



Palacký University
Olomouc

Car use: motives and habits

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1. Background: **Automobile dependency**

- ↑ resource consumption
- ↑ financial & land resources
- ↑ traffic congestion
- ↑ roadway risk
- ↑ environmental impacts



↓ viability and attractiveness of other travel modes

→ more dispersed land use and mobility intensive economic patterns that require more vehicle travel for access. Automobile dependency reduces **economic development** (Litman & Laube, 2002).



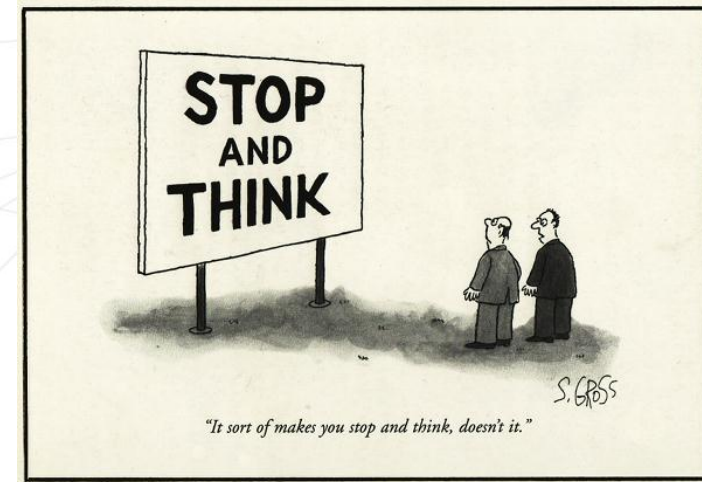
1. Background:

Car use as a habit

- city architecture and infrastructure
- socialization to car use: car use in the (own) family
- car use as the first choice

→ The **problem of starting point**: to break the habit, we need a positive experience. But as car use is the first choice, we miss this experience.

→ To break this circle we use an incentive (extrinsic motivation).





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2. Hypothesis

Real experience with not using a car for one month will influence behaviour after the end of experiment in such a way that people will more often use other modes of transport than the car.



3. Research design and methods

- based on the work of Burwitz, Koch and Kraemer-Badoni (Leben ohne Auto, 1992)
- design: within-group experiment
 - pretest, posttest, 3 months follow-up
- measures:
 - WHO – Quality of life questionnaire (WHOQOL-100)
 - a questionnaire regarding the frequency and attractiveness of car use and other transportation modes (walking, cycling, public transportation)
 - interviews
 - Travel logs (Google Maps/Excel)
 - Travel diaries



3. Research design and methods

Use & attractiveness of different transport mode questionnaire

e.g.

- Do you like to use the [mode of transport]? – 5-point Likert scale
- How many times a week do you use [the mode of transport] – 0 to 7 times a week
- How would you rate [the mode of transport] in terms of comfort? – 5-point Likert scale



4. Research sample and recruitment

- participants: 10 families
 - recruited via ads (incentive for participation)
 - living in the city of Olomouc or up to 50 km away
 - use a car at least 4 times a week
- 6 families with 4 members
- two families with 3 members and
- two families with two members
- all living in different parts of city municipality

Table 1. Family characteristics, example

| F. | Location | Total Nr. of family members | Adults | Children | Children Age | Nr. of cars | Nr. of bicycles | Gross monthly income (family, CZK) | Average monthly car costs (CZK) | Distance to public transport (in meters) | Distance to train station (in metres) | Distance to supermarket (in metres) |
|----|---------------------|-----------------------------|--------|----------|--------------------|-------------|-----------------|------------------------------------|---------------------------------|--|---------------------------------------|-------------------------------------|
| 1 | north periphery | 2 | 2 | 0 | / | 1 | 2 | 50000 | 3000 | 500 | 4000 | 500 |
| 2 | northwest periphery | 4 | 2 | 2 | < 10 y.o., nursing | 1 | 3 | / | 3000 | 600 | 3500 | 3000 |



5. Results: Questionnaires

Only results from pre-testing and post-testing are included, not 3 months after testing. Paired-samples t-test were used.

- In terms of the **24 Quality of Life domains**, virtually no significant changes were observed.
- As for the ratings of **use and attractiveness of different transportation modes**, a significant decrease was observed in car use ($t = 4,258$; $p = 0,001$) – which was expected because the participants were prohibited to use the car for the past month.
- Regarding the other transportation modes, **an increase in public transport use was detected** ($t = -3,223$; $p = 0,006$), and **no change in cycling nor walking.**

(walking, was used pretty often in the pre-test already)



5. Results: Interviews (pre-experiment period)

As for the **car use purposes**, most families reported:

- shopping
- taking kids to/back from school
- leisure time activities and trips

As for the **reasons for using a car**:

- Comfort
- Quickness
- Time saving
- Flexibility
- Finances (this was usually true for bigger families)



5. Results

Interviews (post-experiment period)

After the one month without a car, only 3 families reported:

not perceiving “too much difference” in comparison to their life with a car, adding that they “just had to plan more” (these were families living in the city).

Planning, on the other hand, proved to be difficult for the other 7 families, and they described their month as “**demanding**”.



5. Results

Interviews (post-experiment period)

When asked about **the changes in everyday-life**, six of the families reported “more planning ahead”, probably with more cooperation in coordinating the different activities.

The other four families focused more on the changes in their routine trips

(e.g. to visit the family by train, changing a sauna for a nearer one, starting to use public transport, getting out of the house earlier, etc.).



5. Results

Interviews (post-experiment period)

Half of the families reported **not having to give up some of their previous activities**; the others **gave up some one-time trips**.

Families found a way to do what they would like:

- closer location for their skiing trip
- rides with friends for children's activities
- two families were happy that their children started to use public transport on their own
- two of the families bought a monthly public transportation ticket and two more were considering buying one for the next month.
- three families also discovered positive aspects of travelling via train with children (“you can play with them if needed”)



5. Results

Interviews (post-experiment period)

On the whole, the families described their experiences as “interesting”, “worth taking”, “manageable” and “positive”

Experiences:

- negative ones with public transport („the car would have been a better/more comfortable option“)
- no need to use a car for all their travelling
- possibility to slow down and still manage a lot
- two of the mothers reported apparently losing weight

“In the first week, I almost wanted to quit. After 14 days, we found alternative transport modes, mainly for the children to get to their afterschool activities. We involved our friends more. And in the end, I think it was a positive experience for us.”



5. Results

Interviews (post-experiment period)

When asked whether they wanted to **continue with “a life without a car”**:

- six families admitted that “probably not“
- the four others were rather reluctant, admitting there are some trips for which they would probably use the car again (mostly: *“bigger shopping”, “visiting the family” and „travelling longer distances with children“*).
- two families considered *“not buying another car when this one stops working”*



6. Summary

1. The main car use purposes are *shopping, leisure time (trips, vacations) and children activities*.
2. Reasons for using a car are “comfort”, “quickness”, “time saving”, “flexibility” and “finances”.
3. Not using a car increased public transport use, but not walking or cycling.
4. For a majority of families, not using a car was “demanding”, but it was a positive and manageable experience. It made them plan more and do changes in their routine trips, in some cases giving up some one time trips.
5. Six families prefer to use a car again, the four others are rather reluctant, admitting there are some trips for which they would probably use the car again.



7. Discussion

- Results show that experience with one month no car use was inspiring for the families and in some cases „*started to make them think*“ about other mode choice possibilities.
- In this respect, we can see this as a first step towards breaking the „vicious circle“ of car use habit.
- As for the actual potential of changing the habit, we have to wait for the results of 3 month after experimental period interviews.
- Mode shift towards public transport AND not influencing walking or cycling can probably be explained by winter time conditions and high reported walking in the pre-test already.



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Thank you for listening

