Turn that Racket off: Designing for disputes and frustration in the Family Car

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Abstract

While families in cars are stressed by congested roads, they are all the more likely to be stressed by disputes within the car happening across the front and back seats around media devices. A rising number of in-car infotainment systems and driver-assistance systems aim to help reduce frustration from stressors outside the vehicle and improve the experience of driving but may then lead themselves to further disputes. Reflecting on our own ethnographic work with family car journeys, we discuss the work of parents in managing multiple demands while driving, along with the challenges of appropriating media in a moving car and keeping child passengers occupied on journeys. We take a closer look at the role of entertainment media in family car journeys and how it is part of the experience of family life in the car.

Author Keywords

Car; video ethnography; media practices; family life; infotainment

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

As the car continues to be a popular and seemingly necessary part of conducting family life, gaining a better understanding of car travel as well as improving the all-round experience of drivers and passengers is of

Figure 1: Managing multiple demands while driving

Figure 2: Negotiating and preparing for Media use on journeys

particular value. Car travel has thus held the interest of HCI researchers in the last few years. This has extended from efforts focused on the driver, namely to support driving and way finding itself [2] to efforts that target the experience of car travel of the passengers [6] [8]. The rising number of empirical studies around ethnographic studies of the car space [2] [7] has revealed the significant role of passengers in providing driver support [5] as well as in managing assistive technologies [4] [7] on journeys. There is a growing interest in how the passengers' the wider experience of car travel. We see our work, exploring family car travel, particularly relevant to understanding how frustrations emerge in this context.

Methodology

The data presented here draws on ethnographic work carried out over a period of seven months with four families in the UK during 2012-13. After a week of ethnographic field visits to the family homes and accompanying them during family car travel, the parents were given two video cameras and asked to record their family journeys for the next 3-4 weeks. One of these cameras was mounted above the dashboard, and recorded a dual image of the front seat, and the road through windscreen; the other was to be mounted on the rear windscreen to record back seat passenger interactions. Fundamental to the organisation of the family in the car is the division of the front and back seat spaces [8]. In our own work with families, driver / front seat-passenger / rear seat passenger interactions within and across these spaces were particularly helpful in recognising how distractions and frustrations could be studied more closely. In this paper we draw on our field data as well as recordings of journeys to support our observations.

Family Life and the Car

Families and parents are ever more mobile, yet correspondingly pressed by the demands of tight work schedules and spatially distributed obligations. Thus the opportunity to spend time as a family in the traditional home spaces (e.g. around the dining table or in the living room) substantially lowers. These are particularly relevant as family dynamics shape and affect demands on time and space- including single parenthood, working parents and parents who return to education or training. The family car is a means by which various everyday roles and tasks of parenthood are carried out and is thus of interest as a design space [3]. Indeed it comes as no surprise that in the UK, where the current research is situated, the car is the most frequent mode of transport for children aged 5-10 years [1]. Parents do not view time spent in the car as lost time but instead use it as an opportunity to catch up with conversations and activities [8]. Drawing from our data we list below some sources of frustration that emerge for doing family-work in the car and further provide design considerations for the current context.

The multi-valency of the car trip

Parents often get into the car with more than just the car journey in mind. Many families in our study were driving while managing a number of care-giving duties like school drops, day care and after school activities. This often meant using time in the car to complete reading exercises, eat lunches/ dinners so as to not lose travel time. The car is closely linked to the conducting of ordinary family life and everyday routines so problems with those routines often emerge en route.

"Driving gets really stressful, when you have to remember to bring things that are essential for the journey. Last week John forgot his swimming trunks and there was nothing we could do. There was no way to go back for them" **Mother of daughter and son aged 8 and 5 years**
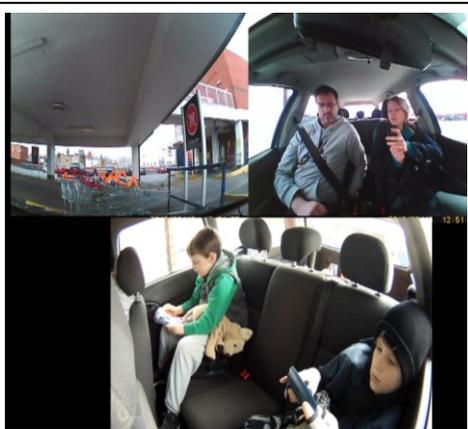
Difficulties of caring once underway

When collected by parents, children brought problems with them into the car that the parents were not necessarily responsible for. Often being unable to make face-to-face contact with the children given the spatial configurations and the demands of driving made it difficult for parents to discover the cause of children's upset resolve issues. The easiest way parents could deal with it was to ignore them if they were driving alone. If another parent was present in the car they could begin to establish the source of the upset and what could be done to remedy it.

> *Their (children) behavior is so dependent on their mood and how their day went at school or after school activities. Sometimes they can be really difficult on a journey when their day was particularly bad.* **Mother of sons aged 6 and 8**

In Car Media

Whose background audio

Portable game consoles are popular with families and were frequently carried on long and short car journeys to keep children occupied. However, managing the sounds produced by games then posed challenges for parents while driving. You can observe this in the excerpt that follows from exchanges between a parent who is driving and a child in the backseat.

> *"Did you just turn the volume up again? I just reduced the volume and you just turned it up again"-***Dad who is driving says to his 7-yr old son playing a racing game on dad's phone**

Figure 3: Managing and monitoring sounds from media

Parents enjoyed listening to the radio in the background while driving and at times, their child's use of media affected this experience. What audio plays in the background during a journey requires family negotiation and often leads to directives from parents.

Sharing Issues

Appropriation and sharing of media is another cause of potential dispute in the car. If children are watching a movie alone, or playing a game by themselves, often there were problems that arose with two children interested in the same device.

> *"Mu-um, can I have a turn on the PSP? Daniel has been playing with it for so long"-* **7-year old says to his mother in the front passenger seat.**

Another issue that was linked with back seat media use was that the users of different ages, particularly younger siblings could not contribute in games played by older siblings. This led to the younger child being bored and requiring attention. Often parents stepped in and encouraged turn taking like the suggestion provided by the mother here:

> *"Daniel why don't you change to a lower level so that Steven can play too?"-***Mother says to her 9-yr old son playing a portable crossword puzzle**

Design Considerations

While entertainment media offer solutions for stress and frustration, based on some of our field observations we suggest some recommendations that can better improve their integration into the car

environment to support the work of parents in this space.

Tracking packing and monitoring mood
Our findings point toward the centrality of preparing and packing things into the car and systems that help parents check whether they have the right equipment for the day would be useful. One possibility then is car systems that integrate tagging, recognition and tracking of items as a part of the routine of getting ready for the journey. A second issue was the unpredictability of children's moods when picked up. Passing along a brief record of the child's day to the car in advance of the child being collected would help parents shape their responses.

'Car Mode' for Entertainment Media
In a similar note as parental control on car windows from the front seat, entertainment controls for parents who would like to be able to exert control on how media is used and moderated. Volume controls for in-car media can be centralized if the technology is embedded into the car. While these are separately available for mobile phones (e.g. Android Car Mode) and portable devices, they still require manual activation. Portable technologies like PSPs can have controls that could be activated when in the car, this would enable parents to exert more control over its use. This could be similar to the 'flight' mode when personal technologies are carried on flights. In addition, to address the issues around arguing for taking turns on a device, in car systems can enables 'turn taking' or is able to reconfigure turn-taking for more than one child passenger can be considered.

Conclusion
Our fieldwork of family car journeys have helped gain a deeper understanding of the sources of frustration in the family car and the ways in which entertainment media are currently contributing to the experience of family car travel. It helps us further consider and inform how technology for the car can better support the nuances of family journeys.

Acknowledgements

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