

**Project: Environmental
Impact of Digital
Services on Health and
Wellbeing in the Home**
UKRI grant: EP/V042130/1

slides->
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Empowering infrastructures in UK sheltered housing

The role of sensor technologies in producing
uncertainty, control and conviviality in older
people's homes

Sensors Day 2022, University of Cambridge, 12th October 2022

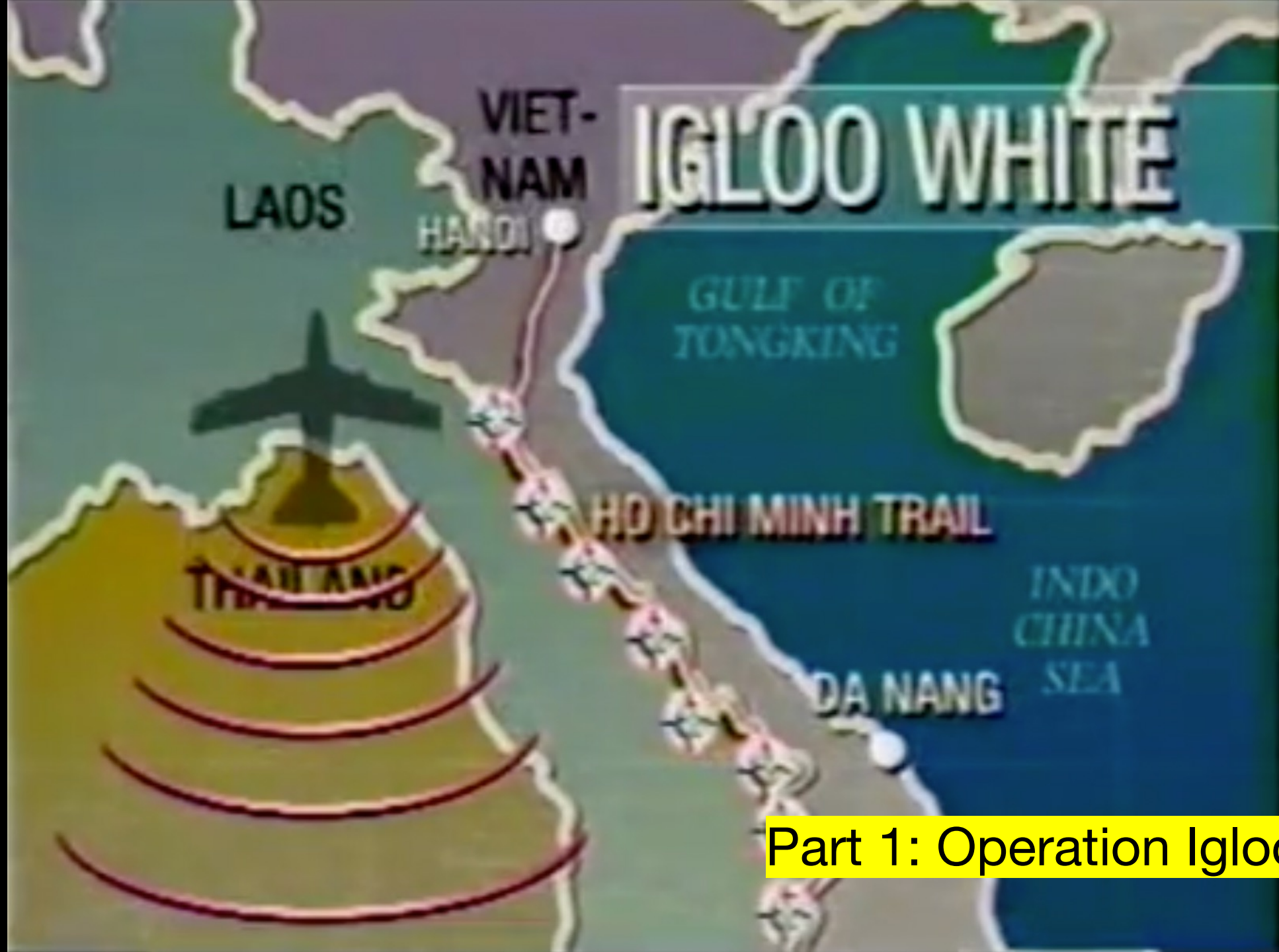
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Beyond remote control:
How can we design sensing and
automation infrastructures so they
contribute to collaboration,
creativity, care and conviviality?

Argument: uncertainties are not the only problem – it's their premature closure

Need: newly cultivated research capacity and capabilities to produce wider sets of
knowledge + opening-up of space in society and politics to confront radical
uncertainty

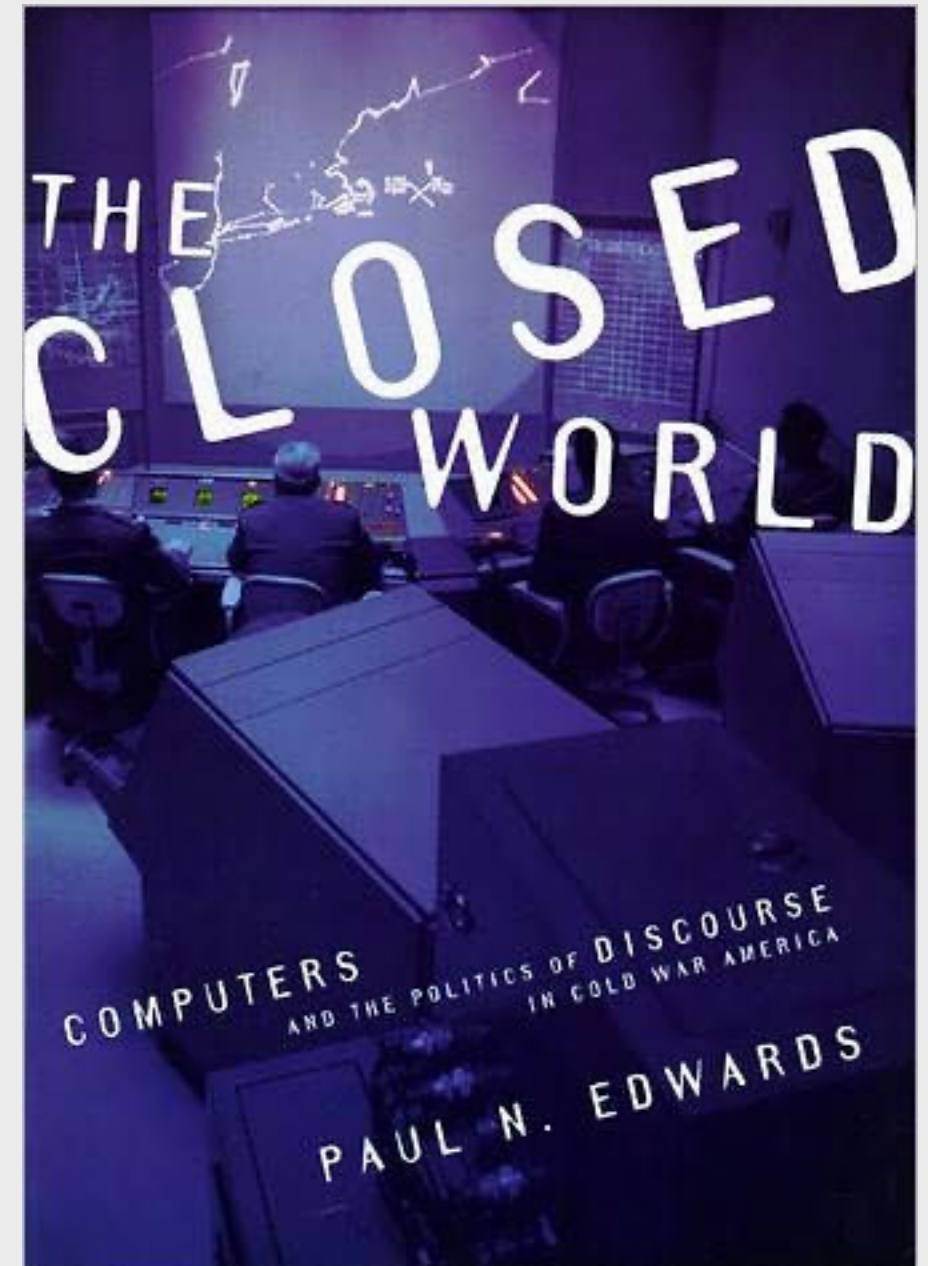


Part 1: Operation Igloo White



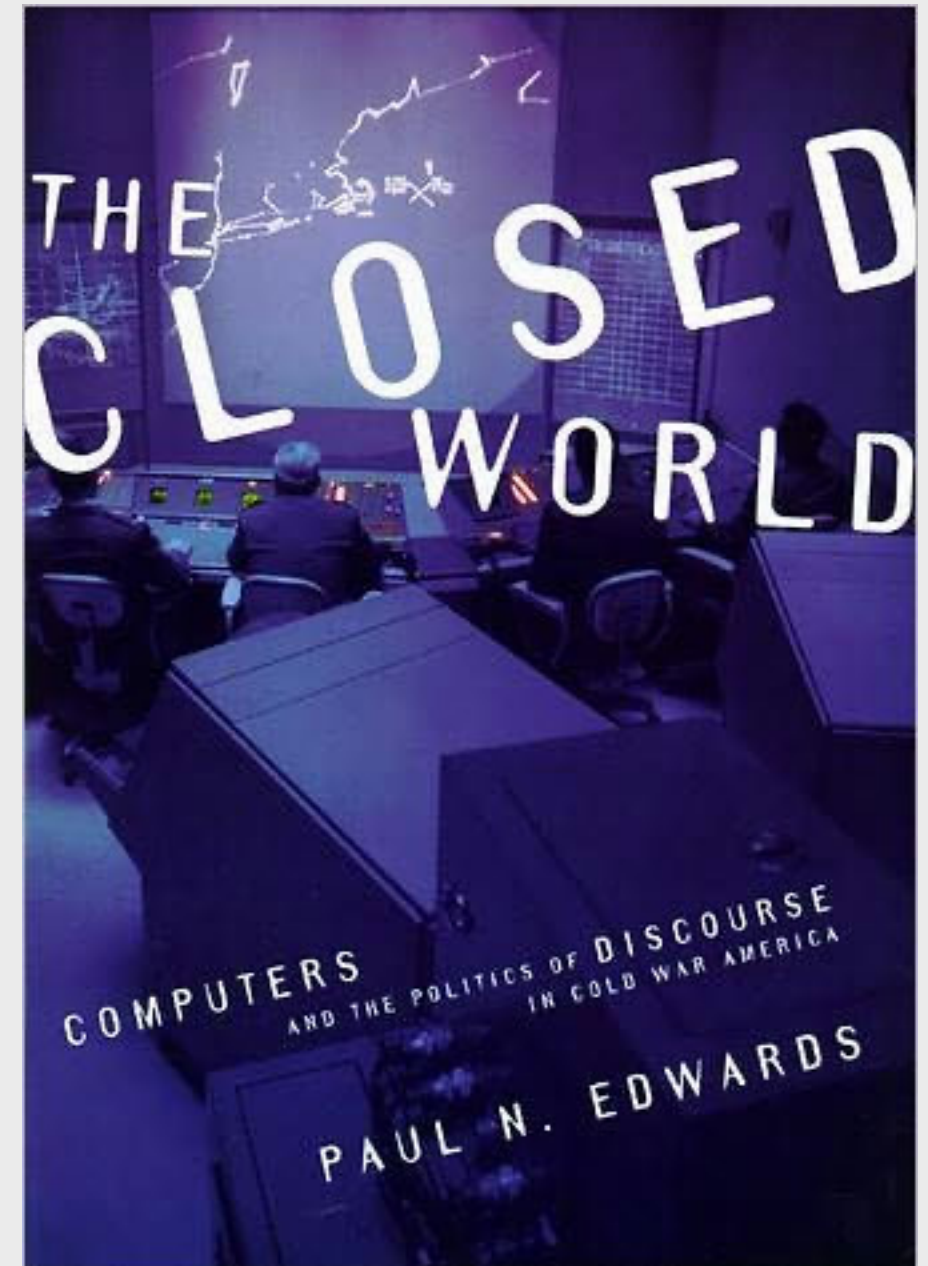
Closed world *discourse*

- The **language, technologies, and practices** that supported the visions of centrally controlled, automated global power at the heart of Cold War politics
- Allowed the construction of **centralized, real-time military control systems** on a gigantic scale
- Facilitated an **understanding** of world politics as a sort of system subject to technological management.



Closed world *spillovers*

“Closed-world discourse, through **metaphors, techniques, and fictions**, as well as **equipment** and salient experiences linked the globalist, hegemonic aims of post-World War II American foreign policy with a **high-technology military strategy**, an ideology of apocalyptic struggle, and a language of **integrated systems**”



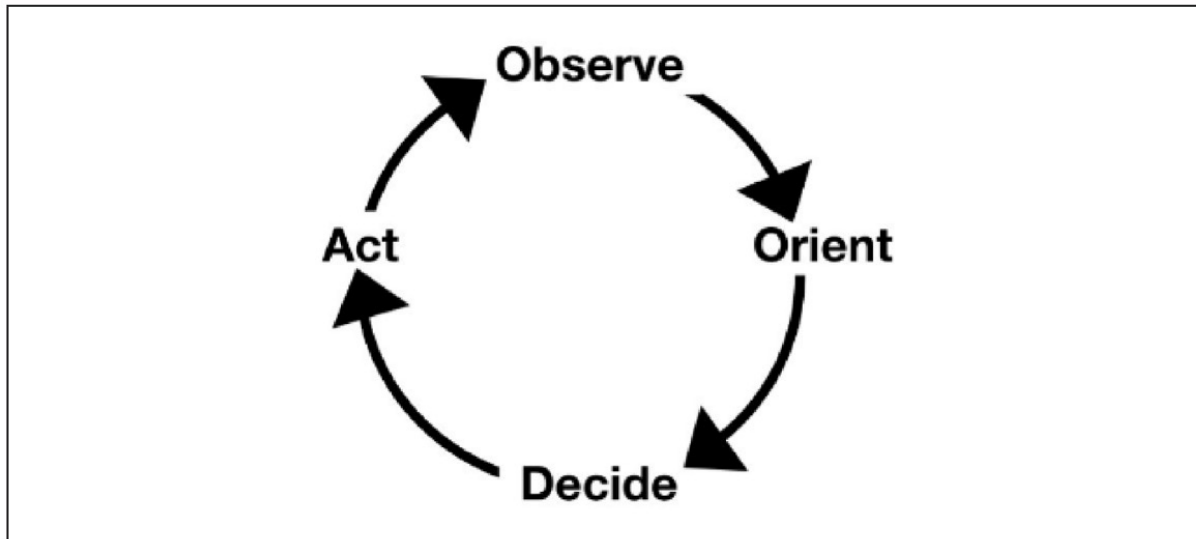


Figure 1. The OODA loop depicted as a simple sequential process. Reproduced in Richards (2020: 144).



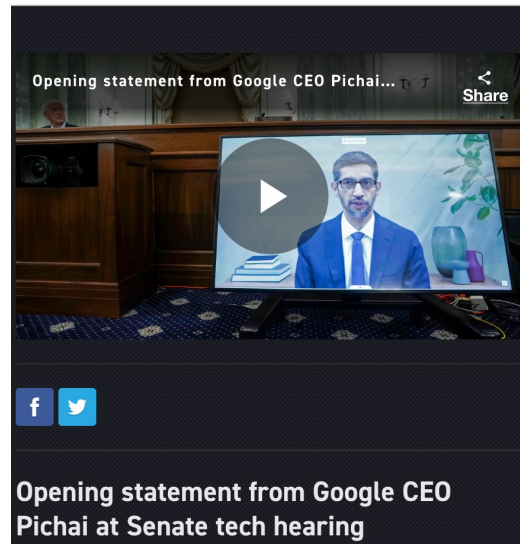
Project Maven to Deploy Computer Algorithms to War Zone by Year's End

July 21, 2017 | By Cheryl Pellerin, DOD News



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Winning wars with computer algorithms and artificial intelligence were among the topics that Defense Department intelligence officials discussed during a recent Defense One Tech



Imaginarities of omniscience: Automating intelligence in the US Department of Defense

Lucy Suchman 

Abstract

The current reanimation of artificial intelligence includes a resurgence of investment in automating military intelligence on the part of the US Department of Defense. A series of programs set forth a technopolitical imaginary of fully integrated, comprehensive and real-time ‘situational awareness’ across US theaters of operation. Locating this imaginary within the history of ‘closed world’ discourse, I offer a critical reading of dominant scholarship within military circles that sets out the military’s cybernetic model of situational awareness in the form of the widely referenced Observe, Orient, Decide, Act or OODA Loop. I argue that the loop’s promise of dynamic homeostasis is held in place by the enduring premise of objectivist knowledge, enabled through a war apparatus that treats the contingencies and ambiguities of relations on the ground as noise from which a stable and unambiguous signal can be extracted. In contrast, recent challenges to the closed-world imaginary, based on critical scholarship and investigative journalism, suggest that the aspiration to closure is an engine for the continued destructiveness of US interventions and the associated regeneration of enmity. To challenge these technopolitics of violence we need a radically different kind of situational awareness, one that recognizes the place of ignorance in perpetuating the project of militarism. Only that kind of awareness can inform the public debate required to re-envision a future place for the US in the world, founded in alternative investments in demilitarization and commitments to our collective security.

Keywords

militarism, data, closed world, military technologies, imaginaries

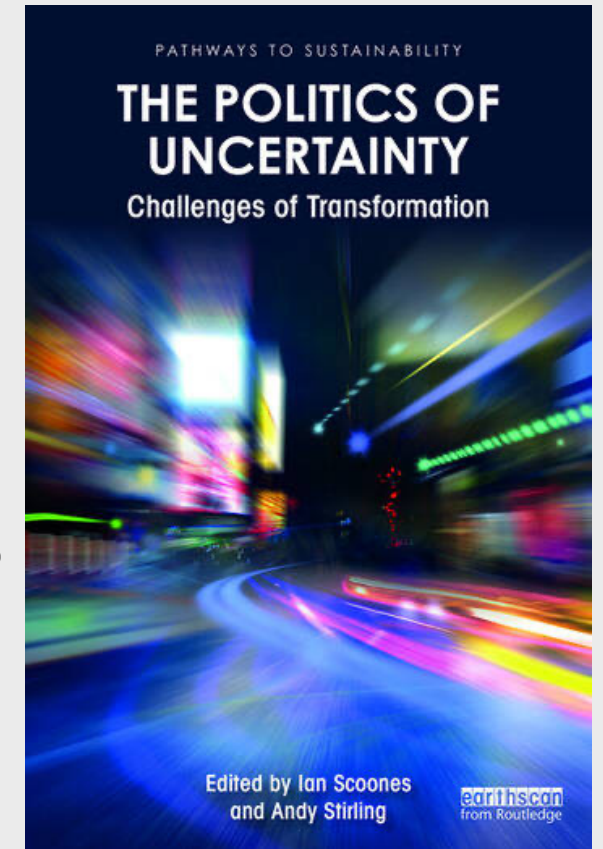
Suchman, L. (2022). Imaginarities of omniscience: Automating intelligence in the US Department of Defense. *Social Studies of Science*

The core question:
how do control technologies
continue to create closed worlds

One way: through the production of *uncertainties*

Five dimensions of uncertainties

1. Uncertainties **not simply absense of data** – they are the conditions of knowledge itself (e.g. frames, methods) – influence how we construct possible futures
2. Uncertainties have concrete material features (e.g. produced in unpredictable, complex systems)
3. Uncertainties are experienced differently by different people – always in context
4. Perspectives on uncertainties are embodied, part of who we are
5. How we understand uncertainty is reflected in our practices, what we do (e.g audit cultures and other control hardware & s/w)



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Part 2: Infrastructures of control and care in UK sheltered housing

Beaufort Court, St. Leonards, UK

Research situations



Hastings / St. Leonards

~100 residents

~96 homes

Independent Living

Sheltered housing



Rugby

~43 residents

~37 homes

Independent Living

Sheltered housing



Stratford Upon Avon

~155 residents

~102 homes

Extra Care/ Independent Living

Sheltered housing

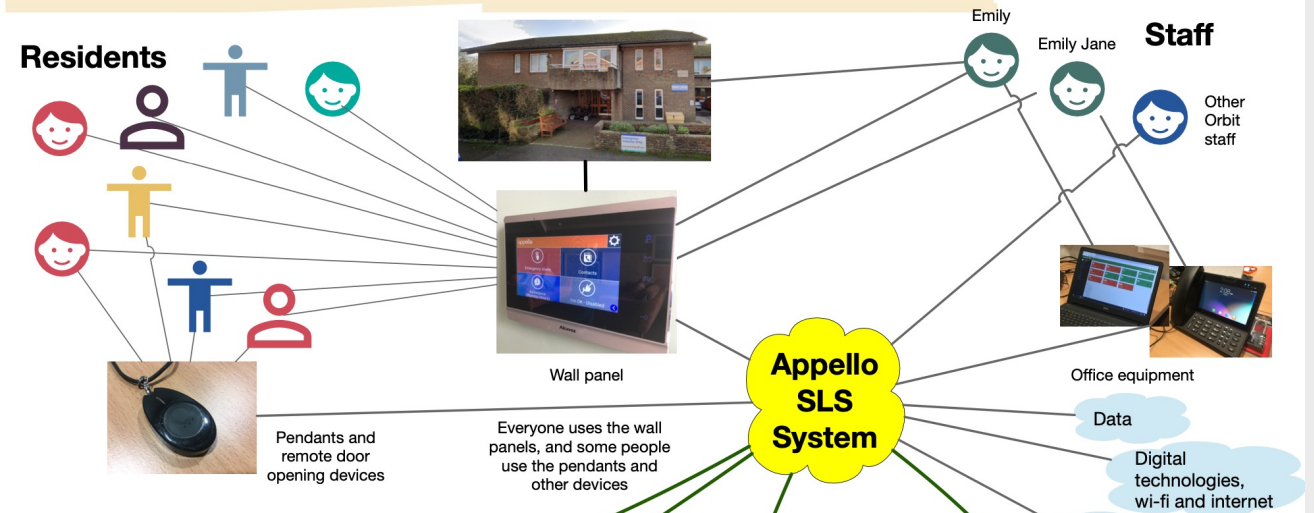
Research questions

1. How do **digital infrastructures** contribute to wellbeing of staff and residents?
 2. What opportunities do residents and staff have to alter these?
(in other words, who or what is in control)
-

Positions taken by residents



Mapping how people in Beaufort Court use the Appello system



How residents and staff use the system

USE 1: Get help

Residents use the system in emergency situations and to save lives

USE 2: Remote door entry

Residents use the system to open the front door for deliveries and visitors

USE 3: Social calls

Some residents use the system to call neighbours

USE 4: I'm Okay! calls

Residents and staff use the systems to check-in with each other

How else do you use the Appello system?

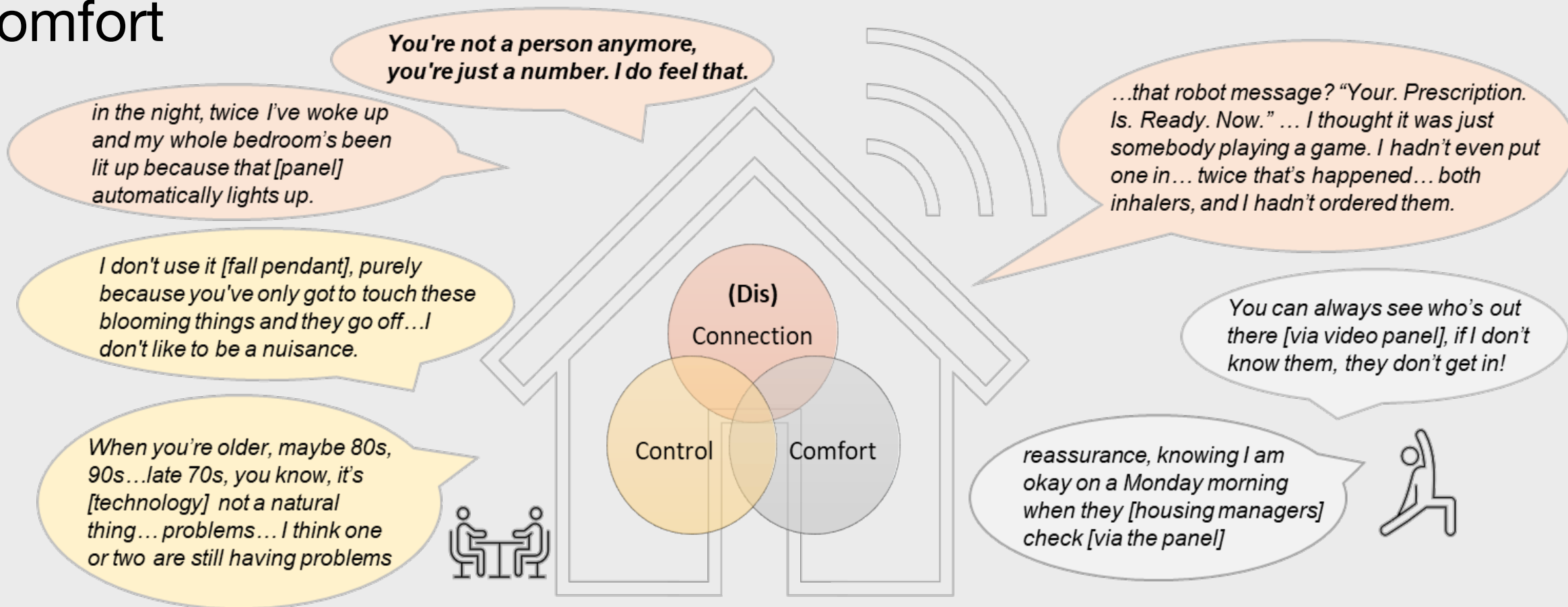
Write it on here or tell Kate

Positions taken by residents



1. Feeling safer with some technology features
2. Praise for new system
3. Distrust of new system
4. Dissatisfaction with people linked to the system
5. **Feeling coerced** into wellbeing calls
6. Tech makes some people *feel* older – feeling left behind
7. **Disempowered** by data, loss of control

Disconnection, control and comfort



Part 2: some initial conclusions relevant for Sensors Day

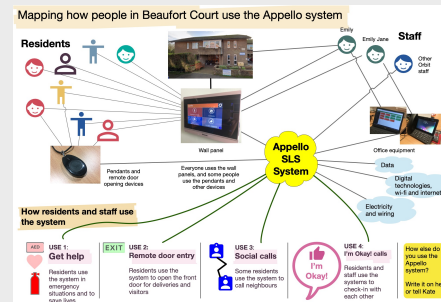
1. Digital services are not plug and play...
 2. Evaluating wellbeing
 - Residents and staff roles, identities, vulnerabilities significantly influenced by infrastructures
 - Sensing technologies don't capture what matters most to people themselves
 - measures of **acceptance**, **roll-out** and **scale-up** of digital technologies don't really tell us what we want to know about wellbeing, sustainability etc.
 3. Opportunities for...
 - Interventions towards convivial, collective and pro-community digital infrastructures
-

Part 3: Cultivating convivial and uncertain infrastructures

Argument: if we take seriously the earlier dimensions of uncertainties, we have to change our approach to designing control infrastructures

Building convivial digital infrastructure

—
potential for
design
interventions



1. **Convivial logics** for digital design: pairing technologies was a new concept for many residents. But need help
2. ...housing association and tech system can act as platform and gate keeper but needs support.
3. Developing **new digital organizational set-ups**; digital development programmes; digital wellbeing officers; digital needs assessments; basic digital provision package
4. **Collective capabilities**: many residents need neighbours to help in communal areas...-> **Broadband connection in communal areas and individual apartments as standard**
5. **Whole system approaches** – working and coordinating collaboratively across housing, healthcare, long term care sectors – needs facilitation and support

Challenging the closed world, confronting uncertainty

How do we go beyond dominant forms of technological, political and market based closed worlds?

(and the ubiquitous analytical monocultures that these produce)?

Confronting uncertainty

- Recognise modelling as conditional and partial –
 - we need plurality of models, not better predictions
 - In modelling practice, advocate for qualities of doubt (vs certainty) and dissent (vs conformity)
- We need places at which to trade **stories from above** (sensing in the sheltered home) and **stories from below** (hearing from neighbours)
 - Encountering uncertainty by mixing sensing and situated knowledge
 - **For CDTs**: cultivate transdisciplinary capabilities for building these knowledge infrastructures together
- Non-control and ignorance can be positive values
 - allowing hope for the future

Be careful about extinguishing uncertainty

Uncertainty is generative, it contains the conditions for hope

Without hope it is impossible to imagine, advocate for and build sustainable, flourishing worlds



Thank you, please do get in touch with questions or comments:

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Data empowering versus controlling

- Strong belief that digital technologies should be enabling rather than controlling
 - Special attention should be paid to:
 - **people's ability to control the tech (interactions with digital technologies should be empowering);**
 - ways in which tech can control users, for example the way in which the design of websites can draw people in;
 - social expectations emerging when people own digital tech can exert control, if, for example, family members start to expect they can constantly contact someone via a smartphone or similar device and this means they expect the device to be always with its users and always on
 - could be the control of options they opt in to and how these are managed and
 - control of who can access data, or awareness of who can access data
 - Some residents are deeply skeptical of data heavy technology
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