

# The case for qualitative methods in transport research

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## Abstract

Transport, more often than not, is a metaphor. It is a practice performed in pursuit not of mobility but of other aims. Driving a car is, of course, the practice of driving, but it is motivated and necessitated by practices of, for example, caring, connecting, collecting and delivering. To challenge and change problematic transport practices, we need deeper understandings of these motivators and shapers of travel behaviour.

This paper proposes that useful understandings of day-to-day transport practices, and subsequent challenges for change, will only be developed when transport research extends beyond existing empirical and theoretical zones of comfort. It first reviews the dominance of quantitative research in transport scholarship, and progresses to provide an overview of the epistemological aspects of qualitative approaches. In doing so, it etches out space for more effective use of qualitative methods, demonstrating that qualitative approaches are rigorous, viable and highly applicable to transport problems. The paper goes on to describe a case study of the use of qualitative methods in transport research as a way to demonstrate the value of qualitative insights in understanding intractable transport problems. It concludes with the reflection that the impact of transport research on complex transport problems would be enhanced if the gold standard of our research was not defined by either qualitative or quantitative methods, but by a skillful melding of the two.

## 1. Introduction

*"It's hard to get data on this, but I do know that anecdotally..."*

This paper opens with a direct quote from a popular US based transport podcast<sup>1</sup>. Its intent informs similar statements uttered many times over by transport researchers as we busy ourselves seeking ways to better understand complex transport phenomena. We suspect that certain factors are at play in shaping transport behaviour, but we just don't have 'the data' to prove it.

This paper argues that we do, indeed, have 'the data' to better understand transport behaviour. It is just not in a form, and derived from a source, recognised as systematic or viable by the transport research profession. Proposing qualitative approaches as effective, rigorous and viable ways to understand transport practices, the paper first provides a basic overview of the epistemological aspects of qualitative approaches to research. It progresses to review the dominance of quantitative research in transport scholarship, and etches out space for more effective use of qualitative methods. The paper goes on to describe a case study of the use of qualitative methods in transport research as a way to demonstrate the value of qualitative insights in understanding intractable transport problems.

## 2. Qualitative methods – a refresher

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<sup>1</sup> "Micromobility", episode 131, 25 February 2022.

This paper does not intend to provide a detailed review of the history or nature of the epistemological differences between quantitative and qualitative research methodologies. Some background, however, is provided to establish a common understanding.

The term ‘qualitative research’ generally refers to research procedures and approaches that emphasise the collection and analysis of open-ended forms of non-numerical data such as texts and images generated from interviews, observations or documentary analysis (Denzin and Lincoln 2007). Qualitative methods are generally used to understand people's beliefs, experiences, attitudes, behavior and interactions, and are particularly suited to explorations of subjectivity and context (Dana and Dumez 2015, Silverman 2015, Silverman 2020).

As with quantitative methods, different assumptions, or ontologies, inform qualitative research and these assumptions shape the practice of research – the questions that are asked, the methods employed, including the positioning of qualitative approaches alongside, and within, findings from quantitative studies (Rahman 2020). Common to all, and juxtaposed starkly to a quantitative epistemology, is that qualitative approaches recognise and embrace the inherent subjectivity of social phenomena, including the research process (Creswell 2007). This simply means that social phenomena, such as driving a car to work, are the result not of an objective truth or reality, but instead are the product of the multiple realities experienced by those doing, planning, engineering and regulating the practice of driving a car. The most common qualitative paradigm, and likely the most acceptable in traditional transport research, is the post-positivist approach, which essentially echoes a scientific way of thinking about and doing research, with the caveat that it recognises that all research has elements of subjectivity (Corcoran 2019). The approach is generally sequenced in a very logical and inductive way, with an emphasis on validity, rigour and triangulation (Creswell and Miller 2000). The researcher pursues and acknowledges the multiple realities expressed by various sources of data, including interview participants, subjects of observation or government documents, and analyses these sources for themes that answer specific research questions.

As with quantitative approaches, debate about the nature of rigour and validity in qualitative research is fierce (see for example Merriam 1995, Koro-Ljungberg 2008). The “gold standard” of qualitative rigour is still accepted as Lincoln and Guba’s (1985,1989) fourth generation evaluation of trustworthiness (Liamputtong 2009, 21; see also Creswell 2007, Padgett 2008). These criteria are credibility, transferability, dependability, confirmability and reflexivity (Korstjens and Moser 2018).

- *Credibility* refers to the trustworthiness of the conclusions drawn from data collection and analysis process – are the conclusions reflecting an actual reality, or have they been distorted through the process of interpretation? Credibility can be established by specific techniques designed to clarify the data and minimise interpretation bias. Member checking is often a technique applied to data collected through in-depth interviews. This is a process of reporting analysed data back to the informant to check for perceived accuracy and reactions. The criterion most related to this in quantitative perspectives is internal validity.
- *Transferability* refers to the ability to apply the research findings to other contexts – be it populations, locations, stimuli or times. In qualitative research, the onus of transferability is on the person or institution ‘transferring’, or applying, the findings of a study. Transferability can be enabled by thorough, or ‘thick’, reporting of the research context, including participant selection and characteristics, and assumptions. It can also be enhanced by contextualising data and conclusions in one or more theoretical frames. The researcher who then wishes to “transfer” the results to a different context is responsible for making the judgment of how reasonable the transfer is, and justifying this decision again through thorough reporting. The criterion most related to this in quantitative perspectives is external validity.
- *Dependability* is the degree to which the findings of a qualitative study can be followed, critiqued and audited. It also relates to the degree to which findings can be trusted as valid over time. In qualitative research dependability can be ensured by keeping *and* reporting a

comprehensive audit trail. The criteria most related to this in quantitative perspectives are reliability and objectivity.

- *Reflexivity* is the process of acknowledging and reporting on the personal and intellectual biases that have been brought to the research process. This enhances both the quality and reliability of the data by providing a mechanism to tame the subjectivity that inevitably infiltrates all research, be it quantitative or qualitative. To ensure reflexivity, qualitative researchers will maintain a diary of reflexive notes. For example, if doing a series of in-depth interviews, these notes would detail the setting and aspects of the interview that were noted during the interview itself and while analysing the transcript. They may also detail the researcher's subjective responses to their relationship with the interviewees. While these notes are not generally published, they are reviewed during data reporting to check for bias.

Many of the criteria of rigour in qualitative research rely on the concept of 'thick' descriptions (Dowling 2000, 346). In practical terms, this means paying attention to and reporting on not only the details of a phenomenon but also the multiple contexts in which details were collected. To 'thickly describe' a practice is to interpret it by recording the circumstances, meanings, intentions, strategies and motivations that characterise a particular event. For example, a thin description of the practice of driving a car to work would record the origin, destination and route, and may include some details of habit, intention and emotion gathered using a standardised instrument. A thick description would examine the events leading up to and ensuing the trip, and detail the various cognitive and emotional states of the driver, the habitual and biographical influences on the mode choice, the habits, emotions and demands of those around them and the sensory experience of the driving trip.

### 3. Methods in transport research

#### 3.1 The dominance of quantitative methods

Although there is a body of well executed and ground breaking qualitative research addressing mobility and travel, quantitative approaches undeniably dominate the scholarship *in toto*. As a locally relevant example, a keyword analysis of the 2,404 papers submitted to the ATRF conference from 1975-2019 revealed that just six reported the results of data from traditionally participant-focussed qualitative methods such as in-depth interviews, focus groups, ethnography and observation. It seems we are very interested in the way people travel but not all that keen to actually talk to those people.

This dominance in the discipline is likely tied to transport's utilitarian origins. Transport research always takes various assumptions as theoretical points of departure, albeit sometimes implicitly. Traditionally, the most popular has been the mainstream rationalist-instrumental approach, which follows the assumption that travellers make decisions based on objective notions of utility maximisation and cost minimisation (Schwanen and Lucas 2011). This microeconomic approach is essentially grounded in G.J. Stigler's original conceptualisation of utility theory as applied to the consumer. Here, the individual chooses from alternatives with the aim of maximising personal utility (Stigler 1950). In terms of travel, the assumption is that the knowing traveller compares different transport alternatives and subsequently selects the alternative that yields the most benefit compared to cost (Ben-Akiva and Lerman 1975). Such work motivates a burgeoning body of analyses and elaborations, with collections such as those edited by Giovoni and Banister (2013) and van Wee et al. (2013) offering comprehensive overviews.

The dominance of utilitarian conceptualisations of transport practices has been accompanied by the dominance of quantitative approaches. The utilitarian ontology of rationality is matched to the epistemology of quantification, and as such the pair are an easy and logical fit. More recently, however, this match has engendered several critiques. First, utility theory, and the quantitative techniques employed to apply it to transport problems, struggle to incorporate recognition that the

way we travel is a product of more than rational decisions to avoid disutility such as lost time and money, unreliability or avoidable effort (Mokhtarian 2005, Cao et al. 2009). Utilitarian approaches do not account well for symbolic and emotional factors in day-to-day transport decisions (Steg et al. 2001, Steg 2005), nor for habitual decisions (Gärling et al. 2002). They are not particularly effective at understanding factors such as comfort, safety, habit, enjoyment, self-actualisation, predictability and autonomy. And when these factors are integrated into quantitative transport models (for example Domarchi et al. 2008, Lois and Lopez-Saez 2009), the focus is generally on the transport practice, rather than the factors that shape that practice. While models often acknowledge that transport is a derived demand - a practice performed in pursuit not of mobility but of other aims - at best, they engage with this concept in a relatively superficial way.

A more holistic and comprehensive research approach advocates that to really understand transport decision making, the researcher must look at the multiple practices facilitated by transport, as well as direct transport practices. This goes beyond the analysis of psychological influences and extends to sociological and cultural influences that do not necessarily fit into the focus on the individual that characterises psychological research in this space. Consider the practice of driving across town to attend a child's birthday party. To the father making this trip, this is not (only) the practice of driving. It is the practice of socialising with his daughter, the practice of networking with other parents, and, ultimately, the practice of 'good parenting'. Understanding transport as an interconnected system linked to varying degrees by the various demands and aspirations of modern life in cities allows transport researchers to develop a clarity of appreciation about points of intervention. Driving a car is, of course, the practice of driving, but it is motivated and necessitated by practices of, for example, caring, connecting, collecting and delivering.

Fundamental to this critique is recognition that although transport is not exclusively a sociological phenomenon, the way people travel is shaped by social practices and their institutional, emotional, and historical expressions. As such, in examinations of the status quo, and proposals of avenues for change, transport research must engage with these expressions. The problem that arises is that doing so often requires taking account of defining variables that either can't be quantified or have not been quantified in a way that is available for use in transport research. As such there is a potential mismatch between contemporary transport problems and the methods most often used to solve them.

### 3.2 The case for qualitative approaches

In 1966, sociologist William Cameron<sup>2</sup> wrote that “not everything that can be counted counts, and not everything that counts can be counted” (Cameron 1966, 64). In other words, the existence of a rich data set does not make it immediately worthy of our research time, and the absence of such data does not immediately suggest its irrelevance. Yet too often our quantitative models are determined *a priori* by the data that is available, or able to be collected by pre-existing instruments, rather than a thorough consideration of the likely variables at play in determining a pattern of behaviour. Hence the oft written acknowledgement that relevant factors are omitted from analyses due to a lack of data (see for example Hensher et al. 2011, 958, Aditjandra et al. 2012, 26, Serna et al. 2017, 7, Ma et al. 2018, 1944, Mohd Shafie et al. 2021, 12814). The emergence of new ways of collecting data, including the promise of 'big data' has only compounded this phenomenon (Bonnell and Munizaga 2018, Pucci and Vecchio 2019, Ge et al. 2021).

At the heart of Cameron's observation is the simple fact that there are many diverse, effective and rigorous methods available to social scientists which can be deployed to understand complex problems (Rossman and Wilson 1985). This fact underpins one of the key tenets of best practice research which transcends allegiance to any specific methodology – triangulation. Triangulation, in the research context, refers to the deployment of multiple methodological resources or practices in the study of the same phenomenon (Merriam and Tisdell 2016). The term is borrowed from the field

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<sup>2</sup> The quote is often erroneously attributed to Albert Einstein.

of navigation, which demands reliance on three points of observation to determine a precise location. Triangulation in research can be pursued by the application of multiple theories, the use of multiple methods to obtain data, and/or the deployment of multiple disciplinary perspectives (Denzin 1970). It is hard to deny that the most powerful research based findings are triangulated through the use of several data sources, and that adding qualitative explorations to quantitative examinations will result in a more comprehensive understanding. In its most simplest form, either the panoramic views of a phenomenon provided by quantitative analyses are given depth by qualitative methods, or the richness and detail of qualitative analyses are granted breadth through quantitative methods. This technique can not only strengthen a finding, it can also provide a different perspective on a phenomenon by drawing attention to contradictions that might have otherwise been missed. In the best cases, the depth of detail provided by one source informs further breadth which is then clarified by the pursuit of further depth, and so on. In best practice deployment of methodological triangulation, each method will complement the other, and be guided by a consistent and clear research question.

Although it may be practised on some level in the research design process, triangulation is regularly omitted from the reporting of both qualitative and quantitative transport research. As a result, research is often depicted as either quantitative *or* qualitative, with the impression being that “never the twain shall meet” (Kipling 1900). Yet qualitative and quantitative methods can, and should, work iteratively to develop and communicate findings that are accurate, revealing and useful to inform changed practice and policy. The emphasis here is on iteration - neither should necessarily take precedence over the other.

A second critical inference from Cameron’s statement is that there are elements that determine social phenomena, including the way people travel, that are either impossible to quantify or are unable to be quantified with the existing tools available. Taking the example mentioned above of a father’s travel to a child’s birthday party on a Saturday afternoon. The practice is first not static over time for its impact on the transport task of a city to be elegantly incorporated into a useful model. Second, it is laden with both values and emotions – a combination which is characteristically slippery in its ability to evade shared understanding, let alone quantification. How does one measure, for example, the impact of parental aspirations, desires for familial connection and enjoyment, a yearning for the feeling of relief one gets when they see their child enjoying time with others, all alongside an innocent yet genuine craving for chocolate birthday cake? Quantification seems unlikely, yet qualitative techniques can be used to dig deeply into the multifarious phenomena shaping transport decisions that cannot be, or have not been, easily quantified. A series of in-depth interviews with 25-30 fathers selected from similar socio-economic and demographic backgrounds would no doubt produce a theoretical framework that could be used to inform a quantitative instrument that could then be tested on other value laden practices. The survey may raise contradictions, which could then be refined through further interviews or focus groups, and the instrument would thus be additionally refined. These techniques are rigorous and transferable, and they can be incredibly useful to augment understandings of complex phenomena such as the way people travel. Another justification for the inclusion of qualitative methods in transport research, therefore, is that they can fill in the gaps left by datasets and modelling techniques inevitably constrained by the data available and the pursuit of analytical elegance. Qualitative research enables consideration of things that are inelegant and unquantifiable – namely, modern lives.

A final, and related case for the inclusion of qualitative techniques in transport research, is that they are not bound by the pursuit of generalisability. Qualitative research acknowledges that its findings are subjective and therefore unlikely to be reflective of a broadly defined population group. It does not try to provide large scale solutions to intractable problems, and instead seeks to inform the deeper understanding of elements of solutions that can then be tested and applied across contexts.

#### **4. The anatomy of a qualitative study – a case study**

The previous section has outlined the dominance of quantitative approaches in transport research and built a case for the inclusion of qualitative methods. The next section takes private car dependency as a quintessentially intractable transport problem and describes how a qualitative approach might be useful in developing both deeper understandings and more effective solutions.

## **4.1 The research gap**

### **4.1.1 The problem of private car use**

Reducing vehicle kilometres travelled by private car and private car ownership is an oft stated goal of transport research, and for good reason. Cars are resource intense, and remain reliant on carbon and other non-renewable resources, implicating them in the global physical, social and ecological harms of human-induced climate change. Because they reduce the need for walking and cycling for transport, and erode the efficiency and desirability of these modes, cars are also associated with decreased physical activity and the high incidence of lifestyle diseases such as heart disease across cultures. Additionally, cars are at the epicentre of the massive increases in traffic related fatality and injury currently dominating headlines around the globe. Finally, cars, and the system of automobility they represent, are linked to personal experiences of detachment, stress, loneliness and anxiety associated with living fast-paced, auto-oriented urban lives.

### **4.1.2 Questioning time as a determinant of travel**

Although there is growing awareness of the problems associated with private car dependence (Millard-Ball and Schipper 2011), driving continues to dominate mode-share for personal trips in Australia and in many other lower density urban areas across the global north (see for example Australian Bureau of Infrastructure, Transport and Regional Economics (BITRE) 2012). This dominance reliably sparks the interests of transport researchers, who are often focused in some way on increasing the appeal of modes alternative to the private car, and/or transitioning the private car system to one that is more efficient, sustainable and universally accessible.

Following utilitarian traditions, transport research in this space often seeks to enhance the time-competitiveness of alternative transport modes such as public transport, cycling and walking when compared to driving (for example Brownstone and Small 2005). In these approaches, time is often regarded as a major barrier to the uptake of alternative transport in that walking, cycling and public transport use is usually positioned as taking more time than driving (see for example Newman 2003 on walking, Winters et al. 2010 on cycling, and Corpuz 2006 on public transport). In this literature, the private car dominates travel choice partly because it allows people fast access to the destinations they want to access. In other words, it allows people to save time. Inherent to this approach is the idea that time spent on transport is time that is wasted and should be minimised. More recent transport research, however, presents a powerful rebuttal to this assumption by suggesting that the benefits people gain from automobility extend beyond simple timely accessibility. Time in the car, therefore, is not necessarily time that is lost.

Using a purely quantitative approach, Mokhtarian and colleagues have demonstrated that people do gain utility other than simple accessibility from travel time by revealing a preference for a commute time that is greater than zero (see for example Mokhtarian et al. 2001, Mokhtarian and Salomon 2001, Redmond and Mokhtarian 2001, Mokhtarian and Chen 2004). Drawing from data on the journey to work from 1,300 full-time and part-time employees in California, they conclude that 15 to 20 minutes was the most desirable commute time primarily because it enabled the transition between work and home roles.

While the work of Mokhtarian has been instrumental in revealing the existence of value for travel time beyond its utilitarian purpose, there have been a series of studies from various fields that have

attempted to unpick how this value is manifested and thus maintained. These fields range from psycho-social approaches that look at the role of affect, meaning and aspirations (Gatersleben and Appleton 2007), to those that focus on driving as a practice that is politically and economically structured (Böhm et al. 2006, Paterson 2007) and culturally inculcated (Sheller 2004, Thrift 2004, Freudendal-Pedersen 2009). These studies generally use qualitative methods such as in-depth interviews, ethnography and observation. At one level is research describing the multitude of ways people use their travel time in the car productively. An ethnographic study by Laurier (2004), for example, describes in detail the work a female executive undertakes to do in the car transitioning from one appointment to the next. This work was recently extended by Laurier and Dant (2012) who rely on interview data to demonstrate the shifting uses for the space of the car during travel time. This space, they claim, will become more functional as technology renders the driver within the car progressively less ‘preoccupied’ with the actual task of driving, and increases opportunities to undertake other tasks. Bull (2004) uses observational and ethnographic techniques to explore the way people experience and use sound in the car, describing the car as “potentially one of the most perfectible of acoustic listening chambers” (247), with the sound from the stereo adding to the positive sensory affect gained from travelling through changing landscapes. Edensor (2003, 2004), and Walsh (2010) describe similar situations. An interview based study by Basmajian (2010) explores the way women use time spent in the car driving to and from work to catch up with children and prepare for the evening’s demands. This work updates an earlier study by Dowling (2000) which examined the way time in the car supports practices of ‘good’ mothering. This notion was explored more recently in a similar study by Jensen et al. (2014). Regarding travel time specifically, the research of Jain and Lyons (2008) conceptualised travel time as a gift instead of a burden. Examining discourse from several focus groups, they explore the way individuals often gain personal benefits from travel time because it is time out from the busy schedules of modern life, or transition time, allowing distance to be created between two activities or roles (for example, employee to parent). Bull (2004) also describes the way the car offers “temporary respite from the demands of the other” (249) – a respite which is only enhanced through personalisation of sound within the cocoon of the car.

This brief review reveals a strong body of research to warrant the claim that transport practices are not simply a product of individual desires to get from A to B in the fastest time possible. Qualitative methods have been used to provide some explanation for the quantitative finding of an appreciation of a journey to work time greater than zero. The study now described builds on this explanatory understanding using qualitative methods as a way to demonstrate the utility of qualitative methods in transport research.

## **4.2 The qualitative study**

### **4.2.1 Careful participant selection**

In this qualitative study, the primary method used for data collection was a series of semi-structured in-depth interviews. Purposive sampling was used to enhance the development of an authentic and novel way of thinking about barriers to alternative transport and enable identification of information rich cases for study (Patton 2001, Padgett 2008). This was not a probability sampling such that statistical inferences can be made (Miles and Huberman 1984), it is a sampling that enables in-depth study of a specific aspect of transport behaviour. As established above, the car’s unrivalled speed, ability to cover distance and, by implication, time saving capacity is often identified as a barrier to alternative transport use (see for example Sharples 2009, Ewing and Cervero 2010, Ellison and Greaves 2011). What if, however, people could travel using alternative modes in the same amount of time as it takes them to drive? What then would be the barriers to alternative transport? To answer this question, this study used a complex process of participant selection to remove time as a rational barrier to alternative transport. It did this by selecting participants who could travel to work using

alternative transport modes in the same amount of time as it currently takes them to drive by private car.

Finding participants who fit this very particular selection criterion required a detailed and relatively manual analysis of a cohort of journeys to work (JTW). First, employees of three organisations located in suburban Sydney, Australia, were invited to fill out a web-based questionnaire. The organisations were selected because they were located in suburban employment areas that are relatively well serviced by public transport, yet mode share for the journey to work is overwhelmingly characterised by private car use (Australian Bureau of Statistics 2011).

The questionnaire was short and asked for details on JTW mode, duration, time of departure, origin and trip chaining behaviour. Respondents were advised that the questionnaire formed part of a larger study and that they may be contacted at a later date to participate in a series of face-to-face interviews. From 879 respondents, 119 journeys across the three organisations were selected randomly for the first phase of trip substitution analysis.

Each respondent's trip was analysed for available alternatives using their nominated origin and work destination. Alternatives were timed using a combination of online timetable information and an estimation of average walking (Knoblauch et al. 1996) and cycling (Krizek et al. 2009) speeds as empirically proven in the literature (further details of this manual process can be found in Kent 2014). The estimated time taken for the alternative mode was then compared with the time taken for the existing car trip as indicated by the respondent in the questionnaire. The decision to use the participant's self-reported journey time for the analysis was intentional and allowed for any eventual presentation of a substitute trip to be time-comparable in each participant's own terms.

After analysis of 119 journeys, 26 respondents attracted a rating of one on the feasibility scale. These respondents could substitute their current car journey to work with an alternative mode that would take less than five minutes more than the time they perceive it takes them to do their existing car journey. These 26 participants fit the key selection criterion for in-depth interview – that is, they could travel to work using alternative transport modes in a similar amount of time as it currently takes them to drive by private car.

#### **4.2.3 In-depth interviews – contacting participants and ‘ground truthing’**

From this group, three participants were e-mailed at a time with an invitation to participate in the second phase of the study. Participants were advised that this phase would entail taking part in two 60 minute interviews to be carried out at a time and place suitable for them and that they would receive one AU\$25 gift voucher as a gesture of thanks for their participation. This process of participant recruitment continued until theoretical saturation was reached. This is an important concept in qualitative research that determines the reliability of the results. The number of participants required for a rigorous study are not determined *a priori*, instead, themes emerge during data collection which are then ‘saturated’ by further data collection. Saturation is considered attained when additional data fails to produce fresh themes and it is only at this point that the process of participant recruitment and interview concludes (Morse 2007).

As each participant agreed to take part in the qualitative phase of the study, the trip that had been mapped as his or her alternative trip was ‘ground truthed’ by the author. This entailed going into the field and ‘doing’ the alternative trip. Further, it required that the trip be carried out at a similar time of the day as the participant would if he or she were to substitute it for the existing drive to work. This process allowed the efficacy of the trip substitution method to be tested and in each case, it confirmed that the alternative trip would indeed take a similar amount of time as each participant's self-nominated car-based journey. It also allowed the author as an interviewer to speak knowingly about the alternative trip as it was introduced to each participant. For example, the topography of



the streets, the condition of the roads and footpaths, the location and design of the bike parking, the exposed or otherwise design of the station platform, and the dominant demographic of fellow travellers were all recorded during the ground truthing process and could be described in some detail. Throughout this entire process of participant selection, trip substitution and participant interview, a journal of reflective memos was maintained which were subsequently incorporated into the data analysis process described below. In total 15 people participated in 30 interviews lasting between 55 and 70 minutes.

#### **4.2.4 In-depth interviews – the actual meeting**

Nine of the 15 participants were male. Six participants were aged between 18 and 34, six participants were aged between 35 and 54 with the remaining three participants aged between 55 and 64 years. The average journey to work distance and time was 20.68 kilometres and 55 minutes respectively. As per the method employed for purposive sampling, all participants consistently travelled to work as a single occupant of a private vehicle.

Interviews were in-depth and semi-structured. They were conducted as focused interviews, meaning that while certain types of information were desired from each participant, the phrasing and order of questions was redefined to accommodate the flow of the interview (Denzin 1989, Minichiello et al. 2008). The first interview was particularly unstructured. It was first explained that the research was on transport in Sydney – a topic of considerable public interest and debate. Participants were then asked to describe the way they travel to work, including details on the specific route or routes they take. They were asked to talk about the traffic en route, as well as the way they occupy their time in the car. They were encouraged to speak without restriction and in detail. While this information forms an integral component of the study, granting participants the opportunity to voice freely their concerns about city peak-hour driving was an effective way to establish a rapport. By starting the interview with an obvious interest in banal details such as traffic, specific route choice, choice of radio station and the daily rhythms of other in-car activities (such as applying make-up, making phone calls, checking social media and eating breakfast) participants were encouraged to reflect in-depth on something they did unthinkingly on a day-to-day basis.

The interview progressed to ask participants to describe what they do at work, their home life and the structure of their typical day. Participants were asked for details on routines associated with preparing for work in the morning and winding down at night. They were also asked about their aspirations in life and encouraged to speak about the things that were important to them, exploring ideas they had about where they'd like to be in the future, how they work towards these goals, as well as their priorities, values and special interests. This approach to qualitative explorations of automobility is relatively novel. Qualitative research using in-depth interviews to study transport behaviour usually has a more explicit focus on mobility. Studies often open by asking participants for their views on alternative transport modes (for example Gardner and Abraham 2007) or asking more direct questions about their motives for car use (for example Hiscock et al. 2002). By opening with an interest in the practice of driving, progressing to frame this practice with details on other routines and further with insights into each participant's goals and values, a layered appreciation of the way the use of the car for the journey to work is embedded in each participant's lifestyle could be developed.

The second interview was conducted between six days and two weeks after the first. It was purposefully more structured. At the beginning of the second interview, participants were asked about the type of car they drove, the age at which they'd obtained their drivers' licence and the basic travel patterns of their household. The alternative trip developed from the trip substitution analysis outlined above was then described. The participant's reaction to this alternative trip was subsequently explored. Potential benefits and barriers relevant to the trip were discussed, both entirely as perceived by the participant.

### 4.2.5 In-depth interviews – data analysis

With permission from participants, interviews were recorded with a digital voice recorder and transcribed by the author to enable reflection and attention to intonation and emphasis during the transcription process. A log of reflective memos was kept by the author during this process. Participants were invited to review transcripts from both interviews. Systematic coding of all data using the CAQDAS (computer aided qualitative data analysis software) program QSR NVivo 9 was then undertaken consistent with a grounded theory methodology involving constant comparative analysis of data against emergent themes (Charmaz 2006). Data analysis began during the data collection phase, in an effort to maintain the dialectic between theory and data consistent with a grounded theory approach. Analysis commenced with identification of eight topic codes where sections of data relating to each other were grouped together (for example ‘work life’ and ‘importance statements’). The topic codes were then narrowed to five initial codes. These are codes that are not necessarily embedded as succinct statements within the interview data but instead emerge as a result of review of the interview and memo data more generally. Examples of initial codes are ‘car appreciation’ and ‘stress of modern life’. These initial codes were used to group categories of concepts into 41 primary codes which describe explanatory patterns emerging from initial codes and are linked to an initial code. For example, primary codes listed under the topic code of ‘car love’ include ‘using time’ and ‘speed and movement’. Primary codes were then allocated into one of two groups: ‘automobility’ and ‘modern life’ which were derived from the coding process up to that point and the series of coding memos written during this process. These were then compared and contrasted through a process of axial coding which involved cross referencing primary codes from each group. Eleven final concepts emerged including ‘comfort’, ‘speed’, ‘presentation at work’. These were then clarified through a process of practice mapping, which essentially involved embedding the practice of driving into other practices for each participant and locating the concept codes within these practices. For example, for Rebecca the practice of driving to work was related to a simplified morning routine necessary for presenting well in an office environment, which was related to sleeping in, which was an integral component of making up for sleep lost due to her 6 month old baby. From this process, a core concept was identified through a process of selective coding. This concept was ‘the car and ontological security.’ Further details of this approach can be found in Kent (2013), pages 135-154.

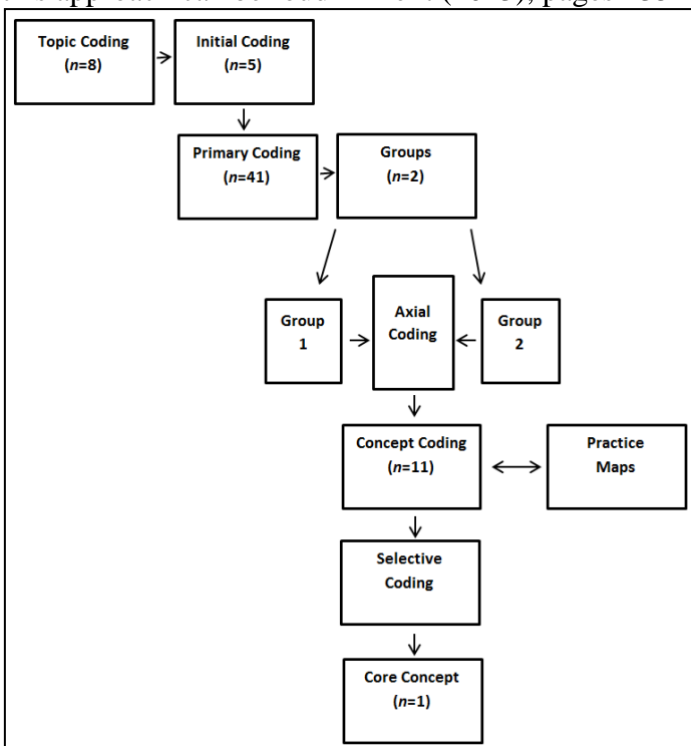


Figure 1: Illustration of coding process

#### 4.2.6 Results in brief

This paper aims to present an example of qualitative research in action rather than describe the results of a study in detail. This section therefore limits its reporting and takes the theme of time to demonstrate how qualitative methods can give colour to the findings of traditional quantitative approaches. For a deeper discussion of results and implications of this research please see Kent (2014).

Study participants did not appear to be any less time-stressed than the observations of sociologists from Harvey (1990) to Bauman (2000) suggest is characteristic of modern life. Many were required to work long hours and had commitments to family and other time-consuming interests outside of work, including study and secondary employment. They described practices of micro-managing time. These included using time on the weekends to cook the approaching week's dinners, laying out clothes for a morning gym session the night before, eating breakfast on the run and choosing to wear a work uniform on the days when there was no time to iron a shirt.

Time was conceptualised in a variety of ways - time waiting, time lost, time saved, time given, time taken, time spent. First and foremost, however, participants treated time as a currency of high value and something that should not be wasted. A new father, for example, described the way he cherishes spare time to spend with his six week old baby boy:

*I guess, every little minute that you get now, even if it's just sitting down talking, sitting down watching TV together, sitting down with the boy, just holding him sort of thing, it's just precious. Time is precious.*

As each participant was introduced to his or her alternative trip, it was emphasised that it would take the *same amount of time* as their car-based trip. Indeed, extremely detailed descriptions of the different components of the trip were offered. This included an estimation of how long each component of the trip would take, the structure of the timetables and the way connections between modes would work. As described above, ground truthing the trips enabled the interviewer to do this. All participants rejected the proposed substitute trip as a viable alternative. Participants tended to cite the car as a device to administer time rather than save it. Time as a barrier to alternative transport use was often viewed in quite a vague way:

*For some reason the bus doesn't grab me and I think it's just the time. It's not that it'd be longer because I know it wouldn't. It's the restriction – I want to be able to leave without looking at a timetable [pause] and then there's that idea that I want my space [pause], it's lots of things.*

Regardless of efforts to 'remove' time's impact, it continued to feature strongly in the way the participants spoke about their choice to drive. It was not that the car was necessarily perceived as faster than alternative transport, it was that the participants perceived time taken on trains, buses, or walking and cycling, as more of an investment, more frustrating, less comfortable and more disempowering than the time they spend in their car. This persisted to the extent that some participants even indicated they did not mind if driving to work actually took more time than the use of alternative transport. One employee compared his 65 minute alternative trip with the time it currently takes him to drive:

*I remember, a long time ago, I used to catch the train to work. It was really busy, people always trying to find their way, and people trying to squeeze in, sometimes the door shuts too early. ..So then I think about taking my car, even if it's 1 hour 15 minutes, I don't care. I*

*think, ah, it's fine I have the air conditioning, I listen to a bit of music, best of the 80s, the news from ABC.*

It was more important to participants to spend their time being comfortable and in control than 'wasting' their time by, for example, waiting for bus connections or dealing with crowded public transport. There were a variety of strong and convincing explanations for why this is the case.

This approach enabled development of the multi-layered understanding of the central proposition of the research: that individual decisions to drive are not necessarily motivated by the desire to save time. Instead, automobility is sustained by appeals of flexibility and autonomy, as well as the interminable pull of the sensory experience provided by the cocoon of the car. It is the depth of understanding embedded within participants' lived experience that is novel here, rather than the finding that time can, by some travelers, be disregarded as a motive for mode choice. This way of thinking about resistance to alternative transport exposes a series of inconsistencies between the expectations of those planning for, and those anticipated to one day use, alternative transport.

### **4.3 An evaluation of this study method**

Section 4.2 above described a qualitative study by first laying out an existing inconsistency in the research as a research gap that could be filled, in part, by qualitative methods. It went on to describe a detailed process of participant selection, recruitment, in-depth interviews and data analysis, concluding with a brief excerpt from the study's results.

Present in this study are several of the key tenets of validity for qualitative research described above. The study established *credibility* by ensuring the reality reported through the data analysis process was verified with the study participants who were actively encouraged to review the research findings. The potential for *transferability* was ensured through the thick descriptions provided in the write up of the method. *Dependability* is secured through the iterative process of the research, where the research approach developed alongside the data collection process until the point of saturation was reached. *Reliability* is guaranteed by the keeping of a thorough audit trail consisting of research memos lodged as the research process unfolded.

The study's findings pose several challenges to existing ways of thinking about transport behaviour. It confirms the findings of previous studies which have disputed the emphasis on time that dominates the utilitarian paradigm. Then, through careful participant selection, it explores the way driving is a choice made through consideration of an array of factors, where time taken is just one element easily traded for comfort, flexibility and perceived freedom. While the finding is interesting, of importance here is that the approach demonstrates the value of qualitative research in action – by developing deep and 'thick' descriptions of transport, and the multiple needs it satisfies, the broad-brush panoramic views of quantitative research can be refined and scrutinised. Ultimately, the approaches in concert result in understandings of transport behaviour that better reflect the multiple realities of the travelling population.

## **5. Conclusion**

Transport problems are complex and intractable. At the heart of this obdurate complexity is the fact that travel behaviour is simultaneously defined by psychosocial notions such as habit and emotion which sit somewhere alongside structures such as the built environment, and the transport modes it supports. What is needed is a bridge that merges these dichotomies, and qualitative methods can contribute to building this bridge.

This paper has revealed the preference in transport research to default to quantitative approaches and provided a detailed example of qualitative research in action. In doing so, the paper attempts to

first reassure the academy that qualitative methods are highly applicable to transport problems, and that they are systematic and rigorous. Second, the paper poses a challenge to transport research. How would our findings be different, and our impact enhanced, if the gold standard of our work was not defined by either a qualitative or quantitative approach, but by a skillful melding of the two?

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