science and beta-knowledge

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Prototypes have acquired certain prominence and visibility in recent times. Software development is perhaps *the* case in point, where the release of non-stable versions of programmes has become commonplace, as is famously the case in free and open source software. Developers are here known for releasing beta or work-in-progress versions of their programmes, as an invitation or call for others to contribute their own developments and closures. An important feature of prototyping in this case is the incorporation of *failure* as a legitimate and very often empirical realisation.

Prototyping has also become an important currency of explanation and description in art-technology contexts, where the emphasis is on the productive and processual aspects of experimentation. Medialabs, hacklabs, community and social art collectives, dorkbots, open collaborative websites or design thinking workshops are further spaces and sites where prototyping and experimentation have taken hold as both modes of knowledge-production and cultural and sociological styles of exchange and interaction. Common to many such endeavours are: user-centred innovation, where users are incorporated into the artefact's industrial design process; ICT mediated forms of collaboration (email distribution lists, wikispaces, peer-to-peer digital channels), or; decentralised organisational structures. Some economists favour the term 'open innovation' to describe an emerging production paradigm. From a historical and sociological angle, however, the backdrop of such cultures of prototyping is not infrequently connected, if in complex and not always obvious ways, with the do-it-yourself, environmental and recycling movements of the 1980s and 90s. Prototyping, then, as both a means and an end of social re-production.

Experimentation has also been at the centre of recent reassessments of the organisation of laboratory, expert and more generally epistemic cultures in the construction of science. An interesting development is the shift in emphasis from the experimental as a knowledge-site to the experimental as a social process: for example, in open access publishing, or more generally in open collaborative knowledge exchanges, where sociality and social exchange often become the limit-tests of experimentation itself. These are only a few examples of what we mean by prototyping cultures. Our workshop invites participants to consider their own work in light of some of these developments and tensions.

[List of speakers]

Georgina Born, *Professor of Music and Anthropology,* Oxford University.

Nerea Calvillo, *Architect*, CMASA Arquitectos.

Alberto Corsín Jiménez, *Investigador Científico*, CCHS, CSIC.

Hernani Dias, *Re:farm the city.*

Adolfo Estalella, *Postdoctoral Fellow*, CCHS, CSIC.

Michael Guggenheim, *Research Fellow*, University of Zurich / Goldsmiths College.

Chris Kelty, *Associate Professor*, Center for Society and Genetics, University of California, LA.

James Leach, *Senior Lecturer*, Department of Anthropology, Aberdeen University.

Javier Lezaún, James Martin Lecturer in Science and Technology Governance, Said Business School, Oxford University.

George Marcus, Chancellor's Professor of Anthropology, University of California, Irvine.

Alain Pottage, *Reader in Property Law*, London School of Economics and Political Science.

Lucy Suchman, *Professor*, Anthropology of Science and Technology, Lancaster University.

Fred Turner, *Associate Professor*, Department of Communication, Stanford University

Alex Wilkie, *Lecturer in Design and Research Fellow*, Interaction Research Studio, Goldsmiths College.

Conference abstracts

The End of Innovation (As We Knew It)

Lucy Suchman
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With thanks to J.K. Gibson-Graham (*The End of Capitalism (As we knew it)* 1996), this paper explores the question of what new possibilities might be opened through some undoing of prevailing discourses of innovation and 'the new'. So there are some contradictions built into the project from the start. That is, on one had I want to engage with questions of how things could be otherwise, of alternative directions, transformations. But a central thing that I am interested in transforming is, you might say, change itself – at least change as it is figured in contemporary discourses of management, design, innovation and the like. Drawing on experiences gained in a particular site of research and development, I offer some critical reflections on the prototype as a medium of transformative change. The aim is to respecify innovation as a strategic category, and as a gloss for more deeply ambivalent and contested forms of future making.

A Countercultural Prototype for Cold War Social Engineering: Revisiting the Pepsi Pavilion

Fred Turner
Department of Communication
Stanford University

To date, many historians have accepted the notion that the American counterculture stood in complete opposition to the values of mainstream, cold-war America. This presentation challenges that view. It returns to Osaka, Japan, and Expo '70 in order to revisit the Pepsi Pavilion – an immersive computational and artistic environment – and explores the ways it brought together military planners, corporate executives, hippie artists and Bell Labs engineers. By doing so, the talk shows how the process of prototyping can serve multiple cultures simultaneously. It reveals that within the Pavilion, the ideals and technologies of the cold war military-industrial research world served as resources for countercultural artists. Those artists in turn gave form and legitimacy to a new mode of American political power. The talk concludes by arguing that the Pepsi Pavilion became a three-dimensional prototype of the sort of world that the cold war American state – *and* large portions of the counterculture – hoped to bring into being.

Infra(proto)types

Nerea Calvillo
CMASA Arquiectos

?In the air? is a collaborative research project focused on visualizing, understanding and contextualizing some components of the air, such as gases or particles. It is a work in process which has been developed through different stages and teams, producing a variety of digital and physical devices. By identifying it´s different levels of ?prototype-ness? , some aspects referred to prototypes related to success, time and performance will be questioned.

The objective is to amplify the concept´s transformative potential, shifting from the necessity of having a superior goal to be achieved (or ?final product?) to having an entity and power on itself that facilitates other things to happen. Could they then become infrastructural? What would be an infra(proto)type?

Re:farm the city. Connecting food to people

Hernani Dias

Re_farm the city

refarmthecity.org is a project with the aim to provide people with tools to easily create, manage and visualize there urban farms, bringing back the rhythms of nature, her diversity, richness and complexity to citizens. By creating social networks, software and hardware we want to promote the production and consumption of products produced locally, techniques and methods that respect the environment, science, biology, maths, biodiversity, the local cuisine recipes and retrieving the forgotten rural wisdom to the contemporary city. We want a more balanced society, educated, richer, healthier and ultimately more sustainable. re:farm the city has developed various remote controlled urban farms prototypes in institutions of artistic, media and science production in different locations on the planet. medialab_prado - madrid, hangar.org – bracelona, wannas foundation -knislinge, intermediae – madrid, straddle3 – barcelona, architecture university of donostia – donostia, el forn de la calç – calders, cceba - buenos aires, mal aupixel – paris, eyebeam.org – new york, andes sprout society – andes, new york city resistor – brooklyn, farm city – brooklyn and llull – Barcelona.

Prototyping and the prospects of obesity

Alex Wilkie

Interaction Research Studio

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The view that the 'user' is constructed, configured or scripted, as a sociotechnical assemblage can be read as a key insight of STS accounts of the design of technological prototypes, most notably computer and information systems. Moving away from such instrumental and singular accounts of users, in this paper I explore the figuring of multiple 'users' as part of the development of a mobile health technology. Drawing on a six-month ethnographic study of designers working for a multinational ICT manufacturer who deploy the principles and practices of user-centered design (UCD), I discuss how multiple users resource the design and development of a mobile phone based daily exercise prototype (DEP) to promote everyday health and fitness routines and thereby address the international threat of obesity. Analytically I treat the health prototype as a changing arrangement of users, technologies and discourses that variously served to resource the design team, individual designers as well as management. To better grasp the relations between the prototype and its users I divide my analysis into two broad temporal categories. Here, I make the distinction between distal-users and proximal-users to differentiate between users that operate in the present but serve to occupy different temporal moments in relation to the prototype. I define distal-users as prospective figures deployed in the present in order to envision particular future health-related populations. I describe how the designers deployed an inventive risk discourse with which to figure distal-users in the form of statistically predicted health publics. Proximal-users, on the other hand, count as users who directly participated in the making of the prototype in the present. The term proximal users includes the representatives of end-users that the designers enrolled to construct and evaluate the prototype as well as the designers themselves, where the prototype served to mediate their professional interests and agendas. In conclusion, I argue that the practice of prototyping in user-centered and participatory design practices can be understood as a formal and material method for managing multiple futures in the present.

Ethnography Of and As Prototyping Culture

George Marcus
University of California (Irvine)

Ethnography, as conventionally understood, could be appreciated as a means for providing sympathetic understandings of and critical insights into prototyping cultures that seem to characterize mainly engineering, design, and art projects/disciplines. But ethnography itself as a form of inquiry, at least in its anthropological tradition for which it is central, is undergoing transitions for which practitioners do not have terms or an articulation. The Center for Ethnography at the University of California, Irvine (www.socsci.uci.edu/~ethnog/) has been trying to come to such terms since its founding in 2004. As a process, ethnography seems to have become much like what has been described for our conference as a prototyping culture. In my presentation, I want to overlay key issues that have been raised for prototyping cultures(e.g., their viability as a space for promoting and sustaining the production of non-stable forms of ideas) onto certain predicaments and ambitions that characterize contemporary ethnography, and to see how this operation affects the virtues, authority, and viability of this venerable, and technologically simple hand-eye-ear and enclosed (as in the solitude of the "fieldnote") craft of thinking.

Music, art, prototype?

Georgina Born
Oxford University

Under the term 'prototype' in the statements presaging this conference several properties are rolled together: a stress on experimentation as a social process; on instability and the negotiation of openness and closure; on non-expert participation in production; on improvisation and remixing; and on novel forms of social organisation and of propertisation. In this light my paper has two related aims. First, with reference to three forms of music and art - modernist computer music from the 1980s and 1990s, art-science collaborations and digital popular musics from the present - and drawing on ethnographic research and scholarship from art and music history, I explore the variable concern with and consciousness of prototypicality. All three forms exist in an interdisciplinary space between the arts, sciences and technology; but they differ markedly in their orientation both to interdisciplinarity, and in particular to what Barry, Born and Weszkalnys have called the logic of ontology, and to prototypicality. To understand each of the three forms is necessarily to engage with the specific genealogy of those practices, and with the ontology manifest in them. Second, with reference to this ethnographic material, I express scepticism about the prototype as an encompassing term, and disassemble what has been rolled together in discussion of the term.

Prototyping as legal techne. A historical case study

Alain Pottage
London School of Economics and Political Science

Intellectual property law is a discursive machine for prototyping. A work or invention is characterized in terms of its role as a prototype for the making of successive additions to a legal-industrial phylum. This characterization is far from straightforward. It involves the second-order observation of diverse prototyping cultures, which, since the mid to late 18th century, have generated the phenomenological horizons and semantic resources for intellectual property law's mode of prototyping. It is interesting to consider the engagements between law's sense of prototyping and the cultures into which law's sense of the prototype are, in turn, taken up. In this paper I explore these engagements by way of a study of the legal theory of reduction to practice – the theory of when an invention has reached the point at which it can be taken as a prototype for the making of further instantiations of an invention. This is a crucial point at which legal prototyping engages with technical and scientific practices and

representations of prototyping. Classically, what is in question is the role of drawings, models, communications and demonstrations in turning the process of 'conception' into an artifact with the futurity of a prototype. What emerges from this study is the sense that patent law is better understood not in terms of its product (the invention as prototype) but in terms of the ongoing process of prototyping. And this in turn informs our understanding of how the forms of intellectual property law might engage with new modes of collaborative or recursive design and production.

Prototypes of Engagement: Trust, Transaction, and Digital Partnership

James Leach[1] **& Wendy Seltzer**[2]
[1] Anthropology (University of Aberdeen)
[2]Princeton Center for Information Technology Policy

The traditional legal device to encourage creativity is intellectual property, but propertization can devalue knowledge by taking it out of context. Copyright or patent are blunt instruments of exclusion, while many sharing practice and understanding would prefer entanglement. An ethnographic study of prototype 'choreographic objects' provides an example of value dependent on negotiating and maintaining trust relationships between artists and audience. This value, located between public and private, gift and commodity, differs from the scarcity-value lost when fans fileshare and copy music, yet it too has boundaries and limits. Exploring trust and transaction on-line and off-, we see a variety of arrangements for creating and sharing value that can be supported by law but not defined by it.

While intellectual property has shown us the power of law in structuring our relation to 'knowledge', we also see that 'property' is not the appropriate framework for all knowledge relations, particularly transacting across cultures. In response, we prototype a new legal framework for supporting collaboration and exchange: the cross-cultural partnership template. The template offers a legal form designed to help potential collaborators to reach understanding and agreement on the terms of their collaboration. We propose the partnership as membrane for social interaction, using legal elements to focus the parties on what expectations could be defined, at the boundary, to enable engagement.

From Prototyping to Allotyping: The Invention of Change of Use and the Crisis of Building Types

Michael Guggenheim
University of Zürich/Goldsmiths

In my talk I am going to analyse the invention and the form of the discourse on building conversion as one particular instance of redefining what a technology is and how it operates. I describe a shift from expert defined closure to lay-based openness and tinkering as a shift from prototyping to allotyping: Since the early nineteen seventies change of use and building conversion have become a central and fashionable discourse among architects and architectural theorists. Before the nineteen seventies buildings were understood as technologies, as "society made durable". The notion of building type was central to link a building to a given use. A bank was a bank, because architects applied existing templates, prototypes, to turn a building into a bank. In the 1970ies, suddenly buildings became – discursively, since building conversion always existed – quasi-technologies, or "buildings made flexible through society": "Building type" no longer was a meaningful link between a building and its use. A bank should not stay a bank, but become a hotel, a theatre, or a flat, in short: an allotype. The definition of a building shifted on the level of both the actors and time: it switched from the architect and his ideas before the building was built to the user and her ideas after the building was built. The user was no more a thing to be measured or a model on which a building should be fitted, but a creative actor who *defines* the building. But, at the same time, this new allotyping became re-technisized again and architects claimed power back from buildings and users: conversion supposedly was cheaper, more

ecological, and even aesthetically more pleasing than newly purposed buildings. In my talk I will elucidate this central shift in thinking about buildings and reflect on the special case of allotyping buildings as quasi-technologies and how it continues to vex thinking about buildings.

Establishing the reality of politics: Revisiting Kurt Lewin's experiments in 'democratic atmospheres'

Javier Lezaun
Said Business School
Oxford University

In the late 1930s, the German psychologist Kurt Lewin – by then working in Iowa after fleeing Germany in 1933 – established 'the reality of democracy' in a series of groundbreaking experiments with children. Making manifest the striking difference between children working in democratic and authoritarian 'atmospheres' (or 'social climates', another term coined by Lewin and his collaborators) involved a series of revolutionary experimental techniques, including, prominently, the use of film in an attempt to render political orders visible. Lewin's work lies at the center of a series of traditions – the conversion of 'groups' into experimental objects, the miniaturization of democracy (and its transformation into an object of social scientific intervention) – that have shaped our contemporary understanding of the artificiality of political forms. This paper will revisit Lewin's 1937 and 1938 experiments to probe the notion that democracy, or, rather, a 'democratic atmosphere', can be proto-typed within the confines of the laboratory, and to examine the forms of vision and editing that were so successfully pioneered in this peculiar experimental setting.

The hospitable prototype: a techno-polis in construction

Alberto Corsín & Adolfo Estalella
CCHS - Consejo Superior de Investigaciones Científicas (CSIC)

Experimentation has been pointed out as a salient dimension of present societies. This paper discusses the particular modes of experimentation in the cultural public centre Medialab-Prado (MP) based in Madrid. Drawing heavily on free software as a source of inspiration, MP organizes its activities (internally and externally) around the collaborative, horizontal and open production of prototypes in two different ways. MP conceives itself as a prototype of cultural centre that experiments with modes of cultural production and the public; and at the same time, it organizes its activity around the production of prototypes. Foregrounding how openness is conceptualized and put into practice in MP we discuss how prototypes are not technologies under way of black-boxing but processes that open political spaces in which cultural production, the public and the city are under debate; and in so doing we relate our discussion with debates in STS that have insisted on the role of objects and human-object engagement as spaces for democracy.

Prototyping prototyping
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[No abstract available]