

Transforming practices through electric car driving

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Background

- Non-stationary energy consumption, i.e. transport, constitutes a large part of the total energy consumption of the household
- Electrification of road transport is of decisive importance in order to be able to curb CO₂ emissions
- Transition to electric road transport is well ahead in Norway which have more than 151 electric vehicles (EV) per 100.000 conventional vehicles, compared to Finland (1 EV/100.000 CV), Austria and The Netherlands (both 5 EV/100.000 CV).
- A need to include the public, when researching processes of technological innovation, policy development and implementation
- The user often is neglected in these processes, and a less 'techno centric' and more user friendly approach to studying transitions is needed (Shove 2007).

Strong incentives for EVs

- Drive in the car pool line
 - Free parking on public areas
 - Free charging
 - Tax exemptions
- Not only environmentally motivated reasons for buying Evs

Theoretical perspective

- In our study we look at the practical, cognitive and symbolic dimensions of electric car use, drawing upon social practice theory
- Practice theory: ‘practice’ as the unit of analysis
 - ‘a routinized type of behavior which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge (Reckwitz 2002)
- Domestication theory

Research questions

- How is 'the thing called the electric car' used and what does the practice of electric car driving look like?
- What material aspects are relevant and regarded as important features of electric car driving?
- What meaning do electric car drivers assign to their practice?
- What competence is needed and used when driving electric cars?



Data material



Focus group interviews and individual interviews of electric car users (+ stakeholders, intermediaries)

- Fleet owners, professional users
- Private owners: new and experienced
- Future car users: youths
- Users of different types and generations of EVs



The meaning of electric car driving practice

- Driving an electric car gives 'a **good feeling**'
- Many get positive feedback and attention from the surroundings, enthusiasm among young people:

«People turn around and laugh, salute me and smile and such»

- **Environmental** aspect of electric car driving is important to many – they feel they are actually contributing to curbing emissions

(But it was not the main reason for buying the car)

The competence of electric car driving

- No need for special competences or training in order to drive an electric car
- The car is perceived as easy to drive, maintenance-free, simple
- Yet, social learning is taking place:
 - Changed how they drive their car after they have learned to know it – the technology has been tamed (domesticated)
 - Have changed driving patterns: drive more carefully, 'safer' driving

The material aspects of electric car driving

- **Range:** (the car is adequate for) driving in the city
- **Infrastructure:** charging facilities are adequate
- **Size + Electric engine:** comfortable, fun, good roadability, easy to park
- **Size + materials:** not as safe as a conventional car – develop a more careful style of driving – spillover to driving conventional cars
 - You do not need to be afraid of damage on the car, others bumping into it

“It is the perfect car. You don’t need to concern yourself about it. It is made of plastic and it is super-solid”.

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→ **Make transportation needs – habits - more visible**

The material aspects of electric car driving

Changes when the material features changes

- Larger, newer types of cars: used as a conventional car
 - Characteristics of size, range, charging infrastructure problematized to a larger extent as people expect more of them
 - Expect them to have the same properties as petrol cars

Changed materiality of the EV transforms meaning of Ev driving practise

- Traditionally, Evs small compact carts with limited range and useage
→ easily domesticated as a 'city car'
- New EVs, look like conventional cars, met with other expectations
- Paradox: Old Evs met a need
- Variation of different types of Evs needed, not only bigger Evs

Most important insights

- To study the implementation of Evs in light of practice (and domestication) theory demonstrates
 - The practice of driving an Evs make users more environmentally aware, concious
 - EV driving practice have spill over effects to other domains, like energy consumption, mobility

(...) My main motivation (for buying an EV) was partly technical, and partly economy, to an equal degree. But, after becoming an electric car driver, I have begun to change, to think differently in relation to what energy is and how we use energy, not only in our homes, but all over the globe, and how we manage available energy which is also an environmental issue. And this line of thinking has accelerated and grown so that I have become more occupied with and attentive towards what obvious processes that lead to increased energy consumption all over the world. (...) So that, by being an electric car driver I think you get a more vigilant relationship about what energy is and what I consume by the way I act.

*A: Because (...) you get more tuned to the idea that **energy is a scarce resource** - you are watching it on your electric car, which lead to the fact that you think more about it in your house also, and other places, at work...turn off the light, you get better...because **you really can feel the lack of energy when you drive an electric car.***

Most important insights

- To study the implementation of Evs in light of practice (and domestication) theory demonstrates
 - The practice of driving an Evs make users more environmentally aware, concious
 - EV driving practice have spill over to other domains, like energy consumption, mobility
- Attitudes do not shape behaviour
- Practise create/shape other practises and attitudes
- A critique of the dominant ABC framework (attitudes, behaviour, choice) for social change

What can we learn from studying EV driving practise?

- Embodied qualities of car EV driving
 - Surprisingly strong emphasis on comfort
 - Experience with driving an EV creates a need/want of EV (recruitment)
- Material agency
 - Transforms driving style
 - Make transportation needs – habits - more visible
- Consumption as social performance
 - EV driving is a strong social performance of environmental behavior – creates normality and refigures the arch. of choice for others