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Technology and the family car: situating media use in family life

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Research participants

Chandrika Cycil

Thesis title : « Technology and the family car: situating media use in family life ».

Country : United Kingdom

University : Brunel University (London)

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Research supervisor : Mark Perry and Eric Laurier

1. What is your research topic? What thesis are you defending?

Family life has seen a dramatic transformation with the infiltration of new technologies into homes and naturally into cars as families spend an increasing portion of time in their cars. The highly contextual nature of family technology calls for the need to study its use within sites of routine family life, but while attention has been paid to places of family life in the house such as kitchens and living rooms, the car has received far less attention.

In contrast to the family home for which a number of digital technologies exist, the car comes with specific restrictions. It has a unique set of spatial configurations (seats face

forward) and physical constraints (seat belts restrict movement, movements between back and front seats are difficult when moving) and legal restrictions (such as using mobile phones while driving) that affect the ways in which parents may manage device use alongside their driving. The demands of driving also inhibit the use of many forms of media in the car.

This interdisciplinary thesis drawing from sociology, anthropology, geography and human-centred computing, documents how family life is organized in the car, with a particular focus on (i) understanding how social interaction between family members is related to everyday mobile technology use and (ii) developing insights to inform the future design of family-oriented, car-based media that are empirically grounded in examples of use.

The analysis presented in *Technology and the Family Car* demonstrates how the family car provides an opportunity for parents and children to spend time together and engage in mundane family activities of talk and play while using a range of mobile devices. The study reveals the ways in which technology supports conversations and allows the travellers to relate to the world around them. During journeys, parents show interest in children's gaming devices as well as expressing empathy based on their own knowledge and familiarity with game content, all within the limitations that driving places on their attention. Navigating with the help of mobile devices in the car is another activity that is socially constructed between parents and children.

In the family car, navigation can be a collaborative learning activity wherein the child learns how to help, how to identify navigational progress in a map, to be sensitive to driving conditions, as well as to keep pace with the progress of the car. There is a significant social component to navigation which is produced through talk, device orientation and gestures between parents and children along with references made to the outside environment in a sequential, coherent and meaningful way.

The study highlights how the car's context is ever changing and continuously renewed as family members engage with each other and the environment outside. For example, when more attention needs to be paid to the road, parents may deflect children's questions or explicitly make children aware of their responsibility of attending to driving over discussing a game. In contrast to the family home, the spatial organisation of the car's interior significantly affects the ways in which activities are produced between children and parents. For example, the proximity of front-seat child passengers to parent drivers allows for discussions about device use or navigation. For non-driving parents who may need to physically intervene in a backseat activity to prompt assistance or intervene in order to stop an argument or negotiate the return of a device as a journey comes to an end, the car can be quite restrictive. Travelling as a family therefore involves the careful negotiation of interactions both between the passengers on the inside as well as the prevailing road conditions.

2. If your dissertation involves empirical research, what does it consist of?

The research draws on insights from video ethnographic data collected with 12 families in the UK. The research documents the varied routines that take place during journeys and conversation analysis demonstrates how parents and children jointly produce media

activities during trips. The majority of the families (10 out of 12) were from urban areas in London with two families living in semi-urban areas. All families were recruited via a university intranet, local newspaper ads and an online parent community and were selected based on their access to or ownership of a car and commitment to a three week study. The principle source of data for the research was video data of car journeys gathered by the families with video cameras provided by the researcher. This was supplemented with ethnographic observations made by the researcher whilst travelling with families on a number of regular car journeys.



The interdisciplinary nature of the project drew methodological inspiration from the fields of ethnomethodology, conversation analysis and "interaction analysis"¹. This approach to studying technology has been particularly useful in understanding how situated conduct is shaped by talk, nonverbal interaction and the placement of artefacts and technologies. The current research builds on existing work that has examined the orchestration of multiple activities in the car's context² and the role of objects in mobile interaction.

3. What is your contribution to theoretical and policy debates?

The novel contribution of the current work is in highlighting the role of children in car journeys. Activities such as supporting navigation on a phone or assisting in answering a phone call while being alone, or in the company of adults, change significantly when such interactions involve children. As seen in the analysis in this thesis, there are a number of asymmetries in skills between adults and children such as the spatial and temporal orientation of activities including navigation and instructing using a Sat Nav which require that instructions and embodied actions are adapted to the ongoing interaction between family members. Children respond to the driving conditions in a different manner to adults and are not able to make the same judgements about the moving environment. For example, a young child may initiate a conversation about a game they are playing at a time that is not conducive to a driving environment (e.g. when at a traffic junction). Here we observe that children rely on parents to prompt them on how to pace their talk to match the needs of the moving environment of the car by making references to the outside environment or by temporarily deflecting conversation.

The research informs social scientists who are interested in how family groups are organized within the complex interactional space of the car that brings together the moving environment and the socially and technology-rich interiors. By teasing apart the mundane aspects of family life such as talking, sharing and dealing with disputes, the

research adds to understandings of how relationships are constructed, enacted through technology, and intertwined with practices. For designers of technology, the work provides insights into how families interact around technology which can inform the design of systems for family cars. For example, children's participation in the collaborative activities of navigation and entertainment use, which have been largely overlooked in earlier naturalistic technology studies³ are addressed here.



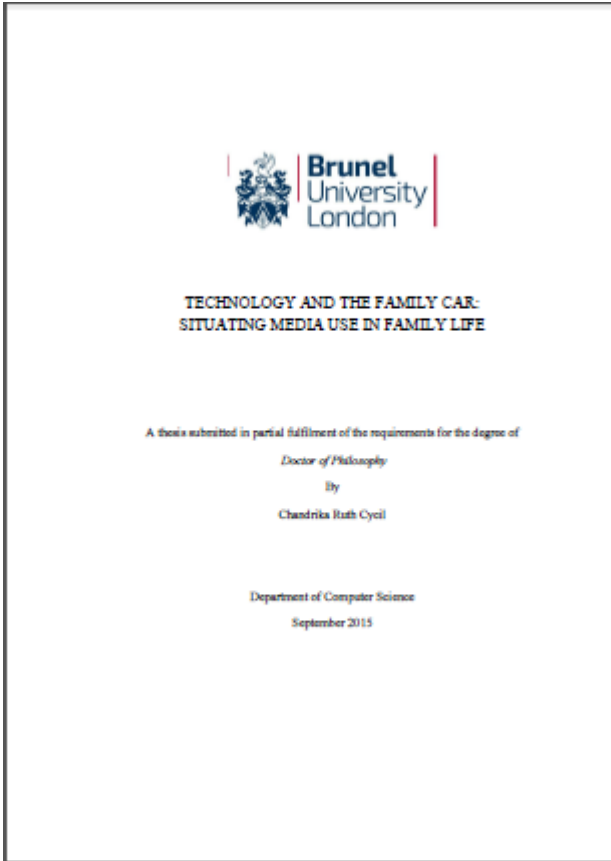
An important implication from the current data in this thesis is to highlight the multi-user needs of family units travelling together. Designs for navigational systems need to consider multi-user issues including an awareness of how tasks are distributed between multiple passengers, who is in control over devices and the knowledge levels they bring. Another important implication relates to the application of family-based systems to technology design in the car. Designers responsible for developing in-car 'infotainment' systems may wish to take into account parental concerns in addressing 'good media practices' such as turn-taking, time-limits on device use and device return when journeys conclude.

4. What questions have arisen from your research that could be addressed in the future?

The findings indicate that there is greater potential for passengers to help drivers if in-car interfaces can support the sharing of screens and simplified screens allow children to follow the progress of journeys. Barriers to current usage include the fact that navigating while driving requires that parent drivers divide their attention between navigation instructions or conversations and the core activity of driving. At the time of the research, there was considerable interest in driverless cars, thereby shifting the focus to the 'passenger' experience of car travel. Driverless cars would have significant implications for family units travelling together as parents would be able to engage in conversation and entertainment activities with their children. Potential future research would be a longitudinal study of changing mobility and technology usage of families over different stages of family life to shed light on how the families adapt their routines and practices

over time.

5. Download the thesis



Movement

Movement is the crossing of space by people, objects, capital, ideas and other information. It is either oriented, and therefore occurs between an origin and one or more destinations, or it is more akin to the idea of simply wandering, with no real origin or destination.

[More](#)

Mobility

Broadly, the word mobility can be defined as the intention to move and the realization of this movement in geographical space, implying a social change.

[More](#)

Keywords : mobility, car, technology, digital, family

Disciplines : Social sciences, Art, literature and design

¹ <http://en.forumviesmobiles.org/marks/movement-460>

² <http://en.forumviesmobiles.org/marks/mobility-450>

³ <http://en.forumviesmobiles.org/mots-cles/mobility>

⁴ <http://en.forumviesmobiles.org/mots-cles/car>

⁵ <http://en.forumviesmobiles.org/mots-cles/technology>

⁶ <http://en.forumviesmobiles.org/mots-cles/digital>

⁷ <http://en.forumviesmobiles.org/mots-cles/family>

⁸ <http://en.forumviesmobiles.org/disciplines/sciences-sociales>

⁹ <http://en.forumviesmobiles.org/disciplines/art-litterature-et-design>

¹⁰ <http://en.forumviesmobiles.org/modes-transport/automobile>