Can citizen practices change energy systems?

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AGENDA

• From individual attitude change to practices
• Citizen practices shaping wider systems?
• The global expansion of solar power as an example
• Other examples
• What characterises practices that mainstream successfully?
DEVELOPMENT IN SUSTAINABLE CONSUMPTION SCHOLARSHIP

• From individual attitudes and responsibilization to socially shared practices

• Why: attitude-behaviour gap, shift in consumption studies from psychology to sociology – consumption as a societal phenomenon rather than (incremental) individual choice

➢ Consumption is steered by social conventions, learning by emulating others and by following simple rules

➢ Consumption is steered by shared infrastructures and systems of provision
RECOMMENDATIONS FOR POLICY

Need to change social practice – but how? Implications for policy makers (Spurling et al. 2013; Shove 2014)

1. Tranform collective conventions (meaning, competence, material)
2. Deliberately reconfigure practice
   • Making it more difficult to drive + making it easier and more normal to cycle
3. Look beyond behaviour change and environmental policy at the diverse drivers of escalating consumption
4. Consider how policy contributes to escalating expectations (e.g. energy efficiency & indoor comfort standards)

➢ Is there any role for individuals in this scheme?
CAN INDIVIDUALS CHANGE SOCIAL PRACTICES → SOCIAL SYSTEMS?

- Research on strategic action fields (Fligstein & McAdam 2012) and institutional work/entrepreneurship (Lawrence et al. 2011; Buhr 2012)
- Research on the role of local experimentation in systems change: strategic niche management, SNM (e.g. Geels 2004; Raven et al. 2008; Schot & Geels 2008; Naber et al. 2017)

Resources: social mobilization, opportunity structure, timing

Work: technical (objectification), political (alliances), cultural (legitimacy)

Processes: diffusion, replication, accumulation, institutional change

Outcomes: local reinvention, translations that change both the practices and the practitioners
We think the German breakthrough of solar power was caused by a generous subsidies.

Source: IEA-PVPS
BEFORE SUBSIDIES, SOCIAL MOBILIZATION AND PILOTING SINCE 1980S

Local solar initiatives →→

Pilot programmes to develop technology

Feed-in-law & EEG

- Competence
- Ownership
- Political coalition
- Legitimacy

Similar processes in the US (Noll et al. 2014)

Dewald & Truffer 2012; Jacobsson & Lauber 2006; Neij et al. 2017
WHAT NEW PRACTICES WERE INVOLVED/DEVELOPED?

USERS
Expansion of home improvement/investment practices

Being an energy producer: monitoring system performance

Storage and self-consumption

INSTALLERS
Expansion/collaboration of existing trades: electrician/roofer, emergence of specialized "solateur" firms

Attending training courses/workshops

Mounting systems: technical planning, structural analysis, installation & warranties

Cabling, inverters

Banks: dedicated products & staff

Insurance comp’s products and quality control

Testing&consumer organizations: safety, quality info

Local authorities: permitting

Energy utilities: grid integration

Campaigns Training Solar maps/atlases Climate/orientation/yield data Books, leaflets Certification Lobbying policy makers
down
Websites, calculators, market surveys Standardization Modularization Integration Coherent support schemes

Dewald & Truffer 2012; Strupeit & Neij 2017
THE ROLE OF LOCAL EXPERIMENTATION IN SYSTEMS CHANGE

- Tech solutions & skills
- Producers & consumers for new solutions
- Social identification & mobilization
- Adaptation to regulations and infrastructure
- Experience of social & env impacts
- Adaptation to user needs
- Development of cultural meaning
- Legitimacy

Schot & Geels (2008)
GLOBAL SCALING OF SOLAR POWER

- Mass production in China
- Drastically reduced prices: affordable for China & India
- Increased demand in China, e.g., Germany etc.
- Government support for PV
- New competence, service development and meaning (legitimacy) of PV
- Popular mobilization for PV

Figure 1: Evolution of annual PV installations (MW - DC)
SOCIAL MOVEMENTS AND LOCAL EXPERIMENTATION UNDERLIE MANY CURRENT SYSTEMS CHANGES

Passive house experimentation to EU legislation requiring nearly-zero energy buildings (EPBD Recast)

Experimentation with organic production in to mainstream organic food market

Recycling movement to recycling industry and regulations

Wind power experiments by collectives to global wind power industry

Collective sharing economy to commercial sharing economy (AirBnB etc.)

Ornetzeder & Rohracher 2010

Jamison 2001; Smith 2007

Lounsbury et al. 2003
Example co-housing

- Various ideas developed since the 1920s
- Several concepts tested in different countries at different times with different aims
- Some diverse user groups (“allies”) identified (e.g. seniors)
- Some enthusiastic intermediaries (architects, national associations)
- Could address several topical problems, e.g. serious energy problem of housing space growth due to diminishing household size
- Max. 1% (DK) of housing market (Vestbro & Horelli 2012)
- Has been expected to be the solution of the future since the 1980s...
PROCESSES OF SCALING UP IN SOLAR POWER

Naber et al. (2017)

- Growing: Conventional diffusion
- Replication: Similar nodes in other places
- Accumulation: Linking to other ongoing initiatives/changes
- Transformation: Institutional change

Visibility, spatial concentration of potential adopters → strong peer effects

One solar panel installation “caused” an average 0.44 new installations in the same block in the next quarter (Graziano and Gillingham 2014)
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Trends in the adoption of FITs/FIPs and auctions, 2004-16; Source: IRENA (2018)
OUTCOMES: DIVERSE TRANSLATIONS
OUTCOMES: NEW PROBLEMS TO SOLVE

Solving problems caused by the new solution

• Grid connections
• Environmental problems in panel production
• Intermittency and need for storage – ultimately, matching demand with production (demand response)
• Impact on user practices as customer base expands: from positive spillover (Kierstead 2007) to rebound effects (Deng & Newton 2017)?
WHAT CHARACTERISES PRACTICES THAT MAINSTREAM SUCCESSFULLY?

From SNM, SAF and ’travel of ideas’ lits

• The narrative power and political, technical & cultural skill of social movements
• Crises and opportunities that challenge/change the logic of the dominant system
• Responses from the dominant system and competing social movements
• Timing: convergence of movements & opportunities
• Ability to dissociate from local origins and become ’objective’ and ’mobile’ (e.g. create standards, but allow for local reinvention & diverse configurations)
SUMMARY AND REFLECTIONS

- Individuals, consumers and citizens can have a role in changing structures for more sustainable consumption patterns

- Alongside pioneers, dedicated early users and producers are important in the development of legitimacy and political alliances

- Social movement pioneers rarely anticipate how new practices are translated and scale up – or with what consequences

Reflection:

- Most ’successfully’ mainstreamed citizen practices are commercialized

- Should all (locally relevant) practices mainstream (globally)?

- Do they unavoidably lose their radical potential? (”to translate is to betray”, Latour 1996)

- Is it possible to mainstream globally more sustainable practices in less commercial forms?
TENTATIVE IMPLICATIONS FOR CITIZEN-PRACTITIONERS AIMING FOR SYSTEMS CHANGE

Successful practitioners engage in

- technical work to objectify and disseminate models
- cultural work to develop legitimacy and resonance
- political work to gain allies and counter/placate opponents
- several alternative courses of action, create small wins and keep organized until opportunities converge

Successfully/rapidly scalable practices are

- modular and adaptable to diverse conditions, yet maintain integrity
- interpretively flexible: able to engage diverse allies & cultural meaning in different places
- build on and recombine existing competence, can be rendered 'objective' and mobile – in order to be 'reinvented' in other places
Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.

(Margaret Mead)
Thanks!

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REFERENCES (1/2)

REFERENCES 2/2


