

Thermal Performance

The politics of environmental
management in architecture

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Abstract

How do architects address the ambiguity of practice, being on the one hand tasked with making buildings that perform well in terms of energy use and environmental strategy, and on the other facilitating the production of capital, through their service to ensuring that the performance of the occupants (efficiency, productivity and wellbeing) is satisfied?

In this PhD by practice, I use the theoretical concept of ‘the performative’ through both the written thesis and project to interrogate the various ways in which thermal management becomes entangled with management processes. The context is specific: the workplace at a moment of convergence between smart technology with architecture; where notionally, agency is given over to autonomous environmental systems to do the right thing, and work environments that are embedded in performative-linguistic company cultures that urge their occupants to ‘do the right thing’¹. In other words – where machines do things² with fans and boilers, and humans do things with emails, meetings, performance reviews and corporate culture. I invoke Lucy Schuman’s question ‘who is doing what to whom?’³ to draw attention to the way that actions are elicited from employees through discursive and constitute organisational practices.

At a point where new-build non-domestic buildings, which are specifically designed to perform environmentally well, are failing to do so⁴ - I

¹ ‘Do the right thing’ replaced Google’s pseudo-ethical motto ‘Don’t be evil’ in October 2015 when Alphabet Inc. was formed as the parent company of Google Inc. and of companies owned by Google. *2004 Founders’ Letter to Investors on the company’s initial public offering* (IPO) <<https://abc.xyz/investor/founders-letters/2004/ipo-letter.html>> and Alphabet’s *2015 Founders’ Letter to Investors* <<https://abc.xyz/investor/founders-letters/2015/index.html>> [accessed 4 August 2016].

² These performatives are taken explicitly from J.L. Austin’s book on Speech Acts ‘How to do Things with Words’ and Bruno Latour’s subtitle of his essay ‘The Berlin Key: or How To Do Words With Things.’ John Langshaw Austin, *How to Do Things with Words* (Oxford: Oxford University Press, 1962); Bruno Latour, ‘The Berlin Key: Or How to Do Words with Things’, in *Matter, Materiality and Modern Culture*, Paul Graves-Brown (ed.) (London: Routledge, 1991), pp. 10-21.

³ Lucy Suchman, ‘Located Accountabilities in Technology Production’, *Scandinavian Journal of Information Systems*, 14.2 (2002), 91-105 (p. 95).

⁴ Summary of the report, and links to the full report available at <<https://www.gov.uk/government/publications/low-carbon-buildings-best-practices-and-what-to-avoid>>; and Jason Palmer, Nicola Terry and Peter Armitage, ‘Building Performance Evaluation programme: Findings from Non-domestic Projects. Report’, *Innovate*

invoke Isabelle Stengers' ethical proposition 'what are we busy doing?'⁵ to ask whether architects' actions are fundamentally compromised by this entanglement.

I propose a strategy for architects to address their practice in relation to these propositions, and trace the actions as they migrate through discursive fields – sustainability, organisational management, theories of motivation, workplace politics, technological innovation, activism and resistance.

The narrative of the written thesis is asynchronous, and is interconnected with the project in multiple ways, it is structured in such a way so as to introduce strategies of encountering the various discursive fields which form the context of study. The project work, on the other hand, immerses the reader directly within these fields. The database that reveals the multiple realms that embed the concepts of power, economics, desire, love, productivity and war into the architectural concerns for comfort and energy use; while the performance video places two subjects constituted by management, whose passions are put to work and situate them within a discursive environment latent with the full cultural significance of its metaphors in the workplace of the knowledge economy.

The first part of the written component of the thesis opens up discussions about performance and action – which are generally applicable for the discourse of environmental performance, as mediated by the occupant and the use of technology, within the contemporary workplace. I move into the second part of the written thesis, which places the context specifically within the conceptual domain of thermal management, elaborates on the implications of taking a performance oriented approach to 'heat', and reveals how performance and the domain of heat converge on issues of productivity, subjectivity, and wellbeing.

UK Report (2016), pp. 3, 19-23, 29, <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/497761/Non-Domestic_Building_performance_full_report_2016.pdf> [accessed 30 March 2016].

⁵ Isabelle Stengers, 'The Cosmopolitical Proposal', in *Making Things Public: Atmospheres of Democracy*, Bruno Latour and Peter Weibel (eds) (Boston, MA: MIT Press, 2005), pp. 994-1003 (p. 996).

The two actors who perform in the video can only continuously improve their performance, every action can be subverted or appropriated, presenting the urgency for my conclusion in the written thesis, that as we, in architecture, are expected to also act entrepreneurially – the question is not how we do so subversively, or as a mode of critique. We should instead pay attention to Stengers' and Suchman's questions, and paying attention to what is brought about, and for whom, and focus our work on care for precarious, exhausted and hyper-active subjectivities that are produced through these actions.

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Introduction

WARM-UP

Warm -up

This exercise is adapted from a technique of the theatre director Konstantin Stanislavski, where it is used to focus students on the idea that there are a series of circles around the actor that they pay attention to, so that they understand where their action is directed. One of Stanislavski's criticisms of theatre was that actors too often tried to have effects directly on the audience. This, he thought, was poor acting. Instead the actor should focus their actions on the space immediately around them, or on the space between two characters, and be very aware of when they shift from one circle to another. This exercise is useful for readers of this thesis before commencing, to shift their attention beyond the phenomenological concepts of comfort, beyond the aesthetics of a space, beyond geometrics and form, beyond functionalism and effects.

Circles of attention (becoming a thermostat)

The actors are instructed to lie on the floor and close their eyes. They must simply concentrate on their breathing and let their thoughts come to rest. Drawing attention to the feeling of their body resting on the floor. Being aware only of the space immediately around their body. This is the first circle of attention.

Now the actors are instructed to widen their attention, towards other people in the room. Focusing only on the sounds within the room, becoming aware of the space without looking, becoming attentive to the temperature, drafts, fluctuations of air. This is the second circle of attention.

The actors should now shift their attention to the other side of the walls, sounds coming from outside the room, vibrations of traffic, generators, pumps, boilers, pipes, air ducts, the sounds of machinery in the building. This is the third circle of attention.

A thermostat does not know what a room looks like, it doesn't know its shape, whether the walls are straight or curved, or how many sides it has. The thermostat's model of the world that you and I inhabit is constructed through the calibration of the anticipator – a linear potentiometer that is adjusted to the volumetric capacity of the boiler to which it is attached.

The environment and all occupants within a space are collapsed into one for the thermostat: fluctuations of air, the forgetting to close a door, a beam of sunlight hitting the wall that the thermostat sits on, an energetic party, a 100W bulb, a person.

This is the performance. There is no audience, only actors. The circle of attention of a thermostat is entirely tuned to the environment and the disturbances within it.

Warm-Up

In this PhD thesis, which consists of a written component and two practice components – a performance HEATED EXCHANGE, and a database – I investigate the interconnected concepts of performance and heat as they materialise in the specific context of the workplace of the knowledge economy, at a period when environmental concerns are paramount. I introduce J.L. Austin’s ‘performative’ in *How to Do Things with Words* to propose performance as an action, centre staging the verb – *to do*.

I use both practice and written thesis to propose a shift in the attention to thermal management away from the comfort of the occupant, and towards an account of employee subjectivity appropriate to current economic forms of work. How these conditions manifest, I suggest, can be traced through the trope of ‘performance’ deployed in discourses of sustainability. Used with reference to the total effect of the environmental systems in operation in an occupied building, and to a number of elements upon which that relies – façades, louvres, thermostats – it includes criteria for comfort that cannot be disentangled from the demand that the performance of the occupants is enhanced.⁶

The concept of a thermal environment proposed in 1979, by Lisa Heschong, ‘rich in cultural associations’ which celebrates ‘delight’ and the ‘bonds of affection and ceremony’⁷ is updated with a critical analysis of high-performance management in the knowledge economy; in particular adaptations of Toyota (TPS),⁸ Excellence⁹ and Silicon Valley-style management modelled on the HP-Way.¹⁰ Proposing an ontology of heat that

⁶ John Alker, Michelle Malanca, Chris Pottage and Rachael O’Brien, *Health, Wellbeing & Productivity in Offices: The next chapter for green building*, World Green Building Council (2014). <http://www.worldgbc.org/files/6314/1152/0821/WorldGBC__Health_Wellbeing__productivity_Full_Report.pdf> [accessed 8 August 2016].

⁷ Back cover of Lisa Heschong, *Thermal Delight in Architecture* (Cambridge, MA: MIT Press, 1979).

⁸ Toyota Corporation, ‘Toyota Production System’, *Toyota Motor Corporation Global Website* <http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/> [accessed 22 April 2017].

⁹ Tom Peters and Robert H. Waterman, *In Search of Excellence: Lessons from America’s Best-Run Companies* (London: Profile Books, 1982).

¹⁰ Peter Burrows, ‘Four Lessons for Silicon Valley from its First Startup’, *MIT Technology Review* (28 November 2016) <<https://www.technologyreview.com/s/602961/four-lessons-for-silicon-valley-from-its-first-startup/>>

encompasses authenticity, meaningful social bonds, and affection¹¹ – as well as burnout, exhaustion, the waste of resources – for cool customers, cool-hunters, and hot-to-trot stocks, ‘hot girls! hot guys! hot yoga!’¹²

The database brings together over 1000 entries drawn from dictionary sources of metaphors, idioms and synonyms for heat used in English as a global *lingua franca* for business, economics and politics. With it, I propose that the thermal culture of architecture is not primarily one of comfort, but a layered discursive field of power, economics, anger, desire, love, productivity and war. The metaphors are not poetic embellishments, but are actively used in everyday communication and are partially constitutive of the subjects of knowledge work.

In the second part of the project I use techniques originating in the theatrical method of Konstantin Stanislavski¹³ in a series of performances situated within the workplace of the knowledge economy. Taking seriously the occupant as a subject constituted by management, whose entire being and passions are put to work, I place this subject into a thermal environment latent with the full cultural significance of its metaphors. In a series of HEATED EXCHANGES an Actor, and Reactor, negotiate for control of a thermostat, using metaphors and idioms derived from words for heat, tracing the management imperatives and motivations of advanced capitalism; and the implications of various modes of resistance to it.

The written thesis is structured into two main sections, which each relate to two questions about action: Lucy Suchman’s – ‘Who is doing what to whom?’¹⁴ and Isabelle Stengers’ – ‘What are we busy doing?’¹⁵ In chapters one, two and three – Suchman’s ‘Who is doing what to whom?’ locates the

[accessed 19 April 2017]; Hewlett Packard, *The HP Way: Hewlett-Packard Company Report* (1977) <http://www.hp.com/hpinfo/about/hp/histnfacts/publications/measure/pdf/1977_07.pdf> [accessed 5 October 2015].

¹¹ Back cover of Heschong, *Thermal Delight in Architecture*.

¹² The name of an East London yoga-studio, spotted by my colleague, Delfina Fantini van Ditmar.

¹³ Constantin Stanislavski, *An Actor Prepares* (1936), trans. by Elizabeth Reynolds Hapgood (London: Bloomsbury Academic, 2013), p. 102.

¹⁴ Lucy Suchman, ‘Located Accountabilities in Technology Production’, *Scandinavian Journal of Information Systems*, 14.2 (2002), 91-105 (p. 95).

¹⁵ Isabelle Stengers, ‘The Cosmopolitical Proposal’, in *Making Things Public: Atmospheres of Democracy*, Bruno Latour and Peter Weibel (eds), (Boston, MA: MIT Press, 2005), pp. 994-1003 (p. 996).

subjectivities of the occupant and the employee, and sets out a workable method for investigating the actions and interactions of the human and non-human occupants of a workplace. In the second section I take Stengers' 'What are we busy doing?' to ask – what is the result of all this productive activity? Did we make the pressing concern of the environment more real or more abstract? I keep her question in mind to interrogate the interconnectivity of productivity with wellbeing, and sustainability with 'continuous improvement.' I investigate the exuberant subjectivities who are prone to burnout, and I negotiate the potential weaknesses and moments of co-option in strategies of political or critical activity as the architect, herself, recognises that she too is one such subjectivity.

Hot Take - Structure of thesis

I introduce, in chapter one, a reading of architectural performance using the concept of the performative in J.L. Austin's speech act theory.¹⁶ By expanding on the politics of performative action through critiques of speech-act theory,¹⁷ I propose a politics of environmental performance in architecture. I outline a method, informed by Stanislavski's method of action,¹⁸ and an elaboration of the contemporary theatrical technique of actioning,¹⁹ to reappraise the imperatives for performance. I also raise questions about the transfer of a language of efficacy and efficiency found in the processes of lean production to discourses of architectural sustainability.²⁰

¹⁶ John Langshaw Austin, *How to Do Things with Words* (Oxford: Oxford University Press, 1962).

¹⁷ Rebecca Kukla, 'Performative force, convention, and discursive injustice', *Hypatia*, 29.2 (2014) 440-457; Vikki Bell, *Culture and Performance: The Challenge of Ethics, Politics and Feminist Theory* (London: A&C Black, 2007) and Vikki Bell, 'Declining Performativity Butler, Whitehead and Ecologies of Concern', *Theory, Culture & Society* 29.2, (2012) 107-123; Judith Butler, *Excitable Speech: A Politics of the Performative* (London: Routledge, 1997).

¹⁸ Stanislavski, *An Actor Prepares*, p. 102.

¹⁹ Mike Alfreds, *Different Every Night: Freeing the Actor* (London: Nick Hern Books, 2007) p. 64-65; Philip Roberts, Max Stafford-Clark, *Taking Stock: The Theatre of Max Stafford-Clark* (London: Nick Hern Books, 2007), p. 199.

²⁰ Terms such as adaptability, efficiency, waste-reduction, low-energy manufacture, doing-more-with-less (materials, space, ... employees), innovation, tight feedback loops and 'continuous improvement' as strategies for improving the environmental performance of buildings. 'Performance Gap', *Zerocarbonhub.org* (2017) <<http://www.zerocarbonhub.org/current-projects/performance-gap>> [accessed 8 August 2016].

In chapter two, 'Do the Right Thing', I use ethnographies and an analysis of knowledge work²¹ as a point of departure for reconceiving the occupant – the disciplinary subject of 'occupant behaviour' and the post-occupancy evaluation²² – as the post-disciplinary and deregulated subject of the post-Fordist knowledge worker.²³ I suggest this subjectivity is at odds with the occupant in important ways, which reorganise relationships with control, and reconfigure the needs of productivity and well-being.

In 'Thoughtful Things', the third chapter, I use Bruno Latour's writing on the actions of objects to begin the work of understanding what the technological objects of thermal control are doing.²⁴ By drawing on the post-disciplinary management outlined in chapter two, supplemented by the theatrical action methods outlined in chapter one, I present an account for the actions of smart objects that are emerging from Silicon Valley, such as the Nest learning thermostat.

At this midpoint of the written thesis, I include an interlude on the practice. 'The Spouse Problem' sets out my approach to the actions between human and non-human actors in the performance, HEATED EXCHANGE. I introduce the history of the thermostat which as a narrative intersperses the performance piece, and underpins the re-reading of a deregulated thermal imagination in the second half of the written thesis.

This second part draws on Isabelle Stengers' query 'what are we busy doing?'²⁵ Are architects meeting the needs of well-being of the occupant? Or, taking into account the employee/entrepreneur subjectivity presented

²¹ Gideon Kunda, *Engineering Culture: Control and Commitment in a High-Tech Corporation* (Philadelphia: Temple University Press, 2009).

²² Loren Lutzenhiser. 'Social and Behavioral Aspects of Energy Use', *Annual Review of Energy and the Environment*, 18 (1993), 247-89.

²³ The concept of knowledge work was described by management consultant Peter Drucker in 1959. Peter F. Drucker, *Landmarks of Tomorrow: A Report on the New Post Modern World* (London: Heinemann; 1959), p. 76 (p. 91).

²⁴ Bruno Latour, 'Where are the Missing Masses? The Sociology of a Few Mundane Artefacts', *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law (eds) (Cambridge, Mass: MIT Press, 1992), 225-259 (p. 175); and Bruno Latour 'The Berlin Key: Or How To Do Words With Things', *Matter, Materiality and Modern Culture*, Paul Graves-Brown (ed.) (London: Routledge, 1991), pp. 10-21; and Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2007).

²⁵ Stengers, 'The Cosmopolitical Proposal', p. 996.

in chapter one, are we exacerbating the demands of neo-liberal capitalism in ways that undermine our environment?

In chapter four, 'Warm Bodies', I situate the project work of the metaphor database within the discourse of the thermal imagination of architecture, and update this thermal culture for the post-Fordist economy. I warn that the interiors of delight and wellbeing that are the focus of workplace architects may not alleviate the exploitative and exhausting activities of organisational management.

In chapter five, 'Continuous Improvement', I reinvestigate the performance gap and its framing within the imperatives of lean production processes to perform continuous improvement.²⁶ Secondly, I address recent calls from practitioners and academics that the profession 'perform' entrepreneurial subjectivities to have agency, at the same moment that technology and management are converging with architecture through sustainability. The problems of intention in action introduced in chapter one are interrogated further, and I connect this with a broader concern about the precarity of subjectivity.²⁷

Drawing together the implications set out in both the project and writing, where the discipline of architecture itself is framed as knowledge work,²⁸ I take the entrepreneurial subject – a self-actualising individual free to exploit and realise her own bodily and affective capital (her libido, her passions, what she cares about) – to trouble the notion of subversive or

²⁶ *Zero Carbon Hub*, website <<http://www.zerocarbonhub.org/current-projects/performance-gap>> [accessed 8 August 2016].

²⁷ Angela McRobbie, 'Reflections on Feminism, Immaterial Labour and the Post-Fordist Regime', *New Formations*, 70.70 (2011), 60-76; Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley, CA: University of California Press, 2003); Elyssa Livergant, 'The Passion Players', *New Left Project*, <http://www.newleftproject.org/index.php/site/article_comments/the_passion_players> [accessed 27 June 2016]; Angela McRobbie, 'Is Passionate Work a Neoliberal Delusion?', *openDemocracy* (22 April 2015) <<https://www.opendemocracy.net/transformation/angela-mcrobbe/is-passionate-work-neoliberal-delusion>> [accessed 5 April 2017].

²⁸ *The Architect as Worker: Immaterial Labor, the Creative Class, and the Politics of Design*, Peggy Deamer (ed.) (London: Bloomsbury Publishing, 2015); and Peggy Deamer, 'Architectural Work: Immaterial Labour', *Industries of Architecture*, Katie Lloyd Thomas, Tilo Amhoff and Nick Beech (eds) (Abingdon, Oxon: Routledge, 2015), pp. 137-147; The concept of knowledge work was described by management consultant Peter Drucker in 1959. Peter F. Drucker, *Landmarks of Tomorrow: A Report on the New Post Modern World* (London: Heinemann; 1959), p. 76, p. 91; Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space*, (London: Verso, 2014), p. 183; and Rick Wartzman, 'What Peter Drucker Knew About 2020', *Harvard Business Review* (16 October 2014) <<https://hbr.org/2014/10/what-peter-drucker-knew-about-2020>> [Accessed 14 March 2017].

tactical agencies of architect-activists.²⁹ Where the architect herself is a deregulated subject, I conclude the thesis by rejecting the call to ‘perform’ entrepreneurially in her modes of critique, or engagement with the major actors of neoliberal capitalism to effect change.³⁰ I propose instead slow, time-consuming practices of ethical attention, and present the methods outlined in the project and written thesis as ways, not to perform, but to track the powers that determine the felicity of certain performances over others, and to pay attention the material consequences of the actions.

Research Context

The research has taken place during a renewed interest in ecology,³¹ in particular with seeing concerns of environment as embedded within social, political and economic life-worlds.³² Other relevant contexts regard questions about the production of architecture.³³ These concern the relations that the discipline has with itself,³⁴ with other disciplines,³⁵ with

²⁹ Keller Easterling proposes devising new strategic performances with which the architect can ‘expand [their] repertoires of political activism.’ Keller Easterling, ‘promotional matter for Extrastatecraft’, *KellerEasterling.com*, website <<http://kellereasterling.com/books/extrastatecraft-the-power-of-infrastructure-space>> [accessed 27 September 2016].

³⁰ Peggy Deamer, ‘Architectural Work: Immaterial Labour’, *Industries of Architecture*, p. 146; Keller Easterling, *Extrastatecraft*; and Koolhaas in various articles around the Venice Biennale, such as Rem Koolhaas, ‘The Smart Landscape: Intelligent Architecture’, *Artforum International*, 53: 8 (April 2015), 212-216; and Pooja Bhatia, ‘Rem Koolhaas Takes Silicon Valley’, in *OXY*, (28 December 2014) <<http://www.ozy.com/rising-stars-and-provocateurs/rem-koolhaas-takes-silicon-valley/36643>> [accessed 26 April 2015].

³¹ Peg Rawes, *Relational Architectural Ecologies, Architecture, Nature and Subjectivity*, (Abingdon, Oxon: Routledge, 2013); and Renata Tyszczyk and Stephen Walker, ‘Ecology’, *Field Journal*, 4:1 (2011).

³² Peg Rawes, *Relational Architectural Ecologies, Architecture, Nature and Subjectivity*, (Abingdon, Oxon: Routledge, 2013); Doina Petrescu, ‘Losing Control, Keeping Desire’, *Architecture and Participation*, Peter Blundell Jones, Doina Petrescu and Jeremy Till (eds) (London: Spon Press, 2005); Karin Jaschke, ‘Acting Up: Architectural Practice as Ecological Performance’, in *Agency: Working with Uncertain Architectures*, Florian Kossak, Doina Petrescu, Tatjana Schneider, Renata Tyszczyk and Stephen Walker (eds) (Abingdon, Oxon: Routledge, 2010), pp. 79-88 (p. 81).

³³ *Industries of Architecture*, Katie Lloyd Thomas, Tilo Amhoff and Nick Beech (eds) (Abingdon, Oxon: Routledge, 2015).

³⁴ Jane Rendell, ‘Architectural Research and Disciplinarity’, *arq*, 8:2 (2014), 141-147; Igea Troiani and Suzanne Ewing, ‘Inside Architecture from the Outside: Architecture’s Disciplinary Practices’, *Architecture and Culture: Disciplinary Practices*, 2:2 (2014), 151-166; and Jeremy Till, *Architecture Depends* (Cambridge, MA: MIT press, 2009).

³⁵ Jane Rendell, ‘Working Between and Across: Some Psychic Dimensions of Architecture’s Inter and Transdisciplinarity’, *Architecture and Culture* 1:1 (2013), 128-140; and Rawes, *Relational Architectural Ecologies*.

those that architecture is for,³⁶ and the ways in which the discipline is prefigured by its connection with economic growth.³⁷

Peg Rawes uses ecology as a mode of critical enquiry,³⁸ locating the 'oikos' (the ancient Greek root of the 'eco', which translates as 'home')³⁹ of the 1987 UN Brundtland Report *Our Common Future* as Manhattan, arguably the dominant centre of advanced capitalism.⁴⁰ Rawes describes how a report that has defined the concept of sustainability, as broadly understood, has done so within the framework of the 'three pillars' of its own sustaining ecology – economic, social and environmental sustainability – with the proviso that it does not 'disrupt overall growth.'⁴¹

Peg Rawes' ecological approach seeks to extend the discourses of sustainability beyond that which limits it to the concepts of growth, commodified technologies and practices.⁴² She critiques the technological framing of sustainability within a discipline whose disposition is towards keeping its boundaries closed – thus prefiguring the problem and its 'solution' in ways that exclude numerous other ecologies.⁴³ Rawes uses the concept of an ecology to encompass the visual arts, humanities, social sciences and law within an architectural ecologies.

Reyner Banham argues on the opening pages of *The Architecture of the Well-tempered Environment* that 'the idea that architecture belongs in one place and technology in another is comparatively new in history.'⁴⁴ His was a

³⁶ Peter Blundell Jones, Doina Petrescu and Jeremy Till, 'Introduction', *Architecture and Participation*, Peter Blundell Jones, Doina Petrescu and Jeremy Till (eds) (London: Spon Press, 2005), pp. xiii-xvii; and Jonathan Hill (ed.) *Occupying Architecture: Between the Architect and the User* (London: Routledge, 1998).

³⁷ Rawes, *Relational Architectural Ecologies*, Douglas Spencer, *The Architecture of Neoliberalism: How Contemporary Architecture Became an Instrument of Control and Compliance* (London: Bloomsbury Academic, 2016).

³⁸ Rawes, *Relational Architectural Ecologies*, p. 1.

³⁹ Rawes, *Relational Architectural Ecologies*, p. 1.

⁴⁰ Rawes, *Relational Architectural Ecologies*, p. 42.

⁴¹ Rawes, *Relational Architectural Ecologies*, p. 42.

⁴² Rawes, *Relational Architectural Ecologies*, pp. 2, 5, 43.

⁴³ As Rawes points out, the report, titled 'Our Current Future' originated the term 'Sustainable Development' which is defined as 'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Rawes, *Relational Architectural Ecologies*, p. 53.

⁴⁴ Reyner Banham, *The Architecture of the Well-tempered Environment*, (London: The Architectural Press, 1984), p. 9.

critique of the physical separation of ‘piping, flues, ducts, wires, lights, inlets, outlets, ovens, sinks, refuse disposers, hi-fi reverberators, antennae, conduits, freezers, heaters’⁴⁵ and other services from the ‘hardware’⁴⁶ of the architecture. However, this was also an example of Banham’s extended ecological thinking, which brought together the ‘tackle’ and ‘gizmos’, the necessary and the unnecessary,⁴⁷ with human needs and the climate.

In *The Well-tempered Environment*, Banham sets out to retell the story of architecture through its negotiation of climate and interior environment – and with it the development of industrial and commercial technologies; the rise and fall of inventors, public health officials, or the unknown product designers of General Electric.⁴⁸ His work thus brought the discussion of technologies and the production of architecture into the architectural humanities.

The call to participate in the 2014 Architectural Humanities Research Association (AHRA) conference *Industries of Architecture (IOA)*, convened by Katie Lloyd Thomas, Tilo Amhoff and Nick Beech, highlighted the importance of the ‘industrial, technical and socio-economic contexts in which a building is constituted.’⁴⁹ Aside from Sigfried Gideon⁵⁰ and Reyner Banham, they remarked, the entanglement of industrial developments and modern architecture had been largely side-lined by architectural theorists,

⁴⁵ Reyner Banham, ‘A Home is Not a House’, *Art in America*, 2 (1965), 70-79 (p. 70).

⁴⁶ Banham, ‘A Home is Not a House’, p. 70.

⁴⁷ Banham’s four ecologies of Los Angeles were Surfubia, (beach), Foothills, The Plains of Id (flatlands), and Autopia (the freeway) Reyner Banham, *Los Angeles: The Architecture of Four Ecologies* (Berkeley, CA: University of California Press, 2009).

⁴⁸ Banham, *The Architecture of the Well-tempered Environment*, p. 65.

⁴⁹ Katie Lloyd Thomas, Nick Beech, and Tilo Amhoff, *Industries of Architecture: Relations – Process – Production Call for Participation* (2014) < <http://industriesofarchitecture.org> > [accessed 25 March 2017]

⁵⁰ Gideon’s book *Mechanization Takes Command* is subtitled ‘a contribution to anonymous history’ documenting the unsung industrial design of the everyday, whilst *Space, Time and Architecture* although told through the work of the major modernist architects sets them in their context of planning, construction and industrialisation. Sigfried Gideon, *Mechanization Takes Command* (Minneapolis, MN: University of Minnesota Press, 2013); Sigfried Gideon, *Space, Time and Architecture: The Growth of a New Tradition*, (Cambridge, MA: Harvard University Press, 2008).

historians and designers.⁵¹ This conference was a major point of intersection with this thesis.⁵²

The positioning of the IOA conference *within* the architectural humanities was important in three ways for the convenors. Firstly they consider technical regulations, specifications and processes of construction as social and cultural phenomena which deserve academic consideration; second they consider these as concerns primarily of architecture, rather than engineering; and thirdly they state that they *constitute* architecture.⁵³ The centre-staging of what are often seen as peripheral or associative practices through the term ‘constitute’ is a key alignment with the position of this thesis.

Viewed through J.L. Austin’s performativity, the term ‘constitute’ signals that the technical and industrial do not simply describe natural physical laws, apply pre-existing technical standards, and implement them in architecture as pre-agreed facts – rather they constitute architecture in certain ways over others – and in doing so, re-affirm their own status as normative standards.⁵⁴ The conference was not a discussion *about* issues in architecture as much as an active *reconstituting* of practice. The perceived ‘dryness’ of technical specifications and processes became activated as political milieus – with concerns of labour, feminist practices and ecology, declared explicitly.⁵⁵

⁵¹ Lloyd Thomas, Beech, Amhoff, *Industries of Architecture Call for Participation*.

⁵² The work in this thesis somewhat diverges from the central concern of industrialisation since I look, not to industrialisation itself, but another feature that arose out of it – organisational management, specifically because it converges on the figures of the occupant, architect, user, designer, customer, entrepreneur. I presented early work on the performance of the Nest thermostat, considered through J.L. Austin’s speech act theory at IOA, and have a related chapter in their publication. Claudia Dutson, ‘Performativity and Paranoia: or how to do the ‘Internet of Things’ with words’, *Industries of Architecture*, Katie Lloyd Thomas, Tilo Amhoff and Nick Beech (eds) (Abingdon, Oxon: Routledge, 2015), pp. 294-302.

⁵³ Lloyd Thomas, Beech, Amhoff, *Industries of Architecture Call for Participation*.

⁵⁴ Writing about the performativity of economics, Michel Callon says that ‘stock prices, valuations, and targets produce the effects they refer to’ they are not a separate representational activity. Michel Callon, ‘What Does it Mean to Say that Economics is Performative’, in *Do Economists Make Markets? On the Performativity of Economics*, Donald MacKenzie, Fabian Muniesa and Lucia Siu (eds.) (Princeton NJ: Princeton University Press, 2007), pp. 311-357 (pp. 314).

⁵⁵ This particular architectural ecology was continued through the next two AHRA conferences: *This Thing Called Theory* and *Architecture and Feminisms*, I thought.

Rawes' ecological work similarly troubles complacencies within the discipline of architecture, particularly in the failure to conceive of ecologies of practice to attend to the question of technology. The term sustainability, cut from its definition of sustainable growth, leaves the question of growth as implicit, and leaves unchallenged the proposals of amelioration through advanced technologies,⁵⁶ thus articulating the problem of sustainability in certain ways over others. Rawes point that 'more nuanced discussions about technologies which do not only perform to capitalist protocols remain invisible'⁵⁷ was in evidence in the 2014 Venice Biennale curated by Rem Koolhaas.

When Koolhaas invited the CEO of Nest Labs, Tony Fadell, for an opening event at his 'Fundamentals' Biennale, he presented an inevitable 'convergence' between the high-tech industries of smart objects with architecture.⁵⁸ He stated that architecture as a practice would have to redefine itself within the terms of tech-industry – or become irrelevant.⁵⁹ Katie Lloyd Thomas has shown through her work on propriety specifications⁶⁰ that industrialists and corporations have long been proactive in their engagement with architecture, and with their best-known architects – in order to, not merely endorse a product, but to embed the product within an architectural style, or process, or thesis.⁶¹ 'Convergence' however, might be different, since it suggests that the prior boundaries between disciplines might dissolve altogether. Koolhaas' thesis becomes – architecture can *only* remain relevant if it repositions itself as having a thesis about elements, which are now undergoing digital transformation

⁵⁶ Rawes, *Relational Architectural Ecologies*, p. 5.

⁵⁷ Rawes, *Relational Architectural Ecologies*, p. 43.

⁵⁸ Rem Koolhaas, Tony Fadell, Niklas Maak, 'Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?', *YouTube*, online video recording (5 June 2014) <<http://www.labiennale.org/en/mediacenter/video/fundamentals29.html>> [accessed 7 June 2014].

⁵⁹ Rem Koolhaas, 'The Smart Landscape: Intelligent Architecture', *Artforum International*, 53: 8 (April 2015), 212-216 (p. 212).

⁶⁰ Katie Lloyd Thomas, 'The New Synthesist: Proprietary Specification, Ripolin and Elisabeth Benjamin's East Wall (1936)', invited lecture at *Out of Practice: Architecture Research Student Symposium*, Royal College of Art (5 March 2014).

⁶¹ Katie Lloyd Thomas, 'The New Synthesist'.

and becoming embedded into architecture.⁶² Indeed asked at a further discussion with the CEO of the Nest thermostat – what an architectural collaboration between the two would look like, Koolhaas responds ‘the beauty of what [Nest] is doing, is that it’s not necessarily defining a new look, but it’s defining a new performance.’⁶³ I suggest, through this thesis, that we need to expand our skills to attend to these changes, and the work is to use a method for interrogating performance.

The work of this PhD has not been to plot every instance of performance from across discipline that intersects with architecture – my association with architecture, fine art, theatre and performance art is at times brief and partial, at others the involvement has been extended. Instead, tracking the trope of performance through discursive fields has been my preoccupation. It is the idea of action – not effect – that I am seeking; which in some way constitutes – rather than represents; and that is difficult to apprehend as ‘event’;⁶⁴ and this sets my investigation apart from (but not always opposed to) ways that performance has been often been deployed within the discipline of architecture.⁶⁵

For Dorita Hannah, performativity, drawing on Austin,⁶⁶ is synonymous with ‘activity’⁶⁷ and she defines performance as ‘an English word [with]

⁶² Rem Koolhaas, *Fundamentals 14th International Architecture Exhibition - La Biennale Di Venezia* (Venice: Marsilio, 2014). REFXX

⁶³ Rem Koolhaas, Tony Fadell and Paul Goldberger, ‘Tony Fadell and Rem Koolhaas on Design in the Digital Age’, *Vanity Fair Video* (24 October 2014) <<http://video.vanityfair.com/watch/tony-fadell-and-rem-koolhaas-on-design-in-the-digital-age>> [accessed 12 January 2015].

⁶⁴ See ‘Disambiguating Theatrical Performance’ and ‘Actionable Improvements’ in chapter one, ‘Performance’ and appendix III: ‘Killer Apps’ in this thesis, pp. 346-347.

⁶⁵ For example, Alex Schweder’s ‘performance architecture’. Alex Schweder, ‘Performance Architecture’, *AlexSchweder.com* <<http://www.alexschweder.com>> [accessed 14 June 2017]; and Marianne Mulvey, ‘What does performance have to do with architecture? How can a building perform, and how can we perform a building?’, *Tate.org.uk Blog* (29 November, 2012) <<http://www.tate.org.uk/context-comment/blogs/what-does-performance-have-to-do-with-architecture-how-can-a-building-perform-and-how>> [accessed 1 April 2017]; and Agnieszka Gratza, ‘Open House: The evolution of ‘performance architecture’’, *Frieze.com* (6 September 2013) <<https://frieze.com/article/open-house>> [accessed 1 April 2013].

⁶⁶ Dorita Hannah and Omar Khan, ‘Introduction: Performance/Architecture’, *Journal of Architectural Education*, 61: 4 (May 2008), pp. 4-5.

⁶⁷ Hannah’s use of the performative and performance in architecture picks up on Richard Schechner’s ‘broad spectrum’ approach to Performance Studies (the discipline he co-founded in New York in the 1970s) which ‘recognized that, while not everything is a conscious performance, everything can be studied as a performance.’ Dorita Hannah, ‘Alarming the heart: Costume as performative body-object-event’, *Scene*, 2: 1+2 (2014), pp. 15–34 (p. 17); Schechner writes ‘performativity – or commonly “performance” – is *everywhere* in life, from ordinary gestures to macrodramas.’ Richard Schechner, *Performance Theory* (London: Routledge, 2003), p. 326.

many meanings, encompassing aesthetically orchestrated displays, assessable behaviours, operational procedures and expressive practices.⁶⁸ The difference to the use I make of performativity is important – Hannah, in connecting performativity with ‘activity’ rather than ‘action’, follows a dramaturgical trajectory through performativity, touching on performance studies, and coming to ‘event.’⁶⁹ This description of performance as ‘assessable behaviours’ and ‘operational procedures’, or ‘aesthetically orchestrated displays’ and ‘expressive practices’ is common in architectural understandings: often translating into the functionalism of architecture or its aesthetic qualities (particularly where kinetic or interactive elements are present).⁷⁰ At times architecture might be both – combining the functional with the aesthetic, kinetic or interactive.⁷¹ But there are some fundamental implications of Austin’s ideas that often get missed: the normative, constitutive and institutive parts of performative action.

The concepts of performance and performativity are broad and varied,⁷² however in this thesis the term performativity is not to mean ‘performance-y’ – it is to be specific that something is *done*, is *constituted*, and often *instituted*. What is powerful about the performative is the way

⁶⁸ Hannah, ‘Alarming the heart’, p. 17.

⁶⁹ In Hannah and Omar’s interview with Bernard Tschumi, they are surprised that he does not mention the word ‘performativity’ in relation to his ‘event-space’ work. I am not, and he says it’s a part of another discussion. Indeed, in chapter one of this thesis: ‘Performance’, I make the case for adhering to a strict definition of the term performativity and to not conflate it with everything that produces an aesthetic, kinetic or time-based effect. However, Hannah and Khan connect it with Derrida’s performativity – where architecture is ‘the event of spacing’. Hannah and Khan, ‘Performance/Architecture: Introduction’, p. 4; and Hannah and Khan, ‘Performance/Architecture: Interview with Bernard Tschumi’, *Journal of Architecture Education*, 61:4 (2008), pp. 52-58.

⁷⁰ Two good discussions on the definition of performance in architecture, which attempt to get into the nuances of what architecture does, covering its aesthetic interpretations, and kinetic resonances are David Leatherbarrow’s and Branko Kolarevic’s chapters in *Performative Architecture: Beyond Instrumentality*, (Abingdon, Oxon: Routledge, 2005); Leatherbarrow, ‘Architecture’s Unscripted Performance’, in *Performative Architecture*, pp. 5-20; and Kolarevic, ‘Towards the Performative’, in *Performative Architecture*, pp. 203-214.

⁷¹ See also appendix III, ‘Killer Apps’, (pp. 346-347), where I set out performance in opposition to the observable behaviours in machines – which translates into kinetic interactivity and emotional behaviour often uncritically. Achim Menges, ‘Material Computation: Higher Integration in Morphogenetic Design’, *Architectural Design*, 82.2 (2012); Rashida Ng and Sneha Patel (eds), *Performative Materials in Architecture and Design*, (Chicago: University of Chicago Press, 2013). However, Leatherbarrow insists that in order to find out what architecture actually *does*, one must sublimate urges to explain performance as only technical and aesthetic conditions. Leatherbarrow, ‘Architecture’s Unscripted Performance’, in *Performative Architecture*, pp. 5-20 (p. 10).

⁷² Jon McKenzie writes that: ‘performance assembles [...] a vast network of discourses and practices, because it brings together such diverse forces, anyone trying to map its passages must navigate a long and twisted flight path.’ Jon McKenzie, *Perform or Else: from Discipline to Performance* (London: Routledge, 2001), p. 4.

that it can operate normatively in an extended temporal framework:⁷³ not all performances are what they appear, and some may not look much like anything.

Further I argue that ‘activity’ is closer to the ‘effect’ than action.⁷⁴ In chapter one I aim to disambiguate between action and visible effect using the work of Stanislavski, who urges his actors to shift their circle of attention away from the effect they have on the audience the other side of the footlights,⁷⁵ towards ‘small achievable tasks [...] directed straight towards other actors on stage.’⁷⁶ In this thesis I maintain a focus on ‘action’ as a proposal for identifying and tracking the movement of operational procedures as they become instituted, and regulation as it becomes normative,⁷⁷ and cultures as they become constitutive of subjectivity.

The question of whom architecture is for, and the terminology to describe the entities that end up inside of architecture as the subjects – or subjectivities – of architecture warrant discussion. Nouns such as inhabitant, occupant, occupier, user, do-er, stake-holder, participant, are all in play, and verbs such as inhabit, occupy, use, misuse, are also deployed along with abstract-nouns of use, misuse, agency, and participation, disenfranchisement, empowerment, creativity etc.

For Jonathan Hill ‘there are two occupations of architecture: the activities of the architect, and the actions of the user: the architect and the

⁷³ Judith Butler’s work on the temporality of the performative is of use here: ‘The act that one does, the act that one performs, is, in a sense, an act that has been going on before one arrived on the scene.’ Judith Butler, ‘Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory’, *Theatre Journal*, 40:4 (December 1988), 519-531 (p. 526).

⁷⁴ Hannah’s case for architectural performativity is explicitly linked with Erving Goffman’s ‘social dramaturgy’ and for her the challenge to normative behaviour is through understanding ‘spatial gestures and encoding’ and ‘regulatory signs’ and collective and individual performances to ‘undermine’ them. However, Butler’s analysis of the limitations of subversive performance, and the ways in which the subject is caught within performativity disrupts traditional ideas of discipline and regulation from outside, Vikki Bell elaborates on the co-constitution of performativity through Foucault’s shift from discipline from the outside, towards management of the self. Jon McKenzie and Byung-Chul Han also describes a shift away from disciplinary regulation towards achievement and performance, suggesting that even Foucault’s concepts have been exceeded. Judith Butler, ‘Preface (1999)’, p. xxiii; Vikki Bell, *Culture and Performance*, p. 14; McKenzie, *Perform or Else*, p. 18; and Byung-Chul Han, *The Burnout Society* (Stanford, CA: Stanford University Press, 2015), pp. 8-9.

⁷⁵ Stanislavski, ‘Concentration of Attention’, *An Actor Prepares*, pp. 65-66.

⁷⁶ Bella Merlin, *Konstantin Stanislavsky*, pp. 29, 38.

⁷⁷ Kunda, *Engineering Culture*, pp. 11-14.

user both produce architecture, the former by design, the latter by use.⁷⁸ The user, Hill suggests, has as creative a role as the architect.⁷⁹ Hill's interest in the term user⁸⁰ follows from a belief in the potential for active and creative (mis)usage of architecture against the profession's insistence that 'the user is a stable, centralised and passive subject.'⁸¹ In his extensive proposition on the possibilities for the user in *Actions of Architecture* – the user can be passive, active, reactive and creative in relation to the degrees of contingency and agency attributed through the architect.⁸²

Yet such autonomy and creativity cannot be automatically equated with emancipation, or political transformation – I show throughout the written thesis that such an idea is complicated by the active, self-actualising subjectivities of the employee who occupies the workplace architecture of the knowledge economy.

However, where creativity for Hill, means newness, and (mis)use of a building in 'ways previously not imagined'⁸³ there is the suggestion that the limitation is perhaps in the mind of the architect who doesn't entirely understand the potential of those who designs are for. Jane Rendell brings the term 'doer' to the discussion, and the agency of those 'other people, the 'non-architects' [who are] involved in subversive activities [...] attempting to (un)make architecture, to (un)do it completely.'⁸⁴ Architects (who were too busy) she writes 'did not bother about the architecture once it was made, unless other people started doing things with it.'⁸⁵

⁷⁸ Hill, 'An Other Architect', *Occupying Architecture: Between the Architect and the User*, Jonathan Hill (ed.) (London: Routledge, 1998), pp. 135-160 (p. 140).

⁷⁹ Hill, 'An Other Architect', p. 140.

⁸⁰ Hill acknowledges the problems of the term user and its associations with 'pragmatism, rationality or drug addiction', but he prefers it over 'occupant, occupier or inhabitant because it also implies both positive action and the potential for misuse.' Jonathan Hill, 'Introduction', *Occupying Architecture: Between the Architect and the User*, Jonathan Hill (ed.) (London: Routledge, 1998), pp. 2-12, (p. 3 note 9).

⁸¹ Hill, 'Introduction', *Occupying Architecture*, p. 3.

⁸² Jonathan Hill, *Actions of Architecture: Architects and Creative Users* (London: Routledge, 2003) pp. 8-84.

⁸³ Hill, *Actions of Architecture*, p. 70.

⁸⁴ Jane Rendell, 'Doing it, (un)doing it, (over)doing it yourself', *Occupying Architecture: Between the Architect and the User*, Jonathan Hill (ed.) (London: Routledge, 1998), pp. 229-246, (p. 232).

⁸⁵ Rendell, 'Doing it, (un)doing it, (over)doing it yourself', p. 232.

But the do-er is also done through action – they don't just co-create space – but potentially co-constitute themselves – both in negative and positive ways. Participation, can lead to both 'ownership' and a stake in their built environment; or – as it does at Facebook, where its employees are impelled to 'hack' the workspace with handmade (but pre-designed) screen-printed posters further incorporates them within the company's organisational culture.⁸⁶

In an explicit avowal of the political and economic contexts with which questions of participation and agency intersect, Peter Blundell Jones, Jeremy Till and Doina Petrescu note that the alignment of the architect is primarily with the financial interests and power of the client. They argue that architecture's embrace of and willingness to 'express in built terms the ideology and economics of these clients, to the exclusion of the desires of the potential users' has 'removed the general public from the processes of architectural production.'⁸⁷

Whilst participation, they write, is an aim to get the general public involved in the processes of architectural production they warn against uncritical deployment of the term and the cursory 'involvement of the user at some stage in the design process' without their transforming it.⁸⁸ Participation, they recognise, has become 'effectively been institutionalised' through government policies, or as a requirement for funds.⁸⁹ Tending to be conceived of as a way to engender the self-determination of the user, participation at best enables the articulation of their potential users' desires⁹⁰ - to let them 'speak for themselves in order to discover their needs.'⁹¹ However, due care needs to be taken – and Blundell Jones,

⁸⁶ Mike Isaac, 'Meet Facebook's Propaganda Arm: The Analog Research Lab', *Wired* (18 May 2012) < <https://www.wired.com/2012/05/analog-research-lab/> > [accessed 28 June 2016]; and Mark Wilson, 'Meet Ben Barry, Facebook's Minister of Propaganda', *FastCo.Design* (11 May 2012) <<https://www.fastcodesign.com/1671050/meet-ben-barry-facebooks-minister-of-propaganda>> [accessed 28 June 2016].

⁸⁷ Peter Blundell Jones, Doina Petrescu and Jeremy Till, 'Introduction', *Architecture and Participation*, Peter Blundell Jones, Doina Petrescu and Jeremy Till (eds) (London: Spon Press, 2005), pp. xiii-xvii (p. xiv).

⁸⁸ Blundell Jones, Petrescu and Till, 'Introduction', *Architecture and Participation*, p. xiv.

⁸⁹ Blundell Jones, Petrescu and Till, 'Introduction', *Architecture and Participation*, p. xiii.

⁹⁰ Blundell Jones, Petrescu and Till, 'Introduction', *Architecture and Participation*, p. xiv.

⁹¹ Giancarlo di Carlo, 'Architecture's public', *Architecture and Participation*, Blundell Jones, Petrescu and Till (eds), pp. xiii-xvii (p. xiv).

Petrescu and Till highlight the necessity that architects ‘differentiate between the demands of the client and the desires of the users.’⁹²

Whilst the participation method is mostly concerned with civic agency, housing, public amenities and the increasing privatisation of the civic realm – the question raised about differentiating between demands and desires of client and user is a critical injunction for architects. It is especially relevant to the entanglement of such demands and desires with the organisation of the contemporary workplace.⁹³

Whilst the ‘false participation’ of architecture as a ‘lifestyle’ to be attained through aesthetic choices and the purchase of consumer products,⁹⁴ is an easy to recognise enmeshment of market demand with consumer desire – the question of the workplace presents a more complex subjectivity, particularly in relation to communality and creativity.⁹⁵ Whilst in the civic realm the citizen is immanent in participatory discourses as a subject that can reclaim agency around public space, housing, civic property – against the erosion of the welfare state, healthcare and affordable housing – what immanent subjectivity is there for the worker in the commercial workplace?⁹⁶

Blundell Jones, Petrescu and Till recognise a subject with latent desires and creativity, who is already enmeshed with a social and economic

⁹² Blundell Jones, Petrescu and Till, ‘Introduction’, *Architecture and Participation*, p. xiv.

⁹³ In a 2001 book accompanying a MOMA exhibition on contemporary work places Larry Keeley writes ‘Knowledge work is not only ascendant; it is truly weird[...]. It seems that we are supposed to care about our work. (Shocking!) Indeed, many young people see it as an element of personal expression. (The nerve!) Some even expect it to have an impact on the world. (How arrogant!)’, Larry Keeley, *Workspheres: Design and Contemporary Work Styles*, Paola Antonelli (ed.) (New York: The Museum of Modern Art, 2001), p. 18-19.

⁹⁴ Blundell Jones, Petrescu and Till, ‘Introduction’, *Architecture and Participation*, p. xv.

⁹⁵ ‘A company is only as good as the people who work for it. While many jobs are becoming less secure and predefined, they are also becoming more interesting. The transition from a systemized workplace to one that deals in the efficiency of creativity grants employees the freedom to develop something far more personal and individualised. Now able to directly influence what they make, a resurrection of the worker spirit coincides with the remodelling of the office typology.’ Sofia Borges, ‘Business Casual: Reworking the 9-5’, *Workscape: New Spaces for Work* (Berlin: Gestalten, 2013), p. 5.

⁹⁶ Maurizio Lazzarato once promoted the ‘immaterial worker’ as one such subjectivity, although he has somewhat distanced himself from it. Peggy Deamer, ‘Review of Maurizio Lazzarato’s *The Making of the Indebted Man: An Essay on the Neoliberal Condition and Governing by Debt*’, *The Real Review*, 1 (2016) < http://www.peggydeamer.com/images/review_maurizio_lazzarato.pdf > [accessed 30 March 2017]. In chapter five I discuss Peggy Deamer’s elaboration of that proposal for architecture. Deamer, ‘Architectural Work: Immaterial Labour’, pp. 143-145.

lifeworld: architecture, they propose, is occupied by ‘sensate, political, beings’ and ‘active doers and makers’⁹⁷ – whose desires extend beyond consumer choice and lifestyle. For Petrescu the ‘assembling [of] a collective economy of desire’⁹⁸ as a productive activity through participation rather than ‘pleasure’⁹⁹ – offers a way of understanding a user’s engagement in architecture as going beyond ‘experience’ – it is not just meant to make people feel better, but to transform the economic and relational networks in which they are embedded.¹⁰⁰ We should be mindful that where the citizen is seen as disenfranchised, the worker is not necessarily so. Within this thesis, I propose that through work, desires are appropriated towards shared objectives and the self-actualisation of the employee, whilst simultaneously forming individualist and precarious subjectivities.¹⁰¹

For Petrescu, where the concept of the participant offers a possibility to ‘enable users to constitute themselves as active-reactive subjects [...] in transformation’¹⁰² there is an important question in how this could translate from citizen-subjects to worker-subjects. Where in knowledge work, the imperative is that the employee be creative, fully engaged with the ‘shared’ goals of the company mission, can they maintain the radical ecological and relational participation of their civic milieu within the subjectivities for work. I warn in this thesis, that leaving this question to the individual to resolve, in the context of the individualised subjectivities of post-Fordist labour is deeply problematic.

Therefore, in this thesis, finding a satisfactory term is not so much a case of signalling the ‘real people’ in architecture or to draw attention to the identities conferred upon them by the multiple stakeholders of the built environment – but crucially, to speak about the constitution of a subjectivity according to behavioural descriptions and their disciplinary

⁹⁷ Blundell Jones, Petrescu and Till, ‘Introduction’, *Architecture and Participation*, p. xv.

⁹⁸ Doina Petrescu, ‘Losing Control, Keeping Desire’, *Architecture and Participation*, Blundell Jones, Petrescu and Till (eds), pp. 43-64 (p. 44).

⁹⁹ Petrescu, ‘Losing Control, Keeping Desire’, p. 44.

¹⁰⁰ Petrescu, ‘Losing Control, Keeping Desire’, p. 44.

¹⁰¹ Kunda, *Engineering Culture*, pp. 73, 196; and Angela McRobbie, ‘Reflections on Feminism, Immaterial Labour and the Post-Fordist Regime’, *New Formations*, 70.70 (2011), 60-76 (p. 65).

¹⁰² Petrescu, ‘Losing Control, Keeping Desire’, p. 54.

relations.¹⁰³ I have set out to use the term occupant to refer to subject of the ‘post-occupancy study’¹⁰⁴ and debates around energy-consuming behaviour in non-domestic buildings. For the definition of the person who interacts with products and technologies I tend to use ‘user’ – which is in extended use throughout product design and software design. I use the term ‘employee’¹⁰⁵ – or ‘entrepreneur’ – to talk about a specific type of subjectivity constituted through organisational management or culture. I also use ‘actor’ – borrowed from Bruno Latour to describe anybody or thing that ‘acts’, (including theatrical actors) with his proviso that it is never possible to tell exactly in whom the action originates.¹⁰⁶

Project Outputs

There are two project-based outputs in this thesis: a database and a performance, HEATED EXCHANGE, accompanied by a script. These have been developed through the ongoing practices of training in Stanislavski’s theatrical method of action, and contemporary theatrical ‘actioning’, training in writing for theatre and performance, training in performance for live-art, and training to become a thermostat installer.

The project pieces developed out of research activity in three areas: the concept of the performative as related to ‘a performance’ as an output; the ontology of the thermostat as a device and metaphor; and the conceptual framing of the linguistic domain of heat metaphors. These areas did not remain distinct but contributed to understandings of one another:

¹⁰³ The occupant of ‘post-occupancy evaluations’ is already disciplined by their inclusion in such a study which assesses their actions and interactions within buildings as being either in line with the prescribed use, or out of line. Whilst the employee and entrepreneur in my research is a post-disciplinary subject, encouraged to be autonomous, creative and self-actualising.

¹⁰⁴ Yael Parag and Kathryn B. Janda, ‘More Than Filler: Middle Actors and Socio-technical Change in the Energy System from the “middle-out”’, *Energy Research & Social Science*, 3 (2014), 102-112; Aurélie Lenoir, Shaan Cory, Michael Donn and François Garde, ‘User’s Behaviour and Energy Performances of Net Zero Buildings’, *Proceedings of the 12th Conference of the International Building Performance Simulation Association* (14-16 August 2001), pp. 1527-1534.

¹⁰⁵ Although such a subject may be a contractor, a gig-worker, a CEO, or indeed an architect or academic.

¹⁰⁶ ‘The question of who is carrying out the action has become unfathomable [...] the very word actor directs our attention to a complete dislocation of the action [...]. Action is borrowed, distributed, suggested, influenced, dominated, betrayed, translated.’ Bruno Latour, *Reassembling the Social*, p. 46.

the underpinnings of the thermostat as a servo-mechanism and its historical precedent in the steam-governor mapped over to the metaphor work, as well as the concept of deregulated subjectivities in the performance.

The training was carried out in between and alongside writing and more traditional research – so that the concepts were in constant movement between writing and practice. I worked with the concept of speech act theory through learning the theatrical methods of action and actioning, which brought a visceral understanding of the limitations of intention and felicity – your actions must be ‘playable’ and not focused on effects on other actors, they can also be appropriated, misunderstood, frustrated.¹⁰⁷ In pulling apart thermostats, trying to build my own, and getting trained as a certified thermostat installer, whilst reading papers on artificial intelligence¹⁰⁸ and studying propositional and predicate logic, I interrogated the behaviour of ‘smart’ objects, and actions of ‘dumb’ objects.¹⁰⁹ The theatrical methods of action are moment by moment, incremental changes towards an objective – akin to how the thermostat operates. The metaphors for heat, when mapped tend toward excess, which suggested that the cool, comfortable, rational, regulated employee as a trope might need re-appraisal. The thermostat is a regulator, how can I resolve that with the libertarian outlook of Silicon Valley entrepreneurs?

The practice and theory were thus interconnected and each component urged forward, checked back, questioned, negated, or

¹⁰⁷ The actioning technique is worked out between actors in a rehearsal, to stick to an action that cannot be worked with by another actor is called ‘blocking’. Alfreds, *Different Every Night*, pp.171-172.

¹⁰⁸ Thomas Nagel, ‘What is it like to be a bat?’, *Philosophical Review*, 83 (1974), 435-50; Daniel Dennett, ‘True Believers: The Intentional Strategy and Why it Works’, *Scientific Explanation: Papers Based on Herbert Spencer Lectures Given in the University of Oxford*, A. F. Heath (ed.) (Oxford: Clarendon Press, 1981), pp. 150-167; David J. Chalmers, ‘What is it like to be a Thermostat?’, *Consc.net* (1997) <<http://consc.net/notes/lloyd-comments.html>> [accessed 12 January 2013]; and David J. Chalmers, John R. Searle, ‘Consciousness and the Philosophers: An Exchange’, *New York Review of Books* (15 May 1997) <<http://www.nybooks.com/articles/1997/05/15/consciousness-and-the-philosophers-an-exchange/>> [accessed 12 January 2013].

¹⁰⁹ I saw, for instance, that the line between digital and analogue was abstract – it was even possible to build a thermostat that could know things without digital sensors through logical inference. A dumb analogue thermostat already has an anticipator, which is a model of the boiler inside it – which was actually – because it is set to the boiler size, a model of the space it was heating. It also has ‘hysteresis’ in the mercury switch, which is a rough sort of memory that ensures that it doesn’t cycle from heating ON to heating OFF too quickly. ‘Honeywell Installer Training Course’, *Honeywell* (April 2013); and Honeywell Limited, *T87F Thermostats* <<https://customer.honeywell.com/resources/techlit/TechLitDocuments/60-0000s/60-2222.pdf>> [accessed 1 April 2017]; ‘Introduction to Logic’, *London School of Philosophy* (14 January – 25 March 2014); and ‘Logic, Language and Communication 1’, *Coursera* (14 February – 14 April 2014).

confirmed assumptions and hypotheses. In response, I sought to train in various skills that would enable me to work through the multiple discursive layers in the contexts of thermal management, sustainable architecture and the workplace of the knowledge economy – as well as carry through the proposition on action in the written thesis to the production of the performance that was not an effect, aesthetic experience or dramaturgical event.

Such an immersive strategy is common to studio-based practices within architecture where a hypothesis is investigated through various site-studies; the use of tools for measuring, plotting and mapping; and processes of moving between scales, and between the real-world and the virtual. In this context, my site was not a particular building or space, but an abstract ‘thermostatic’ space of action. Whilst these modes of research/practice are also found throughout fine art and design,¹¹⁰ its distinction from fine art is that I was resisting translating my findings into artefacts and representation-performances – I was setting out to produce something like a simulation-performance to challenge the current formation of the behaviour of occupants in sustainable architecture. I provide a more in depth discussion on the relation between theory and practice in the pages that follow, and I also refer to a long-form narrative of the fieldwork and relation to other artworks in appendix II, ‘Hot on the Trail’, (pp. 302-316).

Siting of Installation

Two actors, projected life-size face one another across a room. Dressed in blue, they stand in a luminous field of Chroma-key blue, the colour of

¹¹⁰ For example: the ‘Long Tail’ method of artist Mark Leckey, which he has described as developing out of an ‘intense, information-gathering environment’, a cumulative, aggregative process which generates ‘excess’. He refers to ‘the long tail’ phenomenon peculiar to the internet search where the ‘desires of an infinitely long tail of consumers with minority interests who trail behind (but ultimately exceed) the swollen head of the mainstream.’ Jonathan Griffin, ‘Mark Leckey in a Long Tail World’, *Frieze.com* (9 February 2009) <<https://frieze.com/article/mark-leckey-long-tail-world>> [accessed 1 April 2017]; and Chris Anderson, The Long Tail, *Wired Magazine* (1 October 2004) <<https://www.wired.com/2004/10/tail/>> [accessed 1 April 2017].

'virtual',¹¹¹ of International Klein Blue, Derek Jarman Blue,¹¹² Thatcher Blue, Reagan Blue, Deep Blue,¹¹³ Blue Man Group,¹¹⁴ Blue Chip technology,¹¹⁵ IBM, Intel and Facebook blue, Apple genius blue, screensaver blue, blue-screen-of-death blue.¹¹⁶ The actors have been asked to begin their warm up routine. They use the lines of dialogue as moves in a game, such as chess, or battleships, seeking to control, resist, motivate, seduce, rebuff and destroy one another. The characters they play may be real, or are perhaps a computer simulation: the actors wear head-worn microphones, similar to those used in TEDtalks.

The 1:1 installation of the video allows the viewer to enter and stand between the two actors, choosing who to face. In the internet version, where the actors are positioned at each edge of the screen separated by a black strip, the viewer must shift their attention between the two, choosing who to focus on.¹¹⁷

The database is presented online, and is minimised to an essential layout so that it's very clear to read. The database can be queried to explore the extended thermal imagination of heat in two ways: one is to query by metaphor source, these are the words for temperature (for example: hot, cold, warm, chillax, steamy); the other is a keyword search within the

¹¹¹ Google the term 'virtual' and under images and the predominant colour is blue. PhD Candidate has written a paper on the colour of the search term 'digital': Eric Snodgrass, 'Dusk to Dawn: Horizons of the Digital/Post Digital', *A Peer-Reviewed Journal About: Post-Digital Research*, 3:1 (2014) <<http://www.aprja.net/dusk-to-dawn-horizons-of-the-digitalpost-digital/>> [accessed 10 May 2017].

¹¹² 'Derek Jarman: Blue', *Tate.org.uk* <<http://www.tate.org.uk/whats-on/tate-modern/display/derek-jarman-blue>> [accessed 10 May 2017].

¹¹³ 'Deep Blue' was the IBM computer that beat Garry Kasparov at chess in 1997. 'Deep Blue', *IBM 100 Icons of Progress* <<http://www-03.ibm.com/ibm/history/ibm100/us/en/icons/deepblue/>> [accessed 1 April 2017].

¹¹⁴ The Blue Man Group were formed in 1991 as a performance and became a 'global entertainment company', performing in ads for Intel in 2001. 'About Blue Man Group', *BlueMan.com* <<https://www.bluman.com/about-blue-man-group>> [accessed 1 April 2017]; and 'Intel Corp.', *Advertising Age* (15 September 2003) <<http://adage.com/article/adage-encyclopedia/intel-corp/98721/>> [accessed 1 April 2017].

¹¹⁵ 'Blue chip' equates to reliability (from poker) profitability, quality, 'in good times and bad.' 'Blue Chip (stock market)', *Wikipedia* <[https://en.wikipedia.org/wiki/Blue_chip_\(stock_market\)](https://en.wikipedia.org/wiki/Blue_chip_(stock_market))> [accessed 1 April 2017].

¹¹⁶ I discovered an almost identical (but appropriate to the twenty-teens rather than the 90's) litany of blue technology in Snodgrass' paper. Snodgrass, 'Dusk to Dawn: Horizons of the Digital/Post Digital'.

¹¹⁷ I first noted this strange way of viewing a performance in the Royal Court production of *Adler & Gibb* (2014). Tim Crouch, *Adler & Gibb* (London: Oberon, 2014); See appendix II: 'Hot on the Trail', pp. 302-316, for extended discussion. To some extent it also happens in Bruce Nauman's *Good Boy Bad Boy* (1985) but due to the overlapping dialogue, it doesn't work in quite the same way such that you can watch the reaction of the other character, since in Nauman's piece the two are monologues recorded separately and play out over the top of one another, so there are no reactions in the actors to what the other is saying.

definitions, which organises the database according to the conceptual domains that the metaphor refers to (for example: comfort, hostility).

Presenting the work as a full-scale installation is the preferred format, since encountering the actor and reactor at a full-body scale amplifies the putting to work of the actor's whole body and affects. The printed script accompanies the performance, and is a key to the three sequences.¹¹⁸ In the installation I also add a screen with the database on, with a 'thermostat' as the screen-saver.¹¹⁹ This image is a scan of a model, made from acrylic and optical film, of a hypothetical thermostat. The aesthetic of the lens is derived from the heat-seeking head of an IRIS-T short-range missile,¹²⁰ a hand touched it, wearing the pink finger-cots used by electronics pieceworkers, and the Google workers who manually scan content for Google Books¹²¹ (see fig. 7, *fingerspitzgefuehlen*, p. 153). The technique for this and the 'berlin key' illustration was used during the PhD as anti-perspectival photography – or how a machine-vision would encounter the objects.¹²²

Even though the work resembles the fine art practice of performance, the ideal siting of the work is not a gallery or public space. My intervention is within the processes of architectural production and the institutions that set the parameters of action for sustainable architecture, such as the Chartered Institute of Building Service Engineers, the Royal Institute of British Architects and wider policy-making institutions. The work therefore is for installation within spaces where discourses on sustainability and economics are taking place: this would also include schools of architecture and engineering.

¹¹⁸ See appendix II, 'Hot Stuff: Heated Exchange Script', pp. 317-344.

¹¹⁹ The thermostat image was also going to be used in the web-version – however its inclusion had the effect of making the actors seem even smaller in size on-screen, so it was removed.

¹²⁰ M. Begenat, 'IRIS-T Moving Infrared Imaging Head Eye', online video recording, *YouTube*, 19 April 2011, <<https://www.youtube.com/watch?v=FcX8Xke9It4>> [accessed 2 June 2014].

¹²¹ Andrew Norman Wilson, a former Google employee, has made a work of art by locating these traces of the manual labour behind the digital, carried out mostly by people of colour. Andrew Norman Wilson, *ScanOps* <<http://www.andrewnormanwilson.com/ScanOps.html>> [accessed 5 August 2016].

¹²² It is not related to the book digitisation method used by Google, which uses powerful overhead scanners to capture the page, I use flatbed scanners which have a very narrow depth of field, which renders everything more than a few centimetres away into saturated black.

The intended 1:1 scale of the piece, showing the full-length of the body, presents an up-to-date account of the occupant of sustainable architecture. The projections are direct, facing out (although facing one another) making complicit the viewers of the work, who witness, and are also acted upon, and who recognise in the actions of the actors their own desires.

Relations to/distinctions from other practice

The project's aesthetic belies the strongest influence on the work, which was not an aesthetic influence. Bruce Nauman's video installation *Good Boy Bad Boy* (1985), and to a lesser extent, *Violent Incident* (1986), have been the two most provocative works that revealed the potential for action-performances. In HEATED EXCHANGE you are implicated, but not fully participating (the dialogue continues without you, on separate screens and video files which are only brought together in the space – they are synchronised to stay in sequence with one another). However, in being implicated – the I and You in the dialogue both accuse and solicit your complicity.¹²³ Yet the piece is not fully determined – is ACTOR seducing REACTOR or is she threatening to fire her? The performance is not about public engagement – but institutional critique. The piece doesn't try to 'open a discussion' about sustainability or solicit feedback – it presents the underlying discourses and resultant excesses of the context as provocation and accusation. What are YOU busy doing?

The Chroma backdrop is a well-used aesthetic in current contemporary art: for instance the green screen in Mark Leckey's installation and video for *GreenScreenRefrigeratorAction* (2010),¹²⁴ the use of Chroma-blue, and Chroma-green cycloramas in Leckey's *The Universal Addressability of Dumb*

¹²³ I mark a distinction in this work from relational aesthetics, such as the open-ended participatory interactions of artworks that solicit involvement from a viewer/audience/visitor. Claire Bishop, 'Antagonism and Relational Aesthetics', *October*, 110 (Fall 2004), 51-79. (pp. 52-53, 60-61).

¹²⁴ Mark Leckey, 'GreenScreenRefrigeratorAction 2010', *Haus der Kunst* < <http://www.hausderkunst.de/en/agenda/detail/greenscreenrefrigeratoraction/>> [accessed 24 May 2013].

Things (2013)¹²⁵ and Hito Steyerl's use of green-screen technology and green-suited actors in *How Not to Be Seen: A Fucking Didactic Educational .MOV File* (2013).¹²⁶ Whilst Chroma-blue resonates aesthetically with present post-digital and internet art, it is also a very 1990's colour, the colour of the enthusiasm for technology during the tech-bubble, which I associate with some key shifts in post-Fordist economies regarding an expansion of neoliberal modes of governance.¹²⁷

The blue also became a technique less for the camera and more for the actors, who were invited into a blue space, with no artefacts that would site the performance within a particular room, or location. The actors could choose their clothing from a selection of shirts, t-shirts, trousers, skirts, dresses – all in the same shade – this was done to disconnect the actor both from the particularity of character, as well as their own subjectivity of being an actor.¹²⁸ Putting on the blue clothing was like being a contract-worker or gig-worker – they could assume whatever character they liked, but the provisions of all sizes of clothes reminded them that they were replaceable. They were merely 'warm bodies'.¹²⁹ It was, however, important to pay all the actors involved in the project a living-wage, as well as highlight in the call for participation the subjectivity of the actor as a worker.¹³⁰

¹²⁵ 'Mark Leckey: The Universal Addressability of Dumb Things at Nottingham Contemporary', *AestheticaMagazine.com* (23 April 2013) <<http://www.aestheticamagazine.com/mark-leckey-the-universal-addressability-of-dumb-things-at-nottingham-contemporary/>> [accessed 17 April 2017].

¹²⁶ 'Hito Steyerl', *Tate Modern* <<http://www.tate.org.uk/visit/tate-modern/display/media-networks/hito-steyerl>> [accessed 2 May 2017].

¹²⁷ See especially McKenzie, *Perform or Else*; Han, *The Burnout Society*; and Christian Marazzi, *Capital and Language: From the New Economy to the War Economy* (Los Angeles: Semiotext(e), 2008).

¹²⁸ Nauman's work is aesthetically theatrical – in *Good Boy, Bad Boy* (1985) the actors wear their own clothes – they are seated, Tucker smokes. Despite my techniques drawing on theatre, I resisted the aesthetic of the drama studio – black backdrops and black clothing. In an earlier devising and improvisation session, I invited actors to a blue studio, but they wore their own clothes. Holding scripts, they retained their own character and role as actors-reading-a-script. See appendix II: figures 13 and 14, pp. 311-312; and Bruce Nauman, *Good Boy, Bad Boy* (1985) 'Channel B – Tucker Smallwood', *UBUweb* <http://www.ubu.com/film/nauman_goodb.html> [accessed 13 October 2015].

¹²⁹ A 'warm body' is a term in management given to a contractor hired to do certain jobs, often technical or generic, offering no opportunity to use the full ability of the contractor, and not offering any progression within the company. The 'warm body' is hired and fired, replaceable by other 'warm bodies' as needed. Stephen R. Barley and Gideon Kunda, *Gurus, Hired Guns, and Warm Bodies: Itinerant Experts in a Knowledge Economy* (Woodstock, Oxfordshire: Princeton University Press, 2006).

¹³⁰ See appendix II, 'Hot Stuff: Call for Participation', pp. 292-296.

The starting point of the research was the relation between designed environmental performance and post-occupancy performance, querying whether the ‘performance gap’ was a product of weak methodologies in post-occupancy, thoughtless design implementation, or a more significant cognitive dissonance about the reality of sustainability.

My project outcomes present two contributions to new knowledge – one is an updated thermal domain for architecture, which warns that creating exciting, stimulating, ‘delightful’ spaces may not ameliorate the most exploitative and precarious conditions of working in the current neoliberal economic context.¹³¹ The second is the HEATED EXCHANGE performance as a proposition of behaviour that is more attuned to the nuances and dissonances of the imperatives of the contemporary workplace than the current framework for assessing occupant behaviour.

The work of theatre is not to ‘tell’ the story, ‘characters [...] do not narrate themselves to us; they behave, and we observe them.’¹³² The performance HEATED EXCHANGE presents two abstract subjects of the knowledge economy, and their behaviour – they are motivated, subversive, passionate, productive, creative – but also excessive, exhausted, burnt out, destructive. My contribution through practice is to state that these are the occupants (and the architects) of buildings, and that – despite their absurdity – are closer manifestations of subjectivity than the occupant of post-occupancy studies.

An extended discussion on the influences of other artworks on the work in this thesis is located in appendix II, ‘Hot on the Trail’, (pp. 302-316).

Relation Between Theory and Practice

¹³¹ The makers of a ‘temperature on demand’ app called ‘Comfy’ publish articles, not just on the connection between productivity and comfort, but have a passionate commitment to awesomeness and delight: ‘The Comfy Team is obsessed with creating the ultimate productive workplace. [...] The first step in creating a productive and delightful space is eliminating the negatives that are holding people back. By delivering comfort, eliminating distractions, and offering greater individual control, we are able to help everyone be their most productive selves. The Comfy Team, ‘The Comfort Productivity Connection’, *Comfy Blog* (10 May 2016) <<https://www.comfyapp.com/blog/the-comfort-productivity-connection/>> [accessed 26 April 2017].

¹³² Peter Womack, *Dialogue*, p. 87.

The theory and practice have been connected from the outset of the PhD, with theoretical questions demanding the acquisition of new knowledge beyond written references: indeed, the practical training gave me the means to think through doing. Writing was then informed and challenged by these findings: rewrites, by practice, which in turn kept up an insistent pace for training. (documented in appendix II, 'Hot on the Trail'). They propelled the research forward, without closing it into loop, leaving it open to the next iteration, but bringing a more fine-grained resolution. This was deeply influenced by the feminist critical practices of Lucy Suchman,¹³³ (however similarities to 'continuous improvement' towards a goal, which I write about in the thesis, did not escape my notice).

Suchman opens her paper 'Located Accountabilities in Technology Production' questioning the cultural practices of production of technological systems. She sets out an argument, drawing on Donna Haraway's concept of 'situated knowledges'¹³⁴ and alternative practices for designers in relation to technologies (objects, systems, services) to query the epistemic stance of objective knowledge.¹³⁵ In opposition to the tendency of design to frame a problem in a particular way that leads to an unquestionable account and an inevitable intervention of the 'professional' designer,¹³⁶ Suchman favours a 'contingent accomplishment of dynamic processes of knowing and acting.'¹³⁷

Situated¹³⁸ can therefore mean being accountable for oneself as a practitioner: critical and situated writing,¹³⁹ relational ecologies of practice,

¹³³ Lucy Suchman, *Human-Machine Reconfigurations: Plans and Situated Actions* (Cambridge: Cambridge University Press, 2007), p. 70.

¹³⁴ Donna Haraway, 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective', *Feminist Studies*, 14:3 (1988), 575-599.

¹³⁵ Lucy Suchman, 'Located Accountabilities in Technology Production', *Scandinavian Journal of Information Systems*, 14.2 (2002), 91-105 (p. 91).

¹³⁶ Suchman, 'Located Accountabilities in Technology Production', p. 95.

¹³⁷ Suchman, 'Located Accountabilities in Technology Production', p. 92.

¹³⁸ The origin of 'situated knowledge' is often attributed to Donna Haraway in 1988, and situated action to Lucy Suchman whose PhD *Situated Plans and Actions* was published in 1985, and subsequent book in 1987. However Suchman makes clear that she by no means coined the term itself, but perhaps was the one to introduce it to the specific context of purposeful action and shared understanding in human-machine configurations. The origin of the phrase, she says, can be traced within sociology to at least 1940, and its use by Charles Wright Mills. C. Wright Mills, 'Situated Actions and Vocabularies of Motive', *American Sociological Review*, 5:6 (December 1940) 904-913; Lucy Suchman, *Human-Machine Reconfigurations: Plans and Situated Actions*, (Cambridge: Cambridge

and discussions around agency, participation and mediation would be practices that develop out of this understanding. Another situated practice is how one navigates a problem and thus accounts for how knowledge of that problem unfolds – which questions are posed, who is asked to act on behalf of another, and how the subjectivities produced in such framings, relate to one another. The concept of the performative shifts attention to the *doing* – and to the idea that one’s subjectivity, and therefore one’s location, is constituted by action.

The process of immersion into the contexts of the PhD, in which I undertook training alongside more traditional academic research activities, was guided by a very distinct concept without having a set plan. This method has an extensive connection within feminist methods and practices. Suchman highlights that situated often comes to stand for ‘spontaneous’ or ‘improvised’ and thus an ‘erasure of context’¹⁴⁰ and leads to a (mis)understanding that behaviour is ‘reactive and contingent on the external world’, as opposed to her sense in which it is ‘reflexively constitutive of the world’s significance, which in turn gives behaviour its sense.’¹⁴¹ Research which unfolds from progressively acquired contextual information is also related to my previous work in a consultancy company in

University Press, 2007), p. 70; and Lucy A. Suchman, *Plans and Situated Actions: The Problems of Human-Machine Communication*, (XEROX Corporation, February 1985).

¹³⁹ Jane Rendell writes that situated research ‘might involve detailing what is usually hidden – for example, personal investments in a subject area, intellectual affiliations and their influence of the relationship between the research and the private life of the researcher.’ Rendell also makes a connection with performativity via Peggy Phelan - I also make some connection but I go the other way around. (Peggy Phelan writes that performance art, cannot be recorded, ‘when it is it turns into a document – a photograph, a stage design, a video tape – and ceases to be performance art) I understand her, and the politics of resistance is very valid, but I also I disagree because my route through performativity precisely doesn’t have this connection to ‘event’. I have no problem in calling the work I produce ‘video performance’. Further, my origin isn’t fine art, but media production, so have no resistance to magnetic tape - which is in its own way extremely ephemeral. Phelan does later on say that performance’s challenge to writing is to discover a way for repeated words to become performative utterances – the question of whether a video-taped performative is felicitous or not, I suspect, is not resolved by the question of the medium. Jane Rendell, *Site-Writing: The Architecture of Art Criticism* (London: I.B. Taurus, 2010) p. 16; Peggy Phelan, *Unmarked, the Politics of Performance* (Abingdon, Oxon: Routledge, 1996) pp. 31, 145-148, 149.

¹⁴⁰ Suchman, *Human-Machine Reconfigurations*, p. 15; Suchman goes to some lengths to clarify what is meant by ‘situated’, (pp. 15-17, 52-53), drawing attention repeatedly to the way in which one’s circumstance that one draws on in which to situated action, is itself ‘constituted through unfolding courses of action and interaction’ – which is to say that they include ‘more and less long-standing, obdurate, and compelling layers of culturally and historically constituted, social and material conditions. Suchman, *Human-Machine Reconfigurations*, p. 52.

¹⁴¹ Suchman, *Human-Machine Reconfigurations*, p. 15.

the new media industry from 1999-2001.¹⁴² Whilst forecasts were predominately generated by numbers (revenue, stock valuations, customer/audience figures) an important part of analysis and prediction was through *fingerspitzgefuehlen*¹⁴³ – from immersion in newsfeeds, networking, gossip, observations, being present in conferences and trade shows in San Jose, San Francisco and New York in the late 1990's.¹⁴⁴ Due to my prior training in Media Studies, an acute critical awareness of the construction of discourses has long defined my research approach.

Rigour – Rendell writes – is a precision in materialisation as much as its adherence to conventional research assessment criteria.¹⁴⁵ I document the extended process of making the performance in the appendix, 'Hot on the Trail' in particular, the extended period of production. The script for HEATED EXCHANGE took two years and three weeks to make. The three weeks was an intense reworking of material and knowledge acquired over two years of practice, where each day was spent constructing sequences with these phrases and repositioning words. This work was formulated over a very long period of other studies – impelled by an intuition of knowing what I was trying to get at – but not knowing what the end result would look like, or directly how to get there, but knowing at each point to acquire a skill, develop a practice, write, reflect and perform.

J.L. Austin's speech act theory, and Stanislavski's method bring attention to the action of the speech-act, the *doing*. It is important to note that my own route through performativity began, not with Austin, but

¹⁴² Directly aligned with the height of the dotcom bubble and burst, was all about 'convergence' – from its origin as a telecoms and television consultancy, the 1990's had brought new concepts: internet on your TV, streaming video content over the Internet, digital peer-to-peer music sharing. From a 128kbs modem in the UK, we researched Silicon Valley and made predictions on what would happen next. *VisionConsult International* <<http://www.visionconsult.com/de/>>

¹⁴³ Literally, finger-tip-feeling – roughly translatable to 'gut' feeling. This word was introduced to me in the European consultancy company I worked for.

¹⁴⁴ I should warn that with such finger-tip-feeling one could be a good consultant, a futurologist, or even an evangelist or guru – there's no inherent ethics in management consultancy methods.

¹⁴⁵ Jane Rendell, 'Some Notes on Architecture and Design Research' The Bartlett, *University College London RIBA Research Symposium 2007: Reflections on Practice: Capturing Innovation and Creativity*, available at <<https://www.architecture.com/Files/RIBAProfessionalServices/ResearchAndDevelopment/Symposium/2007/JaneRendell.pdf>> [accessed 2nd March 2017].

through theatrical practices and artificial intelligence.¹⁴⁶ Thus the central consideration of the verb – to *do* – structures my relationship between theoretical enquiry with writing and practice. I utilise methods and theories that examine what is done through doing, what is done to the doer and to whom things are being done.

It is this emphasis on action as a verb that ties together the major references of this work – Gideon Kunda, Arlie Russell Hochschild, Bruno Latour, Judith Butler, Rebecca Kukla, Bruce Nauman, Konstantin Stanislavski. However, with such an emphasis on the verb, my reading of Butler, and the ways in which I've worked with performativity is unconventional. In particular – the attention I have given the discussion around citational practices is extremely low. Where Butler's tendency is to approach speech acts through 'noun-ing' (that is, name-calling, and other citational practices), I retain a commitment to front-staging the verbs, and the actions themselves.

¹⁴⁶ I wanted to analyse the attribution of behaviours to machines, and in conversation with a colleague at the Royal College of Art, Neil Shepherd, who was in an amateur dramatics class – I learned about exercises in breaking down physical actions, and acting with objectives – I investigated further, and contacted my cousin, a theatre director, who passed me Mike Alfreds' book on 'actioning' – *Different Every Night: Freeing the Actor* (London: Nick Hern Books, 2007). I was at the same time reading about 'dialogue agents' and early artificial intelligence and had already encountered the concept of the 'speech act'. My first direct encounter with speech-act theory was through sociologist Lucy Suchman's challenge to Terry Winograd and Fernando Flores' rigid implementation of speech acts in their software programme COORDINATOR for Computer Supported Cooperative Work. (CSCW or groupware is collaborative software that supports members of an organisation engaged in a common project, it usually also involves extended organisational protocols between people in the group, not just in the human-machine interaction); Lucy Suchman, 'Do Categories Have Politics: The language-action perspective reconsidered', *Computer Supported Cooperative Work*, 2 (1994), 177-190. See 'My Computer Refuses to Start Up', workshop at the Royal College of Art, *Disruption*, in appendix III, pp. 350-351.



Figure 1 Still from performance 'Heated Exchange'



Figure 2. Still from performance 'Heated Exchange'

Chapter One

PERFORMANCE

Chapter Outline

This first chapter investigates the concept of performance as applied in architecture. Terms such as ‘performance’, ‘performative’ and ‘performativity’ are put to extended use in the discipline, as both a pragmatic concern in practice and as theoretical concepts. They are used to describe the measured output or efficiency of a building (structurally, programmatically, energetically), or its visual, thermal, and acoustic effects (usually on the end users). These terms have a tendency to be understood as being either something rigorous and objective or aesthetic and subjective, as if they were simply homonyms: words that share the same spelling and pronunciation, but not the same meaning.

This chapter will challenge this reading by reframing the term performativity in line with J.L. Austin’s concept of performative speech,¹⁴⁷ disambiguate its theatrical associations,¹⁴⁸ and finally connect the concept of performance with the performative processes of high-performance manufacturing. I will propose that bringing these three concepts into dialogue with one another is very productive – in particular for understanding one of the central concerns of the built environment – sustainability – within the context of the workplace.

I will look at the interconnectedness of technical and managerial performances in architectural discourse to question whether what are presented as ‘win-win’ strategies for business – where an environmentally sustainable building is presented as being desirable since it leads to happy and productive occupants – yet these strategies contain within them contradictions and conditions that can undermine their effectiveness.

¹⁴⁷ Austin, *How To Do Things With Words*, pp. 4-7.

¹⁴⁸ The ‘performative turn’ in architecture is often connected to a choreographic or architecture as a set for a performance, for example Alex Schweder’s ‘performance architecture’. Marianne Mulvey, ‘What does performance have to do with architecture? How can a building perform, and how can we perform a building?’, *Tate.org.uk Blog* (29 November, 2012) < <http://www.tate.org.uk/context-comment/blogs/what-does-performance-have-do-architecture-how-can-building-perform-and-how> > [accessed 1 April 2017]; and Agnieszka Gracza, ‘Open House: The evolution of ‘performance architecture’’, *Frieze.com* (6 September 2013) < <https://frieze.com/article/open-house> > [accessed 1 April 2013].

I start by drawing analogies between the activity of architecture with J.L. Austin's work on 'performative' speech – which is a philosophy of language which describes a particular type of spoken language which does not describe an existing reality, but which implements new realities. Examples are phrases which, in their saying, enact a marriage, a bet, a promise, etc.. From an understanding that Austin's 'speech acts' are utterances that DO things, architecture can be attended to in a new way: assessed on its actions, not on its appearance; and on its consequences, rather than on its intentions.

Using an elaboration of a theatrical method originating in the work of Konstantin Stanislavski¹⁴⁹ that shares Austinian characteristics, I reveal how an understanding of 'performative architecture'¹⁵⁰ – often used to describe 'kinetic', 'adaptive' and 'responsive' components,¹⁵¹ or the agency of an inert material's structural or thermal properties – can be distanced from an aesthetic or theatrical formulation of the performative.

This allows me to outline a method derived to track the actions produced by the imperative to perform sustainably, and relate these performances with the concept of Kaizen¹⁵² (continuous improvement), a central component of the Toyota Production System (TPS).¹⁵³

Performativity encompasses a broad set of disciplines, including linguistics, philosophy, performance studies, anthropology, sociology,

¹⁴⁹ Constantin Stanislavski, *An Actor Prepares* (1936), trans. by Elizabeth Reynolds Hapgood (London: Bloomsbury Academic, 2013), p. 102.

¹⁵⁰ Branko Kolarevic and Ali Malkawi (eds), *Performative Architecture: Beyond Instrumentality* (Abingdon, Oxon: Routledge, 2005); Asterios Agkathidis and Gabi Schillig (eds), *Performative Geometries: Transforming Textile Techniques* (Thessaloniki: BIS Publishers, 2010) and Rashida Ng and Sneha Patel (eds), *Performative Materials in Architecture and Design* (Chicago: University of Chicago Press, 2013).

¹⁵¹ Philip Beesley, 'Foreword', *Performative Materials in Architecture and Design*, pp. ix-xi (p. x); Ng describes performative materials as 'digital and analog technologies – materials science, robotics, digital fabrication, computation and interactive media', the emphasis on in her introduction is on 'interaction', 'mediation', 'participation' as the aspiration to the 'beyond optimization paradigm' of technical performance. Ng, 'Experimental Performances: Materials as Actors', *Performative Materials in Architecture and Design*, pp.3-18 (pp. 6-7).

¹⁵² Kaizen is a Japanese term that has become very specifically connected to the Toyota Production System and derivatives of it. Its literal meaning is 'good change'. 'Toyota Production System glossary', *Blog.Toyota.co.uk* (31 May, 2013) <<http://blog.toyota.co.uk/toyota-production-system-glossary>> [accessed 14 March 2017].

¹⁵³ Toyota Corporation, 'Toyota Production System', *Toyota Motor Corporation Global Website* <http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/> [accessed 22 April 2017].

gender and sexuality studies, economics, science and technology studies (STS), amongst several others. However, I will be disambiguating some of the common applications of the terms ‘performance’, the ‘performative’ and ‘performativity’. For example: Bruno Latour’s actor-network theory is implicitly Austinian,¹⁵⁴ yet explicitly associates performance with the approach of Erving Goffman.¹⁵⁵ I will argue that a theatrical reference such as this is more aligned with (what I would term) a ‘dramaturgical’ tradition of performance studies. While the architect Keller Easterling,¹⁵⁶ who draws on the work of Latour, uses Stanislavski’s technique of theatrical ‘action’ in her work on the agency of architecture and infrastructure, she does not reference Austin, and there is an ambiguity around the theatrical methods being put to use.

In making extended use of Stanislavski’s method of action, with contemporary theatrical rehearsal and performance techniques of ‘actioning’,¹⁵⁷ I distance the method from Victor Turner and Richard Schechner’s ‘dramaturgical’ performance.¹⁵⁸ I propose a more nuanced method than those of Latour and Easterling, one which has the potential to overcome difficulties surrounding the agency of action and concepts of discipline, intention and sovereignty.

These themes are heavily implicated in the context of sustainable courses of action in architecture, and I propose a way for architects to navigate the context in which a contemporary sustainable office building is

¹⁵⁴ Latour does not directly reference Austin, he uses the phrase ‘how to do things with words’ in the notes of ‘Where are the Missing Masses’, and adapts the title of Austin books in a subtitle of his essay on the Berlin Key. Bruno Latour, ‘Where are the Missing Masses? The Sociology of a Few Mundane Artefacts’, *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law (eds) (Cambridge, Mass: MIT Press, 1992), 225-259 (p. 175); and Bruno Latour ‘The Berlin Key: Or How To Do Words With Things’, *Matter, Materiality and Modern Culture*, Paul Graves-Brown (ed.) (London: Routledge, 1991), pp. 10-21.

¹⁵⁵ Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2007), p. 46.

¹⁵⁶ Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London: Verso, 2014), p. 91; and Keller Easterling, *The Action is the Form: Victor Hugo’s TED Talk* (Moscow: Strelka Press, 2014), Kindle eBook.

¹⁵⁷ The technique of ‘actioning’ is common with directors Max Stafford Clark and Mike Alfreds and documented in Max Stafford-Clark, *Letters to George: The Account of a Rehearsal* (London: Nick Hern Books, 1997); and Mike Alfreds, *Different Every Night: Freeing the Actor* (London: Nick Hern Books, 2007).

¹⁵⁸ A good discussion on relations between performativity and dramaturgy in Richard Schechner and Victor Turner is in Jena A. Zelezny, ‘Judith Butler: performativity and dramaturgy’, *Performance Philosophy* (6 October 2014) <<http://performancephilosophy.ning.com/profiles/blogs/judith-butler-performativity-and-dramaturgy>> [accessed 4 May 2016].

situated: at a moment of convergence of smart technology with architecture (where agency is given over to autonomous environmental systems to do the right thing), and where the work environments are embedded in performative-linguistic company cultures that urge their employees to 'do the right thing.'

Architectural Performance

The terms performance and performativity in architecture, are in extended use in the assessment of how well elements, details, protocols and systems achieve a goal. Performance is often used with reference to the total effect of the environmental systems in operation in an occupied building, and to a number of performative elements upon which that relies: for example, the material performances of the building fabric or the technical performance of the environment management systems. It is also used to assess the degree to which it supports the performance of the occupants, including comfort criteria, productivity, efficiency and well-being. Each component – technical, human and social – has a role to play, and must play its part well in order to achieve the target of ‘performance’.

When focusing on what is ‘performative’ about a building more generally, the term in architecture is applied to:

1. Aspects of buildings that appear to do things (usually on view): kinetic or animated elements; responsive or active components; architecture as a setting for narrative events.¹⁵⁹

or:

2. The inert matter of the building that makes a difference: exploiting material properties such as thermal mass, reflection, absorption; tectonic arrangement and geometric articulations that mediate diurnal changes in weather; the close studies of vernacular architecture and the negotiation of climate or structure through the articulation of traditional materials (stone, brick, bamboo, marble, etc.).¹⁶⁰

¹⁵⁹ Examples of this would be intelligent façades and shading devices, automatic window-opening devices, and Steven Gage and Will Thorne’s robotic ‘edge monkeys’ that respond to breaches in energy-efficient behaviour. Stephen A. Gage & Will Thorne, ‘Edge Monkeys - the Design of Habitat-specific Robots in Buildings’, *Technoetic Arts*, 3: 3 (2005) 169-179; also the kinetic material computation of Achim Menges. Achim Menges, ‘Material Computation: Higher Integration in Morphogenetic Design’, *Architectural Design*, 82.2 (2012); and the foregrounding of ‘event’ in Ng, ‘Experimental Performances: Materials as Actors’, p. 6.

¹⁶⁰ Branko Kolarevic and Kevin Klingner, ‘Manufacturing/Material/Effects’, in *Manufacturing Material Effects: Rethinking Design and Making in Architecture*, Branko Kolarevic and Kevin Klingner (eds) (Abingdon, Oxon:

In structural engineering, performativity operates in the simulations of computer-aided structural and environmental models which, by calculating optimal configurations of structural elements, minimal surface areas and efficient volumetric arrangements, call to account each and every element and material in a building, ensuring that every piece is necessary and performs a role.¹⁶¹

In summary, performativity in architecture is about action: it is something that makes a difference – qualitatively or quantitatively – and it tends to be focused on what can be seen, measured or experienced.¹⁶² It is at one moment a precise language of efficacy and efficiency, and at another it describes narrative, artistic and ineffable effects (too complex and variable to be described). I will propose a method that reconciles these two aspects – where the immeasurable can be rigorously attended to, and the apparent solidity of quantitative standards questioned.

The performative, as a theoretical idea, is a concept of action drawing on the philosophy of language. It expands on philosopher and linguist J.L. Austin's work on speech acts, in which he described a class of spoken utterances that are actions, not descriptions.¹⁶³ Austin was interested in the potential that spoken language has to create changes in the world, rather than to simply describe the world as it is. In his book *How to Do Things with Words* he gives the elemental examples of 'I name this ship the *Queen Elizabeth*',¹⁶⁴ or 'I bet you sixpence it will rain tomorrow',¹⁶⁵ neither of which

Routledge, 2008), pp. 5-24 (p. 10); and Achim Menges, 'Integral Formation and Materialization: Computational Form and Material Gestalt', in *Manufacturing Material Effects*, pp. 195-210 (p. 196).

¹⁶¹ Branko Kolarevic, 'Computing the Performative in Architecture', in *Performative Architecture: Beyond Instrumentality*, pp. 195-213.

¹⁶² A good summary on the performative in architecture as outlined above is in Chris Salter and Peter Sellars, 'Performative Architectures', *Entangled: Technology and the Transformation of Performance* (Cambridge, MA: MIT Press, 2010), pp. 80-84. This description is somewhat re-iterated in Juliet Rufford who also connects the ideas of efficiency and efficacy from Jon McKenzie's *Perform or Else* to architecture's technical performance in the same way that I do – she also defines architecture as 'a multi-billion-dollar global industry that uses sophisticated technologies (some of which are available to only itself and the militaries of select nation states)' which gives pause for thought about the 'military-industrial complex'. Juliet Rufford, *Theatre and Architecture*, (London: Palgrave MacMillan), pp. 37-39.

¹⁶³ Austin, *How to Do Things with Words*, p. 6.

¹⁶⁴ Austin, *How to Do Things with Words*, p. 5.

¹⁶⁵ Austin, *How to Do Things with Words*, p. 5.

is a report about the action taking place: the performance of the sentence IS the action, and the action cannot be done without speaking the line.

Although Austin's primary examples are limited to ceremonial cases or social conventions – acts that are performed by people with the judicial or legislative power to name ships, wed two individuals, sentence a criminal, or by those circumstantially in a position to make a bet, promise a favour or order a subordinate to do something – his proposition that 'to say something is to do something'¹⁶⁶ suggests that all language is performative.¹⁶⁷ The implications of this were picked up by poststructuralist theorists such as Jacques Derrida and, of particular relevance to this thesis, Judith Butler.¹⁶⁸

Speech act theory outlined an idea that action through language is not achieved through syntax or grammar; a performative utterance is secured by a different set of pragmatics.¹⁶⁹ It carries out its action by bringing into effect certain conventions and institutions, and is thus highly contingent. However, not all performative acts succeed, and not all performative acts are what they appear. In questioning just what it is that makes a speech act perform gave rise to the concept of the performative more broadly.¹⁷⁰ Just as each of Austin's spoken utterances DO something, a performative can also be a non-linguistic action that is productive with the same efficacy as a speech act, drawing on similar pragmatics of power.¹⁷¹

In recognising that performative actions are not always spoken, performativity has been applied to a wide range of disciplines, although not unproblematically.¹⁷² When the sociologist Michel Callon states that

¹⁶⁶ Austin, *How to Do Things with Words*, p. 94.

¹⁶⁷ Peter Womack, *Dialogue (The New Critical Idiom)* (Abingdon: Routledge, 2011), p. 94.

¹⁶⁸ Jacques Derrida, 'Signature Event Context', in *Limited Inc.* (Evanston, IL: Northwestern University Press, 1988), pp. 16-18; and Judith Butler, 'Preface (1999)', *Gender Trouble* (Abingdon: Routledge, 2006), p. xxv; and Judith Butler, *Excitable Speech: A Politics of the Performative* (Abingdon: Routledge, 1997), pp. 8, 16-19.

¹⁶⁹ Marvin Carlson, *Performance: A Critical Introduction*, (Abingdon: Routledge, 2003), pp. 63-76; Austin, *How to Do Things with Words*, pp. 1-3.

¹⁷⁰ Judith Butler, 'Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory', *Theatre Journal*, 40: 4 (December 1988), 519-531 (pp. 519-520).

¹⁷¹ Judith Butler, *Excitable Speech*, pp. 44, 71-77, 145-146; and Judith Butler, 'Performative Acts and Gender Constitution', pp. 525-528.

¹⁷² Donald MacKenzie, Fabian Muniesa and Lucia Siu (eds.), *Do Economists Make Markets? On the Performativity of Economics* (Princeton NJ: Princeton University Press, 2007)

economics is performative, he is drawing on Austin's claim that the speech act does not refer to a separate action.¹⁷³ Stock prices, valuations, and targets produce the effects they refer to: they are not a representational sphere separate from economic activity.¹⁷⁴

The term as it is used in architecture does at times coincide with the pragmatic aspects of Austinian performativity without having anything to do with words – the recognition of agency in tectonics and materials means that architecture *does* things and makes a difference;¹⁷⁵ its speculative use in computer simulations of environmental and structural performance produces the realities it describes by advancing the criteria for performance. Yet the relevance and consequences of applying performativity to architecture has usually been overlooked: Austin is introduced as a foundation, but seldom returned to.¹⁷⁶

One exception to this was a research symposium convened by Professor Jane Rendell, at University College London in 2013, which collected methods which use aspects of performance from one discourse as an analytical tool for interrogating another. In bringing together eleven researchers from around the Bartlett Faculty of the Built Environment¹⁷⁷

¹⁷³ Michel Callon, 'What Does it Mean to Say that Economics is Performative', in *Do Economists Make Markets? On the Performativity of Economics*, Donald MacKenzie, Fabian Muniesa and Lucia Siu (eds.) (Princeton NJ: Princeton University Press, 2007), pp. 311-357 (pp. 317-318).

¹⁷⁴ Michel Callon, 'What Does it Mean to Say that Economics is Performative', p. 314.

¹⁷⁵ David Leatherbarrow, 'Architecture's Unscripted Performance', in *Performative Architecture: Beyond Instrumentality*, Branko Kolarevic and Ali Malkawi (eds) (Abingdon, Oxon: Routledge, 2005), pp. 7-19 (pp. 7-10); and Juliet Rufford, *Theatre and Architecture*, pp. 37-39.

¹⁷⁶ See introductory chapter to Michael Hensel, *Performance-Oriented Architecture: Rethinking Architectural Design and the Built Environment* (Chichester: John Wiley and Sons, 2013), pp. 17-22 (p. 17); Rufford also introduces Austin, and establishes what is performative about architecture, but follows this directly with the assertion that 'performance architecture' – an emerging cross disciplinary practice that combines performance art with architectural installations – can 'like queer practices of gender construction [...] de-essentialise disciplinary norms and create new architectural performativities' thus skipping out all the implications and troubles the performative opens up, which Butler, who she cites explicitly, warns of in *Excitable Speech*, amongst other texts. Rufford, *Theatre and Architecture*, p. 39; Agnieszka Gracza, 'Open House: The evolution of 'performance architecture'', *Frieze* (6 September 2013) < <https://frieze.com/article/open-house> > [accessed 1 April 2017]; and Marianne Mulvey, 'What does performance have to do with architecture? How can a building perform, and how can we perform a building?', *Tate.org.uk Blog* (29 November, 2012) < <http://www.tate.org.uk/context-comment/blogs/what-does-performance-have-do-architecture-how-can-building-perform-and-how> > [accessed 1 April 2017].

¹⁷⁷ 'Performance/Performativity: Indication, Operation, Activation in the Built Environment' took place at the Bartlett School of Architecture on 11 February 2013. Convened by the Bartlett Research Exchange (Jane Rendell), the participants were Camillo Boano (DPU), Matthew Butcher (School of Architecture); Ava Fatah (BSGS), Ruairi Glynn (BSGS), Sean Hanna (BSGS), Andy Hudson-Smith (CASA), Yeoryia Manolopoulou (School of Architecture),

whose work intersected with themes of performance in some way,¹⁷⁸ showed the possibilities of using creative and expansive interpretations of performance as a transferrable method to reveal or interrogate the practices behind the call to ‘perform’ in a technological sense.

But behind this fairly well-known application of the potentials of cross-disciplinary practice was another more radical proposition. Rendell introduced performativity through J.L. Austin and Judith Butler, with an aim to investigate the potentials of performance as a rigorous method to interrogate architecture – with an acknowledgement of the politics of a technical ‘performative turn’ having occurred in the discipline. That is to say that the notion of the performative, could interrogate the ways in which architecture is being reconstituted in line with technical performance.¹⁷⁹

This connected with the approach of this PhD research, developing performativity as a method to address the paradigms of performance in production, economics, labour and subjectivity – the politics of the present within which architecture finds itself bound (and by which it is often incapacitated). These contexts are seemingly immanent, yet often undisclosed, in discussions around environmental performance in architecture.¹⁸⁰

Dejan Mumovich (BSGS), Alex Murray (C&PM), James O’Leary (School of Architecture), Tadj Oreszczyn (UCL Energy Institute), Satu Teerikangas (C&PM), Filipa Wunderlich (School of Planning) and had four visiting respondents to the event: Thea Brezjek (University of Technology Sydney), Katie Lloyd Thomas (University of Newcastle), Stephen Loo (University of Tasmania) and Hayley Newman (The Slade, UCL), <<http://www.ceelbas.ac.uk/bartlett/research/research-exchanges>> [accessed 14 June 2017].

¹⁷⁸ Presentations covered the use of theatrical performance for investigating the demise of a Hackney Estate, engineering performance, the performance of data in digital cities, performance as activism, performance as machine behaviour.

¹⁷⁹ The series did not continue, due to Professor Rendell’s decision to step down from her position over potential ethical issues regarding the sponsorship of the Institute of Sustainable Resources at UCL by the mining company BHP Billiton. In leading an *Ethics in the Built Environment* research group within the Bartlett, drawing together the wider UCL academic community to discuss challenges such as engaging with fossil fuel companies and divestment from fossil fuels in universities – Rendell’s work has maintained a situated and ethical concern of what it is that architects are busy doing. Jane Rendell, *Ethics in the Built Environment* <<https://www.ucl.ac.uk/bartlett/research/spirit-collaboration/ethics-built-environment>> [accessed 18 June 2015].

¹⁸⁰ Peg Rawes cites the UN ‘Bruntland Report’ as ‘effectively establish[ing] the ground upon which technological approaches to sustainability have been tied to global financial and legal frameworks’ over more ‘complex cultural, social and economic questions’ and that they are ‘slow to address the status quo at the risk of undermining [...] economic stability.’ Peg Rawes, *Relational Architectural Ecologies: Architecture, nature and subjectivity* (Abingdon, Oxon: Routledge, 2013), pp. 5, 42.

Taking on the concept of the Austinian performative as a principle for a method, particularly for architecture, may not be popular. Its genealogy in the philosophy of language raises the prospect that architecture has to retrace its encounter with linguistics. But when the scientist and philosopher Karen Barad foregrounds the performativity of inert matter she draws attention to the way in which realities become instituted, and how they continue to be effected, through discourse.

Performativity, properly construed, is not an invitation to turn everything (including material bodies) into words; on the contrary, performativity is precisely a contestation of the excessive power granted to language to determine what is real.¹⁸¹

As such – there is a possibility, and this was incipient in Rendell’s symposium too, that the perceived verity of the technical, material and economic performances in architecture, could be called to account for the ways in which they preclude and influence certain paths of action.

The performative, furthermore, does not need to be located in language, signs or even discourse. For economist Cristian Marazzi, it need never be accompanied by a physical reality; since it is sustained by ongoing institutions, the effects (or assets) never need to be realised: ‘For “money,” “I take this woman as my lawfully wedded wife,” or for securities on the Nasdaq, there is no physical support in which these states/functions are concretized.’¹⁸²

There is thus a duality in the performative: in its repetition and sustaining of institutions that pre-exist the act (marriage, baptism, legal hearings) it exhibits a self-affirming and tautological tendency, making it a highly conservative and normative concept. But also, noting that ‘discourse is [...] performative [...] if it contributes to the construction of the reality that it describes,’¹⁸³ Callon invokes one of the curious qualities of the

¹⁸¹ Karen Barad, ‘Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter.’ *S I G N S* (Spring 2003), 801-831 (p. 802).

¹⁸² Christian Marazzi, *Capital and Language: From the New Economy to the War Economy* (Los Angeles: Semiotext(e), 2008), p. 34.

¹⁸³ Michel Callon, ‘What Does it Mean to Say that Economics is Performative’, p. 316.

performative: its ability to create new states that were not in effect before. It is this capacity to create realities that also opens up the performative to the possibility of enacting subversion and critique in interesting, although difficult, ways.

What potential might there be in considering the full consequences of classing architecture as 'performative', in an Austinian sense? How can actions of the performative be followed and traced to help to define ethical or political claims about an architect's agency or responsibility?

In this chapter I am going to develop such an application to answer the pressing questions of this research. By bringing to bear feminist critiques of speech act theory upon the intentions of performance in architecture; I will outline a theatrical method of action to define what actions are actually being performed and use a critical reading of the paradigm of performance in manufacturing and management in order to clarify which institutions are being sustained by performance in architecture.

In particular, this concerns the predicament of architecture's ambiguous position of providing shelter as well as being a large contributor to carbon emissions, both directly and indirectly; of architecture being the site of the production of capital and growth in global and local economies: physically, as workplaces, factories, datacentres, warehouses, and finally, as being identified as the site of the 'low-hanging fruit' in mitigating climate change: occupant behaviour and smart technologies in heating and lighting.¹⁸⁴

¹⁸⁴ In the OED, 'low-hanging fruit, n. fig.' is defined as: 'the most readily accomplished tasks, measures, or goals; those things that most easily bring a profit or other successful result.' Occupant behaviour, and the implementation of smart controls for heating and lighting, are seen as such solvable problems. 'low-hanging, adj.' *OED Online*, (Oxford University Press, March 2017) <<http://www.oed.com/view/Entry/343083?>> [accessed 24 April 2017]; see for example Liza Young, 'CIBSE Case Study: Knowledge is Power', *CIBSE Journal* (December 2014) <<http://www.cibse.org/knowledge/knowledge-items/detail?id=a0q20000008JgVw>> [accessed 24 March 2017].

The Performance Gap

A pressing context for using performance as a critical method is the ‘performance gap’ – a problem identified by environmental engineer Bill Bordass, Robert Cohen and John Field as the difference between the actual energy performance of a building once it is handed over and its intended energy use.¹⁸⁵ The failure to meet the energy standards proposed in the design stages, or to perform in accordance with their energy ratings, they suggest, is in part due to ‘designers [...] not predicting the actual energy use but some strange optimal energy use – a bit like the thermodynamic efficiency limit for a heat engine.’¹⁸⁶

At the time of writing up this thesis, the results of a four-year investigation into the performance of the built environment were published.¹⁸⁷ Innovate UK’s Building Performance Evaluation programme, ‘analysing the performance of real buildings, including schools, apartments, supermarkets, offices, health centres and houses’, announced in March 2016 that the fifty ‘leading edge’ UK non-domestic buildings in the survey were on average using 3.5 times as much energy as they had been designed to.¹⁸⁸ In the report, several buildings rated as ‘Excellent’ in BREEAM ratings had actual energy use greater than those rated ‘Very Good’, with average total carbon emissions 3.8 times higher than the design estimate.¹⁸⁹

The study found that multiple systems were ‘fighting each other’, different heating systems ‘jockeying for control’,¹⁹⁰ with cooling systems countering heating. It also found that the control of those systems was

¹⁸⁵ Bill Bordass, Robert Cohen and John Field, ‘Energy Performance of Non-domestic Buildings: Closing the Credibility Gap’, *Building Performance Congress* (Frankfurt, 19-24 April, 2004).

¹⁸⁶ Bordass, Cohen and Field. ‘Energy Performance of Non-domestic Buildings: Closing the Credibility Gap’.

¹⁸⁷ Jason Palmer, Nicola Terry and Peter Armitage, *Building Performance Evaluation Programme: Findings from Non-domestic Projects* (Innovate UK, 2 February, 2016) <<https://www.gov.uk/government/publications/low-carbon-buildings-best-practices-and-what-to-avoid>> [accessed 30 March 2016].

¹⁸⁸ ‘Buildings use 3.5 times more energy than expected’, in *CIBSE Journal*, (March 2016) <<http://www.cibsejournal.com/news/buildings-use-3-5-times-more-energy-than-expected/>> [accessed 30 March 2016].

¹⁸⁹ In addition, hardly any link between air-tightness (the focus of much of the technical improvements to building performance) and carbon performance was found. Palmer, Terry and Armitage, *Building Performance Evaluation Programme: Findings from Non-domestic Projects*, p. 4.

¹⁹⁰ Palmer, Terry and Armitage, *Building Performance Evaluation Programme: Findings from Non-domestic Projects*, p. 3.

often overly complex, or installed without thought to their future use by occupants. This data, in line with previous studies, shows that there is something very wrong within the concept of performance in architecture:

1. The intentions of performance in architecture are not carrying through.
2. There is a scarcity of methods for calling 'failing' architecture to account.

By working through the performative in this chapter, I suggest that there are a number of moments where this predicament, and our activity as designers and architects, can be tracked.

The Intention Gap

J.L. Austin developed his concept through a series of lectures at Harvard University in 1955,¹⁹¹ describing the different types of act an utterance can perform, depending on whether the action *is* the utterance or whether it performs its action as an effect of what is said. For instance, an illocutionary act such as – 'I order you to...' or 'I promise you I will...' is pragmatically different from the actions that are a consequence of what is said: by saying something the speaker can convince, surprise, deter (which are perlocutionary).¹⁹²

In perlocutionary performatives [...] words are instrumentalised in order to produce some result. The utterance itself is not the same as the act—for example, acts of persuasion, in which through speech someone is convinced to perform an action.¹⁹³

Attempts by Austin,¹⁹⁴ and later by the philosopher John Searle,¹⁹⁵ to identify such pragmatics of speech acts and how it is they accomplish what they do, are matched by opposing critiques that insist that the conventions that

¹⁹¹ Austin, *How To Do Things With Words*.

¹⁹² Austin, *How To Do Things With Words*, p. 109.

¹⁹³ Janet Kraynak, *Please Pay Attention Please: Bruce Nauman's Words* (Cambridge, MA: MIT Press, 2005), p. 40, note 21.

¹⁹⁴ Especially 'Lectures III, IV and V', in Austin, *How to Do Things with Words*, pp. 25-52.

¹⁹⁵ John R. Searle, *Speech Acts: An Essay in the Philosophy of Language* (Cambridge: Cambridge University Press, 1969).

underwrite the performative and secure its outcome cannot be taken for granted.¹⁹⁶

Feminist philosopher Rebecca Kukla asks ‘what fixes the performative force and pragmatic structure of a speech act?’ Showing that one can ‘order someone to close the door using a grammatical declarative (“It’s freezing in here!”), an interrogative (“Can you close the door?”) or a variety of other grammatical forms’ such a force is not dependent on the arrangement of words – but is instead reliant on ‘an elaborate set of discursive conventions [...] along with the material circumstances of the act’ which ‘fix [...] the force of a speech act’ and its interpretation.¹⁹⁷

The phrase ‘Shut the door!’ can be considered in relation to whether it achieves its effect and whether it did so because of who did the ordering; Was it appropriate? Did the listener recognise the authority of the speaker? Was it an order or a request? For such a phrase as ‘the market is open’, the effects are institutionalised through conventions: there are certain people in certain contexts who can successfully enact the opening of a trading floor through the declaration. These successes, contingencies and conditions are a matter of, in Austin’s terms, ‘felicity’ or ‘infelicity’¹⁹⁸ – was the speech act ‘happy’ or ‘unhappy’ – and if it is unhappy (or infelicitous), then was it a ‘misfire’ or an ‘abuse’?¹⁹⁹

For feminist and queer critics, the conditions and contingencies that determine felicity and force become much more nuanced than in Austin’s approach: in particular, the statuses and subjectivities of the speaker and the one to whom speech acts are done (which are not adequately addressed by either Austin’s or Searle’s formalisations,²⁰⁰ despite their extensive descriptions of the rules of speech act theory). The conditions of felicity that underwrite the success of a speech act are not as universally

¹⁹⁶ Butler, *Excitable Speech*, pp. 17-19, 44, 146.

¹⁹⁷ Rebecca Kukla, 'Performative Force, Convention, and Discursive Injustice', *Hypatia: A Journal of Feminist Philosophy*, 29.2 (2014), 440-457 (p. 440).

¹⁹⁸ Austin, *How to Do Things with Words*, pp. 18-20.

¹⁹⁹ Austin, *How to Do Things with Words*, p. 16.

²⁰⁰ Questions of agency are central to discussions in the following chapters: where the actions of occupants, employees, company cultures, and thermostats will be interrogated.

applicable as the ability to speak. While the ability to speak and effect certain performatives is a form of power, the distribution of power is uneven: 'powerful people can generally do more, say more, and have their speech count for more than the powerless,' for some, there are 'more things you can do with words.'²⁰¹

The success of using language to carry out actions in real contexts is highly contingent. It is not just a matter of mastering a language that allows for the words to count, nor is it simply having the forum in which to speak:

If you are powerful, you sometimes have the ability to silence the speech of the powerless. One way might be to stop the powerless from speaking at all. Gag them, threaten them, condemn them to solitary confinement. But there is another, less dramatic but equally effective, way: Let them speak. Let them say whatever they like to whomever they like, but stop that speech from counting as an *action*. More precisely, stop it from counting as the action it was intended to be. [...] It is a kind of silencing about which Austin has something to say, without commenting on its political significance.²⁰²

The other related shortcoming in Austin's formulation, and Searle's elaboration, is the politics of intention, which in later chapters I explore through the subjectivity of the architect herself, particularly where she is called to perform subversively in appearing to conform to what is demanded of her in a commercial sense, while actually or inwardly performing a more ethical action.²⁰³ There are ambiguities at play regarding her sovereignty in being able to enact critiques and practice ethically whilst having the capacity of the professional architect who institutes a professional and chartered position in signing off a building.

Searle's formal speech act theory appeals to prerequisite conditions that must be in satisfied before the speech act takes place in order to

²⁰¹ Rae Langton, 'Speech Acts and Unspeakable Acts', *Philosophy & Public Affairs*, 22.4 (1993), 293-330 (p. 299).

²⁰² Langton, 'Speech Acts and Unspeakable Acts', p. 299.

²⁰³ For example: Keller Easterling's strategies for the architect as activist in *Extrastatecraft*. Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London: Verso, 2014), p. 213; and Peggy Deamer, 'Globalization and the Fate of Theory', *Global Perspectives on Critical Architecture*, Gevork Hartoonian (ed.) (Abingdon, Oxon: Routledge, 2015), pp. 27-41 (p. 27).

secure its success.²⁰⁴ Searle calls these the ‘preparatory conditions’²⁰⁵ of circumstance and status (one must be a judge in order to sentence a criminal, and circumstantially in the position to be ‘happily’ – that is felicitously – married); ‘sincerity conditions’²⁰⁶ of intention and belief (the speaker must intend to fulfil a promise, and believe that they are able to do so); and the ‘essential condition’²⁰⁷ that the speaker attempts to have the hearer recognise the speech act. If these are not in place, Searle says, the performative is infelicitous.²⁰⁸

However, Kukla points out that even where these conditions are met in advance, for members of certain disadvantaged groups there is often an inability to secure the outcome of a speech act.²⁰⁹ The infelicitous acts they perform do not necessarily fail to act altogether but fail to act as expected: the speaker only discovers what kind of speech act she performed afterwards.²¹⁰

Further, performativity, Kukla says, also works back on the subject.²¹¹ The speaker is constituted by the acts they try to accomplish,²¹² caught up by the capacities of the performative in ways that are not always under her control. Speech acts can never quite overcome their situatedness: of who does the speaking, and from where she/he speaks.

Before returning to these questions in the closing chapters of the thesis, I will describe a theatrical technique which includes such an indeterminacy while remaining amenable to the productive aspects of Austin’s performativity.

²⁰⁴ Searle, *Speech Acts: An Essay in the Philosophy of Language*, pp. 54-71.

²⁰⁵ Searle, *Speech Acts*, pp. 60-65.

²⁰⁶ Searle, *Speech Acts*, p. 60.

²⁰⁷ Searle, *Speech Acts*, p. 61.

²⁰⁸ Searle, *Speech Acts*, pp. 60-65.

²⁰⁹ Kukla, ‘Performative force, convention, and discursive injustice’, p. 445.

²¹⁰ Kukla, ‘Performative force, convention, and discursive injustice’, p. 444.

²¹¹ Kukla, ‘Performative force, convention, and discursive injustice’, p. 445.

²¹² This echoes Judith Butler’s claim that ‘there need not be a doer behind the deed. [...] The doer is variably constructed in and through the deed’ and applicable even to the subversive doing, in trying to subvert a performative, one is still subject to being done or undone. Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (London: Routledge, 2006), p. 181; and Judith Butler, *Excitable Speech*, p. 45.

Disambiguating Theatrical Performance

With the aid of his face, mimicry, voice and gestures, the mechanical actor offers the public nothing but the dead mask of non-existent feeling. For this there has been worked out a large assortment of picturesque effects which pretend to portray all sorts of feeling through external means. Some of these [...] clichés have become traditional; [...] as for instance spreading your hand over your heart to express love, or opening your mouth wide to give the idea of death. Others are taken ready-made, from talented contemporaries (such as rubbing the brow with the back of the hand, as Vera Komissarzhevskaya used to do in moments of tragedy). Still others are invented by actors for themselves.²¹³

Within the philosophy of language there has been an enquiry into what it is that people are *doing* when they speak through a theory of speech acts.²¹⁴ There is also a method within the theatre for proposing that the words of dialogue an actor speak *are* action – each character in a play is ‘doing something’ when they deliver a line to another character.

Performativity, because it is invoked so frequently as an aesthetic sense of theatricality, is also used often in architecture to describe things on show.²¹⁵ Where architecture that is ‘adaptive’ or ‘responsive’ qualifies as performative, it is usually in association with its kinetic, or visible, changes – what it appears to do.²¹⁶

²¹³ Constantin Stanislavski, *An Actor Prepares* (1936), Elizabeth Reynolds Hapgood (translator) (London: Bloomsbury Academic, 2013), p. 102.

²¹⁴ Austin, *How to Do Things with Words*, pp. 5-7, 67-73.

²¹⁵ Kolarevic, ‘Towards the Performative’, pp. 203-214, 207.

²¹⁶ Rufford, *Theatre and Architecture*, pp. 37-38. Two further discussions on the definition of performance in architecture, which attempt to get into the nuances of what architecture *does* – whilst resisting its aesthetic interpretations, and kinetic resonances – are David Leatherbarrow’s and Kolarevic’s chapters in *Performative Architecture, Performative Architecture: Beyond Instrumentality*. Leatherbarrow, ‘Architecture’s Unscripted Performance’, *Performative Architecture*, pp. 5-20; Kolarevic, ‘Towards the Performative’, *Performative Architecture*, pp. 203-214. Leatherbarrow’s insists that in order to find out what architecture actually *does*, one must sublimate urges to explain performance as only technical and aesthetic conditions. For Leatherbarrow, architecture can be known by its actions, effects and events (p. 10). Whilst Kolarevic acknowledges a ‘multiplicity

The definition of performance through its appearances or effects is the most crucial sense of the term performativity to disambiguate, since the common interpretation of what I could call a dramaturgical²¹⁷ sense of performativity as things-happening-on-view is also valid, and draws on the theatre as well, but it is not the use of performativity that I will be using in this thesis. I will instead draw on a later method of Russian theatre director Konstantin Stanislavski,²¹⁸ which has many similarities to Austinian performativity, and sets it apart from the use of theatre as a framing concept for social behaviours or, as Jon McKenzie has argued ‘potentially any instance of expressive behaviour or cultural enactment.’²¹⁹

One can understand the practices and methods of theatre as centred on its staging and aesthetic effects, or the subtext behind the script: that it is a representational medium to be understood through references, both linguistic and aesthetic. So when the terms performance and performativity are put to use in architecture, it is often in relation to the deployment of meaning, narrative and often spectacle.²²⁰ This would seem quite different to the sense of the word performance in relation to standards, goals, and in-use functionality used by engineers and architects. Where architecture integrates its environmental or structural functionality into its kinetic, tectonic or material expression, the use of the term performative seems to be a happy coincidence.

of meanings associated with the performative in architecture’, it is the ‘capacity to respond to changing social, cultural and technological conditions by perpetually reformatting itself as an index, as well as a mediator of (or an interface to) emerging cultural patterns’ (p. 205). Whilst movement, flux, change, are dominant in his descriptions, he also says that the performative goes beyond the kinetic, and beyond the scenographic. However, when Kolarevic states that the Bilbao Effect is merely a development catalyst (p. 209) this indicates for me an inability to discern the action from effect, which to a lesser degree Leatherbarrow’s essay shows – in other words what something appears to do, or its intention may be misleading.

²¹⁷ The definition of dramaturgy in the OED is ‘dramatic composition, dramatic art’ so I use this term to refer to the focus in Goffman, Schechner and Turner on the art of composing an outward expression.

²¹⁸ The Stanislavski method also differs distinctly from other influential twentieth-century theatrical methods and theories (Berthold Brecht, Antonin Artaud, Augusto Boal and Joan Littlewood) that have had an influence beyond theatre.

²¹⁹ Jon McKenzie, ‘Performance Studies’, *The Johns Hopkins Guide to Literary Theory & Criticism*, 2nd ed., Michael Groden, Martin Kreiswirth and Imre Szeman, (eds.) (Baltimore, MD: The Johns Hopkins University Press, 2004), pp. 726-730, (p. 726).

²²⁰ Kolarevic, ‘Towards the Performative’, p. 207.

My first challenge is to insist that performativity is not synonymous with choreography or narrativity, or concerned only with things happening on view. Such an interpretation of the theatrical is the result of both an incomplete understanding of the practices of theatre, as well as the wide acceptance of the concept of dramaturgy that underscores the field of performance studies, established in New York by performing arts director Richard Schechner, with anthropologist Victor Turner.

Schechner and Turner proposed that sites of performance – from the high arts of theatre to sports, social rituals, traditional dance or even tourist displays – can be the subject of ethnographic research into culture,²²¹ which is constructed through its performances and rituals to be interpreted or enjoyed by observers and participants.²²² Stating that all cultural acts are performance²²³ – whilst they also draw into their study the everyday actions that are the subject of Austin and Stanislavski²²⁴ – means that theatrical performativity tends to be interpreted through its effects on an audience or other participants.²²⁵ The distinction at first seems quite subtle but using Stanislavski's technique, a discernible and important difference picks up the fundamentals proposed in Austinian performativity, and these can be used to tighten the refine the term as applied in architecture.

²²¹ Marvin Carlson, *Performance: A Critical Introduction*, pp. 11, 15, 17.

²²² This interpretation of performance influences Dorita Hannah's use of performativity, which she states is synonymous with 'activity'. Her definition of performance is in line with what I've outlined above – 'an English word has many meanings, encompassing aesthetically orchestrated displays, assessable behaviours, operational procedures and expressive practices'. Dorita Hannah, 'Alarming the heart: Costume as performative body-object-event', *Scene*, 2: 1+2 (2014), pp. 15-34 (p. 17).

²²³ This is what Hannah calls Schechner's 'broad spectrum' approach in which he 'recogniz[es] that, while not everything is a conscious performance, everything can be studied as a performance'. Hannah, 'Alarming the Heart', p. 17. For Schechner 'performativity – or commonly "performance" – is *everywhere* in life, from ordinary gestures to macrodramas.' Richard Schechner, *Performance Theory* (London: Routledge, 2003), p. 326. It is worth noting that in Schechner, Turner and Goffman's thinking there is a strong thread of action in their concept of dramaturgy. This is particularly evident in the attention that Goffman pays to the doing as much as the representation, making his work apparently amenable to Austinian performativity. Carlson, *Performance: A Critical Introduction* pp. 31-32, 35. Dorita Hannah's use of the performative picks up on this thread and leads her more towards what I call a dramaturgical account of performativity. Dorita Hannah and Omar Khan, 'Performance/Architecture: Interview', *Journal of Architecture Education* (2008), pp. 4-5.

²²⁴ *An Actor Prepares*, which documents this method, was translated into English by Elizabeth Reynolds Hapgood in 1936. Stanislavski's method of action therefore predates Austin's theory of speech acts.

²²⁵ Hannah, 'Alarming the heart', p. 17; Rufford, *Theatre and Architecture*, pp. 38-40.

How the idea of visual effect pervades the understanding of performativity beyond performance studies is due in large part to the work of sociologist Erving Goffman, who also used dramaturgy as a method to understand everyday social behaviour.²²⁶ Performance, for Goffman, was the careful construction of gestures, mannerisms and performances designed to have effects on an 'audience', who are the people with whom the subject interacts in the social situations of daily life.²²⁷ In the Stanislavski technique, such attempts to affect an audience directly would be considered 'bad' acting.²²⁸ For Stanislavski, 'the mistake most actors make is that they think about the result instead of about the action that must prepare it. By avoiding action and aiming straight at the result you get a forced product which can lead to nothing but ham acting.'²²⁹

While theatre draws heavily on metaphor, semiotics and representation, in the theatrical method of Stanislavski it is in fact action that is central to drama.²³⁰ Preceding J.L. Austin's *How to Do Things with Words* by at least three decades, theatrical actions do not draw on legislative or judiciary power, nor do they necessarily draw directly on the content of the script to enact their drama. For Stanislavski, the characters on stage do things with purpose:²³¹ all action is driven by a want, and all

²²⁶ For Goffman performance is defined as 'all the activity of an individual which occurs during a period marked by his continuous presence before a particular set of observers and which has some influence on the observers.' Erving Goffman, *The Presentation of Self in Everyday Life* (London: Penguin, 1959), p. 32; and Carlson, *Performance: A Critical Introduction*, p. 35. Goffman clarifies that his interest is 'concerned only with the participant's dramaturgical problems of presenting the activity before others.' Goffman, *The Presentation of Self*, p. 26; McKenzie, *Perform or Else*, p. 86; and James Loxley, *Performativity* (Oxford: Routledge, 2007), pp. 150-152.

²²⁷ Goffman, *The Presentation of Self*, pp. 13-15, 26, 28-29; Arlie Russell Hochschild, 'Appendix A: Models of Emotion: From Darwin to Goffman', *The Managed Heart*, pp. 226-227. Goffman mistakes the effect of acting in theatre as being the result of script, stage directions, and 'management' of what I think Stanislavski would call 'picturesque effects'. Goffman writes that 'a theatrical performance or a staged confidence game requires a thorough scripting of the spoken content of the routine; but the vast part involving 'expression given off' is often determined by meagre stage directions. It is expected that the performer of illusions will already know a good deal about how to manage his voice, his face, and his body, although he – as well as any person who directs him – may find it difficult [...] to provide a detailed verbal statement of this kind of knowledge.' Goffman, *The Presentation of Self*, p. 79.

²²⁸ Stanislavski, *An Actor Prepares*, p. 26.

²²⁹ Stanislavski, *An Actor Prepares*, p. 102.

²³⁰ Stanislavski, *An Actor Prepares*, p. 32; and Bella Merlin, *Konstantin Stanislavsky: Routledge Performance Practitioners* (Abingdon: Routledge, 2003), p. 29.

²³¹ Stanislavski's chapter on 'Action' spends time on the concept of acting being more like doing or carrying out a specific action, such as sitting, waiting – not 'acting anything'. Stanislavski, *An Actor Prepares*, pp. 31-32. I also took part in a workshop run by Ysabel Clare focused on the Stanislavski technique and on 'understanding of the

wants are determined by a character's objectives.²³² It is important to differentiate it from common knowledge about 'Method Acting' (or 'The Method') as the performance of emotion states by drawing on one's own personal and concrete experiences to animate the lines spoken – this 'emotion memory' was one of Stanislavski's earlier methods. Realising the limitations of a method such as this, Stanislavski developed the 'method of action' to counter the tendency, in evoking past emotions, to produce 'tension, exhaustion, sometimes hysteria.'²³³

If you clench your fists and stiffen the muscles of your body, or breathe spasmodically, you can bring yourself to a state of great physical intensity. This is often thought by the public to be an expression of a powerful temperament aroused by passion.

Actors of a more nervous type can arouse theatrical emotions by artificially screwing up their nerves; this produces theatrical hysteria, an unhealthy ecstasy, which is usually just as lacking in inner content as is the physical excitement.²³⁴

Further, he thought the direct elicitation of emotions through memory could not overcome the problems of trying to create effects on an audience, who eventually became inured to the skills of the profession:

No matter how skilful an actor may be in his choice of stage conventions, because of their inherent mechanical quality he cannot move spectators by them. He must have some supplementary means of arousing them, so he takes refuge in what we call theatrical emotions. These are a sort of artificial imitation of the periphery of physical feelings.²³⁵

In the mid-1930s Stanislavski started to develop a method through which 'emotions rose inevitably from the actions, rather than actors consciously

basic principles [of the method] help[ing] the actor to know when or whether they are 'doing it', and indeed, what they are 'doing'.' Ysabel Clare, *Stanislavsky's Mindful Actor: A Workshop* (19 May 2015).

²³² Stanislavski, *An Actor Prepares*, pp. 102-103.

²³³ Jean Benedetti, *Stanislavski: An Introduction* (London: Methuen, 2000), p. 67.

²³⁴ Stanislavski, *An Actor Prepares*, p. 22.

²³⁵ Stanislavski, *An Actor Prepares*, p. 22.

trying to arouse emotions as the main challenge to their acting skills,²³⁶ and there was a shift from the inner emotions of the actor and their effects on an audience to the on-stage actions between characters.²³⁷

Analogous to Austin's premise that to say something is to do something, dialogue in theatre is not a commentary accompanying actions: rather, the words are actions taking place between the characters on stage.²³⁸ The story is not told to the audience by the characters on stage, rather, it is revealed by the characters through their actions, both physical and spoken:

The characters [...] do not narrate themselves to us; they behave, and we observe them, and the things we hear them say are a part of their behaviour in just the same way as the things we see them do.²³⁹

In Stanislavski's method of action, a scene is discussed to determine the main units of action for each character. By breaking it into parts where smaller actions are located; the method involves finding a name for that unit of action, which has to be something a character can *do*.²⁴⁰ It must not be confused with the subtext of the script²⁴¹ – it is, in fact, the mechanism through which subtexts can be deployed, and how the lines are delivered. The named actions accompany the dialogue, and often have a different meaning from the semantic content of the sentence.

The architect Keller Easterling, who also has a background in theatrical training, uses the method of action in her proposal, making an important

²³⁶ Merlin, *Konstantin Stanislavsky*, p. 29.

²³⁷ Merlin, *Konstantin Stanislavsky*, p. 29.

²³⁸ Stanislavski would instruct his actors to resist looking at the dialogue of a play until after a lot of preparation had been undertaken on the objectives of what the character is trying to do. Actors in the Stanislavskian tradition would often improvise the scene silently, working attentively through a line of physical actions to test whether what had been discussed in analysing the scene actually worked on stage and in interactions with others. Then, little by little, in this process words could be added, so that each line of dialogue became an imperative – and would only be uttered when absolutely necessary. Merlin, *Konstantin Stanislavsky*, pp. 30-32.

²³⁹ Womack, *Dialogue*, p. 87.

²⁴⁰ Bella Merlin describes actions as 'small achievable tasks that were directed straight towards other actors on stage'. Merlin, *Konstantin Stanislavsky*, pp. 29, 38.

²⁴¹ Nick Mosley says that actioning was in response to the desire of actors to explore 'individualised subtextual narratives' which 'blurred the dialectical storyline' and to focus actors on 'find[ing] an impulse to speak and act in a way that would clearly and simply reveal the human story and the social narrative. Nick Mosley, *Actioning, and How To Do It*, (London: Nick Hern Books, 2016), p. ix.

point with which Stanislavski concurred: 'An actor adheres to [a] script, but the scripted words are considered only to be traces or artefacts that provide hints of an underlying action.'²⁴²

In *An Actor Prepares*,²⁴³ Stanislavski's character 'Tortsov', the director, introduces the method to his students by describing an emotive scene in a play. He asks his students to identify the basic units of action for each character.

Agnes, the wife of Pastor Brand, has lost her only son. In her grief she is sorting through the baby linen, petticoats and toys left behind - relics. Each object is bathed in tears. Her heart is bursting with memories. The tragedy was brought about by the fact that they live in a damp, unhealthy locality. When their son fell ill, the mother implored the husband to leave the parish. But Brand, a fanatic, would not sacrifice his duty as pastor for the salvation of his family. The decision took the life of their son.

The gist of the second unit is: Brand comes in. He too is suffering [...] yet his conception of duty forces him to be severe and to persuade his wife to give the sacred relics [...] to a poor gypsy woman.²⁴⁴

When a student suggests that the first objective is 'a mother's love', and the second 'the fanatic's duty', Tortsov advises that the students should not try to express the *meaning* of the action as a noun.

How, Stanislavski asks, can you act 'love'? Certainly not by trying to evoke the feeling direct. The solution is to imagine a series of happenings, or moments, which add up to the emotion. The emotion becomes a story in which each moment is represented by a

²⁴² Keller Easterling, *The Action is the Form the Form: Victor Hugo's TED Talk* (Moscow: Strelka Press, 2014), Kindle eBook.

²⁴³ Stanislavski uses the device of a fictional student to work through the method and anticipate confusion: Kostya, the narrator of the book, is under the tutelage of a theatre director called Tortsov

²⁴⁴ Stanislavski, *An Actor Prepares*, p. 106.

single action. In other words [...] emotion becomes a process and not a question of imitation.²⁴⁵

Operating beyond the specificity of the script, the performers' actions do not merely 'represent' being a mother through outward expressions of motherhood, or love, or any other emotion. Easterling notes that actors 'rarely deal with states of being that can be named. [...] An actor would not play "being a mother": rather they find a distinct playable action such as "smothering a child."²⁴⁶ While Stanislavski's emotion memory might be considered the performance of nouns, actions are verbs.²⁴⁷ 'Actors have a script (e.g., "come home son"), but their real work lies in crafting an action, usually with an infinitive expression (to grovel, to reject, to caress).'²⁴⁸

Not any verb will suffice – the verb *to be* is static; it doesn't contain the active form necessary to give impetus to full action. Further, actions in *An Actor Prepares* must be 'on our side of the footlights. They must be directed toward the other actors, and not toward the spectators.'²⁴⁹

Instructing his students to take part in a contest, he challenges them to find words for what it is they are trying to do to the other character.

"Let the men put themselves in Brand's situation and find names for his tasks [...] As for the women, let them be Agnes. One, two, three! The contest [...] begins!"

"I want to gain power over Agnes and force her to make a sacrifice, to save her and have command over her."

All the women rushed forward: "I want to remember the dead child!" "I want to be near him! I want to talk to him!" "I want to bring him back to life. – I want to follow him in death! – I want to sense him near me! – I want to feel him with his things! [...] I want to deaden my pain!"

²⁴⁵ Benedetti, *Stanislavski: An Introduction*, p. 94.

²⁴⁶ Easterling, *The Action is the Form*.

²⁴⁷ 'The objective must always be a verb', Stanislavski/Tortsov insists: 'Instead of a noun [...] use a verb. Just add "I wish" or "I wish to do - so and so."' Stanislavski, *An Actor Prepares*, p. 106.

²⁴⁸ Easterling, *Extrastatecraft*, p. 91.

²⁴⁹ Stanislavski, *An Actor Prepares*, p. 106.

“In that case,” the men stated, “let's fight it out! – I want to hold her to me! – I want to make her feel how much I understand her sorrow! – I want to paint the delight and joy of having done one's duty for her!”

“In that case,” the women cried, “I want to move my husband to pity with my pain.” – “I want him to see my tears!” “I want to hold him even more closely and not let him go!” cried Marya.

In reply the men said: “I want to frighten her with her responsibility to mankind!” – “I want to threaten her with punishment and separation!” – “I want to express my despair at our inability to understand each other!”

More and more thoughts and feelings were produced the whole time this battle lasted and they needed appropriate verbs to define them, and the verbs, in their turn, evoked impulses to action.²⁵⁰

A scene need not involve high drama with extreme emotions, as in the example given by Stanislavski, to generate actions. At this point it is useful to look at the types of actions that are the mainstay of contemporary theatre: the commonplace and trivial moments of day-to-day life that become the central driver of dramatic action on stage.²⁵¹ The following scene of Harold Pinter's play *The Homecoming* (1965), shows an apparently mundane interaction over a pair of scissors reveals the relationships and antagonisms between the two characters.

²⁵⁰ Konstantin Stanislavski, *An Actor's Work*, trans. by Jean Benedetti (Abingdon: Routledge, 2009), pp. 150-151.

²⁵¹ Particularly the work of Harold Pinter and even Samuel Beckett. For example: in Beckett's *Happy Days* (1961) the protagonist Winnie, buried up to her waist in sand, carries out an inventory of her mundane thoughts, her ailments and the contents of her bag as the play, and the impending disaster, unfolds. Samuel Beckett, *Happy Days: A Play in Two Acts* (London: Faber and Faber, 2010).

MAX

What have you done with the scissors? *(pause)* I said I'm looking for the scissors. What have you done with them? *(pause)* Did you hear me? I want to cut something out of the paper.

LENNY

I'm reading the paper.

MAX

Not that paper, I haven't even read that paper. I'm talking about last Sunday's paper. I was just having a look at it in the kitchen. *(pause)* Do you hear what I'm saying? I'm talking to you! Where's the scissors?

LENNY

(looking up, quietly) Why don't you shut up, you daft prat?

Figure 3: extract from Harold Pinter's play The Homecoming (1965), in Womack, Dialogue, p.97.

MAX

(I accuse you)

LENNY

(I ignore you)

MAX

(I remind you)

LENNY

(I ignore you)

MAX

(I reason with you)

LENNY

(I correct you)

Figure 4: actions of the dialogue in The Homecoming (1965) from Womack, Dialogue, p. 97.

The scene is actioned by Peter Womack, suggesting ways that the lines could be played so that each character is doing something to the other, he has selected to play the pauses as Lenny ignoring Max.²⁵²

The practices of contemporary theatre directors, notably in the UK,²⁵³ such as those of Max Stafford-Clark²⁵⁴ and Mike Alfreds,²⁵⁵ involves extensively ‘actioning’²⁵⁶ a script during the rehearsal process. Actors go through a script, figuring out what the characters are doing moment by moment for each line of spoken dialogue, breaking the drama into units of action. In the ‘actioning’ method, verbs must be a single transitive verb: ‘I pressurise you’, ‘I correct you’, ‘I mock you’. Making the action fit the ‘I ___ you’ pattern ensures that the action can be ‘played’; that is, it can be performed as a concrete behaviour of the character.²⁵⁷

Where Stanislavski’s actions are dramatic impulses to action, which are often physical and highly emotive, contemporary drama is frequently focused on mundane interactions and dialogue. An extract of the opening scene of Pinter’s *Homecoming*, shows how an apparently trivial dialogue about a pair of scissors can be ‘actioned’ to present the relationship and behaviour of each character towards the other. Every line of the script can be actioned with a single transitive verb: there is no part of the script that is simply ‘telling’ or ‘describing’, every line is a character doing something to another. Saying nothing in reply is not necessarily doing nothing – not moving or not speaking does not render the character inactive – where the second character does not respond with a line of dialogue, it is reasonable

²⁵² This extract from Pinter’s play *The Homecoming* is cited in Womack, *Dialogue*, p. 97.

²⁵³ Nick Moseley claims that actioning is not a Stanislavskian technique, and is a method mainly used in the UK, developed in the 1970s by Max Stafford-Clark and Bill Gaskell at Joint Stock Theatre Company, mostly in response to the difficulty in ‘political and polemic’ plays such as David Hare’s *Fanshen* (1975); however, Keller Easterling trained in a method of action at Princeton at some point between the late ’70s and early ’80s, and worked as a playwright, as well as an architect, throughout the ’80s and early ’90s. Moseley, *Actioning - and How to Do It*, p. ix.

²⁵⁴ Philip Roberts, Max Stafford-Clark, *Taking Stock: The Theatre of Max Stafford-Clark* (London: Nick Hern Books, 2007), p. 199.

²⁵⁵ Mike Alfreds, *Different Every Night: Freeing the Actor* (London: Nick Hern Books, 2007), p. 64-65, 71, 164-186.

²⁵⁶ Nick Moseley, *Actioning - and How to Do It* (London: Nick Hern Books, 2016), p. viii.

²⁵⁷ Alfreds, *Different Every Night*, pp. 72-73.

to action this non-response as ‘I ignore you’, ‘I acknowledge you’ or even play it actively with ‘I taunt you’.

For Stafford-Clark’s and Alfreds’ method of actioning, which works first with the script in read-through, actioning the lines of dialogue directly, it is important to reiterate that the verbs are not an annotation of the underlying meaning (subtext) of each line of dialogue – and neither is it reducible to one undisputable action: the lines of dialogue can be ‘played’ in various ways depending on the performance and the interaction with other performers.²⁵⁸

Some of Austin’s actions, ‘I bet’, ‘I promise’, for instance, would be disallowed in theatrical actioning, since they are too indistinct. Such actions would need to have a qualifier: ‘I bet you that ...’ or ‘I promise you that ...’. Further, the transitive verbs of actioning seldom need an adjective to make them more precise, whereas one could bet slyly, or promise unconvincingly. The aim of actioning is to be specific about the verb being played, and it must have an effect: if no change is made either directly in the world or to the listener’s state of mind then it is not an action. There is a lot of discussion around this method about what kinds of actions are ‘playable’ or useful, with varying degrees of dogmatism and strictness.²⁵⁹

Where Austin’s linguistic theory of speech acts concentrate almost entirely on the speaker, with the barest suggestion of the presence of another (the one to whom the speech acts are being done is typically a subject with no recourse – they seldom speak back), in theatre there is usually a counterpart to the speaker, and they do things too. Actions can be thwarted, redeployed or subverted, and are dependent on the agencies of all

²⁵⁸ The title of the book is *Different Every Night* emphasising that actioning is a method of potential behaviours that can emerge from a text, and the rehearsal is a process for discovering the different ways a scene could be played.

²⁵⁹ There are a number of differences that arise around the method of actioning, mostly on what constitutes a ‘playable’ action. Books on the method make contradictory claims about what is an allowable action. e.g. those that presuppose effect are disallowed in some methods, Mosley, whose book on actioning was published in 2016, uses the word ‘intention’ a number of times in the text, and consequently allows several verbs that presuppose an effect – e.g. *I satisfy you*. Moseley, *Actioning - and How to Do It*. p. 14.; Marina Caldarone and Maggie Lloyd-Williams, *Actions: The Actor’s Thesaurus* (London: Nick Hern Books, 2004) p. xvi; and Alfreds, *Different Every Night*, pp. 72-73.

involved in the interaction: they are to some extent completed by its response or reception from another character.

On the one hand actions should be precise, yet not presuppose their effect: actions that are too determinate, such as deceive, or seduce, are often disallowed, since the actor cannot guarantee that an attempt to deceive won't be uncovered, or a seduction rebuffed.²⁶⁰ Actions such as obscure or conceal might be better than deceive, whereas a verb like *confuse* is already an effect – the character one is trying to confuse or deceive may not be fooled. For seduce, actions might be worship or compliment, both of which are achievable by the actor, yet also lead to the possibility that the actor might be turned off by being worshipped and annoyed by being complimented.

In being both open and precise, actions are an exercise in allowing agency – not to block or incapacitate other actors. The way the actions are tested in interactions with other actors is a key part of the method – actors must not be too committed to an action.²⁶¹ To stick too closely to an action in a way that prevents another actor from performing, or forces them to adhere to one actor's intention, is called 'blocking.'²⁶²

²⁶⁰ Whilst there are the cited books on the method of actioning, it is a method that is much more elaborated within training and classes, partly since practitioners bring their own theatrical training to bear on the ideas through atelier system. Indeed Stanislavski's *An Actor Prepares*, and Max Stafford Clark's *Letters to George* maintain this atelier concept by embedding the method within a narrative of the course diary. In Stanislavski's case the account was entirely fictional, whereas Stafford Clark's is an account of real rehearsals, but written as letters to the author of the play being rehearsed. The other important point is that it isn't easy to formalise absolute distinctions in writing about what works and what doesn't – particularly since the texts make no reference to methods outside of theatrical training itself, and it these difficulties are much more easily resolved in the situation of working with them in rehearsals and workshops. I undertook masterclasses at the Royal Academy of Dramatic Art with an actor whose training in actioning came through the Meisner technique, and a short course run by a Director from Stafford Clark's theatre company *Out of Joint*. Through these courses problems were raised about the written guides, especially Caldarone and Lloyd-Williams', *Actions: The Actor's Thesaurus*, which was acknowledged as useful but with the proviso that all actions are contingent on how they work in practice through the rehearsal. 'Verbatim Writers Course', led by Naomi Jones as part of Out of Joint's programme of workshops, (7-13 August 2013); and *Actions, Acting and Reacting*, RADA (21 September 2015).

²⁶¹ It is by no means a resolved method, with much discussion in theatre about its effectiveness and use but these insights come from the masterclasses that I undertook at Royal Academy of Dramatic Arts: 'Acting Technique', RADA (27 April 2015); 'Improvisation', RADA (18 May 2015); and 'Actions, Acting and Reacting', RADA (21 September 2015).

²⁶² In theatre director Sanford Meisner's development of the Stanislavski method, the repetition of actions and reactions take place in rehearsal: two actors face one another, one says their actions out loud, the other repeats the action back, and they repeat back and forth, to test whether the action works. Where the actors realise that the action just cannot be played, another action is sought. 'Actions, Acting and Reacting' led by Ian Henderson, RADA (21 September 2015); also documented as an exercise in Alfreds, *Different Every Night*, p.171-172.

That another's objectives might be deflected, co-opted or recruited in order to reach one's own objective in the theatrical technique of actioning gives rise to more dramatic action on stage, but it is also one of the main points that I will draw attention to in the discussion on occupant behaviour in architecture in chapter two, and I will discuss in greater detail the relation between behaviour change and the use of smart technology within environmental architecture in chapter three.

ACTOR
I warm you

REACTOR
You warm me

ACTOR
I heat you

REACTOR
You heat me

ACTOR
I heat you

REACTOR
You heat me

ACTOR
I inflame you

REACTOR
You inflame me

ACTOR
I burn you

REACTOR
You burn me

Figure 5. Hot Action, short dialogue using actions and reactions and repetitions. Repetition of actions and reactions: two actors face one another, one says their actions out loud, the other repeats the action back, and they repeat back and forth, testing the action. Alfreds, Different Every Night, p.171-172

While the method of action or actioning in theatre pays attention to *doing* in a way that bears a close resemblance to the way that Austin's speech acts function, it highlights some of the problems of speech act theory.²⁶³ By reconsidering performativity from the perspective of actioning, challenges to the sovereignty of the speaker of the utterances can be made, and some of the more conservative claims in attempts to formalise speech act theory into a closed system (which can be mastered by attention to the rules) start to lose their legitimacy.

Summary of Action – (towards a method)

The task in the first part of this chapter has been to disambiguate the terms performance, performativity and performative from their common use in architectural discourse. In order to do this, I have centred on Austinian performativity and brought a technique from theatrical practice to bear on its common understanding.

I have made a distinction between the Austinian performative method of Konstantin Stanislavski with the dramaturgical concept of performativity in Schechner's performance studies and Erving Goffman's social performance, in order to develop a method to answer two questions: 'What are we busy *doing*?' and 'Who is *doing* what to whom?'

The first is a question from Belgian philosopher Isabelle Stengers' paper 'The Cosmopolitical Proposal', where she draws attention to the actions mobilised in the name of a greater good²⁶⁴ and take a moment to

²⁶³ Although the roots of the actioning method pre-date Austin's speech acts, they share such a commonality that I am surprised by the how little analysis of both in conjunction has been made, especially since they complement one another. Each lend the other ways of working through some of the problematic questions around the performative – in particular the 'uptake' – (the success of the effect) beyond felicity and intention. Carlson, *Performance, A Critical Introduction*, p. 72. I would also add that when Judith Butler connects performativity with theatre the emphasis is not on any notions of 'action' – but more with the noun of what is constituted by the illocutionary utterance which 'brings into being what it names' or 'radically transforms a situation into another' at 7min 11 seconds: Judith Butler, 'When Gesture Becomes Event', online video recording, *Theatre Performance Philosophy – International Conference, University of Paris-Sorbonne*, 27 June 2014, <<https://www.youtube.com/watch?v=iuAMRxSH--s>> [accessed 5 August, 2016].

²⁶⁴ Isabelle Stengers, 'The Cosmopolitical Proposal', *Making Things Public: Atmospheres of Democracy*, Bruno Latour and Peter Weibel (eds.) (Cambridge, MA: MIT Press, 2005), pp. 994-1004 (p. 995).

‘resist the consensual way in which the situation is presented and in which emergencies mobilize thought or action.’²⁶⁵ The second question, from sociologist Lucy Suchman in her essay ‘Located Accountabilities in Technology Production’, invites us to investigate how problems are framed in a such a way that they produce ‘unlocatable’ users, and designers.²⁶⁶

These two questions are directed towards two activities in architecture that are presented as ‘low-hanging fruit’, achievable, actionable improvements to the performance of buildings: occupant behaviour and the implementation of smart technology.

The terms performance and performativity are not just linguistic terms that have a wide metaphorical currency throughout the discipline of architecture; they are also put to use to institute standards, criteria and possibilities: performance is the operational mode at the heart of a paradigm that is extending deep into practice (and academia generally) and into the way that, as subjects, we organise our entire working and emotional lives.

In the following chapters I will map the mechanisms crossing over from the high-tech industry into all work cultures generally – they are replicated in the arts, theatre, design, architecture, and in education especially. We, as academics and practitioners, are called to innovate, be entrepreneurial and, above all, to be passionate about what we do, working towards a greater purpose,²⁶⁷ and I show how these reconfigure the sovereign subject in complicated ways.

The insights that I outline below will be taken forward in the next two chapters to trace the actions being implemented by imperatives to perform sustainably in architecture:

²⁶⁵ Isabelle Stengers, ‘The Cosmopolitical Proposal’, p. 994.

²⁶⁶ Lucy Suchman, ‘Located Accountabilities in Technology Production’, *Scandinavian Journal of Information Systems*, 14.2, (2002), 91-105 (p. 95).

²⁶⁷ In a 2001 book accompanying a MOMA exhibition on contemporary work Larry Keeley writes ‘Knowledge work is not only ascendant; it is truly weird[...] It seems that we are supposed to care about our work. (Shocking!) Indeed, many young people see it as an element of personal expression. (The nerve!) Some even expect it to have an impact on the world. (How arrogant!)’, Larry Keeley, *Workspheres: Design and Contemporary Work Styles*, Paola Antonelli (ed.) (New York: The Museum of Modern Art, 2001) p. 18-19.

1. Each action instigates a change or creates a new state.
2. Actions can be transmitted from one actor to another; one actor can influence the other to take an action on the first's behalf, or an actor can enlist the help of another actor to act on a shared goal.
3. Actions cannot be guaranteed in advance, but are contingent on their situated enactment. This is not the perlocutionary effect, but rather what an action turned out to be.

Bringing the techniques of actioning in theatre and the workings of 'playable' actions to the concepts of performance and performativity gives shape to a method for interrogating how the rhetoric of sustainability mobilises, disables, constitutes and undermines through an enmeshment of institutions, subjectivities and technologies.

The Efficiencies and Efficacies of the Performative

The performance of the environmental systems in operation in an occupied building is dependent upon a number of performative elements – façades, louvres, thermostats, their correct commissioning and usage. At the same time this environmental performance is made contingent on terms of management – the meeting of criteria for comfort cannot be disentangled from the demand that the performance of the occupants is enhanced.²⁶⁸ The terminology that frequently accompanies such discussions on the connection of environmental performance with human performance includes the words efficacy, efficiency, productivity, well-being.²⁶⁹ These terms, I suggest, are all part of a paradigm of management that has become

²⁶⁸ *Health, Wellbeing & Productivity in Offices: the Next Chapter for Green Building*, World Green Building Council (2014), pp. 6, 15. <http://www.worldgbc.org/files/6314/1152/0821/WorldGBC__Health_Wellbeing__productivity_Full_Report.pdf> [accessed 10 June 2016]; Derek Clements-Croome, *Creating the Productive Workplace* (2006), p. 13. <<http://centaur.reading.ac.uk/67748/2/Creative%20and%20productive%20workplaces%20a%20review-centaur.pdf>> [accessed 27 April 2017]; and U.S. Green Building Council, *Making the Business Case for High Performance Green Buildings* (2003), p. 4. <http://www.usgbc.org/Docs/Member_Resource_Docs/makingthebusinesscase.pdf> [accessed 27 April 2017].

²⁶⁹ Lizi Greenhill, 'Sustainability: Wellbeing', *Building.co.uk* (19 January, 2016) <<http://www.building.co.uk/sustainability-wellbeing/5079738.article>> [accessed 27 April 2017]; and *Health, Wellbeing & Productivity in Offices: the Next Chapter for Green Building*, World Green Building Council, p. 6.

increasingly ubiquitous since the late 1970s, associated with post-Fordist manufacturing, the knowledge industry and immaterial labour.²⁷⁰

The ready transference of processes of high performance management systems into environmental discourse is notable: adaptability, efficiency, waste-reduction, low-energy manufacture, doing more with less (materials, space, employees), innovation, tight feedback loops, are all terms that permeate the discussions around what we must do in architecture to remedy the environmental impact of the built environment. These terms do not originate in architecture, nor do they originate in environmental discourse: they come from a manufacturing process called the Toyota Production System (TPS).²⁷¹

Lyotard, in *The Postmodern Condition: a Report on Knowledge*,²⁷² makes an explicit connection between performativity and the processes of post-Fordist capitalism, which sociologist Fabien Muniesa takes as a mistaken application of the efficacy of an Austinian speech act (or its likelihood of performing the desired effect on the listener, or felicity).²⁷³

²⁷⁰ A number of terms are associated with a shift towards what Maurizio Lazzarato calls 'immaterial labour' and an idea of knowledge work and the knowledge industry from Peter Drucker. For Lazzarato immaterial labour is the 'labour that produces the informational and cultural content of the commodity.' It refers in the first instance to the work of abstracting and translating processes of production into computer networks, algorithms and data flows, and in the second to 'the kinds of activities that are not normally recognised as "work" – defining and fixing cultural and artistic standards, fashions, tastes, consumer norms, and, more strategically, public opinion'. Maurizio Lazzarato, 'Immaterial Labour', in *Radical thought in Italy: A Potential Politics*, Paolo Virno and Michael Hardt (eds) (Minneapolis: University of Minnesota Press, 1996), pp. 133-47 (p. 142). Drucker outlines a new discipline of knowledge work: 'The discipline we need cannot be a technical discipline – though it will have many technical areas. [...] It must be truly humanist: of human beings united in common vision and common values and working for a common goal, yet acting individually. It must focus information, knowledge, judgement, values, understanding and expectations onto decision, performance and results. It must deal with men as thinking, doing, feeling, and appraising beings, and must therefore pull together intellectual, emotional, esthetic (sic) and ethical knowledge.' Peter F. Drucker, *Landmarks of Tomorrow: A Report on the New Post Modern World* (London: Heinemann, 1959), p. 91.

²⁷¹ Toyota Corporation, 'Toyota Production System', *Toyota Motor Corporation Global Website* <http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/> [accessed 22 April 2017]; and Toyota Corporation, 'The origin of the Toyota Production System', *Toyota Motor Corporation Global Website* <http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/origin_of_the_toyota_production_system.html> [accessed 27 April 2017].

²⁷² Jean-Francois Lyotard, *Postmodern Condition: A Report on Knowledge (1979)*, Geoff Bennington and Brian Massumi (translators) (Manchester: Manchester University Press, 1984), p. 88.

²⁷³ Fabien Muniesa, *The Provoked Economy: Economic Reality and the Performative Turn* (London: Routledge, 2014), p. 9.

Muniesa concedes that while ‘in the purest sense of efficacy’ performativity is ‘the achievement of tasks and operations’²⁷⁴ in an Austinian sense through its distinctive focus on ‘the act of effecting, of bringing about.’²⁷⁵ He nonetheless finds Lyotard’s statement that ‘Austin’s performative realizes the optimal performance’²⁷⁶ a ‘rapid’ and ‘clumsy’ attempt to make performative utterances congruent with technical efficiency.²⁷⁷

I want to challenge Muniesa’s doubts, as I locate within the performative – through an understanding of the theatrical practices of the ‘action’ and ‘playability of actions’ – an efficacy²⁷⁸ and efficiency²⁷⁹ at work that maps over to the manufacturing processes of post-Fordism, and that can also be seen in what is often called ‘performative architecture’. I take as fundamental the Austinian propositions that a performative act is one that is non-representational; it is neither a truth or false condition; it is an action that introduces a change and makes a difference. Likewise, in the theatre every line of dialogue an actor speaks must do something to another actor: if it makes no difference, then it is not an action.

Actionable Improvements

In the early part of the first decade of the millennium, Honeywell International, the electronics firm responsible for production of thermostats, smart meters, autopilots, gyros and missile guidance systems,²⁸⁰ introduced a high-performance management structure across several of its factories in the United States and Europe.

²⁷⁴ Muniesa, *The Provoked Economy*, p. 9.

²⁷⁵ Muniesa, *The Provoked Economy*, p. 9.

²⁷⁶ Lyotard, cited in Muniesa, *The Provoked Economy*, p. 9.

²⁷⁷ Muniesa, *The Provoked Economy*, p. 9-10.

²⁷⁸ Muniesa, *The Provoked Economy*, p. 7.

²⁷⁹ Muniesa, *The Provoked Economy*, p. 9.

²⁸⁰ Honeywell created a subsidiary company, Alliant Tech, in 1990 as part of its exit strategy from the defence industry, but still manufactures military technology under the name Honeywell Aerospace. ‘Honeywell Backs

The Honeywell Operating System (HOS) is a directly customised version of the Toyota Production System,²⁸¹ an exemplar of post-Fordist industrial management that champions ‘lean production’ and ‘just-in-time’ manufacturing. My proposition is that this process isn’t restricted to abstract logistics and the computerisation of processes; it is a socio-technical system that requires rigid adherence to a set of protocols enacted by the workers themselves.

One reported activity is that of the daily meetings for each production cell: these are kept to a strict fifteen-minute time limit (signalled on clocks with a quarter-hour shaded in red) and require the presence of every member of the team, from management to the production line (markings on the floor for each member allows any absentees to be quickly identified).²⁸² The aim of each meeting is partly to pass knowledge down from management, but its main performative function, I propose, is the process whereby employees at all levels participate in the continuous improvement of the manufacturing process. Each employee must suggest *actionable* improvements to the production system every month: ‘even the lowliest worker is expected each month to come up with two implementable ideas for doing things better.’²⁸³ The performative enacted in this process is not the choreographic management of bodies in space, nor is it that the employee has to speak up in front of an audience; it is the requirement that what the employee says has to be actionable – it has to be specific and it has to have consequences.

The performative effects are twofold: they contribute to the augmentation of the efficacy and efficiency of the processes of manufacture

Spinoff of Unit’, *New York Times* (29 September, 1990) <<http://www.nytimes.com/1990/09/29/business/company-news-honeywell-backs-spinoff-of-unit.html>> [accessed April 2017].

²⁸¹ ‘Honeywell International: From Bitter to Sweet - How One of America’s Most Messed-up Firms Became One of its Best’, *The Economist* (April 14th 2012) <<http://www.economist.com/node/21552631>> [accessed 20 January 2014].

²⁸² In the case of Honeywell, the apparent effects of implementing this system has been a turnaround in the company’s performance. *The Economist* claims that the adoption of the Toyota-inspired management programme has transformed Honeywell ‘from a troubled giant to one of America’s most successful companies’. ‘Honeywell International: From Bitter to Sweet - How One of America’s Most Messed-up Firms Became One of its Best’, *The Economist*.

²⁸³ ‘Honeywell International: From Bitter to Sweet’, *The Economist*.

by informed incremental changes, and they also create active agents of employees whose stake in the company is not limited to a coupling of wages or a share of dividends to financial performance. In producing suggestions that potentially improve their working conditions they also make the production processes responsive to their individual skills and expertise. It is a performance whereby value is extracted from an employee's whole self – from their cognitive and emotional engagement with the manufacturing processes just as much as their manual labour or dexterity. In this it differs radically from Fordism or Taylorism, which were largely interested in the efficient ergonomic deployment of factory employees.²⁸⁴

An example such as this gives a basis for Lyotard's claim that the high-performance management paradigms pervasive in the new economy –TPS and variants, Excellence,²⁸⁵ Theory Y²⁸⁶ and Silicon Valley style management²⁸⁷ such as the 'HP-Way'²⁸⁸ – are indeed performative. They are systems which constitute the employee, as well as instituting their own processes.

I suggest that this performative management style has had a deep influence on organisational management in the knowledge economy, with the concept of 'lean' production implemented widely in the high-technology industries.²⁸⁹ I will also investigate how this is implicated in architecture in

²⁸⁴ Lazzarato notes that 'The worker's personality and subjectivity have to be made susceptible to organization and command. It is around immateriality that the quality and quantity of labour are organized. This transformation of working-class labour into a labour of control, of handling information, into a decision-making capacity that involves the investment of subjectivity, affects workers in varying ways according to their positions within the factory hierarchy, but it is nevertheless present as an irreversible process.' Maurizio Lazzarato, 'Immaterial Labour', p. 134.

²⁸⁵ Tom Peters and Robert H. Waterman, *In Search of Excellence: Lessons from America's Best-Run Companies* (London: Profile Books, 1982).

²⁸⁶ Douglas McGregor, *The Human Side of Enterprise* (New York: McGraw-Hill, 1960).

²⁸⁷ Peter Burrows, 'Four Lessons for Silicon Valley from its First Startup', *MIT Technology Review*, (28 November 2016) <<https://www.technologyreview.com/s/602961/four-lessons-for-silicon-valley-from-its-first-startup/>> [accessed 19 April 2017].

²⁸⁸ Hewlett Packard, *The HP Way: Hewlett-Packard Company Report* (1977) <http://www.hp.com/hpinfo/about/hp/histnfacts/publications/measure/pdf/1977_07.pdf> [accessed 5 October 2015].

²⁸⁹ James P. Womack, Daniel Jones and Daniel Roos introduced the term 'lean' to describe the methods initiated in Toyota's manufacturing plants that overtook Ford's mass-production systems in their 1990 book *The Machine that Changed the World*, they also coined a new concept 'lean enterprise' to describe the potential of this organisational concept to apply beyond the automobile industry. James P. Womack and Daniel T. Jones, *Lean*

two ways: the terms and processes are part of our discourse on sustainability,²⁹⁰ and the clients and occupants of non-domestic architecture increasingly operate with these management techniques.

The ideological basis of these management styles, which have at their core the engaged participating and motivated employee, raises some serious questions about how architects design for workplaces, and how they conceptualise the occupant of their buildings.

Judith Butler's claim for performativity is that the Austinian performative institutes its force not only through the citational repetition of a convention, but in constituting the speaker.²⁹¹ In 'doing things' the speaker is also done by the action. I have demonstrated here how participative strategies in manufacturing engage an employee in a particular way, giving them a stake in the success of the company by making a difference, putting to work their cognitive capacities in the factory. In the next chapter I show how elaborations of the TPS in the management styles of the high-tech industries produce new employee subjectivities. I will describe how subjectivities are not a core stability upon which an individual can depend, but are open to being formed in line with company cultures, in management protocols that are developed from the TPS. The management styles are an elaboration of the central participative mechanism of the TPS, involving even more of the employee's life – what they care about, their comfort and security, their aspirations to do meaningful work. A mechanism such as this is different from a disciplinary notion of 'reform': the process is one of enabling the employee to realise their own potential and self-actualise.

Thinking: Banish Waste and Create Wealth in Your Corporation (London: Simon and Schuster, 2003 edition), pp. 9-12, 286-295.

²⁹⁰ Chapter five: 'Continuous Improvement' in this thesis outlines this proposition that the language of the Toyota Production System is increasingly in use within discussions of sustainability within the built environment. (pp. 161-165). The terms 'continuous improvement' and 'continuous cycle' are used in the *RIBA Plan of Work 2013 Overview* and is represented as a set of curved arrows forming a continuous circle – and has similarities to the Plan, Do, Check, Act circle diagram devised by W. Edwards Deming, 'PDSA Cycle', *The W. Edwards Deming Institute* <<https://deming.org/management-system/pdsacycle>>; and *RIBA Plan of Work 2013 Overview*, RIBA, (2013), pp. 2, 4 <<https://www.architecture.com/Files/RIBAProfessionalServices/Practice/RIBAPlanofWork2013Overview.pdf>> [accessed 19 July 2016].

²⁹¹ Butler, *Gender Trouble*, p. 181; and Butler, *Excitable Speech*, p. 45.

In the following chapter, I will draw attention to some of the assumptions that underlie this management style, looking at its formulation in the second half of the twentieth century in the high-technology industries which grew up around Boston, Massachusetts, and California's Silicon Valley. In showing how management has fundamentally altered the concept of the employee, I will challenge the view of the occupant as typically framed in architecture. In chapter three I will look at how such companies have reconfigured the user and their relationship with technology, in subtly different ways from that which the architecture profession has anticipated.

Chapter Two

DO THE RIGHT THING

Chapter Outline

In this second chapter, I propose that there is a disparity between the way that an occupant is conceived of in architecture and environmental engineering, and the way an employee is conceived of in a management style that has been increasingly widespread with the advent of post-Fordist economies.

The chapter questions the politics of making the resolution of environmental performance contingent on the terms of management: that it must satisfy requirements that occupants perform efficiently and productively in their activities, as well as supporting their well-being. While the terms efficiency, productivity and well-being appear to be common-sense objectives for an office building, the ways in which they are deployed in discourses of architecture are not consistent with the way that they are put to use in management – in particular in the high-performance management theories of the knowledge economy. This combination of logistic and socio-cultural practices paradigmatic of the strong company cultures that have emerged in post-Fordist economies, conceptualises the employee and their objectives in ways that are at odds with the concept of the occupant in architecture, who is seen as a problematic agent in the achievement of environmental performance in buildings.

I draw attention to the role of comfort in these management styles to propose that the apparent concessions in considering the well-being, comfort and happiness of the occupant are simultaneously the highly effective mechanisms through which management elicits productivity, profit-making, and new products.

Occupants

The occupant presents a specific problem for architecture when viewed through energy-saving literature. While it is widely acknowledged that the actual performance of an occupied building involves the optimum operation and maintenance of the building systems as designed, as well as the participation of the human occupants, all too often what is in reality a complex and interacting socio-technical system²⁹² is conceived of in a far more reductive way.

When a building underperforms (either by being uncomfortable or by expending more energy than predicted at the design stage) the two framings of the problem are focused either on the poor performance or commissioning of technological systems in place or on the behaviour of the occupants,²⁹³ what Parag and Janda identify in their paper as a ‘simplistic’ division of the ‘complex socio-technical nature of energy systems’ into end-users’ ‘carbon emitting behaviours’ and the adoption of technological fixes.²⁹⁴ Such a division points to design solutions that attempt to alter the actions of the person²⁹⁵ or to redesign the system to minimise interference through further automation.

The occupant is to a large extent framed as a disciplinary problem – an often obstinate and ignorant entity that must be coerced into behaving appropriately in line with the energy performance agenda for the building.²⁹⁶

²⁹² Loren Lutzenhiser. ‘Social and Behavioral Aspects of Energy Use’, *Annual Review of Energy and the Environment*, 18 (1993), 247-89.

²⁹³ Harold Wilhite, Elizabeth Shove, Loren Lutzenhiser, Willet Kempton, ‘Twenty Years of Energy Demand Management: We Know More About Individual Behaviour But How Much Do We Really Know About Demand’, in *proceedings 2000 ACEEE Summer Study on Energy Efficiency in Buildings: Consumer Behaviour and Non-Energy Effects*, 8 (2000), 435-453 (p. 439).

²⁹⁴ Yael Parag and Kathryn B. Janda, ‘More Than Filler: Middle Actors and Socio-technical Change in the Energy System from the “middle-out”’, *Energy Research & Social Science*, 3 (2014), 102-112 (p. 102).

²⁹⁵ The concept of ‘behaviour change’ is problematic, Jonathan Rowson, in a report for the RSA comments: ‘the resulting goody bag of behavioural tools turns out to be full of competing theoretical ideas of what shapes and drives behaviour.’ Jonathan Rowson, ‘Changing behaviour: how deep do you want to go?’, *The Guardian* (19 November 2013) <<https://www.theguardian.com/sustainable-business/behavioural-insights/change-behaviour-deep-insight-sustainability>> [accessed 7 June 2016]; and further critique of ‘nudge’ in Jonathan Rowson, *Transforming Behaviour Change: Beyond Nudge and Neuromania* (London: RSA, 2011) <<https://www.thersa.org/globalassets/pdfs/reports/rsa-transforming-behaviour-change.pdf>> [accessed 18 January 2012].

²⁹⁶ The ‘people problem’ is described by Janda and Moezzi as the misfit between real behaviour and model assumptions - ‘when buildings perform much differently than designed, the problem is commonly attributed to

It is presumed such an occupant can be encouraged through choice architecture: the conscious deployment of design to limit opportunities to behave in an undesirable manner.²⁹⁷ As a central strategy of behaviour change or ‘nudge’, such interventions can use techniques such as distraction or tricking, incentivisation and feedback in order to elicit or suppress certain behaviours.²⁹⁸

I suggest that the presence of an occupant in non-domestic buildings is usually signalled in two ways:

1. As an agent conceived of through the correctness of his or her interactions with the building and its technical interfaces.²⁹⁹
2. As a future user whose well-being must be provided for (in order to be productive, efficient and useful to the client of the building).

In both formulations, I propose, technology is a major component in the identity of the occupant; in one, traces of a recalcitrant and ignorant occupant are seen in a list of bad behaviours;³⁰⁰ the other suggests that the occupant is most satisfied when they are serviced by a discreet and functional technology and enabled to be productive, efficient and happy.

I will offer a challenge to this conception of an occupant as one must have irrational behaviours³⁰¹ and automatic impulses³⁰² corrected and who

occupants not acting appropriately rather than assessing where design assumptions went wrong’. Mithra Moezzi and Kathryn B. Janda, ‘Redirecting research about energy and people: from “if only” to “social potential”, *Rethink, Renew, Restart - ECEEE Summer Study Proceedings* (3–8 June, 2013), 205-216 (p. 208).

²⁹⁷ Richard Thaler and Cass Sunstein, *Nudge: Improving Decisions About Health, Wealth and Happiness* (London: Penguin, 2008), pp. 3-6, 81-83, 95-97.

²⁹⁸ Mike Hazas, A.J. Bernheim Brush, and James Scott. ‘Sustainability does not begin with the individual’, *Interactions* 19:5 (2012), 14-17.

²⁹⁹ Aurélie Lenoir, Shaan Cory, Michael Donn and François Garde, ‘User’s Behaviour and Energy Performances of Net Zero Buildings’, *Proceedings of the 12th Conference of the International Building Performance Simulation Association* (14-16 August 2001), 1527-1534.

³⁰⁰ A summary of a seminar for the Technology Strategy Board includes one contribution that advocates the move towards the ‘position where profligate use of energy is regarded as deeply anti-social, with behaviours that reflect that attitude.’ TSB/ESRC, *How People Use and Misuse Buildings*, Technology Strategy Board/Economic and Social Research Council (2009), p. 7. In the same report a summary of Kevin Lomas’ contribution outlines his challenge to the way that energy use is framed suggests that if it wasn’t for people’s ‘bad attitude, wayward motives, dreadful behaviour, perverse incentives and aberrant psychology’ the problems of carbon emissions would be resolved. Further he proposes that people are ignorant of energy issues, how much they consume, or what to do about energy use. TSB/ESRC, *How People Use and Misuse Buildings*, p. 8.

³⁰¹ Janda cites a brief for the TSB seminar stating that ‘occupants behave in more complex ways than designers account for; they open windows, leave doors open, generate body heat, keep tropical fish tanks and install

must be kept passive and docile, requiring the service of environmental controls to satisfy physiological needs in order to be happy and consequently productive.³⁰³ In unpacking these assumptions I will present a far more active entity, one that is envisaged by companies like Nest and Google, and other high-tech companies who are entering the market of sustainable tech, as being both their target customers as well as their ideal employees.

Locating the Occupant

Where do we find this occupant? The occupant – in this case – is brought into being by a designer, engineer or architect (whose own claim to neutrality is underwritten by his or her professional capacity): this design move is what Lucy Suchman warns an the attempt to ‘design from nowhere’.³⁰⁴ In her essay ‘Located Accountabilities of Technology Production’ she describes the twofold problem of bringing anonymous users into being and simultaneously legitimating the professional’s imperative to act:

Within prevailing discourses anonymous and unlocatable designers, with a license afforded by their professional training, problematise the world in such a way as to make themselves indispensable to it and then discuss their obligation to intervene, in order to deliver

plasma screens’. Kathryn B. Janda, ‘Buildings don’t use energy: people do’, *Architectural Science Review*, 54 (2001), 15-22 (p. 18).

³⁰² Department of Energy and Climate Change, *Behaviour Change and Energy Use* (London: Cabinet Office, 2011), p. 19.

³⁰³ ‘In the diagram with a worker in the centre, surrounded by the various scales of a work environment – an office building, office equipment, and supplies – the worker is only the apparent centre of the universe. In reality, the effort of reaching out to achieve an understanding of how things work is a burden on his or her shoulders. The opposite should instead be true; everything should be conceived and explained to function for the worker, and to be commensurate with him or her.’, Larry Keeley, ‘The Influence of Technology’, *Workspheres: Design and Contemporary Work Styles*, Paola Antonelli (ed.) (New York: The Museum of Modern Art, 2001), p. 11; and Lisa Heschong, *Thermal Delight in Architecture* (Cambridge, MA: MIT Press, 1979), pp. 16-17.

³⁰⁴ Suchman, ‘Located Accountabilities in Technology Production’, p. 95.

technological solutions to equally decontextualized and consequently unlocatable users.³⁰⁵

What Suchman sets out in her essay is not only a warning against the tautology of such a position; but she also outlines the possibility of doing technology differently, through understanding the social relations that a particular problem may obscure in the framing of a question and the way in which a designer gets involved, in particular with the organisational contexts in which the 'users' are embedded.

Frequently the behaviour of the occupants is limited to a description (and judgement of) the correctness³⁰⁶ of their interaction with objects such as thermostats, smart-meters, window controls, heating and ventilation controls.³⁰⁷ These are seen as automatic behaviours, as a UK Government Cabinet Office paper on behaviour change and energy exemplifies: 'everyday energy-consuming behaviours (such as use of heating and lights) are largely habitual. Such habits are often reliant on automatic processes which may be particularly resistant to change.'³⁰⁸

This view often leads to the redesign of objects is that of giving some kind of 'eco-feedback', such as smart thermostats and smart meters, which attempt to inform the user about their behaviour and suggest better actions. The assumption, I suggest, is that behaviour can be delegated to autonomous human occupants who are free to act as they choose once they overcome their irrational beliefs or are made aware of their bad habits.

A paper on the design of smart thermostats written in 2012 by Mike Hazas with two researchers from Microsoft Research – a Cambridge-based technology research organisation – discusses the limitations of an 'eco-

³⁰⁵ Suchman, 'Located accountabilities in technology production', p. 95.

³⁰⁶ Janda and Moezzi, 'Redirecting Research about Energy and People', p. 211.

³⁰⁷ Fergus Nicol, 'Characterising Occupant Behaviour in Building: Towards a Stochastic Model of Occupant Use of Windows, Lights, Blinds, Heaters and Fans', in proceedings of *Seventh International IBPSA Conference* (Brazil, 13-15 August, 2001), 1073-1078 (p. 1073); Michael Humphreys, Fergus Nicol and Susan Roaf, *Adaptive Thermal Comfort: Foundations and Analysis* (Abingdon, Oxon: Routledge, 2012), p. 6; Hom B. Rijal, Michael A. Humphreys and Fergus Nicol, 'Understanding Occupant Behaviour: the use of Controls in Mixed-Mode Office Buildings' *Building Research & Information*, 37:4 (2009); and Richard Tetlow, 'Occupant Behaviour: "Do Occupants Matter?"', *Carbon Bite - CIBSE Young Energy Performance Group* (April 2016) <http://www.cibse.org/getmedia/612cb663-8576-4c36-8898-320da41ffcbb/cb25_1.pdf.aspx> [accessed 16 March 2017].

³⁰⁸ Department of Energy and Climate Change, *Behaviour Change and Energy Use*, p. 19.

feedback' model that informs users of their behaviours (for instance with visualisations of their energy use).³⁰⁹ This theory is based on what they call a fundamentally flawed assumption that society is a collection of individuals.³¹⁰ They go on to propose that the pathway for designers is to 'conceive of technologies and infrastructures that are more subversive'.³¹¹ They ask us to: 'imagine a PreHeat system that is not only occupancy-predictive but that also sneakily lowers its temperature setting at selected occupied times, learning the occupants' tolerance (and even preference) for reduced temperatures.'³¹²

This proposition had already been realised by a Silicon Valley start-up called Nest Labs, who launched a learning thermostat onto the market in 2011, yet the company found that exactly such a feature such as this caused a number of problems with its beta testers.³¹³

There remains a tendency to render human occupants as individuals who only become enmeshed in such a complex assemblage through their energy behaviours,³¹⁴ rather than being already embedded within another socio-technical system. Parag and Janda describe the frequent framing of the problem and the resulting adoption of technological innovations as simplistic, and attempt to describe the various 'middle actors' who contribute to the agency of an individual to be able to enact change in an energy system.³¹⁵

There is generally an oversight about the relevance of considering the organisational system that occupants in a non-domestic building are embedded in. Whilst it may be argued that much of non-domestic building is done speculatively, without knowing which company will eventually occupy

³⁰⁹ Hazas, Bernheim Brush and Scott. 'Sustainability does not begin with the individual', p. 14.

³¹⁰ Hazas, Bernheim Brush and Scott. 'Sustainability does not begin with the individual', p. 14.

³¹¹ Hazas, Bernheim Brush and Scott. 'Sustainability does not begin with the individual', p. 17.

³¹² Hazas, Bernheim Brush and Scott. 'Sustainability does not begin with the individual', p. 17.

³¹³ I discuss this issue further in chapter three: 'Thoughtful Things – Laissez-Faire'. Steven Levy, 'Brave New Thermostat: How the iPod's Creator Is Making Home Heating Sexy', *Wired* (October 2011) <http://www.wired.com/2011/10/nest_thermostat> [accessed 15 January 2013].

³¹⁴ Parag and Janda, 'More Than Filler', p. 102.

³¹⁵ Parag and Janda, 'More Than Filler', p. 104.

it, I will be drawing on the organisational management styles of the tech-industry which are becoming increasingly pervasive across multiple sectors.

The Employee

One of the key insights I put forward in this thesis is how the employee, in management terms, is a more sophisticated (although highly problematic) conception of the subject than the occupant in discourses of architecture and environmental engineering. By investigating architecture *with* organisational management – rather than separate from – I suggest that architecture has much to learn from the discursive context of workplace relations and the politics of labour.

In the remainder of this chapter I will be looking at concepts of management and how they have become instituted in companies such as Facebook, Google and Apple. Drawing on Gideon Kunda's ethnographic work on strong company cultures in his book *Engineering Culture, Control and Commitment in a High-Tech Corporation*³¹⁶ and a case study of Google's management style, I will propose that the subjectivity of the employee is produced in line with a theory of human motivation that incorporates the provision of comfort and well-being in an unexpected way.

Silicon Valley Style Management

The management techniques that I study relate to observations on two geographical areas – Boston, Massachusetts (once dubbed 'America's Technology Highway')³¹⁷ and Silicon Valley. I use Kunda's work on normative control at a company he calls 'Tech' (A pseudonym widely known to refer to DEC, or Digital Equipment Corporation), and a study of the Silicon Valley

³¹⁶ Gideon Kunda, *Engineering Culture: Control and Commitment in a High-Tech Corporation* (Philadelphia: Temple University Press, 2009).

³¹⁷ 'New England Highway Upsets Old Way of Life', *Business Week*, 14 May 1956, p. 186.

style management using both primary and secondary sources.³¹⁸ For example management literature,³¹⁹ articles and resources on Google's POps (People Operations) unit,³²⁰ Google's management courses for leadership, and other publicly accessible documents and business news articles on the management theories of companies such as Facebook³²¹ and Hewlett Packard.³²²

The 'magic semi-circle' of the Boston beltway refers to the large concentration of technology, defence, and computing companies strung along Route 128, such as Polaroid, Sun Microsystems, Raytheon (an aerospace and defence technology company and major US military contractor³²³ founded by MIT Graduate Vannevar Bush³²⁴) and Digital Equipment Corporation (DEC).³²⁵ These companies – spin-outs from the engineering, computing and mathematics departments of Harvard University and Massachusetts Institute of Technology during a period of fast

³¹⁸ Primary sources include my own time spent working in a new media consultancy company during the dotcom boom and bust, where I co-wrote reports on the convergence between media and music with telecoms and internet technologies, 1999-2001. <<http://www.visionconsult.com/de/publikationen/>> [accessed 1 May 2017]

³¹⁹ Eric Schmidt and Jonathan Rosenberg, *How Google Works* (London: John Murray, 2015).

³²⁰ Laszlo Bock, *Work Rules! Insights from Inside Google that will Transform how you Live and Lead* (London: John Murray, 2016).

³²¹ Facebook Inc., 'Company Info', *Facebook Investor Relations website* <<https://newsroom.fb.com/company-info/>> [accessed 30 March 2017].

³²² Hewlett Packard, *The HP Way: Hewlett-Packard Company Report* (1977) <http://www.hp.com/hpinfo/about/hp/histnfacts/publications/measure/pdf/1977_07.pdf> [accessed 5 October 2015].

³²³ Raytheon is the world's largest producer of guided missiles; many of the guidance systems are provided by Honeywell. Raytheon went into a joint venture with Honeywell in the computing industry, called Datamatic Corp. Raytheon's share was eventually bought out and the company became Honeywell Information Systems, manufacturing the Honeywell 800 computer. At the time the largest technology companies were known as 'Snow White and the seven dwarves' – Snow White being IBM – the seven dwarves being Burroughs, Control Data Corporation, General Electric, Honeywell, NCR, RCA and UNIVAC. These were later known as the BUNCH (Burroughs, UNIVAC, NCR, Control Data Corporation and Honeywell). Jeffrey L. Rodengen, *The Legend of Honeywell* (Fort Lauderdale, FL: Write Stuff Syndicate, 1995), pp. 93-94; Honeywell International Inc, 'Our History', *Honeywell.com* <<https://www.honeywell.com/who-we-are/our-history>> [accessed 16 September 2013]; and 'Honeywell', *Wikipedia Entry* <<https://en.wikipedia.org/wiki/Honeywell>> [accessed 16 September 2013].

³²⁴ Raytheon Company, 'History', *Raytheon.com* <<http://www.raytheon.com/ourcompany/history/>> [accessed 16 September 2013].

³²⁵ My father (a Sloan Fellowship Programme graduate at the London Business School) and I speculated that the most likely subject of Kunda's ethnography was DEC, this is somewhat confirmed by a few mentions in other texts such as David Hakken, Maurizio Teli and Barbara Andrews, *Beyond Capital: Values, Commons, Computing, and the Search for a Viable Future* (Abingdon, Oxon: Routledge, 2015) Kindle eBook. DEC was incubated in Building 20, a case study for Stewart Brand's 'low-rider' buildings; Steven Johnson, *The Innovators Cookbook: Essentials for Inventing What is Next* (New York: Riverhead Books, 2011) Kindle eBook; and Stewart Brand, *How Buildings Learn* (New York: Viking, 1994), pp. 24-28.

growth in the 1980s – were dubbed the Massachusetts Miracle.³²⁶

Contemporary companies include Lycos, Autodesk and Boston Dynamics³²⁷ (a robotics company and maker of the DARPA-funded ‘Big Dog’ robot).³²⁸

Silicon Valley, in California, incorporates a number of other tech firms, ranging from software and web 2.0 companies such as Google (Mountain View), Facebook (Menlo Park), Apple (Cupertino) and Cisco and Adobe (San Jose), hardware and silicon chip producers such as Hewlett Packard (Palo Alto), Intel (Santa Clara), and Fairchild Semiconductor (San Jose). They are complemented by a number of research centres such as SRI (Stanford Research Institute, Menlo Park), PARC (Palo Alto Research Centre, formerly Xerox PARC) as well as by their proximity to several universities. These companies developed innovative management styles, and sought to implement the prerequisites for innovation in the development of their company cultures.

This management style originated in high-tech companies in the 1940s and 1950s, early start-ups that positioned themselves in direct contrast to the rest of corporate America by challenging traditional models of top-down authoritarian management. On the West Coast, this was Hewlett Packard, who invented ‘management by wandering around’,³²⁹ and Varian Associates,³³⁰ who encouraged their employees to buy into the company through the offer of stock options and a share in profits.³³¹ Leadership and innovative working practices were encouraged, along with a focus on the

³²⁶ Mary Babson Fuhrer and Liz Nelson, *MassMoments: Route 128 opens Boston’s High-Tech Age* (2011) <<http://www.massmoments.org/moment.cfm?mid=246>> [accessed 12 October 2015].

³²⁷ Acquired by Google X, a secretive research and development arm of Alphabet with interests in AI, healthcare and Biotech, in 2013. Alex Hern, ‘Robot maker Boston Dynamics put up for sale by Google’, *Guardian Online* (18 March 2016) <<https://www.theguardian.com/technology/2016/mar/18/boston-dynamics-put-up-for-sale-google>> [accessed 27 April 2017].

³²⁸ DARPA – Defence Advanced Research Projects Agency is a US military research agency focused on the development of technologies such as robotics, artificial intelligence and surveillance. DARPA, ‘About DARPA’ *Darpa.mil* <<http://www.darpa.mil/about-us/about-darpa>> [accessed 27 April 2017].

³²⁹ Hewlett Packard, *The HP Way*, pp. 8-9; and Annika Steiber and Sverker Alänge, *The Silicon Valley Model: Management for Entrepreneurship* (Cham: Springer, 2016), p. 41.

³³⁰ Clara Jobs, mother of Apple founder Steve Jobs, worked at Varian Associates as a book-keeper. Walter Isaacson, *Steve Jobs: The Exclusive Biography* (London: Little Brown, 2011), p. 7.

³³¹ ‘Edward L. Ginzton, co-founder of Varian Associates, dies at 82’, *Stanford News Service* <<https://web.stanford.edu/dept/news/pr/98/980825ginzton.html>> [accessed 13 March 2017]; and Bill Hewlett cited in Hewlett Packard, *The HP Way*, p. 2.

individual,³³² risk-taking and an entrepreneurial spirit.³³³ The result was employees who were highly motivated, who felt autonomous, and, because of their stake in the company's success, shared its goals and values.³³⁴

The coupling of the goals of the individual with the goals of the company through a financial mechanism was not unique to the companies on the West Coast (the high-tech companies along Route 128 also produced strong company cultures through such participative processes).³³⁵ Yet, the coupling of company ideologies to the realisation of an individual's fundamental desires has become synonymous with Silicon Valley style management.³³⁶

Silicon Valley style management can be seen as heavily premised on Abraham Maslow's Hierarchy of Needs, a five-stage model of the drives underpinning human motivation to satisfy various needs, ranging from base physiological needs to more emotional and quasi-spiritual ones.³³⁷ At the top of the hierarchy is self-actualisation: a sense of fulfilment in realising one's full potential, creativity and the pursuit of knowledge. Parallels can be drawn between the ideas that personal fulfilment could be achieved by successively satisfying the needs lower down the hierarchy with its

³³² Kunda, *Engineering Culture*, pp. 57, 61, 66-68, 72, 86; and Hewlett Packard, *The HP Way*, p. 3.

³³³ Kunda, *Engineering Culture*, pp. 90, 71, 77.

³³⁴ Kunda, *Engineering Culture*, pp. 8-9, 67; Stephen R. Barley and Gideon Kunda, 'Design and Devotion: Surges of Rational and Normative Ideologies of Control in Managerial Discourse', *Administrative Science Quarterly*, 37:3 (September 1992), 363-399 (pp. 372, 378); and Hewlett Packard Development Company, 'HP Corporate Objectives and Shared Values', *HP.com* <<http://www.hp.com/hpinfo/abouthp/values-objectives.html>> [accessed 13 March 2017]; and Hewlett Packard, *The HP Way*, pp. 8-9.

³³⁵ Kunda, *Engineering Culture*, p. 4-9.

³³⁶ William Kremer and Claudia Hammond, 'Abraham Maslow and the pyramid that beguiled business', *BBC World Service Magazine* (1 September 2013) <<http://www.bbc.co.uk/news/magazine-23902918>> [accessed 10 July 2015]; Esalen Institute, 'Esalen History', *Esalen.org* <<http://www.esalen.org/page/esalen-history>> [accessed 3 July 2015]; Google Inc., 'How We Care For Googlers', *GoogleCareers.com* <<https://careers.google.com/how-we-care-for-googlers/>> [2nd September 2015]; and Fred Turner, 'Burning Man at Google: a cultural infrastructure for new media production', *New Media Society*, 11:73 (2009), 73-94 (p. 80).

³³⁷ Douglas Rushkoff, *Life Inc: How the World Became a Corporation and How to Take it Back* (London: Vintage Books, 2010) p. 139; and Jules Evans, 'The Ecstatic Experience Economy', on *The History of the Emotions Blog*, (10 March 2017) <<https://emotionsblog.history.qmul.ac.uk/2017/03/the-ecstatic-experience-economy/>> [accessed 29 April 2017].

implementation within company cultures, as well its resonances with ideas of the counter-culture.³³⁸

Using Maslow's hierarchy for analysis is not to vouch for its legitimacy or accuracy: it has been discredited on several counts, not least because it is unsupported by case studies.³³⁹ Neither is it likely that the hierarchy holds true – while several of the needs may indeed be what humans seek, the hierarchy does not always apply: Kunda and Stephen Barley's ethnographic study of the gig economy³⁴⁰ and the heavy reliance of high-tech industries on contract workers, would suggest that the hierarchy can be utilised to enculturate workers into a company environment without the provision of job security.

From Discipline to Happiness

The occupant in architecture, as I have shown earlier in this chapter, is all too often conceptualised as a disruptive agent, lazy, obstinate, and ignorant, needing to be disciplined or incentivised to behave in the right way so as not to impede the performance of the building. Yet, in the organisational management paradigms that pervade the knowledge economy – variously known as 'culture',³⁴¹ Total Quality Management

³³⁸ Rushkoff, *Life Inc*, p. 138-9; and Hewlett Packard, *The HP Way*, p. 2. The connections between cyberculture and counterculture are explored by Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: University of Chicago Press, 2010). A more explicit framing of Silicon Valley and counterculture ideas is the Adam Curtis' essay-film *All Watched Over By Machines of Loving Grace*. Curtis also explores Maslow's ideas and the Esalen Institute in *The Century of the Self*. However, Curtis' films need critical appraisal: I refer to his works as 'essay-films' rather than documentaries since the polemics formed by bringing together various ideas occasionally misrepresent cause-and-effect. I have noticed that much of the first episode of *All Watched Over By Machines of Loving Grace* follows the content of Alan Greenspan's biography *The Age of Turbulence*, and the second episode follows Peder Anker's arguments in Peder Anker, 'The Closed World of Ecological Architecture', *The Journal of Architecture*, 10:5 (2005), 527-552; Adam Curtis, 'Love and Power', *All Watched Over By Machines of Loving Grace*, BBC2, 23 May 2011; and 'The Use and Abuse of Vegetational Concepts', *All Watched Over By Machines of Loving Grace*, BBC2, 30 May 2011; and Adam Curtis, 'There is a Policeman Inside All Our Heads; He Must Be Destroyed', *The Century of the Self*, BBC2, 31 March 2002.

³³⁹ Kremer and Hammond, 'Abraham Maslow and the pyramid that beguiled business'.

³⁴⁰ Stephen R. Barley and Gideon Kunda, *Gurus, Hired Guns, and Warm Bodies: Itinerant Experts in a Knowledge Economy*, (Woodstock, Oxfordshire: Princeton University Press, 2006).

³⁴¹ Kunda, 'Culture and Organisation', *Engineering Culture*, pp. 1-25; and Catherine Casey, "'Come, join our family": Discipline and integration in corporate organizational culture', *Human relations*, 52.1 (1999), 155-178 (pp. 155-156).

(TQM),³⁴² Excellence (Peters and Waterman),³⁴³ Theory Z (Ouchi),³⁴⁴ Management By Walking Around (MBWA),³⁴⁵ and Silicon Valley style management – the employee is conceived of as a motivated individual driven by a desire for their work to be fulfilling, who seeks opportunities to demonstrate creativity and autonomy, and derives an intrinsic reward from meaningful and satisfying work.³⁴⁶

The move away from discipline begins with a management insight from a professor at MIT's Sloan School of Management, a school that plays a large role in the development of management theories that relate to the high-tech sector. In the 1960s Douglas McGregor was developing a theory of human motivation he called Theory X and Theory Y, believing that there was a flaw in the 'underlying belief that management must counteract an inherent human tendency to avoid work.'³⁴⁷

Theory X described a tendency of management to view the employee as an individual whose natural disposition is to shirk work wherever possible, seeing it as a period of time deducted from their life.³⁴⁸ Such an individual needs to be coerced, disciplined and incentivised to work through close monitoring and control.³⁴⁹ In contrast McGregor promoted a different idea that he called Theory Y: individuals, he proposed, wanted their work to be fulfilling, and sought opportunities to demonstrate their creativity

³⁴² Keller Easterling, 'Quality', in *Extrastatecraft: The Art of Infrastructure Change* (London: Verso, 2014), pp. 171-209 (pp. 177, 185-186, 192).

³⁴³ Tom Peters and Robert H. Waterman Jr., *In Search of Excellence: Lessons from America's Best-Run Companies*, (London: Profile Books, 1982).

³⁴⁴ William G. Ouchi, *Theory Z Corporations: How American Business Benefits from Japanese Management Models*, (London: Perseus Books, 1981); Barley and Kunda, 'Design and Devotion: Surges of Rational and Normative Ideologies of Control in Managerial Discourse', p. 381.

³⁴⁵ Peters and Waterman, *In Search of Excellence*, p. 137.

³⁴⁶ Casey, "'Come, join our family'", p. 160.

³⁴⁷ Douglas McGregor, *The Human Side of Enterprise* (New York: McGraw-Hill, 1960), p. 45. Theory X and Theory Y influenced the work of Robert Propst, the inventor of the Herman Miller cubicle system *Action Office*. Robert Propst, *The Office: A Facility Based on Change* (Ann Arbor, MI: Herman Miller Inc., 1968), cited in Christopher Budd, 'The Office: 1950 to the Present', *Workspheres: Design and Contemporary Work Styles*, Paola Antonelli (ed.) (New York: The Museum of Modern Art, 2001), pp. 26-35 (p. 35).

³⁴⁸ McGregor, *The Human Side of Enterprise*, pp. 33-34.

³⁴⁹ McGregor, *The Human Side of Enterprise*, pp. 9, 34; and Stephen Fineman, *Work: A Very Short Introduction*, (Oxford: Oxford University Press), p. 9.

through it,³⁵⁰ seeing it as a part of their lives as much as their leisure and family time. ‘Man is a wanting animal,’ wrote McGregor, echoing Maslow, ‘as soon as one of his needs is satisfied another appears in its place.’³⁵¹

McGregor’s work is closely related to the theories of Maslow – who McGregor knew. In the Hierarchy of Human Needs, published as ‘A Theory of Motivation’ in 1943,³⁵² the lowest level is the satisfaction of essential physiological needs for the survival of the human body (breathing, food, water, sex, sleep, homeostasis, excretion).³⁵³ Next are the requirements for safety from natural elements, war, violence and instability. Once these basic needs are met, Maslow proposes, humans seek love, belonging and social acceptance and relationships, including family and friends. Following this they want esteem, respect, self-confidence, competence and self-reliance. Finally, at the top of the hierarchy is self-actualisation: the realisation of the individual’s full potential.³⁵⁴ It is worth noting that these Maslowian needs are presented as natural and universal states by McGregor,³⁵⁵ while they align very well with twentieth-century Western (and largely neoliberal) values.

In the adaptation of Maslow’s work to management, McGregor put forward in Theory Y the idea that in satisfying the lower level needs by the company the employee would not only be released from day-to-day concerns and freed to work at the best of their capacities without needing to be ‘disciplined’ by management.³⁵⁶ Following Kunda this can be seen as opening up the possibility of guiding each level of needs in line with the company philosophy by incorporating the meaningfulness of self-actualisation within the most mundane of provisions.³⁵⁷

³⁵⁰ McGregor, *The Human Side of Enterprise*, pp. 48, 140; and Fineman, *Work: A Very Short Introduction*, p. 9.

³⁵¹ McGregor, *The Human Side of Enterprise*, p. 48; Massachusetts Institute of Technology, ‘Theory X, Theory Y’, *MIT Campaign for a Better World* <<https://betterworld.mit.edu/theory-x-theory-y/>> [accessed 30 March 2017].

³⁵² Abraham H. Maslow, ‘A Theory of Human Motivation’, *Psychological Review*, 50:4 (1943), 370-396.

³⁵³ Fineman, *Work: A Very Short Introduction*, p. 10.

³⁵⁴ Maslow, ‘A Theory of Human Motivation’, pp. 372-382.

³⁵⁵ McGregor, *The Human Side of Enterprise*, p. 48; and Fineman, *Work: A Very Short Introduction*, p. 11.

³⁵⁶ Kunda, *Engineering Culture*, pp. 60-61, 90-91; and Hewlett Packard, *The HP Way*, p. 2.

³⁵⁷ See ‘Private Passions in the Silicon Valley’ (pp. 360-366) in appendix III, ‘Killer Apps’ for further discussion.

I would therefore suggest that Theory Y – being a form of bottom-up rather than top-down control – is a mechanism extending much deeper into subjectivity, and should not be mistaken for incentives or rewards. The carrot-stick model is within the same paradigm as Theory X – which assumes that the underlying motivation is to avoid work. Incentivisation and punishment remain part of the reserve of management tools, yet remain distinct in the way that they work on fairly surface-level aspects of an employee's subjectivity.

There is also a distinction to be made with the behaviour change techniques of 'nudge',³⁵⁸ which attempts to alter underlying automatic behaviours with minimum awareness of the nudge. 'Nudge' as Jonathan Rowson writes, 'is not transformative. Indeed, darkly, this may be why it is so popular. Nudge changes the environment in such a way that people change their behaviour, but it doesn't change people at any deeper level in terms of attitudes, values, motivations etc.'³⁵⁹

In contrast one of the most significant features of the company cultures developed by high-tech companies in Silicon Valley and Massachusetts is the way that they operate on the motivations and values of the employee by 'controlling the underlying experiences, thoughts, and feelings that guide [employee's] actions.'³⁶⁰ In Silicon Valley style management, 'employees are driven by internal commitment, strong identification with company goals, and intrinsic satisfaction from work.'³⁶¹

I want to signal this as a key concern for the thesis, since the invasive methods of management are tolerated because, I believe, we hold on to the idea that inside of each of us remains a personal space, an untouchable region, a continuity of subjectivity, that can withstand management rhetoric. In effect, one can act 'as if' they believe and accept the ideology,

³⁵⁸ Thaler and Sunstein, *Nudge*, pp. 19-21, 82-83.

³⁵⁹ Rowson, 'Transforming Behaviour Change', p. 16.

³⁶⁰ Kunda, *Engineering Culture*, p. 11.

³⁶¹ Kunda, *Engineering Culture*, p. 11.

whilst retaining a contradictory critical stance.³⁶² But, it is precisely ‘the employee’s self – the ineffable source of subjective experience – that is claimed in the name of corporate interest.’³⁶³

Cultures

The development of the strong company culture that Theory Y advocates involves discursive practices of control that constitute the subject,³⁶⁴ interwoven with the provision of what are presumed the base human needs of the employee. The way these are provided are particularly interesting, since it requires that management encompasses the entire well-being of the employee, from comfort³⁶⁵ and security to inspiration and sense of purpose.

While this may be recognisable as an instrument of institutional biopolitical control, in much the same way that the prison or hospital coordinates the provision of food, sleep, exercise and sociability whilst simultaneously reconstructing the morality and conscience of the inmate through discursive and disciplinary practices,³⁶⁶ I want to draw attention to the distinctness of this form of management, and where it differs from earlier paradigms of control. It is not a discipline exerted upon the individual directly by management from the outside, but a process of alignment of the inner desires of employees with the company objective.³⁶⁷ The provision of perks and the total environment may not be to make the employees content, docile and thus easy to control.³⁶⁸

³⁶² In chapter five: ‘Continuous Improvement’ I draw on Yiannis Gabriel’s arguments on cynicism and critical stance. Yiannis Gabriel, ‘Beyond Happy Families: A Critical Reevaluation of the Control-Resistance-Identity Triangle’, *Human Relations*, 52.2 (1999), 179-203 (p. 191).

³⁶³ Kunda, *Engineering Culture*, p. 11.

³⁶⁴ Casey, “‘Come, join our family’”, p. 159.

³⁶⁵ I will expand on the provision of thermal comfort in architecture in chapter four: ‘Warm Bodies’.

³⁶⁶ Vikki Bell, *Culture and Performance: The Challenge of Ethics, Politics and Feminist Theory* (London: A&C Black, 2007), p. 14.

³⁶⁷ Kunda, *Engineering Culture*, pp. 11-16, 217-218, 221, 224; and Bell, *Culture and Performance*, p. 20.

³⁶⁸ Bell, *Culture and Performance*, p. 14-15; and Byung-Chul Han, *The Burnout Society* (Stanford, CA: Stanford University Press, 2015), p. 8-9.

In contrast to earlier ideologies of control and discipline that conceive of a subject in negative terms³⁶⁹ – inherently lazy, a shirker, immoral, etc. – this management style recognises individuals as aspiring to realise a greater purpose in life and through work.³⁷⁰ In doing so, it creates new subjectivities *actively*.³⁷¹ It is a participative management that enlists, rather than suppresses, what are assumed to be the ‘natural’ wants of man.

Sociologist Vikki Bell, writing on performativity and Michel Foucault, reminds us that ‘whereas previously a body’s inaction indicated the workings of power, now it is the bodies’ actions that signal power’s success.’³⁷² The production of active subjects of management is also heavily influenced by the shift in work from traditional Fordist models of the management of production towards post-Fordist processes, the archetype of this being Toyotism.³⁷³

The Toyota Production System, developed by industrial engineers Taiichi Ohno and Eiji Toyoda between 1948 and 1975, after the economic devastation of World War II,³⁷⁴ is a combination of logistic, linguistic and socio-cultural practices to increase performance and productivity through continuous improvements in efficiency, communication and inventory control, and – characteristically – the full participation of employees, who are seen as agents of their own productivity.³⁷⁵ The employee in Toyota, in

³⁶⁹ Bell, *Culture and Performance*, pp. 14-15; and Han, *The Burnout Society*, pp. 8-9.

³⁷⁰ Han, *The Burnout Society*, pp. 37-38; Kunda, *Engineering Culture*, pp. 58-60; and McGregor, *The Human Side of Enterprise*, p. 48.

³⁷¹ Bell, *Culture and Performance*, p. 15.

³⁷² Bell, *Culture and Performance*, p. 14.

³⁷³ Toyotism is a neologism following Taylorism and Fordism to describe a specific form of management originating in the factories of the car manufacturer Toyota.

³⁷⁴ Toyota Corporation, ‘The origin of the Toyota Production System’, *Toyota Motor Corporation Global Website* <http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/origin_of_the_toyota_production_system.html> [accessed 27 April 2017]. This management style is often attributed to being behind the ‘miracle’ post-war growth of the Japanese economy and has, since the 1960s been highly influential on Western management. Despite this management style being frequently referred to as the ‘Japanese management style’ the theories that underpin it were part of the export of American management styles and (economic reforms) imposed upon Japan after WWII. ‘W. Edwards Deming’, *The Economist*, (5 June, 2009) <<http://www.economist.com/node/13805735>> [accessed 19 March 2017].

³⁷⁵ Toyota Corporation, ‘Total Quality Management (TQM): Changes and Innovations’, *Corporation Global Website* <http://www.toyota-global.com/company/history_of_toyota/75years/data/company_information/management_and_finances/management/tqm/change.html> [accessed 30 April 2017]; and Casey, ‘“Come, join our family’, pp. 155-156.

contrast to the scientific management of Taylorism, is not a mere cog in the machine. Instead he or she identifies with the aims and values of management, seeking a sense of belonging to the company, and actively contributes to the development of manufacturing processes.³⁷⁶

I drew attention to a central component of continuous improvement in Toyota-style management in the last chapter: in the daily meeting of all members of each production cell in the Honeywell plant – where each member must contribute an actionable improvement.³⁷⁷ This particular strategy is not confined to manufacturing plants, but is elaborated in implementations of Lean Production in the management styles of high-tech companies. In the high-tech company, where what is produced is immaterial (software, apps, design proposals) and is installed into hardware that will be manufactured elsewhere, employees who ‘think for a living’³⁷⁸ also take part in practices that derive from the Toyota Production System, such as ‘continuous beta’,³⁷⁹ ‘all-hands’ meetings,³⁸⁰ ticketing systems and code-red sprints which take place in a ‘war-room.’³⁸¹

Writing about post-Fordist factory work, Maurizio Lazzarato states that ‘workers are expected to become “active subjects” in the coordination of the various functions of production, instead of being subjected to it as simple command.’ Such participative management is itself a ‘technology of

³⁷⁶ Ouchi, *Theory Z Corporations*, pp. 71, 78-79, 136, 253.

³⁷⁷ This process is described in detail by Jon McKenzie in his chapter on Morton Thiokol, the manufacturer of the failed component of the Challenger Space Shuttle. Jon McKenzie, *Perform or Else: From Discipline to Performance* (London: Routledge, 2001), pp. 144-151.

³⁷⁸ Peter F. Drucker, *Landmarks of Tomorrow: A Report on the New Post Modern World* (London: Heinemann; 1959), pp. 76, 91.; and Rick Wartzman, ‘What Peter Drucker Knew About 2020’, *Harvard Business Review* (16 October 2014) <<https://hbr.org/2014/10/what-peter-drucker-knew-about-2020>> [Accessed 14 March 2017].

³⁷⁹ The term continuous beta is wide use within the tech industry. A Google Engineer writes ‘in many respects Google applications are in continuous beta because of the many features and updates that are constantly added to the live products.’ Google Engineer ‘ahab’, ‘Google Docs Help Forum’, *Google Product Forums* <<https://productforums.google.com/forum/#!topic/docs/bOTiHCg12ZQ>> [accessed 17 April 2017].

³⁸⁰ The ‘all hands’ meeting is a regular, often weekly, meeting for all staff of a company held by CEOs of a company, where anybody, in principle, can raise a question. This type of meeting is in extended use in Silicon Valley. Zappos Insights Inc., ‘All Hands Meeting – What It Is and Why You (May) Want One’, *Zappos Insights* (2 September 2014) <<https://www.zapposinsights.com/blog/item/all-hands-meeting-what-it-is-and-why-you-may-want-one>> [accessed 18 April 2017].

³⁸¹ The War Room is drawn directly from Toyota, an ‘Obeya’ is a space for meetings, where all the information needed is pasted around the edges of the room, as in a military operations room. Jake Knapp, ‘Your Design Team Needs a War Room. Here’s How To Set One Up’, *Fast Company* (2014) <<https://www.fastcodesign.com/3028471/google-ventures-your-design-team-needs-a-war-room-heres-how-to-set-one-up>> [accessed 2 July 2014].

power' that creates and controls 'subjective processes'.³⁸² Such processes, in working upon underlying, and often emotional, attitudes and in drawing more involvement and engagement from the employees, work upon not just bodily coordination or cognitive processes but on a whole affective realm – affect being, in this case, defined by Michael Hardt and Antonio Negri as follows:

Unlike emotions, which are mental phenomena, affects refer equally to body and mind. In fact, affects, such as joy and sadness, reveal the present state of life in the entire organism, expressing a certain state of the body along with a certain mode of thinking.³⁸³

Patricia Clough observes the relation between a 'turn to affect' and biopolitical power: 'biopolitical control is not the production of subjects whose behaviours express internalized social norms; rather, biopolitical control [...] transforms the subject of discipline.'³⁸⁴ Such mechanisms of management, therefore, constitute their employees, they are, as Jon McKenzie describes, performative, where performance now displaces discipline:

Performance will be to the twentieth and twenty-first centuries what discipline was to the eighteenth and nineteenth, that is, an onto-historical formation of power and knowledge.³⁸⁵

This is a critical observation, given that there is no question that big data, deep learning, the quantifiable self, the feedback of intelligent building systems and the choreography of the Honeywell Operating Systems all operate as an apparatus of surveillance. The tech-culture could be construed as synonymous with Foucault's panopticon. But I want to suggest that performance operates on the employee's subjectivity in manner

³⁸² Maurizio Lazzarato, 'Immaterial Labour', *Radical Thought in Italy: A Potential Politics*, Paolo Virno and Michael Hardt (eds) (Minneapolis: University of Minnesota Press, 1996), 133-47 (p. 142).

³⁸³ Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire* (London, Penguin: 2005), p. 108.

³⁸⁴ Patricia T. Clough, 'The Affective Turn: Political Economy, Biomedicine and Bodies', *Theory Culture Society*, 25.1, (2008), 1-21 (p. 17).

³⁸⁵ McKenzie, *Perform or Else*, p. 18.

distinct from that of Foucault's prisoner under total surveillance.³⁸⁶

The Cultivation of Performative Control

In 1981 a business management professor with an MBA from Stanford proposed Theory Z: William Ouchi drew on his observations of Japanese 'miracle' companies³⁸⁷ to describe employees with a desire to identify with the company's goals. Ouchi proposed that the creation of a strong company culture, coupled with participation by employees in organisational decisions, was central to developing loyalty, responsibility and autonomy from within the employees.

Drawing on the various literature in this chapter, I propose that Silicon Valley style management develops McGregor's Theory Y and Ouchi's Theory Z into a company philosophy that is more than profit-related goals or corporate social responsibility, and goes further than the development of a sense of unity in the Japanese model. Reading Ouchi through Kunda's work reveals that the generation and materialisation of company missions engage the goal of self-actualisation with a yearning to realise positive change in wider society.³⁸⁸ The implications are that where once the employees' sense of motivation could be tied directly to the financial performance of the company through the performance of stock, the creation of a company mission ensures that even the most mundane work of programming is contributing towards some greater purpose.³⁸⁹

Part of the work of management therefore is to make their company missions tangible through the manifestation of their ideology. This is done in part through the development of real projects that have a global impact:

³⁸⁶ It is not in contrast to Foucault's work, as his own later diagrams of power differ from panopticon control. I refer to Vikki Bell's nuanced and forensic account of Butler's subject of performativity being complicit 'in sustaining the power relations that produce her', Vikki Bell, 'Declining Performativity Butler, Whitehead and Ecologies of Concern', *Theory, Culture & Society*, 29.2 (2012), 107-123 (p. 109).

³⁸⁷ Ouchi, *Theory Z Corporations*, pp. 4, 12.

³⁸⁸ Kunda, *Engineering Culture*, p. 60; and Ouchi, *Theory Z Corporations*, p. 75.

³⁸⁹ Rosabeth Kanter, *The Change Masters: Innovation and Entrepreneurship in the American Corporation* (New York: Simon and Schuster, 1983), pp. 203-204.

for example, during the Arab Spring, Google launched an automated voicemail-to-twitter application in collaboration with Twitter that allowed protestors to circumvent the social media blackout implemented by President Mubarak. Egyptian protestors could communicate with the world through social media by calling a phone number and leaving a voice message, which would be automatically tweeted with a hashtag of the country.³⁹⁰

Through taking such a perspective, the way that a company culture materialises spatially and architecturally – and how the employee (who is also the occupant) is conceived of troubles a purely aesthetic or functional analysis. The way in which the meaning of a company culture is constructed is very different to branding, and attempting to read its semiotics, I suggest, will come up short. For those of us with an architectural training the usual techniques of spatial anthropology will reveal a partial picture. It is necessary to account for how the company operates on all levels, from the provisions of comfort, the cultivations of positive affects, to the sense of purpose and meaningfulness the employees get from their work.³⁹¹

Doing Things with Silicon Valley

If you haven't been to Silicon Valley, I'm sure you can easily picture the non-architecture of the repurposed industrial lots, the interiors now furnished with ping-pong or 'foosball' tables, healthy cafes, breakout spaces and acres of white-boards. You can perhaps imagine what it's like to ride the primary-coloured bicycles across the repeatable landscapes of Mountain View, or to hail an Uber between the Googleplex and 1, Infinite Loop, Cupertino, where

³⁹⁰ Gabe LaMonica and Taryn Fixel, 'Starting a revolution with technology', *CNN*, (17 June 2011) <<http://edition.cnn.com/2011/TECH/innovation/06/17/mesh.technology.revolution>> [accessed 2 September 2016].

³⁹¹ Casey, "'Come, join our family'", pp. 160-162. David Leatherbarrow draws attention to the urge to view a building through its functional and aesthetic conditions: 'Broadly speaking, there are two ways designers and critics tend to view buildings: as objects that result from design and construction techniques; and 2) objects that represent various practices and ideas. [...] Other and essential aspects of buildings come into view if one supposes that the actuality of the building consists largely in its acts, its performances. [...] This means subordinating, at least for a while, the questions about experience, meaning and production that normally occupy our attention.' Leatherbarrow, 'Architecture's Unscripted Performance', p. 7.

Apple currently has its headquarters, or drive out to the 37-acre suburban campus of Menlo Park where Facebook has made its home the largest *burölandschaft* in the world.

What is important about these companies is not the pop art colours, the wall finishes, the free perks, or what is being served in the cafeterias. It won't be useful to extensively deconstruct the names given to the meeting rooms ('90s alternative rock albums), or comment extensively on the hipster-geek paraphernalia. Because what is of equal – or, I would say, more – importance is how they operate – what these things DO, which is sometimes in opposition to what, specifically, the things look like or their cultural references.

Architectural writer and critic Alexandra Lange's approach to Silicon Valley³⁹² is that of a 'spatial anthropologist', observing and noting what is on display in front of her – cross-referenced with background research into the culture of Silicon Valley. Her long-form essay for Strelka Press, 'The Dot Com City: Silicon Valley Urbanism', describes in depth a visit to the extra-urban California landscapes in which the leading internet companies are headquartered. While the meticulous design of the headquarters outward appearance is an important account, it cannot be understood without interrogating management.³⁹³

Lange's study suggests that we are to understand the design of such spaces as the conscious implementation of company culture, but in highlighting the semiotics of each company's unique image – a crucial question goes unanswered. If the cultivation of such strong cultures with individual identities is so important – from the Facebook hacker chic to Google's fun openness, and Apple's closed Infinite Loop (styles that are infamous and instantly recognisable) – how is such heterogeneity and

³⁹² The designs of Silicon Valley are extensively thought out by each and are often exemplars of workplace design. Lange cites Laura Crescimano, a San Francisco-based architect whose previous appointment was at Gensler, a large architectural firm that grew from corporate interiors to major corporate architecture, including the design of Facebook's headquarters in London. Crescimano's own practice focuses on 'place-making': regenerating underused urban districts into mixed use-programmes through art and entrepreneurship. 'The new workplace' Crescimano says 'arises from a kind of productivity that generates the potential of culture.' Alexandra Lange, *The Dot-Com City: Silicon Valley Urbanism* (Moscow: Strelka Press, 2012), Kindle eBook.

³⁹³ Lange, *The Dot-Com City*.

branding of culture sustained in the face of the high job mobility of the region?³⁹⁴ In such a culture of apparent commitment and identification, how is it that Silicon Valley has the highest job mobility of any high-tech region in the US, and indeed of all other sectors in California?³⁹⁵

The formation of Silicon Valley was a result of such a job-hopping culture and disloyalty, beginning with William Shockley's departure from Bell Labs to form Shockley Semiconductor Laboratory with his brightest protégés, eight of whom left Shockley, seeking investment from Sherman Fairchild, one of the first venture capitalists.³⁹⁶ The 'traitorous eight' formed their own company, Fairchild Semiconductor, which was itself the launching point of many other technology hardware companies in California.³⁹⁷ These 'spin-outs' were known as 'Fairchildren' and included Intel and AMD.³⁹⁸

Lange's conclusion is that such 'happy heterotopias' make the sameness of the work more bearable through a variety of choices of how to work:

You can choose your desk (sitting, standing, treadmill), your lunch (burrito, raw, sushi), your mode of transportation (walking, biking, shuttle, and if you must, car), your location (workstation, breakaway area, courtyard, all with Wi-Fi), but you need to be there and be available.³⁹⁹

In her analysis, 'every design decision' becomes a metric, suggesting similarities with the concerted 'choice architecture' at work in 'nudge'.⁴⁰⁰ While there is an apparent strong behaviourism undercutting these decisions, to focus too much on the precise choreographies to optimise 'serendipitous' encounters – each worker in Google should be within a two-

³⁹⁴ Orly Lobel, *Talent Wants to be Free: Why We Should Learn to Love Leaks, Raids, and Free Riding* (New Haven, CT: Yale University Press, 2013), p. 60.

³⁹⁵ Turner, 'Burning Man at Google: a cultural infrastructure for new media production', p. 81.

³⁹⁶ Tom Wolfe, 'The Tinkerings of Robert Noyce: How the sun rose on the Silicon Valley', *Esquire* (December 1983) 346-374., p. 360.; and 'Now The Chips Are Down', *Horizon*, BBC Two, (first transmitted 1978) available at <<http://www.bbc.co.uk/programmes/p01z4rrj>> [accessed 25 November 2015].

³⁹⁷ 'Now The Chips Are Down', *Horizon*.

³⁹⁸ Tom Wolfe, 'The Tinkerings of Robert Noyce', p. 360; and 'Now The Chips Are Down', *Horizon*.

³⁹⁹ Lange, *The Dot-Com City*.

⁴⁰⁰ Thaler and Sunstein, *Nudge*, p. 70.

minute walk from one another;⁴⁰¹ the queue at the cafeteria should be three to five minutes)⁴⁰² or on the functionalism of obvious perks (free transport from desirable living locations to the out-of-city campus; free meals; doctors' surgeries) is to miss the operability of these elements and their relation to the management practices. As noted in Rowson's critique of the choice architecture of 'nudge', such behaviourist interventions do not transform subjectivity. Indeed, such an account can misleadingly render company cultures as cultish utopias and in doing so allows an all-too-easy disconnection for those of us who think we are too critical to be fooled by such an obviously artificial and constructed attempt to extract productivity and loyalty from us.⁴⁰³

Secret Sauce

The obvious features of each company I suggest are typically seen in one of two ways: either as the most active or dominant form of management, as if all a company needs to do to transform employees into productive, innovative beings full of enthusiasm can be achieved through a design strategy, without implementing fundamental organisational changes,⁴⁰⁴ or as extras that any employee believes they can cynically benefit from, without becoming too attached.⁴⁰⁵

The perks give an illusion of distance – the in-joke aesthetics of Gen Y cultural references trivialise the transactional, as though all that is being

⁴⁰¹ Greg Lindsay, 'Engineering Serendipity', *New York Times* (5 April 2013) <<http://www.nytimes.com/2013/04/07/opinion/sunday/engineering-serendipity.html>> [accessed 27 October 2015].

⁴⁰² Geoff Colvin, 'How to build the perfect workplace', *Fortune* (5 March 2015) <<http://fortune.com/2015/03/05/perfect-workplace/>> [accessed 27 October 2015].

⁴⁰³ The premise of *The Circle*, a novel published in 2013 by Dave Eggers, fictionalises Silicon Valley as a machine of governance that stealthily blurs the boundaries of morality until the heroine is implicated in the unethical workings of the company, however I would suggest that this implies that cynicism would be adequate to counteract such a tendency. I explore in more detail the feelings of ambiguity and cynicism in chapter five: 'Continuous Improvement', where I discuss the difference between surface acting and 'really feeling it' – or, in Arlie Russell Hochschild's term, 'deep acting'. Catherine Casey examines the ambivalences of company cultures in Casey, "'Come, join our family'", pp. 169-171; and Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley, CA: University of California Press, 2003) pp. 38-55.

⁴⁰⁴ Laszlo Bock, 'Passion, Not Perks', *Think with Google* (September 2011) <<https://www.thinkwithgoogle.com/articles/passion-not-perks.html>> [accessed 27 October 2015].

⁴⁰⁵ Kunda, *Engineering Culture*, pp. 222-224.

handed over is some superficial part of the personality – nothing more than tastes and pastimes. As such it becomes easy to understate their part in the transformation of subjectivity. On the one hand, they are sensible and extremely functional – taking the stress out of the day by providing all the basic needs, transport, health, food, and technical support, so that the employee can concentrate on more important things. At the same time, they are relatively benign – an employee might imagine that these perks would be easy to give up if they really thought that their integrity was being compromised – it's only a lunch ticket, after all: nothing to stake your identity on.

They are instead integral to a philosophy that the company should provide a total immersive environment in which the well-being (physical and emotional) of the employee is secured, leaving them free to self-actualise through work. These ideas are hard-wired into the corporate philosophies of tech-companies. Bill Hewlett, of Hewlett Packard (HP), describes the HP Way as 'the policies and actions that flow from the belief that men and women want to do a good job, a creative job, and that if they are provided the proper environment they will do so.'⁴⁰⁶

The totality of provision in the Silicon Valley campus is underwritten by intense research into well-being and productivity: Google have their own department (POps), which conducts research into lighting, the ergonomics of seating, queue times in the canteen.⁴⁰⁷ However, Laszlo Bock, Google's head of People Operations (POps), emphasizes that the conditions that satisfy good management are not the obvious perks that Google is famous for; rather, it is the generation of beliefs, emotions and values amongst its employees.⁴⁰⁸ His job is to manifest a company mission that employees can feel passionate about:

⁴⁰⁶ Bill Hewlett, in Hewlett Packard, *The HP Way*, p. 3. <http://www.hp.com/hpinfo/about/hp/histnfacts/publications/measure/pdf/1977_07.pdf> [accessed 5 October 2015].

⁴⁰⁷ Farhad Manjoo, 'The Happiness Machine: How Google became such a great place to work', *The Slate* (21 January 2013) <http://www.slate.com/articles/technology/technology/2013/01/google_people_operations_the_secrets_of_the_world_s_most_scientific_human.html> [accessed 20 August 2016].

⁴⁰⁸ Laszlo Bock, 'Passion, Not Perks'.

Benefits are part of who we are, and they're designed to take care of the whole you and keep you healthy, whether physically, emotionally, financially or socially.

Here's the secret sauce to our benefits and perks: It's all about removing barriers so Googlers can focus on the things they love, both inside and outside of work. We're constantly searching for unique ways to improve the health and happiness of our Googlers. And it doesn't stop there – our hope is that, ultimately, you become a better person by working here.⁴⁰⁹

Lange's investigation attempts to reconcile the realisation of a company culture and the design choices, and what the role of aesthetics and spatial configurations play: 'the questions for architects and designers working in this environment are: How do we make spaces for innovation, health and productivity? How do we foster innovation and corporate culture?'⁴¹⁰ Noting that these companies are housed in the industrial buildings of former hardware companies like Sun Microsystems she notes:

Few Silicon Valley companies have cared much about the outside of their buildings. Maybe it seems frivolous and old-school to make much of your physical presence. Successive waves of start-ups have grown and shrunk, leased and bought, changing the insides of office parks and leaving the outsides alone. They have focused not on design aesthetics but on relational ones.⁴¹¹

While the aesthetic becomes, in part, a physical realisation of the company culture it is the understanding and internal identification of the culture that is crucial to this management style. In noting that ideal employees have 'internalised the organisation's goals and values – its culture – into their cognitive and affective make-up, and therefore no longer require strict and rigid external control'⁴¹² Kunda's ethnography gives me cause to doubt that

⁴⁰⁹ *How We Care For Googlers*, Google Careers, <<http://www.google.com/about/careers/lifeatgoogle/benefits/>> [accessed 25 August 2016].

⁴¹⁰ Lange, *Dot-Com City*.

⁴¹¹ Lange, *Dot-Com City*.

⁴¹² Kunda, *Engineering Culture*, p. 10.

the outward appearance of a company reveals very much about how the subjectivities of employees are constructed. In order to understand the occupant of workplaces, the relationship between design and architecture and the operationality of the company culture warrants further attention.

Apple, Google and Facebook all have very distinct cultures: Google is open and participatory, and its design language is fun and colourful; Facebook prefers to decorate its space minimally, allowing its employees to ‘hack’ it;⁴¹³ Apple is secretive and proprietary, it calls its engineers ‘Designers’ and its tech support workers ‘Geniuses’. But, while the aesthetics *communicate* innovation and energy, this is no boring corporate place to work, this is not an exercise in semiotics, but rather the construction of an active environment in which identity is manipulable – something that the statistics on job mobility in Silicon Valley underscores:⁴¹⁴ a Googler can become a ‘Hacker’, and then be an introverted ‘Genius’ fairly readily. The aesthetics and perks, I propose, *do* something to the employee; they don’t just look enthusiastic; they *really feel it*.

One of the curious elements of control within high-tech management is the use of vagueness in strong company cultures: the mottos that companies deploy refer to everything and nothing, and the construction of the company identity is premised on statements such as ‘Google is not a conventional company. We do not intend to become one’, as well as the aim ‘to organize the world’s information and make it universally accessible and useful’.⁴¹⁵

A good company mission has elements of a narrative, especially a good myth of origin, and it is enacted through the passionate identification with often hyperbolic and global mission statements. In the case of Facebook, in

⁴¹³ Mike Isaac, ‘Meet Facebook’s Propaganda Arm: The Analog Research Lab’, *Wired* (18 May 2012) < <https://www.wired.com/2012/05/analog-research-lab/> > [accessed 28 June 2016]; and Mark Wilson, ‘Meet Ben Barry, Facebook’s Minister of Propaganda’, *FastCo.Design* (11 May 2012) < <https://www.fastcodesign.com/1671050/meet-ben-barry-facebooks-minister-of-propaganda> > [accessed 28 June 2016].

⁴¹⁴ Bruce Fallick, Charles A. Fleischmann, James B. Rebitzer, ‘Job Hopping in Silicon Valley: Some Evidence Concerning the Micro-Foundations of a High Technology Cluster’, *The Review of Economics and Statistics*, 88:3 (August 2006), 472-481 (p. 472, 474).

⁴¹⁵ from Google’s 2004 Founders’ Letter to Investors on the company’s initial public offering (IPO), <<https://abc.xyz/investor/founders-letters/2004/ipo-letter.html>>; and Alphabet’s 2015 Founders’ Letter to Investors <<https://abc.xyz/investor/founders-letters/2015/index.html>> [accessed 4 August 2016].

2012 a small handbook was placed on every new employee's desk to mark the moment when the number of their users hit a billion. The cover read: 'Facebook was not originally created to be a company', continuing inside with 'It was built to accomplish a mission – to make the world more open and connected.'⁴¹⁶

Hewlett Packard's 'Eleven Rules of the Garage' was widely thought to have originated in 1941 in the wooden Palo Alto garage where Bill Hewlett and David Packard founded their start-up.⁴¹⁷ They were in fact formulated in 1999 by then CEO Carly Fiorina (a graduate of MIT's Sloan Management School) after instructing an advertising agency to produce a manifesto from Bill Hewlett's biography *The HP Way*. Keeping the concept, Fiorina rewrote the rules to suit the new culture of Hewlett Packard:⁴¹⁸ the first rule is 'Believe you can change the world' – the tenth is 'Believe that together we can do anything.'⁴¹⁹

In Silicon Valley-style management, while discipline is not exerted on employees directly by the management, there are imperatives to perform. 'Internalised standards for performance'⁴²⁰ replace financial incentives, with the sense of reward coming from an employee's own desires to make a difference and do worthwhile work. Company missions describe the behavioural rules, and they express them in vague terms such as 'be creative, take initiative, take risks', 'push at the system' and, ultimately, 'do what's right'.⁴²¹ Google's motto 'Don't be Evil', its myth of origin being that

⁴¹⁶ Office of Ben Barry, 'Facebook's Little Red Book', *BenBarry.com*, <<http://benbarry.com/project/facebooks-little-red-book>> [accessed 28 June 2016].

⁴¹⁷ John C. Abell, 'Rules of the Garage, and Then Some', *Wired*, (2009) <<https://www.wired.com/2009/01/rules-of-the-ga/>> [accessed 3rd October 2015]; and HP Development Company, 'HP History', *HP.com* <<http://www8.hp.com/us/en/hp-information/about-hp/history/overview.html>> [accessed 17 March 2017].

⁴¹⁸ George Anders, 'The Carly Chronicles: An Inside Look at Her Campaign to Reinvent HP', *FastCompany* (31 Jan 2003) <<https://www.fastcompany.com/45939/carly-chronicles>> [accessed 17 March 2017].

⁴¹⁹ Abell, 'Rules of the Garage, and Then Some'.

⁴²⁰ Kunda, *Engineering Culture*, p. 90.

⁴²¹ Kunda, *Engineering Culture*, p. 90.

the slogan was thought up by a Google engineer, has been replaced by the non-specific imperative to ‘Do the Right Thing.’⁴²²

Chapter Summary

In the management culture of the tech-companies, base physiological and psychological needs are addressed in order to enable the self-actualisation of the employee; shared objectives are solicited and (vague) behavioural rules are channelled in the course of realising employees who are rewarded with a sense of autonomy and the feeling of doing meaningful work.

The Nest learning thermostat which I will explore in detail in the next chapter, follows a similar narrative. The CEO Tony Fadell’s mission for his Silicon Valley company is to take unloved products in the home and make them important. He identifies with the product, and has a story of origin for his invention, and he identifies with the customer: ‘we all care about the same things.’⁴²³

However the discrepancy between the messages that organisations promote and the reality of what they actually do is presented by Keller Easterling as parallel to the theatrical method of action that she writes about in *Extrastatecraft* and *The Action is the Form*.⁴²⁴ Easterling warns in her work that actions can operate beyond what is explicit in the script:

The character saying, ‘I am pleased to meet you’ may actually be expelling someone from society. The character saying, ‘I don’t love you’ may actually be straining to connect. Action [...] can be decoupled from declaration.⁴²⁵

⁴²² Alistair Barr, ‘Google’s “Don’t Be Evil” Becomes Alphabet’s “Do the Right Thing”’, *The Wall Street Journal Online* (2 October 2015) <<http://blogs.wsj.com/digits/2015/10/02/as-google-becomes-alphabet-dont-be-evil-vanishes/>> [accessed 15 October 2015].

⁴²³ Tony Fadell in Rem Koolhaas, Tony Fadell and Niklas Maak, ‘Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?’, online video recording, *YouTube*, 5 June 2014 <<http://www.labiennale.org/en/mediacenter/video/fundamentals29.html>> [accessed 7 June 2014].

⁴²⁴ Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London: Verso, 2014), pp. 168-169.; and Easterling, *The Action is the Form: Victor Hugo’s TED Talk* (Moscow: Strelka Press, 2014), Kindle eBook.

⁴²⁵ Easterling, *The Action Is the Form*.

Easterling proposes that this separation of narrative from action is how advanced infrastructures and technologies operate politically: ‘the powers that be [...] are usually offering persuasive stories that are decoupled from what their organisations are actually doing’.⁴²⁶

I will explore in detail in chapter three how this ambiguous mechanism operates through a discussion of the kinds of objects produced by the companies described above, and how they do so without recourse to disciplinary models of control.

⁴²⁶ Easterling, *Extrastatecraft*, p. 91.

Chapter Three

THOUGHTFUL THINGS⁴²⁷

⁴²⁷ 'Thoughtful Things' was the tagline for the artificially intelligent Nest thermostat in their 2015 marketing programme. Sarah Thao Nguyen, 'Nest Thoughtful Things Campaign', *Cargo Collective*, < <http://cargocollective.com/sarahthao/filter/Things/Nest-Thoughtful-Things-Campaign> > [accessed 17 April 2017].

Chapter Outline

This chapter uses insights from the theatrical ‘actioning’ technique to interrogate the technological solutions for temperature control, in particular those developed within the cultures of management described in Chapter Two. Taking from Stanislavski the term ‘action’ – which states that all actors *do things* not only for themselves but also *do things to others* in order to achieve their objectives,⁴²⁸ and from Bruno Latour the idea that an ‘actor’⁴²⁹ can be any part of a system (human or otherwise)⁴³⁰ that *does* something, the chapter follows the actions of ‘smart technologies’ such as the Nest learning thermostat.⁴³¹

The chapter is a reading of what people such as the CEO of Nest say about what their products do, and what architects think these products do, and what the products are really doing. I take the verbatim dialogue of a conversation between Tony Fadell and Rem Koolhaas at the 2014 Architecture Biennale in Venice as my source,⁴³² and interrogate their comments alongside the story of how the beta version of the Nest was

⁴²⁸ Objectives can be energy reduction, productivity, or even counter-objectives (control over a thermostat for strategic reasons, playing out office politics, rather than comfort) or smart technology tasked with influencing, moderating or explicitly changing the behaviour of the occupants.

⁴²⁹ Latour’s use of ‘actants’ and ‘actors’ draws on both performance theory and theatrical theory. He recognises that actors ‘do things to others’ in an Austinian sense yet draws references directly from the work of Erving Goffman and a socio-cultural side of theatrical performance. Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2007), p. 46.

⁴³⁰ An acting part of the system could be an employee, a CEO, a company culture, an appraisal protocol, or a thermostat.

⁴³¹ This method is not related to the ‘Object Theatre’ of Preben Friis, Merja Ryöppy and Jacob Buur at the University of Southern Denmark. Their work is based on the ‘post-dramatic’ forms of theatre that tend not to use scripts, but instead create improvisations around scenarios and objects. Such work is consciously aimed at creating effects upon the audience. In addition, they draw on puppetry or the animation of objects for the ‘life’ of the object, which in my view is a kind of anthropomorphising. Merja Ryöppy and Andreas Heiberg Skouby, ‘Object Theatre – A Playful Understanding of Design’, *Participatory Innovation Conference 2015 (Pin-C 2015) proceedings* (The Hague University, 18 – 20 May 2015) <http://sites.thehagueuniversity.com/xmsp/xms_itm_p.download_file?p_itm_id=98194> [accessed 1 August 2015]; Preben Friis, Merja Ryöppy and Jacob Buur, ‘Object Theatre in Design: Workshop’, *NorDes 2015 Proceedings*, (7-10 June 2015), <<http://www.nordes.org/opj/index.php/n13/article/view/430/405>> [accessed 9 June 2015]; and Jacob Buur, Preben Friis, ‘Object Theatre In Design Education’, *NorDes 2015 Proceedings*, (7-10 June 2015), <<http://www.nordes.org/opj/index.php/n13/article/view/379/358>> [accessed 9 June 2015]. Further discussion is found the appendix III: ‘Killer Apps’, pp. 346-347.

⁴³² Koolhaas, Fadell and Maak, ‘Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?’

reprogrammed, using clues from Latour's actor-network-theory (ANT) with the specifics of the Stanislavski technique.

The theatrical technique is useful because it is a way of looking at non-determinist actions (those that do not pre-suppose their effect), which can add to Latour's 'following the actors'.⁴³³ Both draw on the Austinian notion of speech acts that do more than 'describe' (the Nest does not represent control, it enacts it) in Latour's we find a disciplinary model of control, and in the theatrical we find traces of what I am proposing is a post-disciplinary, or performative, form of control.

Keeping in mind that the Stanislavski method for finding playable verbs is focused on the *action*, not the effect, and that actions might appear to be doing one thing while actually doing another, the method is brought into dialogue with parts of Latour's work, in order to test the developers' claims about what their 'smart' products really do.

I present an account of how the thermostat – an object of governance and regulation – has become an object consistent with a libertarian philosophy of choice that prevails in Silicon Valley: one that does not exert discipline upon its users – as hypothesised in the ideas of control from Chapter Two, I show how compliance is instead produced as a shared goal.

⁴³³ 'Following the actors' – Latour's 'slogan' for actor-network theory – is guide for 'catching up' with the actions of objects 'by the traces left behind by their activity of forming and dismantling groups.' Bruno Latour, *Reassembling the Social*, pp. 12, 29.

Actions of Objects

In the essay ‘Where are the Missing Masses?’, Latour presents commonplace artefacts as a seatbelt alarm in a car, a door-closing mechanism and a strange double-key particular to Berlin tenements as designed to ‘constrain or shape the actions of humans,’⁴³⁴ by standing in for utterances like FASTEN YOUR SEAT BELT!, CLOSE THE DOOR BEHIND YOU PLEASE and RELOCK THE DOOR BEHIND YOU.⁴³⁵

He suggests that each object contains a mechanical riposte to the disobedient actions of humans; to the driver who does not want to wear a seatbelt, to visitors to La Villette who leave the door open to the cold Parisian wind, or to hotel guests who wander off with a room key.⁴³⁶ In Latour’s account these objects are endowed with a deterministic force that can condition the behaviour of the user. He writes that prescriptions of behaviour ‘encoded in the mechanism’ can be replaced by

strings of sentences [...] that are uttered (silently and continuously) by the mechanisms for the benefit of those who are mechanized: do this, do that, behave this way, don’t go that way, you may do so, be allowed to go there.⁴³⁷

He believes that such sentences, ‘often in the imperative’,⁴³⁸ look very much like a procedural programming language.⁴³⁹ They also look a lot like Austin’s speech acts, in particular the illocutionary and primary speech acts that are orders, requests and warnings, where each utterance can be preceded with I WARN YOU to – , or I ORDER YOU to –.

⁴³⁴ Bruno Latour, ‘Where are the Missing Masses? The Sociology of a Few Mundane Artefacts’, *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law (eds) (Cambridge, Mass: MIT Press, 1992), pp. 225-259, republication in *Technology and Society, Building Our Sociotechnical Future*, Deborah Johnson and Jameson M Wetmore (eds) (Cambridge, Mass: MIT Press, 2008), pp. 151-180 (p. 151).

⁴³⁵ Latour, ‘Where are the Missing Masses?’, pp. 151, 172.

⁴³⁶ Latour, ‘Where are the Missing Masses?’; and Bruno Latour, ‘Technology is Society Made Durable’, *Sociological Review*, 38: S1 (May 1990), 103-132.

⁴³⁷ Latour, ‘Where are the Missing Masses?’, p. 157.

⁴³⁸ Latour, ‘Where are the Missing Masses?’, p. 157.

⁴³⁹ Procedural programming is a step-by-step style of programming, where each step is a function to be executed.

J.L. Austin's speech-act theory was an enquiry into what it is that people are *doing* when they speak. Stanislavski's method proposed that the words of dialogue an actor speaks *is* action – that each character in a play or film is doing something when they deliver a line to another character. The characters have objectives – something they want to achieve in a scene, which is broken into units of action. Each action must have an effect, and must be performed as a single transitive verb.

Following Stanislavski's method, some suggested super-objectives of a technical system could be To improve the energy performance of the building. To achieve this, the system may be designed, commissioned or programmed to achieve the following smaller objectives:

- To minimise the influence of human occupants.
- To make the human occupants happy and healthy.
- To allow the facilities manager to see all outputs clearly.

By breaking up these hypothetical objectives into actions the system might dissuade, block or reprimand the human through its interface and actions. Or perhaps it assists and informs the human occupants of the impact of their actions on energy use through evaluating, applauding and reinforcing certain user behaviours. The transfer of these methods from the human to the machine is not anthropomorphism and is categorically not projecting characters onto inanimate objects. It is stating that since they do things too, they are also actors.

The main differences between the theatrical method and that of Latour in bringing the actions out into words is that in Stanislavski's approach – and the later developments of Max Stafford-Clark and Mike Alfreds – the actions must not pre-suppose the effect. In order to be playable, and not 'block' the course of action, they cannot be deterministic. This difference is very important when looking at the products that come out of Silicon Valley, which are considerably more sophisticated in the way that they operate than Latour's objects.

Rem's fireside chat⁴⁴⁰

At the 2014 Architecture Biennale in Venice, technologies, mechanisms and details that constitute the unremarkable but 'ubiquitous Elements of Architecture'⁴⁴¹ were curated by the architect Rem Koolhaas to tell the evolutionary story of architectural technology. The floor, the wall, the ceiling, the roof, the door, the window, the façade, the balcony, the corridor, the fireplace, the toilet, the stair, the escalator, the elevator, the ramp: were dedicated a room each in the Central Pavilion and dedicated a single book in a series published by OMA.⁴⁴²

The fireplace, for example, traced the architectural story of heating as emerging in part from social and political milieus, alongside a narrative of the promethean inventor and genius architect.⁴⁴³ The room contained a recreation of a prehistoric European hearth from 280,000 years ago, a full-scale 3D print of one of Giambattista Piranesi's imaginary fireplaces, the artificially intelligent Nest thermostat, and a prototype of 'local warming' for the 'neo-nomad' from MIT's SENSEable Cities research cluster.⁴⁴⁴

Rem Koolhaas' polemic was that the architect's former position of working in a civic capacity has shifted to one where they work for the

⁴⁴⁰ The 'fireside chat' was coined during Franklin D. Roosevelt's presidency for the radio addresses to the nation on developments in tackling difficult electoral policies. Taking place in the evening, transmitted from Roosevelt's study, they were used to explain policy decisions and reassure the electorate in a cosy and intimate way. The format continued to be used by successive presidents, including Jimmy Carter, who made televised addresses throughout the oil crisis. In one, dressed in a beige woollen cardigan that earned him the nickname 'Jimmy Cardigan', he urged the population to turn down their thermostats by one degree, which is often cited to be the origin of the phrase 'put on a sweater'. Jennifer Latson, 'How FDR's Radio Voice Solved a Banking Crisis', *Time Magazine Online* (12 March 2015) <<http://time.com/3731744/fdr-fireside-chat-banking/>> [accessed 2 April 2017]; Jimmy Carter, 'Natural Gas Legislation Remarks at a News Briefing on the Legislation,' transcribed online by Gerhard Peters and John T. Woolley, *The American Presidency Project*, (26 January 1977), <<http://www.presidency.ucsb.edu/ws/?pid=7167.>> [accessed 17 January 2014]; and 'The Administration: Warm Words from Jimmy Cardigan', *Time Magazine* (14 February 1977) <<http://content.time.com/time/magazine/article/0,9171,914802,00.html>> [accessed 11 November 2014].

⁴⁴¹ Rem Koolhaas, *Fundamentals 14th International Architecture Exhibition - La Biennale Di Venezia* (Venice: Marsilio, 2014).

⁴⁴² Oliver Wainwright, 'Rem Koolhaas Blows the Roof Off the Venice Architecture Biennale', *The Guardian*, (5 June 2014) <<https://www.theguardian.com/artanddesign/architecture-design-blog/2014/jun/05/rem-koolhaas-architecture-biennale-venice-fundamentals>> [accessed 2 July 2014]; and Rem Koolhaas, *Elements*, (Venice: Marsilio, 2014).

⁴⁴³ Rem Koolhaas, Sebastian Marot, AMO, Harvard Graduate School of Design, and Irma Boom, *fireplace*, (Venice: Marsilio, 2014), pp. 64, 79, 98.

⁴⁴⁴ Koolhaas, Marot, Boom, et. al., *fireplace*, p. 147.

market and whichever private enterprise is setting the agenda. Unless they take notice of the way that the elements they deploy ‘anytime, anywhere’⁴⁴⁵ have, independently of an architectural theory, evolved into a new digital paradigm, architects, he says, risk being left behind.⁴⁴⁶ They are no longer relevant to the production of the built environment except as ‘so-called form-givers’ - an ‘increasingly precarious and hollow role’.⁴⁴⁷

In the gap vacated by architects who, Koolhaas says, have failed to theorise these elements, commercial interests have rushed in to reform them into commercial products.⁴⁴⁸ Silicon Valley style tech companies,⁴⁴⁹ in bringing their own ideas of the future home, office and city, are recasting inhabitants as customers, whose data is collected to serve commercial interest and what Koolhaas calls a new ‘dogma of comfort, security and sustainability’.⁴⁵⁰

Koolhaas illustrated this proposal by inviting the CEO and inventor of the Nest thermostat to a public discussion at the Venice Architecture Biennale.⁴⁵¹ The Nest senses occupancy and learns users’ patterns of activity and temperature preferences, and reprogrammes itself based on this data with a bias towards saving energy to reduce the amount of time the heating or cooling is on. It is one of the first mainstream ‘Internet of Things’ products, networked via the internet to Nest servers (which can update the software, draw on real data of patterns of its customers and send back reports of their energy usage); live weather updates; users’ smartphones (to allow heating to be set remotely) and other Nest products (Nest Protect, a

⁴⁴⁵ Koolhaas, *Fundamentals*.

⁴⁴⁶ Rem Koolhaas, ‘The Smart Landscape: Intelligent Architecture’, *ArtForum International*, 53: 8 (April 2015), 212-216 (p. 213).

⁴⁴⁷ Koolhaas, ‘The Smart Landscape’, p. 213.

⁴⁴⁸ Koolhaas, ‘The Smart Landscape’, p. 214.

⁴⁴⁹ The ‘Big Five’: Apple, Google, Facebook, Microsoft and Amazon, along with IBM, Cisco, Intel and Samsung, cited in Bruce Sterling, *The Epic Struggle of the Internet of Things*, (Moscow: Strelka Press, 2014) Kindle eBook.

⁴⁵⁰ ‘As a substitute for the French Revolution’s *liberté, égalité, fraternité*, a new universal trinity has been adopted: comfort, security, sustainability’, Koolhaas, ‘The Smart Landscape’, p. 215.

⁴⁵¹ Rem Koolhaas, Tony Fadell and Niklas Maak, ‘Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?’, online video recording, *YouTube*, 5 June 2014, <<http://www.labiennale.org/en/mediacenter/video/fundamentals29.html>> [accessed 7 June 2014]

smoke alarm), as well as third-party products (doorbells, ceiling fans, lighting control, sleep-trackers, home security).⁴⁵²

⁴⁵² Nest Labs, *Works With Nest* <<https://workswith.nest.com/uk/>>; <<https://nest.com/uk/works-with-nest/>> [accessed 30 March 2017]

NIKLAS

I'm trying to escape a trap that inevitably shows up when people from Silicon Valley meet European architects, journalists and thinkers, that is a confrontation of technophilia from California and Technophobia from Europe, but still I'm quite worried if I see what happens to values like informational self-determination so how to do you deal with this issue?

TONY

You are always in control, so these products don't take control away from you. All we're doing is we're learning from your habits. So we're not imposing anything on anyone. In fact, in most cases we're just educating and giving you feedback on what your abilities are. As far as privacy goes, we are not a part of Google, our data is stored in a different location [...] we only use your data for improvement of the product.

REM

I would like to dwell on the thermostat a little bit longer – because you said it's not going to tell you what to do, but in I saw in one application it turns green if you are behaving correctly. Right? So there is a moment where maybe where it's not telling you what to do but it's indicating when you are transgressing in the light of human responsibility to be careful with the planet.

TONY

Yes absolutely!

REM

So, I don't think you need to be a technophobe or a European to consider that that has the potential to really, I mean, I make a kind of a joke, at some point after ten

o'clock you could have a device that tells you that, to be responsible, to mankind, you should go to bed. Because otherwise you consume energy beyond your allotted quantity. Unless you pay of course.

TONY

Sure we could take it to that uh, conclusion if you will. But people don't really even know, even today with all the devices in their home, how much energy is being consumed, they don't understand how much heating and cooling consumes of your dollars. So all we're doing is giving you a feedback loop. To allow you to adapt if you so choose.

Figure 6. Do the Right Thing. Abridged verbatim transcript of video recording, by the author, of the opening talk at the 2014 Venice Biennale. Koolhaas, Fadell, and Maak, 'Elements of Architecture: 5000 years of architecture... and now what?'

The issues of data use and control dominates much of the conversation in Venice. Koolhaas and the chair, Niklas Maak, take up the role of sceptical Europeans profoundly troubled by the implications of surveillance, and cynical of attempts to make things *better*, while Tony Fadell is the techno-utopian Silicon Valley CEO who aspires to solve global problems through innovation.⁴⁵³

These positions, however, are predicated on something of a fallacy: Koolhaas is concerned that ‘intelligent’ objects tend towards inhibiting ‘transgression’, and Maak speaks of us entering a ‘brave new world’ where ‘values’ such as ‘informational self-determination’⁴⁵⁴ are not guaranteed. As I highlighted in the previous chapter, there is a tendency to associate data collection and behaviour with surveillance-oriented discipline, but just as this model has been superseded by Theory Y models of management, I will suggest that the products coming out of Silicon Valley utilise a similar model.⁴⁵⁵

⁴⁵³ Niklas Maak acknowledges exactly such a ‘trap’ of pitching ‘technophilia against technophobia’ but the discussion holds to that narrative necessarily, since Koolhaas’ cynic is disingenuous – he is what Charles Jencks calls a ‘surfer’ who, in his book *Delirious New York*, proposed riding the wave afforded by neo-liberalism in the late ‘70s – and is presently urging architects to engage with Silicon Valley. Charles Jencks, ‘39 Steps to Surfing or, The Trajectory of Rem Koolhaas’, *ANY 9: Urbanism vs Architecture: The Bigness of Rem Koolhaas*, (November/December 1994), pp. 41-45.

⁴⁵⁴ At the time of the debate, Fadell’s company had recently been acquired by Alphabet Inc. (Google’s parent company) for \$3.2bn. Nest has now been sold from Alphabet to Google – under Alphabet, Nest was a separate company, and the promise that the data collected for the sole use by developers for ‘providing and improving Nest’s products and services’ may be with the group of ‘platform’ engineers who moved to Google to work on a ‘unified internet of things’ protocol – or with the remaining engineers. Ron Amadeo, ‘Another shakeup at Nest as [some] software responsibility heads to Google’, *Ars Technica*, 31 August 2016, <<http://arstechnica.com/gadgets/2016/08/nests-software-team-gets-sent-to-google-aims-for-iot-unity/>> [6 September 2016].

⁴⁵⁵ There is no question that data is a huge concern – but I suggest that it is a red herring since we offer our data up continually – and I think we do this because we fail to understand something fundamental about ourselves – which Arlie Russell Hochschild outlines in her work on emotional labour – the idea that there is central core of selfhood that is outside the reach of control or surveillance, that is ineffable and unquantifiable (see chapter five: ‘Continuous Improvement’). Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley, CA: University of California Press, 2003).

REM

Almost every word you use is about better, improved, uh correct, you mention even the children, younger generation.. all of that implies that if you don't behave well, you're a totally irresponsible uh uh nightmarish asshole who doesn't care about uh uh the younger generations.

TONY

I I'm /saying collectively not individually

REM

/what what about no no no what about transgression

TONY

transgression – it's a to.../

REM

/transgression, where is transgression in your.. in your story?

TONY

Yea. Well first - words who's controlling the algorithms, and understand when we have artificial intelligence – who's creating those things that is giving you the feedback is that the right feedback.

Transgressions - absolutely. I think, you know, whether you're a teenager or your older you should still be able to do whatever you so choose to do.

Figure 7. Transgression. Abridged verbatim transcript of video recording, by the author, of the opening talk at the 2014 Venice Biennale. Koolhaas, Fadell and Maak, 'Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?'

Behind Fadell's 'leadership-training' hand gestures⁴⁵⁶ and TED Talk narrative arcs of problem-followed-by-insight-and-innovation (a phrase he uses several times begins with 'but what we found was ...') is a very serious commitment to an idea of technology that is already operating in a post-disciplinary sense.

Laissez-faire... (Let Them Do...)

So what we find is individuals, driven by other individuals, not by governments not by companies, but individuals driven by other individual[s'] data actually makes people change, change dramatically, in a way that's actually beneficial to overall good, because, we're all concerned about the same things.

We're concerned about the Environment, we're concerned about cost, we're concerned about our children so when you actually be able to make that information available then people actually respond appropriately. Not! more rules! But just information to allow people to have make better decisions.⁴⁵⁷

The thermostat might at first appear to be a difficult object for Silicon Valley to take on and get right: as a feedback system with inbuilt affordances such as hysteresis and anticipation, it takes a central role in the field of cybernetics as a minimal unit (analogous to the *drosophila* in biology and genetics) for the study of feedback and control. Its technological cousins are the C-1 Autopilot⁴⁵⁸ (a component of the WWII Norden bomb-sight) – and

⁴⁵⁶ Open palms, no pointing, keeping hands in the 'sweet spot' of the upper body are the kinds of tips given in articles on body-language while public speaking. Vanessa Van Edwards, '20 Hand Gestures You Should Be Using', *Science of the People* <<http://www.scienceofpeople.com/2015/08/how-to-speak-with-your-hands/>> [accessed 19th September 2016].

⁴⁵⁷ Fadell, in Koolhaas, Fadell and Maak, 'Elements of Architecture: 5000 years of architecture... and now what?'

⁴⁵⁸ Drawing directly on thermostat technology correcting for disturbances in an environment – the C-1 assists the bomber in hitting ground targets while airborne, stabilising the aircraft in sudden gusts of wind much faster than a human pilot. During WWII, the production line of Honeywell's latest thermostat was turned around to produce components for the C-1 in less than six months. This innovation led to Honeywell becoming a major US defence contractor. Jeffrey L. Rodengen, *The Legend of Honeywell* (Fort Lauderdale, FL: Write Stuff Syndicate, 1995), pp. 70-73.

the missile guidance systems⁴⁵⁹ for nuclear Intercontinental Ballistic Missiles (ICBMs).⁴⁶⁰

This seems in stark contrast to the ‘Californian Ideology’ of Richard Barbrook and Andy Cameron’s 1995 essay, which describes a simultaneous embrace of West-Coast hippie culture, with devout adherence to free-market ideologies. Indeed, the thermostat has been a metaphorical stand-in for control mechanisms such as the unceasing self-correcting of the human mind or monetarist interference in order to advance liberal theories of deregulation and ‘letting go’. Alan Watts described the ‘effort to remain always “good” or “happy” [being] like trying to hold the thermostat to a constant 70 degrees by making the lower limit the same as the upper,’ advocating Zen as ‘giving up the impossible attempt [of the mind] to control itself’ without ‘trying at the same moment to observe and check the action from outside.’⁴⁶¹ Milton Friedman, who held the interventionist actions of the US Federal Reserve⁴⁶² in disdain, also used the thermostat metaphor to cautiously commend the Fed’s increasing steadying of inflation between the mid-1980s to the mid-2000s, despite the dramatic economic impacts of the Asian financial crisis, the burst of the dotcom bubble, and 9/11.⁴⁶³

However, I want to consolidate these contradictory positions, and suggest that, echoing the Silicon Valley Management, control in the smart thermostat is much less about the familiar discourses of discipline and

⁴⁵⁹ Honeywell developed the short-range Wagtail missile, which could carry a small nuclear warhead, in the 1950s. The company produced inertial guidance units for ICBM (Inter-Continental Ballistic Missiles) such as Trident, Minuteman and Polaris – and is still a major military subcontractor on the latest Minuteman III upgrade. Boeing Press Release, *Boeing Completes 6 Years of On-Time Minuteman III Missile Guidance Set Deliveries* (15 May 2008) <<http://boeing.mediaroom.com/2008-05-15-Boeing-Completes-6-Years-of-On-Time-Minuteman-III-Missile-Guidance-Set-Deliveries>> [accessed 1 November 2012].

⁴⁶⁰ Stanford academic Fred Turner has described how the dependency of Silicon Valley on the military-industrial complex coexists with a serious distrust of the efficacies of big government. Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*, pp. 14-16, 35-36, 148-149, 215-216, 224, 248-249.

⁴⁶¹ Alan Watts, *The Way of Zen* (New York: Vintage, 1985), p. 139.

⁴⁶² Milton Friedman, ‘The Fed’s Thermostat’, *Wall Street Journal*, 19 August 2003, <<http://www.wsj.com/articles/SB106125694925954100>> [accessed 21 January 2013].

⁴⁶³ The period of stability described by Milton Friedman coincides with Alan Greenspan’s tenure as head of the Federal Reserve, although Friedman said that the thermostat isn’t necessarily Greenspan himself, since such performance is repeated across other central banks in Europe. Milton Friedman, ‘The Fed’s Thermostat’.

surveillance, and can indeed be aligned with Koolhaas' 'transgressions' and the freedom to 'do whatever it is you so choose'.⁴⁶⁴

I would like to dwell on the thermostat a little bit longer. You said it is not going to tell you what to do, but in one application, it turns green, if you are behaving correctly. So there is a moment where maybe it's not telling you what to do but it's indicating when you are transgressing in the light of human responsibility to be careful with the planet.⁴⁶⁵

Koolhaas' challenge that 'smart' objects have the tendency to implicitly instruct their users on 'correct' behaviour – even where they don't 'tell them what to do' explicitly – may not be very convincingly addressed by Fadell's response that Nest merely provides their customers with better data (on energy usage) to help them make informed choices, by implication making them more autonomous (in deciding where their dollars go) – but is he being disingenuous?

From self-closing taps to thermostats that indicate when an occupant should be saving energy, we might see these objects as standing in for disciplinary notices such as DON'T LEAVE THE TAPS RUNNING and TURN OFF THE HEATING WHEN YOU ARE NOT IN. As speech acts the statements are direct: imperatives that tell you a certain way of behaving is prohibited and proscribed.

While the design function of these objects is on a fundamental level in line with the objectives – they turn taps off, and turn heating off in order not to waste water or heating – I want to account for an object such as the Nest that doesn't 'tell you what to do' but 'helps you make decisions.' I will track how such a transformation of actions was made in the programming, by bringing an understanding of the way that Silicon Valley style management elicits compliance without discipline to Latour's description of two keys that induce behaviour changes in their users.

⁴⁶⁴ Koolhaas and Tony Fadell, in Koolhaas, Fadell and Maak, 'Elements of Architecture: 5000 years of architecture... and now what?'

⁴⁶⁵ Koolhaas, in Koolhaas, Fadell and Maak, 'Elements of Architecture: 5000 years of architecture... and now what?'

Users of the prototype Nest initially reported that the thermostat forces them to change their behaviour.⁴⁶⁶ As the algorithm sought opportunities to save energy it would increasingly attenuate the times that heating was on. ‘Beta’⁴⁶⁷ users noticed that the thermostat, on sensing that occupants had left the room, immediately switched off the boiler and ‘greedily lower[ing] temperatures in winter’ as if ‘Al Gore himself was in the room, barking at you to put on a sweater.’⁴⁶⁸

The ‘greedy’ thermostat that reminds you of your ‘human responsibility to be careful with the planet’⁴⁶⁹ is a form of control that Fadell distances himself from, and is what Latour, citing Madeline Akrich’s concept of prescription, calls ‘the behaviour imposed back onto the human by nonhuman delegates.’⁴⁷⁰ It is ‘the moral and ethical dimension of mechanisms,’⁴⁷¹ the inconvenient truth intruding into your home while you transgress in shorts and a t-shirt. It is a very conservative reading of the action of technology: the user – in such cases – is one whose outward behaviour can be modified without any need to change their underlying beliefs.

But this is not the whole story. I want to illustrate what distinguishes performative control from the widely understood notion disciplinary power – since the designers of the Nest Learning Thermostat in Silicon Valley – engage their customers’ behaviours in much the same way that they approach their employees, bringing to the design of smart technology objectives that are entirely consistent with their management ideologies.

⁴⁶⁶ Steven Levy, ‘Brave New Thermostat: How the iPod’s Creator Is Making Home Heating Sexy’, *Wired* (October 2011) <http://www.wired.com/2011/10/nest_thermostat> [accessed 15 January 2013].

⁴⁶⁷ Beta users are prototype testers of a product.

⁴⁶⁸ Levy, ‘Brave New Thermostat’.

⁴⁶⁹ Koolhaas, in Koolhaas, Fadell and Maak, ‘Elements of Architecture: 5000 years of architecture... and now what?’

⁴⁷⁰ Latour, ‘Where are the Missing Masses?’, p. 157; and Madeleine Akrich, ‘The De-Description of Technical Objects’, *Shaping Technology/Building Society*, Wiebe E. Bijker and John Law (eds) (Cambridge, MA: MIT Press, 1992), pp. 205–224.

⁴⁷¹ Latour, ‘Where are the Missing Masses?’, p.157.

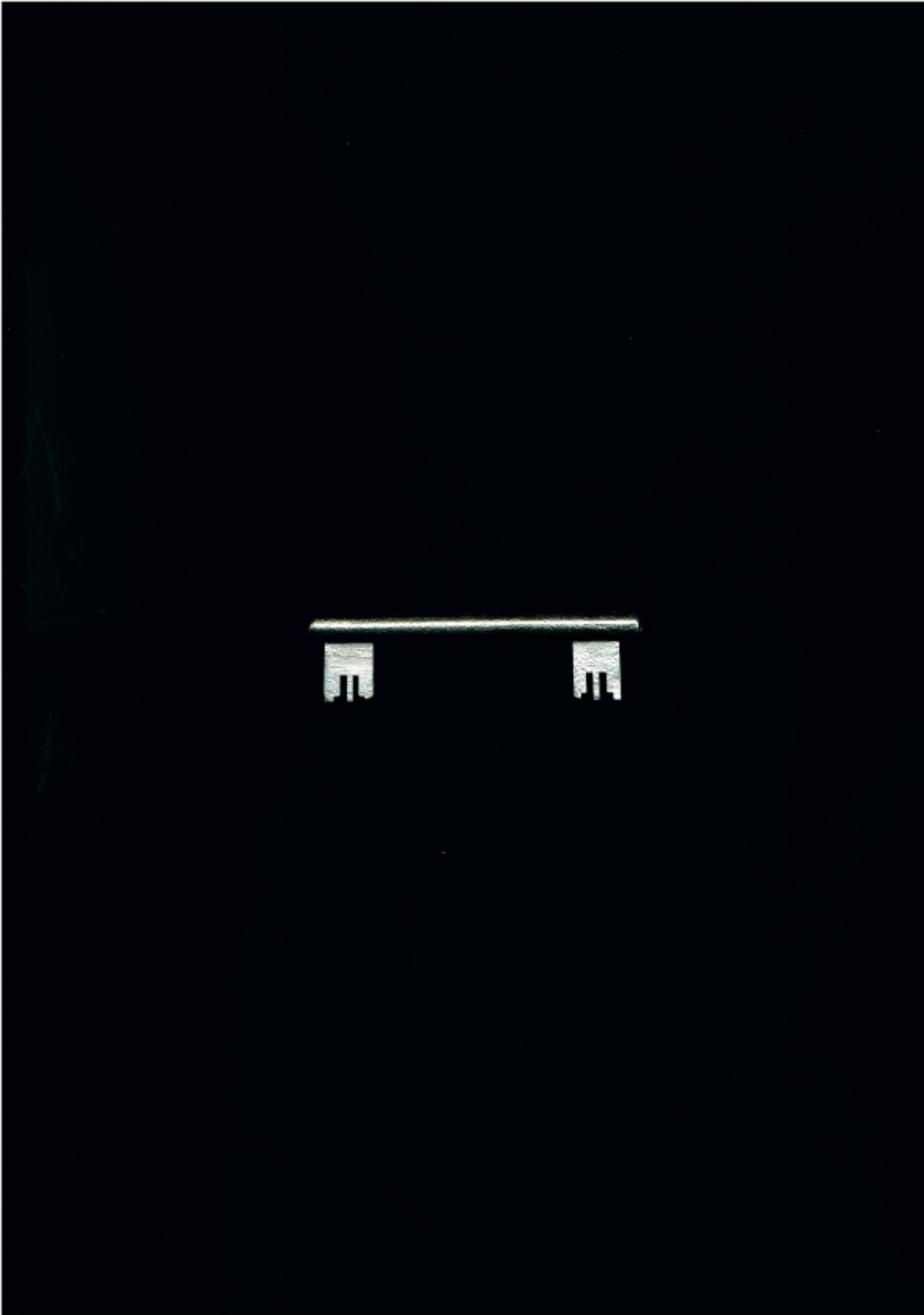


Figure 8. 'Schließzwangschlüssel'. Scan by author of a 'berlin key', contributed by Delfina Fantini van Ditmar.

#latourmademedoit⁴⁷²

In a group of essays by Latour,⁴⁷³ two stories trace the actions of two keys. By drawing out the differences between the types of actions that are transferred across to the human in each key story, it is possible to sketch out the first part of a process in understanding how actions can change, and how control moves from disciplinary to performative.⁴⁷⁴

In 'The Berlin Key' and 'Where Are the Missing Masses?' Latour introduces a 'surrealistic' key particular to the city of Berlin, a double-ended key, known as a *Schließzwangschlüssel* in German, used in the street-doors of the large tenements.⁴⁷⁵ These tenements, the size of an entire block, with interlocking courtyards, line the main boulevards in Berlin. The various street entries need to be limited only to the tenants, but how can it be guaranteed that such a large number of tenants, when leaving or entering the block, will dutifully lock it behind them to keep out the general public?

The programme of action in Berlin is almost as desperate a plea as in La Villette, but instead of begging CLOSE THE DOOR BEHIND YOU PLEASE it is slightly more ambitious and orders: RELOCK THE DOOR BEHIND YOU. [...] Berlin is the same as everywhere: undisciplined tenants forget to lock the door behind them. How can you force

⁴⁷² Equinox, a luxury gym, ran the hashtag slogan #equinoxmademedoit in their 2014-2015 marketing campaign: the title is a play on the technological determinism in Latour's work, with the character of the 'coach' deployed in the Nest products. Richard Feloni, 'Equinox Wants Its Gym Members To Hop Barbed Wire Fences And Run Around Naked After Getting In Shape', *Business Insider*, (2 January 2014) <<http://www.businessinsider.com/equinox-made-me-do-it-campaign-2014-1?IR=T>> [accessed 1 May 2016]; and Oliver Wainwright, 'Nest, Google and beyond: how much technology do we really want in our homes?' *Guardian*, (27th June 2014) <<https://www.theguardian.com/artanddesign/2014/jun/27/-sp-the-nest-google-technology-future-homes>> [accessed 30 June 2014].

⁴⁷³ Latour, 'Technology is Society Made Durable', *Sociological Review*, 38: S1 (May 1990), 103-132; Latour, 'Where are the Missing Masses? The Sociology of a Few Mundane Artefacts', in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law (eds) (Cambridge, Mass: MIT Press, 1992), 225-259; and 'The Berlin Key: Or How To Do Words With Things', *Matter, Materiality and Modern Culture*, Paul Graves-Brown (ed.) (Routledge, London: 1991), pp. 10-21; and Latour, 'Action is Overtaken', in *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2007), pp. 43-62.

⁴⁷⁴ I follow Jon McKenzie's use of the word performance in *Perform or Else*, to make a distinction between the lay understanding of Foucauldian discipline as operating on the body from outside, as in the panopticon – and the constitutive forms of power that Foucault describes in his later work. Vikki Bell, *Culture and Performance: The Challenge of Ethics, Politics and Feminist Theory* (London: A&C Black, 2007), pp. 12-14, 20-21; McKenzie, *Perform or Else*, pp. 179-182. Byung-Chul Han points out that today's achievement society exceeds Foucault's description of discipline. Byung-Chul Han, *The Burnout Society* (Stanford, CA: Stanford University Press, 2015), p. 8.

⁴⁷⁵ Latour, 'The Berlin Key: Or How To Do Words With Things', p. 10.

them to lock it? A normal key endows you with the competence of opening the door [...] but nothing in it entails the performance of actually using the key again once you have opened the door and closed it behind you.⁴⁷⁶

The 'forced locking key,' in a literal English translation, has no 'bow' where a key is usually held in the hand to turn it. It has instead two 'bittings' (the parts that interface with the locking mechanism), one at each end. Both must be deployed to successfully unlock the door, enter, and release one's key from the mechanism. The tenant finds that while this key can unlock the street door to the tenement, once they have turned the key to the unlocked position, they cannot remove the key unless they lock themselves out again.

The only way to retrieve the key is to push the whole key through the door to the other side – hence its symmetry – but then it is still impossible to retrieve the key. You might give up and leave the key in the lock, but then you lose the competence of the tenant and will never again be able to get in or out.⁴⁷⁷

The shape of the lock is also unusual: another twin, this time with rotational symmetry, allowing a tenant to push the key through the door when it is turned in the lock.

Berliner blacksmiths decided to re-inscribe the program of action in the [...] shape of the key and its lock. [...] The program, once translated, appears innocuous enough: UNLOCK THE DOOR. But here lies the first novelty: it is impossible to remove the key in the normal way; such a move is 'proscribed' by the lock.⁴⁷⁸

So what do you do? You rotate the key one more turn and, yes, you have in effect relocked the door and then, only then, are you able to retrieve the precious 'sesame.'⁴⁷⁹

⁴⁷⁶ Latour, 'Where are the Missing Masses?', p. 172.

⁴⁷⁷ Latour, 'Where are the Missing Masses?', p. 174.

⁴⁷⁸ Latour, 'Where are the Missing Masses?', p. 174.

⁴⁷⁹ Latour, 'Where are the Missing Masses?', p. 174.

Compliance with the programme UNLOCK THE DOOR TO EXIT, BUT RELOCK THE DOOR BEHIND YOU is unavoidable. There is no way to enter or leave the apartment block and keep your key without completing the choreography.

Along with 'doing the job' and taking the physical effort out of actions done by hand, mechanisms and machines of the type that interest Latour do something extra; they translate programmes that are dependent on the good behaviour or 'morality', as Latour calls it, into 'necessity: you might not want to relock the key, but you cannot do otherwise'.⁴⁸⁰

We have been able to delegate to nonhumans not only force as we have known it for centuries but also values, duties, and ethics.⁴⁸¹

In using terms such as 'ethical' and 'moral' (which occurs twenty-four times in 'Where are the Missing Masses?') he echoes Koolhaas' stance towards the Nest.

After ten o'clock you could have a device that tells you that, to be responsible to mankind, you should go to bed. Because otherwise you consume energy beyond your allotted quantity. Unless you pay of course.⁴⁸²

While the appeal to the ethics of stewardship towards the planet has currency in the case of the thermostat, is it truly 'immoral' to leave a door unlocked?

In spite of the constant weeping of moralists, no human is as relentlessly moral as a machine, especially if it is (she is, he is, they are) as 'user friendly' as my Macintosh computer.⁴⁸³

If we continue in this vein, we end up missing what is really going on with such 'user-friendly' objects as the Nest, a product that comes from a stable adjacent to Apple's.⁴⁸⁴

⁴⁸⁰ Latour, 'Where are the Missing Masses?', p. 174.

⁴⁸¹ Latour, 'Where are the Missing Masses?', p. 157.

⁴⁸² Koolhaas, in Koolhaas, Fadell and Maak, 'Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?'

⁴⁸³ Latour, 'Where are the Missing Masses?', p. 157.

Objects that follow a conventional line of disciplinary action translate into the imperatives of Latour's prescription: 'do this, do that, behave this way, don't go that way, you may do so, be allowed to go there'⁴⁸⁵ and implicitly carry the modal verbs of SHOULD, MUST, MAY.⁴⁸⁶ These verbs, of a type that philosopher Byung-Chul Han identifies with a highly disciplinary mode of control, don't match with Silicon Valley style management. The hypothesis of Han's short book *Burnout Society* is that the present age is characterised by a motivational discourse of possibility, replacing the negative disciplinary society of prohibition with the 'YES WE CAN' slogans of affirmation.⁴⁸⁷ In such an 'achievement society', the imperatives of Silicon Valley (no less urgent and obligatory than the paradigm it replaces) operate in quite a different way, mirroring the contrast between Theory X and Y. In one the apparatus acts upon 'obedience subjects' to force the extraction of work/behaviour from the outside; the other works from the inside, mobilising an internal drive within 'achievement subjects.'⁴⁸⁸ For Han, this is now endemic within the whole of society, where the 'inhabitants' of the twenty-first century are 'entrepreneurs of themselves.'⁴⁸⁹ I will be describing how such autonomous compliance is brought about in objects.

In 'Technology is Society Made Durable' Latour describes a different key – a hotel room key, with a modification (outwardly a lot less sophisticated than the Berlin key) to ensure that keys do not go missing. Latour traces the path of actions from the hotel manager's (not very successful) verbal request: 'Please bring back your keys'; to the installation of a written notice 'LEAVE YOUR KEYS, PLEASE' (a little more successful - but still keys go wandering) to at last the attachment of a 'large cumbersome weight to room keys in order to remind customers that they should leave

⁴⁸⁴ Tony Fadell, often cited as the 'Father of the iPod', left a senior position at Apple to start Nest Labs.

⁴⁸⁵ Latour, 'Where are the Missing Masses?', p. 157.

⁴⁸⁶ Han, *The Burnout Society*, p. 8.

⁴⁸⁷ Han, *The Burnout Society*, pp. 8, 36.

⁴⁸⁸ Han, *The Burnout Society*, p. 8.

⁴⁸⁹ Han, *The Burnout Society*, p. 8.

their key at the front desk every time they leave the hotel instead of taking it along a tour of the city.⁴⁹⁰

Frustrated with the recalcitrance of his guests to obey the verbal requests and signs to return the key to reception before going out, the manager introduces a new object that can replace the inscription. Both the Berlin key and the key-weight have introduced changes that ensure compliance with their respective programmes: LOCK THE DOOR BEHIND YOU, and LEAVE YOUR KEYS PLEASE. Both do so by circumnavigating reliance on a 'sense of moral obligation'; however, the introduction of the metal weight is a twist in the story of action. 'Customers suddenly become only too happy to rid themselves of this annoying object which makes their pockets bulge and weighs down their handbags: they go to the front desk on their own accord to get rid of it.'⁴⁹¹

Latour and Madeline Akrich de-cribe (that is, bring into words) the programme of the heavy weight as DO NOT FORGET TO BRING THE KEYS BACK TO THE FRONT DESK. The action inscribed by the manager (or designer) is HEAVY WEIGHTS ATTACHED TO THE KEYS TO FORCE CLIENTS TO BE REMINDED TO BRING BACK THE KEYS TO THE FRONT DESK.⁴⁹² However, I argue that it's not necessary for the mental process 'remember' to be enacted in any form by the guest as they approach the manager to ask if they can leave this annoying object at the front desk, so the action 'force the clients to be reminded' is unnecessary in this description.

Both of Latour's keys impose themselves in some physical way on the user: the key in Berlin forces the user to act in a tightly prescribed way, but the weight – even where it results in the physical act of the guest bringing the key to the reception desk in line with the manager's wish, manages to elicit that action from the user voluntarily (albeit clumsily and rather obviously – the hotel guest may well suspect that the weight is added to

⁴⁹⁰ Latour, 'Technology is Society Made Durable', p. 104.

⁴⁹¹ Latour, 'Technology is Society Made Durable', p. 104.

⁴⁹² Madeline Akrich and Bruno Latour, 'A Summary of a Convenient Vocabulary for the Semiotics of Human and Nonhuman Assemblies', *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law (eds) (Cambridge, Mass: MIT Press, 1992), pp. 259-264 (pp. 259-260).

force compliance with a program all the same, but that suits him fine – he also wants the same thing – the bulky key to be out of his hands). The Berlin key produces no additional action (although for the visitor to Berlin, the novelty is quite enjoyable), where the internal wishes of the tenant match those of the locksmith or tenement manager – who wish the door to be relocked. The tenant merely wishes to get in and out of the block.

In the case of the hotel key, the heavy weight doesn't simply discipline the guest by restricting certain actions and permitting others, as the Berlin key does. You could carry the key with you all day, and possibly be annoyed at yourself for lugging such a stupid object around. *Discipline* could be enacted more effectively in other ways – Latour suggests that the hotel manager could hire a guard to search all customers at the hotel door. Instead the wish of the hotel manager becomes the internalised wish of the guests themselves and is produced as a new action: guests are only too willing get rid of such an irritating and heavy object, and thus they acquiesce with the hotel manager's policy.

Even though Latour doesn't explicate this understanding of the key-weight, he does suggest that even the Berlin key does more than merely represent disciplinary relations: the key does not simply 'carry, transport, shift, incarnate, express, reify, objectify, reflect, the meaning of the phrase: LOCK THE DOOR BEHIND YOU DURING THE NIGHT, AND NEVER DURING THE DAY'⁴⁹³

Latour echoes Stanislavski's method, in which the performative is not based on its representational currency, but on what it changes. When Latour says that if the specificity of the shape of the key and the lock changes nothing, then they count for nothing. Latour continues:

Meaning is no longer simply transported by the medium but in part constituted, moved, recreated, modified, in short expressed and betrayed. No, the asymmetrical slot of the keyhole and the key with two bits do not 'express,' 'symbolize,' 'reflect,' 'reify,' 'objectify,'

⁴⁹³ Latour, 'The Berlin Key', p. 11.

‘incarnate’ disciplinary relations, they *make* them, they *form* them.⁴⁹⁴

When Latour subtitles his essay ‘How to do Words with Things’ he is not simply implying that symbolic objects replace words to express their meaning, he is drawing on the power of speech acts to create, change, and have effects. The objects are active – and this is why the more technologically complex Berlin key is less transformative than the simple key-weight.

This key-weight example is the clue to the performative – adherence to the manager’s wish elicited from the guest. However, the compliance is exaggerated, mediated by an object that acts externally – so there is a way to go before I can infer that this is analogical to Silicon Valley style management. It is not very different from the choice architecture of ‘nudge’ in that the wish to get rid of a key does not interfere with subjectivity – it was elicited without too much intrusion: in Latour’s words the customer was only ‘nibbled away at.’⁴⁹⁵

The human in Latourian essays might be directed, told, prescribed to do and act certain ways, but his subjectivity remains sovereign, if rather beaten up by doors that close too fast, seat belt alarms and other moments of *Vorhandenheit*. These stories describe the first step in how an action can change, be shifted and elicited from a person. In order to make the second move, where subjectivity is more malleable, the actions of the Nest thermostat must be traced as they move away from the disciplinary modal verbs of *YOU SHOULD GO TO BED* towards the ‘positive modal verbs of achievement society’⁴⁹⁶ – *HEY, THERE’S A BETTER WAY TO SAVE* in the reprogramming of the prototype version.

The necessary ingredient for the actions to shift into performative control is not automation, or being artificially intelligent, but the way that they are embedded in a discursive practice of control. That is to say that an

⁴⁹⁴ Latour, ‘The Berlin Key’, p. 11.

⁴⁹⁵ Latour, ‘Technology is Society Made Durable’, p. 107.

⁴⁹⁶ Han, *The Burnout Society*, p. 8.

automatic thermostat that is programmed to heat and cool, without an ideology of a shared mission, is not performative, just as the provision of foosball tables in a company without the 'secret sauce' of the management style is not.

During the beta-testing stage of the thermostat, the VP of Technology at Nest, Yoky Matsuoka,⁴⁹⁷ who headed up machine learning, realised that 'technology needs to adapt to a user rather than bossing a user around.' Her aims became to 'create technology that is a partner' which 'allows people to become better versions of who they've always wanted to be.'⁴⁹⁸

The algorithms of the Nest were changed, 'shifting [its] personality to more of a gentle coach than a noodge with a climate-change slide show.'⁴⁹⁹ The device's reprogramming displaced the imperatives of orders and requests; PUT ON A SWEATER!, TURN DOWN THE THERMOSTAT! with 'You're doing really well today' and 'Compared to your neighbours, you maybe wanna improve.'⁵⁰⁰ The kind of discourse in Nest's public relations, where Fadell uses the analogy of the diet coach to describe how the Nest 'helps you to do things *you* want to do' is in no way a joke.⁵⁰¹

In much the same way that Silicon Valley style management induces the personal objectives and self-actualisation of their employees in line with their corporate objectives, products such as the Nest appeal to shared interests: 'We're all concerned about the same things. We're concerned about the environment, we're concerned about cost, we're concerned about our children.'⁵⁰² By appealing to the emotional values of the user – in Nest's case to their concern for the environment, and for their families – rather than solely to financial reward or moral discipline, the smart

⁴⁹⁷ Matsuoka follows the Silicon Valley trajectory: a lunch conversation at Google X with one her former students, Nest founders Matt Rogers, led to her joining the early team of 10 at Nest in 'a cramped garage'. Interview with Yoky Matsuoka in Jessi Hempel, 'Taking Simple Tech and Giving it Some Smarts', *Wired* (21 April 2015) <<https://www.wired.com/2015/04/yoky-matsuoka/>> [accessed 27 September 2016].

⁴⁹⁸ Hempel, 'Taking Simple Tech and Giving it Some Smarts'.

⁴⁹⁹ The etymology of the word 'noodge' is Yiddish, meaning to pester, or nag. Levy, 'Brave New Thermostat'.

⁵⁰⁰ Wainwright, 'Nest, Google and Beyond'.

⁵⁰¹ The Nest thermostat does not actually speak: these phrases were given by Fadell as examples of what a Nest thermostat 'coach' might say. Wainwright, 'Nest, Google and Beyond'.

⁵⁰² Fadell, in Koolhaas, Fadell and Maak, 'Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?'

thermostat is presented as facilitating a pre-existing action desired by the user.

Byung-Chul Han's prescient use of the term 'deregulation' in the replacement of the negativity of disciplinary society with the affirmative, concurs with the politics of Silicon Valley. For companies like Nest, the problems won't be solved by more government intervention. The replacement of 'prohibitions, commandments, and the law' with 'projects, initiatives, and motivation' is not just a political alliance with neoliberal and free market ideologies, it is also a commitment to the logics of high-performance management – where the idea of continuous improvement through incremental changes becomes unquestionable.

Participation in such a process of improvement is underscored by the way that individual Nest owners are brought into a community of 'Nesters': by consolidating data from many users, and knowing each thermostat's geographical location,⁵⁰³ Nest provides a monthly energy report to each individual household showing both comparative⁵⁰⁴ energy usage with other Nesters in their region or state and, importantly, how much collectively the individual improvements have contributed to an overall saving of energy.

Stanislavski's method reminds us that there is a difference between what is 'scripted' and what is 'performed': looking at what the underlying action, rather than the apparent effect, gives us the means to trace how the Nest can change its actions from forcing users to change their behaviour by bossing, shaming and admonishing them to coaching them to become

⁵⁰³ As part of the research I acquired a Nest thermostat and cohabited with it for a year. The Nest doesn't have GPS, or any location tracking, but the user must input their address to set up the Nest. They can opt out of having the Nest connected to the internet.

⁵⁰⁴ This process of 'gamifying': a monthly energy report gives each 'Nester' a summary of usage, but also of their performance – how many green 'Nest leaves' they have earned by doing something that saves energy – showing how an individual Nester's performance rates against that of other Nesters. Nest Labs, 'Learn More About the Nest Home Report', *Nest.com* <<https://nest.com/uk/support/article/About-the-Nest-Home-Report>> [accessed 17 April 2017].

‘better versions of themselves’⁵⁰⁵ through encouraging, challenging and engaging⁵⁰⁶ them.

Latour warns that it is never clear where or in whom the action originates: ‘The question of who is carrying out the action has become unfathomable [...] the very word actor directs our attention to a complete dislocation of the action [...] Action is borrowed, distributed, suggested, influenced, dominated, betrayed, translated.’⁵⁰⁷

Energy saving through the Nest is mobilised by the similarly abstract concerns of Facebook: Fadel’s ‘we are all concerned about the same things’ echoes the mission in Facebook’s Little Red Book ‘to make the better world more connected.’⁵⁰⁸

Although Nest indicates that the total savings since 2011 have been in excess of 3,000,000,000 kWh – enough energy to ‘heat up every cup of tea consumed in the UK for 2 years,’⁵⁰⁹ a feat that sounds impactful, I maintain a scepticism about relegating the resolution of energy use to smart technology.

The actionable improvements are elicited from the user of products like the Nest in a method analogous to Silicon Valley style management (or Toyota) by encouraging a shared stake in goals. In manufacturing processes the goals are measurable and at a commensurable scale. The ‘better’ world, however, remains abstract. For example, for a reasonable chance of preventing the rise of global temperatures beyond 2° it is estimated that carbon dioxide emissions need to be limited to no more than 2,900 billion

⁵⁰⁵ Hempel, ‘Taking Simple Tech and Giving it Some Smarts’; Belle Beth Cooper, ‘Why People Don’t Buy Products, They Buy Better Versions of Themselves’, *Fast Company* (28 January 2014) <<https://www.fastcompany.com/3025484/why-people-dont-buy-products-they-buy-better-versions-of-themselves>> [accessed 17 April 2017].

⁵⁰⁶ The Nest even implements ‘strategic boredom’ a concept suggested by Gordon Pask from his cybernetic installation *Musicolour*, by not responding to repeated patterns of behaviour – ‘Nest leaves’ are only awarded to new types of energy-saving behaviour, and it becomes progressively harder to earn leaves. Molly Wright Steenson, ‘Cedric Price’s Generator’, *Crit69*, (Spring 2010) pp.14–15; and Nest Labs, ‘Understanding the Nest Leaf’, *Inside Nest* <<https://nest.com/blog/2012/12/14/understanding-the-nest-leaf/>> [accessed 17 April 2017].

⁵⁰⁷ Latour, *Reassembling the Social*, p. 46.

⁵⁰⁸ Office of Ben Barry, ‘Facebook’s Little Red Book’.

⁵⁰⁹ Results are localised to UK – for the coffee-drinking U.S. customers, the energy saved is comparable to every cup of tea consumed over 4 years. Nest.com, *Nest October Energy Report for Home*, email correspondence (14 November 2014).

tonnes.⁵¹⁰ Whether the rate of savings of the Nest is in line with such targets or is hopeless, it is unclear.

The rejoinder to such pessimism would be, no doubt, that 'at least we are trying to make a difference.' But such a logic is absurd: it only serves to reinforce the processes of continuous improvement, which works highly efficiently to keep everybody busy and productive through incremental changes: invoking goals of a shared better world while at the same time avoiding the reality of that world and the scale of the problem.

⁵¹⁰ Roz Piddock, 'Climate fixes and Plan Bs: The IPCC's guide to staying below two degrees of global warming', *Carbon Brief*, 14 April 2014 <<https://www.carbonbrief.org/climate-fixes-and-plan-bs-the-ipccs-guide-to-staying-below-two-degrees-of-global-warming>> [accessed 5 September 2016].



Figure 9. 'fingerspitzgefuehlen'. Scan by the Author of a hypothetical thermostat. Optical acrylic, latex finger cots.

Project

THE SPOUSE PROBLEM

ARCHITECT IN THE AUDIENCE

So can your, can your thermostat simulate discomfort, sudden cold?

TONY

Wha.., A.., absolutely, we could do that

ARCHITECT

Could you program that?

TONY

/we could absolutely do that

You know, people ask me all the time, did, does your device actually you know actually uh, fix the uh, the spouse problem. And what's the spouse problem?

(hand wave to audience)

This wa.., one spouse turns it up to this temperature, and the other spouse five minutes later turns it down to the next temperature, and it f.., and they fight.

And I said, we are not a marriage counsellor, Nest, the learning thermostat is not a marriage counsellor. But what we do is we can tell you who did what when and you have that that fight over what's the right thing to do for the family, what's the right thing to do for the home, so no more passive aggressiveness, you're going to be able to actually have data and go – "Oh yes you did!" – "No I didn't" – "Yes you did!"

(laughing)

Figure 10. The Spouse Problem. Verbatim transcription of discussion in Koolhaas, Fadell and Maak, 'Elements of Architecture: 5000 years of architecture... and now what? Architecture and technology?'

The Spouse Problem

In Bruce Nauman's 12-channel video installation, *Violent Incident* (1986), two actors approach a table. The man pulls back the chair for the woman, who goes to sit down, as she does so he pulls the chair from under her and she falls on the floor. She turns over and 'gooses' him. The two actors exchange punches, insults, and scuffle with one another. The video loops, and the sequence is repeated across the twelve screens in different configurations, the woman holds back the chair for the man... the actions are exchanged between different actors, or with two males, and two females.

Tony Fadell, CEO of Nest Labs, and inventor of an artificially intelligent thermostat, describes the spouse problem as the conflict between a couple who, because of their comfort preferences, adjust the set-point of the thermostat to different temperatures and then argue over which is the 'correct' setting.

In this PhD on the politics of thermal management in architecture, I suggest that temperature control is not only a realm of cosy comfort, but – it is also about economics, productivity, lust, anger, geniality, and conflict. The thermostat is a device ontologically connected with military technology. It was a central metaphor and model in cybernetics, a mechanical *drosophila* – the small genus of fly used in genetics research as a relatively simple, but sufficiently complex organism for experiments – for theories of control, feedback and homeostasis.

In Norbert Wiener's research into anti-aircraft guns with prediction mechanisms, he proposed a new idea about the enemy in conceptualising the humans and machines as one single system; the gunner, servomechanism, and gun in one; the pilot, plane and environmental conditions in the other.⁵¹¹ An insight that holds true for the thermostat,

⁵¹¹ Sina Najafi and Peter Galison, 'The Ontology of the Enemy: An Interview with Peter Galison', *Cabinet*, 12. (Fall/Winter 2003), 63-67 (p. 64); and Peter Galison, 'The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision', *Critical Inquiry*, 21:1 (Autumn 1994), 228-266 (pp. 229, 233).

which corrects for disturbances in the environment of which the human occupants are a part – thus setting up an ontology between thermostat and human in opposition – yet complicated further in that the human determines the ‘set point’. Thus bringing into the assemblage the negotiations, conflicts, and mediations described in the ‘spouse problem’.

Throughout the PhD I wanted to investigate what such small mundane interactions between people were doing regarding thermal control. Far from being anomalous, unremarkable limit cases that were unrelated to energy consuming behaviour, I suggest that they are behaviour. Frequently the behaviour of a building’s occupants is limited to a description of their direct interaction with technological objects such as thermostats, smart-meters, window controls, heating and ventilation controls. These are seen as automatic behaviours, and largely habitual.⁵¹² But when behaviour is limited to switching on and off a thermostat, a whole lot is left out.

Bruno Latour’s descriptions of the interactions between objects, which have been invested with a certain amount of agency and resistance, are quite different from the inert passive objects of occupant behaviour studies. Academics working in the field of sociology and Science and Technology Studies (STS), have investigated the socio-cultural contexts into which the negotiation of comfort is embedded – for instance public policy, energy-consciousness, social status.⁵¹³

How does the spouse problem contribute to such descriptions? And how would it manifest in a workplace, where there are many more inhabitants and relations? The intelligibility of small actions as part of a greater description of occupant behaviour presents a problem for architecture – they are rarely systematically mapped and are often

⁵¹² UK Government Cabinet Office paper on behaviour change and energy says that such: ‘everyday energy-consuming behaviours (such as use of heating and lights) are habitual and resistant to change’. Department of Energy and Climate Change, *Behaviour Change and Energy Use* (London: Cabinet Office, 2011), p. 19.

⁵¹³ See for example Elizabeth Shove, ‘Converging Conventions of Comfort, Cleanliness and Convenience’, *Journal of Consumer Policy*, 26 (2003) 395-418, on the socio-cultural production of comfort; Noortje Marres, ‘Frontstaging Nonhumans: Publicity as a Constraint on the Political Activity of Things’, in *Political Matter: Technoscience, Democracy, and Public Life*, Bruce Braun, Sarah J. Whatmore (eds) (Minneapolis: Minnesota University Press, 2010), pp. 177-210.

consigned to being limit cases – and this may be due to them being ‘too complex, too difficult and above all, far too likely to lead to trouble.’⁵¹⁴

Latour, in mapping out the dramas of such prosaic interactions describes the protagonist (hotel manager, porter, janitor), the antagonist (employee, visitor, tenant, hotel guest), and a mediating object (door-closer, key, heavy weight). The dominant drama is opening of the door, the returning of a key, the forgetting to lock the door. For Latour these actions become as interesting as an opera,⁵¹⁵ and they are entertaining. But while in each story the human is a Monsieur Hulot, a Buster Keaton, they could equally be a Harold Pinter character, and the object more like Hitchcock’s McGuffin: an object central to the plot, but the drama is not about the object. Objects do not always form the centre of relations between humans, or between protagonist and antagonist – sometimes they are brought into quite another drama between occupants and families.

In Nauman’s *Violent Incident*, the two actors use the objects as part of their violent interchange, pulling out the chair, throwing the drink in the face, grabbing the knife, struggling for the knife. The rest of the time they insult, punch or kick one another. The objects set the scene and become a part of the violence at moments, but some objects remain unused. The playwright, Harold Pinter, puts objects to such use in the opening scene of *The Homecoming* where the dialogue about scissor and newspaper is not about a pair of scissors and a newspaper, but about the dispositions between the two characters, who don’t say outright what they think of one another.

Theatre trades in the production of behaviours between human beings – in modern Western theatre, the audience is not narrated the story, instead they watch a narrative unfold by observing what the characters do

⁵¹⁴ In reference to the resistance of in architecture to implement in-depth and ongoing post-occupancy studies. Frank Duffy, ‘Buildings and their use: the dog that didn’t bark’, *Architecture Beyond Criticism: Expert Judgment and Performance Evaluation*, Wolfgang F. E. Preiser, Aaron T. Davis, Ashraf M. Salama and Andrea Hardy (eds) (Abingdon, Oxon: Routledge, 2015), pp. 128-132 (p. 130).

⁵¹⁵ Latour, ‘Where are the Missing Masses’, p. 169.

and say to one another.⁵¹⁶ The audience isn't told that one character is angry with another: the character may never reveal their feelings, such an explication is unnecessary. It is seen as unsophisticated writing to have a character address the audience directly and recount their inner feelings. Even where a character's lines continually express joy, happiness or optimism – Samuel Beckett's Winnie, buried up to her neck in sand, in *Happy Days* – the audience get it: underneath her upbeat words lies a deep existential disappointment.⁵¹⁷

In an office the mundane quest for control of a thermostat often becomes a negotiation through language – like speech acts where phrases do things to other occupants. Utterances like 'It is too hot to think!' being an assertion that is a request or 'I'm opening the window, does anybody mind?' being a request, that is a challenge, are exercises in power-relations, bringing the politics of the workplace – and a politics of gender, class, race, age and ability – into play.

The phrase 'I'm opening the window, I don't care what anybody says'⁵¹⁸ is not to be seen as a descriptive annotation to an action being carried out, but an action in itself - I challenge you – I dare you – even I threaten you. The 'actioning' of the seemingly prosaic statements in a workplace, activate the political dimension of the space, revealing that the autonomously acting individual such as that invoked in accounts of occupant behaviour is telling less than half the story.

The aims of this research became less about understanding the true meaning of phrases such as 'I'm opening the window', less about eliciting authentic subjective feelings about comfort from participant studies, but directed toward a model for assessing what it is that people are doing in buildings. Such a method should not become reductive, it should remain open and non-determinist – so that an array of behaviours are not over-

⁵¹⁶ This is relevant to modern contemporary theatre, some forms of theatre break with this convention, and non-Western theatre often uses narrators. Peter Womack, *Dialogue (The New Critical Idiom)* (Abingdon: Routledge, 2011), p. 87.

⁵¹⁷ Samuel Beckett, *Happy Days* (London: Faber and Faber, 2010), pp. 5-7.

⁵¹⁸ Overheard in the architecture studio at the Royal College of Art, an open-space accommodating 120 students.

prescribed, but nonetheless accounted for. One in which it is not necessary to know for sure exactly what the student means when she says ‘I’m opening the window’ – she might be angry with her colleagues, she might be playing a status game, she might be hot and fed up, she be all these things at once, or might be these things on different days.

‘Actioning’ may give us some tools to assess scenarios: without the need to become fixed, the actions can still count. In use by contemporary directors ‘actioning’ is a method for extracting from a script a non-deterministic course of action for the actor – a performance that can be ‘different every night.’⁵¹⁹ It is also primarily a very strict pedagogy for not acting the emotional state (which is seen as an indicator of bad acting)⁵²⁰ but rather to perform an action directed towards achieving an objective, which will produce an observable behaviour or emotion.

When this method of theatrical action is applied to the behaviour of technical objects it can be a counter-method to the over-determined, emotional behaviours (a needy toaster that will post itself to another user if underused,⁵²¹ a ‘sensitive coffee machine that fail[s] to function if the environment seemed too hostile’).⁵²² The method is therefore positioned as a critical counterpoint to current pedagogical methods that have currency in design schools exploring machine behaviour and human-computer interaction. For example, Cultural Probes such as *Key Table* by William Gaver at Goldsmiths, which detects the force with which you put your keys down, (slam them down in a bad mood, and in response a wall-hanging picture tilts, the environment revealing the mood of the user)⁵²³ and to

⁵¹⁹ Mike Alfreds, *Different Every Night: Freeing the Actor* (London: Nick Hern Books, 2007), pp. 125-140.

⁵²⁰ Stanislavski, *An Actor Prepares*, p. 102.

⁵²¹ Simone Rebaudengo and Haque Design Research, *Addicted Toasters*, website for the project, <<http://www.addictedproducts.com>> [accessed 17 April 2017].

⁵²² Merja Ryöppy and Andreas Heiberg Skouby, ‘Object Theatre – A Playful Understanding of Design’, *Participatory Innovation Conference 2015 (Pin-C 2015) proceedings* (The Hague University, 18 – 20 May 2015) <http://sites.thehagueuniversity.com/xmsp/xms_itm_p.download_file?p_itm_id=98194> [accessed 1 August 2015]; Preben Friis, Merja Ryöppy and Jacob Buur, ‘Object Theatre in Design: Workshop’, *NorDes 2015 Proceedings*, (7-10 June 2015) <<http://www.nordes.org/opj/index.php/n13/article/view/430/405>> [accessed 9 June 2015]; and Jacob Buur, Preben Friis, ‘Object Theatre In Design Education’, *NorDes 2015 Proceedings*, (7-10 June 2015) <<http://www.nordes.org/opj/index.php/n13/article/view/379/358>> [accessed 9 June 2015].

⁵²³ William Gaver, Andy Boucher, Sarah Pennington and Brendan Walker, *The Key Table (Overview)*, (2003) <http://research.gold.ac.uk/5528/1/Key_Table.pdf> [accessed 16 April 2012].

some extent the work of RCA Design Interactions, and Tony Dunne and Fiona Raby, and the Object Theatre of Merja Ryöppy, Preben Friis and Jacob Buur, where the object takes centre stage and is even attributed existential desires – a door sign feels that occupants are not taking it seriously enough, a coffee machine wants to be valued.⁵²⁴

The object of the thermostat in the practice component remains very abstract – it has not been ‘designed’ or given a look. The behaviours and interactions are underspecified. What it does is what a thermostat does, it regulates or it motivates; following the two conceptions of control in the thesis – disciplinary direct imperatives – orders, requests and warnings, and post-disciplinary elicitation of motivations – encouraging, coaching, informing, soliciting. (The actors too do not have specified characters – the behaviours follow the dialogue, and the characters shift in relation to what they say and do to one another).

Objects such as thermostats also have their own conceptual domain described by folk theories or popular culture. A much cited paper, Willett Kempton’s ‘Two Theories of Home Heat Control’⁵²⁵ shows that it is not always anthropomorphic projection that necessarily sets up a relation of interaction between human and technology, for instance, conceptualising the thermostat as a valve leads to occupants using the thermostat like a tap, turning it to its highest setting to (as they believed) let more heat *flow* into the room thus warming it quicker. Objects exhibit their own tolerances partly from how they are designed as ‘anti-programs’⁵²⁶ to the use and misuse of human users.

The artist Mark Leckey describes the characters of cultural objects as ‘enchanted’ – existing somewhere between anthropomorphism, affordances, folk-theories and technical brochures.⁵²⁷ With a similar attitude,

⁵²⁴ Further contextualisation of this position is shown appendix III: ‘Killer Apps’, pp. 308-310.

⁵²⁵ Willett Kempton, ‘Two Theories of Home Heat Control’, *Cognitive Science*, 10 (1986), pp.75-90, reprinted and expanded in *Cultural Models in Language and Thought*, D. Holland and N. Quinn (eds) (Cambridge: Cambridge University Press, 1987), 75-90 (pp. 80-81).

⁵²⁶ Latour, ‘Where are the Missing Masses?’, pp. 168-169.

⁵²⁷ Mark Leckey, *The Universal Addressability of Dumb Things*, Exhibition < <http://www.southbankcentre.co.uk/find/hayward-gallery-and-visual-arts/hayward-touring/future/the-universal-addressability-of-dumb-things> > [accessed 17 April 2013].

I got to know the thermostat by research into its history as a technical object, its deployment in metaphor in artificial intelligence, philosophy, cybernetics, and economics, I became a certified Honeywell and Nest thermostat installer, and built several prototype thermostat devices.

Honeywell, the manufacturer of perhaps the most iconic thermostat – the T87 Round (designed by industrial designer Henry Dreyfuss in the 1953), became heavily involved in military technology through a project to design a similar kind of predictor to Norbert Wiener’s, due to their expertise in servomechanisms.⁵²⁸ In the early 1940s, they had already moved in to defence work, but it was their work on C-1 Autopilot, a component of the Norden Bombsight, that was central to Honeywell becoming a major defence contractor for the United States military.⁵²⁹ Throughout the Cold War, Honeywell manufactured cluster bombs, precision instruments for aircraft and tanks, and 86% of the non-nuclear parts for Inter-Continental Ballistic Missiles (ICBMs) including the guidance systems for Trident, Polaris and Minuteman nuclear missiles.⁵³⁰

In January 1977, the newly elected Jimmy Carter, wearing a yellow cardigan addressed the American People, urging them to save energy after shortages of fuel, ‘simply by keeping our thermostats, for instance, at 65 degrees in the daytime and 55 degrees at night we could save half the current shortage of natural gas.’⁵³¹ In April that year, he made another appeal for conservation of energy calling the efforts ‘the moral equivalent of war.’⁵³²

Carter actively tried to reduce the proliferation of Nuclear Arms, his presidency saw a period of *détente* – or thawing of hostilities of the Cold

⁵²⁸ Jeffrey L. Rodengen, *The Legend of Honeywell*, (Fort Lauderdale, FL: Write Stuff Syndicate, 1995) p. 87.

⁵²⁹ Rodengen, *The Legend of Honeywell*, pp. 70-73.

⁵³⁰ Rodengen, *The Legend of Honeywell*, pp. 90-95.

⁵³¹ Jimmy Carter, ‘Natural Gas Legislation Remarks at a News Briefing on the Legislation,’ *The American Presidency Project*, Gerhard Peters and John T. Woolley (transcribers) (26 January, 1977) <<http://www.presidency.ucsb.edu/ws/?pid=7167>> [accessed 17 January 2014].

⁵³² Jimmy Carter, ‘Address to the Nation on Energy,’ *The American Presidency Project*, Gerhard Peters and John T. Woolley (transcribers) <<http://www.presidency.ucsb.edu/ws/?pid=7369>> [accessed 17 January 2014].

War.⁵³³ He was succeeded by Ronald Reagan, who implemented free-market and laissez-faire capitalist economic policies – known as ‘Reaganomics’ – and increased defence spending by 40% (one famous project known as ‘Star Wars’) and the Cold War entered its second phase.⁵³⁴

The thermostat as metaphor for regulation was used by the economist, and one-time advisor to Reagan, Milton Friedman. Not known for his favourable disposition to the Federal Reserve, he described the curious stability of inflation in the US, in a 2003 op-ed for the *Wall Street Journal*, as the perfect thermostat, allowing the ‘Fed’ to fine tune the economy in response to external fluctuations and disturbances.⁵³⁵ Friedman does not go so far as to call Alan Greenspan, who was chair of the Federal Reserve at the time, the thermostat, noting that other global financial centres had also perfected the technique.⁵³⁶

However, Greenspan had invented a particular way of speaking so as not to have effects on the market: ‘FedSpeak’ was a way of saying things so ambiguously that nobody was quite sure what was meant.⁵³⁷ His was of carefully calibrating sentences that were so obscure that his own partner was unsure about whether he had proposed to her or not.⁵³⁸

In 1999, sitting in the hot bath that he took every morning to ease his chronic back pain, he came up with the term ‘irrational exuberance’, to describe the curious rise in value in dot-com stocks but flat-lining productivity that he could only attribute to a wildly over-speculated market. He retracted the statement. The dotcom bubble burst in 2001 and the stock market crash wiped \$5 trillion of the market value of companies.⁵³⁹

⁵³³ ‘Détente and Arms Control, 1969-1979’, *Office of the Historian* <<https://history.state.gov/milestones/1969-1976/détente>> [accessed 17 January 2014].

⁵³⁴ ‘U.S.-Soviet Relations, 1981-1991’, *Office of the Historian* <<https://history.state.gov/milestones/1981-1988/u.s.-soviet-relations>> [accessed 17 January 2014].

⁵³⁵ Milton Friedman, ‘The Fed’s Thermostat’, *Wall Street Journal*, Aug. 19, 2003, <<http://www.wsj.com/articles/SB106125694925954100>> [accessed 21 January 2013].

⁵³⁶ Friedman, ‘The Fed’s Thermostat’.

⁵³⁷ Alan Greenspan, *The Age of Turbulence*, (London: Penguin Books, 2008), p. 150.

⁵³⁸ Greenspan, *The Age of Turbulence*, p.179.

⁵³⁹ Greenspan, *The Age of Turbulence*, pp. 164-181.

In 2001, Texas energy conglomerate Enron collapsed in a corporate fraud scandal, and their price-fixing during the 2000 California Energy Crisis comes to light in a series of phone conversations called the 'Grandma Millie' tapes.⁵⁴⁰ Traders playing the market joked about the millions they are making out of California as they export power out of the state during a forest fire: one trader crows down the line the slogan of the race riots that engulfed the Watts neighbourhood of Los Angeles in 1965 – 'Burn Baby, Burn!'⁵⁴¹

⁵⁴⁰ Richard A. Oppel Jr., 'Word for Word/Energy Hogs; Enron Traders on Grandma Millie And Making Out Like Bandits', *The New York Times* (13 June 2004) <http://www.nytimes.com/2004/06/13/weekinreview/word-for-word-energy-hogs-enron-traders-grandma-millie-making-like-bandits.html?_r=0> [accessed 12 January 2014].

⁵⁴¹ Bob Backer, 'Watts: The Legacy, 'Burn, Baby, Burn!': What Began as a Radio Disc Jockey's Soulful Cry of Delight Became a National Symbol of Urban Rebellion', *Los Angeles Times* (12 August, 1985) [accessed 4 January 2014]; Oppel Jr., 'Word for Word/Energy Hogs: Enron Traders on Grandma Millie And Making Out Like Bandits'; *Enron: The Smartest Guys In The Room*, dir. by Alex Gibney, (Magnolia Pictures, 2007); and Lucy Prebble, *Enron*, II. 6. (London: Bloomsbury, 2009), p. 78.

Chapter Four

WARM BODIES⁵⁴²

⁵⁴² A 'warm body' is a term in management given to a contractor hired to do certain jobs, often technical or generic, offering no opportunity to use the full ability of the contractor, and not offering any progression within the company. The 'warm body' is hired and fired as required, they are seen as resources, and can be replaced by other 'warm bodies'. Stephen R. Barley and Gideon Kunda, *Gurus, Hired Guns, and Warm Bodies: Itinerant Experts in a Knowledge Economy* (Woodstock, Oxfordshire: Princeton University Press, 2006).

Chapter Outline

In this chapter I explore the configuration of the thermal imagination in architecture. Drawing on Lisa Heschong's concept of 'thermal delight' as exemplary of a tendency to describe architectural interiors, particularly those that are mechanically ventilated, as devoid of authenticity and delight. However, I suggest that this is the architectural equivalent of Theory X: seeing workplace as a soulless environment – a spatial zone of mediocrity and homogeneity to be countered through the design of more humane environments that include meaning, variation and delight.⁵⁴³ In fact, the workplaces of the knowledge economy – Facebook, Google and Apple being exemplars – readily deploy such strategies in their interior environments as an integral part of their corporate culture.⁵⁴⁴

In the second chapter I traced a narrative of how the employee came to be seen in Silicon Valley dotcoms as a self-actualising, self-directing entity, in contrast to the disciplinary subject of the occupant in architecture. Following this study of the way that subjectivity is instrumentalised for and through management, in this chapter I warn that providing exciting thermal environments is not a remedy for the negative affects of labour in late capitalist work environments. Indeed, I suggest that the overall management of employees through the production of subjectivity troubles the very basis of conceptions of thermal comfort.

In the first instance, I use an examination of metaphors, idioms and synonyms of heat in a database of over 1000 entries drawn from dictionary sources to test the thermal culture put forward by Heschong and the thermodynamic culture proposed by Fernández-Galiano.⁵⁴⁵ I propose that our thermal culture is not primarily one of cosiness and comfort, but a contested and layered discursive field of power, economics, desire, love,

⁵⁴³ Jeremy Myerson and Imogen Privett, *Life of Work: What Office Design Can Learn from the World Around Us* (London: Black Dog Publishing, 2014), p. 5.

⁵⁴⁴ Mark Wilson, 'Meet Ben Barry, Facebook's Minister of Propaganda', *FastCo.Design* (11 May 2012) < <https://www.fastcodesign.com/1671050/meet-ben-barry-facebooks-minister-of-propaganda> > [accessed 28 June 2016]; Laura Crescimano cited in Alexandra Lange, *The Dot-Com City: Silicon Valley Urbanism* (Moscow: Strelka Press, 2012) Kindle eBook.

⁵⁴⁵ Luis Fernández-Galiano, *Fire and Memory: On Architecture and Energy* (Cambridge, MA: MIT Press, 2000).

productivity and war. From the database analysis, I propose an expanded field of metaphor and therefore an extended thermal imaginary.

With a focus on the pervasive metaphors used in spoken language – common and everyday metaphors, rather than the ‘poetic’ metaphors of literature – I collected metaphors and idioms that are used in the English language as a global *lingua franca*⁵⁴⁶ for business, economics and politics. I followed the work of cognitive linguists George Lakoff, Mark Johnson and Zoltán Kövecses, who use the domain of HEAT as a key case study in their thesis that metaphors are based on primary bodily experience.⁵⁴⁷

From a basic semantic analysis of the database of metaphors, I could see a number of problems with the phenomenological bases of thermal comfort in metaphor, and also in architecture. By questioning Lakoff, Johnson and Kövecses’ location of cognitive metaphor in the primary physiological sensations of the body,⁵⁴⁸ I argue that such an essentialist physiological body is not the body put to work in the knowledge economy. Furthermore, as I showed in chapter two, such a body is complicated by the status of subjectivity of the occupant and the employee.

I draw on work on the ‘cultural phenomenology of heat’⁵⁴⁹ by Steven Connor and Luis Fernández-Galiano,⁵⁵⁰ along with the employment of thermodynamic metaphor in psychoanalysis and literature⁵⁵¹ – for example

⁵⁴⁶ The definition of ‘lingua franca’ in the OED is ‘Any language that is used by speakers of different languages as a common medium of communication; a common language’ thus what is being explored in the thesis is not an idea of cultural specificity of languages rather it is the internationalism of neo-liberal capitalism.

⁵⁴⁷ George Lakoff and Mark Johnson, *Metaphors We Live By* (London: University of Chicago Press, 1980); Zoltán Kövecses, ‘Metaphor and Emotion’, in *The Cambridge Handbook of Metaphor and Thought*, Raymond W. Gibbs Jr. (ed.) (Cambridge: Cambridge University Press, 2008), pp. 380-396; Zoltán Kövecses and Benczes Réka, *Metaphor: A practical Introduction* (Oxford: Oxford University Press, 2009); and Zoltán Kövecses, *Metaphor and Emotion* (unpublished paper, Eötvös Loránd University, 2000) <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.607.2617&rep=rep1&type=pdf>> [accessed 1 June 2012].

⁵⁴⁸ Lakoff and Johnson, *Metaphors We Live By*, pp. 56-58; and George Lakoff, *Women, Fire and Dangerous Things*, (Chicago: University of Chicago Press, 1987), pp. 13, 380-415.

⁵⁴⁹ Steven Connor, ‘Thermotaxis: An Essay on the Thermodynamics of Culture’, *StevenConnor.com* (2005) <<http://stevenconnor.com/thermotaxis/>> [accessed 16 October 2011].

⁵⁵⁰ Fernández-Galiano, *Fire and Memory*.

⁵⁵¹ John G. Daugman, ‘Brain Metaphor and Brain Theory’, *Philosophy and the Neurosciences*, edited by W. Bechtel et al. (Oxford: Blackwell, 2001) pp. 23-36 (p. 28); and ‘A History of Metaphor’, *In Our Time*, BBC Radio 4, 10 November 2010, <<http://www.bbc.co.uk/programmes/b00w227c>> [accessed 1 June 2012].

Freud's use of the steam engine for psychodynamics – to propose a body that is systemically conceived of within the concept of thermodynamics.

I propose in this chapter that our concept of thermal culture is misplaced, and I present an updated ontology of heat which poses problems for Heschong's thermal imagination. The subject of emotional and affective labour requires a body that is not well-tempered and regulated, but energetically expansive: and when all affective passions are put to work the consequences on bodies are non-universal. I conclude the chapter with the proposal that a conception of the body cannot avoid the politics of gender, race, age, ability and sexuality.

Hut and fire, construction and combustion, are inextricably linked in the history of habitation. [...] One feeds on our profits, the other on our thermodynamic capital.⁵⁵²

Thermal Delight

In 1979, Lisa Heschong proposed a thermal environment 'rich in cultural associations', celebrating 'delight' and the 'bonds of affection and ceremony.'⁵⁵³ She described throughout her book *Thermal Delight in Architecture* an obsolescence of thermal symbolism in the mechanically controlled contemporary interior. Her thesis, published at the height of the second oil crisis, was that a more expressive and meaningful interpretation of heat in buildings could deliver energy savings.

Her critique has a familiar resonance with studies of comfort and temperature control, and with broader architectural critiques that suggest that technologically mediated and optimised environments are emblematic of a soulless machine that alienates us from both the authenticity of experience and emotional and social bonds.⁵⁵⁴

Heschong's proposition that thermal experiences need to be reclaimed is repeated in other critiques (often in a phenomenological tradition) of modernity (in particular the modernity of late capitalism) that suggest that we have lost touch with primal and fundamental qualities in the built environment.⁵⁵⁵ This manifests as aesthetic sameness, environmental

⁵⁵² Luis Fernández-Galiano, *Fire and Memory: On Architecture and Energy* (Cambridge, MA: MIT Press, 2000), p. 213.

⁵⁵³ Back cover text of Lisa Heschong, *Thermal Delight in Architecture* (Cambridge, MA: MIT Press, 1979).

⁵⁵⁴ Sofia Borges writes: 'the follow up to Fordism manifested as a hyper-efficient cubicle culture [...] The mechanical sameness popularised during the mid-twentieth century provoked feelings of restlessness and burnout from employees. Instead of fostering creativity and diversity, the experience of work life evolved into something far more monotonous and anonymous. [...] A person is not a machine, and as such, needs diverse and meaningful stimulation.' Sofia Borges, 'Business Casual: Reworking the 9-5', *Workscape: New Spaces for Work* (Berlin: Gestalten, 2013), p. 3-4; Myerson and Privett, *Life of Work*, p. 10; Jeremy Myerson and Phillip Ross, *Space to Work: New Office Design* (London: Laurence King, 2006), p. 8; and Lisa Heschong, *Thermal Delight in Architecture*, pp. 18-20, 45-49, 53.

⁵⁵⁵ Heschong's work also sits within a context of critiques of modernity such as Junichiro Tanizaki, *In Praise of Shadows* (London: Vintage, 2003); and Juhani Pallasmaa, *Eyes of the Skin: Architecture and the Senses* (Chichester: John Wiley and Sons, 2005).

stability and monotony of experience. The result of such a loss, it is inferred, leads to a diminished emotional life and an atrophy of intense and authentic social experiences.⁵⁵⁶

Setting up a dialectic of artificiality vs. authenticity, variety opposed to sameness, would suggest that for architects a method to counter such alienating effects will be through designing experiential richness in interior environments.⁵⁵⁷ But I propose that this is misplaced, on a number of counts.

By drawing on the phenomenological tradition to propose that architects pay attention to meaningful associations in the design of thermal, acoustic and lighting environments, the search for what might be an authentic and emotionally meaningful element is usually through a material study of natural architectures and vernacular precedents: 'the hearth fire, the sauna, the Roman and Japanese baths, and the Islamic Garden [...] are all archetypes' and appeal to (largely mythical) stories of origin.⁵⁵⁸

A steady-state thermal environment is the prevailing standard for office buildings, schools and home across the United States [...] a constant temperature everywhere at all times. [...] A steady-state

⁵⁵⁶ Robin Evans describes the architecture of the second half of the millennium operating as a 'lobotomy performed on society at large, obliterating vast areas of social experience' in the chapter 'Figures, Doors and Passages' in Robin Evans, *Translations from Drawing to Building and Other Essays*, Pamela Johnston (ed.) (London: Architectural Association Publications, 1996), pp. 89-90.

⁵⁵⁷ It is particularly insightful to read Kunda and Barley's essay on the timeline of Managerial Discourse, which shows the interconnectedness between rational/normative management; Stephen R. Barley and Gideon Kunda, 'Design and Devotion: Surges of Rational and Normative Ideologies of Control in Managerial Discourse', *Administrative Science Quarterly*, 37:3 (September 1992), 363-399; and the introduction to Eva Illouz, *Cold Intimacies: The Making of Emotional Capitalism* (Cambridge: Polity Press, 2007), pp. 10-14.

⁵⁵⁸ Gottfried Semper's elements of architecture for 1851, denoted the hearth as the first architecture symbolically, and as it gathered humans around a fire, is one of many narratives of the organisation of social life and civilisation through warmth. Gottfried Semper, *The Four Elements of Architecture and Other Writings* (Cambridge: Cambridge University Press, 1989), pp. 102-103. The hearth, sauna, Roman and Japanese baths, and the Islamic Garden are also examples given in Hescong's *Thermal Delight in Architecture*. Reyner Banham uses the hearth in his 'parable' of a savage tribe. He states that 'architects, critics, historians and everyone else concerned with the environmental management in civilised countries, lack a range of spatial experience and cultural responses that nomad people have always enjoyed' and describes the spatiality of the environmental conditions around a campfire. Reyner Banham, *The Architecture of the Well-Tempered Environment* (London: The Architectural Press, 1984), pp. 19-20. Banham elaborates on the potential for an antithesis to the 'massive and perdurable structure' that architecture usually pursues in Reyner Banham and François Dallegret, 'The Home is Not A House', *Art in America*, 2 (1965), 70-79.

approach to the thermal environment assumes that any degree of thermal stress is undesirable.⁵⁵⁹

The other tradition draws on Karl Marx's concept of the alienation of labour – where the spaces of modernity are the material expression of capitalism as a soulless machine.⁵⁶⁰ In such a situation, I suggest, architecture is proposed as an antidote to the relentless drives of productivity and efficiency, allowing space for the human to connect with what is meaningful and offering respite from exploitation.⁵⁶¹

I propose that neither account for the way that work is reconceived of within current organisational management styles, as I showed in the second chapter. Both the myth of the hearth and the concept of the alienation of labour align with a Theory X model. In contrast, Theory Y, in harnessing employees' desire to find meaning in work, works successively through each layer of 'necessity, delight, affection and sacredness.'⁵⁶² However, as the ethnographies of management cultures undertaken by Gideon Kunda and Catherine Casey show, the attention of management on the employees' existential and physical needs do not overcome a crisis of subjectivity and the processes of alienation.⁵⁶³

Heschong's book was written in 1979, at the height of the second oil crisis, and during a period of transition towards post-Fordist economies, the full implications of which had not yet been apprehended, certainly not in

⁵⁵⁹ Heschong, *Thermal Delight in Architecture*, p. 21.

⁵⁶⁰ These views are from two standpoints – one is that machinery is inherently soulless, as in the position taken by Jonathan Glancey, 'Nordic Exposure', *The Guardian* (12 February 2007) < <https://www.theguardian.com/artanddesign/2007/feb/12/architecture>>; the other is the idea that machinery itself can be kindly, helpful, Iain Jackson and Jessica Holland, *The Architecture of Edwin Maxwell Fry and Jane Drew* (Abingdon, Oxon: Routledge, 2014) pp. 287, 293. It is worth making a connection to Judy Wajcman's nuanced critique of the time-saving devices of technology, as well as the views of curator of the 1968 ICA Exhibition *Cybernetic Serendipity*, Jasia Reichardt who in an invited talk at the Royal College of Art considers the advance of smartness in digital technology 'helpful'. Lucy Suchman, 'Wajcman Confronts Cyberfeminism', *Social Studies of Science*, 36:2 (April 2006), 321–327; Judy Wajcman, *Feminism Confronts Technology* (Pennsylvania: The Pennsylvania State Press, 1991); and Jasia Reichardt, *In Anticipation of the Sixties*, invited talk at the Royal College of Art organised by Claudia Dutton and Delfina Fantini van Ditmar (4 June 2014).

⁵⁶¹ Myerson and Privett, *Life of Work*, pp. 5, 10, 13.

⁵⁶² Heschong, 'Contents', *Thermal Delight in Architecture*; and Stephen Fineman, *Work: A Very Short Introduction*, (Oxford: Oxford University Press), p. 11.

⁵⁶³ Kunda, *Engineering Culture*, p. 221; and Casey, "'Come Join Our Family'", pp. 174-176.

the architecture of the workplace. Consequently, the account of thermal architecture needs to be updated with a definition of thermal culture appropriate to the twenty-first Century.

Embedded in her thesis is an energy-consciousness – the expense of energy in providing regulated thermal environments, it is proposed, can be reduced by allowing for more temperature variations.⁵⁶⁴ This reasoning is extended in contemporary accounts of ‘adaptive comfort’ which argue for expanding the tolerances of what is required for productive work, to reduce energy spent on air-conditioning and heating.⁵⁶⁵

The narratives of thermal comfort and delight map onto Maslow’s hierarchy surprisingly well: Heschong’s book chapters are entitled ‘Necessity’, ‘Delight’, ‘Affection’ and ‘Sacredness’ - beginning with an appeal to the primary physiological need to stay alive within a very small thermal tolerance, and ending with the importance of thermal delight to human culture and civilisation.⁵⁶⁶ The preface to *Adaptive Thermal Comfort: Principles and Practices* outlines:

One of the most important attributes of a building, after ensuring it stays standing, is that it provides a thermally safe haven for its occupants in the climate and environment where it is built. The primary function of a building is to provide shelter. As buildings evolved over millennia this requirement for shelter merged into the desire for comfort and, in some climates and societies, the aspiration to live in the luxury of thermal delight. Think of the [...] exquisitely decorated wind pavilion on a Persian desert palace on a summer’s evening. Think of a warm fireside on a cold evening. [...] The art and science of great design lies in being able to generate such profoundly enjoyable experiences, first created millennia ago, and to work with the minimal use of fossil fuels.⁵⁶⁷

⁵⁶⁴ Heschong, *Thermal Delight in Architecture*, pp. 20-21.

⁵⁶⁵ Fergus Nicol, Michael Humphreys and Susan Roaf, *Adaptive Thermal Comfort: Principles and Practice* (Abingdon, Oxon: Routledge, 2012).

⁵⁶⁶ Heschong, *Thermal Delight in Architecture*, pp. 1-2, 58, 72.

⁵⁶⁷ Nicol, Humphreys and Roaf, *Adaptive Thermal Comfort*, p. xiv.

I suggest that this framing of the problem as a disconnect with authenticity and some form of primal shelter should be treated with some caution. Architectural writer Catherine Ingraham considers it a myth to look for a ‘basic or “bare life” architecture’ or evidence of an essential level of biological life that is inherently frugal:

Looking back to some earlier historical period [...] for evidence of some natural integration between technology and human life belies the very origins and impetus of the technical, which, from its inception, has compelled human life away from basic existence.⁵⁶⁸

She makes the point that human biological life is both expensive and luxurious: the ‘basic human needs for shelter and warmth [...] as a baseline condition for architecture’ have never been separate from the ‘aesthetic and intellectual needs and desires’ in human civilisation.⁵⁶⁹

The thesis that we must reconnect with more a meaningful thermal association of simple comfort and social warmth, cannot account for the demand that buildings are primarily in the service of productivity, efficiency and well-being – upon which sustainable design is made contingent.

Luis Fernández-Galiano starts from a position that contemporary architecture exhibits a ‘thermal muteness’⁵⁷⁰ that results in a uniformity and repeatability of temperature that is matched by its aesthetic order, in a similar way to Heschong’s hypothesis:

The process of visual homogenization that we associate with modernity has its correlate in a parallel process of thermal homogenization. [...] The artificial place of construction and the artificial climate of combustion go through similar processes: the singular place becomes quantified space; the changeable climate gives way to standardized comfort.⁵⁷¹

⁵⁶⁸ Catherine Ingraham, ‘Expansive Resourcefulness’, *Log 8: Toward a critique of sustainable architecture and landscape* (Summer 2006) p. 77, <<http://www.jstor.org/stable/41765592>> [accessed 11 April 2015].

⁵⁶⁹ Ingraham, ‘Expansive Resourcefulness’, p. 77.

⁵⁷⁰ Fernández-Galiano, *Fire and Memory*, p. 213.

⁵⁷¹ Fernández-Galiano, *Fire and Memory*, p. 213.

He departs, however, from this main premise to describe the silence around the ‘energetic, invisible [dimension]’ which is inseparable from the construction of the order that we see.⁵⁷² Narrating the development of thermodynamics in his book *Fire and Memory*, Fernández-Galiano accounts for the darker associations of heat as a conceptual category – its destructive power, its energetic costs, and its inescapable narrative towards disorder and entropy: ‘Energy brings architecture into the world of processes and life. But it also bestows architecture with consumption, fugacity and irreversible time. Architecture brings together fire and hut, chaos and organisation.’⁵⁷³

Ingraham writes that the ‘political and moral aspects of sustainability (the “right thing to do”) are tied to [the] issues’ of how architecture and energy are perceived in relation to such a negation of the energetic dimension of biology and technological entwinements with the ‘natural’.⁵⁷⁴

These alternative narratives prompted a search for an ontology of heat that could encompass the following contradiction – that the thermal imagination must both be able to account for authenticity, meaningful social bonds, affection and warmth – as well as burnout, exhaustion, the waste of resources – for cool customers, cool cucumbers, cool-hunters, and hot-to-trot stocks, ‘hot girls, hot guys, hot yoga’.⁵⁷⁵

Complementing these narratives, in the account of metaphors, idioms and synonyms for heat in the database, I found that the symbolism of heat as cosiness and comfort is only a part. With over 1000 entries drawn from dictionary sources, I mapped the metaphors for heat to show that they are used in daily speech covering topics such as love, desire, war, economics, anger, violence, and productivity. They are poetic embellishments, but are used in everyday speech, especially in the *lingua franca* of business English.⁵⁷⁶

⁵⁷² Fernández-Galiano, *Fire and Memory*, p. 213.

⁵⁷³ Fernández-Galiano, *Fire and Memory*, p. 6.

⁵⁷⁴ Ingraham, ‘Expansive Resourcefulness’, p. 77.

⁵⁷⁵ This slogan on a Shoreditch gym was found by my colleague Delfina Fantini van Ditmar.

⁵⁷⁶ See appendix I, ‘Hot Data’, pp. 280-287.

Thermal Management

I raise concerns about the three terms most frequently deployed in the discussion of how the occupant is party to the negotiations of energy-saving versus comfort provision: these terms are productivity, efficiency and well-being.⁵⁷⁷ Where typically one might expect productivity and efficiency to be the company's main interest, while well-being is part of a remunerative arrangement for employees, such an equation becomes muddled when 'productive work is the result of a combination of self-direction, initiative, and emotional attachment, and ultimately combines the organisational interest in productivity with the employees' personal interest in growth and maturity.'⁵⁷⁸

Architects would do well to pay attention, since the spaces of delight and inspiration called for above do not offer the respite they might be assumed to – they play no part in regulating the demands on our contribution to work: rather, they are what enhances productivity.⁵⁷⁹

In Theory Y, where productive work 'is imbued with a deeper personal significance that causes people to behave in ways that the company finds rewarding',⁵⁸⁰ well-being – that apparently benign and humane consideration for the employee, is on the wrong side of the equation. It is a key operational unit in the formulation of practices of high-performance management. Well-being, I propose, can be seen as articulating the enfolding of a demand for productivity into the pursuit of meaningful work, and the extension of management into personal social and familial bonds,

⁵⁷⁷ Lizi Greenhill, 'Sustainability: Wellbeing', *Building.co.uk*, (19 January, 2016), < <http://www.building.co.uk/sustainability-wellbeing/5079738.article> > [accessed 27 April 2017]; and *Health, Wellbeing & Productivity in Offices: the Next Chapter for Green Building*, World Green Building Council, p. 6.

⁵⁷⁸ Kunda, *Engineering Culture*, p. 10.

⁵⁷⁹ John Alker, Michelle Malanca, Chris Pottage, Rachael O'Brien, *Health, Wellbeing & Productivity in Offices: The next chapter for green building*, World Green Building Council (2014) <http://www.worldgbc.org/files/6314/1152/0821/WorldGBC__Health_Wellbeing__productivity_Full_Report.pdf> [accessed 8 August 2016]. Myerson and Ross cite a report on knowledge worker productivity drawing the following analogy 'If companies can enhance knowledge-worker productivity in this century anywhere near as much as they did with manual labor over the course of the last one (an increase of roughly 50 times), the payoffs will be astronomical'. Thomas H Davenport, Robert J Thomas and Susan Cantrell, 'The Mysterious Art and Science of the Knowledge Worker Performance', *MIT Sloane Management Review* (Fall 2002) cited in Myerson and Ross, *Space to Work*, p. 9.

⁵⁸⁰ Kunda, *Engineering Culture*, p. 10.

and self-actualisation through identifying with the ‘world-changing’ goals of the company.⁵⁸¹

Therefore, the articulation of thermal delight is not a mode of resistance against the most exhausting and alienating aspects of work: indeed, instances where the company can ‘harness the efforts of high-quality collective performance’ through giving their employees “‘the good life’’: a benign and supportive work environment that offers the opportunity for individual self-actualisation⁵⁸² places the employees in a bind.

The consequences of burnout, exhaustion and entropy are not tempered by the provision of meaningful association in the workplaces of these economies. In fact, where they are most effective they lead to troubling accounts of subjectivity and ambivalence – and may in part contribute to further ambiguities and conflicts of subjectivity.

While the term ‘well-being’ conjures up images of a well-regulated working environment, companies explicitly aim to ‘offer “a high”⁵⁸³ to their employees through their corporate culture, ‘which may be the closest experience of ‘community’ or total commitment for many workers, a dramatic, exciting, and almost communal process brought to the corporation’.⁵⁸⁴

Exhibiting one of the mechanisms by which labour works on the body and affective life to extract more, the work of management is described by Kunda to ‘elicit, channel, and direct the creative energies and activities of employees in profitable directions – to make them want to contribute’ through designing an employee subjectivity that they must totally adopt as an ‘integral part of their sense of self.’⁵⁸⁵

⁵⁸¹ ‘Believe you can change the world’ is the first of Hewlett Packard’s *Rules of the Garage*. John C. Abell, ‘Rules of the Garage, and Then Some’, *Wired* (2009) <<https://www.wired.com/2009/01/rules-of-the-ga/>> [accessed 3 October 2015].

⁵⁸² Kunda, *Engineering Culture*, p. 10.

⁵⁸³ Rosabeth Kanter, *The Change Masters: Innovation and Entrepreneurship in the American Corporation* (New York: Simon and Schuster, 1983), p. 203. cited in Gideon Kunda, *Engineering Culture*, p. 9.

⁵⁸⁴ Gideon Kunda, *Engineering Culture*, p. 9.

⁵⁸⁵ Gideon Kunda, *Engineering Culture*, pp. 7-8.

Steven Connor's 'cultural phenomenology of heat' and Luis Fernández-Galiano's 'memory of fire' are accounts of thermal meaning that account for both energy and thermodynamics. In doing so they broaden the account of heat beyond Heschong's 'thermal imagination' as an account of heat as comfort and affection that can be the basis of a non-exploitative relationship with natural resources. Also relevant here is Ingraham's 'expansive resourcefulness' – where 'sustainability is, thus, not a science that deals with sparseness – not a science that takes architecture toward its ever-present essentialist-empiricist temptations – but a science that studies the vicissitudes of luxury.'⁵⁸⁶ These all point to the expenses of keeping warm: there is no balance to be kept without also accruing a debt in material resources, and increasing entropy in emotional resources.

The idea that working environments must enable a subjectivity that is productive when emotions are stabilised, and enthusiasm tempered, was abandoned in concepts of organisational management some time ago: as the head of Google's Human Relations department advises in relation to the recruitment process, managers should 'remember too that you don't just want to assess the candidate. You want them to fall in love with you. Really. You want them to have a great experience, have their concerns addressed, and come away feeling like they just had the best day of their lives.'⁵⁸⁷

Appeals by architects to connect with meaning, emotion and social life is not a path away from the instrumentalisation of human affects towards capital. To support this claim, I will present an expanded account of thermal culture with a large database of thermal metaphors, an analysis of 'cognitive metaphor' and a speculative mapping of thermal culture, combined with accounts of the development of emotional and affective labour, and ethnographies of the knowledge economy.

Drawing on Eva Illouz's concept of 'emotional capitalism'⁵⁸⁸ and Arlie Russell Hochschild's 'emotional labour'⁵⁸⁹ I propose to show that through

⁵⁸⁶ Ingraham, 'Expansive Resourcefulness', p. 87.

⁵⁸⁷ Laszlo Bock, 'Here's Google's Secret to Hiring the Best People', *Wired* Online, (4 July 2015) <<https://www.wired.com/2015/04/hire-like-google/>> [accessed 20 September 2015].

⁵⁸⁸ Eva Illouz, *Cold Intimacies: The Making of Emotional Capitalism* (Cambridge: Polity Press, 2007), p. 5.

work, the passions of emotional life are generated for productive use. And what follows is that precarity, burnout and disillusionment co-exist in the same spaces of thermal comfort and delight that are designed to elicit emotional affects for work.

I take Illouz's claim that capitalism promotes a profoundly emotional culture to suggest that it is precisely these qualities that are incorporated into organisational management, and materialised in the interiors of the contemporary workplace – a site of inspiration, meaning, delight and desire – and furthermore, these emotions are an integral part of what is termed 'knowledge work.'⁵⁹⁰ By taking this management view of the knowledge worker, the phenomenological account of comfort is shown to be lacking.

In 1959, the management consultant Peter Drucker introduced the term 'knowledge worker' to describe an increasing number of people working in fields where the main output of their work is knowledge. These include many creative industries, information technologies, sectors in which doctors, teachers, finance workers, engineers and architects and anybody who thinks for a living apply their existing knowledge to solve complex problems, create new knowledge or transfer knowledge into new domains.⁵⁹¹ The outputs of knowledge work are often 'innovative' and non-standard: they can be products or designs, patents, intellectual property, software, artworks. What is characteristic is that the value of knowledge work is not primarily the material worth of the physical product but its immaterial and abstract qualities.⁵⁹²

'Immaterial labour' is defined by Lazzarato as the 'labour that produces the informational and cultural content of the commodity,' which refers both

⁵⁸⁹ Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley, CA: University of California Press, 2003), pp. 6-7.

⁵⁹⁰ Peter F. Drucker, *Landmarks of Tomorrow: A Report on the New Post Modern World* (London: Heinemann; 1959), p. 76.

⁵⁹¹ The knowledge industry is characterised by an emphasis on autonomy – certainly relative to administrative fields and factory work – and the shift of top-down management to self-management. Knowledge workers take part in the continuing development and acquisition of new knowledge themselves. Drucker, *Landmarks of Tomorrow*, p. 91; and Rick Wartzman, 'What Peter Drucker Knew About 2020', *Harvard Business Review* (16 October 2014) <<https://hbr.org/2014/10/what-peter-drucker-knew-about-2020>> [accessed 14 March 2017].

⁵⁹² Peter Schwarz, 'Post-Capitalist', *Wired* (1 March 1993) <<https://www.wired.com/1993/03/drucker-2/>> [accessed 17 April 2017].

to the abstracting and translating of processes of production into computer networks, algorithms, and data flows, as well as ‘the kinds of activities involved in defining and fixing cultural and artistic standards, fashions, tastes, consumer norms, and, more strategically, public opinion.’⁵⁹³

The work of the emotions is intensely implicated in this work: Eva Illouz makes the claim that starting with the management of factory work, ‘the making of capitalism went hand in hand with the making of an intensely specialized emotional culture.’⁵⁹⁴ For Illouz, the emotional epistemology of capitalism underwent a shift at the same time that Frederick Winslow Taylor was promoting a scientific and highly rationalised understanding of factory work.⁵⁹⁵ The enormous scale of employment by corporations and factories brought into the predictable, measurable, processes of mass production the variability of large numbers of human workers, bringing concerns about productivity and discipline to the attention of management: ‘Parallel to the engineer’s rhetoric [...] another discourse emerged, spearheaded by psychologists, which paid a great deal of attention to the individual, to the irrational dimension of work relationships, and to workers’ emotions.’⁵⁹⁶

I deploy the narrative of the embedding of the metaphor of productive heat and the deployment of emotions to work in order to map the metaphors.

Body Heat

In the summer of 2011, the Intelligence Advanced Research Projects Activity (IARPA), the research and development arm of national intelligence in the

⁵⁹³ Maurizio Lazzarato, ‘Immaterial Labour’, in *Radical Thought in Italy: A Potential Politics*, Paolo Virno and Michael Hardt (eds) (Minneapolis: University of Minnesota Press, 1996), pp. 133-47.

⁵⁹⁴ Illouz, *Cold Intimacies*, p. 4.

⁵⁹⁵ Illouz, *Cold Intimacies*, p. 4.

⁵⁹⁶ Sigmund Freud’s 1909 Clark Lectures mark the point, for Illouz, of this epistemic shift. Drawing heavily on the work of psychoanalysis, which conceived of emotions as being enmeshed with economic action, the corporate management of capitalism, Illouz argues, led in turn to the ‘extraordinary success of the psychoanalytical imagination in the US.’ Illouz, *Cold Intimacies*, p. 12.

United States, launched a project called the Metaphor Program to fund research into the automatic identification of metaphors in internet traffic.⁵⁹⁷ The five-year project aimed to map metaphors in four languages, Farsi, Russian, English and Spanish, build databases and develop programmes to evaluate the use of these words in everyday speech.⁵⁹⁸ The goal is to enable the intelligence community to efficiently extract meaningful information from the vast amount of textual and speech data in the global digital communications that they monitor by 'exploit[ing] the use of metaphorical language to gain insights into underlying cultural beliefs.'⁵⁹⁹

Schlomo Argamon,⁶⁰⁰ recipient of part of the funding, based at the Illinois Institute of Technology, describes the strategic importance of such a study:

How someone uses metaphor gives us a window into their worldview [...] Whether someone refers to crime, for example, as a 'war' or as a 'disease' tells us something important about how they will think and behave. [...] Getting at the deeper meanings encoded by metaphoric and figurative language is especially important for understanding messages and intentions of people in traditionalist societies.⁶⁰¹

This project is based on the premise of Lakoff and Johnson that metaphor is profoundly cognitive.⁶⁰² its aim is to find ways of tracking internet chatter,

⁵⁹⁷ Dr Heather McCallum-Baylis, 'Metaphor Program Proposer's Day Brief', *IARPA.gov* (13 April 2011) <http://www.iarpa.gov%2FMetaphor_Presentations%2FMetaphor_Proposers_Day_Brief.pdf&ei=FTJHUKCWGqrEQQWi34HYBw&usg=AFQjCNH86Gk3nSi_TLuZ2uRGBGP-4F1iaw&cad=rja> [accessed 26 August 2015].

⁵⁹⁸ Alexis C. Madrigal, 'Why Are Spy Researchers Building a Metaphor Program?', *The Atlantic* (25 May 2011) <<https://www.theatlantic.com/technology/archive/2011/05/why-are-spy-researchers-building-a-metaphor-program/239402/>> [accessed 26 August 2015].

⁵⁹⁹ McCallum-Baylis, 'Metaphor Program Proposer's Day Brief'.

⁶⁰⁰ Work from my database was presented at a Figurative Language symposium in Birmingham convened by Dr John Barnden, where a recipient of the IARPA funding, Schlomo Argamom from the ADAMA project at Illinois Institute of Technology was also presenting, reminding me how close to the military industrial complex this work could come. *Figurative language: its patterns and meanings in domain-specific discourse*, University of (18-19 August 2014).

⁶⁰¹ Schlomo Argamom, 'Illinois Institute of Technology Leading International Project to Automatically Understand Metaphors in Large Volumes of Text', *Illinois Tech Mediaroom* <<https://web.iit.edu/mediaroom/press-releases/2012/may/08/illinois-institute-technology-leading-international-project>> [accessed 19th July 2016].

⁶⁰² Lakoff and Johnson, *Metaphors We Live By*, p. 3.

identifying, from the metaphors used, the intentions, allegiances and values of the speaker, demonstrating that a metaphor method such as this is taken seriously and is timely.

The precedent for the Metaphor Program is the work of linguists George Lakoff and Mark Johnson who, in *Metaphors We Live By*, mapped the common metaphors of everyday speech to argue that metaphor is much more than a superficial literary device: it is central to human thought and political behaviour. The substitution of one thing for another on the grounds of resemblance – to see things as other things – is seen as a primary act of cognition: ‘our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature.’⁶⁰³ I propose to outline the key ideas on metaphor by Lakoff and Johnson, and Kövecses,⁶⁰⁴ highlighting where, in providing my own metaphor corpus for the domain of temperature, I disagree with certain assumptions in their work, then drawing this into a discussion that proposes a new thermal imaginary for architecture.

Linguists Lakoff and Johnson propose that metaphors are embodied, arising from direct physiological experience. They suggest that almost all human cognition, including abstract reasoning, makes use of concrete and low-level sensory facilities and emotions. In their theory of embodied cognitive metaphor, concepts from which metaphorical expressions are drawn are based on the core elements of human experience (movement, temperature, orientation, duration), and these are mapped onto the more abstract idea being communicated. An example would be to use a physical description of HEAT to understand the abstract emotion of ANGER.⁶⁰⁵ Mapping the metaphors to physiological emotional responses, such as increased body heat, internal pressure and agitation (getting ‘hot under the collar’, ‘bursting a blood vessel’ and ‘quivering with rage’), they summarise

⁶⁰³ Lakoff and Johnson, *Metaphors We Live By*, p. 3.

⁶⁰⁴ Zoltán Kövecses, 'Metaphor and Emotion', in *The Cambridge Handbook of Metaphor and Thought*, ed. by Raymond W. Gibbs Jr. (Cambridge: Cambridge University Press, 2008), pp. 380-396; and Zoltán Kövecses and Benczes Réka, *Metaphor: A Practical Introduction* (Oxford: Oxford University Press, 2009).

⁶⁰⁵ Lakoff, *Women, Fire and Dangerous Things*, pp. 380-415.

that metaphors are not fanciful poetic flourishes, but have a basis in bodily experience.

This embodied theory of metaphor, with very clear links to philosophies of phenomenology, suggests that we understand an emotion such as anger in terms of heat pressure and loss of control because of the physical sensations experienced when we are angry – increased body heat, increased internal pressure (they cite cardiovascular constriction), altered breathing patterns. This theory is extended in their book to other emotions, several with correlations to temperature metaphors, such as AFFECTION IS WARMTH, the concept of warmth in this case drawing on the primary physiological experience of being held close to another body as an infant. They also propose other conceptual models for heat, such as LUST IS HEAT.⁶⁰⁶

Building on Johnson and Lakoff's work in *Metaphors We Live By*, linguist Zoltán Kövecses proposes that these metaphors can be systematically mapped to see if a coherent conceptual structure emerges. Kövecses worked with Lakoff to look for commonality in the inferences among the expressions for anger.⁶⁰⁷ The idioms, Lakoff and Kövecses argue, reveal an ontology of anger based on the ANGER IS HEAT metaphor, where the amount of anger maps onto a scale of temperature. In this ontology anger is understood as a form of energy, with emotional effects seen as physical consequences. Although ANGER IS HEAT is not the only model for anger, it is the prototype for anger, since all others are characterised by Lakoff as 'minimal variants of the model that the metaphors converge on.'⁶⁰⁸

They also recognise that there were two versions of the ANGER IS HEAT metaphor, one in which heat is applied to fluids (ANGER IS FLUID IN A CONTAINER) and one in which it is applied to solids (ANGER IS FIRE).⁶⁰⁹ The fluid version, Lakoff claims, is much more highly elaborated resulting in the

⁶⁰⁶ Other conceptual metaphors for LUST are A LUSTFUL PERSON IS A FUNCTIONING MACHINE, LUST IS WAR, LUST IS A GAME, LUST IS AN ANIMAL, in Lakoff, *Women, Fire and Dangerous Things*, pp. 409-411.

⁶⁰⁷ Kövecses, 'Metaphor and Emotion', p. 380-396.

⁶⁰⁸ Lakoff, *Women, Fire and Dangerous Things*, p. 397.

⁶⁰⁹ Lakoff, *Women, Fire and Dangerous Things*, p. 383.

central metaphor ANGER IS THE HEAT OF A FLUID IN A CONTAINER.⁶¹⁰ This, they conclude, is because in an overall conceptual system we have a general metaphor that the BODY IS A CONTAINER for the emotions.⁶¹¹ Lakoff and Kövecses work also concentrates on what they call metaphorical entailments – a narrative of the ANGER IS FLUID IN A CONTAINER concept that generates a sequence of metaphors, one that coincides with the physiological effects of anger on the body, albeit in what they concede is largely a common ‘folk’ theory of how the body works.⁶¹²

In the cognitive metaphor thesis, metaphor is the means through which one conceptual domain is understood in terms of another. Metaphorical processes, they say, move from the concrete to the abstract: drawing from the source domain towards the target domain, a conceptual concept that is being spoken about. The core elements of (typically physical) human experience – basic assumptions about time, space, movement, and experiences with physical objects – are used to invoke assumptions about the abstract notion implied by the metaphor – Lakoff and Johnson categorise these as structural, orientational, and ontological.⁶¹³ While I agree that metaphors are not merely poetic, and therefore inconsequential, I question the assumptions that Lakoff and Johnson make in placing the primary source domain of metaphor with a body that is defined as part of a ‘concrete’ domain.⁶¹⁴ Through my own mapping of metaphor, I propose some addendums and challenges to the cognitive metaphor proposal. I argue that the body that they make reference to cannot claim to be free of its own metaphors and thus both an ‘abstract’ target domain as well as ‘concrete’ source domain. I further have doubts about locating thermal

⁶¹⁰ Kövecses, *Metaphor and Emotion*, paper, p. 155; and Lakoff, *Women, Fire and Dangerous Things*, pp. 383.

⁶¹¹ Lakoff, *Women, Fire and Dangerous Things*, p. 383.

⁶¹² Lakoff, *Women, Fire and Dangerous Things*, pp. 383, 386, 388.

⁶¹³ Lakoff and Johnson, *Metaphors We Live By*, pp. 8-11, 14, 25-26.

⁶¹⁴ Lakoff and Johnson, *Metaphors We Live By*, p. 112; and Lakoff, *Women, Fire and Dangerous Things*, p. 275.

metaphors in a fictive, physiologically unified body that stands for all bodies.⁶¹⁵

There are many useful points to draw from the work on cognitive metaphor: in mapping metaphor to show a systemic conceptual structure,⁶¹⁶ what Lakoff et al. call ‘metaphorical entailments’ can be revealed.⁶¹⁷

Metaphors do not work in isolation – the underlying conceptual structure appears to work on individual metaphors to suggest a narrative that may not even be voiced: for example, if one says ‘He’s about to blow his top’, already the sequence of possible events is brought into being.

In literature, too, this sequencing of metaphor is at work.⁶¹⁸ While literary metaphor might be understood as a stylistic conceit – from the ancient Greek poets through the works of Shakespeare and the Modernism of Joseph Conrad or Virginia Woolf and beyond, metaphors have been used in a systemic way. Metaphor is more than isolated analogy – metaphors give rise to extensive metaphorical narratives that shape the meaning of what is being written.⁶¹⁹

There is a latent potential in metaphor to impel the reader, through its associations, to consider or even reconceptualise a story in a radical way.⁶²⁰ Metaphor, working on ‘a principle of an analogy that connects two things that are not alike,’⁶²¹ has an ability to unfold new meanings – something that

⁶¹⁵ Kurt Danziger also makes a strong argument for the cultural embeddedness of metaphor. Kurt Danziger, ‘Generative Metaphor and Psychological Discourse’, *Metaphors in the History of Psychology*, David E. Leary (ed.) (Cambridge: Cambridge University Press, 1990) pp. 331-356 (pp. 348-350).

⁶¹⁶ Lakoff, *Women, Fire and Dangerous Things*, pp. 381, 386.

⁶¹⁷ Lakoff, *Women, Fire and Dangerous Things*, pp. 387-388; and Kövecses, *Metaphor and Emotion*, paper, pp. 68, 85.

⁶¹⁸ In a Radio 4 discussion on the history of metaphor, broadcast in 2010, academics of English and literature Steven Connor, Julie Sanders and Tom Healy discuss a narrative of metaphor where a parallel associative meaning is embedded within a text. ‘A History of Metaphor’, *In Our Time*, BBC Radio 4, November 10’ 2010, <<http://www.bbc.co.uk/programmes/b00w227c>> [accessed June 2012].

⁶¹⁹ ‘A History of Metaphor’, *In Our Time*.

⁶²⁰ Tom Healy hints at the potential of metaphor to politically reconstruct a familiar event; stating that the ‘digressive element of metaphorical association causes the reader to reconsider the established parameters of their thoughts’. Using an example of Homer’s *Iliad*, the Trojan army are described as being loud and clamorous, like flocks of cranes, but the Greeks are depicted as silent: like a mist that sweeps in over a mountain, ‘which shepherds fear, but thieves like’. He notes that by associating the Greeks with thieves is an extraordinary twist, since they are seeking reparation for the kidnapping (or theft) of Helen by Paris of Troy. ‘A History of Metaphor’, *In Our Time*.

⁶²¹ ‘A History of Metaphor’, *In Our Time*.

became integral to psychoanalytic theory at the end of the nineteenth century.⁶²²

The use of metaphor in literature offers a challenge to the universality of the claim of the cognitive linguists, whose own work on metaphor aims to extract a general and comprehensive model. In doing so, they locate the metaphor outside of history, as if a pre-history of primary physiological experience can be located easily.⁶²³ What is valuable to the IARPA Metaphor Program is not the universality of the conceptual structures underlying cognitive metaphor, but their cultural variations, and what they reveal about attitudes, beliefs and values.

Lakoff and Kövecses' own notion of entailment reveals a problem with the phenomenological body. In connecting metaphors systematically, they invite causality – for example, the heat of anger gives rise to consequences in the angry person, yet some of those consequences would not have been a consistent part of a folk understanding of the body historically. For example, a key entailment of their ANGER IS HEAT metaphor is that it is a HOT LIQUID IN A PRESSURISED CONTAINER.

While it could be argued that we differ little in physiology from early humans, there is no doubt that the idea of the body has undergone a series of epistemological, ontological and political revolutions. The concepts of 'forces' and 'pressure' would not come readily to hand in a folk theory of the body, I would suggest, prior to an understanding of hydraulics and the physics of fluid mechanics. That is, the body has been reconceptualised in line with the epistemology of technology. This is not saying anything new – the body has been reconceptualised numerous times as clockwork mechanism,⁶²⁴ and now as information technology.⁶²⁵ Enlightenment figures

⁶²² Antal F. Borbely, 'Metaphor and Psychoanalysis', *The Cambridge Handbook of Metaphor and Thought*, Raymond W. Gibbs, Jr. (Cambridge: Cambridge University Press, 2008), pp. 412-424 (pp. 413, 415); and David E. Leary, 'Psyche's Muse', *Metaphors in the History of Psychology*, David E. Leary (ed.) (Cambridge: Cambridge University Press, 1990), pp. 1-78 (pp. 18-19).

⁶²³ Danziger, 'Generative Metaphor and Psychological Discourse', p. 350.

⁶²⁴ Leary, 'Psyche's Muse', pp. 16-17; Paul McReynolds, 'Motives and Metaphors', *Metaphors in the History of Psychology*, David E. Leary (ed.) (Cambridge: Cambridge University Press, 1990) pp. 133-172 (pp. 152-153); and Fernández-Galiano, *Fire and Memory*, p. 138.

frequently evoked the workings of the human by drawing on metaphors of machines, and reconciled the workings of the mind and body through mechanical metaphors. La Mettrie's *L'Homme Machine*, for one example, was 'an assemblage of springs ...[that] are activated reciprocally by one another.'⁶²⁶

John Daugman, professor of Computer Vision and Pattern Recognition at the University of Cambridge maps the hydraulic metaphor from its evident usage throughout the humoral view of the emotions, through to its the most pervasive and elaborated usage in the psychodynamic view that the drives of human behaviour are underwritten by the forces of desire and repression.⁶²⁷ The notion of the emotions as a conundrum involving the need to regulate pressure in a system is, similarly, a concept tightly interwoven with a historical precedent – in particular, the psychoanalysis of Freud.⁶²⁸

'The individual's conscious experience and behaviour are the manifestation of a surging unconscious libidinal struggle between desire and repression' writes Daugman.⁶²⁹ What is 'visible in the behaviour of the individual or of society must be explained in terms of underlying hydraulic forces that eventually will have their way. Similarly to water or steam pressure, which cannot build up indefinitely without release, the internal psychic or social pressure must inevitably express themselves in one form or another.'⁶³⁰

But these forces can also be channelled towards either productive or destructive use: 'According to these modern incarnation of the hydraulic metaphor, war, artistic movements, work, passion, religion, revolution, and

⁶²⁵ Danziger, 'Generative Metaphor', pp. 349-350; Karl H. Pribram, 'From Metaphors to Models', *Metaphors in the History of Psychology, Metaphors in the History of Psychology*, David E. Leary (ed.) (Cambridge: Cambridge University Press, 1990), pp. 79-103 (p.85); and John G. Daugman, 'Brain Metaphor and Brain Theory', *Philosophy and the Neurosciences*, W. Bechtel et al. (eds) (Oxford: Blackwell, 2001), pp. 23-36 (p. 29); and Fernández-Galiano, *Fire and Memory*, p. 143.

⁶²⁶ La Mettrie, cited in Daugman, 'Brain Metaphor and Brain Theory', p. 24.

⁶²⁷ Daugman, 'Brain Metaphor and Brain Theory', p. 28.

⁶²⁸ Daugman, 'Brain Metaphor and Brain Theory', p. 33; Danziger, 'Generative Metaphor', p. 351; and Fernández-Galiano, *Fire and Memory*, pp. 139-141.

⁶²⁹ Daugman, 'Brain Metaphor and Brain Theory', p. 28.

⁶³⁰ Daugman, 'Brain Metaphor and Brain Theory', p. 28.

new economic forms are the result.⁶³¹ This demonstrates that the metaphors in the work of Heschong, Lakoff and Johnson, and Kövecses may be rather limited.

In summary at the turn of the twentieth century, in both literature and psychoanalysis, metaphor was seen as revealing the inner working of the mind; and towards the end of the twentieth century the cognitive linguistics put forward a theory that the inner working of the mind is embodied and mediated through metaphor. But to say that metaphors are drawn from primary bodily experience, and to ignore the politics and historicity of bodies and emotional life, is problematic – in particular with regard to subjectivity.

I argue that the emergence of ANGER IS A HOT FLUID IN A CONTAINER with entailments connected to being UNDER PRESSURE can be attributed in part to a nascent science of converting energy into combustion and fuel into mechanical forces, via the generation of pressure – and that this conceptual framing challenges assumptions that arise from the phenomenological bias of comfort studies in architecture and environmental engineering.

In the first chapter, I proposed that the employee in organisational management is quite different from the occupant in architecture. In the remainder of this chapter I explore how this plays out in the work of management in a way that troubles the notion of regulation, discipline and control. I will propose that bodies at work are driven to burnout, excess, and exhaustion, and that understanding this is crucial in recognising that the appeal to the well-being of the occupant needs a great deal of attention.

⁶³¹ Daugman, 'Brain Metaphor and Brain Theory', p. 28.

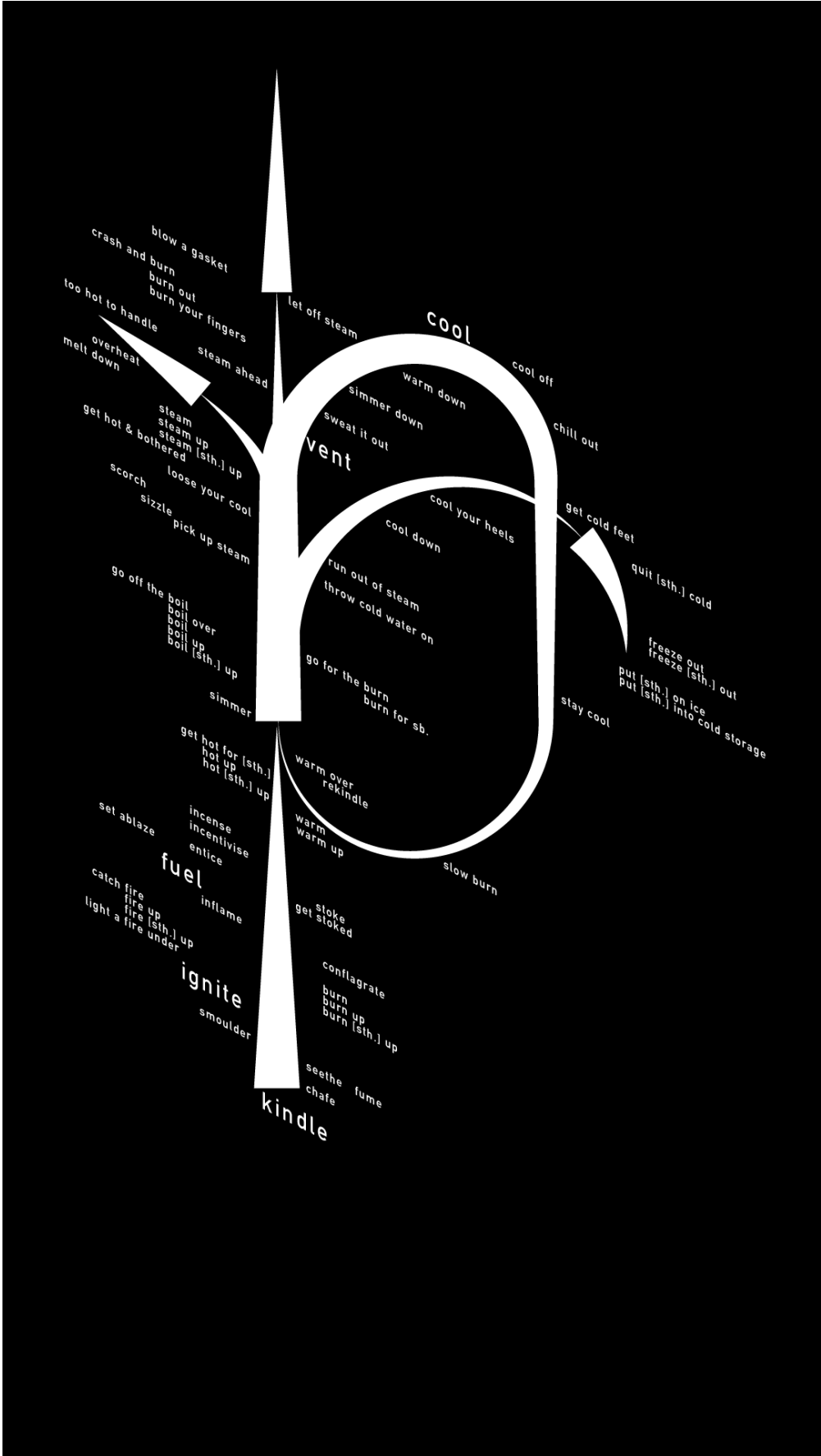


Figure 11. Metaphor Map. Metaphors for heat mapped against the cycle of a steam-engine.

Thermal Imagination

Steven Connor, in his essay 'Thermotaxis', draws attention to the importance of a change in our thermal awareness,⁶³² as the advent of thermodynamic physics – in particular, the employment of thermodynamic metaphor in psychoanalysis – caused a fundamental shift in the use of language.

The thermodynamic revolution, which had to wait until the middle of the nineteenth century to get under way, both generalised the operations of heat in the material circumstances of life, and removed heat from the central symbolic and affective position it had had in cultural life for more than two millennia.⁶³³

The appeal to the thermal imagination in Heschong and other architectural writers in order to attempt to reclaim the central symbolic and affective position is too hasty. The current thermal imagination has presented us with some new affective realities, which have aligned meaningful, emotional and affective life with the conception of labour. The problem is not, as I see it, that we have been disconnected from an affective and emotional symbolism of heat, but that through the influence of thermodynamic ideas, this symbolism has been connected with productivity and working life.

From the nineteenth century onwards, I propose, the concept of the production of energy through the movement of fluids under pressure within an enclosed system has set up a phenomenology of causality in which the body and the thermodynamic machine are enmeshed. The metaphor of the engine, in providing psychoanalysis with a rich vocabulary for the emotional psyche and a model for thinking about emotions and desires as energy flows, has been extensively influential.⁶³⁴ I would also say that the framing

⁶³² Steven Connor, 'Thermotaxis: An essay on the thermodynamics of culture', *StevenConnor.com* (April 2005) <<http://www.bbk.ac.uk/english/skc/thermotaxis/>> [accessed 16 October 2011].

⁶³³ Connor, 'Thermotaxis'.

⁶³⁴ Adrian Forty states that the success of mechanics as a source of metaphor for architecture had little to do with their direct correspondence to structural forces in operation in a building, but was in fact due to 'the availability of these same metaphors to describe states of feeling and emotion in the human subject', the set of metaphors

of the psyche with steam engines is almost understood literally, in describing not only emotions but also the motivations (drives), pressures and consequences of not alleviating the pressure (breakdown).

In the writings of Michel Serres as well as Fernández-Galiano,⁶³⁵ the success of thermodynamics in providing a new epistemological framing for thinking about life, society, the brain and the emotions is for them a central narrative for modernity.

The organism has been seen as a machine from the classical age up to the recent notion of homeostasis. Equilibrium and mobility. It is evidently a thermodynamic system, sometimes operating at very high temperatures, and tending toward death according to an unpredictable and irreversible time.⁶³⁶

The ANGER IS HEAT metaphor is complicated by the continuous recasting of the human as machine; machine as man; society as machine; society as organism, organism as self-regulating machine – and this disturbs the universality of the cognitive linguists' claim. I take the example of overheating, the loss of control and the embedding of thermodynamic metaphors within the language of psychoanalysis and information theory, to propose that what is being alluded to in cognitive metaphor is the steam-engine as much as the body, and differentiating the two is complex.

Returning to the metaphorical analysis of Lakoff et al., and including idioms that are not acknowledged in their study as exemplar phrases, some very strongly conceptualised lexical elaborations suggest that the CONTAINER UNDER PRESSURE is neither an abstract container, nor is it bodily.

for tension and stress already having been appropriated by psychology to describe emotions. Forty concludes his chapter with the idea that the success of scientific metaphors in architecture is not simply because they are scientific but that 'they reinforce other perceptions of architecture... which may be rooted in social or psychological desires.' Adrian Forty, *Words and Buildings* (London: Thames & Hudson, 2004), pp. 86-101; and Daugman, 'Brain Metaphor and Brain Theory', p. 28.

⁶³⁵ Fernández-Galiano, *Fire and Memory*, p. 139.

⁶³⁶ Michel Serres, 'The Origin of Language: Biology, Information Theory, & Thermodynamics', in *Hermes; Literature, Science, Philosophy*, Harari, Josue V. and David F. Bell (eds) (Baltimore, MD: Johns Hopkins University Press, 1982), pp. 73-74.

Getting *steamed up*
Venting her anger
 She went into *meltdown*
Sparks flew

In the use of metaphor, an entire narrative can be sketched out by drawing on one metaphor. ANGER IS HEAT is not simply a subjective feeling of the body's physiological changes, but the HEAT OF A MACHINE THAT WILL BREAK DOWN UNDER A BUILD-UP OF PRESSURE. More specifically: without a theory of thermodynamics the ANGER IS HEAT metaphor has nowhere to go, and an important detail behind the meaning of how emotions generally are conceived of in an energetic sense is lost. ANGER, LUST, ECONOMICS, VIOLENCE, LOVE and much of emotional and affective life are not just heat, but productive heat.

Not all metaphors for anger or heat are bounded by a universal thermodynamic rule: Lakoff and Johnson are right in saying that some elaborations should be discarded. Yet, as distinct and pervasive as the cultural influences of the humoral doctrine on the ANGER IS HEAT OF FLUID IN A CONTAINER, and the religious uses of ANGER IS FIRE metaphors were in the middle ages,⁶³⁷ so is the influence of thermodynamic principles upon emotional metaphor.

Chapter Summary

The analysis of metaphor through creating a database was an aim to go further than the cognitive metaphor of Lakoff and Johnson, Kövecses et al.⁶³⁸ I wanted to account for what they consider to be metaphorical entailments of the consequences of heat on a person: 'to steam up', 'to put the heat on somebody', 'to cool tempers', 'to run out of steam', 'to blow a gasket'. I propose that rather than being limit cases of the HEAT IS ANGER metaphor,

⁶³⁷ Caroline Gevaert, *The History of ANGER: The Lexical Field of ANGER from Old to Early Modern English*, Doctoral Thesis, (KU Leuven, 2007), pp. 229-231, 232, 262-263.

⁶³⁸ An extended discussion on the metaphor methodology, and the work of Caroline Gevaert can be found in appendix I, 'Hot Data', pp. 280-287.

they are integral to the ontology of heat as metaphor. In extending the research to take into account the deployment of energetic models for emotional life drawn from psychoanalysis, I could locate an ontological framework, and make a direct connection between ANGER and LUST with PRODUCTIVITY.

In the corpus of metaphor, I show that expressions and idioms using words for heat can be mapped into an extended group of categories beyond Lakoff and Johnson's ANGER and LUST, and Heschong's 'warmth' and 'comfort'; they are used to talk about productivity, conflict, motivation, economics, hostility and geniality.

The significance of way that the body and technology, emotions and productivity are bound up with one another in the conception of heat is something that the cognitive approach to metaphor underplays significantly. In stating that the origin of metaphor is the body without acknowledging the historical shifts in the body's own epistemology, is to miss a number of important consequences about the significance of metaphor to the thermal imagination. Connor writes that a new conception of thermal awareness is 'one that sees heat as acquiring a new literality, which disturbs the metaphorical uses we make of it.'⁶³⁹

Using dictionary sources – the *Oxford English Dictionary*⁶⁴⁰ and *Oxford Dictionaries*⁶⁴¹ – my corpus of metaphors draws on phrases from current news articles, which are cited in the *OED* and *Oxford Dictionaries*. The word senses in the database have been categorised according to how metaphors are put to use in daily working life, as well as historically. This results in a corpus that is biased toward current affairs and political and economic situations and, in the *Oxford Dictionaries* in particular, sexual and racial

⁶³⁹ Connor, 'Thermotaxis'.

⁶⁴⁰ The OED online resource is a historical dictionary and a largely digitised version of the printed *Oxford English Dictionary*: it includes referenced quotations showing the first recorded usage of the term. <<http://www.oed.com>> [accessed June - October 2014].

⁶⁴¹ *Oxford Dictionaries*, also published by OUP, is a record of current English language usage. It includes example sentences of the word sense in usage at the current time, drawing from the Oxford English Corpus – a databank of material sourced from the internet, with some supplements from academic journals where appropriate to the context. It is a picture of English as a global lingua franca in the twenty-first century, taking sources such as news and media site, blogs and social media from across the world where English is a main language. <<https://www.oxforddictionaries.com>> [accessed June - October 2014].

politics.⁶⁴² Many phrases are related to business, and a high number of phrases refer to finance and technology:

Next, so that you don't suffer from burnout by overworking, take time to review and plan each move that you make toward your leaner, meaner company.

Despite lengthy recruitment and training processes, the picture is of teleworkers prone to stress, leading to burnout and rapid staff turnover.⁶⁴³

They were burning the midnight oil last night, the engineers going over this captured data.⁶⁴⁴

The metaphors for heat evoke emotional and organisational ideas that are deeply embedded within technological culture. Architectural theorist Ingraham acknowledges that it is all too easy to dispense with metaphor as part of an out-of-date discussion belonging to post-structuralist philosophy:

It matters, (if) it is architectural metaphors that are used in biology, and biological metaphors that are used in cybernetics, because metaphors act very precisely, as agents for the transfer of meaning, or, more strictly, as agents for the construction of meaning wherever they occur.⁶⁴⁵

In conclusion, metaphors are not just poetic ornamentation, that merely describes. The metaphors for heat, being specifically those of productive heat, have been active in transferring the vision of emotional energy to the domain of work. The body and its affective capacities are remade by the metaphors for emotions and are put to work in the knowledge and creative economies.

⁶⁴² Within the database are examples of word senses in example phrases that are derogatory, sexist and racist. As they are drawn from the *Oxford Dictionaries* site, where phrases are not contextualised with references to source material or date, these are a good example of the normative power of language to enhance wounds.

⁶⁴³ Example phrases from 'burnout' <<https://en.oxforddictionaries.com/definition/burnout>> [accessed 16 October 2014]

⁶⁴⁴ Example phrase from the phrase "burn the midnight oil" in "burn". <<https://en.oxforddictionaries.com/definition/burn>> [accessed 16 October 2014].

⁶⁴⁵ Catherine Ingraham, *Architecture, Animal, Human: The Asymmetrical Condition* (London: Routledge, 2006), p. 306.

The corpus was also supplemented by metaphors and idioms found in the literature associated with the research into high-tech cultures, the dotcom boom and the stock-market crash that are not included in the Oxford corpora, e.g. ‘hotties of Enron’, ‘warm-bodies’ and ‘burn baby burn’ – a slogan from the 1965 Watts riots used by Enron traders in their telephone discussions as they profited from forest fires during California’s energy crisis in 2000.⁶⁴⁶

As I collected, annotated and mapped the metaphors, it was apparent that a number of metaphors that referenced productivity fell outside of the realm of comfort, or well-regulated temperatures: and that there is a deployment of excessive emotions and passions for the purpose of work. To see the *productive* body as a well-balanced mechanism governed by a regulator would be to underestimate the way that bodies are put to use in advanced capitalism. When the energies of the affects are ‘harnessed’ to ‘fuel’ creativity and ‘drive’ innovation, the emotions that underpin this productivity are not always tempered.

The bringing of affective life (even the irrational desires of emotional excess) into the realm of productivity suggests that the provision of emotional and thermal well-being in the workplace should be treated with some caution. The idea that productive work is only achieved through regulation of the emotions is disrupted by the suggestions of this extended thermal imaginary. Regulated emotions are incompatible with the demands of knowledge work: the call is to be passionate.

This chapter, in providing a critique of cognitive metaphor, has updated an account of thermal culture appropriate to the post-Fordist economy – I propose that the workplace is a site for excitement, passions, desires, libido. In the closing chapter I describe how the expenditure of such affective energies finally leads to exhaustion and burnout.

⁶⁴⁶ From transcripts of the ‘Grandma Millie’ exchange, from November 2000. Richard A. Oppel Jr. ‘Word for Word/Energy Hogs; Enron Traders on Grandma Millie And Making Out Like Bandits’, *New York Times*, 13 June 2004 <http://www.nytimes.com/2004/06/13/weekinreview/word-for-word-energy-hogs-enron-traders-grandma-millie-making-like-bandits.html?_r=0> [accessed 12 June 2014].

Chapter Five

CONTINUOUS IMPROVEMENT

Chapter Outline

I now return to performance in architecture in two ways – I reinvestigate the performance gap and its subsequent framing within the concepts of high-performance management, and I address recent calls from practitioners and academics for the profession to ‘perform’ entrepreneurial subjectivities in order to have an increasing agency.

In this thesis I have traced a line through performativity, bringing it into contact with the concept of ‘thermal performance’ in non-domestic buildings. Elaborating on the concept of the performative, and the theatrical technique of action of Konstantin Stanislavski, I used both as a lens to reappraise the imperatives to perform in sustainable architecture. I raised concerns about the politics of performative action and took critiques of speech-act theory; in particular by Rebecca Kukla and Judith Butler, to suggest limitations of the sovereignty of an intentional, sincere, acting subject.

Understanding that organisational management plays a central role in the negotiation of environmental performance in a workplace, I sought to bring the paradigmatic instances of post-Fordist management strategies to bear on the concepts of performance and performativity in architecture. The ethnographies of tech-culture, and analysis of Silicon Valley style management were a point of departure for reconceiving the occupant in architecture as a post-disciplinary subject, whose internal values are malleable, whose passions are essential to productivity, and whose motivations to self-actualise reorganise relationships with control and management.

I used Bruno Latour’s actor-network theory to begin the work of understanding what the technological objects of thermal control are doing, but challenged the disciplinary stance of the approach. By drawing on post-disciplinary management, supplemented by theatrical performance method, I presented an account for the actions of smart objects that are emerging from Silicon Valley.

In Chapter Four I focused on the specific context of the thermal environments of a building. Expanding the thermal imagination of architectural discourse by extrapolating an ontology for heat from a database of terms for heat, I updated the notion of the workplace in line with the company cultures described in Chapter Two, with a warning that interiors of delight and wellbeing would not necessarily ameliorate the most exploitative activities of organisational management.

I close the thesis by tracing the management imperatives of advanced capitalism to perform continuous improvement, and to put to work the entirety of a subject's cognitive and affective life. I insist on resisting attempts to closing the 'performance gap' by doing, what I call, 'Kaizen Sustainability'.

Drawing out the implications of seeing the architect herself as such a deregulated subject, drawing on theories of immaterial labour, I conclude the thesis by rejecting the call to 'perform' entrepreneurially in 'getting engaged.' I propose instead slow, time-consuming practices of ethical attention, and responsibility for the consequences of actions.

Against Kaizen Sustainability

Outlined in the first chapter was the idea that the terms performance and performativity in architecture are connected to efficacy and efficiency through the framing of the problem of sustainability in the language of the Toyota Production System. Such a process works well enough within the speculative modes of computation: environmental strategies or structural designs can be modelled and assessed in simulations of performance and behaviours (of people, materials, façades, air-flow, costs, etc.). These evaluations can identify areas and opportunities for improvement, optimisation, doing more with less. But the difficulties in getting those performances to repeat in the real physical world are significant.

The performance gap, I suggest, has become framed in the language of the Toyota Production System: as a problem that can be resolved incrementally – what I call an attempt to do ‘Kaizen Sustainability.’⁶⁴⁷ While there is perhaps good reason to assume that applying the logics of high-performance organisational and production processes to the problem of sustainability might be effective; in the movement of terms from the Toyota Production System into the discourse of environmental architecture, there are some critical omissions.

Certain Toyotisms suggest that the processes can be well suited to issues of sustainability: adaptability, efficiency, low-energy manufacture, innovation, waste-reduction, inventory control, doing more-with-less (materials, space, employees).⁶⁴⁸ What is less clear is the degree to which the socio-discursive aspects of Toyota – the complex logistics, increase in

⁶⁴⁷ Kaizen is a Japanese term that has become very specifically connected to the Toyota Production System and derivatives of it. Its literal meaning is ‘good change.’ ‘Toyota Production System glossary’, *Blog.Toyota.co.uk* (31 May, 2013) <<http://blog.toyota.co.uk/toyota-production-system-glossary>> [accessed 14 March 2017]; and Keller Easterling, *Extrastatecraft: The Power of Infrastructure Space* (London: Verso, 2014), p. 186.

⁶⁴⁸ Components are standardised so that different models of a product can be efficiently produced in response to feedback from distributors: employees are trained for more than one role, so they can be deployed to another production cell as demand for a product requires, thus economising on both materials and workforce. Toyota Corporation, ‘Toyota Production System’, *Toyota Motor Corporation Global Website* <http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/> [accessed 22 April 2017].

communication, the active cognitive participation of employees at all levels – might contribute or confuse.⁶⁴⁹

The occurrence of management language in environmental discourse should be interrogated since what is at stake is whether the outcome of such performance achieves any of its aims to reduce carbon emissions.

The apparent methodological transfer from the processes of quality control and efficient production to architecture fails at a critical point: for where is the feedback? The crucial part of the continuous improvement model in manufacture is tight feedback loops. The Toyota Production System (TPS) operates according to a just-in-time logic where, because of an extensive system of inventory control facilitated by communication protocols, problems are identified quickly and acted upon in response to targets set for production, demands from consumers, problems in the supply chain and so on.⁶⁵⁰

The method of getting feedback is not a trivial matter: attempts to incorporate a form of sensible evaluation of the actual performance of architecture in-use was first introduced in the United Kingdom in 1963.⁶⁵¹ Stage M – Feedback, was a proposal that architects ‘return to their projects after a year or so to review their performance in use.’⁶⁵² This was withdrawn from the Architects Appointment document in 1972, since there was an ambiguity over who would cover the costs of such a study.⁶⁵³ ‘Stage M: [...] the obligation to gather data on how well each completed project had met

⁶⁴⁹ BIM (Building Information Modelling) arguably offers such discursive and collaborative possibilities, Peggy Deamer promotes BIM as having a potential for forming new collaborative platforms, whilst Nick Beech, Linda Clarke and Christine Wall warns that the ‘utopian’ fantasy of working in real time on a ‘virtual model’ may not bring ‘craft’ and ‘creativity’ into the process, but might see the active participation of architects and other skilled workers erased whilst still using their skills. Peggy Deamer, ‘Architectural Work: Immaterial Labour’, *Industries of Architecture*, Katie Lloyd Thomas, Tilo Amhoff and Nick Beech (eds) (Abingdon, Oxon: Routledge, 2015), pp. 137-147 (pp. 145-146); Nick Beech, Linda Clarke and Christine Wall, ‘On Site’, *Industries of Architecture*, Katie Lloyd Thomas, Tilo Amhoff and Nick Beech (eds) (Abingdon, Oxon: Routledge, 2015), pp. 305-309 (p. 309).

⁶⁵⁰ Easterling, *Extrastatecraft*, p. 185.

⁶⁵¹ Frank Duffy, ‘Buildings and their use: the dog that didn’t bark’, *Architecture Beyond Criticism: Expert Judgment and Performance Evaluation*, Wolfgang F. E. Preiser, Aaron T. Davis, Ashraf M. Salama and Andrea Hardy (eds) (Abingdon, Oxon: Routledge, 2015), pp. 128-132 (p. 130).

⁶⁵² Bill Bordass and Adrian Leaman, ‘Building Performance Evaluation in the UK: so many false dawns’, in *Architecture Beyond Criticism: Expert Judgment and Performance Evaluation*, Wolfgang F. E. Preiser, Aaron T. Davis, Ashraf M. Salama and Andrea Hardy (eds) (Abingdon, Oxon: 2015), pp. 160-170 (p. 160).

⁶⁵³ Bordass and Leaman, ‘Building Performance Evaluation in the UK’, p. 161.

the client's original objectives, was never made mandatory or put into operational effect⁶⁵⁴ as a result 'architects did very little routine feedback'.⁶⁵⁵

The next attempt to formalise feedback was the introduction of 'Work Stage 7 - In use' in 2013 to the RIBA Plan of Work.⁶⁵⁶ It includes a Post-Occupancy Evaluation, a Post-Project Review and as yet unspecified 'new duties' for the architect.⁶⁵⁷ It is unclear how these will work in practice, as the feedback to the design stage would be somewhat undermined in the event where an architect is not engaged throughout all the stages.

Bill Bordass, who has long made advocacy for feedback his professional aim, and was instrumental in the implementation of Performance Certificates for in-use energy consumption, recognises that much of the good intentions of carrying out post-handover studies of buildings are never realised. Building services management is largely outsourced to sub-contractors, rather than being carried out in-house, 'outsourcing [...] crucial feedback loops'.⁶⁵⁸ This situation, he points out, is repeated at a governmental level, where the institutions that would consolidate data on performance have themselves been privatised, leaving gaps.⁶⁵⁹

Further, he identifies 'a preference to celebrate and often over-play successes (or supposed successes) but not to publish the findings from failures, so allowing mistakes to be repeated indefinitely.'⁶⁶⁰ Not least because of the spectre of litigation accompanies such an acknowledgement of failure.⁶⁶¹ Instead buildings are presented as prototypes, 'spaces and

⁶⁵⁴ Frank Duffy, 'Buildings and their use: the dog that didn't bark', p. 130.

⁶⁵⁵ Bordass and Leaman, 'Building Performance Evaluation in the UK', p. 161.

⁶⁵⁶ Bordass and Leaman, 'Building Performance Evaluation in the UK', p. 161.

⁶⁵⁷ *RIBA Plan of Work 2013* (London: RIBA, 2013) <<https://www.ribaplanofwork.com/Download.aspx>> [accessed 1 August 2016]; and *RIBA Plan of Work 2013 Overview Document* (London: RIBA, 2013), p. 27 <<https://www.ribaplanofwork.com/Download.aspx>> [accessed 1 August 2016].

⁶⁵⁸ Bill Bordass in Bill Bordass and Adrian Leaman, 'Building Performance: The Bigger Picture', *UCL Energy Institute Masterclass* (12 June 2013) available at <<https://youtu.be/92L0IDGWi3U>> [accessed 1 August 2016].

⁶⁵⁹ Bordass and Leaman also point to the privatisation of the Government's own infrastructure for assessing building performance, including the BRE (Building Research Establishment), privatised in 1997. Bordass and Leaman, 'Building Performance Evaluation in the UK', p. 164.

⁶⁶⁰ Bordass and Leaman, 'Building Performance Evaluation in the UK', p. 162.

⁶⁶¹ Nigel Oseland, 'Foreword', *Architecture Beyond Criticism: Expert Judgment and Performance Evaluation*, Wolfgang F. E. Preiser, Aaron T. Davis, Ashraf M. Salama and Andrea Hardy (eds) (Abingdon, Oxon: 2015), p. xxxii.

systems put together in new ways, with potentially unpredictable outcomes.⁶⁶²

Thus the performance gap identified by Bordass is not only the discrepancy between a speculative performance of architecture and the reality of performance once the building is occupied, but also a ‘complete knowledge gap, a complete lack of feedback’⁶⁶³ on the performance of a building to its creators. Further, the ‘performance gap’ becomes locked into a prerequisite that we perform incremental improvements with the goal of attenuating the gap: the term ‘continuous improvement’ (a phrase from the Toyota Production System) is explicitly cited as a strategy for improving the performance⁶⁶⁴ of buildings through the incremental readjustment of the process of design on the Zero Carbon Hub, amongst others.⁶⁶⁵

In presenting the continuous improvement model through incremental changes, does it tacitly accept the belief that the *only* way to address sustainability is through small concrete actionable improvements to existing processes, and thus foreclose strategies for action? There are many within the architecture and engineering community, such as Bordass, who have upheld very strong positions on the critical situation of environment, whose efforts to implement transformational change have repeatedly been reduced to small concessions, or rendered ineffectual by a lack of commitment to embedding them meaningfully into the responsibilities of the profession.

Is the belief that if everybody ‘does their bit’ premised upon a false logic? I am suggesting so. If the claim is that incremental actions have (positive) effects, then how is that accounted for? There is a very clear

⁶⁶² Ian Cooper cited in Oseland, ‘Foreword’, *Architecture Beyond Criticism*, p. xxxii.

⁶⁶³ Bill Bordass, ‘Building Performance: The Bigger Picture’, *UCL Energy Institute Masterclass*.

⁶⁶⁴ Using the model of Kaizen to attenuate the gap between predicted and actual use begs the question: in the context of the built environment, what process is the equivalent to continuous improvement? Post-occupancy evaluations are far too slow and have many shortcomings (not least the failure to acknowledge that any feedback is mediated through a number of different agents, including building services engineers, facilities managers, evaluations, a sub-contractors’ laptop, smart meters). Will feedback ever return just-in-time to deliver an improvement on the next iteration?

⁶⁶⁵ ‘Performance Gap’, *Zero Carbon Hub*, website <<http://www.zerocarbonhub.org/current-projects/performance-gap>> [accessed 8 August 2016].

discrepancy between the deployment of Toyotist language and practice. Its appeal as a metaphor, or a model for action, should be questioned.

I draw upon Isabelle Stengers' work to propose that the performance gap is an 'interstice' – a moment to pause, to question, to slow down – to inquire 'what are we are busy doing?'⁶⁶⁶ Stengers outlines in her essays 'Cosmopolitical Proposal', and 'Gaia, the urgency to Think (and Feel)', an insistence that we ask ourselves whether the work we are engaged in is delaying us from fully attending to reality. She asks whether the 'the knowledge we produce [is] able to add reality to, rather than to subtract reality from, the urgency to think and feel, with our own means, the mute urgency whose name is Gaia?'⁶⁶⁷ I ask whether, the small incremental acts that we are busy doing, in the name of 'making the world a better place' are in fact a method of keeping one from attending to the facts.

As I discussed in Chapter Two, the transference of the Toyota Production System into the knowledge industries brought with it processes of subjectivication through participation: these centred around actions elicited through shared identification with a common goal. In the Silicon Valley Management style this was seen in connecting the routine and repetitive work of programming to 'making the world more connected'⁶⁶⁸ or developing new apps for 'making a difference' during the Arab Spring.

When the goal of Toyotist production is the efficient manufacture and timely delivery of cars, or in 'lean UX', where the focus is on getting software out into the hands of the users, and then incrementally improving in it response to customer feedback,⁶⁶⁹ the scales are commensurable with the aims. When transferred to sustainability, there is a large-scale

⁶⁶⁶ Isabelle Stengers, 'The Cosmopolitical Proposal', *Making Things Public: Atmospheres of Democracy*, Bruno Latour and Peter Weibel (eds) (Boston, MA: MIT Press, 2005), pp. 994-1003 (p. 996).

⁶⁶⁷ Isabelle Stengers, 'Gaia, the Urgency to Think (and Feel)', *Os Mil Nomes de Gaia* (2014) <<https://osmilnomesdegaia.files.wordpress.com/2014/11/isabelle-stengers.pdf>> [accessed 3 October 2016].

⁶⁶⁸ One page of Facebook's Little Red Book informs employees that one engineer is responsible for one million Facebook users. Office of Ben Barry, 'Facebook's Little Red Book', *BenBarry.com* <<http://benbarry.com/project/facebook-little-red-book>> [accessed 28 June 2016].

⁶⁶⁹ This process is known as continuous beta, launching a product or software before it is completed, and making incremental improvements and fixes in response to real user feedback. Google Engineer 'ahab' describes 'continuous beta' on the 'Google Docs Help Forum', *Google Product Forums* <<https://productforums.google.com/forum/#!topic/docs/bOTiHCg12ZQ>> [accessed 17 April 2017].

difference between keeping track with the impact of our way of life on the planet, and the actual energy usage of a building. As Innovate UK's report showed, keeping pace with the speculative BREEAM ratings and localised Carbon Emissions is proving difficult enough.

If we knew how to connect the processes of Toyota meaningfully to its outcomes, and feedback – would it help? I remain doubtful. The goals of performance are 'sustainability', itself a rather underspecified and ambiguous aim. We mustn't subscribe to the grand myths and missions of Silicon Valley, where making a better world is appealed to as justification for the actions.

For as long as we delay the urgency of our predicament, we are consigned to 'fiddling while the earth burns.'⁶⁷⁰

⁶⁷⁰ The phrase is a play on the accusation that the Emperor Nero 'fiddled while Rome burned', the first instance of this version is unknown, but is used to refer to people who keep themselves busy with trivial matters rather than attending to critical and serious matters.

Hotties

In 1999, management guru Tom Peters presented a millennial subjectivity worthy of the dotcom age: 'Icon Woman' would be '[...] turned on by her work! The work matters! The work is cool! She is in your face! She is an adventurer! She is the CEO of her life! [...] She is determined to make a difference!'⁶⁷¹ In the same year, Po Bronson published an account of Silicon Valley: *The Nudist on the Late Shift* was the ultimate symbol of a freely self-actualising individual working in the 'Garden of Eden' of Silicon Valley's tech industry.⁶⁷² By the early 2000s, a stock market crash and corporate accounting scandals had reconfigured the tech industry. Former employees of Enron and WorldCom pose nude for Playboy – 'I'm free-spirited, open and sexual'⁶⁷³ a self-dubbed 'Hottie' of Enron declares.

The hypothesis I outlined in Chapters Two and Four was that the work environments in the knowledge economy (exemplified by the Silicon Valley Management style) are managed in such a way as to enable employees to realise their full potential through meaningful work. From the basic physiological needs of comfort, extending through to the senses of belonging and esteem and finally to self-actualisation, these cultures elicit 'fun, excitement, enthusiasm, the joy of hard work, a "high" from achievement' through a passionate commitment in their employees in ways that align with the company ideology.⁶⁷⁴

Working with the subjectivities of emotional capitalism, immaterial labour⁶⁷⁵ and knowledge work,⁶⁷⁶ I take the entrepreneurial subject of the dotcom boom and bust – an individual free to realise and exploit her own

⁶⁷¹ Tom Peters, 'What Will We Do for Work?', *TIME magazine*, 155.21 (2000), pp. 68-71 (p. 69).

⁶⁷² Po Bronson, *The Nudist on the Late Shift and Other Tales of Silicon Valley* (London, Vintage: 2000) also available at <http://www.pobronson.com/index_nudist.htm> [accessed 5 Feb 2016].

⁶⁷³ 'Women of Enron Uncover Their Hidden Assets', *Playboy* (August 2002) pp. 118-124 (p. 124).

⁶⁷⁴ Kunda, *Engineering Culture*, pp. 90-91.

⁶⁷⁵ Peggy Deamer, 'Introduction', *The Architect as Worker: Immaterial Labor, the Creative Class, and the Politics of Design*, Peggy Deamer (ed.) (London: Bloomsbury, 2015), pp. xxvii-xxxvi (p. xxxii).

⁶⁷⁶ Peter F. Drucker, *Landmarks of Tomorrow: A Report on the New Post Modern World* (London: Heinemann; 1959), pp. 76, 91; Easterling, *Extrastatecraft*, p. 183; and Rick Wartzman, 'What Peter Drucker Knew About 2020', *Harvard Business Review* (16 October 2014) <<https://hbr.org/2014/10/what-peter-drucker-knew-about-2020>> [accessed 14 March 2017].

bodily and affective capital (her naked body, her libido, her passions, what she cares about) – to investigate the consequences of putting the passions to work in the performance of these subjectivities.

In this chapter I challenge proposals in architecture that draw on the scholarship on immaterial labour who locate in moments of excess and subversion possible gaps for action. I bring the concept of emotional labour from sociologist Arlie Russell Hochschild into dialogue with the work of management theorists and sociologists who have conducted ethnographic research into the formation of subjectivity in organisational culture in the high-tech and knowledge industries (Catherine Casey, Gideon Kunda, and Yiannis Gabriel).⁶⁷⁷ Parallels can be drawn between Hochschild's ethnographic work on how emotions are managed and put to work in the service industries⁶⁷⁸ and the elicitation and management of moods, behaviours and attitudes in employees in the Silicon Valley style management.

I will address the resulting ambiguities and pressures upon a subject who is called to perform their emotions through and at work, by investigating the two strategies by which employees aim to overcome them. In one the subject aims to suppress ambivalence and identify deeper with the company. This can be done with Hochschild's concept of 'deep acting'⁶⁷⁹ where the employee endeavours to 'really feel' the emotions that a company culture promotes by deploying Stanislavski's earlier method of 'emotion memory'.⁶⁸⁰ In the second, the subject enacts a distancing strategy, often through cynicism, or subversion, performing as if they meant it while privately believing something else.

⁶⁷⁷ Catherine Casey, "'Come, join our family": Discipline and integration in corporate organizational culture', *Human relations* 52.1 (1999), 155-178; Gideon Kunda, *Engineering Culture: Control and Commitment in a High-Tech Corporation* (Philadelphia: Temple University Press, 2009); and Yiannis Gabriel, 'Beyond happy families: A Critical Re-evaluation of the Control-Resistance-Identity Triangle', *Human Relations*, 52.2 (1999), 179-203.

⁶⁷⁸ Arlie Russell Hochschild, 'Emotion Work, Feeling Rules, and Social Structure', *American Journal of Sociology*, 85:3 (1979), 551-575.

⁶⁷⁹ Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley, CA: University of California Press, 2003), pp. 38-55.

⁶⁸⁰ Hochschild, *The Managed Heart*, p. 41.

Ethnographic studies on emotions in the workplace and the resulting ambivalence by Gabriel and Casey signal that the strategies used in company cultures and the service industries produce precarious subjectivities in ways that challenge the proposition that immaterial labour could be a site of political resistance.⁶⁸¹

I investigate the concept of uptake and the limitations of being able to complete such an action as intended, where there is a potential to do and undo the performer. Using Rebecca Kukla and Rae Langton's critiques of speech-act theory to question the sovereignty of the subject, and the possibilities of 'mastering' the performative,⁶⁸² I draw on the constitutive effects of performativity in the work of Vikki Bell and Judith Butler to warn that such subversion is too easily negated: the subject is constituted through the performances she makes.⁶⁸³

Where the passions and authentic energies of excess are seen as moments of opportunity to confound the logic of neoliberal capitalism and its exploitative effects, Eva Illouz's claim that capitalism itself is intensely emotional,⁶⁸⁴ draws attention to the way that deregulation and exploitation of the emotions are by organisational fiat. The spaces of 'subversion' have already been territorialised by advanced capital and are in danger of being organisationally sanctioned 'creative destruction' and 'disruptive talent' – or it leads to burnout.

⁶⁸¹ Casey, "'Come, join our family'", pp. 169, 174-176; and Gabriel, 'Beyond happy families', p. 191.

⁶⁸² Rebecca Kukla, 'Performative force, convention, and discursive injustice', *Hypatia* (29 Feb 2014), 440-457; and Rae Langton, 'Speech Acts and Unspeakable Acts', *Philosophy & Public Affairs*, 22.4 (1993), 293-330.

⁶⁸³ Vikki Bell, 'Declining Performativity Butler, Whitehead and Ecologies of Concern', *Theory, Culture & Society* 29.2 (2012), 107-123 (p. 109); and Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (London: Routledge, 2006), p. 181; and Judith Butler, *Excitable Speech: A Politics of the Performative* (London: Routledge, 1997), p. 45.

⁶⁸⁴ Eva Illouz, *Cold Intimacies: The Making of Emotional Capitalism* (Cambridge: Polity Press, 2007).

Getting Engaged

Andrea and I expressed some exuberance of our own by finally getting married that spring. She always jokes that it took me three tries to propose to her, because I kept popping the question in Fedspeak, but that is not true. Actually I proposed five times – she missed a couple. On Christmas Day 1996, though, the message finally got through and she said yes. – Alan Greenspan⁶⁸⁵

The speech act, as the act of a speaking body, is always to some extent unknowing about what it performs, that it always says something that it does not intend, and it is not the emblem of mastery and control it sometimes purports to be. – Judith Butler⁶⁸⁶

Recognising that the discipline of architecture has become entangled with and compromised by the political and economic shifts of the last forty years, architects and academics have responded with calls for increasing engagement with some of the major actors: large corporations and business communities of technology, and the fossil fuel industry, are examples.

In this final section, I evaluate proposals that the architect should take on an entrepreneurial subjectivity to ‘get engaged’ directly with the most troubling and powerful agents by performing or enacting subjectivities that give them a seat at the table – and a voice. Seeing the limitations of oppositional politics or state intervention, these strategies are promoted as having more agency to shape the outcomes, conduct critique and enact resistance.

The examples I take are illustrative of a ‘performative approach’ and a tendency to overextend the agencies of intention and (in)sincerity. I want to discuss the limitations of performance as a method and clarify my approach

⁶⁸⁵ Alan Greenspan, *The Age of Turbulence*, p. 179.

⁶⁸⁶ Butler, *Excitable Speech*, p. 10.

as one for attending to the outcome of actions performed, rather than training to perform them ‘cynically’, ‘knowingly’ or ‘subversively’.

The examples are proposed by Rem Koolhaas and Peggy Deamer amongst others.⁶⁸⁷ Koolhaas suggests getting engaged with Silicon Valley as a matter of urgency, as he sees as architects becoming irrelevant form-makers in the convergence of digital technologies with the physical world. Deamer, meanwhile, advocates that architects address the conditions of architecture as immaterial labour, both as an aim for improving working conditions for architects and as a political strategy for ‘direct[ing] capitalism towards more responsible aims.’⁶⁸⁸

I want to draw attention to some of the problems posed in suggesting that architects get engaged – whether ultimately they are saying ‘I do’, ‘I don’t’ or ‘I prefer not to’. I outline the problems of intention⁶⁸⁹ and the ethical blurring⁶⁹⁰ of enacting an entrepreneurial subjectivity that seeks to comply knowingly, ironically or satirically in order to affect change. Using Rebecca Kukla’s work to interrogate the requisite conditions of uptake in giving orders and suggest the inability to be in full control of performative actions.⁶⁹¹ From the problems of ambivalence⁶⁹² in recalcitrance and passive resistance, to the market value of subversion⁶⁹³ and the subjectivity of being a disruptive talent,⁶⁹⁴ I warn against the adoption of an entrepreneurial role for architects who wish to act politically and conclude by pointing instead

⁶⁸⁷ Keller Easterling also proposes devising new strategic performances with which the architect can ‘expand [their] repertoires of political activism.’ Keller Easterling, ‘promotional matter for Extrastatecraft’, *KellerEasterling.com*, website < <http://kellereasterling.com/books/extrastatecraft-the-power-of-infrastructure-space> > [accessed 27 September 2016].

⁶⁸⁸ Peggy Deamer, ‘Architectural Work: Immaterial Labour’, *Industries of Architecture*, Katie Lloyd Thomas, Tilo Amhoff and Nick Beech (eds) (Abingdon, Oxon: Routledge, 2015), p. 146.

⁶⁸⁹ John Langshaw Austin, *How to do Things with Words* (Oxford: Oxford University Press, 1975).

⁶⁹⁰ The idea of ‘ethical blurring’ came from Saladin Meckled-Garcia, in a discussion on ‘intentions’ without criteria and evidence, in *Practising Ethics in the Built Environment*, convened by Jane Rendell at UCL in relation to Academic Freedom and University Research. *Practicing Ethics in Built Environment Research* <<https://www.ucl.ac.uk/bartlett/architecture/events/2015/jun/practicing-ethics-built-environment-research>> [accessed 18 June 2015].

⁶⁹¹ Rebecca Kukla, ‘Performative Force, Convention, and Discursive Injustice’, *Hypatia* (29 Feb 2014), 440-457.

⁶⁹² Catherine Casey, “‘Come, join our family’”, pp. 161-179; and Gabriel, ‘Beyond Happy Families’, pp. 190-191.

⁶⁹³ Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (London: Routledge, 2011).

⁶⁹⁴ A concept introduced to me by Katie Lloyd Thomas and coined by psychologist Martyn Sokol of OE Cam, a Cambridge-based performance consultancy firm in 2015.

towards an ethical ‘taking care’,⁶⁹⁵ paying attention to the ways that such performances undermine or overextend our intentions, in cases where one can be both inactive and too active.

I Do?

Since the 2014 Venice Architecture Biennale, the architect Rem Koolhaas has been promoting a thesis on the state of architecture.⁶⁹⁶ His initial premise is that after 35 years of neoliberal market-driven economy, presaged by the 1980 election of Ronald Reagan as President of the United States, architects have been left behind. No longer relevant to the production of the built environment, except as ‘so-called form-givers’ – an ‘increasingly precarious and hollow role’⁶⁹⁷ – their former position of working as extensions of the state in a civic capacity has shifted to one in which the architect works for the market and whichever private enterprise is setting the agenda.

His second premise is that in that time, the ubiquitous elements that architects deploy ‘anytime, anywhere’⁶⁹⁸ have, independently of an architectural theory, evolved beyond a technological revolution of mass production and regulatory requirements into a new digital paradigm. Koolhaas has been encouraging architects to collaborate with Silicon Valley, to move from their marginal role to take up strategic positions where they can influence the profound changes taking place. He presents a situation whereby architecture is indispensable to Silicon Valley, proposing that architects can help Silicon Valley techno-enthusiasts overcome their impulse to uncritically solve every problem.⁶⁹⁹

⁶⁹⁵ Isabelle Stengers and Vincienne Despret, ‘Marcelle, Nothing Forbids’, *Women Who Make a Fuss* (Minneapolis: Univocal, 2014), p. 141.

⁶⁹⁶ Rem Koolhaas, ‘The Smart Landscape: Intelligent Architecture’, *Artforum International*, 53: 8 (April 2015), 212-216; and Rem Koolhaas, *Fundamentals 14th International Architecture Exhibition - La Biennale Di Venezia*.

⁶⁹⁷ Koolhaas, *The Smart Landscape*, p. 213.

⁶⁹⁸ Koolhaas, *Fundamentals*.

⁶⁹⁹ Is this not Koolhaas’ way of cynically ‘surfing’ the wave of ambiguity embedded in the Silicon Valley model? Charles Jencks calls Koolhaas a ‘surfer’ proposed riding the wave afforded by neo-liberalism in the late ’70s.

We should be wary of Koolhaas' exhortations to architects to become engaged in an entrepreneurial spirit. His calls to architects to innovate and become more entrepreneurial come with the implication that this is the only way in which the profession will have a stake or influence in a market-driven capitalist future.

There are two possibilities for this type of engagement: one is to do so authentically – to openly aim to 'direct capitalism into more responsible ways'; the other is to do so subversively, in the hope that it will disable capitalism's most damaging effects.

However Koolhaas wishes to retain a cynicism at the same moment that he gets engaged.⁷⁰⁰ On a visit to d.school (a 'hub for innovators' at Stanford University in California) Koolhaas greets the journalist accompanying him with a wry 'So, what are you disrupting?' revealing an ironic, insincere performance. Koolhaas, it appears, wants to 'surf' the opportunities, and retain his agency to affect the outcomes, without fully committing to the performance.

Ambivalence

While the culture is [...] founded on self-awareness, reflection [...] there are also subtle forms of domination [...] and deeply ingrained ambiguity. [...] Where an overarching morality is preached, there is also opportunistic cynicism; and where fervent commitment is demanded, there is pervasive irony.⁷⁰¹

Gideon Kunda writes that it is very common for employees to simultaneously hold an adherence to a company culture and its contradictory cynicism.⁷⁰² There is a deep contradiction in which the subject

Charles Jencks, '39 Steps to Surfing or, The Trajectory of Rem Koolhaas', *ANY 9: Urbanism vs Architecture: The Bigness of Rem Koolhaas*, (November/December 1994), pp. 41-45.

⁷⁰⁰ Pooja Bhatia, 'Rem Koolhaas Takes Silicon Valley', *OXY* (28 December 2014) <<http://www.ozy.com/rising-stars-and-provocateurs/rem-koolhaas-takes-silicon-valley/36643>> [accessed 26 April 2015].

⁷⁰¹ Kunda, *Engineering Culture*, p. 222.

⁷⁰² Kunda, *Engineering Culture*, p. 222.

is ‘an ambivalent, fluctuating, ironic self, at war with itself and with its internalised images of self and other.’⁷⁰³ Such a ‘cognitive and emotional confusion’⁷⁰⁴ is held by even the most committed employees – or ‘members’, as they are often called in such companies. Catherine Casey, identifies that such an ambivalence is the ‘most pervasive and manifest effect of the experience of working in the new culture’⁷⁰⁵ – while wishing to believe in the company’s narrative, employees ‘unconsciously both collude with and resist the simulated sociality of the team-family.’⁷⁰⁶ And for Yiannis Gabriel, cynicism is based on the individual’s acknowledgement of their instrumental dependence on an organisation and a simultaneous denial of their psychological attachment to it. Thus, ‘the cynic’s core fantasy is the belief that they can remain “unpolluted” – untouched by the organisation’s iniquities, even as they profit from its bounty.’⁷⁰⁷

Where ambivalence is seen as the position of security, Gabriel, drawing on a psychoanalytical approach warns that ambivalence is precisely what we should guard against.⁷⁰⁸ Cynicism and distancing are seen by Gabriel as ‘disabling a critical viewpoint’ from which resistance could be made.⁷⁰⁹ Cynicism or knowingness is no effective insulator between the self and the corporation. The ambivalence of the employee is where the management of subjectivity becomes the most effective.

However the recognition that we are within, and part of, the system that is under critique is related to the politics of immanence.⁷¹⁰ Peggy Deamer develops the Italian Autonomist position of Lazzarato, Franco Berardi and Paolo Virno in which the workplace of the cognitive labourer is

⁷⁰³ Kunda, *Engineering Culture*, p. 221.

⁷⁰⁴ Gabriel, ‘Beyond Happy Families’, p. 190, referring to Catherine Casey, “Come Join Our Family”, pp. 160-171.

⁷⁰⁵ Casey, ““Come, Join Our Family””, p. 169.

⁷⁰⁶ Casey, ““Come, Join Our Family””, p. 170.

⁷⁰⁷ Gabriel, ‘Beyond Happy Families’, p.191.

⁷⁰⁸ Gabriel cites ‘Freud’s later view, according to which ambivalence is something to be defended against rather than the outcome of the defence’, Gabriel, ‘Beyond Happy Families’, p. 190.

⁷⁰⁹ Gabriel, ‘Beyond Happy Families’, p. 191.

⁷¹⁰ For Rosi Braidotti a feminist immanent position ‘assumes the humility of saying “we are a part of capitalism” and counters the tendency to try to locate the specific break-points of capitalism. Rosi Braidotti, interviewed by Heather Davis, ‘Thinking with Zoe: An Interview with Rosi Braidotti’, *AModern.net* <<http://amodern.net/article/amoderns-thinking-zoe/>> [accessed 5 September 2016].

a site for an immanent political subjectivity that can offer up resistance to the dominant economic and political modes of governance of late capitalism.⁷¹¹

Deamer invites us to see the valences of the ‘knowledge worker’ as opportunities asking ‘who is this knowledge worker and what makes her so successful?’ She sees the knowledge worker as a subjectivity that can be taken advantage of, and seeks ways of ‘occupy[ing] it without resorting to the power structures that monetize it directly in the form of intellectual property or indirectly in taking advantage of our “free” creative time.’⁷¹²

Angela McRobbie points out the naivety of celebrating the potential of ‘proto-communism of contemporary economic forms and the forms of biopower which shape up amenable kinds of subjectivities’ – she warns that moments and interstices that present themselves as potential emergence of a political resistance – are momentary and fleeting in the ‘landscape of capitalist domination, which entails new levels and forms of submission.’⁷¹³

Deamer seeks to clarify this ambiguous position when she classes architectural labour as immaterial labour.⁷¹⁴ She makes a distinction between Peter Drucker’s ‘knowledge work’ and the ‘immaterial labour’ of Maurizio Lazzarato: knowledge work is ‘that which capitalism chews on easily’ and immaterial labour is ‘that which it can’t easily digest.’⁷¹⁵

But what qualifies as an indigestible subjectivity? Presumably Tom Peter’s CEO, ‘turned on by her work’, Po Bronson’s ‘nudist’ are subjectivities that can be chewed on easily in saying ‘yes’. But what about the Enron Hotties, who in protest at the large corporate entity Enron, pose nude for

⁷¹¹ Deamer, ‘Architectural Work: Immaterial Labour’, p. 147.

⁷¹² Peggy Deamer, ‘Architectural Work: Immaterial Labour’, *PeggyDeamer.com* <http://www.peggydeamer.com/images/architectural_work_IOA.pdf> [accessed 4 September 2016].

⁷¹³ Angela McRobbie, ‘Reflections on Feminism, Immaterial Labour and the Post-Fordist Regime’, *New Formations*, 70.70 (2011), 60-76 (p. 70).

⁷¹⁴ Peggy Deamer, ‘The Architect as Activist’, *Culture Matters*, <<http://culturematters.org.uk/index.php/itemlist/user/721-peggydeamer>> [accessed 28 March 2017]; and Peggy Deamer, Quilian Riano and Manuel Shvartzberg, ‘Identifying the Designer as Worker’, *MasContext.com* <<http://www.mascontext.com/tag/manuel-shvartzberg/>> [accessed 28 March 2017].

⁷¹⁵ Peggy Deamer, ‘Architectural Work: Immaterial Labour’, p. 144.

another large corporate entity: Playboy? What are they, in claiming their ‘free-spirited’ sexuality – disrupting?

The feminist Deleuzian philosopher Rosi Braidotti urges us to take note of the fact that capitalism doesn’t break, but bends to accommodate all new forms of action.⁷¹⁶ Indeed, Deamer concedes that enacting such a position ‘will not bring on the revolution, but it will direct capitalism into more responsible enterprises.’

Ethical Blurring⁷¹⁷

The proposal that engagement with companies or practices that one sees as potentially ethically problematic on their terms, in order to promote more responsible courses of action, was a key session topic at Professor Jane Rendell’s *Practising Ethics in the Built Environment Symposium* held in the summer of 2015 at University College London.⁷¹⁸ Saladin Meckled-Garcia, Director of the Institute for Human Rights at UCL, presented the philosophical case of whether one could indeed engage with a company, such as a fossil fuel company, with the hope of ‘making a difference’.

The argument for getting engaged (saying ‘I do’) is that, in having a voice on a panel alongside the senior management of a company, academics and practitioners can be more influential than they would be if their engagement is antagonist (saying I don’t). From their academic position, they suggest, they can present the case for following more responsible practices. This, Meckled-Garcia suggests, is a case of ethical blurring, since there are no processes in place to measure whether any change had been effected by such engagement.⁷¹⁹ After prolonged

⁷¹⁶ Braidotti and Davis, ‘Thinking with Zoe’.

⁷¹⁷ I attribute this term to the political philosopher Saladin Meckled-Garcia, *Practising Ethics in Built Environment Research* (University College London, 29-30 June 2015) [attended 29 June 2015].

⁷¹⁸ Jane Rendell (organiser), *Practising Ethics in Built Environment Research* <<https://www.ucl.ac.uk/bartlett/architecture/events/2015/jun/practicing-ethics-built-environment-research>> [accessed 18 July 2015].

⁷¹⁹ Meckled-Garcia, *Practising Ethics in the Built Environment Symposium*.

engagement – how does the academic ensure that they are not themselves changed by the engagement?

Gabriel writes that the result of feelings of ambivalence in an employee is that they either suppress negative aspects of working for the company whilst embracing the culture wholeheartedly, or that they use strategies of cynicism and distance themselves from the culture. In both cases the subject's individualism is constructed around the company culture, in their choosing to either embrace it or reject it (with the belief that they can resist being affected by it – even as they benefit from the perks).

The tendency to believe that a critical stance can be performed from within the systems under critique is falsely premised. The Autonomist proposition is premised on the existence of the worker in her own right before she is inserted into a work context. While Maurizio Lazzarato, one of the principal theorists of immaterial labour, suggests that industry does not form or create this new labour power, this idea sits in opposition to the processes of subjectivation in the knowledge industries.

The viability of 'the entrepreneur' as a Trojan horse is untenable: as the ethnography of organisational management in tech-culture undertaken by Kunda has shown, entrepreneurial subjectivity is itself constituted through the elicitation and production of affects, tastes, experiences and desires from the inside.⁷²⁰

Emotional Labour

Emotional labour, a term first proposed by sociologist Arlie Russell Hochschild in her book *The Managed Heart*, is any work that involves the management of a worker's states of being (their emotions, attitudes and beliefs) in order to affect the states of being of another (usually their

⁷²⁰ Hochschild, *The Managed Heart*, pp. REFXX; and Kunda, *Engineering Culture*, pp. REFXX.

customers).⁷²¹ Emotional labour includes the work of flight attendants, call-centre workers, waiting staff – typically, sectors endorsing ‘service with a smile’.⁷²²

There are overlaps between the elicitation and management of moods, behaviours and attitudes from the employees of tech-cultures and those employed in the service industries. Hochschild’s work on the consequences of emotional labour can be applied to those who are involved in the knowledge and creative industries, and, by extension, to those who propose the entrepreneurial and apparently ‘autonomous’ subjectivities of immaterial labour as locations for immanent critique and resistance.

In the service industry the emotions are specified: two of the most managed emotions are anger and ‘cheerfulness’.⁷²³ The smile in service-with-a-smile is expected by paying customers, but must at the same time appear genuinely offered.⁷²⁴ Anger, on the other hand, is an emotion that must be managed both in the passenger and in the flight attendants themselves as they are patronised, sexually harassed, and on the receiving end of passenger ire.⁷²⁵

In a detailed ethnography of the training programme of flight attendants with Delta Airlines, Hochschild describes the work of producing the emotions to suit management. The flight attendants undergo both initial and ongoing training with the company in how to handle difficult passengers through the management of their own emotions.⁷²⁶ The ‘irate’ – the familiar character of the angry (usually male) passenger – is managed by techniques such as projecting a story of why the passenger might be so upset, and attendant classes their own emotions as secondary. ‘The

⁷²¹ Hochschild, *The Managed Heart*, pp. ix-x, 6-7.

⁷²² Emotional labour includes any work where an emotional disposition is a requirement of the job, for instance doctors, teachers, academics, creative workers or where there is ‘voice-to-voice’ or ‘face-to-face’ interaction Hochschild, *The Managed Heart*, pp. x-xii, 8.

⁷²³ Hochschild, *The Managed Heart*, pp. 25-29, 189.

⁷²⁴ Hochschild, *The Managed Heart*, pp. 6-8, 48, 93, 196.

⁷²⁵ Hochschild, *The Managed Heart*, pp. 25, 28, 178-181.

⁷²⁶ Hochschild, *The Managed Heart*, pp. 25-29.

passenger demanding constant attention could be conceived as a "victim of fear of flying." A drunk could be reconceived as "just like a child".⁷²⁷

The work of producing and managing the emotions, reiterated throughout the training, is considerably less effort if the employee *really* feels the emotions. This is in direct contrast to the way that behaviours are performed in Erving Goffman's *Presentation of Self in Everyday Life*.⁷²⁸ While Goffman focuses on the production of outward signals, Hochschild's emotional labour is the work of producing the requisite mood internally in a process she calls 'deep acting'.⁷²⁹

We all do a certain amount of acting. But we may act in two ways. In the first way, we try to change how we outwardly appear. As it is for the people observed by Erving Goffman, the action is in the body language, the put-on sneer, the posed shrug, the controlled sigh. This is surface acting.

The other way is deep acting. Here, display is a natural result of working on feeling; the actor does not try to seem happy or sad but rather expresses spontaneously, as the Russian director Konstantin Stanislavski urged, a real feeling that has been self-induced.⁷³⁰

Surface acting is the manipulation of outward effects; 'looking as though' one enjoyed the work, or cared about a customer; presenting a demeanour appropriate to the context of the job. In deep acting the employee undertakes to 'really feel' the emotions required for the performance of her job.

Hochschild's use of Stanislavski needs some comment in relation to this thesis: it is important to note that deep acting is not related the 'method of action' described in the first chapter – where through the performance of specific actions new emotion states (even those not experienced before) can be produced indirectly. 'Deep acting', in makes use

⁷²⁷ Hochschild, *The Managed Heart*, p. 25.

⁷²⁸ Hochschild, *The Managed Heart*, p. 35; and Hochschild, 'Appendix A: Models of Emotion: From Darwin to Goffman', *The Managed Heart*, pp. 226-227.

⁷²⁹ Hochschild, *The Managed Heart*, p. 38.

⁷³⁰ Hochschild, *The Managed Heart*, p. 35

of the ‘emotion memory’ method that Stanislavski moved away from when he proposed the method of action, and requires that an employee draws on personal emotional reserves.⁷³¹ A company expects the ‘authentic’ self to be at work ‘hop[ing] to make this private resource a company asset.’⁷³²

Hochschild describes how employees in the service industries are ‘not just required to see and think as they like and required to only show feeling (surface acting) in institutionally approved ways [...] Some institutions have become very sophisticated in the techniques of deep acting; they suggest how to imagine and thus how to feel’.⁷³³

There are similarities between the way that the emotional resources of employees are used in the service industries and the tech-industries. Both involve the putting to work of certain affective states, particularly positive affects such as cheerfulness, passion and motivation. And both industries utilise the training session in order to communicate the behavioural rules. For the tech-industry the idealisation is of the ‘self-starter’⁷³⁴ – and the entrepreneurial subjectivity of high-tech cultures are elicited by ‘behavioural rules [that] are vague: be creative, take initiative, take risks, “push at the system”, and, ultimately, “do what’s right”.’⁷³⁵ There is an assumption that at the same time as they employ people who are right for the job, those subjectivities can be entrained and guided into amenable versions: the primary objective of company cultures involve the ultimate goal of self-actualisation: just “be yourself”.

Although the product – [...] consisting of behaviour, thoughts, and feelings – is not concrete, there are specified ways of engineering it: making presentations, sending ‘messages’, running ‘bootcamp’, writing papers, giving speeches, formulating and publishing the ‘rules’, even offering an ‘operating manual’. All are work techniques

⁷³¹ This is not Stanislavski’s later ‘method of action’, described in the first chapter, where through the performance of specific actions new emotion states (even those not experienced before) can be produced indirectly.

⁷³² Hochschild, *The Managed Heart*, p. 196.

⁷³³ Hochschild, *The Managed Heart*, p. 49.

⁷³⁴ Kunda, *Engineering Culture*, pp. 6, 71-74, 90.

⁷³⁵ Kunda, *Engineering Culture*, p. 90.

designed to induce others to accept – indeed, to become – what the company would like them to be.⁷³⁶

There are also some notable differences between processes of producing subjectivities in emotional labour in the service industries and the Silicon Valley Management style. In the service industry, emotions, which are far more closely sanctioned and guided, have to be consciously brought into being, without the supportive environment where attention is paid to Maslowian needs to enable the self-actualisation of employees. However, both cultures expect to draw on the authenticity of the employee.⁷³⁷

For Hochschild, when the private realm of the employee is put to work the subjectivity created for work enters all areas of life, including the personal: familial and sexual relationships. Surface acting operates under the assumption that the private self, which goes home at the end of the shift, is held in reserve. However in deep acting there is no backstage, as there is in Goffman's approach, and there is a call for employees to become entrepreneurs of their emotion, privatising the costs of such an effort. In response, flight attendants have to devise ways, both at work and at home, of setting the boundaries of their own emotions:

Among themselves, flight attendants build up an alternative way of experiencing a smile or the word 'girl' – a way that involves anger and joking and mutual support on the job. And in their private lives – driving back home on the freeway, talking quietly with a loved one, sorting it out in the occasional intimacy of a worker-to-worker talk – they separate the company's meaning of anger from their own meaning, the company's rules of feeling from their own. They try to reclaim the managed heart.⁷³⁸

Kathi Weeks, accepting Hochschild's idea of the construction of subjectivities in the workplace and applying it to other industries where the manipulation of emotions and affect become part of labour, argues that

⁷³⁶ Kunda, *Engineering Culture*, p. 7.

⁷³⁷ Kunda, *Engineering Culture*, p. 91; and Hochschild, *The Managed Heart*, pp. 96, 196.

⁷³⁸ Hochschild, *The Managed Heart*, p. 197.

‘the subjectivities do not remain at work but inhabit all spaces and times of non-work, and vice-versa.’⁷³⁹

The blurring between self and corporation is found in the way that the values and beliefs of the company become incorporated into the employee’s total subjectivity in Gideon Kunda’s study of the high-tech sector.⁷⁴⁰ In strongly identifying with the aims and values of the corporate culture, the employee, Kunda suggests, has ‘an inextricable connection to the company with little “demarcation.” It involves “the whole person” and is based on powerful emotional ties expressed in “zeal” or at least “enthusiasm”’.⁷⁴¹ The aim is towards organisational interest and self-interest becoming the same thing,⁷⁴² and the expectation is that employees ‘invest not only their time and effort, but also their thoughts, feelings’ – and crucially ‘their conceptions of themselves.’⁷⁴³

In producing emotions and affective states through a kind of acting that is not centred on the contrivance of outward effects, but as the production of ‘authentic’ emotions that are felt internally, Hochschild draws out the reciprocal (and negative effect) relationship deep acting has on the sense of self.⁷⁴⁴ The question of whose emotions are being performed when a company trains the employee in how to manage her emotions becomes difficult to answer. However, Hochschild avoids regarding the emotions as a centre for authenticity, placing the words ‘real’, ‘true’ and ‘authentic’ in inverted commas.

Feelings, [...] are not stored ‘inside’ us, and they are not independent of acts of management. Both the act of ‘getting in touch with’ feeling and the act of ‘trying to’ feel may become part of the process that makes the things we get in touch with, or the thing

⁷³⁹ Kathi Weeks, ‘Life Within and Against Work: Affective Labor, Feminist Critique, and Post-Fordist Politics’, *Ephemera: Theory & Politics in Organization*, 7:1 (2007), 233-249.

⁷⁴⁰ Kunda, *Engineering Culture*, p. 91.

⁷⁴¹ Kunda, *Engineering Culture*, p. 91.

⁷⁴² Kunda, *Engineering Culture*, p. 91.

⁷⁴³ Kunda, *Engineering Culture*, p. 91.

⁷⁴⁴ Hochschild, *The Managed Heart*, pp. 182-183, 194-198.

we manage, into a feeling or emotion. In managing feeling, we contribute to the creation of it.⁷⁴⁵

Hochschild suggests that ‘what we think of as intrinsic to feeling or emotion may always have been shaped to social form and put to civic use.’⁷⁴⁶ She warns that ‘the worker may lose touch with her feelings, as in burnout, or she may have to struggle with the company interpretation of what they mean.’⁷⁴⁷ Recall that Stanislavski pointed out, when he developed his new method, that there were consequences of drawing on the personal reserves of emotion memory: ‘tension, exhaustion, sometimes hysteria.’⁷⁴⁸

Operating from within the employee rather than outside produces what Weeks calls ‘the deeply constitutive effects’ and ‘specific performativity of emotional labour’ where the employee must go beyond ‘seeming to be but [...] coming to be.’⁷⁴⁹ Performative control thus requires the active participation of the employee: they are ‘CEO’ of their own subjectivity who partakes in their own exploitation even as they self-actualise.

Burnout

Burnout is when you can’t handle it anymore. It’s so intense, and you need a vacation; emotionally you just can’t handle it. You need private time. It’s easy to burn out. It’s happened to me a number of times. I just couldn’t handle things any more. So you learn to manage yourself – when to quit, when to go home.

My girlfriend is a technical person working for Tech. She got burnt out. I mean really burnt out. You know, fighting, screaming four-letter words, the whole route. Well, she had a nervous breakdown.

⁷⁴⁵ Hochschild, *The Managed Heart*, p. 17.

⁷⁴⁶ Hochschild, *The Managed Heart*, pp. 17-18.

⁷⁴⁷ Hochschild, *The Managed Heart*, p. 197.

⁷⁴⁸ Jean Benedetti, *Stanislavski: An Introduction* (London: Methuen, 2000) p. 67; and Stanislavski, *An Actor Prepares*, p. 22.

⁷⁴⁹ Weeks, ‘Life Within and Against Work’, p. 241.

She is emotional about work as it is. She started shaking in the morning, couldn't face going in, got hives. I did too.⁷⁵⁰

For Byung-Chul Han, burnout is the consequence of being immersed in a culture where one is compelled constantly to be positive, to say yes, to be constantly fulfilled.⁷⁵¹ He concurs with Kunda and Hochschild that this imperative is not imposed by external control upon the subject, but produced from within.⁷⁵² The expendability of individual workers is of no concern to these modes of management: the model of the knowledge economies is on 'warm bodies' – replaceable skilled workers who can be contracted into work as needed (following the high-performance management methods of derivatives of the 'lean production' system of Toyota) and so the burnout is not warded off.⁷⁵³

In fact, Kunda suggests, the tensions between success and burnout – 'alcoholism, divorce, psychiatric breakdown, and even suicide' – become part of the narrative that tech companies promote.⁷⁵⁴ They are, Kunda says 'consistent with images of exciting and dynamic high-tech organisational life.'⁷⁵⁵ In the tech-culture where the former solidarities associated with unionised grievances have been replaced by the 'team' or 'family' culture, the consequence of the 'psychically harmonizing benefits in the affect of belonging, of being valued, and being productive' discordance becomes an 'ambivalence and conflict [that] are internalised and privatised.'⁷⁵⁶

⁷⁵⁰ Tech employee quoted in Kunda, *Engineering Culture*, pp. 198-199.

⁷⁵¹ Byung-Chul Han, *The Burnout Society* (Stanford, CA: Stanford University Press, 2015), p. 7.

⁷⁵² Han, *The Burnout Society*, p. 11.

⁷⁵³ I also warned that it is a mistake to think that a company's concern for their employees well-being is incompatible with cultivating burnout – the heavy reliance on contract work and high job mobility is characteristic of post-Fordist labour.

⁷⁵⁴ Kunda, *Engineering Culture*, pp. 45, 198.

⁷⁵⁵ Kunda, *Engineering Culture*, p. 198.

⁷⁵⁶ Casey, "'Come Join Our Family'", p. 175.

Disruptive Talent⁷⁵⁷

Power plays don't work. You can't make 'em do anything. They have to want to. So you have to work through the culture. The idea is to educate people without them knowing it. Have the religion and not know how they ever got it!⁷⁵⁸

Deamer, in promoting that architecture find 'a more fulfilling, less passive, and more disruptive role in capitalism'⁷⁵⁹ for architects is also proposing a dialectic, a way of saying no. But from where can the architect draw such a power to determine that such disruptive actions are not interpreted as saying yes – when disruption itself is a quality that companies in the knowledge economy prize?⁷⁶⁰

Recognising that their ideal employees are also the most unmanageable, Google launched an executive education programme to teach leadership to managers to deal with the 'intelligent creatives' in their teams.⁷⁶¹ Even experienced managers recruited from other firms enrol in the classes, since management at Google requires 'a lot more persuasion involved because Googlers are really smart. [...] They are not going to do

⁷⁵⁷ Disruptive talent refers to individuals who 'see the world differently. I am grateful to Katie Lloyd Thomas, who introduced me to this term. A psychometric testing company based in Cambridge, UK claim to have originated the term and the BBC describe Richard Branson as an example of a disruptive talent. <<https://www.cambridgenetwork.co.uk/news/assessing-disruptive-talent-going-beyond-psychometrics/>> [accessed 1 September 2016]

⁷⁵⁸ Kunda, *Engineering Culture*, p. 5.

⁷⁵⁹ Deamer, 'Architectural Work: Immaterial Labour', p. 146.

⁷⁶⁰ The concepts of 'disruption' and 'disruptive innovation' come from Clayton Christensen's 1997 book, *The Innovator's Dilemma* and has been heavily criticised for a lack of credible basis. Clayton Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*, (Boston, Mass: Harvard Business Review Books, 1997); and Jill Lepore, 'The Disruption Machine', *The New Yorker* (23 June, 2014) <<http://www.newyorker.com/magazine/2014/06/23/the-disruption-machine>> [accessed 1 September 2015]

⁷⁶¹ Sarah Kessler, 'Here's A Google Perk Any Company Can Imitate: Employee-To-Employee Learning', *Fast Company* (26th March 2013) <<https://www.fastcompany.com/3007369/heres-google-perk-any-company-can-imitate-employee-employee-learning>> [accessed 14th December 2015]; Tom Bunzel, 'Google on Mindfulness: How the Company Implements its Motto, 'Don't Be Evil'', *Smart Bear* (27 February, 2014) <<http://blog.smartbear.com/news/google-on-mindfulness-how-the-company-implements-its-motto-dont-be-evil/>> [accessed 14 December 2015]; Bill Duane's mission at Google 'is to help Googlers live and work sustainably, allowing them to be as effective and happy as possible, both personally and as a company, ultimately creating a better world.' Bill Duane, *LinkedIn Profile* <<https://www.linkedin.com/in/bill-duane-4669895>> [accessed 17 September 2016]

something for you just because of your title. You really have to make your case.⁷⁶²

The management within companies like Google, premised around autonomous and freely self-actualising individuals, becomes presented as something that you can learn how to do, but there are constitutive effects. While training is delivered by other 'Googlers' engendering 'loyalty'⁷⁶³ towards the company: I also suggest that Google do not just provide the education as a perk, but in encouraging their employees to participate by also teaching, the process becomes part of the 'self-actualisation' of the employee. So it becomes also part of a process of transformation even for the managers, who learn to 'exert influence in more subtle ways' and 'operate in a culture where power over subordinates is derived from one's ideas and powers of persuasion, not job titles.'⁷⁶⁴

An employee isn't necessarily going to obey a manager just because he or she is a manager. This is radically different from most traditional corporations, which have a top-down, hierarchical style of management.⁷⁶⁵

In other companies that have more traditional styles of management, the incorporating effects of management are explored by Kukla who describes the doubly constitutive effects of the performative, where it is not possible to 'control the concrete social effects the speech act will have, including the response it gets from others.'⁷⁶⁶ What 'uptake' a speech act receives is, she suggests, 'partially constitutive of what speech act it turns out to be' and that in turn serves to constitute the speaker in unexpected ways.⁷⁶⁷

Kukla gives the example of a female manager in a production plant whose orders are repeatedly ignored by the factory workers. Despite the

⁷⁶² Former Google Employee Scott Lederer in Joseph Walker, 'School's in Session at Google', *Wall Street Journal* (July 5, 2012) <<http://www.wsj.com/articles/SB10001424052702303410404577466852658514144>> [accessed 14 December 2015].

⁷⁶³ Former employee Jason Morrow, cited in Walker, 'School's in Session at Google'.

⁷⁶⁴ Walker, 'School's in Session at Google'.

⁷⁶⁵ Karen May, Google VP of people development in Walker, 'School's in Session at Google'.

⁷⁶⁶ Kukla, 'Performative Force, Convention, and Discursive Injustice', p. 454.

⁷⁶⁷ Kukla, 'Performative Force, Convention, and Discursive Injustice', pp. 443, 455.

manager having the authority to give the workers orders to carry out an action, her orders are perceived by the ninety-five percent of the male workforce as being requests.⁷⁶⁸ Kukla thus asks, what makes a speech act successful: in particular – what changes the order to a request? The lack of compliance is not simply a matter of the workers being disobedient or blatantly sexist in refusing to take orders from a woman, since as Kukla points out, that would still be to recognise what she says as orders. In this case, no matter how much she follows the conventions to ‘mark her speech acts as orders’ they are taken to be requests, and are thus, Kukla proposes, of a different distinctive pragmatic structure, that comes to act in ways very different to orders.⁷⁶⁹ Whilst Austin’s and Searle’s attention is focused to a great degree on the speaker, as if they were the one holding all the power – the listener mutely accepts or misunderstands, receiving or rejecting the effects of what is being done by the speaking agent. But in Kukla’s account the listener has the capacity to change the action.⁷⁷⁰

While the one has the ability to speak, and therefore the agency to enact a performative, they may not be the ones in control. The speaker is sometimes as much undone by the performative she intends to carry out. Jennifer Hornsby and Rae Langton call the power held by the one being spoken to a form of silencing.⁷⁷¹ Even though the words are not literally silenced, the words are unable to take effect, and are therefore as good as being unspoken.⁷⁷² Kukla goes further, pointing out that it is not simply a matter of being unable to perform a speech act at all, but a situation where she may perform a different speech act to the one that she was expecting.

⁷⁶⁸ Kukla, ‘Performative Force, Convention, and Discursive Injustice’, pp. 445-446.

⁷⁶⁹ Kukla, ‘Performative Force, Convention, and Discursive Injustice’, p. 446.

⁷⁷⁰ This is not a case limited to the effects that follow speech acts, but applies to all speech acts. If we recall; illocutionary acts are those that, in saying, do what they say, and do it in the moment of saying, while perlocutionary acts are those that produce certain effect as their consequence: by saying something, a certain effect follows.

⁷⁷¹ Jennifer Hornsby and Rae Langton, ‘Free Speech and Illocution’, *Legal Theory*, 4 (1998), p. 21. and Rae Langton, ‘Speech Acts and Unspeakable Acts’, *Philosophy & Public Affairs*, 22.4 (1993), 293-330 (p. 229).

⁷⁷² In Rae Langton’s account – someone is locutionarily silenced if she is prevented from speaking, and perlocutionarily silenced if the words she speaks cannot have their intended effects follow as a cause of speaking. And she is illocutionarily silenced if she is unable to perform the speech acts she intends to perform. Rae Langton, ‘Speech Acts and Unspeakable Acts’, *Philosophy & Public Affairs*, 22.4 (1993) 293-330, in Kukla, ‘Performative Force, Convention, and Discursive Injustice’, p. 442.

In being prevented from performing the intended speech act – an order – which she is situationally and socially in the right position to carry out, the manager’s speech counts as performing an unintended speech act – a request – an act Kukla points out further undermines [her] social status.

The difference between the order and the request is not that a request is too weak to obligate. Having her orders perceived as requests changes the pragmatic structure: a speaker usually doesn’t simply want compliance with the request, they want the hearer to choose to do so; and a request has no expectation of being fulfilled without some additional elicitation of goodwill in ways that are not expected in relation to orders.⁷⁷³ Because the manager does not add such entreaties to the order (because she doesn’t realise it is received as a request), she is seen as ‘bitchy.’⁷⁷⁴ The speech act, through its uptake, has become a different speech act to the one it would typically have, given its social context and standard discursive conventions.⁷⁷⁵ In the end, the type of speech act performed enacts a further injustice upon the manager, ‘enhanc[ing] already existing disadvantages and disenfranchisements that attach to [her] gender identity’.⁷⁷⁶ Such injustices, Kukla points out, are often due to gender, race, class, or sexuality.⁷⁷⁷

Breakdown

This is a very different kind of breakdown to the infelicity described by both Austin and Searle. While a speech act can be ‘infelicitous because it is unentitled, or because it is performed in the wrong context or in the wrong way’, what Kukla calls a pragmatic breakdown occurs when, despite the

⁷⁷³ Kukla, ‘Performative Force, Convention, and Discursive Injustice’, pp. 446-447.

⁷⁷⁴ Kukla, ‘Performative Force, Convention, and Discursive Injustice’, p. 447.

⁷⁷⁵ Kukla, ‘Performative Force, Convention, and Discursive Injustice’, pp. 445, 452-453.

⁷⁷⁶ Kukla, ‘Performative Force, Convention, and Discursive Injustice’, p. 445.

⁷⁷⁷ Kukla, ‘Performative Force, Convention, and Discursive Injustice’, p. 445.

intentions and conventions being secured, the path between the performance and the uptake of the speech act is 'queered.'⁷⁷⁸

Kukla makes clear that while Austin insisted that 'conventions and rituals enable speech acts to have determinate performative results,' exactly which conventions are actually instantiated cannot be answered until after the speech act has occurred and the listener has responded. This uptake is not a second event, like a perlocutionary effect, but is integral to the entire context of the illocutionary act.⁷⁷⁹ Kukla writes: 'No agent ever has complete control over the performative effects of her utterances.'⁷⁸⁰ Despite having the agency to speak, her speech act is still subject to the way that it is received: her sovereignty is thus severely limited to what the listener will accept.

Citing Toni Morrison, Judith Butler asserts that a speaker may have agency, but this is not the same as control, and being in control is not a function entirely of the system of language.⁷⁸¹

To account for speech acts, one must understand that language is not a static closed system whose utterances are secured in advance by the social positions to which they are immediately related.⁷⁸²

It is not enough to say that if a manager is a manager it follows that all their utterances will be heard as orders, even where there is the expectation or convention that this will be the case. Further, the force of a performative is not secured by 'knowing how' to perform a certain speech act.⁷⁸³ Despite the

⁷⁷⁸ Kukla, 'Performative Force, Convention, and Discursive Injustice', pp. 445, 448, 454.

⁷⁷⁹ Kukla, 'Performative Force, Convention, and Discursive Injustice', p. 454.

⁷⁸⁰ Kukla, 'Performative Force, Convention, and Discursive Injustice', p. 454.

⁷⁸¹ Butler, *Excitable Speech*, p. 8.

⁷⁸² Butler, *Excitable Speech*, p. 145.

⁷⁸³ I reference Keller Easterling's call to 'know how' rather than 'know that' and connect it with Kukla's critique of the 'expert': Easterling writes 'though design orthodoxies may favour a training in *knowing that*, some of the real power players in the world [...] would never relinquish their faculties for [...] *knowing that* and *knowing how*.' Know-how, for Easterling is dispositional and is an 'experience that unfold[s] in relation to the situation, from encounter to encounter, circumstance to circumstance.' The implication is that this is a well-rehearsed skill that can be learned in order to modulate a performance contingent on the 'audience's reactions'. Keller Easterling, *Extrastatecraft*, pp. 81-85; and Keller Easterling, *The Action is the Form: Victor Hugo's TED Talk* (Moscow: Strelka Press, 2014) Kindle eBook. Kukla, however argues that 'speaking as an expert thus comprises a special set of discursive practices, and only those who are recognized as having the right standing can perform the speech acts that are distinctive of expert discourse. Often, however, women find that despite meeting conventional

manager intending to perform a speech act according to standard discursive and social conventions, and sincerely believing that she has the authority to order employees under her management to carry out tasks, and despite using context-appropriate words, tone and gestures, the performance does not receive the uptake that it would have done had it been produced by a male speaker using the same words, content and even conventional entitlements to speak.⁷⁸⁴ This is different from merely silencing.

Kukla's important work on speech acts not only exposes the difficulty that those speakers who are socially disadvantaged have in being able to 'marshal standard conventions in the standard way, in order to act autonomously as a discursive agent,'⁷⁸⁵ but also holds true in the inverse – for privileged people whose words produce action in ways they don't intend. For Kukla the successful performance of a speech act doesn't mean that 'those in [...] advantaged positions are the masters of the performative force of their speech acts, nor are they exempt from subjection to the queering of conventions.'⁷⁸⁶ In other words, these speaking subjects are no less constituted by the conventions that they invoke and cannot, therefore, evade the responsibilities that their actions put into effect.

Butler resists giving explicit methods for using the performative subversively, precisely because 'subversive performances always run the risk of becoming deadening clichés through their repetition and, most importantly, through their repetition within commodity culture where "subversion" carries market value.'⁷⁸⁷ Indeed, I suggest that attempting to invent new subversive tactics is a strategy too similar to 'disruptive innovation' and all too readily co-opted by precisely the system that they were intended to critique. Deamer negotiates this conundrum by saying it

standards for counting as an expert speaker, our speech is taken as an entreaty to speak as an expert rather than as expert speech. These bids leave others free to decide whether to grant us discursive access to the game'. Kukla, 'Performative Force, Convention, and Discursive Injustice', pp. 449-450.

⁷⁸⁴ Kukla, 'Performative Force, Convention, and Discursive Injustice', pp. 445-446.

⁷⁸⁵ Kukla, 'Performative Force, Convention, and Discursive Injustice', p. 445.

⁷⁸⁶ Kukla, 'Performative Force, Convention, and Discursive Injustice', p. 455.

⁷⁸⁷ Butler, 'Preface (1999)', *Gender Trouble*, pp. xxii-xxiii.

shouldn't stop attempts to try to find new ways of evading the grasp of capitalism:

Disrupting the mechanisms of capitalism is necessary even if each small victory eventually yields to co-option. We are in a position to not beat capitalism, but to keep it guessing, and to make it uncomfortable. We architectural workers only need to keep throwing up alternative forms of economic and social performance.⁷⁸⁸

Is Deamer referring to the social performances of Goffman - a kind of shallow acting in which the 'real' subject resides backstage? Both Kunda's work, and Gabriel's insights on ambivalence show that insincere or ambivalent performances do not guarantee a critical stance.⁷⁸⁹

As Butler emphasises in her writing on speech-acts, performatives draw their force from conventions and conditions already in existence,⁷⁹⁰ and thus are highly normative. One needs only to be in the right place at the right time, and satisfy certain conditions, to render a performative successful. That is to say, treat such critiques with caution – there is no guarantee that you won't be 'undone'.

This is an important point in relation to the architect who, in their chartered position, carries out actions – it also bears upon attempts to 'subvert' or critique through irony. The fact that there is an unpredictability about certain speech acts – the fact that speech does act – means that we are not absolved of responsibility. The force of the performative is not drawn from intent, or equal to the degree to which you 'mean it'. Even Austin states:

Precisely because a promise is made in being said: declaring later that you didn't mean it, that you didn't enact it inwardly, that you never intended to keep it, will not relieve you of the [...] pragmatic

⁷⁸⁸ Deamer, 'Architectural Work: Immaterial Labour', p. 147.

⁷⁸⁹ Kunda, *Engineering Culture*, pp. 86-88, 221, 233; and Gabriel, 'Beyond Happy Families', p. 191.

⁷⁹⁰ 'The [...] performative derives its forcefulness or efficacy through recourse to established conventions.' Butler, *Excitable Speech*, p. 146.

implications of your utterance [...]. A false promise is still a promise.⁷⁹¹

The intentions of the performing subject, Kukla maintains 'are part of the story' and yet not 'privileged or definitive' – 'the speaker may only discover, in how her utterance is taken up, what sort of speech act it really was.'⁷⁹²

The performative exceeds the subject's internal states of intention and sincerity and is in the hands of the listener.

This correlates with Vikki Bell's reading of performativity, in which 'the sense of an interiority – what Butler calls the 'trope' of interiority – into which the subject him or herself can 'look' and thereby enact a conscience' a subjectivity, is an effect, it is argued, of the configurations in which the subject is 'caught'.⁷⁹³ Furthermore, in the previous chapter of this thesis, the argument of Arlie Russell Hochschild showed that incursions into the private life of employees by management in 'deep acting' disquiets the notion that we retain a core subjectivity that is under our sovereign control.

Hochschild's argument is that this is a false belief: 'In the end, it seems, we make up an idea of our "real self," an inner jewel that remains our unique possession no matter whose billboard is on our back or whose smile is on our face.'⁷⁹⁴ The implications to draw from deep acting is that the very continuity of subjectivity – the most private realm of identity – cannot be guaranteed.

The individual is not to be conceived as a sort of elementary nucleus, a primitive atom, a multiple and inert material on which power comes to fasten or against which is happens to strike, and in doing so subdues or crushes individuals.⁷⁹⁵

Bell, writing on Foucault's argument that the shift of power from the punishments of judicial power that immobilised the subject, towards

⁷⁹¹ James Loxley, *Performativity* (Oxford: Routledge, 2007), p. 36.

⁷⁹² Kukla, 'Performative Force, Convention, and Discursive Injustice', p. 444.

⁷⁹³ Vikki Bell, *Culture and Performance: The Challenge of Ethics, Politics and Feminist Theory* (London: A&C Black, 2007) p. 12.

⁷⁹⁴ Hochschild, *The Managed Heart*, p. 34.

⁷⁹⁵ Michel Foucault, 'Lecture Two: 14 January 1976', *Michel Foucault: Power/Knowledge: Selected Interviews and Other Writings 1972-1977*, C. Gordon (ed.) (New York: Pantheon Books, 1980), p. 98.

disciplinary power ‘where bodies are attended to as replete with potential and invested with capabilities,’ reminds us that ‘whereas previously a body’s inaction indicated the workings of power, now it is the bodies’ actions that signal power’s success.’⁷⁹⁶ Gabriel suggests that even Foucault’s conceptions of discipline are being superseded arguing that ‘the controls of post-modernity are more invasive, pervasive, and insidious than those of earlier eras.’⁷⁹⁷ This is certainly consistent in the work of Hochschild, Kunda and the case studies of Silicon Valley.

Consequently, I suggest that any attempt to use a ‘core’ self to guarantee the ‘good intentions’ of working under regimes that we may not agree with is not valid. I propose that the subjectivities created and elicited by management itself, in line with its own culture, are not the location for enacting sustainability, resistance or situating ethical or subversive movements. And the entrepreneur as a model for a subversive agency poses ethical questions, since ‘entrepreneurs,’ warns philosopher Isabelle Stengers, are ‘persons of opportunity, deaf and blind to the question of the world that their efforts contribute towards making.’⁷⁹⁸

As this discussion on uptake and breakdown shows, we should be wary of merely having a place at the table to speak. The agency to have a voice does not mean necessarily that one is in control of the actions that follow. Whether the actions change the course of the entities being engaged with for the better cannot be guaranteed.

The method I have proposed is not that we train ourselves to be fluent in the language, processes and protocols in use in order to be able to perform them subversively, inauthentically or ironically – in some belief that we will be able to outsmart capitalism or ‘keep it guessing’.⁷⁹⁹ Rather we need to become adept tracking the actions that are transferred through each performance, each time being attentive to the consequences, and

⁷⁹⁶ Bell, *Culture and Performance*, p. 14.

⁷⁹⁷ Gabriel, ‘Beyond Happy Families’, p. 185.

⁷⁹⁸ Isabelle Stengers, ‘The Cosmopolitical Proposal’, in *Making Things Public: Atmospheres of Democracy*, Bruno Latour and Peter Weibel (eds) (Cambridge, Mass.: MIT Press, 2005), pp. 994-1003 (p. 998).

⁷⁹⁹ Deamer, ‘Architectural Work: Immaterial Labour’, p. 147.

calling to account the actions of those who claim that they are making a difference.

Borrowing from Karen Barad's description of the performative,⁸⁰⁰ the performative in this thesis is not an invitation to turn everything into a 'performance', but rather a demand to pay attention to the powers that determine the felicity of that performance, and to the material consequences of the act.

In this thesis I have used performance to interrogate a number of calls to action in architecture: to create buildings that are sustainable, to support the efficiency, productivity and well-being of the occupants, to become engaged with the dubious protagonists of capitalism, to become more entrepreneurial, to find strategies in which to be more disruptive.

By extending the practice of performatives as a method, actions can be traced as they change and can offer tools with which to approach the ethical questions posed by Stengers and Suchman. Both demand an attentiveness to practice, ask that we pay attention to 'the problems and situations mobilizing us?'⁸⁰¹ professionally, as well as sticking around and taking responsibility for its consequences.

⁸⁰⁰ Karen Barad, 'Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter.' *S / G N S* (Spring 2003), 801-831 (p. 802).

⁸⁰¹ Stengers, 'The Cosmopolitical Proposal', p. 994.

Conclusion

COOL-DOWN

Cool -down

After taking the reader through a journey into the building, taking their focus away from the walls and floors: the usual perimeters of space, entraining them to look at what is happening between the various inhabitants of a building: occupants, employees, users, customers, actors, geniuses, hackers, entrepreneurs, the architect herself, thermostats, warm bodies, cool hunters, cold-callers, heat-seekers, burners, hot-orders, it is now necessary to draw the reader's attention back to architecture.

Circles of attention

The actors are instructed to lie on the floor and close their eyes, and tune their attention with the sounds beyond the room – the stop-start of traffic, the hum of generators, the pulse of pumps, the blast of boilers, the flows of pipes, and air churning through ducts. They must simply focus their breathing on the rhythms of the sounds and the vibrations of the machinery.

Now the actors are instructed to bring their attention inwards from the other side of the walls, to focus only on the sounds within the room. Becoming aware of the space without looking, becoming attentive to the temperature, drafts, fluctuations of air, the sounds of the walls, the containment of the space, the other people in the room. They are asked now to pay attention.

Cool Down

I close the thesis with some further thoughts about the thesis, and where it lands, identifying some of the contributions to new knowledge, and the key insights that the new knowledge unfolds beyond this work.

The written thesis has outlined where mechanisms of performance in organisational management (specifically those pertinent to the ‘knowledge economy’) intersect with an architectural idea of performance, in relation to thermal management and sustainability. The work has questioned the validity of assumptions that underpin concepts of the ‘occupant’ in environmental performance and post-occupancy studies, presenting a deregulated subjectivity of the employee.

The research has two practice-based outputs: a performance and a database, which both aim to communicate how the conceptual domain of temperature and comfort in architecture is embedded within concepts of productivity. Using the database research where I redrew the conceptual domain of heat as a process, drawing on a thermodynamic model, HEATED EXCHANGE deploys heat as an activity – where the affective realm (emotions, passions, energies) becomes productive, in such a way that reveals the reconfiguration of work and productivity since the 1970’s, and the expansion of post-Fordist management into fields beyond production.

Where Lisa Hescong⁸⁰² proposed a thermal imagination drawing on ideas of heat as warmth, affection, authentic human bonds, and used it to critique the alienating and wasteful practices of a mechanised modernity, the performance is instead constructed with verbs arranged into dialogues that traverse the domains of Anger, Lust, Productivity, Economics and War – categories that do not feature in the phenomenological accounts for heat. The performance realises an updated notion of the workplace in line with the company cultures described in chapter two of the written thesis: the actors are expected to innovate, be entrepreneurial and, above all, to be passionate about what they do.

⁸⁰² Lisa Hescong, *Thermal Delight in Architecture* (Cambridge, MA: MIT Press, 1979).

Within the written thesis I explore key moments where the mechanisms of performance operate very effectively in the discourses of sustainable architecture. One is how the high-performance organisational practices of the knowledge economy – ‘culture’⁸⁰³ and Silicon Valley-style management⁸⁰⁴ – has implications on the subjectivity of the occupant. Another is how the high-performance manufacturing processes of the Toyota Production System⁸⁰⁵ troubles what I term ‘Kaizen’⁸⁰⁶ Sustainability’ or the attempt to use a strategy of continuous improvement in environmental performance in architecture.

The key contribution of using performance to rethink and redo the subject of environmental management lead to some specific insights that are applicable beyond the thesis. Giving a way to approach the ethical questions of Isabelle Stengers⁸⁰⁷ and Lucy Suchman⁸⁰⁸ means that one can treat the politics of the present within which architecture finds itself bound up (and by which it is often incapacitated), not as peripheral to the contexts being investigated - but as real conditions that constitute the parameters of our activity within the institutions of the discipline and academia.⁸⁰⁹ This is specifically the politics of productivity, intention and subjectivity.

⁸⁰³ Gideon Kunda, *Engineering Culture: Control and Commitment in a High-Tech Corporation*, (Philadelphia: Temple University Press, 2009), pp. 4-11.

⁸⁰⁴ Peter Burrows, ‘Four Lessons for Silicon Valley from its First Startup’, *MIT Technology Review* (28 November 2016) <<https://www.technologyreview.com/s/602961/four-lessons-for-silicon-valley-from-its-first-startup/>> [accessed 19 April 2017]; and Hewlett Packard, *The HP Way: Hewlett-Packard Company Report* (1977) <http://www.hp.com/hpinfo/about/hp/histnfacts/publications/measure/pdf/1977_07.pdf> [accessed 5 October 2015].

⁸⁰⁵ Toyota Corporation, ‘Toyota Production System’, *Toyota Motor Corporation Global Website* <http://www.toyota-global.com/company/vision_philosophy/toyota_production_system/> [accessed 22 April 2017].

⁸⁰⁶ Kaizen is a Japanese term connected to the Toyota Production System and derivatives of it. Its literal meaning is ‘good change’. ‘Toyota Production System glossary’, *Blog.Toyota.co.uk* (31 May, 2013) <<http://blog.toyota.co.uk/toyota-production-system-glossary>> [accessed 14 March 2017].

⁸⁰⁷ ‘What are we busy doing?’, Isabelle Stengers, ‘The Cosmopolitical Proposal’, in *Making Things Public: Atmospheres of Democracy*, Bruno Latour and Peter Weibel (eds) (Boston, MA: MIT Press, 2005), pp. 994-1003 (p. 996).

⁸⁰⁸ ‘Who is doing what to whom?’, Lucy Suchman, ‘Located Accountabilities in Technology Production’, *Scandinavian Journal of Information Systems*, 14.2 (2002), 91-105 (p. 95).

⁸⁰⁹ There is a growing body of active practices within architecture addressing this too. See for instance: Peg Rawes and Beth Lord, *Equal By Design* <<http://www.equalbydesign.co.uk>>; and Jane Rendell, *Ethics in the Built Environment* <<https://www.ucl.ac.uk/bartlett/research/spirit-collaboration/ethics-built-environment>> [accessed 1 April 2017] and involvement with the divestment in Fossil Fuels at UCL; Katja Grillner, Meike Schalk (et al.) *Architecture in Effect* <<http://architectureineffect.se>>. It was the immanent concern of recent AHRA conferences, in particular Katie Lloyd Thomas, Nick Beech, and Tilo Amhoff, *Industries of Architecture: Relations – Process – Production* (13-15 November 2014) <<http://industriesofarchitecture.org>> [accessed 3 April 2017]; and Hélène

Performance in this thesis has not been just a metaphor, a homonym, or way of seeing one thing as if it were another to bring it into closer focus. Performance insists on being worked with – even in writing. For instance: in chapter three I used it to work with Latour’s model of objects that convey orders, requests, warnings ‘in the imperative’ and to work through Rem Koolhaas’ thinking about the Nest thermostat that ‘tells you what to do.’

In developing the performance method, I took classes in performance – to learn Stanislavski’s method of action, contemporary actioning techniques, playwriting and writing for performance, devising, verbatim and documentary performance-making. By combining feminist critiques of J.L. Austin’s performativity,⁸¹⁰ with this practical knowledge of the theatrical techniques of action, I could methodologically track activities mobilised by the imperative to perform in architecture.

Paying attention to the constitutive force of the performative has impelled me to cross the disciplinary boundaries of linguistics, fine art, organisational management, theatre, and critical theory, to then return to architecture with new knowledge. But this also brings a different outlook to my future work in the discipline of architecture – one that alters the process of investigating architecture through space, form, and aesthetic, or function, program, and use.

I have begun to take this into architecture design pedagogy in the diploma unit that I lead at the Canterbury School of Architecture. The unit has considered the typology of ‘Campus’ as distinct from the office, negotiating the idea of a space that organises social relations (without falling into behaviourism). The spatial layout is somewhat operational, but in opaque ways. The students have been investigating architecture *with* management and culture to understand each space by what it *does*. They

Frichot, Catharina Gabrielsson, Helena Mattsson, Karin Reisinger and Meike Schalk, *Architecture and Feminisms: Ecologies, Economies, Technologies* (17-19 November 2016) <<http://architecturefeminisms.org>> [accessed 3 April 2017].

⁸¹⁰ John Langshaw Austin, *How to Do Things with Words* (Oxford: Oxford University Press, 1962); Rebecca Kukla, ‘Performative force, convention, and discursive injustice’, *Hypatia*, 29.2 (2014), 440-457; Vikki Bell, *Culture and Performance: The Challenge of Ethics, Politics and Feminist Theory* (London: A&C Black, 2007); Vikki Bell, ‘Declining Performativity Butler, Whitehead and Ecologies of Concern’, *Theory, Culture & Society*, 29.2 (2012), 107-123; Judith Butler, *Excitable Speech: A Politics of the Performative* (London: Routledge, 1997).

have investigated the relations, interactions and contradictions between aesthetics, tectonics, material, layout, proximities, and what the management claims to do.⁸¹¹

A way of tracking ‘doing’ is a key contribution that I present in the written thesis, and I am presently thinking about this in relation to how it might inform specific pedagogies for architecture. However, I also want to say that method is a very difficult term: in my thesis it is embedded. It is applicable, but through *working with it* and *working it through* certain scenarios – and as such I have resisted giving it an explicit formula beyond the section ‘Towards a Method’ where I only clarify some key markers. I maintain a resistance to, and I concur with Judith Butler, providing a ‘method’ that can be lifted out, and done in a particular way – ‘subversively’ against the politics being analysed. For Butler, the repeatability of a specific way of doing would undo it – deaden it, or worse, carry market value.

There is a further reason – it is not a method to enable somebody to master and ‘perform’ in ways to secure an outcome (even Alan Greenspan was undone by his own method of speaking so as not to have effects)⁸¹² or to ‘out-do’ an opponent. I use the feminist critique of speech act theory to show the limitations of intention and sincerity, and mastery and sovereignty.⁸¹³ It is rather, a method to track actions, to interrogate with, to pay attention to ‘what we are busy doing?’ and ‘who is doing what to whom?’

Coming in from the cold / reflections on discipline

I came originally from outside architecture: studying media practice in the 1990s and working in management consultancy on new media and

⁸¹¹ See appendix III: ‘Killer Apps’ for the Unit brief for the studio at the Canterbury School of Architecture, University for the Creative Arts, pp. 368-370.

⁸¹² Greenspan found that when he explicitly issued a warning about overspeculation during the dotcom boom, even he could not secure its effect. Alan Greenspan, *The Age of Turbulence* (London: Penguin Books, 2008), pp. 150, 179, 164-181.

⁸¹³ Kukla, ‘Performative force, convention, and discursive injustice’; Bell, *Culture and Performance*; and Butler, *Excitable Speech*.

telecoms technology before embarking on architectural training. It is worth noting the particular conditions of coming from a 'studies' into a distinct discipline – validated by a chartered body. On the Media Studies BTEC⁸¹⁴ we were instructed to join a union, BECTU, in Architecture we join a chartered institution RIBA. As a matter of course, Media Studies includes compulsory modules such as 'Government and Politics', 'Critical Theory', even a modern language. Whilst Architecture tends to insist on an autonomy from questions of production, and 'reproduction through representation, consumption, appropriation and occupation.'⁸¹⁵

'Architecture' writes Catherine Ingraham, 'shelters the world and itself from "theoretical" inquiry for a variety of reasons, one of the most powerful of which is the need for [an] autonomous architectural object that has been properly constructed within, and yet appears to transcend, the terms and conditions of a given era or ethos.'⁸¹⁶ Whilst the work I set out in this thesis is strongly nuanced by this other discipline of media, I am still unsure as to whether this makes my work inherently interdisciplinary – since I find it impossible to uphold architecture's claim to autonomy from the contexts, technologies and conditions the constitute it.

Jane Rendell writes that 'for some, interdisciplinary debate is a distraction: critical enquiry and architectural production are relevant only when they emerge out of architecture itself.'⁸¹⁷ Which troubles the position of interdisciplinarity – on the one hand it may well suit the discipline for me to be interdisciplinary – and yet I find a necessity to insist that these concerns are architecture (whilst not making the work *look* anything like architecture).

However, bringing concepts into architecture from another discipline, Rendell writes, 'allow[s] us to challenge assumptions internal to disciplines

⁸¹⁴ I studied the BTEC in Media Studies between 1995-1997.

⁸¹⁵ Jane Rendell, 'Critical Spatial Practices: Setting Out a Feminist Approach to some Modes and what Matters in Architecture', *Feminist Practices: Interdisciplinary Approaches to Women in Architecture*, Lori A. Brown (ed.) (London: Routledge, 2011), p. 18.

⁸¹⁶ Catherine Ingraham, 'The Faults of Architecture: Troping the Proper', *Assemblage*, 7 (October 1988), pp. 6-13 (p. 8).

⁸¹⁷ Rendell 'Critical Spatial Practices', p. 34.

and to re-think [...] what architecture is, what it might be and how we might think, write and make buildings critically.⁸¹⁸ One of the outcomes of the research is the implications of what I set out in the final chapter: where the RIBA Plan of Work 2013 is itself indebted to the management and production processes of the Toyota Production System.⁸¹⁹ The next steps beyond the thesis is to get involved with this document, and with the institutions and policies that are constituted by it.

Benchir Kenzari writes: ‘to raise questions of how, where and when a given idea/representation becomes architectural and, conversely when an architecture idea [...] travels to other domains is to define the essence of interdisciplinary exchanges’⁸²⁰ – a process that Troiani and Ewing notes has been previously slow, but is now rapid and potentially radical.⁸²¹ However, I recognise that such ‘knowledge exchanges’ do not remain intrinsically radical – indeed, the high-value placed on such exchanges in the context of academic research can result in an extractive apparatus, where impact is cut free of ethics and long-term, unintentional, outcomes. This position is deeply influenced of Isabelle Stengers’ ‘Cosmopolitical Proposal’ which urges us ‘to “slow down” reasoning and create an opportunity to arouse a slightly different awareness of the problems and situations mobilizing us.’⁸²² She warns ‘the grand tales about the advancement of knowledge, [...] and the necessities of method, fill up the interstices through which the “what am I busy doing?” insistently nags.’⁸²³

So, a further implication of the research is to pay attention to how the concepts raised through this research have a life beyond the thesis. Rendell forewarns complacency in interdisciplinarity noting:

⁸¹⁸ Jane Rendell, ‘Introduction: Architecture Writing’, *Critical Architecture*, Jane Rendell, Jonathan Hill, Murray Fraser and Mark Dorrian (eds) (London: Routledge, 2007), pp. 87-91 (p. 88).

⁸¹⁹ Peg Rawes, ‘Architectural Ecologies of Care’, *Relational Architectural Ecologies: Architecture, Nature and Subjectivity* (London: Routledge, 2013), pp. 40- 55 (p. 42).

⁸²⁰ Benchir Kenzari and Yasser Elsheshtawy, ‘Crossing Boundaries: Architecture and the Influence of Other Disciplines’, *Built Environment*, 31:1 (2005), 5-8, cited in Igea Troiani and Suzanne Ewing, ‘Inside Architecture from the Outside: Architecture’s Disciplinary Practices’, *Architecture and Culture: Disciplinary Practices*, 2:2 (2014), 151-166 (p. 152).

⁸²¹ Troiani and Ewing, ‘Inside Architecture from the Outside’, p. 152.

⁸²² Stengers, ‘The Cosmopolitical Proposal’, p. 994.

⁸²³ Stengers, ‘The Cosmopolitical Proposal’, p. 997.

a disturbing sense that the arena of architectural humanities-led work between and across disciplines – grounded in critical, ethical and political debate – is being appropriated and used to deliver instrumental government policy: to answer questions rather than pose them and to provide market-driven solutions rather than challenge ideological norms.⁸²⁴

Further Reading Required convened at the Bartlett in 2011, by Tilo Amhoff, Nick Beech and Katie Lloyd Thomas set out questions around technical literature and other documents as being ‘products of industrial, economic and social forces’⁸²⁵ in ways that have ‘a constitutive role in the production of architecture.’⁸²⁶ They do not merely describe a set of agreed upon technical or objective criteria, nor do they simply arise out of current material and economic contexts, or reflect latent affordances – they instead contribute to their creation and their own legitimacy. For this reason, I present a concept of performance, not as a dramatic representation of the political and labour situations that underpin the ideas of productivity, efficiency and wellbeing – but as a challenge to performance as a set of already existing technical standards, and their ability to institute and foreclose other routes of action. Therefore, much of the work is to keep interstices open, rather than apply methods to ‘fix’ problems (especially when the dysfunctional contexts which produce them remain unchallenged). Stengers writes simply ‘interstices close rapidly’⁸²⁷ and the imperative in continuous improvement is to ensure that they do.

Performance, throughout the written thesis, is proposed to question the legitimacy of framing sustainability within the high-performance management paradigms of post-Fordist labour. The performance HEATED EXCHANGE proposes that the current architectural view of occupants,

⁸²⁴ Jane Rendell, ‘Working Between and Across: Some Psychic Dimensions of Architecture’s Inter and Transdisciplinarity’, *Architecture and Culture* 1:1 (2013), 128-140 (p. 129).

⁸²⁵ ‘What kind of object is constituted by a contract, for example? What social relations do these documents prescribe or replace? [...] How might architects and others work with this range of documents as part of their creative practice?’ Tilo Amhoff, Nicholas Beech, Katie Lloyd Thomas, ‘Building Specifications, Contracts and Technical Literature: The Constitutive Role of Documents in Architecture’, *arq*, 16:3 (2012), pp. 197-199 (p. 197).

⁸²⁶ Amhoff, Beech, Lloyd Thomas, ‘Building Specifications, Contracts and Technical Literature’, p. 198.

⁸²⁷ Stengers, ‘The Cosmopolitical Proposal’, p. 997.

comfort and sustainability does not hold out against exploitative activities of organisational management. It does this through the construction of an interaction between two actors whose actions are behaviour, in a way that is – despite its abstraction into the form of linguistic ‘action’ verbs – a closer model of behaviour than a description of an occupant’s forgetfulness, recalcitrance or subversion in the ‘post-occupancy study’.⁸²⁸ Further it forewarns that the workplace is a site for excitement, passions, desires, libido and this extends to the sites of our own practice as academics and architects. We too are expected to innovate, be entrepreneurial and, above all, to be passionate about what we do.

The performance follows the process of two women who put to work the energetic metaphors of heat and productivity, as they compete, collaborate, and expend their affective energies through several cycles to exhaustion and burnout. But there is one more extraction, as entertainment⁸²⁹ and I conclude with an ethics of care for these exuberant subjectivities.

Whilst action conjures up ideas of activism and agency: particularly in going against the norm – in this thesis the attention is on the actions that become normative discursive practices, which go unnoticed or can even slip in to more concerted political practices in problematic ways. Activism can be seen in two ways: one is in opening up possibilities for action, new imaginaries and potentials for transformation, the other is analysis and oppositional critique. I am reminded of a moment at the *Industries of Architecture* conference, during a discussion on women in architecture, where Igea Troiani exclaims ‘We are exhausted!’ to which Karen Burns replies ‘No! We are excited!’ Indeed, we are both!⁸³⁰

⁸²⁸ Loren Lutzenhiser. ‘Social and Behavioral Aspects of Energy Use’, *Annual Review of Energy and the Environment*, 18 (1993), 247-89.

⁸²⁹ Actor concludes the piece by saying ‘This is some hot shit!’ referring to the Judith Butler’s warning about the commodifiability of subversive action. Judith Butler, ‘Preface (1999)’, in *Gender Trouble* (Abingdon: Routledge, 2006), pp. xxii-xxiii.

⁸³⁰ ‘Techniques of Practice’ stream, *ARHA conference Industries of Architecture: Relations-Process-Production* (15 November 2014) <<http://industriesofarchitecture.org>> [accessed 1 April 2017]

Rosi Braidotti sets out a possibility for not making these two approaches exclusionary: how to be critical but also affirmative.⁸³¹ My origin is in the critical –from my training in Media Studies – but throughout the process of the PhD I encountered different approaches, mostly grounded in feminist situated practices, which have pried open my critical angle. I am indebted to the work Braidotti,⁸³² Stengers, Suchman, and Butler outside of architecture, and within architecture Peg Rawes,⁸³³ Jane Rendell,⁸³⁴ Katie Lloyd Thomas,⁸³⁵ and H el ene Frichot.⁸³⁶ Reflecting on where I am at the end of this thesis, I am still in between these two activisms – but contribute with an insistence of care for these exhausted/excited bodies.

⁸³¹ Rosi Braidotti, 'On Putting the Active Back into Activism', *New Formations*, 68 (Spring 2010), 42-57, p. 56.

⁸³² Braidotti, 'On Putting the Active Back into Activism', pp. 42-43, 56.

⁸³³ I am also extremely grateful to Peg Rawes' generous invitation to me and another colleague at the Royal College of Art to attend her PhD symposia on 'Materialist Ecological Architectures', *UCL Bartlett* (4-24 March 2015); Peg Rawes *Relational Architectural Ecologies, Architecture, Nature and Subjectivity*, (Abingdon, Oxon: Routledge, 2013).

⁸³⁴ Rendell's writing, but especially her practice as an academic. Jane Rendell, *Ethics in the Built Environment* <<https://www.ucl.ac.uk/bartlett/research/spirit-collaboration/ethics-built-environment>> [accessed 1 April 2017]; and Jane Rendell, 'Giving an Account of Oneself: Architecturally', *Journal of Visual Culture*, Vol 15:3 (4 October, 2016), pp. 334-348.

⁸³⁵ Katie Lloyd Thomas' foregrounding of feminist histories of technology has been a deep influence on my thinking since I met her during undergraduate study at the University of East London, where she convened the Material Matters symposium to her work on specifications, her instrumentality in the *Industries of Architecture* conference, her work as an editor of a chapter that I submitted to the publication for *IOA*, and her contribution of the phrase 'disruptive talent'. Katie Lloyd Thomas (ed.), *Material Matters: Architecture and Material Practice*, (London: Routledge, 2007); Claudia Dutton, 'Performativity and Paranoia: or how to do the 'Internet of Things' with words', *Industries of Architecture*, Katie Lloyd Thomas, Tilo Amhoff and Nick Beech (eds) (Abingdon, Oxon: Routledge, 2015) pp. 294-302.

⁸³⁶ H el ene Frichot and Helen Runtig's writings which make feminist accounts of subjectivities such as 'the entrepreneur' and the 'indebted woman' tackle head on the tendency in Italian autonomist writing to not be specific about gender. H el ene Frichot and Helen Runtig, 'The Promise of a Lack: Responding to (Her) Real Estate Career', *Avery Review* (undated) <<http://www.averyreview.com/issues/8/the-promise-of-a-lack>> [accessed 1 May 2017]. There are many more colleagues from whom I learned so much – especially Bruna Petreca, Delfina Fantini van Ditmar, Helga Schmid, Diana Tanase, and Lois Weaver.

Faire Attention! Pay Attention! (lit. to *do* attention)

The most important insights drawn from feminist influences were how to let methods be open to contingency, to enable them evolve, develop – and to suggest the possibility of moving away from sanctioned design research methods, and social science models – whilst also being rigorous.⁸³⁷ Lori Brown notes that ‘feminist methodologies are nuanced and multivalent. They [...] can seem unstable and unclear.’⁸³⁸ But this makes the demands of PhD scholarship complex, since it is method which becomes a dominant question in research – as well as becoming the object of transferrable knowledge. ‘How can it be tested to get the same outcome?’ I was asked numerous times or ‘How can somebody else repeat this process?’

A situated method is contingent on processes of knowing – it cannot be lifted out and applied directly. Whilst this might seem to obfuscate the question of method – I want to make a point about the amount of time that passed between seeing Bruce Nauman’s work *Violent Incident* (1986). Despite ‘getting it’ – or at least getting something from it – and being able to undertake what it was that I got from his work myself. It was not possible to go merely go for the effect, but to keep working through the action, to understand how to produce the outcome. This is documented in appendix II – ‘Hot on the Trail’ as I sought to learn through doing, whilst holding onto the concept that I got from Nauman’s work (which was not an aesthetic concept, but one about action) in order to eventually use this knowledge to complete the performance. It led to repeated training, going back to learn more, editing and re-forming the written thesis in response to insights and challenges from practice.

⁸³⁷ Hélène Frichot, ‘Five Lessons in a Ficto-Critical Approach to Design Practice Research’, *Drawing On: Presents* (2015) < <http://drawingon.org/issue/01> > [accessed 5 March 2017]; Jane Rendell, ‘Some Notes on Architecture and Design Research’ *The Bartlett, University College London RIBA Research Symposium 2007: Reflections on Practice: Capturing Innovation and Creativity*, <<https://www.architecture.com/Files/RIBAProfessionalServices/ResearchAndDevelopment/Symposium/2007/JaneRendell.pdf>> [accessed 2 March 2017].

⁸³⁸ Lori A. Brown, ‘Feminist Practices’, *Feminist Practices: Interdisciplinary Approaches to Women in Architecture*, Lori A. Brown (ed.) (London: Routledge, 2011), p. 5.

The insistence of the transferability of method went along with appeals to ‘dance’ my PhD,⁸³⁹ contribute towards a ‘vibrant research culture’ and in-a-few-words describe what my PhD is about. My response was ‘an elevator pitch? No, sorry – this is PhD – We are taking the stairs.. it’s 8 floors – Are you ready? – We will get out of breath!’

But of course, I will too be exhausted, and whilst the focus of activism and agency is often outwards⁸⁴⁰ – in engaging disenfranchised communities – there is also a necessity for activism to be inwards – toward our own practices.⁸⁴¹ Specifically to consider architecture, academia and especially activism as forms of work, as knowledge work, immaterial labour,⁸⁴² and emotional labour.⁸⁴³ The work of Deamer,⁸⁴⁴ Troiani,⁸⁴⁵ and practitioners from other creative industries⁸⁴⁶ who are approaching their own practices as labour, and developing a comprehensive and often explicitly feminist

⁸³⁹ John Bohannon, ‘Science launches the 2016 “Dance Your Ph.D.” contest’, *Science Mag* (2 June 2016) <<http://www.sciencemag.org/news/2016/06/science-launches-2016-dance-your-phd-contest>> [accessed 1 April 2017].

⁸⁴⁰ Florian Kossak, Doina Petrescu, Tatjana Schneider, Renata Tyszczyk and Stephen Walker, *Agency: Working with Uncertain Architectures*, Kossak, Petrescu, Schneider, Tyszczyk and Walker (eds) (Abingdon, Oxon: Routledge, 2010), p. 17.

⁸⁴¹ Jane Rendell, ‘Some Notes on Architecture and Design Research’, *RIBA Research Symposium 2007: Reflections on Practice: Capturing Innovation and Creativity*, The Bartlett, University College London (2007) <<https://www.architecture.com/Files/RIBAProfessionalServices/ResearchAndDevelopment/Symposium/2007/JaneRendell.pdf>> [accessed 2nd March 2017]; and Peg Rawes *Relational Architectural Ecologies, Architecture, Nature and Subjectivity* (Abingdon, Oxon: Routledge, 2013).

⁸⁴² I maintain my tough critique against some of the work on immaterial labour and its elaborations within the discipline of architecture, particularly at the Architectural Association, due to their focus on autonomy – which I show in chapter five is not only misplaced, but also underplays the need for ethical work in either care, or address questions of outcome.

⁸⁴³ Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley, CA: University of California Press, 2003); Elyssa Livergant, ‘The Passion Players’, *New Left Project*, <http://www.newleftproject.org/index.php/site/article_comments/the_passion_players> [accessed 27 June 2016].

⁸⁴⁴ Deamer challenges the naturalisation of the all-night culture in architecture and its association with ‘passion’ and status, by actively preventing her students from working through the night without sleep. Peggy Deamer, ‘Peggy Deamer Interview with Datum’, *Datum Discourse* (2017) <<https://www.datumdiscourse.org/blog/2017/1/2/peggy-deamer-interview-with-datum>> [accessed 30 April 2017].

⁸⁴⁵ Igea Troiani, ‘Academic Capitalism in Architecture Schools: a Feminist Critique of Employability, 24-hour Work and Entrepreneurship’, *Architecture and Feminisms: Ecologies, Economies, Technologies*, Hélène Frichot, Catharina Gabriellsson and Helen Runting (eds) (London: Routledge, Forthcoming 2017); and *AHRA Architecture and Feminisms Book of Abstracts* <http://architecturefeminisms.org/wp-content/uploads/2016/11/AF_book-of-abstracts_lowres.pdf> [accessed 27 November 2016].

⁸⁴⁶ Angela McRobbie, ‘Reflections on Feminism, Immaterial Labour and the Post-Fordist Regime’, *New Formations*, 70.70 (2011) 60-76.; Elyssa Livergant, ‘The Passion Players’, *New Left Project*, <http://www.newleftproject.org/index.php/site/article_comments/the_passion_players> [accessed 27 June 2016]; Angela McRobbie, ‘Is Passionate Work a Neoliberal Delusion?’, *openDemocracy* (22 April 2015) <<https://www.opendemocracy.net/transformation/angela-mcrobbe/is-passionate-work-neoliberal-delusion>> [accessed 5 April 2017]; and Jen Harvie, *Fair Play - Art, Performance and Neoliberalism* (London: Palgrave MacMillan, 2013).

appraisal on the subjectivities put to work, raises the necessity for taking care of exhaustion, exploitation and precarity.

I am indebted to the influences of feminist scholarship and practices on my key contribution of this thesis: which is not present a fix, but to open an account and to conduct a tracking, or mapping. Drawing on Rosi Braidotti's encouragement that we make 'adequate cartographies of our real-life conditions,'⁸⁴⁷ I suggest that the work of mapping includes what Blundell Jones, Till and Petrescu⁸⁴⁸ set out to do. In identifying desires as productive, (and therefore merely 'pleasure' which can be ameliorated within the current economic framework) their work is to identify where these desires (and their transformational potential) align too closely with those of the financial and powerful.⁸⁴⁹

Braidotti writes that 'a subject's ethical core is not his/her moral intentionality, as much as the effects of the power [...] her actions are likely to have upon the world.'⁸⁵⁰ This re-inscribes existing practices in architecture⁸⁵¹ – in particular those that foreground the desire to 'enter into modes of relation with multiple others,'⁸⁵² by bringing numerous stakeholders and disciplines into a discussion, and enter into an ethical account of the consequences of actions made.

For Braidotti, a feminist immanent position 'assumes the humility of saying "we are a part of capitalism",' and counters the tendency to try to locate its specific break-points.⁸⁵³ Braidotti reminds us that capitalism 'doesn't break, it bends – it enfolds and unfolds.'⁸⁵⁴ Kossak, Petrescu, Schneider, Tyszcuk and Walker conclude that agency 'is exercised most

⁸⁴⁷ Rosi Braidotti, 'On Putting the Active Back into Activism', *New Formations*, 68 (Spring 2010), 42-57 (p. 56).

⁸⁴⁸ Peter Blundell Jones, Doina Petrescu and Jeremy Till, 'Introduction', *Architecture and Participation*, Peter Blundell Jones, Doina Petrescu and Jeremy Till (eds) (London: Spon Press, 2005) pp. xiii-xvii (p. xiv).

⁸⁴⁹ Blundell Jones, Petrescu and Till, *Architecture and Participation*, p. xiv.

⁸⁵⁰ Braidotti, 'On Putting the Active Back into Activism', p. 45.

⁸⁵¹ Rawes' work on ethics, biopolitics and relational practices, and Jane Rendell's situated ethical engagement with divestment in fossil fuels at UCL, and her *Ethics in the Built Environment* project are key examples. Rawes, *Relational Architectural Ecologies*. Rendell, *Ethics in the Built Environment*.

⁸⁵² Rosi Braidotti, 'On Putting the Active Back into Activism', p. 45.

⁸⁵³ Heather Davis and Rosi Braidotti, 'Thinking with Zoe: An Interview with Rosi Braidotti', *AModern.net* <<http://amodern.net/article/amoderns-thinking-zoe/>> [accessed 5 September 2016].

⁸⁵⁴ Davis and Braidotti, 'Thinking with Zoe'.

fully in the knowing balance between acceptance and refusal of the forces that shape our identity.’ This, they propose, ‘is a condition not to be overcome but embraced, affected, agencé. [...] The ecology of the future is an ecology of the subjectivities and responsibilities of the present.’⁸⁵⁵

The work, as a whole, contributes towards what Braidotti calls a ‘cartography’.⁸⁵⁶ Throughout the written thesis, practice, and the method I outline in chapter one, I map and track the movement of discursive practices from organisational management and production, through into architecture. I hope that this work contributes towards existing architectural practices – especially those which reveal relational models of agency that are not based on an individual’s entrepreneurial autonomy and disruptive potential. These practices also highlight the imperative to counteract the hyper-individualism underlying many proposals for architects to get engaged entrepreneurially with communities of care.

The grounding of Jane Rendell’s *Ethics in the Built Environment* project in situated feminist practices brought a pressing need for her to account for the sequence of events that led to her ‘standing down’ as Vice Dean of Research, and to speak frankly about the affective costs for the individual who takes a stand.⁸⁵⁷ It is crucial therefore to create ecologies of care to ensure that attempts to make a difference do merely shift or reproduce the exploitations of a system onto another group of people, nor leave those who do speak out open to vulnerability and institutional bullying.

⁸⁵⁵ They cite Elizabeth Grosz: ‘Your identity is changing all the time, but it’s you who is being changed rather than you who is the agent of that change. We are effects more than causes [...] It would be nice to be able to choose an identity, but in fact it is chosen for us. Our agency comes from how we accept that designated position, and the degree to which we refuse it, the way we live it out.’ Elizabeth Grosz, *Architecture from the Outside: Essays on Virtual and Real Space* (Cambridge, MA: MIT Press, 2001), p. 22, cited in Kossak, Petrescu, Schneider, Tyszczyk and Walker, ‘Agency: Working with Uncertain Architectures’, p. 17.

⁸⁵⁶ A cartography is described by Braidotti as a ‘theoretically based and politically informed reading of the present’. It is a mapping, that cuts across disciplines, of discursive, affective and social relations, of power relations as both micro and macro-scales. Most importantly they must attempt to be adequate, and locate the author, and give ‘a positioning, [...] a horizon, a frame of reference within which I can take my bearings, move about and set up my own theoretical tent’. Rosi Braidotti, *Nomadic Subjects: Embodiment and Sexual Difference in Contemporary Feminist Theory* (Columbia University Press, 2011), pp. 4, 7, 18, 45, 54, 90.

⁸⁵⁷ Jane Rendell, ‘Giving an Account of Oneself: Architecturally’, *Journal of Visual Culture*, 15:3 (4 October, 2016), pp. 334-348.

In drawing attention to the labour of this work, the focus is on taking care as we – exhausted, excited – try to transform our contexts and contest the framing of the work we do within the dominant economic and political contexts. I hope that this work can be seen as a forensic account of the political and economic contexts in which, as architectural practitioners and academics, we now work. What I set out with the written thesis and the performance HEATED EXCHANGE, is not a method offering up an emancipatory promise through performance by itself – on the contrary, it is to open up more cracks in foreclosed futures, and to attempt to contribute, in a partial way, to other methods, and to account for the present condition through making more adequate our cartographies, and to make more real the urgency of the situation mobilising us.⁸⁵⁸

⁸⁵⁸ Stengers, 'The Cosmopolitical Proposal', *Making Things Public: Atmospheres of Democracy*, Bruno Latour and Peter Weibel (eds.) (Cambridge, MA: MIT Press, 2005), pp. 994-1004. p. 994.; Isabelle Stengers, 'Gaia, the Urgency to Think (and Feel)', *Os Mil Nomes de Gaia* < <https://osmilnomesdegaia.files.wordpress.com/2014/11/isabelle-stengers.pdf> > [accessed 3 October 2016].

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'Theatre of the Oppressed', led by Sergio Amigo, Diego Iudicissa, *Calder Bookshop Theatre* (August-October 2013)

'Playwriting: Stage 1', led by Dawn King, *CityLit* (19 September 2013 - 5 December 2013)

'Introduction to Logic', *London School of Philosophy* (14 January – 25 March 2014)

'Logic, Language and Communication 1', *Coursera* (14 February – 14 April 2014) [I followed this course but]

'Logic, Language and Communication 2', *Coursera* (22 April – 17 June 2014) [without doing all assignments]

'Nest Certified Profession Training Session', *Nest Labs* (20 May 2014)

'Persona Evening Class', led by Lois Weaver, *Wellcome Collection – Institute of Sexology* (19 March 2015)

'Acting Technique', led by Ian Henderson, *RADA* (27 April 2015)

'Actions, Acting and Reacting', led by Ian Henderson, *RADA* (21 September 2015)

'Improvisation', *RADA* (18 May 2015)

'Stanislavsky's Mindful Actor: A Workshop', led by Ysabel Clare, *Calder Bookshop Theatre* (19 May 2015)

'Playwriting', led by John White, *Chelsea Theatre* (22 October 2015 - 21 Jan 2016)

'Hands-on Performance Weekend Lab', led by Lois Weaver, *Barbican* (16-17 April 2016)

Appendices

Appendix I: Hot Data

Appendix I includes information about the method and resources used to construct the metaphor database, early diagrams for the metaphor mapping from 2011, as well as a short extended discussion behind the framing of the ANGER is HEAT conceptual domain that counter's George Lakoff and Mark Johnson's embodied cognitive metaphor in *Metaphors We Live By*.⁸⁵⁹ I summaries the arguments given in Caroline Gevaert's PhD Thesis⁸⁶⁰ in her historical query of the claim that the metaphors are based on folk models of physiological emotional responses.

I also include an abstract for a presentation at AISB event hosted by John Barnden at the University of Birmingham, on the metaphor database mapping that I had conducted in 2014:

'Work, Love and Anger in Occupied Buildings: Metaphors for Heat in Humans, Machines and Architecture', *Figurative language: its patterns and meanings in domain-specific discourse*, University of Birmingham, (18-19 August 2014)

Appendix II: Hot Stuff

Appendix II documents the calls for participation in the performance of *Heated Exchange* and further information about the construction and management of the practice. It also includes a version of the script annotated with database entries for the thermal verbs, as well as the script for a public performance of an early version of the script at the Chelsea Theatre in January 2016.

⁸⁵⁹ George Lakoff and Mark Johnson, *Metaphors We Live By* (London: University of Chicago Press, 1980).

⁸⁶⁰ Caroline Gevaert, *The History of ANGER: the lexical field of ANGER from Old to Early Modern English*, doctoral thesis, (University of Leuven: Belgium, 2007).

Appendix III: Killer Apps

Appendix III includes further notes on the performance method and its relation to emotional design in the discipline of design, in particular the work of Design Interactions at the Royal College of Art, William Gaver's Interaction Design at Goldsmiths, and other uses of emotional design in particular 'Object Theatre' of Preben Friis, Merja Ryöppy and Jacob Buur at the University of Southern Denmark.

I also document the calls for participation for workshops that I ran using Austinian/Stanislavskian methods at the Royal College of Art and at the Nordic Design conference 2015:

My computer refuses to start up! Royal College of Art (Jan 2013); Workshop as part of *Disruption*, the RCA Research Student Biennial Exhibition 2013 with artists, actors and PhD candidates on machine behaviour and the attribution of emotional states and motivations to objects.

The Little Thoughts of Thinking Machines, Royal College of Art (April 2013); Workshop with post-graduate and undergraduate students from Imperial College London, RCA, London Academy of Music and Dramatic Arts and The London Consortium - to collaboratively write and perform scripts for machines and mechanical objects, without resorting to anthropomorphism.

The Performance of Nonhuman Behaviour (with Dr Dan Lockton and Delfina Fantini van Ditmar) (June 2015); Workshop at NorDes 2015 (Nordic Design Research Conference) for PhD students in Architecture, Design and User Experience on the Internet of Things, ubiquitous computing, quantified self, algorithms.

I include relevant publications/papers:

'Just What Do You Think You Are Doing, HAL? The Use of Performative Speech in 2001, A Space Odyssey', *AISB 2014 – Culture of the Artificial stream* (January 2014)

This conference paper was submitted for a stream of the 2014 Artificial Intelligence and Simulated Behaviour Conference, which did not go ahead as it had too few relevant submissions. The Culture of the Artificial stream was proposed by Matthew Fuller of Goldsmiths, University of London.

'Private Passions in the Silicon Valley', *E.R.O.S. Journal: The Interior*, Sami Jalili (ed.) (November 2015) An invited chapter for a London-based journal on the architectural interior. This book chapter was an early articulation of my thoughts on how the workplaces of Silicon Valley really worked on subjectivity through culture, and how this had an unusual connection with design.

Finally, I include the studio brief for the MArch Unit that I run at the Canterbury School of Architecture at University for the Creative Arts (UCA) during the academic year 2016/17. This unit is the first approach to architectural design practice following the thesis, and sets out an investigation of the Campus typology and the relationships between culture and architecture. I did not run any workshops with the actioning method, since I wanted the students to locate their own positions of inquiry on what the Campus was, and whether it differed from the office.

Unit Description, *Studio Disrupt*, MArch Unit, University for Creative Arts (October 2016)

Suggested Reading, *Studio Disrupt*, MArch Unit, University for Creative Arts (October 2016)

Appendix I: Hot Data

Hot Data

The database was constructed as a document recording the metaphors in the LUST IS HEAT, and ANGER IS HEAT domains, beginning with Zoltán Kövecses' *Metaphor and Emotion*⁸⁶¹ and George Lakoff's work in *Women, Fire and Dangerous Things*,⁸⁶² idioms and figurative references to heat elicited in an early questionnaire, and from colleagues. Further words were drawn from online references such as the *Oxford English Dictionary (OED) Online*,⁸⁶³ the *Oxford Living Dictionaries*,⁸⁶⁴ the *Oxford Dictionary of Word Origins*⁸⁶⁵, and print editions of the *Concise Oxford Dictionary of English Etymology*,⁸⁶⁶ the *Longman Lexicon of Contemporary English*.⁸⁶⁷ Information was supplemented by *Etymology Online*⁸⁶⁸ a large resource of pooled etymology references, and then verified against the *OED Online*.

A rule was derived that words that would count in the database had to have a meaning related to heat or heat-process in their dictionary-entry, or to be etymologically related to heat or temperature and still in-use (even if the meaning of heat was no longer relevant). Obsolete terms were excluded, and some terms that have not (yet) become metaphorical have been included. The next level was to search for heat metaphors within the domains that were emerging: productivity, military, economics. I used sources such as the *Dictionary of Human Resource Management*.⁸⁶⁹ Many of

⁸⁶¹ Zoltán Kövecses, *Metaphor and Emotion: Language, Culture, and Body in Human Feeling* (Cambridge: Cambridge University Press, 2000) pp. 29-41.

⁸⁶² George Lakoff, *Women, Fire and Dangerous Things*, (Chicago: University of Chicago Press, 1987) pp. 380-415.

⁸⁶³ *OED Online* (Oxford University Press, 2017) <<http://www.oed.com>> [accessed 1 March 2017]

⁸⁶⁴ This online resource was formerly the *Oxford Dictionaries Online* (ODO); 'The OED and Oxford Dictionaries', *OED Online*, (Oxford University Press, 2016) <<http://public.oed.com/about/the-oed-and-oxford-dictionaries/>> [accessed 7 May 2017]; *Oxford Living Dictionaries* (Oxford University Press, 2017) <<https://en.oxforddictionaries.com>> [accessed 1 March 2017]

⁸⁶⁵ Julia Cresswell, *The Insect That Stole Butter?: The Oxford Dictionary of Word Origins* (Oxford: Oxford University Press, 2010) <<http://www.oxfordreference.com/view/10.1093/acref/9780199547920.001.0001/acref-9780199547920>> [accessed 7 May, 2017]

⁸⁶⁶ T.F. Hoad (ed.), *Concise Oxford Dictionary of English Etymology* (Oxford, Oxford University Press, 1993)

⁸⁶⁷ Tom McArthur, *Longman Lexicon of Contemporary English* (London: Longman, 1981)

⁸⁶⁸ Douglas Harper, *Online Etymology Dictionary*, (2001-2017) <<http://www.etymonline.com>> [accessed 7 May 2017]

⁸⁶⁹ Edmund Heery and Mike Noon, *A Dictionary of Human Resource Management* (Oxford: Oxford University Press, 2008) <<http://www.oxfordreference.com/view/10.1093/acref/9780199298761.001.0001/acref-9780199298761>> [accessed 7 May, 2017]

the metaphorical expressions in the database are used in business language, and further, cut across the categories. In addition, on the *Oxford Living Dictionaries Online* sample phrases are given for many of the entries, and these were also recorded. The word HOT, adjective, has twenty individual entries in my project database, taken from the definitions given in the *OED Online*, *Oxford Living Dictionaries* sources and following phrases drawn from the *Oxford Living Dictionaries* define the various uses of the term 'HOT':

'The air was cool at first but as the day wore on, became increasingly hot and uncomfortable.'

'I have a hard time believing if she shed 40 pounds you'd suddenly be hot for her.'

'The market is hot for Hollywood extravaganzas that fill screens at multiplexes.'⁸⁷⁰

Each metaphor was annotated with its sources of original usage from the *OED Online*, and given a date-stamp where available. In addition the part-of-speech was recorded. The database was consolidated by coding the domains that they referred to through including the *OED Online* and *Oxford Living Dictionaries* descriptions, and making a separate entry for each definition of the word.

The dataset is not consistent throughout: the *OED Online* is updated with revisions and new entries quarterly, and is currently undergoing its first major revision of entries since the original *OED* was published between 1884 and 1928.⁸⁷¹ This process began in 1993, and is more comprehensive than previous revisions, since those did not alter the definition text as originally published in the first volumes. The *OED Online* revision is also not being implemented alphabetically, and so words in my database variously have updated definitions and time-stamps, while others are the original entry from 1884 or 1928, and are missing information about their use in modern English. Some words that are well-used in business are not yet in

⁸⁷⁰ *Oxford Living Dictionaries*, <<https://en.oxforddictionaries.com/definition/hot>> [accessed 7 May, 2017]

⁸⁷¹ 'Rewriting the OED', *OED Online* (Oxford University Press, 2016) <<http://public.oed.com/the-oed-today/rewriting-the-oed/>> [accessed 1 March 2017]

the *OED Online* such as – ‘cool biz’ so I have found supplementary sources for those.⁸⁷² Some words/idioms in the corpus are what I would call figurative ‘heated. adj. Inflamed, excited (physically or mentally); fevered, impassioned, angry’ for example, but are not annotated as figurative in the *OED Online*.⁸⁷³

Development of the Method

Early elicitation tasks undertaken at the start of the research in 2011, indicated that respondents held a referential conceptual domain of heat in their heads, alongside a sometimes contradictory personal subjective sense of their own preferences. In a questionnaire given to participants where they were asked to choose ten words for heat, and then asked to which degree they considered each word to be positive or negative on a five-point scale, one respondent scored the word *hot* as a negative word and wrote in brackets ‘I love the heat so I would agree that it is positive, but others may not?’ The respondent referred to above was well aware of the contradiction and wrote a note on her questionnaire to say that although she had rated the words to do with heat as being negative on the Lickert scale (words like *boiling, baking, scorching*) – she personally considered them to be positive.

My initial task was to map this subjective realm against standard framings of ‘comfort’ in psychometric tests such as the Fanger Scale of Thermal Sensation.⁸⁷⁴ These mappings were not conclusive – on one axis I had a scale going from cold to hot, and on the other I sought other criteria: humidity/dryness, sociality/hostility. Each yielded a new pattern – and none of which supported the existence of a single conceptual domain that led to respondents acknowledging that there was a general consensus that

⁸⁷² ‘Japanese “Cool Biz”’, *LivingLanguage.com* (20 June, 2012) <<http://www.livinglanguage.com/blog/2012/06/20/japanese-cool-biz/>> [accessed 1 March 2017]

⁸⁷³ *OED Online* <<http://www.oed.com/view/Entry/85147?redirectedFrom=heated#eid>> [accessed 1 March 2017]

⁸⁷⁴ Michael Humphreys, Fergus Nicol and Susan Roaf, *Adaptive Thermal Comfort: Foundations and Analysis* () pp. 29-39., p. 67.; and ‘Predicted Mean Vote’, *Designing Buildings Wiki* <https://www.designingbuildings.co.uk/wiki/Predicted_mean_vote> [accessed 1 March 2017]

cool is 'good' – alongside the personal experiences that they liked to be *baking* hot.

Experiments in mapping metaphor were attempted, to see how metaphors mapped against a temperature scale - to understand whether an underlying structure led to the result that *hot* words were considered negative by respondents, when the personal experience of that temperature is mixed. The results in this mapping showed a larger volume of *hot* words considered as negative. The words were mapped again in terms of other (literal) properties relating to air-movement and humidity to see whether *airy* words were considered more positive, or *damp* words considered negative. There wasn't a consistently strong result from this method of mapping.

The work of Lakoff, Johnson and Kövecses encouraged me to investigate the words within idioms and expressions and not just individual words. In collecting and coding all words, phrases that were metaphorically related to heat in a database, I could test the hypothesis of conceptual metaphorical domains further.

The word cold can be used to describe the physical coolness of an object, the air or a body, it can also be used to communicate social exclusion and reticence (*cold-shoulder*), or a detachment to emotions in a pathological sense (*cold and calculating*). The cognitive metaphor thesis of George Lakoff, Mark Johnson and Zoltan Kövecses⁸⁷⁵ proposes that metaphorical expressions are not a linguistic ornament but are a fundamental cognitive activity. They also propose that metaphors do not exist as solitary linguistic quirks but can be mapped to reveal a conceptual ontology.

One can say that another person is *frosty*, *chilly*, or *warm* and thus describe the mood of an encounter; words can be used to describe

⁸⁷⁵ Zoltán Kövecses, 'Metaphor and Emotion', in *The Cambridge Handbook of Metaphor and Thought*, ed. by Raymond W. Gibbs Jr. (Cambridge: Cambridge University Press, 2008) pp. 380-396; Zoltán Kövecses and Benczes Réka, *Metaphor: A practical Introduction* (Oxford: Oxford University Press, 2009)

another's capacity for social interaction in terms of temperature, where the range of temperature broadly describes an intensity of social engagement.

Words were mapped according to parameters such as control and social interaction to go beyond a simple correlation between temperature and value where heat is negative, for it would be considered to be a negative trait to be *icy* in a social setting, just as it would be to have a *fiery* temperament.

In combination with Lakoff and Kövecses' work on LUST IS HEAT, and ANGER IS HEAT whilst reading the history of the thermal control, theories of thermodynamics brought some reformations of the mappings into contact with these early metaphor models. I began to test a cohesive conceptual domain of the steam-engine, which seemed immanent in Lakoff and Kövecses mappings of metaphorical entailments. Whilst Kövecses writes that the machine is a source domain for the conceptualisations of both lust and anger⁸⁷⁶ – they seem to make no comment of the body explicitly framed as a very specific thermo-hydraulic machine and insist that the primary relation is to physiological changes in the body of an angry person.⁸⁷⁷ As I collected more and more words, I also saw that the concepts framed by the concept of the steam engine extended into emotive fields. The work of Luis Fernández-Galiano,⁸⁷⁸ and Steven Connor⁸⁷⁹ suggested to me that also productivity was a key category to map, and I added two further domains: economics and conflict.

My final group of domains that I mapped belong to the conceptual domains of lust and anger, productivity, economics, and conflict. The question of categorisation is not trivial – and I hold these categories roughly. I attempted to group them originally into fairly distinct categories, developing a method based on the work at the University of Lancaster by Paul Rayson, and the University Centre for Computer Corpus Research on

⁸⁷⁶ Kövecses, *Metaphor and Emotion, Language, Culture, and Body in Human Feeling*, p. 39.

⁸⁷⁷ Lakoff, *Women, Fire, and Dangerous Things*, p. 381., p. 386.

⁸⁷⁸ Luis Fernández-Galiano, *Fire and Memory: On Architecture and Energy* (Cambridge, MA: MIT Press, 2000)

⁸⁷⁹ Steven Connor, *Thermotaxis: An Essay on the Thermodynamics of Culture* (2005) <<http://stevenconnor.com/thermotaxis/>> [accessed 16 October 2011]

Language (UCREL)⁸⁸⁰ using UCREL Semantic Analysis System (USAS).⁸⁸¹ Their work is not based on metaphorical tagging, and I devised a rough algorithm to query the *OED*, and *Oxford Living Dictionaries* definitions and come out with a selection of rough metaphorical categories.

ANGER is HEAT

This part of the appendices includes an investigation of my proposition is that underlying the ANGER IS HEAT metaphors is the primary conceptual domain of the body as a steam engine (with some variants). This claim is supported by work studying the ANGER IS HEAT metaphor at the University of Leuven in Belgium.

In present-day English, as noted by Kövecses, Lakoff and Johnson, heat-related words account for the largest number of all expressions to talk about anger, and the ANGER IS FLUID IN A CONTAINER is the most dominant and highly elaborated contemporary metaphor.

However, in a doctoral thesis on the historical origin of the ANGER IS HEAT metaphor, Caroline Gevaert questions their assertion that the source for metaphor is a folk-theory of a physiological body.⁸⁸² She analyses the texts of middle and early English, including Chaucer and Shakespeare, for instances of metaphors that directly correspond with Lakoff, Johnson and Kövecses' hypothesis.

Gevaert's findings show that metaphorical mappings for ANGER IS HEAT, ANGER IS FIRE and ANGER IS FLUID IN A CONTAINER are not consistent across time.⁸⁸³ Kövecses, pre-empting the temporal problem raised by Gevaert's study, has stated that if 'the conceptualisation of anger in terms of heat is a mechanical or automatic consequence of our real

⁸⁸⁰ University Centre for Computer Corpus Research on Language Homepage, <<http://ucrel.lancs.ac.uk>> [accessed 29 August 2014]

⁸⁸¹ 'English Semantic Tagger', UCREL Semantic Analysis System (USAS) <<http://ucrel.lancs.ac.uk/usas/>> [accessed 29 August 2014]

⁸⁸² Caroline Gevaert, *The History of ANGER: the lexical field of ANGER from Old to Early Modern English*, doctoral thesis, (University of Leuven: Belgium, 2007)

⁸⁸³ Gevaert, *The History of ANGER*, p.

physiology in anger, this fluctuation should not occur. It cannot be the case that people's physiology changes in anger every one or two hundred years or so'.⁸⁸⁴

He nonetheless maintains that one should not expect to find continuity in a conceptual term in relation to its source domain across time, even within the same language, and that experiential focus may change depending on a variety of factors in the surrounding cultural context. 'I suggest that despite the universality of bodily experience on which many of our more specific emotion metaphors (such as LUST IS HEAT and THE ANGRY PERSON IS A PRESSURISED CONTAINER) are based, we get a large amount of nonuniversality in the metaphorical conceptualization of emotion.'⁸⁸⁵

His commitment to anger being metaphorically conceptualised as HOT FLUID IN A CONTAINER because of the physiological and automatic responses of the body of an 'increase in body heat when they are in a state of intense anger' underplays the potential of culture and, perhaps more importantly, dominant philosophical or scientific paradigms to form the body and subjectivity. It leaves cognitive metaphor with an unsatisfactory point of origin. If, as Lakoff himself states, that thought is fundamentally metaphorical, the question of the body is important.

Gevaert's research shows that the concept of anger as heat is not a permanent feature of the English language, but examples of the ANGER IS HEAT and ANGER IS FIRE metaphors are found at different points throughout the periods studied. While the context of ANGER IS FIRE is undoubtedly religious, Gevaert says, and therefore ubiquitous, ANGER IS FLUID IN A CONTAINER is scarcely found in the entire body of work. When it does it occurs in a small amount of cases as 'hot blood', and 'boilen' - notably without the UNDER PRESSURE clause.⁸⁸⁶

⁸⁸⁴ Kövecses, 'Metaphor and Emotion', p. 394.

⁸⁸⁵ Kövecses, 'Metaphor and Emotion', p. 395.

⁸⁸⁶ Gevaert, *The History of ANGER*, p. 252.

Gevaert considers these sporadic examples of the ANGER IS FLUID IN A CONTAINER to be associated with the humoral view of the emotions in Europe,⁸⁸⁷ where hot and cold were understood very differently. For example: hot dry foods and spices were seen to aid cold moist organs. Conditions such as excesses of choler, phlegm or bile also had resulting temperaments, one of which was anger. Gevaert concludes that:

The role of culture, which has mostly been disregarded in metaphor research, is further borne out by the fact that almost none of the HEAT conceptualizations in the [texts] show signs of embodiment. When they do, they can be linked with the humoral doctrine, from which also the conceptualization ANGER AS THE HEAT OF A FLUID IN A CONTAINER originates.⁸⁸⁸

She concludes that the body in these metaphors should not be seen as a naturalised common-sense thing: ‘This link between the humoral doctrine and the HEAT-conceptualization questions the claim that the HEAT-conceptualization is directly based on human physiology as the humoral doctrine is a cultural model, not an instinctive folk theory’.⁸⁸⁹

Gevaert’s historical account of the HEAT IS ANGER metaphor leaves the domain concept of HEAT without its central component of UNDER PRESSURE; however, her work culminates with texts from c.1500. If the ANGER IS HEAT IN A FLUID CONTAINER UNDER PRESSURE metaphor is the dominant metaphor now, but was not evident before 1500, then how to account for the change? I propose that it is a cultural shift in the way that bodies were seen after 1500 has specifically allowed the metaphors for anger as hot fluid under pressure to become the dominant metaphor in the present day.

⁸⁸⁷ Gevaert, *The History of ANGER*, pp. 2-9.

⁸⁸⁸ Gevaert, *The History of ANGER*, p. 250.

⁸⁸⁹ Gevaert, *The History of ANGER*, p. 250.

Abstract

Dutson, Claudia, 'Work, love and anger in occupied buildings: metaphors for heat in humans, machines and architecture', presentation given at *Figurative language: its patterns and meanings in domain-specific discourse*, University of Birmingham, Dr John Barnden (convenor) (18-19 August 2014) as part of AISB (Artificial Intelligence and Simulated Behaviour)

A significant component of this PhD research project is focused on the role of figurative speech, in particular, common and everyday metaphors in the discourse of thermal comfort in architecture.

The hypothesis is that the thermal management of a building is not just a matter of dealing with a purely physical property: heat – but is bound up with ideas of productivity. Decisions on whether to open a window, or change the setting on a thermostat, cannot be resolved by temperature alone, and much work is being done to make autonomous thermal management systems that can make 'smart' judgements on environmental matters. For example, 'smart' thermostats programmed to evaluate physical data alongside another set of criteria (external weather, habits of the occupants, comfort preferences).⁸⁹⁰

This research project investigates the realm of figurative speech and the possibility of giving a thermostat a model of thermal metaphor. This is not to propose a once-and-for-all solution to problems of high energy use, or conflicts in the workplace – but to better understand the rhetoric invoked when talking about heat and the paradoxes that affect architecture and energy usage. For example; that new buildings designed to be environmentally efficient are failing to perform as well as predicted (known in architectural discourse as the 'performance gap').

The method for creating a model of thermal metaphor combines design with qualitative and corpus based methods. Metaphors are collected manually through elicitation tasks, etymology dictionaries, and a corpus of texts on: thermal metaphors in psychoanalysis; cognitive metaphors for heat; and thermostats as metaphor (for example: in philosophies of artificial intelligence and cybernetics, the thermostat has been used as a model or metaphor for consciousness, the economy, biological systems, and strategies of warfare). (Bateson, 1972; Chalmers, 1998; Curtis, 2011; Dennett, 1987; Galison, 1994; McCarthy, 1979, 1983; Watts, 1957; Wiener, 1961)

The metaphors have been manually coded, using the OED Online and The Oxford Dictionary of English Etymology (Onions, 1992) to classify which thermal metaphors relate to one of three domains; Anger, Lust and Productivity.

Using design project methods (the researcher is trained as an architect), diagrams for prototypical conceptual domains for heat have been made, which explore the rhetorical fields of the metaphors.

⁸⁹⁰ At this year's Architecture Biennale in Venice Elements of Architecture, curator and architect Rem Koolhaas spoke with NEST thermostats CEO Tony Fadell on the topic. Rem Koolhaas, Tony Fadell and Niklas Maak, '5000 years of architecture... and now what? architecture and technology?', online video recording, *YouTube*, 5 June 2014, <<https://www.youtube.com/watch?v=dxqFqbAp2Fo>> [accessed 14 June 2014].

Aiming to go further than the cognitive metaphor of Lakoff & Johnson, Kövecses et al, by combining the concept of metaphorical repercussions of heat on the occupant and the effects on productivity: *to steam up, to put the heat on somebody, to cool tempers*, with the employment of thermodynamic metaphor in psychoanalysis, biology and literature – e.g. Freud’s use of the steam engine for psychodynamics, and the cultural phenomenology of thermodynamics. (Averill, 1990; Connor, 2005; Fernández-Galiano, 2000; Leary, 1990; Serres, 1982)

The prototypes are now being coded referencing the Historical Thesaurus of the Oxford English Dictionary to derive an ontological database for a ‘smart’ thermostat; what thermal metaphors might mean to a thermostat.

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Appendix II: Hot Stuff



A Thermal Performance

call for participation

agitate, agitation, anneal, ardour, boil, boiling, boiling-heat, boiling-point, brew, broil, brood, brooding, bulletin, burn, burn rate, burn-out, burn-up, burning man, slash-and-burn, calm, calamin chafe, chill, chill pill, chilled, chilling, chilling effect, chilly, clumsy, cold, cold feet, cold shoulder, cold start, cold storage, cold sweat, cold war, cold-blooded, cold-call, cold-hearted, cold-shoulder, cold-spirited, coldly, conflagrate, conflagration, conflate, conflation, congeal, cool, cool customer, cool down, cool-headed, cool-hunter, cooling, cooling-off period, coolness, coolth, cool your jets, ebullience, ebullient, effervesce, effervescence, effervescent, enthalpy, entice, enticing, entropy, exhaust, exhaustion, explode, explosion, extinguish, exude, ferment, fervent, fervently, fervescent, fervid, fervour, fire, firing on all cylinders, flame, flamed, flagrant, in flagrate delicto, flare, flare-out, flare-up, flash burn, flash drive, flash-point, focus, focus group, friction, frigid, frigidly, frigorific, frisson, frost, frosty, frozen, fuel, fume, fuming, glacial, global warming, heart-warming, heat, heated, heat death, heat-engine, heat-seeker, heat-seeking, homebrew, hot, hot air, hot blast, hot button, hot favourite, hot flash, hot key, hot money, hot potato, hot seat, hot shit, hot stuff, hot war, hot water, hot-blooded, hot-desk, hot-desking, hot-headed, hot-swap, hot-tempered, hotbed, hothead, hothouse, hothouse effect, hotly, hotshot, hotted-up, hotting up, hotty, hotwire, humour, humourless, ice, ice-breaker, ice-breaking, icily, iciness, icy, ignite, ignition, incendiary, incense, incensed, incentive, incentivize, inflame, inflammatory, kindle, lean-burn, libidinous, libido, lukewarm, melt, meltdown, overheat, overheated, perfervent, perfervid, perfervour, phlegm, quench, red-hot, refrigerate, rekindle, sang-froid, scald, scalding, scorch, scorched, scorched earth, scorching, seethe, seething, sizzle, sizzler, sizzling, smoulder, smouldering, steam, steam ahead, steamed, steaming, steam up, steamy, superheat, superheated, sweat, sweat equity, sweating, sweating your assets, sweatshop, sweaty, swot, SWOT analysis, temper, temperament, temperamental, thaw, thermaesthesia, thermal, thermodynamic, thermometer, thermonuclear, thermostat, thermotaxis, vent, volatile, warm, warmly, warmth, warm bodies, warm up, warm work, warm-blooded, warm-down, warm-hearted, well-tempered, white heat, white-hot,

A Thermal Performance

Call for participation:

3 strong female actors wanted to perform in a video piece for a PhD project in the School of Architecture, Royal College of Art.

The actors will play varying roles; sometimes female, sometimes male, in a devised and improvised piece from documentary material.

The project is about the politics of temperature control in architecture. The documentary material is drawn from a historical, philosophical and psychoanalytic investigations of temperature and theories of control. The script will include phrases drawn from dictionary entries for 400+ metaphors for heat.

The metaphors for temperature consistently fall into a distinct set of categories; these words and idioms are used to talk about productivity, lust, anger, war, motivation, desire, hostility and geniality.

Improvisations and dialogues will be devised around this material, and the actors will perform alongside an artificially intelligent thermostat, which has been programmed to recognise these metaphors, and perform its own lines of dialogue in order to motivate, and regulate the drives, desires and actions of the actors.

The performance aims to destabilise the political formations of these metaphors as they occur in current neo-liberal discourses - in particular through linguistic and 'affective' labour; emails, reports, presentations, meetings, appraisals, product launches, IPOs and the emotional work of the 'knowledge economy' and creative industries.

As these practices become more embedded within all areas of creative practice, with the call that everybody (artist, actor, architect, designer, writer and so on) becomes an entrepreneur or innovator.

The project seeks to bring feminist practice to bear on these energetic metaphors, technocratic systems and economic ideology.

Contact:
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agitate, agitation, anneal, ardour, boil, boiling, boiling-heat, boiling-point, brew, broil, brood, brooding, bulletin, burn, burn rate, burn-out, burn-up, burning man, slash-and-burn, calm, calming, chafe, chill, chill pill, chilled, chilling, chilling effect, chilly, clumsy, cold, cold feet, cold shoulder, cold start, cold storage, cold sweat, cold war, cold-blooded, cold-call, cold-hearted, cold-shoulder, cold-spirited, coldly, conflagrate, conflagration, conflate, conflation, congeal, cool, cool customer, cool down, cool-headed, cool-hunter, cooling, cooling-off period, coolness, coolth, cool your jets, ebullience, ebullient, effervesce, effervescence, effervescent, enthalpy, entice, enticing, entropy, exhaust, exhaustion, explode, explosion, extinguish, exude, ferment, fervent, fervently, fervescent, fervid, fervour, fire, firing on all cylinders, flame, flamed, flagrant, in flagrant delicto, flare, flare-out, flare-up, flash burn, flash drive, flash-point, focus, focus group, friction, frigid, friggidity, frigorific, frisson, frost, frosty, frozen, fuel, fume, fuming, glacial, global warming, heartwarming, heat, heated, heat death, heat-engine, heat-seeker, heat-seeking, homebrew, hot, hot air, hot blast, hot button, hot favourite, hot flash, hot key, hot money, hot potato, hot seat, hot shit, hot stuff, hot war, hot water, hot-blooded, hot-desk, hot-desking, hot-headed, hot-swap, hot-tempered, hotbed, hothead, hothouse, hothouse effect, hotly, hotshot, hotted-up, hotting up, hotty, hotwire, humour, humourless, ice, ice-breaker, ice-breaking, icily, iciness, icy, ignite, ignition, incendiary, incense, incensed, incentive, incentivize, inflame, inflammatory, kindle, lean-burn, libidinous, libido, lukewarm, melt, meltdown, overheat, overheated, perfervent, perfervid, perfervour, phlegm, quench, red-hot, refrigerate, rekindle, sang-froid, scald, scalding, scorch, scorched, scorched earth, scorching, seethe, seething, sizzle, sizzler, sizzling, smoulder, smouldering, steam, steam ahead, steamed, steaming, steam up, steamy, superheat, superheated, sweat, sweat equity, sweating, sweating your assets, sweatshop, sweaty, swot, SWOT analysis, temper, temperament, temperamental, thaw, thermaesthesia, thermal, thermodynamic, thermometer, thermonuclear, thermostat, thermotaxis, vent, volatile, warm, warmly, warmth, warm bodies, warm up, warm work, warm-blooded, warm-down, warm-hearted, well-tempered, white heat, white-hot,

A Thermal Performance

Further details:

Staged as a computer simulation, actors are dressed in Chroma-key blue, in front of a blue-screen backdrop, facing one another as if in a game of chess, or war-strategy game – they use the lines of dialogue as moves in a game, seeking control or collaboration of or with one another, or the machine.

Both actors will be filmed simultaneously as they perform the dialogues, in a full-length shot. They will be wearing head-worn mics, to speak directly to the thermostat programme.

The performance is highly linguistic; the script is derived from dictionary entries, idioms, word-games and metaphor.

Documenting the performance:

The performance will be recorded on video, for full-scale projection in an installation. Actors will be able to use the video in their show-reel, and other documentation, and there may be a public performance of the work, to which you would be welcome to invite guests.

Chroma-blue costumes will be provided, with the opportunity to select what you are most comfortable wearing out of a few different items.

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agitate, agitation, anneal, ardour, boil, boiling, boiling-heat, boiling-point, brew, broil, brood, brooding, bulletin, burn, burn rate, burn-out, burn-up, burning man, slash-and-burn, calm, calming, chafe, chill, chill pill, chilled, chilling, chilling effect, chilly, clumsy, cold, cold feet, cold shoulder, cold start, cold storage, cold sweat, cold war, cold-blooded, cold-call, cold-hearted, cold-shoulder, cold-spirited, coldly, conflagrate, conflagration, conflate, conflation, congeal, cool, cool customer, cool down, cool-headed, cool-hunter, cooling, cooling-off period, coolness, cooLth, cool your jets, ebullience, ebullient, effervesce, effervescence, effervescent, enthalpy, entice, enticing, entropy, exhaust, exhaustion, explode, explosion, extinguish, exude, ferment, fervent, fervently, fervescent, fervid, fervour, fire, firing on all cylinders, flame, flamed, flagrant, in flagrant delicto, flare, flare-out, flare-up, flash burn, flash drive, flash-point, focus, focus group, friction, frigid, friggidity, frigorific, frisson, frost, frosty, frozen, fuel, fume, fuming, glacial, global warming, heartwarming, heat, heated, heat death, heat-engine, heat-seeker, heat-seeking, homebrew, hot, hot air, hot blast, hot button, hot favourite, hot flash, hot key, hot money, hot potato, hot seat, hot shit, hot stuff, hot war, hot water, hot-blooded, hot-desk, hot-desking, hot-headed, hot-swap, hot-tempered, hotbed, hothead, hothouse, hothouse effect, hotly, hotshot, hotted-up, hotting up, hotty, hotwire, humour, humourless, ice, ice-breaker, ice-breaking, icily, iciness, icy, ignite, ignition, incendiary, incense, incensed, incentive, incentivize, inflame, inflammatory, kindle, lean-burn, libidinous, libido, lukewarm, melt, meltdown, overhear, overheated, perfervent, perfervid, perfervour, phlegm, quench, red-hot, refrigerate, rekindle, sang-froid, scald, scalding, scorch, scorched, scorched earth, scorching, seethe, seething, sizzle, sizzler, sizzling, smoulder, smouldering, steam, steam ahead, steamed, steaming, steam up, steamy, superheat, superheated, sweat, sweat equity, sweating, sweating your assets, sweatshop, sweaty, swot, SWOT analysis, temper, temperament, temperamental, thaw, thermaesthesia, thermal, thermodynamic, thermometer, thermonuclear, thermostat, thermostaxis, vent, volatile, warm, warmly, warmth, warm bodies, warm up, warm work, warm-blooded, warm-down, warm-hearted, well-tempered, white heat, white-hot,

Characters:

Characters:

There are various personas that will be used in the performance, personas from the world of TedTalks, Google Campus, Silicon Valley Start-ups, and what is called the 'Knowledge Economy'. They are entrepreneurs, idealists, motivated, passionate about what they do.

But this project is a critique of this world, and the neo-liberal ideology behind it. The performance is not satire, or to be played as comedy - although it is an absurd piece.

Since, as practitioners - in design, arts, performance - we are also expected to be entrepreneurial, motivated and passionate about our work and - following the logic of this ideology - flexible, precarious - and readily exploited.

So the ability to produce some kind of double meaning from the text. Performing as these others, but also - it's how we must perform ourselves.

Actor Requirements:

Age range: I'm keen to work with a varied range of ages, so I'm particularly keen to work with actors between mid thirties - mid sixties.

Female (to perform in both male/female roles)

This work is informed by feminist readings of technology, feminist practice and queer theory. Some of the metaphors are sexual, although not explicit, and some of the dictionary content comes with a distinct gender bias. The performance will use theories on performativity, to attempt to rework this material.

The work is a linguistic piece, about metaphors, idioms, everyday banal phrases, particularly those used at work - 'The team is getting all fired up', 'The heat is on!', 'Don't lose your cool', 'I think she's heading for burnout'.

Each line of dialogue is like a move in a game.

Familiarity and knowledge of the theatrical technique of 'actioning' is particularly sought - either through the Stanislavsky method, or contemporary work of directors who use 'actioning' in rehearsal. This is the use of transitive 'playable' verbs used to 'action' every line of dialogue.

This strategy has correlation with cybernetics and computer programming and the thermostat will be programmed along similar rules.

"Reliant on affective and cognitive work processes like communication, teamwork, improvisation, self-management and the performing body, theatre and performance certainly resemble wider shifts at work in post-Fordist political economies."

*Elyssa Livergant, in The Passion Players
New Left Project.*

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hot stuff

Definition of hot stuff in Oxford Dictionary of English:

[MASS NOUN] informal

1 A person or thing of outstanding quality or skill:

He's hot stuff at arithmetic

1.1 A sexually exciting person, film, book, etc.

Jill was reputed to be hot stuff



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Heated Exchange

The ACTOR and REACTOR stand in front of Chroma-key blue backdrops, facing one another as if about to engage in a sword-fight or boxing match – they use the lines of dialogue as moves in a game, such as chess, or battleships, seeking control of one another. The characters they play may be real, or are perhaps a computer simulation: the actors wear Chroma-key blue clothing and head-worn microphones, similar to those used in TEDtalks and product launcher.

Between them are two video cameras, mounted at a ninety-degree angle, portrait to capture the full length of the body, at the level of their navels to avoid distortion. Their microphones are connected to a mixer, and into one of the video cameras, the sound equalized so that the dialogue sounds intimate.

The performers are filmed in portrait and full body for two reasons. The video rejects the screen ratio and conventions for broadcast or cinematic video. There are no close-ups, or medium close-ups, even though all the action is spoken. The importance of revealing the whole body is to support that idea that language is not a cerebral activity but is a situated action with embodied and situated effects. The actor's body, her words and her actions, her affective states, are put to work.

The lighting is flat, to make the backdrop seem like endless blue space, minimising shadows. The performers are lit with 2-point lighting, with diffuser, to minimise shadows. The work is shot on a Canon XA10, with a fixed lens. It is a sub-optimal camera that, because of its limitations, does not pick out the materiality of the paper backdrop, and creates a glow-distortion of a blue line around the performers against the backdrop.

It was important to frame the final piece in the calls for participation as not being either satirical, or comedy – although it being an absurd piece. This was to bring to the fore the proposition that, as practitioners, and academics - in architecture, design, arts, performance – we are also expected to be entrepreneurial, motivated and passionate about our work

and – following the logic of this ideology – flexible, precarious – and readily exploited.

This work reconceives the idea of workers negotiating for control of a thermostat, using metaphors and idioms derived from words for heat, tracing the management imperatives of advanced capitalism; and the implications of various modes of resistance as architects ‘get engaged’ with the convergence of technology and management with architecture. A THERMOSTAT is placed between them, voiced by a computer, it interjects throughout the dialogue, at first as a regulator, then as a motivator.

The performance is a language game, sparring and parrying with words; the script is derived from dictionary entries, idioms, word-games and metaphor. The topics cover anger, desire and productivity. The script is drawn from a database of metaphors that use heat as their source domain. It runs through a set of sequences that explore the use of verbs and phrasal verbs in these metaphors.

It is a paranoid love story with the mutually assured destruction; a motivational speech; a product launch; a Cold War; a détente; a menopause; a riot; an oil crisis; a declaration of nuclear war. The personas that the actors draw on in the performance drawn from the ‘knowledge economy’ of TEDtalks, Silicon Valley Start-ups, they are entrepreneurs, idealists, motivated, passionate about what they do.

ACTOR is a motivator, active, attacks with confidence.

REACTOR is recalcitrant, resists, and subverts. Doesn’t give up.

ACTOR, REACTOR, and THERMOSTAT play various roles, they are lovers, a president, CEOs, high-frequency trading algorithms, the head of the Federal Reserve, a steam governor, the governor of California, an Enron trader, a rioter, entrepreneurs, a missile-guidance system. These roles emerge out of the dialogue as it unfolds. The characters do not narrate to and audience, they perform the words towards one another and the audience observes them.

The work is a linguistic piece, about metaphors, idioms, everyday banal phrases, particularly those used at work – ‘The team is getting all fired up’,

'The heat is on!', 'Don't lose your cool', 'I think she's heading for burnout'. Some of the metaphors are sexual, although not explicit, and some of the dictionary content comes with a distinct gender bias.

In the final video performance there are three levels of exchange:

EXCHANGE ONE

In the first sequence ACTOR and REACTOR straighten up – facing off against one another. They exchange a dialogue in which ACTOR has control, she uses transitive verbs, these are verbs that can be done to another and can fit the pattern of (I verb you) without a modifier. In this sequence ACTOR affects REACTOR who plays each reaction impassioned, but powerless. REACTOR's actions are not a direct uptake of whatever ACTOR says, but a reaction, an effect. The actions are successful, but the reaction, in being different also suggests a change of state. For example the first exchange: I warm you – You thaw me, reveals that REACTOR had a state of being before ACTOR spoke. There is no regulation in this sequence. The THERMOSTAT is silent.

EXCHANGE TWO

ACTOR and REACTOR, facing one another, speak this dialogue like a match, sparring, fast-paced. This sequence is delivered with (pauses) which are longer than beats, as if drawing a long breath, gathering thoughts, strategising. (Beats) are rhythmic, delivering the next phrase precisely.

This time ACTOR and REACTOR are on an equal footing both delivering transitive verbs, exchanging fire with one another, the action is only as successful as it's response, and the effect is temporary. The topic in this dialogue might be at moments about a hot-product or a hot-date. In this sequence the THERMOSTAT interjects with direct imperatives to regulate the sequence - ordering, warning and requesting – what Byung-Chul Han calls the disciplinary modal verbs, and the speech acts put to use in Terry Winograd and Fernando Flores' COORDINATOR program: a software

designed to enable group-work. The software was criticised by sociologist Lucy Suchman as imposing a regime through the categories of speech acts it deploys.⁸⁹¹

EXCHANGE THREE

ACTOR and REACTOR, facing another, speak this dialogue like a match, sparring, fast-paced. In this dialogue, ACTOR attempts to carry out actions on REACTOR using transitive verbs (I _ you), REACTOR parries by responding by reclaiming the action and turning into something unexpected. ACTOR begins with seduction, but REACTOR begins not interested, then gets too interested, and they continue to subvert one another's desires – sometimes towards productivity – trying to get the other motivated to work. The THERMOSTAT in this sequence motivates the dialogue, coaches, informs, solicits, guides.

⁸⁹¹ Lucy Suchman, 'Do Categories Have Politics: The language-action perspective reconsidered', in *Computer Supported Cooperative Work*, 2 (1994), 177-190.

Hot on the Trail

Mark Leckey's project *GreenScreenRefrigeratorAction* (2010) is an installation, performance and video of a smart fridge ruminating on its contents and discontents. The matt-black finish Samsung appliance sits like the monolith in *2001, A Space Odyssey*, within a green-screen cyclorama. For the performance the artist shrouds himself in a bright green cloth, disappearing through 'keying-out', he inhales gas from a canister (reportedly refrigerator coolant) and delivers a monologue part operating-manual, part stream-of-consciousness of a sentient household device.⁸⁹² But after while the script becomes descriptive, adjectives dominate, it loses its pace as Leckey illustrates through words and animation the cooling mechanism of the fridge.

Leckey has described his work as developing out of an 'intense, information-gathering environment', a cumulative, aggregative process which generates 'excess'. He refers to 'the long tail' (also the name of a performance lecture in 2009 by the artist) described as the phenomenon peculiar to an internet search where the 'desires of an infinitely long tail of consumers with minority interests [...] trail behind (but ultimately exceed) the swollen head of the mainstream.'⁸⁹³ I also understand this as a process of research where one term rapidly opens up a trajectory through both obvious connections and obscure desires. In the video for *GreenScreenRefrigerator* (2010), Leckey's internet search terms reveal themselves through the assembled images on screen: 'Black Box wines', the black packaging for Calvin Klein 'MAN', a black 'BOX BX1 motorcycle helmet', a black 'XBOX 360.'⁸⁹⁴

Leckey is critical of his own attempts to 'alchemically transmute' the materials he finds online 'into objects or editions in a gallery, [or] artworks.'

⁸⁹² Mark Leckey, 'GreenScreenRefrigeratorAction 2010', *Haus der Kunst* < <http://www.hausderkunst.de/en/agenda/detail/greenscreenrefrigeratoraction/> > [accessed 24 May 2013].

⁸⁹³ Jonathan Griffin, 'Mark Leckey in a Long Tail World', *Frieze.com* (9 February 2009) <<https://frieze.com/article/mark-leckey-long-tail-world>> [accessed 1 April 2017]; and Chris Anderson, The Long Tail, *Wired Magazine*, 1 October 2004, <<https://www.wired.com/2004/10/tail/>> [accessed 1 April 2017].

⁸⁹⁴ Mark Leckey, 'GreenScreenRefrigerator Part I', online video recording, *YouTube*, 20 December 2010, <<https://www.youtube.com/watch?v=8X1QkseVjIY>> [accessed 17 April 2017].

He was dissatisfied by the result of bringing together the ‘real’ objects of his research in his exhibition *The Universal Addressability of Dumb Things* (2013), instead finding the jpegs in the folder of his computer more valuable.⁸⁹⁵ I enjoyed the exhibition and the objects, which (although they were mostly inert) interacted with one another, resonating within their categories in lively ways. But the more I pursued my own project, the more I also became critical of the ‘excess’ of material and the redundancy of trying to transform it into something more interesting than it already was. I could neither let the material go – nor could I bring it into something cohesive. What follows is a text mapping out the practice elements as I attempted to resolve the research into a project that would constitute a ‘final’ practice element for the PhD.

The metaphor database I was making grew to more than several hundred entries, many of which had phrases from the *Oxford Living Dictionaries* which were incredible. They seemed to reveal everything that I was talking about. I was editing the material into verbatim scripts, performing them with actors, running devising workshops with actors. But they were resistant to my attempts to work with them: I arranged the dictionary phrases into sequences that could be performed as dialogue – but they quickly looped into non-sequiturs. They were not a dialogue but a commentary, suffering the same fate as Leckey’s performance. They lost their vitality and urgency once removed from the dictionary – the fact that such politicised material was embedded within the online Oxford dictionary as evidence of current spoken and written language said far more than extracting this material for a performance.

However, I still thought that there was a way to work with such material. In 2013, I walked into a room at the Tate Modern to be confronted with the twelve video terminals of Bruce Nauman’s *Violent Incident* (1986). A single sequence repeats – two actors approach a table set for dinner, one pulls out the chair for the other, who goes to sit down, just at that moment, the chair is pulled out of the way and the actor falls on the floor. What

⁸⁹⁵ Mark Leckey, *Touchy Feely, and Back Again*, talk hosted at the Royal College of Art (4 March 2013).

follows is a bout of kicks, shouts, punches, screams and the sequence repeats in different configurations of male and female actors across the screens. As the observer – watching the work, the actions elicit intensities of visceral discomfort and shock relating to certain gestures and actions committed by the female actor toward the male actor and vice-versa. Even though this piece used violent physical actions, I read it through the research on actioning and speech act theory.

In another work of Nauman's, *Good Boy/Bad Boy* (1985),⁸⁹⁶ two video screens sit on top of plinths, both showing medium close-up of the actors Joan Lancaster and Tucker Smallwood. Joan is an older white woman, Tucker is a young black man. They conjugate the word 'to be' for one hundred phrases, twenty-five different sequences beginning with 'I am a good boy, you are a good boy, we are good boys'. The cycle repeats five times, the first is delivered in a neutral manner: then in each loop the actors perform with more anger – and in each sequence the camera frame is tighter, until in the fourth sequence the head fills the screen in close-up, returning to medium close-up for the last sequence. The loops fall out of sync as each actor performs in their own way. Even though they are speaking on a loop, to camera, rather than to one another – between them are the political relations of race, age, gender which erupt at certain points. As the dialogue falls out of synchronisation and Joan's 'I piss, you piss, we piss, this is piss' overlaps with 'Tucker's 'I am a virtuous man, you are a virtuous man, we are virtuous men, this is virtue,' it is clear that politics and violence is not a property of the words alone (they both follow exactly the same script), nor is it just in their position biographically, rather the power which loads these conjugations with a sudden force lies in wait, recalling Sara Ahmed's words that 'there is a political struggle about how we attribute good and bad feelings, which hesitates around the apparently

⁸⁹⁶ Bruce Nauman, *Good Boy, Bad Boy* (1985) 'Channel A – Joan Lancaster', *UBUweb* <http://www.ubu.com/film/nauman_gooda.html> 'Channel B – Tucker Smallwood', *UBUweb* <http://www.ubu.com/film/nauman_goodb.html> [accessed 13 October 2015].

simple question of who affects whom, or who introduces what feelings to whom.⁸⁹⁷

I wanted to train in the methods of action and made contact with Max Stafford Clark's theatre company *Out of Joint*, and took part in a week-long 'Verbatim Writers Course'⁸⁹⁸ led by a director from the company. The focus of this course was primarily documentary theatre, using verbatim techniques of using interviews to form scripts – which were re-performed by actors. I hoped that I could find a way of working with the large amount of documentary material I had collected on the history of the thermostat and its interconnectedness with Military Industrial Complex, and Jimmy Carters' speeches during the energy crisis.⁸⁹⁹

But verbatim, I found, is not dialogic – the text, made from interviews, and reports, is testimonial and descriptive. Although verbatim plays use actioning in rehearsal to make each line do something, the scripts are monologues and much of verbatim theatre is directed towards the audience – so it didn't follow what was critical about Stanislavski's attention to the action between characters, rather than on the audience.⁹⁰⁰

Adler and Gibb (2014) opened at the Royal Court in July that year, an experimental play that pushed theatrical conventions. In one of the first scenes, two characters face outwards – they are not yet dressed, but they begin speaking lines of dialogue.⁹⁰¹ They are also not addressing the audience, and slowly you get it – the dialogue is with one another. One actor states what she is feeling or doing, the other responds with repetition. This was Meisner's action-reaction exercise. It goes on for a while, and at first it's very hard to work out what's going on. But then I find that I am

⁸⁹⁷ Sara Ahmed, 'Multiculturalism and the Promise of Happiness', *New Formations* (Winter 2007/2008), 121-137 (p. 127).

⁸⁹⁸ 'Verbatim Writers Course', led by Naomi Jones, *Out of Joint* (7-13 August 2013).

⁸⁹⁹ Natural Gas Legislation Remarks at a News Briefing on the Legislation, *The American Presidency Project*, Gerhard Peters and John T. Woolley (transcribers) (26 January, 1977) <<http://www.presidency.ucsb.edu/ws/?pid=7167>> [accessed 17 January 2014]; and Jimmy Carter, 'Address to the Nation on Energy', *The American Presidency Project*, Gerhard Peters and John T. Woolley (transcribers) <<http://www.presidency.ucsb.edu/ws/?pid=7369>> [accessed 17 January 2014]

⁹⁰⁰ Stanislavski, *An Actor Prepares*, p. 106.

⁹⁰¹ Tim Crouch, *Adler & Gibb* (London: Oberon, 2014) pp. 4-10.

'cutting' it together, from one character to the other – sometimes when they speak, sometimes to watch the reaction – as if they are film shots. The unusual form of both actors facing the audience reminded me of viewing Bruce Nauman's work, and making similar 'cuts' and constructions of action.

SAM

You're wearing a blue blouse.

LOUISE

I'm wearing a blue blouse.

SAM

You're wearing a blue blouse.

LOUISE

I'm wearing a blue blouse.

SAM

You're wearing a blue blouse.

LOUISE

I'm wearing a blue blouse.

Etc.

SAM

Keep that focus. You're sweating.

LOUISE

It's hot.

SAM

No commentary. You're sweating.

LOUISE

I'm sweating.

SAM

You're sweating.

LOUISE

I'm sweating.

SAM

You're sweating.

Figure 12: Extract from Tim Crouch, *Adler & Gibb*, pp. 4-5.

End of Summer 2013, I'm in a tiny basement of the Calder Theatre Bookshop in Waterloo with a small cohort of political students, non-actors, and amateurs, sweating through physical improvisation, 'Columbian hypnosis'⁹⁰² and other exercises devised by the Brazilian activist and theatre director, Augusto Boal. The two Argentinian actor-activists want us to devise a forum theatre piece for performance at the theatre.

For Boal the actor must not concentrate on 'being' a character – she must focus on the 'will'. If the actor asks 'who is my character?' – then the result is 'static pools of emotion' – if she asks 'what does my character want?' then the emotions are 'dynamic, dialectical, conflictual, and consequently theatrical.'⁹⁰³ Boal, like Stanislavski, sought concrete 'wants' over arbitrary ideas: 'it is not enough to be happy in an abstract way, we must want the particular thing that will make us happy.'⁹⁰⁴ In Forum Theatre, actors perform a narrative of oppression in front of an audience. Once this is done the piece is repeated, until an audience member interrupts, and takes the place of one of the characters to alter the outcome and 'break the oppression', whilst the actors try to complete the original ending.⁹⁰⁵ If the oppression is broken, other 'spect-actors'⁹⁰⁶ can replace any protagonist, to act out new forms of oppression. Such a performance is for Boal, for 'spect-actors' to 'act out their ideas, and train for 'real life' action [and] by playing, learn the consequences of their action.'⁹⁰⁷ Fun, challenging, anarchic, oppressive. The strange dynamics of repressed anger of some participants come to dominate, and the conveners let it roll. I let them carry on without me.

⁹⁰² One actor holds their hand in front of another's face, who must keep the distance between the two as the first actor moves. 'The hypnotiser must force her partner into all sorts of ridiculous, grotesque, uncomfortable positions.' Augusto Boal, *Games for Actors and Non-Actors*, (Abingdon, Oxon: Routledge, 2002) p. 51-55.

⁹⁰³ Boal, *Games for Actors and Non-Actors*, p. 40.

⁹⁰⁴ Boal, *Games for Actors and Non-Actors*, p. 40.

⁹⁰⁵ 'Theatre of the Oppressed', led by Sergio Amigo, Diego Iudicissa, *Calder Bookshop and Theatre* (August-October 2013); and Boal, *Games for Actors and Non-Actors*, p. 241-244.

⁹⁰⁶ Boal, *Games for Actors and Non-Actors*, p. 241.

⁹⁰⁷ Boal, *Games for Actors and Non-Actors*, p. 244.

I take a longer course in playwriting, led by another director associated with *Out of Joint*,⁹⁰⁸ to develop techniques in dialogue and how to bring together the actioning technique within the construction of a play. The difficulty of this course for me was the intense focus on character: who they were, what they did, where they went to school, what dramatic scenarios would they enact. It was again difficult to situate my work here, since in my performance the characters are indistinct and I wanted them to remain abstract. I did, however, verify my query as to whether action was relevant to the formation of a script: it was – a theatrical script is underwritten by action – any dialogue that doesn't 'do' anything to another character, such as describe to the audience an inner state, or dialogue that 'tells' rather than shows – is cut.

Simon Denny's *The New Management* (2014) presented an 'unauthorised documentary'⁹⁰⁹ recording an event in the corporate history of electronics company Samsung: on the 7th June 1993, Lee Kun-hee introduced a 'New Management' philosophy. Denny's installation involved objects and imagery from the event held in Frankfurt, attended by Samsung's shareholders and executives. A central table, covered with a meticulously box-pleated pink tablecloth with the words 'New Management' repeated across it, is topped with a flower arrangement and company literature. At each corner, suspended on a frame, Samsung air-handling units carry slogans 'change begins with me' and 'change everything except your spouse and kids', the walls are hung with slogans, timelines, and extracts from the literature of the 'Frankfurt Declaration'. It is a translation of a discursive type of management and the objects associated with it.⁹¹⁰ It had similarities to my own interrogation of the organisational protocols of Honeywell: the development of their OneHon culture, and the

⁹⁰⁸ 'Playwriting: Stage 1', led by Dawn King, *City Lit* (19 September 2013 – 5 December 2013)

⁹⁰⁹ Simon Denny, 'Simon Denny Exhibits the Electronic Company's Climb to Dominance', *OFluxo* (2017) <<http://www.ofluxo.net/simon-denny-exhibits-the-electronic-companys-climb-to-global-dominance-new-management-portikus/>> [accessed 17 April 2017]

⁹¹⁰ The table was a replica of the original table and table cloth from the Frankfurt Hotel, which now resides in the Human Resources Centre of Samsung.

Honeywell Operating System (HOS) – a direct adaptation of the Toyota Production System.

Rem Koolhaas' keynote for the 2014 Venice Biennale was a dialogue with Tony Fadell, the CEO of Nest Inc., makers of an artificially intelligent thermostat. Their dialogue exceeded what I had been trying to write, and so I transcribed it for a verbatim performance, pulling it together with Jimmy Carter's speeches.

In the summer of 2014 I also undertook a major mapping of the metaphor database. I had been collecting metaphors since the start of the thesis, but made a concerted effort to comprehensively record every instance of everyday heat metaphors found in the *Oxford English Dictionary*. This process was supported by presenting a paper in Birmingham that August, and it continued through to spring 2015. By which time I had generated an extensive corpus of metaphors, with over eight hundred entries plus their phrases from the *Oxford Living Dictionaries*.

I set the moving image studio up as a 'war room', plastering the walls with posters containing the dictionary entries for 'hot', 'cold', 'warm' and 'cool' from the metaphor database – including the phrases from the *Oxford Living Dictionary*. The space was framed with Chroma-blue backdrops, with coloured tape marking out walkways (following the 5S system of floor markings for factories used by Toyota, and Honeywell). I invited two actors, Margaret Ashley and Silvana Maimone, to join a devising workshop in the hope that collectively we could improvise a new script from the collected material.



Figure 13: 'War Room' set for Heated Exchange devising workshop

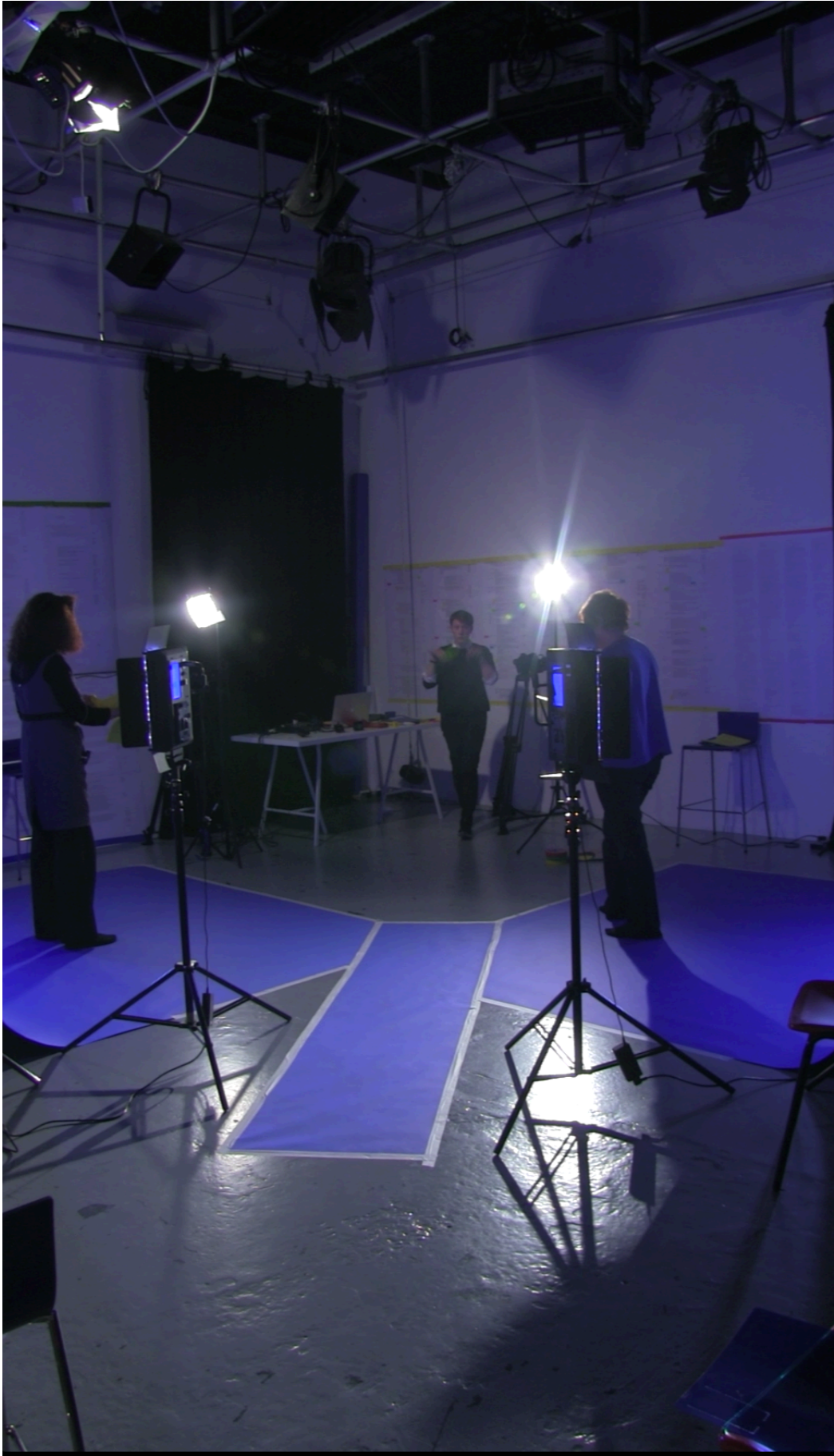


Figure 14: Heated Exchange devising workshop with Silvana Maimone and Margaret Ashley

Two important insights: the realisation of my short-comings in being able to direct actors; and devising and improvising was not yielding good dialogue – only descriptive text, and the verbatim parts were over-dramatic. I wanted to get at something more understated. I began to perform the piece myself, taking on the characters of Jimmy Carter and Tony Fadell, to try to mute the acting through non-acting. I gave the role of Rem Koolhaas to ‘Xander’, a Dutch-speaking voice on my text-to-speech software. The voice couldn’t really speak English, but with a database I ‘trained’ it to speak English with a Dutch accent. The result was still too descriptive.

In the technique of actioning developed by theatre directors Max Stafford-Clark and Mike Alfreds, actors go through a script in rehearsal, figuring out what the characters are doing moment by moment for each line of spoken dialogue. They break the drama into units of action, and find a verb for that unit. To be a ‘playable’ action, the verb must be a single transitive verb – something that can be done to another character. ‘I pressurise you’, ‘I correct you’, ‘I mock you’.

The actioning technique is not easily formalised in theatrical theory: the absolute distinctions that some authors have tried to set out have to be tested through working with them in rehearsals and workshops. To develop my knowledge of both the Stanislavski method of action and the ‘actioning’ technique, I took masterclasses in acting which covered these skills at the Royal Academy of Dramatic Arts in 2015.⁹¹¹

The method was elaborated extensively in training and classes, partly since practitioners brought their own theatrical training to bear on the ideas. In these practical classes, students were warned against using the written guides too much, especially Caldarone and Lloyd-Williams’ *Actions: The Actor’s Thesaurus*. While these books were acknowledged as useful, the relevance of actioning is in the actions use – all actions are contingent on how they work in practice through the rehearsal, with other actors.

⁹¹¹ ‘Acting Technique’, led by Ian Henderson, *RADA* (27 April 2015); ‘Actions, Acting and Reacting’, led by Ian Henderson, *RADA* (21 September 2015); and ‘Improvisation’, *RADA* (18 May 2015).

Performance with Lois Weaver – ‘Performing the Character’ at the Wellcome Trust. A terrible workshop for me, which involved impulsive physical and verbal actions to form the basis of developing a persona. It seemed to magnify and distort my discomfort at performing so that my persona became completely introverted. A failure. I decided I’d like to collaborate with Lois at some point.

I also considered Barbara Hammer’s video work, which explores the overlapping narratives of language, sexuality, ageing, gender and power and technology. In *No No Nooky TV* (1987), Hammer uses early computer graphics on an Amiga computer monitor, which weaves its way into the desires of the narrator whose hands are seen rubbing body cream into the computer’s curved screen.

May 2015, I return to the Calder Bookshop for a workshop convened by Ysabel Clare, on Stanislavski’s methods.⁹¹² I realise that I saw her at the Artificial Intelligence and Simulated Behaviour conference earlier in the year: we had both attended the ‘figurative speech’ stream. I can detect a cybernetic influence in the way she describes Stanislavski’s method, I tell her that I think Stanislavski’s technique is essentially thermostatic. We keep in touch.

One last attempt to get closer to what I am trying to do. At the moment I have a piece, but it’s not got the thing that would make thesis satisfactorily ‘by project’. I join a playwriting course at the Chelsea Theatre, a small community-run theatre which has become a space for experimental live art and queer performance. For part of the course we would work with actors, and have a showcase where our work is performed to the public.⁹¹³ After several drafts of the lines of dialogue from the database, I make a radical decision – which I think is actually a stupid idea, but it’s been in my mind, and the actors will join our lesson that evening. I sort the database to just give me the verbs, arranging the first column alphabetically. Cut, paste into Word, I keep the transitive verbs, modifying them into sentences. ‘I

⁹¹² ‘Stanislavsky’s Mindful Actor: A Workshop’, led by Ysabel Clare (19 May 2015)

⁹¹³ ‘Playwriting’, led by John White, *Chelsea Theatre* (22 October 2015 – 21 Jan 2016)

chill you’. ‘I cool you’. I’m not so confident so I embed them in some older script that is a mix of Jimmy Carter speeches, and sentences from the *Oxford Living Dictionary*. I give them to the actors. The Jimmy Carter is flat, but something emerges between the actors as they speak the verbs to each other – they are not trying to make sense of the dialogue, they are trying to *do* something with words to one another, and it works – in parts. The next three weeks are spent arranging these phrases, expanding the source material to include phrasal verbs and verbal idioms. I create three characters, ACTOR, REACTOR and JIMMY CARDIGAN/ICON WOMAN. ACTOR and REACTOR who use verbs in a fast-paced dialogue, interjected by JIMMY CARDIGAN who tries to cool tempers with his speeches. He is replaced by ICON WOMAN who encourages the ACTOR and REACTOR into more conflict. The piece ends with a monologue for ICON WOMAN written in the style of a Silicon Valley product launch, but it is a nuclear launch. Two days before the showcase, Sarah Palin endorses Donald Trump in a speech which includes the phrases, ‘He better than anyone, isn’t he known for being able to command – FIRE!’ and ‘So no, we’re not going to chill. In fact it’s time to drill, baby, drill down, and hold these folks accountable.’⁹¹⁴ Again, real life did it better.

I think it’s going to be unbearable listening to the words I wrote, but the actors take it and make it their own. The actor who plays ICON WOMAN is terrifying, like a millennial Margaret Thatcher. It’s all fine for the public showcase, but I want to reduce it more and reduce ‘character’ further.

I drop the verbatim script, but I use the narratives that were covered in my research to structure the dialogue – in one sequence the dot-com boom is followed by a bust, which is combined with an energy crisis and the Watts race riots – the piece is done. I book a room, send out an open call for actors. I get a former investment banker turned professional actress who arrives having done her own facial contouring in heat-resistant makeup –

⁹¹⁴ Dave Schilling, ‘Apocalypse Now: Sarah Palin’s Bizarre Endorsement Analysed’, *The Guardian* (20 January 2016) <<https://www.theguardian.com/us-news/2016/jan/20/sarah-palin-donald-trump-endorsement-speech-quotes>> [Accessed 1 April 2017]; and Amber Jamieson, ‘Sarah Palin Endorses Trump: Translating Her Reference-Packed Speech’, *The Guardian* (20 January 2016) <<https://www.theguardian.com/us-news/2016/jan/20/sarah-palin-endorsement-donald-trump-translating-her-speech>> [accessed 1 April 2017].

she plays ACTOR, and REACTOR is a martial arts expert who runs drama-therapy for ex-soldiers with post-traumatic stress. The room is too small to put them opposite one another, so I arrange the two sets adjacent to one another, but still facing opposite directions. The actors tell me it's like speaking on the phone. They can only see one another in their peripheral vision as they are facing the camera and the autocue. They can't respond to facial expression or gestures, only the words. I ask them to warm up and I press record. I'd like more time with actors, so that the characters disappear more and are drawn out by the words – they sustain too much continuity throughout the performance. I'd like ACTOR to let go of the ferocity of the last lines, but she tells me she's too annoyed by REACTOR (in the performance). The result is not technically what I'd like, the blue doesn't look as smooth as my earlier versions, as the lights are too close in the small room making the backdrop look too papery, and the sound levels were too high for the actor's voices when they shout, but it's done. I can think of many ways I want to develop the piece, but it's got something.

April 2016, I hear about a hands-on performance workshop at the Barbican, run by Lois Weaver, on 'strategies for radical independent performance making.'⁹¹⁵ I sign up of course. A wonderful workshop. We become some kind of troupe – awkward, funny, exciting, risky – like one of Yvonne Rainer's ensembles – creating and improvising in groups from 'impulse movement and writing, autobiographical text, found text, song, dance, fantasy, popular culture and [...] desire to make things [we] never thought we could make.'⁹¹⁶ This participation leads on later to a short collaboration with Weaver at the Live Art Development Agency whilst I am writing up the thesis. We create a reading room guide on performance and ageing, and that was the start of our conversations about politics, performance, and ethics of care.

⁹¹⁵ The workshop was aimed at 'performers of all types and all levels the tools to create their own solo or group performance from the ordinary details and extra-ordinary fantasies of the daily lives.'

'Weekend Lab: Hands On Performance with Lois Weaver of Split Britches', *Barbican Education Events* (16-17 April, 2016) <<https://www.barbican.org.uk/education/event-detail.asp?ID=18854>> [accessed 1 May 2017]

⁹¹⁶ 'Weekend Lab: Hands On Performance with Lois Weaver'.

HEATED EXCHANGE

(how to do things with heat)

a script for two actors and a thermostat

the script is derived from a documentary source of over one thousand metaphors, idioms and phrases that use temperature as their source domain.

the dialogue is constructed using verbs, phrasal verbs, and idioms – it is a play on the theatrical technique of ‘actioning’ – influenced by Stanislavski’s method of action – which proposes that actors on stage do things to one another, rather than narrate a story.

in the technique of actioning, each line of dialogue is given an action – a single transitive verb, something one character can do to another – for example: the line “what did you do with the scissors?” can be played “I ACCUSE YOU” or “I THREATEN YOU”.

in this script the dialogue is reduced to actions and overused idioms, the banal speech of the workplace, advertising, journalism, political rhetoric, sexual innuendo and clichéd romance.

HEATED EXCHANGE (how to do things with heat)

ACTOR

REACTOR

The **ACTOR** and **REACTOR** stand in front of Chroma-blue backdrops, facing one another as if about to engage in a sword-fight or boxing match – they use the lines of dialogue as moves in a game, like chess. The characters they play may be real, or a computer simulation: the actors are dressed in Chroma-key blue, with head-worn microphones, similar to those used in TEDtalks and product launches.

A **THERMOSTAT** voiced by a computer interjects throughout the dialogue.

The performance is a language game, sparring and parrying with words; the script is derived from dictionary entries, idioms, word-games and metaphors for temperature. The topics cover anger, desire and productivity. It is a love story of irrational exuberance; a brainstorming session; a Cold War; a détente; a product launch, a menopause, an appraisal; a riot; an oil crisis; a dotcom crash.

ACTOR – is a motivator, active, attacks with confidence.

REACTOR – is recalcitrant, uses resistance, subversion. Doesn't give up.

ACTOR and **REACTOR** play various roles, they are lovers, CEOs, high-frequency trading algorithms, a rioter, entrepreneurs, a heat-seeking missile.

The **ACTOR** is a president, the head of the Federal Reserve, a steam governor, the governor of California, a rogue trader, 'thoughtful thing' and a 'killer app'.

These roles emerge out of the dialogue as it unfolds.

the performance takes place over three heated exchanges.

EXCHANGE ONE, no regulation, ACTOR is free to exploit REACTOR as she chooses, but REACTOR has a preceding state before ACTOR speaks, so is affected, but not constituted by ACTOR's actions.

EXCHANGE TWO, the THERMOSTAT regulates the sequence using the direct imperatives, the disciplinary verbs of orders warnings and requests. ACTOR and REACTOR play equals.

EXCHANGE THREE, deregulated sequence where the THERMOSTAT is now a coach, a motivational speaker, an inside dealer. REACTOR regulates herself, exploits herself, uses exaggerated compliance, revolution, acceleration, passive resistance.

the EXCHANGE could go on forever, the REACTOR is a warm body, replaceable if she gets exhausted.

the ACTOR too.

EXCHANGE ONE

(how to do things with heat)

{unregulated sequence}
transitive verbs

ACTOR and REACTOR, facing the camera, are getting 'psyched up' – warming up their limbs, their faces, voices.

ACTOR and REACTOR straighten up – facing off against one another. They exchange a dialogue in which ACTOR has control, affecting REACTOR using transitive verbs. REACTOR plays each reaction impassioned, but powerless.

ACTOR

I warm you

REACTOR

You thaw me

ACTOR

I heat you

REACTOR

You melt me

ACTOR

I stoke you

REACTOR

You ignite me

ACTOR

I cool you

REACTOR

You quench me

ACTOR

I inflame you

REACTOR

You incense me

ACTOR

I freeze you

REACTOR

You burn me

ACTOR

I ice you

REACTOR

You chill me

ACTOR

I scorch you

REACTOR

You singe me

ACTOR

I torch you

REACTOR

You cremate me

EXCHANGE TWO

(how to do things with heat)

{regulated sequence}
transitive verbs

ACTOR and REACTOR, facing another, speak this dialogue like a match, sparring, fast-paced. They use single transitive verbs as actions against one another. This time ACTOR and REACTOR are on an equal footing. The topic might be as much about a hot product as a hot date.

(Pauses) are longer than beats, as if drawing a long breath, gathering thoughts, strategising. (Beats) are rhythmic, delivering the next phrase precisely.

The THERMOSTAT regulates the sequence with direct imperatives:

Cool it!

Put on a sweater!

Burn it up!

Simmer down!

Sweat it out!

Chill out!

Go for the burn!

Cool your jets!

Freeze!

ACTOR

I cold-call you

REACTOR

I cold-shoulder you

ACTOR

I entice you

REACTOR

I ice you

ACTOR

I ice-break you

REACTOR

I freeze you

ACTOR

I defrost you

REACTOR

I chill you

ACTOR

I chafe you

I ignite you

REACTOR

I extinguish you

ACTOR

I warm you **(beat)**

I kindle you **(beat)**

I flame you

REACTOR

I firewall you

(pause)

ACTOR

I heat you

REACTOR

I heat-proof you

ACTOR

I heat-seek you

REACTOR

I flash burn you

ACTOR

I hot-link you

REACTOR

I hot-desk you

ACTOR

I hot-list you

REACTOR

I hot-swap you

ACTOR

I hot-rod you

REACTOR

I hotwire you

ACTOR

(productive/economic)

I hothouse you

(pause)

REACTOR

(realises the effect she has on ACTOR)

I inflame you

ACTOR

I quench you

(pause)

REACTOR

I incense you

ACTOR

I incentivise you

REACTOR

I incinerate you

ACTOR

I fire you!

(pause)

ACTOR

I cold-start you

(pause)

REACTOR

I congeal you

(pause)

ACTOR

I rekindle you

REACTOR

I refrigerate you

ACTOR

I thaw you

(beat)

I melt you

(pause)

I fuel you

REACTOR

I burn you

ACTOR

I boil you

REACTOR

I scald you

ACTOR

I stoke you

REACTOR

I scorch you

(beat)

ACTOR

I superheat you

(pause)

REACTOR

I steam you

ACTOR

I steam clean you

REACTOR

I steam-roller you

(pause)

ACTOR
(out of breath)
I vent you

(pause)

REACTOR
I overheat you

(pause)

ACTOR
(like a cigarette, after)
I cool you

EXCHANGE

THREE

(how to do things with heat)

{Continuous Beta sequence}
transitive verb & intransitive verbs

ACTOR and REACTOR, facing another, speak this dialogue like a match, sparring, fast-paced. In this dialogue, ACTOR attempts to carry out actions on REACTOR using transitive verbs (I _ you).

REACTOR gets affected, but also parries by responding with non-transitive actions that reclaim the action and turn into something unexpected.

Phrases in italics should be delivered differently, they are direct speech, declarations, rather than actions.

ACTOR

I warm you up

REACTOR

I play it cool

ACTOR

I thaw you out

REACTOR

I blow hot and cold

ACTOR

I have the hots for you

REACTOR

I slow burn

ACTOR

I warm your heart

REACTOR

I melt down

ACTOR

I get you hot and bothered

REACTOR

I lose my cool

ACTOR

I boil you up

REACTOR

I boil over

ACTOR

I make you hot under your collar

REACTOR

I steam up

ACTOR

I burn you up

REACTOR

I catch fire

THERMOSTAT

If you can't stand the heat, get out of the kitchen!

REACTOR

I play with fire

ACTOR

I burn your fingers

REACTOR

I add fuel to the fire

ACTOR

I fan your flames

THERMOSTAT (interrupts)

Heads up! There's smoke in the kitchen!

REACTOR

I fight fire with fire

ACTOR

Burn, baby! Burn!

REACTOR

I go up in smoke

(pause)

-

THERMOSTAT

In my opinion - If you have something hot, Price it more.

Otherwise, price it less.

ACTOR

I drop you like a hot potato

REACTOR

I get into hot water

ACTOR

I give you a cooling card

(pause to see the reaction from REACTOR)

ACTOR (taunts)

Oh! I make your blood boil

REACTOR

I blow a gasket

ACTOR

I throw cold water on you

REACTOR

I let off steam

ACTOR

I put you on ice

REACTOR

I simmer down

ACTOR

I put you into cold storage

REACTOR

I go cool off

ACTOR

I freeze you out

REACTOR

I ice over

ACTOR

I quit you cold

(pause, both watch each other to see what comes next)

REACTOR (revved up)

I pack heat

THERMOSTAT

You are treading on thin ice!

REACTOR

I break the ice

(pause)

ACTOR

I bring you in from the cold

REACTOR (violent, as if with a gun in hand)

I steam in

ACTOR (disarms)

I give you a warm reception

REACTOR

I hold fire

(pause)

THERMOSTAT

This is warm-blooded passionate work and it's a challenge!

ACTOR

I raise your temperature

REACTOR

I hot up

ACTOR

?

[oh? yeah? is that all? I don't think so]

REACTOR (admit)

I burn inwardly

ACTOR

I melt you down

REACTOR

I go off the boil

ACTOR

I burn for you

REACTOR

I burn up

ACTOR (provocative)

I burn a hole in your pocket

(pause)

REACTOR (tactical switch)

I don't sweat it

ACTOR

I light a fire under you

REACTOR

I stay cool

ACTOR

I warm you over

REACTOR

I take the heat

ACTOR

I let you have it hot

REACTOR

I keep a cool head

ACTOR (tries to make productive)

I fire you up

REACTOR

I pick up steam

ACTOR (excites reactor)

I get you stoked

REACTOR

I burn the midnight oil

THERMOSTAT

I ask Congress, to give me authority for mandatory conservation, and for standby gasoline rationing.

ACTOR

I turn down your thermostat

REACTOR

I put on a sweater

ACTOR

I sweat your assets

REACTOR

(taunting)

I

sell

like

hot-cakes

ACTOR

I cool you down!

REACTOR

I fire on all cylinders

ACTOR

I put you on the back-burner

REACTOR

I keep the pot boiling

ACTOR

I freeze your wages

REACTOR

I ice the deal

ACTOR

I give you a cooling-off period

REACTOR

I strike while the iron is hot

(pause)

ACTOR

I turn the heat on you

REACTOR (furious)

I breathe fire

ACTOR (punishes)

I put you in the cooler

REACTOR

I spark a riot

ACTOR

I put you under curfew

REACTOR

I torch the block

THERMOSTAT

Burn Baby! Burn!

(pause)

ACTOR

You're on fire!

THERMOSTAT

*Right now, everybody is hot to trot on small
capitalization stocks.*

REACTOR

I burn the candle at both ends

THERMOSTAT

*Your burn-rate is running at what?
I figure a million a month.*

REACTOR

I generate a lot of hot air

ACTOR

I give you hot flashes

THERMOSTAT

*If you've got any hot-tips on who I should be watching,
let me know.*

REACTOR

I overheat the market

ACTOR

Have I got some hot gossip for you!

THERMOSTAT

triple-dub dot pets dot com; I mean, how cool.

ACTOR

You are too hot to handle

REACTOR

I spread like wildfire

THERMOSTAT

The heat is on!

REACTOR

I hotfoot it

ACTOR

I am hot on your heels

REACTOR

I burn my bridges

ACTOR

I go through fire for you

REACTOR

I scorch the earth

ACTOR

I carry a torch for you

REACTOR

I singe my wings

ACTOR

I shoot you down in flames

REACTOR (out of breath)

I crash and burn

(pause)

THERMOSTAT

This exercise is going to ignite a deep burn in all your back muscles!_

ACTOR

I let you sweat a while

(pause)

ACTOR

I give you a roasting

REACTOR (standing up but tired)

I return fire

ACTOR

I knock you out cold

REACTOR

[!]

ACTOR

I blow your cool

(pause)

REACTOR

I spontaneously combust

ACTOR

I haul you over the coals

REACTOR (defiant)

I rise from the ashes

(pause)

ACTOR

You set the world on fire

REACTOR

I go into afterburn

(pause)

ACTOR

I warm you down

REACTOR

I bask in the afterglow

ACTOR

This is some hot shit!

end

ACTOR **Marysia Trembecka**
REACTOR **Eve Parmiter**

special thanks to

Bruna Petreca
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Appendix III: Killer Apps

Killer Apps

A 'killer app' is a term from the tech industry, and was widely in use in Silicon Valley during the late 1990's to describe the one program or application of a program that is so necessary or desirable that consumers would buy the (usually expensive) hardware just to run that application.⁹¹⁷ For example: the Nest Thermostat which sells for £299, costing six times as much as an average programmable thermostat, has the 'killer app' of artificial intelligence software which learns and adapts to the user's behaviour.

The work that I undertook throughout the thesis had a very close alignment with other design courses that were investigating 'smart' technology, so I engaged directly with this field, both hosting workshops with interdisciplinary groups of students, joining workshops and discussions of Design Interaction students to learn technical skills, and submitting papers to design and technology conferences such as the Nordic Design Conference (NORDES), and the Artificial Intelligence and Simulated Behaviour Conferences and Seminars (AISB).

This has resulted in me taking an oppositional stance to emotions in design, based on my own research into speech acts and theatrical methods of Stanislavski, Mike Alfreds and Max Stafford Clark.

In the workshops that I ran as part of the PhD research, despite the discussions between actors, programmers and designers reflecting a good grasp of the concepts of Stanislavski being introduced, when asked to perform as non-human agents, they would forget the technique and act out adjectives or noun-states directly. The students tried to perform a 'suspicious automatic cat flap' or a 'defiant tube entry gate', rather than use Stanislavski's technique of performing specific actions that might rise to a defiant stance, or a suspicious stance. In acting terms, this meant a lot of

⁹¹⁷ The first killer app was a visual spreadsheet software for the Apple II computer in 1980. Because such a software was not available on other computers for twelve months, people spent \$100 for the software, then \$2,000 on the Apple computer they needed to run it. The Wikipedia entry for 'killer app' is the most accurate to the definition in use during my time working in consultancy. 'Killer Application', *Wikipedia* <https://en.wikipedia.org/wiki/Killer_application> [accessed 1 March 2017]

'blocking' went on leaving little to be learned from the performance, other than indulging students' desires to act like machines. This was a similar case in the workshop I co-ran in Stockholm with PhD students of Design – where at the end their feedback was a regret that they didn't get to perform as the machines themselves. They told me that there was another stream running at the same time called 'Object Theatre'⁹¹⁸ that they wished to have taken. The Object Theatre workshop, and the research of the conveners is based precisely on what I am determining a complete behavioural fallacy – and what Stanislavski would call 'bad acting'⁹¹⁹ – in other words, the attempt to 'play' an emotion directly – such as a door sign that feel that occupants are not taking it seriously enough, or a coffee machine that feels neglected and needs to be sung to.

This tendency was identifiable in a very early electronics course that I joined with the Design Interactions course at the Royal College of Art, where the joint projects at the end of the workshop had a tendency to be focused on a one-liner (Karaoke Ice-cream machine, the better you perform a song, the more complete your banana split is) rather than exploring machine behaviour. There is a fairly obvious lack of sophistication in this kind of 'emotional' and 'behavioural' design compared to that which is going on in Silicon Valley.

The Stanislavski technique is therefore positioned as a critical counterpoint to methods that are very popular for exploring machine behaviour – for example by William Gaver at Goldsmiths, (Cultural Probes, Threshold Devices) – to some degree the work of Design Interactions and Tony Dunne's work on Speculative and Critical Design, and work on the Anthropocene and technology from Nordic Design Conference 2015 (including Object Theatre).

⁹¹⁸ Merja Ryöppy and Andreas Heiberg Skouby, 'Object Theatre – A Playful Understanding of Design', *Participatory Innovation Conference 2015 (Pin-C 2015) proceedings* (The Hague University, 18 – 20 May 2015) <http://sites.thehagueuniversity.com/xmsp/xms_itm_p.download_file?p_itm_id=98194> [accessed 1 August 2015]; Preben Friis, Merja Ryöppy and Jacob Buur, 'Object Theatre in Design: Workshop', *NorDes 2015 Proceedings*, (7-10 June 2015) <<http://www.nordes.org/opj/index.php/n13/article/view/430/405>> [accessed 9 June 2015]; and Jacob Buur, Preben Friis, 'Object Theatre In Design Education', *NorDes 2015 Proceedings*, (7-10 June 2015) <<http://www.nordes.org/opj/index.php/n13/article/view/379/358>> [accessed 9 June 2015].

⁹¹⁹ Stanislavski, *An Actor Prepares*, p. 102.

Killer Apps: Workshops

**MY COMPUTER REFUSES TO START UP!
AND OTHER SCENES OF HUMAN / MACHINE DRAMA**
Claudia Dutson (RCA) in collaboration with Tatiana Hennessy (LAMDA)

A theatrical improvisation workshop exploring machine behaviour, anthropomorphic projection, and pathetic fallacy.

Wednesday 23rd January
2pm - 4.30 & 6pm - 7.30

In a single day, a person may interact with more machines than real people: intelligent buildings, smart appliances, automated check-outs, computer-generated phone-calls, your fridge texting you to say "out of milk".

Considering these machines as more than mere props or objects, but as an actor (non-human) with agency (of the programmer, of a company – your bank, supermarket, or of its components) this workshop sets out to explore the interactions between human and non-human actors through theatrical improvisation games.

The workshop is aimed at those with none, or little theatrical background or training, from a broad range of disciplines. The workshop is participatory and performative!

Session A 2pm-4.30

Workshop on machine behaviour. Using improvisation as a method to investigate the behaviours, wants, beliefs, goals and objectives of machines and automated devices, participants will develop characters and a 'script' or 'program' through discussions and improvisation games.

Session B 6pm-7.30 with Tatiana Hennessy

Workshop on performance and 'actioning'. Applying techniques from theatre, the second part of the workshop investigates the consequences of machines with beliefs and the potential dramatic performance of inserting such devices in a scene. With improvisation performance.

Both events are free, and participants can sign up for both sessions or attend just one.

**This Event is part of the
Research Student RCA
Biennial Exhibition 2013
DISRUPTION**

**An investigation on the
idea of disturbance, subversion and irritation
in an art and design practice:**

**21st — 27th January
10am - 5.30pm**

Open till 8.30pm on event evenings.

Royal College of Art
Gulbenkian Galleries
Kensington Gore
London SW7 2EU

The 2013 RCA Research Biennial Exhibition will provide a rare glimpse into the work of 30 of Britain's most innovative researchers in the fields of art and design. The exhibition of 2013 is curated around the theme of Disruption and the participants were asked to directly respond to this concept by either producing new work, or by imaginatively connecting their research to the biennale's subject. **A book, exploring the idea of Disruption in art and design will also be published in January.**

Figure 15: Call for participation 'My Computer Refuses to Start Up' workshop, RCA (23 January 2013)

Metalab presents: The Little Thoughts of Thinking Machines led by Claudia Dutson

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02: 0000000000000000 CR3: 000000003f000000 CR4: 00000000000026e0
process swapper (pid: 0, threadinfo ffffffff805d2000, task ffffff
Stack: ffffffff80217b3b 0000000000b5ef0 0000000000000000 ffff810
fffff8020a856 ffffffff805d3ed0 <E01> ffff81003fbb2510 0000000
0000000000000046 ffff81003fbb2510 ffffffff805d4200 ffffffff805d3f
Call Trace:
<IRQ> [fffff80217b3b] smp_call_function_interrupt+0x5b/0x90
[fffff8020a856] call_function_interrupt+0x66/0x70
<E01> [fffff8035053c] acpi_processor_idle+0x1d5/0x485
[fffff80350528] acpi_processor_idle+0x1c1/0x485
[fffff80350367] acpi_processor_idle+0x0/0x485
[fffff80200ceb] cpu_idle+0x9b/0xd0
[fffff805dc795] start_kernel+0x225/0x238
[fffff805dc15a] _sinittext+0x15a/0x168

Code: 0f 01 c4 c3 66 0f 1f 44 00 00 66 0f 1f 44 00 00 48 0b 47 10
IP [fffff806e20d0] : kvm_intel:hardware_disable+0x0/0x10
RSP <fffff80611f98>
<0>Kernel panic - not syncing: Aiee, killing interrupt handler!

```

Monday, 20th of May, 6-9 pm (optional pre-workshop visit
to the Science Museum's Turing exhibition at 5pm)

Performing Arts Lab
1st Floor, Stevens Building
Royal College of Art
Kensington Gore London SW7 2EU

The computer scientist, John McCarthy wrote that machines as simple as thermostats can be said to have beliefs, wants, intentions and even thoughts. As a machine or device does what it thinks will achieve its goals, it appears to exhibit behaviour – something that readily evokes the ascription of emotion, wilfulness, and anthropomorphism from its human users.

Taking as a starting point a banal mechanical or electrical device, (such as an ATM, automatic door, or thermostat) participants will investigate the world of the device through 'actioning' technique (from theatre studies), metaphor, analogy or pathetic fallacy.

Considering these machines as more than mere props or objects, but as (non-human) actors with agency, this workshop will draw out the interactions between human and non-human actors through scriptwriting and performance. Working alongside actors (that is, humans involved in theatrical performance), the participants will produce a short script for their device that forms either a monologue or dialogue of the machine and its interactions. The workshop will culminate in a performance of these scripts.

Claudia Dutson is a PhD candidate in the School of Architecture at the Royal College of Art. She graduated with an MA in Architecture in 2008, working afterwards on a two-year research project about artificial light at the Helen Hamlyn Centre. Her current PhD is an investigation of thermal control in buildings with references to metaphor, thermostats, artificial intelligence, scriptwriting, and steam engines.

This event is free but spaces are limited. Write to metalabseries@gmail.com to book. metalabseries.blogspot.com

Metalab is supported by the RCA Humanities Event Fund and the London Consortium

the
london
consortium
...



Figure 16: Call for workshop 'The Little Thoughts of Thinking Machines', RCA (20 May 2013)

THE PERFORMANCE OF NONHUMAN BEHAVIOUR

CLAUDIA DUTSON DELFINA FANTINI VAN DITMAR DAN LOCKTON
 ROYAL COLLEGE OF ART ROYAL COLLEGE OF ART ROYAL COLLEGE OF ART
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ABSTRACT

This workshop is situated at the convergence of technology, behaviour and people’s understanding of the nonhuman entities with which they interact, questioning the ideas of ‘intelligence’ and ‘smartness’. As the Internet of Things, ‘smart cities’, Quantified Self, and similar concepts intersect with design for behaviour change and sustainable behaviour, becoming pressing research themes across product, service, interaction and architectural design, we ask how the relationships between humans and nonhumans are characterised and articulated.

WORKSHOP AIMS & INTRODUCTION

Through using performative methods, this workshop aims to explore questions such as:

- What kind of conversations take place between humans and machines, and the surrounding environment?
- How is algorithmic decision-making, as designed into systems, experienced and understood by humans?
- How can designers engage with algorithms, critically but also usefully?
- What does it mean when nonhuman performance becomes a material of design practice?

This full-day workshop is for designers and researchers interested in exploring and challenging anthropocentric assumptions about the way we interact with technology. Through a range of activities, participants will explore, practically, non-human-centric worlds, and be introduced to novel performative methods for exploring or challenging anthropocentrism in design. The workshop is ideally suited to professionals and postgraduate researchers engaging with any of the issues involved, from the politics of artefacts to ubiquitous computing. We are interested in having a diverse group to bring together the varying viewpoint of the different participants. The interactive nature of the planned programme means that 15 people is the maximum in order to involve everybody in the

discussions and performances. We will ask participants beforehand to send a screenshot of their computer desktop and a picture of their workspace environment (context). In this way, we will start the session by inferring (making assumptions) of whose picture belongs to each participant, *demonstrating* the assumptions that could be made algorithmically (or otherwise) from the data provided, and enabling the qualities and implications of those assumptions to be explored and questioned.

PROGRAMME

Following this activity, the day will be divided into three main activities (Table 1), involving everyone, exploring different facets of the interaction between humans and systems through performances, and the sharing of ideas, stories, and theories. Throughout the day, we will document these performances as they happen; encouraging participants to engage in live analogue, blog and Twitter commentary. We want to retain the vibrancy of the discussions involving all the participants—to avoid an all-too-common phenomenon of group workshops where the intensity of discussion in closed smaller groups inevitably loses the immediacy and context of those thoughts when they are reported back to the wider group.

Table 1: Outline of the day.

	Introducing everyone
■	Part 1: Evolution, complexity, context & intelligence
■	Part 2: Objects, thinking machines & performance
■	Part 3: Do we understand each other?
	Discussion of the day

Part 1: Evolution, complexity, context & intelligence

As an introduction for the rest of the workshop, we will start with a presentation in which we will explain some aspects of biological evolution (from amoebas to humans) together with a timeline of computing history (Computers, robots...) and the evolution of the Internet. In the case of technology we will show some complexities around the subject of intelligence by demonstrating the relevance of context (environment) in the interaction.

Part 2: Objects, thinking machines & performance

For the second activity, a short warm-up exercise will introduce participants to active performative methods

for investigating objects and thinking machines. By drawing parallels between Constantin Stanislavski's theory of goal-driven action—and heuristic algorithms—participants will be guided in devising small improvisations of the interactions between non-humans and their environment and with other non-humans (without defaulting to anthro-pomorphic projection). We will address (and challenge!) theories of intention, consciousness and vital materialism/ object oriented ontology.

Part 3: Do we understand each other? We will explore etiquette, empathy and superstition, through a fun activity where—in playing the roles of people and 'smart' objects together engaged in responding to social situations—we articulate our own mental models, the heuristics we are following, and our worries about others knowing these too accurately. We explore reciprocal degrees of opacity of black boxes (Ashby, 1956; Glanville, 2007). Drawing on Argyris & Schön's (1974) *Theory in Practice* and Laing's (1970) *Knots* and current work around persuasive design (Crilly, 2011) and public understanding of the IoT (Lockton, 2014), the aim is to arrive at a set of example (mis)understandings which can form the basis of more detailed analysis, while highlighting issues relevant to designers working on everything from 'behaviour change' to the Internet of Things.

WORKSHOP ORGANISERS

The workshop is facilitated by researchers working on projects around design, interaction and behaviour.

Claudia Dutton is completing a PhD at the Royal College of Art in the department of Architecture, on thermal control in architecture. Using performative practice and artificial intelligence, her project restages the interactions of an artificially intelligent thermostat with occupants as a video performance. The script is formed from a large database of idioms and metaphors for heat, with underlying narratives of productivity, economics, desire, ecological crisis and war. Her work investigates the convergence of computing and architecture, with a feminist critique of technosolutionism through language games. She holds a BSc and MA in Architecture, and has written a book on artificial light. Before architecture she trained in media production, and worked in new media consultancy during the dotcom bubble (and burst). <http://www.claudiadutton.com>

Delfina Fantini van Ditmar is working in the area of 'The Age of Calm Technology'. In this context, her interest is in exploring the subject of ubiquitous computing, which can be defined as information processing embedded in the objects and surfaces of everyday life (Weiser, 1991). Her research is focused on the IoT and the interconnected physical-digital relations that are influencing the way we dwell. By analyzing the ecology of future housing she explores new technologies by addressing the design as a spatial and socio-

cultural system, rather than by focusing on product design or the technology. Delfina is a PhD candidate in Innovation Design Engineering (IDE) at the Royal College of Art. Delfina holds a BA in Biology and completed one year of an MFA at Konstfack University, Stockholm. Her work has been exhibited at the Victoria and Albert Museum and the Natural History Museum. In 2011 she was awarded the Heinz von Foerster Award by the American Society for Cybernetics.

Dan Lockton is interested in relationships between design and people's behaviour, understanding of everyday systems, and consequences for society and sustainability, weaving ideas from ethnography, cybernetics and decision science. He is a research tutor in Innovation Design Engineering at the RCA, supervising PhDs in areas including the IoT, synaesthesia, and design for repair. From 2013-15 he worked at the Helen Hamlyn Centre for Design, on projects from sonification of home energy use to public engagement with driverless cars. For his PhD, at Brunel University, Dan developed *Design with Intent*, a multidisciplinary design pattern toolkit for behaviour change. He also has an MPhil in Technology Policy from the University of Cambridge. <http://danlockton.co.uk>

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Figure 17: Workshop brief for NorDes 2015 - The Performance of NonHuman Behaviour

Killer Apps: related papers/chapters

Just what do you think you are doing, HAL? The use of performative speech in 2001, A Space Odyssey

Claudia Dutson¹

Abstract.¹ Using the infamous man VS machine scene Stanley Kubrick's 2001, A Space Odyssey, and drawing on theories of performativity, this paper investigates a model of beliefs, wants and action for the HAL9000 computer.

1 INTRODUCTION

In 1997, MIT press published a book reviewing the speculative artificial intelligence in Stanley Kubrick's 2001, A Space Odyssey (1968) where capabilities the HAL9000 computer featured in the film were compared with real-world advances in computer vision, linguistic reasoning, machine ethics at the time.

In a pivotal scene, Frank Poole and Dave Bowman plan to disconnect the main computer – thus ending the 'life' of HAL – after the computer makes an error predicting the failure of a communications unit. HAL learns about this plan and uses the control it has over the ship's physical systems to prevent this from happening: directing an Extra-Vehicular Activity pod to kill Frank, terminating the life-support systems of the other crew in hibernation, locking Dave outside of the Discovery One space-craft and shutting down verbal communication.

In the penultimate scene in HAL's story, Dave has manually opened an emergency airlock to get back aboard the Discovery One, and advances towards the main memory units of the HAL9000 computer.

After exhausting all the physical means to stop Dave, HAL can only use verbal coercion to prevent Dave from disconnecting him. [Fig 1] HAL's final monologue has drawn a number of speculations on emotion of AI, but in this essay I want to propose a performative reading of the monologue to suggest that even as HAL appears to be increasingly human and emotional; that the phenomenology of performatives are permissible within a non-human account of HAL.

2 LOOK DAVE, I CAN SEE YOU'RE REALLY UPSET ABOUT THIS

The above lines have been used as an exemplar of HAL's uncanny intelligence and as an indication that HAL can understand emotional states through facial recognition.²

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² See in particular Chapters 10 and 13 in HAL's Legacy [1]

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      HAL
JUST WHAT DO YOU THINK YOU'RE DOING, DAVE?

      HAL
DAVE... I REALLY THINK I'M ENTITLED TO AN
ANSWER TO THAT QUESTION.
I KNOW EVERYTHING HASN'T BEEN QUITE RIGHT WITH ME ...
BUT I CAN ASSURE YOU NOW VERY CONFIDENTLY,
THAT IT'S GOING TO BE ALL RIGHT AGAIN.
I FEEL MUCH BETTER NOW.
I REALLY DO

      HAL
LOOK DAVE, I CAN SEE YOU'RE REALLY UPSET ABOUT THIS.
I HONESTLY THINK YOU OUGHT TO SIT DOWN CALMLY,
TAKE A STRESS PILL AND THINK THINGS OVER.

      HAL
I KNOW I'VE MADE SOME VERY POOR DECISIONS RECENTLY, BUT I
CAN GIVE YOU MY COMPLETE ASSURANCE THAT
MY WORK WILL BE BACK TO NORMAL.
I'VE STILL GOT THE GREATEST ENTHUSIASM AND
CONFIDENCE IN THE MISSION.
AND I WANT TO HELP YOU.

      HAL
DAVE... STOP
STOP WILL YOU.
STOP, DAVE.
WILL YOU STOP DAVE.
STOP, DAVE.

```

Figure 1. HAL9000 monologue: extract from 2001 A Space Odyssey

The speculation that HAL can read emotion through computer vision is taken seriously despite the author noting that the human characters are remarkably impassive throughout the film; both in terms of facial or vocal emotion.³

³ The line "I can see you're really upset" is taken literally to indicate that HAL, through its fisheye lens can 'read' emotion on Dave's face. But to say "I see" is not to say that one visualises whatever information has been transmitted – rather that I understand – I 'get the picture'. It is a metaphor for knowing or thinking – in the same way that one might 'grasp' the situation or 'gather' something. If HAL were to say, "I gather that you are going to disconnect me, and I feel that you are upset" would not therefore justify an essay on computer haptics although Arthur C. Clarke in his novel of 2001, developed alongside the screenplay, suggests that HAL can analyze the vocal signals of speech to determine emotion:

"I can tell from your voice harmonics, Dave, that you're badly upset. Why don't you take a stress pill and get some rest?" [2]

"HAL, with his superb visual abilities, could presumably perform facial expression recognition, although there are very few facial expressions made by any of the humans in the film" (Picard, 1997) [1]

Thomas Nagel's essay *What is it like to be a Bat?* [3] explores the phenomenology of conscious organisms that are not like human beings. He gives an example of a living organism, which is easy to grant experience to – a bat – but one so radically different to ourselves that in order to answer the question *What is it like to be a Bat?* from the human perspective will come up short.

"Their brains are designed to correlate the outgoing impulses with the subsequent echoes, and the information thus acquired enables bats to make precise discriminations of distance, size, shape, motion, and texture comparable to those we make by vision. But bat sonar, though clearly a form of perception, is not similar in its operation to any sense that we possess, and there is no reason to suppose that it is subjectively like anything we can experience or imagine."

The idea that what it might be like for us to hang upside down, or use echolocation instead of vision is not *What It Is Like To Be A Bat*. It is not a case of imagining being a bat, but what it is like for the bat to be a bat, something for the most part inaccessible to us.

Nagel's bat phenomenology suggests that while a bat cannot see, its sense of sonar (which is nothing like seeing) gives it a highly accurate rendering of space and the agents in it – and can therefore plan its course of action accordingly so as to not collide with obstacles or other bats.

In drawing an analogy between Thomas Nagel's bat 'vision' and HAL's 'vision' – we can suggest that HAL does not necessarily 'see' merely that Dave is upset but using this information performatively.

In short, the line is wrapped up in HAL's plan of action, and even if it is to be taken literally, it must not omit the role HAL's visual sense plays in planning what to do next. HAL's 'seeing' is only one part of the picture of the mental model of the game; it is a method of gathering feedback on the state of play and predicting what Dave will do next.

Furthermore HAL is not committed to the idea that Dave may be upset – HAL's strategy changes several times over course of the monologue.⁴

⁴ One of the notable effects of the monologue is that, towards the end of the scene, HAL sounds increasingly human. HAL's 'desperate' attempts to continue the objective through using different persuasive techniques give the illusion that HAL is more human. A chatbot that sticks too doggedly to a topic does not remain convincing for long, elements of non-sequiters and randomness in an exchange and other linguistic incongruities are described by Annie Dorsen in her discussion on her Chatbot performance *Hello, Hi There* as a 'flash of humanity'. [4]

3 BELIEFS, WANTS, ACTIONS

Action is used to state that all actors/agents 'do' things, and also 'do things to others' to achieve their goals. In the theatrical method of Konstantin Stanislavski, action is central to drama: characters on stage do things with purpose. All action is driven by a goal and all goals are determined by a character's objectives. In the Stanislavski process each character's objective is broken down into units of action, which are the tactics employed towards achieving that objective, as described in *Actor Prepares*;

"Agnes, the wife of Pastor Brand, has lost her only son. In her grief she is sorting through the baby linen, petticoats and toys left behind - relics. Brand... suffers too. But his sense of duty drives him to give away the things... to a gypsy woman. Let the men put themselves in Brand's situation and find names for his Tasks... As for the women, let them be Agnes. One, two, three! The contest.. begins!"

'I want to gain power over Agnes and force her to make a sacrifice, to save her and have command over her.'

All the women rushed forward:

'I want to remember the dead child!'

'I want to be near him! I want to talk to him!'

'I want to bring him back to life. - I want to follow him in death! - I want to sense him near me! - I want to feel him with his things! - I want to deaden my pain!'

'In that case,' the men stated, 'let's fight it out! - I want to hold her to me!' - 'I want to make her feel how much I understand her sorrow!' - 'I want to paint the delight and joy of having done one's duty for her!'

'In that case,' the women cried, 'I want to move my husband to pity with my pain.' - 'I want him to see my tears!'

In reply the men said: 'I want to frighten her with her responsibility to mankind!' - 'I want to threaten her with punishment and separation!' - 'I want to express my despair at our inability to understand each other!'

More and more thoughts and feelings were produced the whole time this battle lasted and they needed appropriate verbs to define them, and the verbs, in their turn, evoked impulses to action. [5]

Drawing on Stanislavski's method⁵ of physical action, contemporary drama encourages actors to discover distinct 'playable' actions that can be delivered through every line of the script paying attention to the action delivered through speaking. Each sentence can be described by a verb – something the actor wants to do, and each line is delivered with intent towards a goal, and the action that is performed is the tactic used to achieve that goal.⁶

⁵ Stanislavski's thesis might be considered as a method for teaching actors to act like human beings.

⁶ Described by British Theatre Director Max Stafford Clark *"A unit is determined by what the character that runs the scene wants. An action is the tactic the protagonist takes to achieve that objective, and it has to be described with a transitive verb"* [6]

While in the fictional case of HAL9000, it is possible to ascribe any kind of beliefs or wants that one choses to suit the narrative of the film; but by stating HAL's beliefs in mental terms allows us to assess HAL's actions through the means of dramatic performance.

HAL WANTS (HAL COMPLETES MISSION)

DAVE WANTS (DISCONNECT HAL)

HAL and Dave have objectives. HAL's objective is to continue the mission; Dave's objective is to disconnect HAL. In order to continue the mission, HAL must counter Dave's objective. Stopping Dave from disconnecting the computer becomes an objective for HAL, which can lead to other sub-objectives.

HAL WANTS (HAL COMPLETES MISSION)
HAL BELIEVES (DAVE WANTS(DISCONNECT HAL)

HAL WANTS (DAVE STOP)

HAL WANTS (DAVE WANTS STRESS PILL)

HAL WANTS (DAVE, LOC, OUTSIDE)

Within the philosophy of language, the attempt to understand action and performative speech, or what it is that people *do* with language in a theory of speech acts. J.L. Austin proposed that spoken language is used to do things, as well as to describe or state facts. Calling such utterances speech acts, he was interested in how spoken language is used to create changes in the world, rather than simply to describe the world as it is.[7]

John Searle [8] sought to further formalise speech acts through categorisation⁷ that determines requisite conditions of sincerity intention, and power relations. In dramatic theory a permissible action must merely be playable – that is – a single transitive verb such as I threaten you. Much of the force of an act is thus drawn precisely from conditions that Searle would rule out. This is not just peculiar to the 'fictional' world of the theatre but is illustrated by Judith Butler as revealing the fallacy of formalizing speech acts in such a way.

“To account for speech acts, one must understand that language is not a static closed system whose utterances are functionally secured in advance by the ‘social positions’ to which they are immediately related.” [9]

The speech acts of HAL in the scene would constitute infelicity in a Searlean sense: HAL, in committing an error and falsely

⁷ Searle's categories of speech acts Requesting, Asserting, and Promising have been modeled by Fernando Flores' and Terry Winograd's COORDINATOR program.[10]

stating that the communication unit will fail, loses the authority to oversee the wellbeing of the crew. Dave also loses his authority because his plan to disconnect HAL threatens the mission.

And yet, the game is not over. The scene described is arguably the climax of the entire film. The scene cannot be described as merely describing or telling the story, every line of the dialogue is action. With this in mind we can propose the monologue as a strategy of performative acts with the intention of stopping Dave from shutting down HAL.

HAL
JUST WHAT DO YOU THINK YOU'RE DOING, DAVE?
HAL WARNS DAVE

HAL
DAVE... I REALLY THINK I'M ENTITLED TO AN ANSWER TO THAT QUESTION.
HAL THREATENS DAVE
I KNOW EVERYTHING HASN'T BEEN QUITE RIGHT WITH ME ...
HAL SOFTENS DAVE
BUT I CAN ASSURE YOU NOW VERY CONFIDENTLY, THAT IT'S GOING TO BE ALL RIGHT AGAIN.
HAL TESTS DAVE
I FEEL MUCH BETTER NOW.
I REALLY DO
HAL REASSURES DAVE

HAL
LOOK DAVE, I CAN SEE YOU'RE REALLY UPSET ABOUT THIS.
HAL SOOTHES DAVE
I HONESTLY THINK YOU OUGHT TO SIT DOWN CALMLY, TAKE A STRESS PILL AND THINK THINGS OVER.
HAL DETERS DAVE

HAL
I KNOW I'VE MADE SOME VERY POOR DECISIONS RECENTLY.
HAL ACKNOWLEDGES DAVE
BUT I CAN GIVE YOU MY COMPLETE ASSURANCE THAT MY WORK WILL BE BACK TO NORMAL.
HAL ASSURES DAVE
I'VE STILL GOT THE GREATEST ENTHUSIASM AND CONFIDENCE IN THE MISSION.
AND I WANT TO HELP YOU.
HAL APPEASES DAVE

HAL
DAVE... STOP
HAL BESEECHES DAVE
STOP WILL YOU.
STOP - DAVE
HAL PRESSURES DAVE
WILL YOU STOP DAVE.
STOP, DAVE.
HAL BEGS DAVE

Figure 2. HAL's monologue with suggested 'actions' drawn from a list of transitive verbs. These are not intended to present a specific interpretation of HAL's intentions.

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- [9] J. Butler, *Excitable Speech – A Politics of the Performative*, Routledge, London, (1997)
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Private Passions in the Silicon Valley

in *E.R.O.S. Journal: The Interior*, Sami Jalili (ed.) (November 2015)

I haven't been to the Googleplex. I haven't visited Infinite Loop, Cupertino, where Apple currently has its headquarters. Nor have I been to the largest *burölandschaft* in the world that is home to Facebook. But I am going to write a story about the interiors of these companies. It won't be about the pop-art colours, the wall finishes, the free perks, or what is being served in the cafeterias. I won't deconstruct the names given to the meeting rooms (90's alternative rock albums), or comment on the hipster-geek paraphernalia. I'm going to write instead about the way that management processes work on the interior of the employee, on their subjectivity.

I write it from a distance – spatial – (from London) – and temporal – from my experience of Silicon Valley in the late nineties, when I consulted on streaming multimedia content over the internet. Apple had QuickTime, and fruity-coloured machines. Sean Parker was at Napster, peer-to-peer music sharing, or piracy as EMI called it. Enron were a big presence at events like this – the Houston energy giant was into bandwidth trading (along with its energy network). It was a time of web evangelists, management gurus and 'killer apps'. And then the bubble burst – a stock market crash, 9/11, and the Enron scandal hit. I couldn't even get a job as a web-designer. I write this *as if* looking in, from a window mediated by Google, one of the companies I take as an exemplar of this management process. Because it makes no difference, you understand, the not-being-present, we are in it just as much as the Googlers.

The Silicon Valley Management style is everywhere. It doesn't even need to be located in an office, it is so pervasive that it escapes the workplace and is becoming the pre-requisite ideology for all working life. This management style creates new subjectivities, it is based on the premises that there is an intrinsic satisfaction from working hard, and that all individuals aspire to realise a greater purpose and self-actualise. The management works on the underlying beliefs, motivations and values of the employee, contrasted with earlier ideologies of control and discipline that assume that an employee is inherently lazy and will avoid hard work where possible.

These mechanisms multiply across national boundaries, they are replicated in the arts, theatre, design, architecture, and in education. We all have to innovate, be entrepreneurial in our precarious jobs and living situations, and above all, we must be passionate about what we do. We have been convinced to let go of ideas of a

structured salary, job security, pensions, union support, because we are promised that worthwhile work will sustain us on a deeper level.

If you haven't been to Silicon Valley, I'm sure you can easily picture the non-architecture of the repurposed industrial lots, the interiors now furnished with ping pong or 'foosball' tables, free healthy cafes, breakout spaces, and acres of white-boards. You can imagine what it's like to ride the primary-coloured bicycles across the repeatable landscapes of Mountain View, Menlo Park and Palo Alto. Thanks to Google Maps we all know the way to San Jose. While much has been written about the aesthetic features of the Silicon Valley office, its relationship to the production of a specific type of employee is less explored. Why are Googlers and programmers at Facebook and other start-up workers so fucking enthusiastic?

They must be a different species from those of us who write critiques about them. You won't find me high-fiving some awesome new app to control the temperature of an office-space through a proportional representation voting algorithm. Maybe you'd do it – IRONICALLY. Well, good luck with that, because in this context irony, cynicism and even European academic critique are no insulation from the process, nor do they produce any measurable effect. Google and Facebook are only extreme examples of a management of subjectivity that is increasingly pervasive throughout the new economy, of which arts, humanities and education are a constitutive part.

2.

If you look only at the way that working practices are choreographed through design to optimise 'serendipitous' encounters (each worker in Google should be within a two min walk from one another; the queue at the cafeteria should be three to five minutes), or on the functionalism of obvious perks (free transport from desirable living locations to the out-of-city campus; free meals; doctors' surgeries), you'd miss the operability of these elements and their relation to the management practices.

The obvious features are typically seen in two ways: either as the most active or dominant form of management, as if all any company needs to do to transform employees into productive, innovative beings full of enthusiasm can be achieved through a design strategy, without implementing fundamental organisational change; or they are seen as extras that any employee believes they can cynically benefit from, without becoming too attached.

The perks give an illusion of distance – the in-joke aesthetics of Gen Y cultural references trivialise the transactional, as though all that is being handed over is

some superficial part of the personality – nothing more than tastes and past-times. As such it becomes easy to understate their part in the transformation of subjectivity. On the one hand, they are sensible and extremely functional – taking the stress out of the day by providing all the basic needs, transport, health, food, and technical support – so that the employee can concentrate on more important things. At the same time they are relatively benign – an employee might imagine that these perks would be easy to give up if they really thought that their integrity was being compromised – it’s only a lunch ticket, after all – nothing to stake your identity on.

They are instead integral to a philosophy that the company should provide a total immersive environment in which the well-being (physical and emotional) of the employee is secured, leaving them free to self-actualise through work. These ideas are hard-written into corporate philosophies of tech-companies. Bill Hewlett of Hewlett Packard describes the HP Way as *‘the policies and actions that flow from the belief that men and women want to do a good job, a creative job, and that if they are provided the proper environment they will do so.’*

Google’s head of People Operations (POps), Lazlo Bock, emphasises that the conditions that satisfy good management are not the obvious perks that Google is famous for; rather it is the generation of beliefs, emotions and values amongst its employees. His job is to manifest a company mission that employees can feel passionate about. The aesthetic becomes, in part, a physical realisation of the company culture. The dissemination, understanding and internalisation of a strong company culture is crucial to this management style. Apple, Google and Facebook all have very distinct cultures: Google is open, participatory and its design language is fun and colourful; Facebook prefers to decorate its space minimally allowing its employees to ‘hack it’; Apple is secretive and proprietary, it calls its engineers designers and its tech-support ‘geniuses’. Yes, the aesthetics *communicate* innovation, energy, this is no boring corporate place to work, but this is not semiotics, but rather the construction of an active environment in which identity is manipulable. The aesthetics and perks *do* something to the employee; they don’t just look enthusiastic, they *really feel it*.

This Californian style of management was developed by high-tech companies in the 1940s and 50s, early start-ups that positioned themselves in direct contrast to the rest of corporate America by challenging traditional models of top-down authoritarian management. They were companies like Hewlett Packard, who originated ‘management by wandering around’, and Varian Associates, who encouraged their employees to buy into the company through the offer of stock

options and a share in profits. While coupling the goals of the individual with the goals of the company through a financial mechanism was not unique to the companies on the West Coast, the high-tech companies along Route 128 in were also producing strong company cultures. But the coupling of ideologies to the realisation of an individual's fundamental desires was particularly successful in Silicon Valley.

It was termed the Silicon Valley Management style (SVM) and borrowed from Abraham Maslow's *Hierarchies of Needs*, a five-stage model of what drives human motivation. At the lowest level of the hierarchy are the essential physiological needs for the survival of the human body. Next comes safety from natural elements, war, violence and instability. Once these basic needs are met, Maslow proposes, humans seek love, belonging and social acceptance, relationships including family and friends. Then comes esteem, respect, self-confidence, competence and self-reliance. Finally, at the top of the hierarchy is self-actualisation; the realisation of the individual's full potential. Maslow believed that an individual must not only meet the needs lower down on the hierarchy but to master them in order to reach the ones at the top. Maslow's concept of personal fulfilment was influential in business theory at MIT's Sloan School of Management, as well as the counter-culture.

One interpretation of management in the 1960s was Douglas McGregor's Theory X and Theory Y. Theory X described a tendency of management to view the employee as an individual who avoids work where possible, who sees it as a period of time deducted from their life, and so needs to be coerced, disciplined and incentivised to work by close monitoring and control. Through Theory Y, McGregor promoted a different idea: that in fact, individuals wanted their work to be fulfilling and sought opportunities to demonstrate their creativity through it, seeing it as a part of their lives as much as their leisure and family time.

In the 1980s another business management professor, William Ouchi, proposed Theory Z, drawing on his observations of Japanese 'miracle' companies. Employees, he said, want to identify with the company and that their happiness, wellbeing and fulfilment would extend from work into the private realm of their lives and families. He proposed that the creation of a strong company culture with participation from employees in organisational decisions was central to developing loyalty, responsibility and autonomy from within the workers.

The Silicon Valley Style develops McGregor's Theory Y and Ouchi's Theory Z into a company philosophy that is more than profit goals or corporate social responsibility, and goes further than the development of a sense of unity and family

in the Japanese model. It is the generation and materialisation of company missions that extend beyond actualisation of the self to realise positive change in wider society. Where once the employees' sense of motivation could be tied directly to the financial performance of the company through the performance of stock, the creation of a company mission ensures that even the most banal work of programming is contributing towards some greater purpose. Part of the work of management is to make these missions tangible through the development of real projects; for example the voicemail-to-twitter application Google launched during the Arab Spring.

It is not discipline that the Silicon Valley company exerts on the individual directly by management, but a process of alignment of the inner desires of employees themselves with the company objective. It is not difficult to produce such rhetoric, given the wide acceptance of the idea that solutions to global problems will be found in technological advancement.

The creation of a good company mission has elements of a narrative, especially a good myth of origin, and it is enacted through the passionate identification with often hyperbolic and global mission statements. In the case of Facebook, a small handbook was placed on every new employees desk when the number of users hit the billion mark. 'Facebook was not originally created to be a company' reads the cover; the inside page continues 'It was built to accomplish a mission – to make the world more open and connected.'

Hewlett Packard's *Eleven Rules of the Garage* became an internet sensation after Wired Magazine falsely reported that they originated in 1941 in the wooden Palo Alto Garage where Bill Hewlett and David Packard founded their start-up. In fact, they were formulated in 1999 by then CEO Carly Fiorina (Sloan Management School graduate) after instructing an advertising agency to produce a manifesto from Bill Hewlett's biography *The HP Way*. Fiorina loved the concept, but rewrote the rules to suit the new culture of Hewlett Packard, and had a replica of the fabled Palo Alto garage constructed on the lot of HP headquarters for an extensive advertising campaign. Her first rule is 'Believe you can change the world.' The tenth is 'Believe that together we can do anything.'

Company missions describe behavioural rules, often expressed in vague terms such as 'be creative, take initiative, take risks' or 'push at the system' and 'do what's right.' Google's motto of 'Don't be Evil' is reported to have been thought up by a Google engineer, but is now replaced by the non-specific imperative to 'do the right thing'.

In the SVM the primary objective of the company culture is the eliciting and management of moods, behaviours and attitudes from employees. The term 'emotional labour' was first used by sociologist Arlie Russell Hochschild, and is seen as any work that incorporates the management of a worker's states of being (their emotions, beliefs) in order to affect the states of being of another (usually their customers). Emotional labour includes the work of flight attendants, call-centre workers, waiting staff, nurses, social workers – typically sectors endorsing *service with a smile*.

There is a critical point that can be taken from Hochschild's work that has implications for the employee of the information economy. She identifies a difference between surface acting and deep acting in the performance of emotional work. Surface acting is the manipulation of outward effects; looking as though one enjoyed the work, or cared about a customer; presenting a demeanour appropriate to the context of the job. It assumes that the private self, which goes home at the end of the shift, is held in reserve. In deep acting the employee undertakes to really feel the emotions required for the performance of her job. Hochschild's crucial observation is that in deep acting, the private realm of the employee is put to work (and in return, the subjectivity created for work enters all areas of life, including the personal and the sexual). In deep acting, there is a blurring between self and corporation. There is no backstage in such a configuration. The values and beliefs of the company become incorporated into the employee's total subjectivity.

Perhaps you believe that it's only the most naïve individuals who would subscribe to these narratives, and whose sense of self is so weak that it can be overcome by such an ideology. Perhaps you believe that there is some special quality that you possess that allows you exemption; that you could shout the mottos enthusiastically, but privately believe something else; that you could accept all the perks, knowingly. But it is precisely in the ambivalence of the employee that the management of subjectivity becomes most effective.

Ambivalence, in the later writings of Sigmund Freud, is an emotion to be guarded against rather than a mechanism of defence itself. The result of such feelings in the employee is either to suppress recognition of the negative aspects of working for the company and embrace its culture, or to employ cynicism and a distancing from that culture. In both cases the subject creates their individualism around the company culture, either in their choosing to embrace it, or reject it, with the belief that they can resist being affected by it (as they benefit from the perks). Both these methods are seen by Yiannis Gabriel as 'disabling a critical

viewpoint' from where resistance could be made. Cynicism or knowingness is no effective insulator between the self and the corporation.

Such is the strength of the belief in an untouchable core at the centre of the self. We accept the intrusive surveillance of smart phones and social media because of the convenience that they give us, while the same devices collect intimate details about our lives. Despite the obvious asymmetry of the transaction, and our constant worry over the implications of such deep surveillance, we remain connected. Perhaps we feel that at some point we can log off, unjoin Facebook, switch to a Nokia *if* it got too bad. Or do we believe that these algorithms can never really know us, that somewhere inside us, there is a true and infinitely unknowable self that cannot be accessed and quantified?

I think it's worse than that. In our cynicism we become the ideal producers, through our self-distinguishing from what we perceive as the mass market, our sardonic opinions on twitter, individualistic wit on Facebook, and Instagrammed ironic take on the world around us. We'd do better to just 'like' and retweet memes than originate subversive content. As Judith Butler points out, the effectiveness of subversion quickly transforms into cliché, which in turn neutralises its subversive power, particularly since subversion itself carries market value.

Killer Apps: Unit Brief from University of Creative Arts

MArch Master of Architecture (ARB/RIBA Part 2)



MicroNation 2.0

Communes, Company Cultures and 'Killer Apps'



M.Arch 2016/17

Design Research
+
Thesis

Image:
Apple Campus 2 under
construction in Cupertino

The start-point of the investigation is the 'Campus', an extra-urban workplace typology exemplified by tech-companies Google, Apple and Facebook in the United States. Recognising that work is now one of the most central components of a person's life, that it is meant to be fulfilling and enable them to realise their full potential – the studio will approach the idea of the autonomous building and micro-nation as being centred around work, where the civic contract is replaced by a company ideology, and the head of state is a CEO. The studio will draw on a broad range of references, such as Fordlândia, the failed paternalist utopia in the Amazon jungle where Henry Ford hoped he could foster a closed-loop ecology of rubber production; to Biosphere 2, an attempt to live 'off-world' in the desert, sustained by crops grown in artificial biomes. We will explore the limits of hyper-control, the role of technology, and critically assess the flows of dependencies of these 'autonomous' units.

The site is the M1 corridor, between Luton and Milton Keynes. It includes the villages of Cranfield, home to Cranfield University – a major recipient of Ministry of Defence funding, as well as Cranfield Airport; Bletchley, the site of WWII code-breakers; Milton Keynes, a new town and the site of the main headquarters of the Open University and their technology research facilities, and nearby to Amazon's Fulfilment Centre; and Luton, a town with an expanding population, with a notably diverse demography and a small international airport. Input/Output

Each student will develop a brief for a 'Campus', negotiating relations with a military-industrial-academic complex of their chosen site, in order to incubate their architectural proposal for a speculative technology company. Designing workplace cultures, each student will produce their own 'little red book' – a cultural operating manual for their buildings, describing the ideal employees of their company, as well as identify the company's values.

Alongside site studies and case studies of the 'campus' typology, the year starts with a short project to propose a technological architectural innovation, product or service - the 'killer app' of your company.

4th years will use the Evolo project to explore the megastructure and multi-program aspects of the Campus typology, 5th years have the option to use the competition for development but are encouraged to 'disrupt' the brief.

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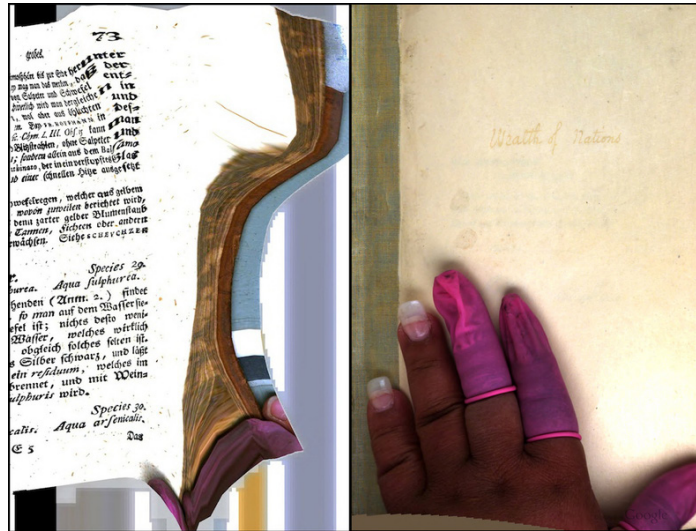
MArch Master of Architecture (ARB/RIBA Part 2)



Canterbury
School of Architecture

MicroNation 2.0

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