



## Driving an EV: a new practice?

How electric vehicle private users overcome a limited battery range through their mobility practice

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# Driving range : main issue concerning the EV?

- ▶ 15,045 fully electric vehicles (EVs) were sold in 2014 in France (AVERE): less than 0,6% of the 1,7 millions of sales of new cars.
- ▶ Limited battery range is often cited as one of the main barriers to commercialization.
  - Scientific literature often concentrates on purchase intentions
- ▶ BUT : Users enjoy the EV.
- ▶ Questions coming from this paradox
  - Are EV users endowed with specific coping skills?
  - How can we explain the gap between what constitutes a new practice for some and an impossible one for others?

# Theoretical framework of our study

## ► Literature review on EV usage

- Hands-on experience is a crucial step (Rygghaug and Toftaker, 2014; see also Bühler *et al.*, 2014)
- Avoidance of long range trips to bypass the problem (Jarrigeon *et al.*, 2014).

## ► Characteristics of our study:

- on long term usages (from one to 3 years after purchase)
- Driving an EV : changes in the whole socio-technical system.
- How are the difficulties overpassed / bypassed?

## ► Domestication theory and practice theory as points of reference

- Appropriation, objectification, incorporation in routines and conversion (status claims) by individuals using the technology (Silverstone *et al.*, 1992).
- What shapes a practice? Focus on the social organisation of practices.

# Description of the field study

## ► The CROME project (CRoss-border Mobility for Electric vehicles)

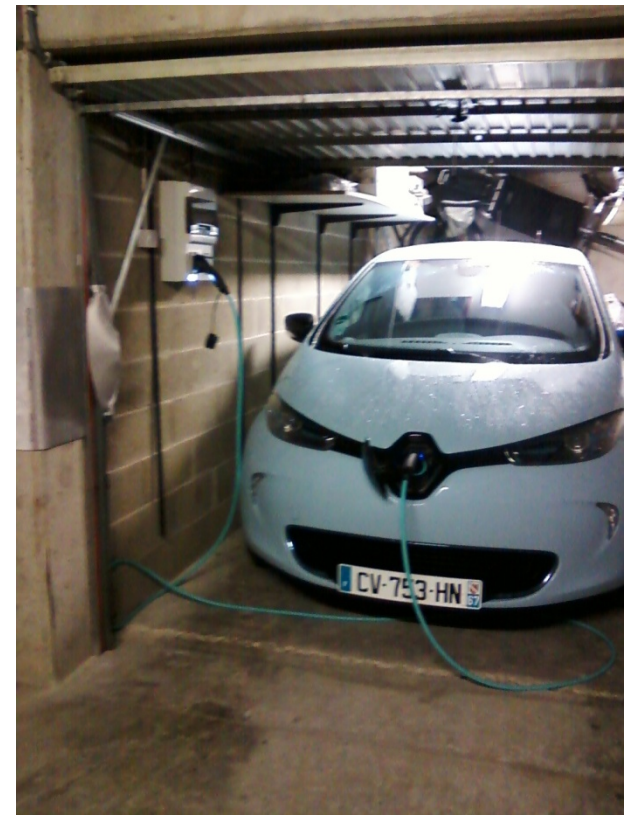
- Variety if EVs (Zoé, Ion Smart Mia Leaf) and wall-boxes.
- On both professional and private users, in France and Germany.

## ► Methodology

- Study on private users in Alsace.
- Data gathering in Autumn 2013
- 27 semi-directive face-to-face interviews.

## ► The sample of interviewed persons:

- Men and women, mostly having a fulltime job.
- Various social levels.
- But overrepresentation of :
  - energy experts .
  - Unexpectedly: healthcare professionals.



→ 3 monographical cases

# Patrick, the case of a reasoned practice

- ▶ Importance of local subsidies
- ▶ Influence of relatives
- ▶ No private parking spot
- ▶ A progressively “reasoned” charge





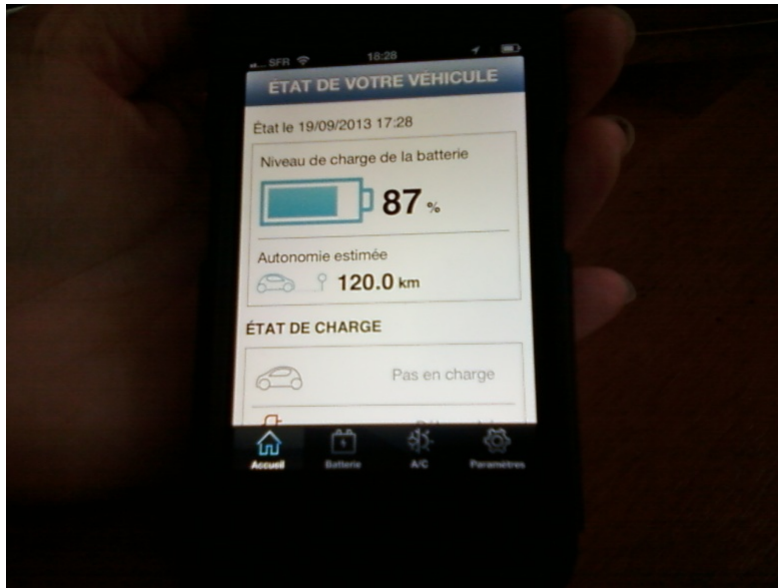
# Lea and Leon: an adjusted practice

- ▶ Farmers sensitive to earth preservation
- ▶ The first charging installation burned out, then they installed one with the required safety standards.



- ▶ A family usage:
  - Anticipating each one's trips
  - Assessing the distances
  - Systematic charging

# Francis, a philosophy of life



- ▶ Love at first sight
- ▶ Both ecological and technophile engagements

- ▶ EV as a pedagogical tool
  - Driving smoothly and watching the dashboard
  - “Smart” charging (in off peak hours for instance)



# EVs are well embedded into daily practices

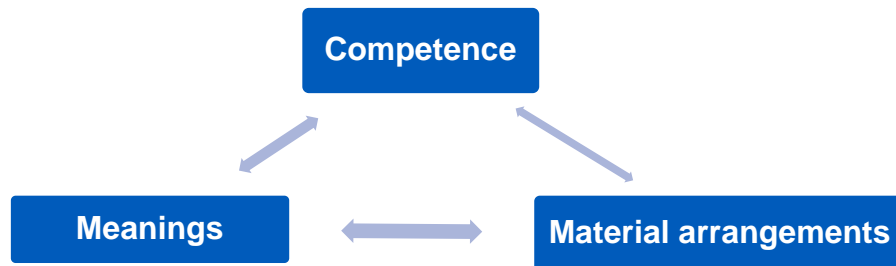
- ▶ Intensity: the first car of the household.  
Medium range trips
- ▶ Pleasure of zen driving.
- ▶ Obvious appropriation of the innovations.
- ▶ Battery limitations are easily overcome.
- ▶ Quite similar mobility practices as before
  - Rare borderline situations. Extra-charges outside.





# What remains stable and what changes

- ▶ How are starting difficulties easily faced? What has changed inside the structuring elements of the EV driving practice?
- ▶ What constitutes a practice? (from Shove *et al.*, 2012):



# Driving an EV: the new practice system

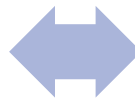
## Competences:

- partitioning the trips,
- managing the battery parameters when driving,
- anticipating moments and places of charge,
- charging gesture,
- ergonomics of public charging.



## Quite stable meanings:

- social status through innovativeness (technophilia),
- opportunism and economical rationale,
- dispersed ecology.

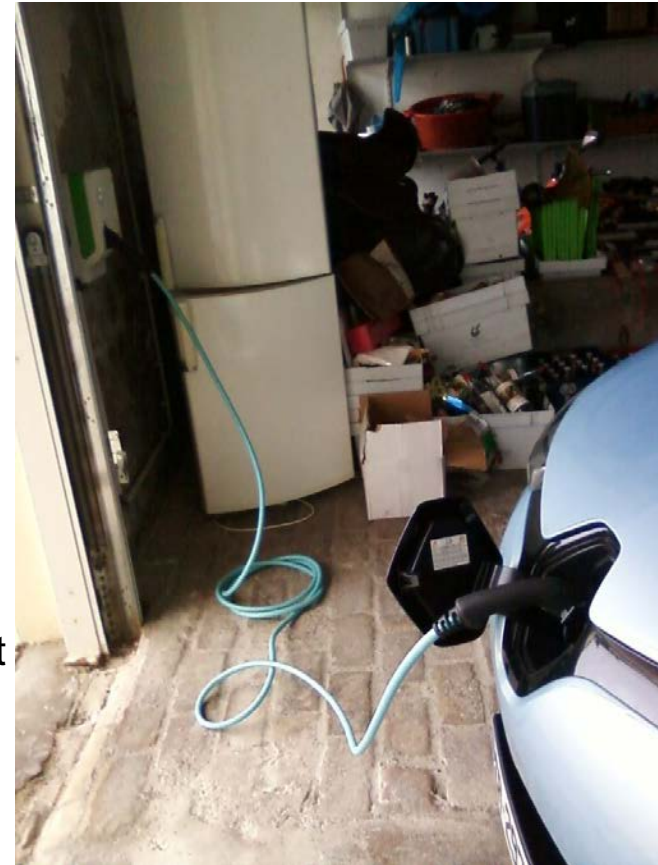


## Adaptation of material arrangement:

- feedback from the dashboard,
- charging wall box, outlet
- conventional car for longer trips,
- public charging stations.

# An invisible domestication

- ▶ Domestication relies on the harmonised co-evolution of the three elements...
- ▶ ... Which are borrowed from pre-existent resource portfolios, e.g.:
  - Charging gesture. ↩ PHONE
  - Moments when charging the car. ↩ OUTSIDE BIN
  - Getting accustomed to new technological interfaces. ↩ SMARTPHONE
- ▶ Both routine and change : invisibility of the efforts.
  - According to Chappels *et al.* (2011, p. 701), "a dominant approach within sustainable consumption research suggests that changing embedded habits and practices requires making them visible and subject to overt decision-making and discussion. An alternative practice-based perspective suggests that enduring change emerges through the amplification of social orientations and does not necessarily depend upon explicit contestation and debate “.



# Conclusion

- ▶ Joining practice theory and domestication theory enables us to understand:
  - The stable and deep anchoring of the practice.
  - How people gradually domesticate an innovation, each element of the new practices being embedded day after day.
  - That there are various pathways for this appropriation.
  
- ▶ Both this progressivity and this variety explain the gap between what constitutes a new practice for some and an impossible one for others.
  
- ▶ Further enquiries should not ask for purchase intentions but for the inclination to acquire and use new material arrangement, to give new significations to a car or to transfer cognitive and physical abilities from a domain to another.



**Thank you  
for your attention**



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