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

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Evolving digital infrastructures in UK sheltered housing

Some implications for freedoms and capabilities

Presented at HDCA 2022, Antwerp, 20th September 2022
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Project: Environmental Impact of Digital Services on Health and Wellbeing in the Home
UKRI grant: EP/V042130/1

Beaufort Court, St. Leondards, UK

How is this useful?
(for HDCA colleagues)

We want to understand… how to better target, anticipate, assess and evaluate innovation in public welfare and long-term care institutions at the level of infrastructure, systems and digital transformations

Conclusions

1. Digital services are not plug and play…

2. Capabilities…
   - Roles, identities, subjectivities and valued beings vs prescriptive doings
   - E.g. the co-production of *independent* or *vulnerable residents* versus focus on technology acceptance, engagement or even exclusion and inclusion

- Opportunities for…
  - Interventions towards convivial, collective and pro-community digital infrastructures
  - At its most radical: rethinking public utility provision for housing, e.g. internet

paper:
Evolving digital
infrastructures

The problem: digital transformation in housing schemes

Research questions, problematization and our approach

PART 1

# Why digital infrastructures, not just technologies?

- Digital technologies (telehealth, patient portals, digital wards) are often developed in silos and are not fully interoperable with built environment systems
- Digital technologies are also often not designed for specific needs and capabilities of staff at housing schemes
  - limited understanding of the functions and purpose of the systems
  - on site staff are expected to provide remote assistance and maintenance (e.g. restarting systems, typing in access codes)
- Infrastructures foreground norms and standards of evaluation, regulation and governance / bring specific problems of scale and complexity
- Data, cloud services/logics and the allure of integration
- [Politics and societal leverage – see keynote!]

What the literature tells us

materials, practices and meanings
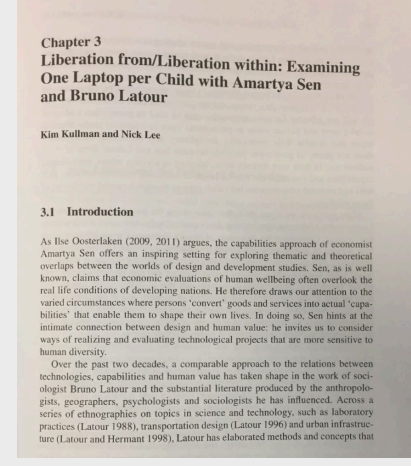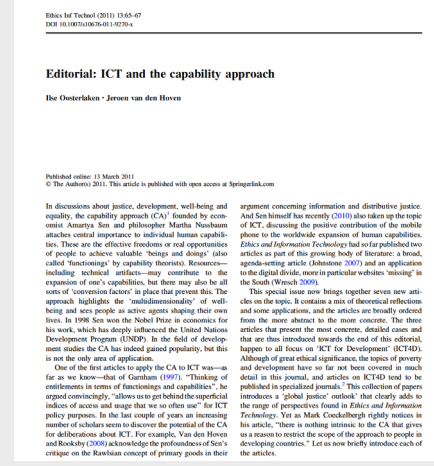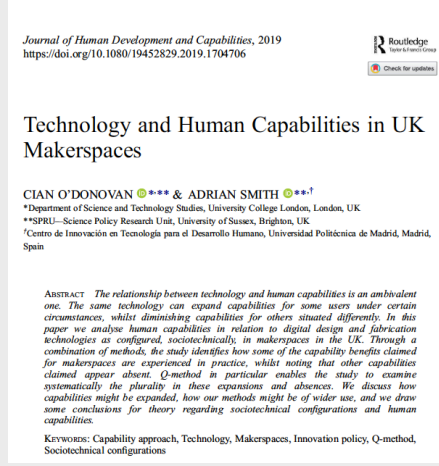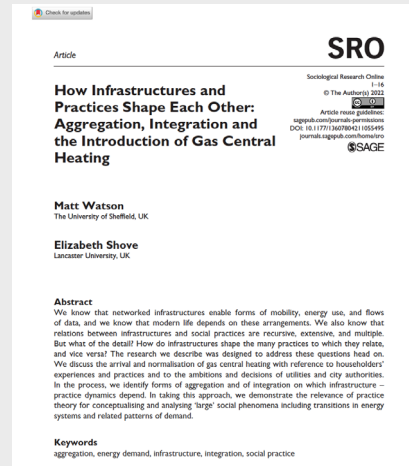
- Watson & Shove 2022: infrastructures & practices evolve together, recursively

- O'Donovan & Smith 2019: capabilities valued in digital spaces (multi-scalar doings and beings incl. identity)

- Oosterlaken et al: ICTs and capabilities

- Kullman & Lee: on translation (STS) and resource conversion (CA)

What the literature tells us

materials, practices and meanings
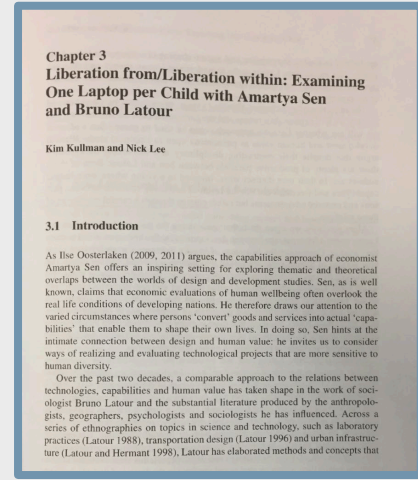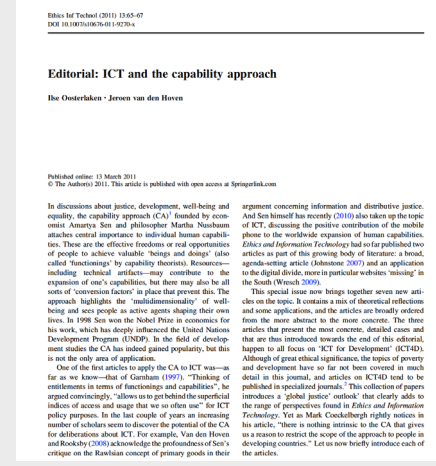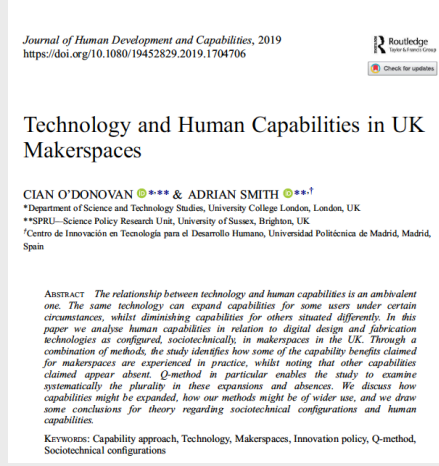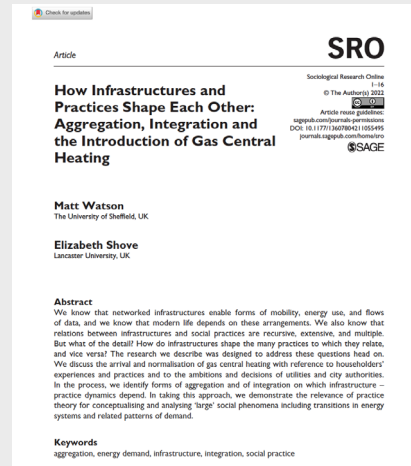
"…more lasting capabilities and freedoms are not the result of unmaking relations between persons and material environments but rather emerge through a careful reordering of those relations"

– Kullman & Lee (2012)

Kullman, K., & Lee, N. (2012). Liberation from/Liberation within: Examining One Laptop per Child with Amartya Sen and Bruno Latour. In I. Oosterlaken & J. van den Hoven (Eds.), *Capability approach, technology and design* (pp. 39–55). Springer.

Meaningful digital encounters

Situational Analysis
Grounded Theory
After the Postmodern Turn

Adele E. Clarke

- **Meaningful digital encounters**: moments of re-ordering during infrastructure building, maintenance, repair and evolution
– proximity doesn't always lead to shared values

- Via situational analysis (Clarke 2009)
  - Mapping distributed action and accomplishments which are produced through the conversion/translation of heterogeneous elements

Valentine, G. (2008). Living with difference: Reflections on geographies of encounter. *Progress in Human Geography, 32*(3), 323–337.

Research questions

1. How do **digital infrastructures** reconstitute social and material relations within housing schemes?

2. What opportunities do residents and staff have to alter these?

3. How can we understand evolving digital infrastructures in terms of **capabilities?**

Encountering digital infrastructures in sheltered housing

Evidence from the case

PART 2

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
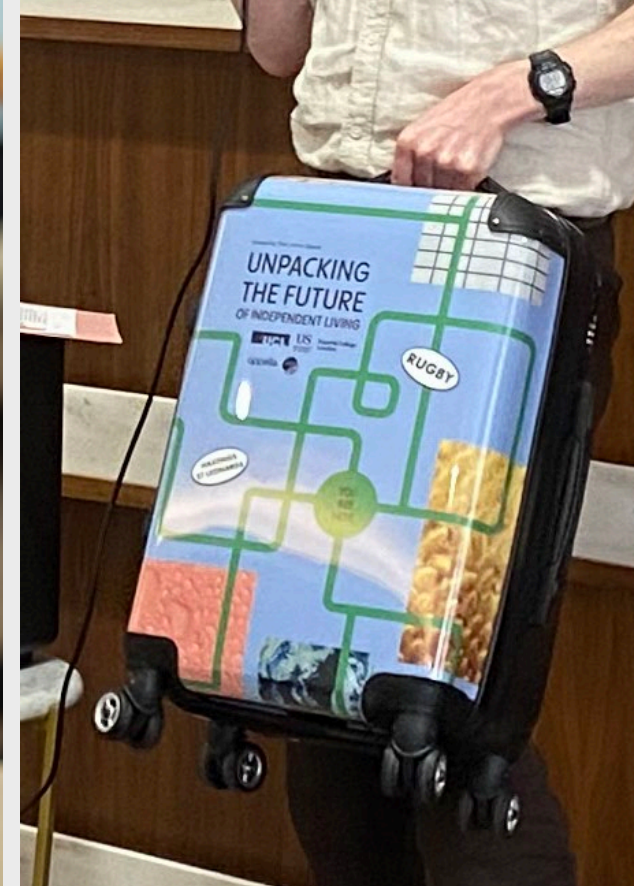
Interviews, focus groups, observation, workshops and trials: independence, future visions, living with technology *e.g. How do we design out waste*

Exploring what independent living means from different perspectives

Independent living vs social isolation **1**

e.g. home
e.g. individuals

Social impacts & future services **2**

e.g. economy
e.g. politics
e.g. legal environment
e.g. planet

Big picture contexts **3**

How we collectively reimagine a fairer society **4**
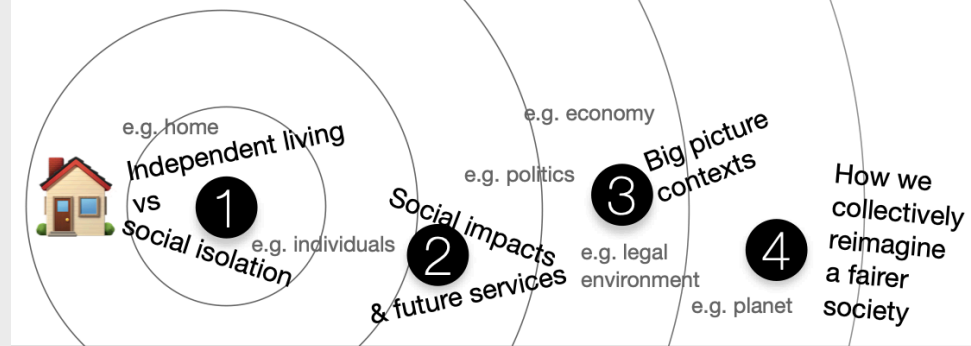
Positions taken by residents

Mapping how people in Beaufort Court use the Appello system

Residents

Staff

Emily

Emily Jane

Other Orbit staff

Wall panel

Office equipment

Data

Digital technologies, wi-fi and internet

Electricity and wiring

Appello SLS System

Pendants and remote door opening devices

Everyone uses the wall panels, and some people use the pendants and other devices

How residents and staff use the system

AED **USE 1:**
Get help

Residents use the system in emergency situations and to save lives

EXIT **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

I'm Okay! **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

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. Previously feeling coerced into wellbeing calls

6. Opt to speak to family over housing managers, where possible

7. Feeling left behind technology

8. Low technology confidence [co-production of being older]

Disconnection, control and comfort
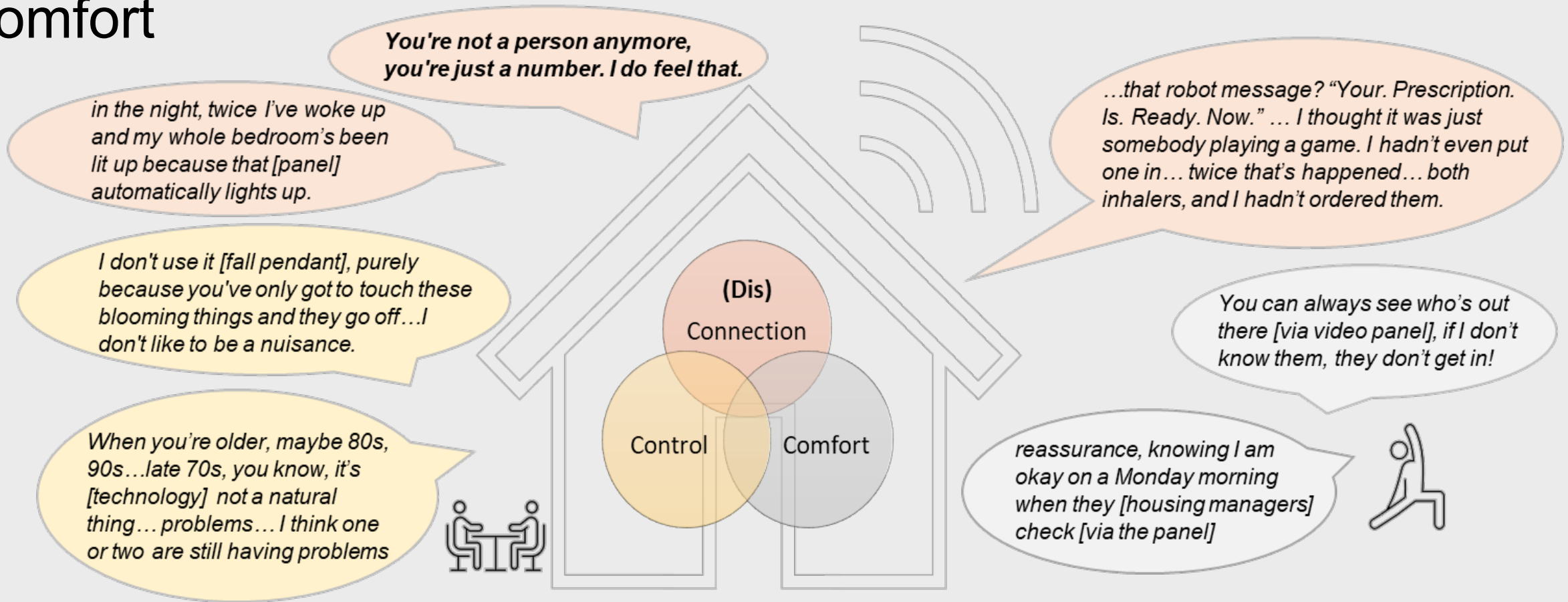
Encountering infrastructures, cultivating capabilities

Thoughts for capability building and designing infrastructure interventions

RQs: Relations / reconfiguring / cultivating capabilities

PART 3

Limitations of plug and play logics

1. Technologies aren't plug and play – they are configured locally
   (Perhaps P&P alludes capability building?!?)

2. Digital is often a synonym for 'new'.
   Fails to acknowledge aggregation over waves of digital infrastructuralising.

3. Problem because
   1. 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.
   2. Wrong diagnosis when things don't go right

Co-production of new roles, identities, subjectivities

1. **Connection is valued, but does not cultivate capabilities by itself.**
   - Everyone agreed connection is central to the home. But connecting what and how? Connecting with neighbours, and nature is valued.
   - But when residents encounter tech already connected to services, firms and analyses outside their control they can feel overwhelmed
2. **Co-production of independence (partial)**
3. **Co-production of vulnerabilities**
   - *"I can't work my Smart TV, how am I ever going to manage this"*
4. **Ongoing work investigating staff subjectivities**

Meaningful digital encounters

Experiences that change perceptions and values beyond a single interaction

- Notable encounters: during installation, when things go wrong, alarm calls, digital myths
- In the absence of meaningful digital encounters, roles and subjectivities formed
  - E.g. meaning making that is mediated and sustained via networks, systems and platforms
- Opportunities to understand; intervene; cultivate capabilities

Building convivial digital infrastructure

—

potential for design interventions
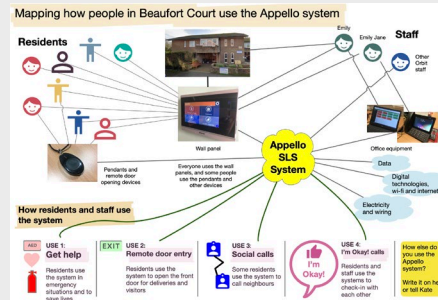
1. **Convivial logics** for digital design: pairing technologies was a new concept for many residents.
2. …housing association and Appello system can act as platform and gate keeper but needs support.
3. Developing **new digital organizational set-ups**; digital development programmes; digital wellbeing 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 BAU
5. **Whole system approaches** – solutions arising from working and coordinating collaboratively across housing, healthcare, long term caresectors

Conclusions

1. Digital services are not plug and play…

2. Capabilities…
   - Subjectivities and valued beings vs prescriptive doings
   - E.g. the co-production of *independent* or *vulnerable residents* versus focus on technology acceptance, engagement or even exclusion and inclusion
   - **Next**: mapping digital capabilities valued by staff

- Opportunities for…
  - Interventions towards convivial, collective and pro-community digital infrastructures
  - At its most radical: rethinking public utility provision for housing, e.g. internet

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

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