Conscience and Consequence, or An Examination of Fare Evasion Behaviour on Public Transport in London

by Hedley Mellor

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University College London
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CONSCIENCE AND CONSEQUENCE,

or

AN EXAMINATION OF FARE EVASION BEHAVIOUR ON PUBLIC TRANSPORT IN LONDON

By

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Being a dissertation submitted to the faculty of The Built Environment as part of the requirements for the award of the MSc Transport and City Planning at University College London: I declare that this dissertation is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

Hedley Mellor (signature)

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ABSTRACT

Fare evasion is a perpetual problem on public transport. It costs revenues, reduces passengers' sense of safety – discouraging them from using the service – and increases violence. Public transport companies are often forced to raise prices to recoup lost revenue, which has a negative impact on social equity. If fare evasion behaviour is not evenly distributed across the network, it can lead to a misallocation of resources. Yet, until recently, enforcement strategies have been running on default. It was not asked why people fare evade. Instead, policy was based on an invented perpetrator of a rational utility maximiser, someone who seeks to obtain as much public transport as they can while paying as little as possible. As our understanding of human action has developed, this model has begun to be questioned. However, these insights have not yet been applied to enforcement policy, which remains based on the rationalist model. This dissertation will ask whether this is an effective approach, based on an online survey and in-depth interviews with public transport users in London. Finding the existing model wanting, an alternative is proposed, incorporating both economic and moral reasoning and making use of the theory of neutralisation techniques, as initially proposed by Sykes and Matza (1957). This model is then further tested against the data, which provides more detail about decision to fare evade and confirms the use of neutralisation techniques. These insights are then utilised to develop new enforcement policies that seek to target all aspects of the fare evasion decision-making process.

'one of the most fascinating problems about human behaviour is why men violate the laws in which they believe' Morris Cohen

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1. INTRODUCTION

Fare evasion costs public transport companies more than €1 billion a year in lost revenue (Bonfanti & Wagenknecht, 2010). According to TfL, in London alone fares evasion costs more than £100 million a year (Dilley & Bardo, 2019). In a human context, that sum could pay for 15 new step-free station upgrades, six new Crossrail trains, 28 New Routemaster buses, or free transport for a year for nearly 3,000 Londoners[1], per year (Rail Technology Magazine, 2016; Railway Gazette, 2010; Bus and Coach, 2013; TfL, 2019).

However, fare evasion has impacts beyond revenues. If lost costs are covered by increasing fares for everyone it is regressive, harming social equity (Keuchal & Laurenz, 2018). It has a security impact: witnessing fare evasion makes other passengers feel less safe, discouraging them from using public transport (Delbosc & Currie, 2016a; Barabino, et al., 2015; Reddy, et al., 2011); attempts to enforce against it can be met with an increased risk of violence (Barabino, et al., 2013). The reverse is also true: successfully combatting fare evasion leads to a reduction in other criminal activity (Bijleveld, 2007).

If fare evasion is geographically or temporarily concentrated, then it can lead to a misestimation of demand, resulting in investment in the wrong places, and cut-backs where there is no spare capacity (Alm, 2012). There is some suggestion that this has happened in London since the introduction of New Routemaster buses, which are associated with increased fare evasion (Webster, 2019). There is a clear case that tackling fare evasion is in the interests of public transport providers.

The historic focus of research on fare evasion has been on how it can be stopped (Delbosc & Currie, 2019). This research has skipped the logically prior step of finding out *why* people fare evade. Instead, it has been assumed the potential fare evader is everyone, acting out of a utility-maximising desire to get as much public transport as possible while paying as little as they can. I will call this the rationalist model of the fare evader. As I will show, as in other areas of life, this *Homo economicus* does not exist. Despite this, the policy approach has not been updated.

Setting aside the truth of it, this dissertation will ask whether the rationalist model of the fare evader is effective. Evidence from an online survey and interviews conducted with public transport users in London will indicate that it is not. A new model is therefore proposed – the scale model – which conceptualises the decision to fare evade as the outcome of competing economic and moral considerations. The role of these moral considerations is understood through the theory of neutralisation techniques (Sykes & Matza, 1957). This incorporates the findings from the literature that the justifications for fare evasion seem to take the form of reasons that their apparently unacceptable behaviour is in fact acceptable after all.

The scale model is then tested in detail against the results of the online survey and interviews to examine which moral reasons are relevant and the role they play in decision making. This provides further evidence for the neutralisation

[1] Based on the price of a zone 1–9 annual travelcard.

model by highlighting that an individual's acceptance of various justifications for fare evasion is more closely linked to their own fare evasion behaviour than it is with the underlaying real world impact of those justifications.

The policy implications of the new model are then examined, highlighting the potential for new enforcement strategies beyond the traditional, finance-heavy approach of new barriers and more inspectors. The dissertation concludes with reflections and proposals for further research.

2. LITERATURE REVIEW

The existing literature on fare evasion can be characterised as answering one of three different questions (Delbosc & Currie, 2019): *how* do we stop fare evasion, *who* does it, and *why*? The traditional focus has been the *how* question. This focuses on the role of enforcement, using the assumed model of a fare evader as a rational profit maximiser. While research into answering the *who* and *why* questions has led to a more detailed understanding of fare evasion, the approach towards policy has remained unchanged. Additional detail has mostly served the existing rationalist model of fare evasion. As this dissertation seeks to highlight the shortcomings in such a model, I will first set out the existing state of research.

Literature was gathered from following citations in key pieces, and through an online search. There are a limited number of answers to the *who* and *why* questions in the literature, and additional insight may be had by looking at the other forms of deviant consumer behaviour (Currie & Delbosc, 2017), such as shoplifting and tax evasion.

2.1 HOW?

How do we stop fare evasion? This long-standing question continues to inform the policy approach (Delbosc & Currie, 2016a; Delbosc & Currie, 2019). This approach is focused on engineering and tactical solutions, such as physical infrastructure and the deployment of inspection staff (Barabino, et al., 2015).

This approach does not look at the motivations of fare evaders themselves. It assumes the passenger is a rational profit-maximiser. They will continue to fare evade until it become in their interest to stop doing so. (Delbosc & Currie, 2016a; Guarda, et al., 2016a; Guarda, et al., 2016b; Barabino, et al., 2013).

This assumption has led to a focus on hard engineering solutions, such as physical barriers and controlled entry (Bijleveld, 2007). However, there are limits to this approach. These are worth exploring in more detail as they highlight the important role played by ticket inspectors in enforcement strategies.

2.1.1 THE LIMITS OF THE ENGINEERING APPROACH

When considering fixed way infrastructure such as rail, the hard engineering solution to fare evasion is to install ticket barriers. When it comes to buses and trams with on-street boarding, this is not possible. The hard equivalent in this case is a payment-on-entry (POE) system, which requires the user to pass the driver and buy a ticket or validate a

smartcard. This contrasts with the alternative proof-of-payment (POP) approach, which generally allows entry by all doors, without a ticket check taking place. This approach is most commonly used in buses and trams, but can be used with fixed-way infrastructure (e.g. the DLR in London). Passengers are trusted to buy a ticket or validate a smart card without supervision. This trust is backed by ticket inspectors.

POE systems theoretically prevent anyone without a ticket from boarding[2], and fare evasion is higher on POP systems than POE systems (Barabino, et al., 2013; Delbosc & Currie, 2016a). However, the universal use of POE is no panacea. POE systems take longer to board, as every passenger must pass through the same door and potentially interact with the driver. In contrast, POP systems can make use of every door and no transactions take place on the vehicle. This time saving means that fewer vehicles are need overall to maintain a frequency, reaping significant capital savings. These capital savings can more than make up for the money lost through increased fare evasion, even if an evasion rate of 0% is assumed for POE systems (Currie & Reynolds, 2016; Lee, 2011).

Within London this discussion can be seen within to context of New Routemaster buses and the expansion of the tram system. Until recently, fare evasion was not considered when introducing New Routemasters (Bartlett, 2019), reinforcing the point that increased capacity and improved frequency are the chief considerations. The question of POP vs POE is relevant beyond just the bus and tram network, however. A large number of railway stations across London are unstaffed and do not have barriers. A hard engineering approach would require the installation of barriers to combat fare evasion, at great expense in capital and labour[3]. This is not practical, especially given that much of Great Britain's rail network only survived the Beeching era because it was realised that not all stations need to be staffed. At the other end of the spectrum, barriers represent a restriction on capacity. The capacity of central London Tube services is not limited by frequency – there is scope to run even the 100-second Victoria line more frequently (Purley, 2017). The limitation comes from moving people off the platform quick enough, where the bottleneck is getting them through the barriers (IanVisits, 2017). If a way can be found to do away with barriers entirely, capacity could be greatly increased. Looking forward, the future of public transport will involve autonomous vehicles. Beyond safety, the major advantage of these is that they do not require staffing, which necessitates a POP approach.

2.1.2 THE NEED FOR INSPECTORS

This all highlights that any public transport system has to make use of ticket inspectors to enforce compliance. Much fare evasion research has therefore focussed on their use: where, when and how many to deploy.

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[2] Ticket inspectors are also employed within POE systems, as no system is 100% secure. Additionally, other forms of fare evasion, such as travelling fraudulently on a discretionary ticket, are harder to capture with the use of barriers or driver checks.

[3] Any station with a barrier must be staffed (Crerar, 2015). Indeed, on the current appraisal of cost and benefit, many stations with barriers leave them open to save on staff costs.

The key insight from this research is that the efficacy of a ticket inspection regime is based on passengers' perceived risk of being inspected (Barabino, et al., 2013; Barabino, et al., 2015; Keuchal & Laurenz, 2018). By contrast, the size of the fine has little impact on fare evasion rates (Bijleveld, 2007; Dootson, et al., 2016). This makes intuitive sense: people will only fare evade if they think the risk of getting caught is low: they do not consider the punishment because they do not think they will face it

The important insight here is that it is not the actual risk of meeting an inspector that affects fare evasion behaviour, but rather the perceived risk, a separate but not independent variable. This has led to an additional enforcement approach beyond hiring more inspectors. The use of advertising campaigns can reinforce the risk of getting caught. TfL's current advertising campaign, highlighting the invisibility of ticket inspectors (see figure 1), is an example of this approach.

Figure 1: anti-fare evasion advertisement on a London bus (author's own)

2.2 WHO

The next question is *who* is fare evading? This research has evolved out of the question of *how* to stop people evading and has been used to support the same policy approach. If a more refined picture of who is fare evading can be developed, then resources can be used more effectively to target these groups. However, it has produced some contradictory results, providing the first hints that something is missing from the current model.

A number of things can be said about fare evaders. Unsurprisingly, they are more likely to be dishonest (Delbosc & Currie, 2016a), and they are more likely to exhibit thrill-seeking behaviour (Delbosc & Currie, 2016a; Bucciol, et al., 2013). They are more likely to be men (Cools, et al., 2018; Bucciol, et al., 2013; Tonglet, 2001; Hofmann, et al., 2017; Barabino, et al., 2013) and young (Cools, et al., 2018; Hofmann, et al., 2017; Barabino, et al., 2015; Bucciol, et al., 2013). Fare evasion behaviour is more common amongst students of all ages (Reddy, et al., 2011; Barabino, et al., 2015).

However, other results indicate that it is not possible to build an image of a typical fare evader. (Delbosc & Currie, 2016a) and (Troncoso & de Grange, 2017) found that fare evasion decreased as unemployment increased. In contrast (Barabino, et al., 2015) and (Bucciol, et al., 2013) found that the unemployed were more likely to fare evade.

A similarly ambiguous relationship is seen with income. (Delbosc & Currie, 2016a), (Guarda, et al., 2016a), (Guarda, et al., 2016b) and (Reddy, et al., 2011) all saw increased levels in fair evasion in low income neighbourhoods. The same pattern has been noted in other examples of deviant behaviour, such as shoplifting (Tonglet, 2001). In contrast, (Delbosc & Currie, 2019) noted that evaders were more likely to be well-educated higher earners. This is similar to the patterns seen in tax evasion, where increased income and education are associated with increased evasion (Hofmann, et al., 2017).

Likewise, (Delbosc & Currie, 2016a) and (Barabino, et al., 2015) noted that frequent users, familiar with the system were more likely to undertake fare evasion behaviour. However, (Bucciol, et al., 2013) saw increased evasion behaviour amongst occasional users.

Some insights undermine the foundational assumption that demographic traits determine fare evasion behaviour. Higher evasion rates amongst larger groups and on busy buses suggest fare evasion behaviour changes with circumstance. Fare evasion variously increases in the summer (Reddy, et al., 2011; Bucciol, et al., 2013) or winter (Keuchal & Laurenz, 2018). (Bucciol, et al., 2013) found that fare evasion was lower in large groups travelling together, while (Guarda, et al., 2016b) found it was higher. These changes could be reflective of the different travelling patterns of fare evaders when compared with the general population. However, it seems more plausible that fare evasion behaviour is modulated by the circumstances the passengers find themselves in, and that their considerations go beyond the risk of getting caught[4].

2.3 WHY

It is clear that demography is not destiny when it comes to fare evasion. The contradictions apparent in the literature could have one of two sources. They could be the sign of poor-quality work, or more probably, they could be the sign that the rationalist model is incomplete, and that other factors are at play when understanding fare evasion behaviour. It could be countered that cultural differences explain the different rates of compliance, but this, too, is to bring non-economic considerations into play.

Consider the example of traffic congestion. No level of demographic data will tell you why in some places congestion is higher in the morning, and some in the evening, no matter how sophisticated it is. It is not until these are seen as reflections of a deeper pattern – people organise their day around their jobs and this determines when they travel – they it becomes apparent contradictions are the result of the same underlying pattern.

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[4] Limited work has been done looking at the relationship between ethnicity and fare evasion, and it is not proposed to do any as part of this dissertation. This is partly because of the ethical issues involved, and partly because of the inefficacies associated with racial profiling (Delbosc & Currie, 2019). An example of this can be seen in (Bucciol, et al., 2013), which identified higher rates of fare evasion amongst non-European immigrants. Classification in this study was done on sight, therefore is at risk of conflating the actions of immigrants and black Italians. Additionally, any policy that targets non-white Italians would bring social discord for naught, as, due to the much larger size of the group, the majority of fare evasion behaviour will still be undertaken by white Italians (Durlauf, 2005).

The picture of the fare evader as a rational maximiser is incomplete. This has, in fact, been apparent all along, but too obvious to see. People are less willing to fare evade when this involves a face-to-face interaction (Suquet, 2010; Delbosc & Currie, 2016b). This is part of the reason why POE systems experience lower rates of fare evasion that POP systems. There is no additional risk in trying to fare evade in POE system, if caught trying to board without a ticket you are refused entry, but not fined. The economic risks are therefore the same (perhaps lower if POE systems use less inspectors), as are the economic gains. People are less willing to fare evade if it involves deception in an interaction with another human. This can also be seen in (Guarda, et al., 2016a)'s finding that the presence of uniformed staff reduces fare evasion, *whether or not* they have any enforcement capability. None of this is captured in the rationalist model.

To understand fare evasion behaviour therefore, it is therefore necessary to look beyond who fare evades and how to stop them, and ask why they do it.

The leading research in this area has been done by Alexa Delbosc and Graham Currie, who have looked extensively at fare evasion, and people's attitudes towards it, on public transport in Melbourne (Delbosc & Currie, 2016a; Delbosc & Currie, 2016b; Currie & Delbosc, 2017; Delbosc & Currie, 2019). Their work holds important insights for understanding fare evasion in London especially, given the close alignment in attitudes between Australians and Britons (Neale & Fullerton, 2010).

The rationalist model contains the assumption that fare evasion is a binary. An action either is, or is not, fare evasion, and all fare evasion is deliberate. Delbosc and Currie find that this does not accord with passenger's perceptions. What may objectively be called fare evasion is subject to gradation and degrees of acceptability. Intent is considered necessary for fare evasion to take place, and mitigating circumstances are relevant considerations. For example, malfunctioning equipment is nearly universally accepted as a justification for not buying a ticket, whereas jumping a

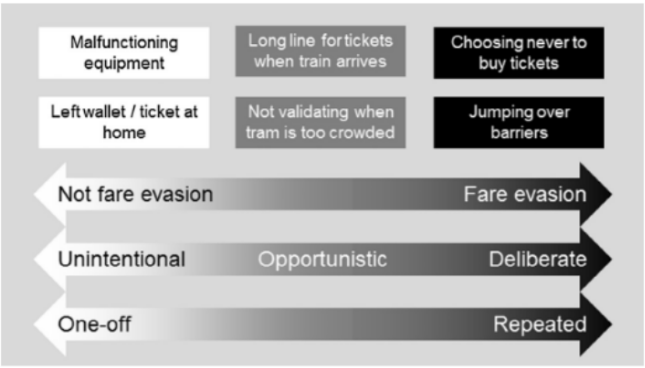

Figure 2: the spectrum of fare evasion (Delbosc & Currie, 2016b)

barrier is always considered wrong. In the middle is a grey area: travelling despite having forgotten your ticket, or not validating when faced with a long queue, are somewhere in between (see figure 2).

Further evidence that the popular conception of fare evasion is not binary can be seen in media coverage of incidents. Sympathy and the benefit of the doubt clearly lie with passengers who intend to pay but battle with technical difficulties (Brignall, 2019). This suggests a need for flexibility when it comes to enforcement.

This need for a flexible approach has long been recognised by inspectors themselves, who show a degree of flexibility when it comes to fining those without a ticket (Suquet, 2010). This flexible approach is incorporated into official policy guidelines (ATOC, 2013; LOROL, n.d.), though there may still be pressure from management to maximise fines collected and present a strong image of enforcement (Suquet, 2010). It is clear that enforcement action is still pursued when it is inappropriate, when there have clearly been technical difficulties (Brignall, 2019). This hints at the need to redefine the policy approach in closer correspondence to human nature.

An online survey of Melbourne residents resulted in a categorisation of three types of public transport users: never-evaders, unintentional evaders and deliberate evaders (Currie & Delbosc, 2017). The second group might more properly be called unplanned evaders: they did not set out to evade, but circumstances did not necessitate travelling without a ticket. However, they did give them the excuse to do so, e.g. a low balance on their smartcard. They share a permissive attitude towards fare evasion with deliberate evaders. People are less likely to evade in cities where there is strong ticketing control (Delbosc & Currie, 2016b) suggesting there is an element of choice in most fare evasion.

Different circumstances have been identified which contribute to the acceptability of fare evasion. The perception that public transport is a commercial service, as opposed to one run for public benefit, makes fare evasion more acceptable (Delbosc & Currie, 2016a; Currie & Delbosc, 2017; Delbosc & Currie, 2019). This highlights the suitability of London for further investigation, with its split between private and TfL-run services.

Additionally, protest at unsatisfactory service was given as a reason for fare evasion (Currie & Delbosc, 2017; Delbosc & Currie, 2016a; Delbosc & Currie, 2016b). When considering a low level of service, a long headway was found to have a greater effect on fare evasion that an infrequent service (Guarda, et al., 2016b). Similarly, servicescape can have an influence on deviant behaviour such as fare evasion and shoplifting (Delbosc & Currie, 2016b; Harris & Daunt, 2011; Reynolds & Harris, 2009).

Certain mitigating circumstances were deemed to make it acceptable to fare evade. Temporary lack of funds (Delbosc & Currie, 2016b), technical problems (Delbosc & Currie, 2016a; Delbosc & Currie, 2016b) and income constraints (Delbosc & Currie, 2016a) were all identified as reasons not to pay. Those taking short trips thought it was more acceptable not to pay (Delbosc & Currie, 2016a; Barabino, et al., 2015).

Understanding how people approach fare evasion provides a better understanding of the patterns identified in demographic studies. For example, the finding that fare evasion increased variously in the summer or winter suggest that extreme weather affects the perceived acceptability of not buying a ticket. (Bucciol, et al., 2013)'s finding that

fare evasion is lower among large groups had one important exception: groups of young men, travelling at lunch time. This demographic is the most likely to fare evade in general, indicating that group dynamics is important in determining acceptable behaviour.

Additional insight can be gained looking at the study of deviant behaviour in other fields. (Tonglet, 2001)'s study into shoplifting found that while a perception of economic gain was important in adults who shoplifted (but still not the most important factor), for schoolchildren the attitude of peer networks was important. This provides an explanation for (Bucciol, et al., 2013)'s observation of reduced fare evasion amongst family groups: people want to avoid the censure of their older family members. On their own, they don't care so much.

The above observations support the premise that the decision to fare evade goes beyond economic considerations. The importance of intent, and the concept of acceptable reasons, suggests that what may be broadly called moral reasoning plays a role in individuals' actions.

3. RESEARCH QUESTIONS

Even after the insight that fare evaders are not solely motivated by economic concerns, the focus of policy research has remained unchanged (Keuchal & Laurenz, 2018; Troncoso & de Grange, 2017).

The first question asked by this dissertation therefore is whether this nonetheless remains an effective approach. Despite the fact that moral reasoning is an important part of an individual's decision-making process, could it be the case that an economics-only framework remains efficient, and that moral considerations do not require a different policy approach? This will be found not to be the case. For a significant number of people, economic considerations do not play a large role in the decision to fare evade. This necessitates the setting out of a new model, incorporating both economic and moral motivations.

Testing this model will be the subject of the second question, seeking to understand which non-economic factors identified in the literature feature in people's decision-making, and how they do so.

The third research aim seeks to discuss how the new model can be used to inform policy approaches, especially in the context of London.

4. METHODOLOGY

141 users of public transport in London took part in an online survey. Following this, a self-identified group of volunteers took part in semi-structured interviews.

4.1 SURVEYS

The online survey consisted of 99 questions, divided into four sections: demographic data; character traits and political opinions; satisfaction with public transport in London and attitudes towards fare evasion[5]. The survey was constructed using UCL's Opinio survey tool and distributed via word-of-mouth along pre-existing social and professional networks. It was chosen not to restrict survey respondents to ensure a representative sample. This made the collection of data easier and it was not deemed necessary as the focus of the survey was relationship between individual fare evasion behaviour and economic and moral motivations.

The design of the questionnaire built on the insights of earlier work in the field. Since fare evasion is illegal behaviour, respondents will not necessarily provide honest answers (Currie & Delbosc, 2017). Several techniques were therefore used to minimise this effect. Firstly, the survey was introduced as looking at the problem of fare evasion from a social policy perspective, rather than from an enforcement perspective, to disassociate the questions that followed from criminal behaviour in people's mind (Cools, et al., 2018; Delbosc & Currie, 2016a; Delbosc & Currie, 2016b). Secondly, when collecting data on attitudes towards fare evasion, respondents were presented with passive, third-party statements. For example, respondents were asked whether they agreed or disagreed with the statement 'I think people can easily avoid being inspected if they don't have a ticket', rather than if they personally knew how to avoid ticket inspectors.

Thirdly, the phrase 'fare evasion' was not used anywhere in the survey, to avoid priming respondents to think of the activity as criminal. Instead, questions referred to 'travelling without a ticket' (Currie & Delbosc, 2017).

Fourth, it was necessary for the research aims of this dissertation to ask people directly about their own fare evasion behaviour. To limit the impact of this question it was asked at the very end of the survey.

To allow an effective comparison with the pre-existing literature, questions about acceptable reasons for fare evasion behaviour were designed to explore that motivations identified in the literature. Additionally, respondents were asked for their general perception on such matters, separate from and prior to questions about fare evasion, to examine the extent to which fare evasion attitudes were based on real world experiences.

Importantly, the anonymity of responses was emphasised throughout. The responses to the demographic portion of the survey were separated from the research-specific questions, including about the subjects' own fare-evasion behaviour, except in the aggregate. This was to ensure that no one could be identified by the responses they gave.

4.2 INTERVIEWS

13 semi-structured interviews were conducted with a self-selected group of survey respondents. The interviewees included a mix of genders and fare evasion behaviours. The format of semi-structured interviews ensured all relevant

[5] A transcript of the survey is available in appendix 2.

aspects were discussed, while giving the freedom to follow up on interesting comments, and thereby allow a thorough investigation of the subject, and avoid redundancy (Kvale, 2011). The conversational nature of the interviews allowed for a more intimate and natural mode of discourse, to encourage openness and honesty. It was this same reason that volunteers were used, rather than a selective sample of survey respondents. The interviews were conducted in public social settings, such as parks, cafés and pubs – the informality of the setting designed to further put the interviewee at ease and encourage open answers.

The structure for the interviews was taken from responses to questions about perceptions of public transport in London and attitudes towards fare evasion. Responses on personal information and character traits were deliberately excluded to help ensure anonymity and help put the subject at ease. Additionally, all participants were provided with an information sheet and asked to sign a consent form. All interviews were audio-recorded with the consent of the participants.

Semi-structured interviews were chosen because this dissertation seeks to develop and elaborate an understanding of human attitudes towards fare evasion, rather than to expound a series of statistical relationships. It is aimed to build an in-depth understanding of the participants' views on the topics, which may not be clear from their binary response to a set of pre-set statements. Through interviews, it can be understood what was really meant by an answer and avoids the need for an outside observer to attempt to attribute an individual's true motives to her. Interviews allows us to build up the individual's narrative account of the subject (Barribal & While, 1994; Rabionet, 2011). Such accounts provide a more intuitive and relatable assessment of attitudes towards a topic than can be provided through statistical analysis alone (Paxson, 2004; Carey, 2006).

5. RESULTS

The first aim of this dissertation is to determine whether the existing rationalist model is an effective enough predictor of behaviour to serve as a basis for policy. Were this the case the additional insight from Delbosc and Currie would be interesting from a sociological perspective, but not relevant for transport planning.

In this scenario, we would expect to see two things from the data: fare evaders would think it was easy to avoid inspectors and that it was worthwhile not paying for a ticket, while non-evaders would think ticket inspectors were effective and that it was cheaper to pay for a ticket. This is not what we see.

Nearly half (48%) of self-identified non-evaders thought it was easy to avoid ticket inspectors, while only 46% agreed it was cheaper to buy a ticket, given the risk of getting fined. This indicates that economic factors are not the primary reason for many for choosing to buy a ticket. This conclusion is supported by the literature. (Delbosc & Currie, 2016b) identified that a significant proportion of people still pay despite thinking it is economically beneficial not to pay.

This conclusion is supported by testimony from the interviewees. Even among those who though it was cheaper, in the long run, to pay for a ticket, economic considerations were not the primary motivation:

'No, I don't… I do buy a ticket because I'm a stickler for rules and I'm quite rigid in my attitudes to obeying them, so I quite angry at people who behave in way that's unfair, people getting something for nothing when everyone else is paying for it. I think it's quite unethical to travel without a ticket.' (Magda[6], non-evader)

Magda indicated that the risks associated with fare evasion were significantly higher than for other people. As a licensed professional she would stand to lose her employment if caught fare evading. Nonetheless, the consequences of getting caught still were not her primary reasons for complying:

'I think that even if I wasn't in a career where the risk was very high I still wouldn't do it, because it goes against my sense of morality and it goes against my sense of fairness.' (Magda)

Another interviewee explicitly addressed the idea of economic gain, and dismissed it as not enough to justify the behaviour, indicating that some moral reason was required to sanction the behaviour:

'I think having someone challenge you about your behaviour, and it's a behaviour which really isn't, it's not particularly culturally mandated [to fare evade], you know this idea, no one thinks they're being a bit of a Robin Hood because they didn't buy a ticket. It's a thing done for convenience, or personal advantage' (Philip, non-evader)

This idea of morality was prevalent in individuals' responses. Moral language, such as the use of words like 'fair' was commonplace:

'I feel that I have this personal connection with public transport – I wouldn't be able to get to work or to different parts of the city without it. I think it's fair to pay for it.' (Joe, non-evader)

'It's not fair if you travel on public transport and don't pay for it' (Jeremy, non-evader)

Additionally, amongst those that indicated that they did fare evade other factors were involved in the decision. One interviewee indicated that while they did often fare evade on public transport in London, they only did so on services run by private companies, and never on those run by TfL:

'No way am I going to pay the extra few quid to go a few extra stops… there's fat cats, shareholders making money off me anyway, for what I think should be a public service anyway, people shouldn't be making money.' (Max, frequent evader)

While highlighting that other factors were relevant in individual's decision making, interviewee comments did provide some support for the conclusion that economic considerations do play a role. The individual above limited their protest against privately-run transport companies only when they thought they could get away with it:

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[6] Pseudonyms are used throughout. Evasion behaviour is included for context, but all other information was hidden from the interviewer to ensure anonymity and avoid bias.

> *If you do the same thing, like a have a regular thing you're not paying for, that's stupid because you're going to get caught at some point, 'cause you're going to be… you've got like a pattern that can be detected, and I never evade paying for regular travel.' (Max)*

Interviewees also drew attention to other material benefits in their decision do travel without a ticket, beyond the financial benefit from doing so:

> *'I tend to travel without a ticket if I am in a rush or running late or don't have enough money to top up my Oyster card, or perhaps sometimes if it's, I don't know, late at night or if I know the station I'm getting off at doesn't have barriers.' (Tim, occasionally evader)*

Only one interviewee conformed to the idea of a fare evader underpinning the rationalist model:

> *'I stopped doing it because it stopped being profitable. If you fare evade you have to constantly watch out for ticket inspectors and it ruins the journey.' (John, non-evader)*

However, they considered their view of the world as unusual, in that they had no moral concern for other people, and that this is what determined the former and present behaviour regarding fare evasion:

> *'I don't really care about other people, I decide what I am going to do based on the benefit for me.' (John)*

Two conclusions can be drawn in reference to the first research aim. Firstly, it is clear that many people who do not fare evade do so for reasons other than the expected economic cost. Additionally, while economic factors do contribute to a positive decision to fare evade, they are not the only relevant factor. Other expected benefits play a role, as do completely non-economic factors, such as political objections to a privately-run transport system.

The policy approach defined by the rationalist model therefore, at best, leads to wasted resources. Attempts are made to dissuade groups from fare evading those who would never consider doing so, even with no enforcement. At worst, all the excessive enforcement could, in turn, discourage compliance. In a study of tax compliance, (Kirchler, et al., 2008) identified that a highly visible enforcement approach had the side effect of reducing trust in the system, and reducing compliance. If you act as if everyone is a criminal, they start acting like one – they are less willing to voluntary comply with tax payments or fares. By trying to make sure everyone pays you discourage them from paying. Evidence of this can be seen in media coverage of fare evasion stories. When trying to enforce what the author considered an illegitimate fine, one inspector was described as a 'jobsworth' and 'a member of the Waffen SS' in the *Mail Online* (Littlejohn, 2016)

5.1.1 A NEW MODEL

If the old model is dead, it is necessary to develop a replacement. The existing literature and new data indicate that this model must incorporate both economic and moral reasoning.

Tonglet's (2001) study on shoplifting can provide a framework for this new model. When determining willingness to shoplift, two factors were determined to be pre-eminent: positive attitudes towards shoplifting and a perception that it was economically beneficial. However, the former was more important, accounting for 51–57% of the variance in behaviour. To fit the evasion data, we substitute for positive attitudes the moral considerations, positive and negative, involved in people's decision to buy a ticket.

The model proposed explains the decision to fare evade as a result of the balance of economic and moral factors. Positive economic factors increase the chance of fare evasion, while positive moral factors increase it (see figure 3).

If the balance of factors tips to the left, fare evasion will occur, otherwise it will not. The traditional rationalist model

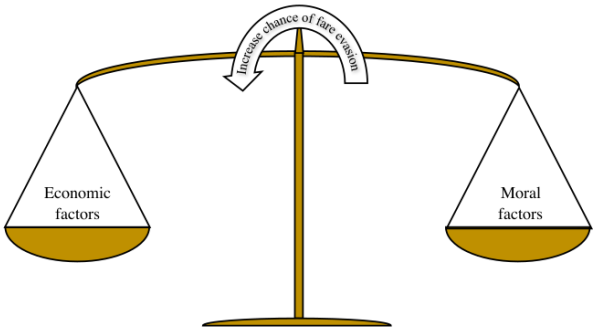

Figure 3: the scale model of economic and moral factors which determine the fare evasion outcome (author's own)

of fare evasion is in fact just a subset of this model. When nothing is loaded on the moral side of the scales, the outcome is entirely determined by whether or not the economic factors weigh out in favour of fare evasion. However, even in this case, it is necessary to expand the list of economic factors beyond the merely fiscal in light of the insights gathered in the interviews. Economic factors in the scale model incorporate any benefits that come from fare evading, such as time savings and increased convenience, as well as financial savings.

Likewise, the case with the non-evaders is easy to conceptualise. They are those individuals whose moral factors weigh so heavily that no economic gain could outweigh them. The usefulness of the model comes in the liminal case, those individuals who sometimes evade, and sometimes do not. These individuals are the most amenable to the behaviour change enforcement seeks to effect. The traditionalist model claims that this is because the perceived risk varies in different situations. However, the comments collected as part of this dissertation indicated that this picture is incomplete. The scale model, however, introduces an additional variable, that of moral factors. It proposed that different behaviour in different situations can be explained by the different weight of moral factors.

This group is Delbosc and Curries unintentional evaders, and as was seen there, this group can be thought of those looking for mitigating circumstances that allow them to evade. This is conceived as a way to lighten the moral load to tip the scales.

This idea of mitigating circumstances can be better understood by looking at the theory of neutralisation techniques (Sykes & Matza, 1957). The theory states that individuals who engage in deviant acts do not do so because they reject prevailing moral norms. In fact, perceived compliance with these norms is an important part of their self-image. Instead they provide reasons which neutralise any moral transgression and allow their continued membership of the moral mainstream. Sykes and Matza originally developed the theory to explain the behaviour of youth offenders, but it has since been expanded and applied to rape (Bohner, et al., 1998), murder (Levi, 1981), sex trafficking (Copley, 2014) and even genocide (Bryant, et al., 2017). It has been seen to be applicable wherever people violate norms they profess to believe in.

Five neutralisation techniques were initially set out: denial of responsibility, denial of injury, denial of victim, condemnation of the condemners, appeal to higher loyalties (Sykes & Matza, 1957). In the years since the theory was initially set out, this list has been expanded to include metaphor of the ledger (Klockars, 1974), defence of necessity (Minor, 1981), denial of humanity (Alvarez, 1997), victimisation, appeal to good character (Bryant, et al., 2017), claim of entitlement (McGregor, 2008), normal practice (Henry, 1990), claim of relative acceptability (Henry & Eaton, 1989) justification by comparison (Cromwell & Thurman, 2003).

These categories slide into one another: denial of injury turns into metaphor of the ledger if taken at aggregate, denial of responsibility turns into defence of necessity if the action is active not passive. The list and number of techniques is not itself important, more important is the underlying mechanism: people subscribe to a moral rule that tells them not to do something, neutralisation techniques provide them with a reason that the rule does not apply in this situation.

The list of acceptable circumstances of justifications for fare evasion identified with the literature correspond with neutralisation techniques (see table 1).

Table 1: fare evasion neutralisation techniques

Fare evasion behaviour	Neutralisation technique	Example
Commercial service	Denial of injury	'They've already made enough profit off me'
Forgotten ticket/smartcard	Denial of responsibility	'I meant to pay'
Technical problems	Denial of responsibility	'I wasn't able to pay'
Busy service	Victimisation	'I could barely get on the bus'
Poor-quality service	Denial of victim	'They can't expect to be paid for poor service'
Lack of funds	Defence of necessity	'I needed to make the journey'
Short trips	Claim of relative acceptability	'I don't do it on long trips'
Travelling in groups	Appeal to higher loyalties	'I can't be the one who shows my friends up'

Evidence for the use of these techniques can be found in the interviews. When justifying their fare evasion behaviour, one interviewee explicitly referenced the fines he had paid for previous journeys for not properly validating his ticket (denial of the victim/metaphor of the ledger):

> *I only do it when I've paid a fine recently. You know when you don't tap out on Oyster card and it charges you the full amount. Overall, I'm paying the same amount, if not more.' (Osman, occasional evader)*

Another called out the high price of public transport fares in London as their justification on not paying for longer journeys, and that they should be able to access more transport for the price paid (condemnation of the condemners):

> *I do think that travel in London is too expensive, and I think we're all paying for a larger share of the transport budget than we should be, I think that should be supported more through the state and because of that I wouldn't have a problem with thinking that I'm owed more for my money.' (Stuart, rare evader)*

The scale model also provides an explanation for some of the contradictions noted in the literature. (Troncoso & de Grange, 2017) described the decrease in fare evasion following an increase in unemployment as 'counterintuitive' (Troncoso & de Grange, 2017, p. 311), indicating a reliance on the rationalist model. Under the scale model it is seen that the loss of employment also results in the loss of a neutralisation techniques – defence of necessity. This increases the weight of the moral side of the equation, reducing the likelihood of fare evasion.

The widely observed relationship between low income and high evasion can be explained with regard to economic factors: as income falls the relative value of a ticket increases, even as moral weights are held steady. Additionally, there may be a sense of being treated unfairly, and owing society less, which reduces the moral side of the equation. By contrast, (Delbosc & Currie, 2019)'s observation that fare evasion is higher among well-educated higher earners can only be explained through the scale model. As with tax evasion, which also increases with income and education (Hofmann, et al., 2017), this could be attributed to a lack of a sense of obligation to wider society. A similar

phenomenon would explain the increased evasion amongst young men and students, who are more likely to reject social norms.

Fare evasion was noted to increase during the summer (Reddy, et al., 2011; Bucciol, et al., 2013). There is no explanation for this within the rationalist model. However, within the scale model, it is simply an extension of the same phenomenon that sees other forms of crime increase in hot weather (Field, 1992).

This new model also lets us see why the minor, infrequent and accidental evaders are the ones who act the most indigent. As Sykes and Matza noted, the users of neutralisation techniques believe themselves to be part of the moral majority; their use of neutralisation techniques represents an attempt to convince themselves of this fact. Therefore, when they are treated as a fare evader, their moral character is questioned, and as a result they are like to become angry and defensive. Habitual and deliberate evaders intentionally reject conventional morality, therefore do not take it personally when this is pointed out to them.

5.2 TESTING THE NEW MODEL

The scale model was developed because the existing model did not adequately explain fare evasion behaviour. Does it do any better against the data?

(Delbosc & Currie, 2019) identified that the people's perception of fare evasion existed on a spectrum, and that not all instances of travelling without a ticket constitute fare evasion in the pejorative sense. This is the essence of the scale model. Where neutralisation techniques lessen moral weights enough to allow fare evasion, this action was taken within this moral grey area. This was supported by the data: nearly three-quarters (73%) of respondents agreed that it was acceptable to travel without a ticket if it was by accident, noticeably higher than the proportion who thought it was always wrong (54%).

This softening of lines can be seen in the interviews also. One interviewee, who described himself as an absolutist with regards to fare evasion, allowed that mitigating circumstances made the behaviour acceptable. When presented with a scenario where an individual had forgotten their ticket, and needed to make a particular train – which was leaving soon – in order to make to it work on time, he responded:

> *Well, I think in that case I think I probably would fare evade, to make sure I would get to work on time. I would feel guilty about it, but if I knew I would probably get away with it, I would do it.' (Jeremy, non-evader)*

His comments also provide another example of the interplay between moral and economic factors when coming to a decision.

The survey data also provide evidence for the way moral reasoning works within the scale model, including the use of neutralisation techniques. I will explore this by looking at the relationship between dissatisfaction, income and the private management of public transport, and fare evasion.

Dissatisfaction was identified in the literature as a reason for fare evasion (Delbosc & Currie, 2016a; Delbosc & Currie, 2016b; Currie & Delbosc, 2017; Barabino, et al., 2015; Guarda, et al., 2016b). Within the survey, 23% of respondents agreed that if public transport fails to deliver a good service it is acceptable not to pay for it. This figure had a closer relationship with personal evasion behaviour than the actual perceived quality of public transport. While there was no relationship between the identified quality of public transport and the willingness to accept poor quality as an excuse for fare evasion, there was a relationship with self-reported evasion behaviour. 12.5% of non-evaders though it was justifiable to evade in the case of poor-quality public transport, while 42% of fare evaders thought so, demonstrating quality is used as a reason to justify their behaviour. This is an example of denial of victim: 'they don't deserve to be paid if they can't provide a decent service.'

This relationship can also be seen in the relationship between shortness of funds and fare evasion. 66% of respondents agreed it was acceptable to travel without a ticket if an individual needed to make the journey but could not afford to. This result is linked to an individual's perceptions of the affordability of fares in London. 63% of those who though it was acceptable to fare evade because of lack of funds though London transport fares were excessive, versus 46% of those who did not. This interpretation is borne out through the interviews.

> *'[It is] unjustified to stop people who can't afford travel but need to satisfy their needs' (Stuart, rare evader)*
>
> *'I think [fare evasion is acceptable] especially when you think about how, for lots of people public transport is just a necessary feature of their lives because it's the nature of low paid work that it's often far away from where you live and quite difficult hours.' (Philip, non-evader)*

This contrasts with those who did not think public transport was unaffordable in London, and therefore do not think lack of funds was justifiable for travelling without a ticket:

> *[Fare evasion is not acceptable because] they have discount or free tickets available for people who require cheaper transport, like you can get free travel if you're disabled and if you're unemployed you can get free bus travel, and compared to most of the country transport in London is extremely cheap, particularly if you get the bus.' (Magda, non-evader)*

Fare evasion was correlated with the perception that a lack of funds makes it acceptable to fare evade. 42% of those who thought that it was ok to fare evade because of cost admitted to fare evasion against 8% who disagreed. However, the level of fare evasion did not appear to be correlated to income, suggesting that this result is reflective of another neutralisation technique: condemnation of the condemners ('they've made it too expensive for people to travel').

(Currie & Delbosc, 2017) identified that there was a perception that fare evasion was more acceptable on commercially-run services than on services run for public benefit. London is the perfect location to test this theory, given its mix of publicly- and privately-run public transport services.

These is some evidence for this phenomenon in London. In addition to the comments from Max noted above, 9% of the respondents though it was acceptable to fare evade on private services, but not on TfL services. However, unlike the dissatisfaction and high-fare reasons discussed above, this group was no more likely to fare evade. They were, however, more likely to believe that TfL should run all public transport in London, indicating their opinion on fare evasion was related to their political opinions about the rail sector in Britain.

This result highlights that tight relationship between transport planning, and individual's perception of it, and fare evasion, which the rationalist model ignores. Through the lens of the scale model and the survey results we can have a better understanding of the relationship between dissatisfaction and a perception that fares are too high on one hand and fare evasion on the other. It is not the case that these individuals will always fare evade, and the excuse provided is just lip service. Rather, they recognise that there is an economic benefit to fare evading, but have moral qualms about it. However, given the poor quality of service, or the price of the fares, these qualms break down, and they allow themselves to fare evade. If this excuse did not exist – if the fares were lower, or the quality higher – they would be robbed of their neutralisation technique, making it harder to justify the fare evasion behaviour. This is different to the conclusion of the rationalist model, which states that fare evasion would continue regardless. This difference plays an important role in policy recommendations.

6. POLICY

The data collected support the conclusion that people use neutralisation techniques in a manner consistent with the scale model. They use them to temporarily suspend their moral objection to the behaviour, to allow the economic considerations to tip the scales in favour of fare evasion. The current approach to inspection policy only targets the economic considerations, can a better approach be found that also targets moral considerations?

Two solutions present themselves. The first is to deal with the problem. This is included in full knowledge that it is not the most practical suggestion. Fares would be lower if they could be, and service would be better. It is presented instead to highlight that fare evasion is intimately linked to transport planning in a way that the current model does not recognise. In a specific example, frequency and headway are two ways of looking at the same problem. But headway has a stronger relationship with fare evasion (Guarda, et al., 2016b). Therefore, while 'fixing the problem' might suggest deploying more buses, in truth better management alone would potentially have a positive effect on fair evasion.

The other solution is to neutralise the neutralisation technique itself. This is in effect targeting passengers' moral reasoning, and making it harder to discount their moral concerns. (Dootson, et al., 2016) identified eight mechanisms by which people determine consumer perspective and influence decision making. The first two of these are official

classification and perceived risk, which are the only two the current approach relies upon. As we have seen, people often disagree with the official classification, and the perceived risk does not influence the most important part of the decision-making process.

Other mechanisms are relevant in choose in the moral path. For example, people base their decisions on the perceived outcomes of actions. Large organisations, such as TfL or a rail company, are not viewed sympathetically, and harms to them will not be considered significant, especially from comparatively small acts like fare evasion. This is what allows people to use the denial of injury technique. A campaign that could successfully counter this would emphasise the human harm of fare evasion, such as cutbacks to service that support vulnerable users. This is a similar approach the that already used by TfL in campaigns to reduce violence against staff. It would change the moral calculus involved in fare evasion, making it harder to use the denial of injury technique and thereby reducing fare evasion.

The relationship between the public/private operation of public transport and fare evasion highlights other approaches. For example, the Thameslink, Southern and Great Northern franchise operates on a similar model to London Overground, whereby revenue is retained by the state and Govia get a fixed fee to operate the service (Topham, 2014). The key difference is private versus public branding. (Currie & Delbosc, 2017)'s findings in Melbourne highlighted that it was the perception that a service was private that made it acceptable to fare evade, separate from the actual contractual arrangements between company and state. Therefore, in a UK context, restoring the British Rail branding (or TfL branding within London) without changing the industry structure in any way, may have a positive impact on fare evasion rates by creating the image of a public service and making neutralisation (denial of the victim) more difficult.

Moral behaviour can also be primed through certain actions, encouraging individuals to behave more morally (Dootson, et al., 2016). For example, applicants asked to sign at the beginning of a form rather than at the end are less likely to commit insurance fraud. The reverse is also true, and individuals can be primed to be less honest. When rail companies leave barriers unstaffed and open it sends a message that it is acceptable to ignore the barriers. This is a stronger message than that delivered by a station with no barriers. What initially start out as neutralisation techniques become habitual behaviours (Cromwell & Thurman, 2003). This identifies an unseen cost in leaving barriers not identified in the rationalist model: as well as reducing the risk of getting caught, you remove the moral stigma of walking through the barriers. The primes people to think of the behaviour as acceptable, potentially increasing fare evasion in the long run.

7. CONCLUSION

This dissertation set out to establish whether the current enforcement approach to fare evasion is effective. This approach is based on a model of a passenger decision making that assumes the actor to be a rational utility-maximiser, only concerned with the financial balance of any action. It was seen from the literature that this approach has developed a great degree of sophistication. Perceived risk of being caught by an inspector is the important in determining fare evasion behaviour, leading to policy which includes tactics such as advertising to scare passengers into paying.

Additional, demographic research has identified young male students as an efficient group to target to prevent the most fare evasion behaviour.

However, demographic research also indicated the limits of rationalist approach. Some studies found that fare evasion declined with increasing unemployment, and that well-educated higher earners were more likely to avoid paying for a ticket. These results are the opposite of what would be expected based on the traditional utility-maximising approach. Delbosc and Currie's work in Melbourne highlighted the limitations of the traditional approach: fare evasion is not a binary concept; the actions of a significant proportion of the population exist in a grey area. Travelling without a ticket can be acceptable, especially if one finds oneself in mitigating circumstances. However, these insights have not been incorporated into the policy approach, which remains focused on using risk to convince passengers it is not worth not paying.

A survey of London transport users found that the current transport approach is misguided. It found that for many users, economic considerations are not the reason they choose to pay for public transport. Additionally, even among those who do not always pay, considerations beyond it being financial beneficial drove their actions. This demonstrates the current approach is at best inefficient, targeting people that would never choose to fare evade. In the long run, heavy enforcement discourages compliance, and therefore the current approach may be making people more willing to evade, the opposite of the intended approach.

To resolve the identified problem in the current approach, a new model for fare evasion behaviour was proposed, which incorporates moral considerations in potential fare evaders' thinking. In this scale model the ultimate decision about whether to fare evade is determined by the balance of economic and moral considerations. To understand how the moral calculus works, it is necessary to turn to Sykes and Matza's theory of neutralisation techniques. Using these techniques, individuals are able to provide themselves reasons that the moral considerations do not apply in this case. Either, as a private company, the transport providers does not deserve the money; or, the service is too expensive, and people shouldn't be expected to pay that much to use it; or, the service is so bad, they don't deserve my money. Whatever the case, the moral side of the scale is lightened somewhat, allowing it tilt to the left and the fare evasion to happen.

This new understanding recommends new policy. It is easier to dismiss the harm done to an organisation, so an advertising campaign which draws attention to the human victims of fare evasion would discourage people from fare evasion. This would be a promising future direction of study to further test the scale model proposed in the dissertation. An advertising campaign on buses or trains, highlighting individuals hurt by fare evasion, in the manner of TfL's anti-violence campaign. The long-term results of such a campaign, compared with a suitable control area would provide evidence of the viability of the scale model as a tool for setting policy.

Further experiments would also help overcome limitations in the current study. While the survey results and especially the interviews strongly support my conclusions here, we could more confident in the results if more people were surveyed. They survey received one round of beta testing; more testing would ensure that the questions themselves do

not generate misleading results. The lack of definition of terms such as 'travelling without a ticket' allowed people to impose their own meanings. This term could have understood only as intentional travelling without a ticket, or unacceptable travelling without a ticket, clouding the result of questions seeking to determine moral attitudes. This is evident in the fact that the sum of seemingly distinct choices adds up to more than 100%.

The interview sample was collected via my existing social, professional and academic networks. It cannot be discounted therefore that the a more representative sample of interviewees would produce a different result. The most effective sample could be collected by working directly with TfL or another transport company and incorporating the interviews into their own data collection efforts. Additionally, close cooperation with TfL would allow the insights to be corroborated with secondary data, such as the prevalence of students amongst the fare evasion population, or different rates of evasion in areas with different demographic profiles. TfL where approached to collaborate with this project, but they declined.

Overall however, this dissertation makes an important contribution to fare evasion research. The insights of behavioural economics over the past few years have shown that people do not act like rational profit maximisers in the marketplace. The results presented here demonstrate that they do not do so when it comes to fare evasion. The expansion of the theory of neutralisation techniques into a new area provides a powerful tool for understanding why people choose not to pay. It is easy to treat everyone like a criminal and scare them into submission. I have shown here that it is more effective to invite people into the transport planning process, and understand their concerns on the one hand, and to demonstrate to them the importance of paying for public transport on the other.

8. APPENDICES

8.1 APPENDIX 1: BIBLIOGRAPHY

Alm, J., 2012. Measuring, explaining, and controlling tax evasion: lessons from theory, experiments and field studies. *International Tax and Public Finance,* Volume 19, pp. 54-77.

Alvarez, A., 1997. Adjusting to Genocide: The Techniques of Neutralization and the Holocaust. *Social Science History,* 21(2), pp. 139-178.

ATOC, 2013. *Arrangements for travel ticket irregularities*. [Online] [Accessed 16 June 2019].

Barabino, B., Salis, S. & Useli, B., 2013. A modified model to curb fare evasion and enforce compliance: Emprical evidence and implications. *Transportation Research Part A,* Volume 58, pp. 29-39.

Barabino, B., Salis, S. & Useli, B., 2015. What are the determinants in making people free riders in proof-of-payment transit systems? Evidence from Italy. *Transportation Research Part A,* Volume 80, pp. 184-196.

Barribal, K. L. & While, A., 1994. Collecting data using a semi-structured interview: a discussion paper. *Journal of Advanced Nursing,* Volume 19, pp. 328-335.

Bartlett, A., 2019. [Interview] (11 April 2019).

Bijleveld, C., 2007. Fare dodging and the strong arm of the law: An experimental evaluation of two different penalty schemes for fare evasion. *Journal of Experimental Criminology,* Volume 3, pp. 183-199.

Bohner, G. et al., 1998. Rape Myths as Neutralizing Cognitions: Evidence for a Causal Impact of Anti-victim Attitudes on Men's Self-Reported Likelihood of Raping. *European Journal of Social Psychology,* 28(2), pp. 257-268.

Bonfanti, C. & Wagenknecht, T., 2010. Human factors reduce agression and fare evasion. *Public Transport International,* 59(1), pp. 28-32.

Brignall, M., 2019. *Passengers threatend with court for using screenshot of e-ticket*. [Online] Available at: https://www.theguardian.com/money/2019/jun/29/passenger-threatened-with-court-for-using-screenshot-of-e-ticket
[Accessed 2 August 2019].

Bryant, E., Brooke, E., Nyseth Brehm, H. & Christopher, U., 2017. Techniques of Neutralization and Identity Work Among Accused Genocide Perpetrators. *Social Problems,* Volume 0, pp. 1-19.

Bucciol, A., Landini, F. & Piovesan, M., 2013. Unethical behaviour in the field: Demographic characteristics and beliefs of the cheater. *Journal of Economic Behaviour & Organization,* Volume 93, pp. 248-257.

Bus and Coach, 2013. *TfL: Borismasters "will save millions"*. [Online] Available at: https://web.archive.org/web/20140107210753/http://www.busandcoach.com/newspage.aspx?id=7650&categoryid=0
[Accessed 23 August 2019].

Carey, J., 2006. *What Good are the Arts?*. London: Faber & Faber.

Cools, M., Fabbro, Y. & Bellemans, T., 2018. Identification of the determinants of fare evasion. *Case Studies on Transport Policy,* Volume 6, p. 348–352.

Copley, L., 2014. Neutralizing Their Involvement: Sex Traffickers' Discourse Techniques. *Feminist Criminology,* 9(1), pp. 45-58.

Crerar, P., 2015. *Revealed: Tube stations where the barriers are being kept open… giving free ride to fare dodgers.* [Online]
Available at: https://www.standard.co.uk/news/transport/revealed-tube-stations-where-the-barriers-are-being-kept-open-giving-free-ride-to-fare-dodgers-a3089191.html
[Accessed 26 August 2019].

Cromwell, P. & Thurman, Q., 2003. the devil made me do it: use of neutralizations by shoplifters. *Deviant Behaviour,* 24(6), pp. 535-550.

Currie, G. & Delbosc, A., 2017. An empircal model for the the psycology of deliberate and unintentional fare evasion. *Transport Policy,* Volume 54, p. 21–29.

Currie, G. & Reynolds, J., 2016. Evaluating Pay-on-Entry Verus Proof-of-Payment Ticketing in Light Rail Transit. *Transportation Research Record,* Volume 2540, pp. 39-45.

Delbosc, A. & Currie, G., 2016a. Cluster analysis of fare evasion bahviours in Melborne, Australia. *Transport Policy,* Volume 50, p. 29–36.

Delbosc, A. & Currie, G., 2016b. Four types of fare evasion: A qualitative study from Melbourne, Australia. *Transportation Research Part F,* Volume 43, pp. 254-264.

Delbosc, A. & Currie, G., 2019. Why do people fare evade? A global shift in fare evasion research. *Transport Reviews,* 39(3), pp. 376-391.

Dilley, S. & Bardo, M., 2019. *Fare dodging costs London £100m a year*. [Online] Available at: https://www.bbc.co.uk/news/uk-england-london-47358028 [Accessed 31 March 2019].

Dootson, P., Johnston, K. A., Beatson, A. & Lings, I., 2016. Where do consumers draw the line? Factors informing perceptions and justifications of deviant consumer behaviour. *Journal of Marketing Management,* 32(7-8), pp. 750-776.

Dreborg, K. H., 1996. Essence of Backcasting. *Futures,* 28(9), pp. 813-828.

Durlauf, S. N., 2005. Racial Profiling as a Public Policy Question: Efficient, Equity and Ambiguity. *The American Economic Review,* 95(2), pp. 132-136.

Field, S., 1992. The Effect of Temperature on Crime. *The British Journal of Criminology,* 32(3), pp. 340-351.

Guarda, P. et al., 2016a. Decreasing far evasion without fines? A microeconomic analysis. *Research in Transportation Economics,* Volume 59, pp. 151-158.

Guarda, P., Galilea, P., Paget-Seekins, L. & de Dios Ortúzar, J., 2016b. What is behind fare evasion in urban bus systems? An economteric approach. *Transportation Research Part A,* Volume 84, pp. 55-71.

Harris, L. C. & Daunt, K. L., 2011. Deviant customer behaviour: A study of techniques of neutralisation. *Journal of Marketing Management,* 27(7-8), pp. 834-853.

Henry, S., 1990. *Degrees of deviance: Student accounts of their deviant behaviour*. Salem: Sheffield Publishing.

Henry, S. & Eaton, R., 1989. *Degrees of deviance: Student accounts of their deviant behaviour*. Salem: Sheffield Publishing.

Hofmann, E., Voracek, M., Bock, C. & Kirchler, E., 2017. Tax compliance across sociodemographic categories: Meta-analyses of survey studies in 111 countries. *Journal of Economic Psychology,* Volume 62, pp. 63-71.

IanVisits, 2017. *The future of rail travel will be ticketless*. [Online] Available at: https://www.ianvisits.co.uk/blog/2017/09/21/the-future-of-rail-travel-will-be-ticketless/ [Accessed 6 July 2019].

Keuchal, S. & Laurenz, K., 2018. The effects of a higher ticket inspection rate in a medium-size public transportation system. *Transportation Research Procedia,* Volume 31, pp. 56-66.

Kirchler, E., Hoelzl, R. & Wahl, I., 2008. Enforced verus voluntary tax compliance: The "slippery slope" framework. *Journal of Economic Psychology,* Volume 29, pp. 210-225.

Klockars, C., 1974. *The Professional Fence*. New York: Free Press.

Kvale, S., 2011. *Doing Interviews.* London: SAGE Publications, Ltd.

Lee, J., 2011. Uncovering San Francisco, California, Muni's Proof-of-Payment Patterns to Help Reduce Fare Evasion. *Transportation Research Record,* Volume 2216, pp. 75-84.

Levi, K., 1981. Becoming a Hit Man: Neutralization in a Very Deviant Career. *Journal of Contemporary Ethnography,* 10(1), pp. 47-63.

Littlejohn, R., 2016. *How a £1.50 bus fare turned into a £750 fine: RICHARD LITTLEJOHN says his friend's experience at the hands of a jobsworth bus inspector proves justice has been turned on its head*. [Online] Available at: https://www.dailymail.co.uk/debate/article-3892074/How-1-50-bus-fare-turned-750-fine-RICHARD-LITTLEJOHN-says-friend-s-experience-hands-jobsworth-bus-inspector-proves-justice-turned-head.html
[Accessed 31 August 2019].

LOROL, n.d. *Revenue Protection Inspector guide*. [Online].

McGregor, S. L. T., 2008. Conceptualizing immoral and unethical consumption using neutralization theory. *Consumer Sciences Research Journal,* 36(3), pp. 261-276.

Minor, W. W., 1981. Techniques of Neutralization: A Reconceptualization and Emprical Examination. *Journal of Research in Crime and Delinquency,* 18(2), pp. 295-318.

Neale, L. & Fullerton, S., 2010. The international search for ethics norms: Which consumer behaviours do consumers consider un(acceptable)?. *Journal of Services Marketing,* 24(6), pp. 476-486.

Paxson, H., 2004. *Making Modern Mothers: Ethics and Family Planning in Urban Greece*. London: University of California Press, Ltd.

Purley, P. o., 2017. *The Ninety Second Railway: Making the Victoria The Most Frequent Metro in the World*. [Online] Available at: https://www.londonreconnections.com/2017/ninety-second-railway-making-victoria-frequent-metro-world/
[Accessed 6 July 2019].

Rabionet, S. E., 2011. How I Learned to Design and Conduct Semi-structured Interviews: An Ongoing and Continuous Journey. *The Qualitative Report,* 16(2), pp. 563-566.

Rail Technology Magazine, 2016. *Khan promises £200m for London Underground step-free access*. [Online] Available at: http://www.railtechnologymagazine.com/HS2/khan-promises-200m-for-london-underground-step-free-

access/158527
[Accessed 23 August 2019].

Railway Gazette, 2010. *Crosrail seeks privately-financed rolling stock*. [Online] Available at: https://www.railwaygazette.com/news/single-view/view/crossrail-seeks-privately-financed-rolling-stock.html
[Accessed 23 August 2019].

Reddy, A. V., Kuhls, J. & Lu, A., 2011. Measuring and Controlling Subway Fare Evasion: Improving Safety and Security at New York City Transit Authority. *Transportation Research Record,* Volume 2216, pp. 85-99.

Reynolds, K. L. & Harris, L. C., 2009. Dysfunctional Customer Behavior Severity: An Empirical Examination. *Journal of Retailing,* 85(3), pp. 321-335.

Suquet, J.-B., 2010. Drawing the line: how inspectors enact deviant bahaviour. *Journal of Service Marketing,* 24(6), p. 468–475.

Sykes, G. M. & Matza, D., 1957. Techniques of Neutralization: A Theory of Delinquency. *American Sociological Review,* 22(6), pp. 664-670.

TfL, 2019. *Caps and Travelcard prices*. [Online] Available at: https://tfl.gov.uk/fares/find-fares/tube-and-rail-fares/caps-and-travelcard-prices?intcmp=54720
[Accessed 23 August 2019].

Tonglet, M., 2001. Consumer misbehaviour: An exploratory study of shoplifting. *Journal of Consumer Behaviour,* 1(4), pp. 336-354.

Topham, G., 2014. *FirstGroup loses Thameslink franchise to Go-Ahead joint venture*. [Online] Available at: https://www.theguardian.com/business/2014/may/23/firstgroup-loses-thameslink-franchise-go-ahead-joint-venture
[Accessed 31 August 2019].

Troncoso, R. & de Grange, L., 2017. Fare evasion in public transport: A time series approach. *Transportation Research Part A,* Volume 100, pp. 311-318.

Webster, P., 2019. *The Boris buses have left a lasting legacy*. [Online] Available at: http://camdennewjournal.com/article/johnsons-new-buses-have-left-a-legacy
[Accessed 24 August 2019].

8.2 APPENDIX 2: SURVEY QUESTIONNAIRE

- How old are you?
  - 16 or under
  - 17–24
  - 25–34
  - 35–44
  - 45–59
  - 60–69
  - 70 and above
  - Prefer not to say
- What is you gender identity?
  - Man
  - Woman
  - Non-binary
  - Other
  - Prefer not to day
- What is the highest level of education you have completed?
  - None
  - Sixth form/college
  - Technical qualification/apprenticeship
  - Bachelor's degree
  - Master's degree
  - Doctorate
  - Professional/technical degree
  - Prefer not to say
- What is your current employment status?
  - Full-time employed
  - Part-time employed
  - Self-employed
  - Student
  - Retired
- What is your current income?
  - Prefer not to say
  - Less than £20,000
  - £20,000–£30,000
  - £30,001–£40,000
  - £40,001–£50,000
  - £50,001–£60,000
  - More than £60,000
- Do you consider yourself to have a disability?
  - Yes
  - No
  - Prefer not to say
- How often do you use public transport in London?
  - Every day
  - Most days of the week
  - More than twice a week
  - At least once a week
  - More than twice a month
  - At least once a month
  - A few times a year
- Are you entitled to free or discounted public transport in London?
  - Yes
  - No
- Which forms of public transport do you use regularly in London?
  - Bus
  - Tram
  - London Underground
  - London Overground
  - Trains
  - DLR
  - Other
- Which Underground lines do you use regularly (if the respondent indicated they use London Underground)?
  - Bakerloo
  - Central
  - Circle
  - District

    - Hammersmith & City
    - Jubilee
    - Metropolitan
    - Northern
    - Piccadilly
    - Victoria
    - Waterloo & City
- Which rail services do you use regularly (if the respondent indicated they use trains)?
    - Chiltern Railways
    - c2c
    - Great Northern
    - Great Western Railways
    - Greater Anglia
    - Heathrow Express
    - London Northwestern Railway
    - South Western Railway
    - Southeastern
    - Southern
    - Thameslink
    - TfL Rail
- Do you agree or disagree with the following statements?
    - I would like to try an 'extreme' sport, such as bungee jumping
    - I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional or illegal
    - I sometimes avoid doing things I want because of the risk something will go wrong
- Do you agree or disagree with the following statements?
    - Honesty is always the best policy
    - If you can save money by bending the rules, that's a win on your side
    - A white lie is often a good thing
- Do you agree or disagree with the following statements?
    - When people annoy me, I keep it to myself
    - Some of my friends think I am hot-headed
- Do you agree or disagree with the following statements?
    - On the whole, I am satisfied with myself
    - I feel that I do not have much to be proud of
- Do you agree or disagree with the following statements?
    - I see myself as extroverted and enthusiastic
    - I see myself as reserved and quiet
- Do you agree or disagree with the following statements?
    - It is important to follow agreed social norms
    - I care more about what my friends think is good than the opinion of wider society
    - I try to do what my family think is right
- Do you agree or disagree with the following statements?
    - If you don't agree with something it is important to resist it in any way you can
    - The proper way to try and change things is by voting in elections
    - Laws are generally set by those who know better, and should be followed
- Do you agree or disagree with the following statements?
    - I think London is a very unequal society that benefits the richest, who have better access to public services
    - I think London is an unequal society, but generous public services make it less unequal
    - I think London is an equal society, where everyone is able to succeed
- Do you agree or disagree with the following statements?
    - All public transport in London should be run by TfL, private companies shouldn't be involved
    - I like the current model – it's ok for private companies to involved in the running of some public transport
    - All public transport should be run by private companies. They are more efficient at delivering a service
- Do you agree or disagree with the following statements?
    - I am highly satisfied with the quality of public transport in London
    - Public transport in London is generally reliable but often dirty and uninviting
    - Public transport in London is clean and welcoming, but I am frequently frustrated by poor service
    - The quality of public transport in London is very poor
- Do you agree or disagree with the following statements?
    - Public transport fares in London are fair and easy to understand
    - Public transport fares in London are excessive
    - Public transport fares in London are confusing and sometimes it is hard to buy the right ticket
    - I think the price structure of public transport fares in London treats the most vulnerable in society unfairly
- Do you agree or disagree with the following statements?
    - Transport is a public service, and should be free for everyone to use
    - Public transport is a useful service, which it is fair to pay for
- Do you agree or disagree with the following statements?
    - It is always wrong to travel on public transport without a ticket
    - It is generally wrong to travel on public transport without a ticket, but it's forgivable if it happens by accident

- It is mostly wrong to travel without a ticket, but it's ok if you don't have the time or money to get one
- It's ok to travel without a ticket, it doesn't hurt anyone

- Do you agree or disagree with the following statements?
  - Public transport is supposed to deliver a service, so it is ok not to pay for it if it does not deliver that service
  - Public transport relies on fares to keep going, if you don't pay the service will just get worse
- Do you agree or disagree with the following statements?
  - I think some people don't buy a ticket because they can't afford it, but still need to make the journey
  - Public transport in London is cheap enough for everyone, people who don't pay just don't want to
  - If people can't afford the ticket, they should cut back on other spending
- Do you agree or disagree with the following statements?
  - I know a lot of my friends travel without a ticket on public transport
  - I think travelling without a ticket is common, but my friends don't do it
  - I think travelling without a ticket is rare
- Do you agree or disagree with the following statements?
  - People aren't really bothered when they see other people travelling without a ticket
  - Most people expect you to pay for a ticket, and get annoyed when you don't
- Do you agree or disagree with the following statements?
  - It is cheaper to travel without a ticket, even if you get caught and have to pay a fine
  - It is cheaper to buy a ticket, the fines that come with being caught are too high
- Do you agree or disagree with the following statements?
  - I think ticket inspectors are effective. Most people who travel without a ticket are likely to get caught
  - I think it is easy to avoid ticket inspectors if you don't have a ticket
- Do you every travel on public transport without a ticket?
  - No, never
  - Rarely, and only when it can't be avoided
  - Occasionally, when I'm in a rush or only going a few stops
  - Often, when I think I can get away with it

8.3 APPENDIX 3: RISK ASSESSMENT

RISK ASSESSMENT FORM
FIELD / LOCATION WORK

The Approved Code of Practice - Management of Fieldwork should be referred to when completing this form
http://www.ucl.ac.uk/estates/safetynet/guidance/fieldwork/acop.pdf

DEPARTMENT/SECTION BARTLETT SCHOOL OF PLANNING
LOCATION(S)
PERSONS COVERED BY THE RISK ASSESSMENT Hedley Mellor

BRIEF DESCRIPTION OF FIELDWORK Interivews with members of the public and enforcement officers at transport service providers.

Consider, in turn, each hazard (white on black). If **NO** hazard exists select **NO** and move to next hazard section.
If a hazard does exist select **YES** and assess the risks that could arise from that hazard in the risk assessment box.
Where risks are identified that are not adequately controlled they must be brought to the attention of your Departmental Management who should put temporary control measures in place or stop the work. Detail such risks in the final section.

ENVIRONMENT	**The environment always represents a safety hazard. Use space below to identify and assess any risks associated with this hazard**
e.g. location, climate, terrain, neighbourhood, in outside organizations, pollution, animals.	Examples of risk: adverse weather, illness, hypothermia, assault, getting lost. Is the risk high / medium / low ? Low risk. Interviews are anticipated to take place indoors. If they take place outdoors it will be in an urban setting where environment risk can be controlled.

CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**
☐	work abroad incorporates Foreign Office advice
☐	participants have been trained and given all necessary information
☐	only accredited centres are used for rural field work
☒	participants will wear appropriate clothing and footwear for the specified environment
☐	trained leaders accompany the trip
☐	refuge is available
☐	work in outside organisations is subject to their having satisfactory H&S procedures in place
☐	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

EMERGENCIES	**Where emergencies may arise use space below to identify and assess any risks**
e.g. fire, accidents	Examples of risk: loss of property, loss of life

No risk

CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**
☐	participants have registered with LOCATE at http://www.fco.gov.uk/en/travel-and-living-abroad/
☐	fire fighting equipment is carried on the trip and participants know how to use it
☐	contact numbers for emergency services are known to all participants
☐	participants have means of contacting emergency services
☐	participants have been trained and given all necessary information
☐	a plan for rescue has been formulated, all parties understand the procedure
☐	the plan for rescue /emergency has a reciprocal element
☐	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

EQUIPMENT	Is equipment used?	No	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. clothing, outboard motors.	Examples of risk: inappropriate, failure, insufficient training to use or repair, injury. Is the risk high / medium / low ?		

CONTROL MEASURES — **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangement for equipment is followed
- ☐ participants have been provided with any necessary equipment appropriate for the work
- ☐ all equipment has been inspected, before issue, by a competent person
- ☐ all users have been advised of correct use
- ☐ special equipment is only issued to persons trained in its use by a competent person
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

LONE WORKING	Is lone working a possibility?	Yes	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. alone or in isolation lone interviews.	Examples of risk: difficult to summon help. Is the risk high / medium / low?		

Low risk. One-on-one interviews will be undertaken.

CONTROL MEASURES — **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangement for lone/out of hours working for field work is followed
- ☐ lone or isolated working is not allowed
- ☐ location, route and expected time of return of lone workers is logged daily before work commences
- ☐ all workers have the means of raising an alarm in the event of an emergency, e.g. phone, flare, whistle
- ☐ all workers are fully familiar with emergency procedures
- ☒ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

Interviewd will take place in normal working hours at otherwise busy locations.

ILL HEALTH	The possibility of ill health always represents a safety hazard. Use space below to identify and assess any risks associated with this Hazard.
e.g. accident, illness, personal attack, special personal considerations or vulnerabilities.	Examples of risk: injury, asthma, allergies. Is the risk high / medium / low? Low risk. Participants will not be placed in circumstances different from those encountered in normal day-to-day activities.

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk
☐	an appropriate number of trained first-aiders and first aid kits are present on the field trip
☐	all participants have had the necessary inoculations/ carry appropriate prophylactics
☐	participants have been advised of the physical demands of the trip and are deemed to be physically suited
☐	participants have been adequate advice on harmful plants, animals and substances they may encounter
☐	participants who require medication have advised the leader of this and carry sufficient medication for their needs
☐	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

TRANSPORT	Will transport be required	NO		Move to next hazard
		YES		Use space below to identify and assess any risks
e.g. hired vehicles	Examples of risk: accidents arising from lack of maintenance, suitability or training Is the risk high / medium / low? No risk			

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk
☐	only public transport will be used
☐	the vehicle will be hired from a reputable supplier
☐	transport must be properly maintained in compliance with relevant national regulations
☐	drivers comply with UCL Policy on Drivers http://www.ucl.ac.uk/hr/docs/college_drivers.php
☐	drivers have been trained and hold the appropriate licence
☐	there will be more than one driver to prevent driver/operator fatigue, and there will be adequate rest periods
☐	sufficient spare parts carried to meet foreseeable emergencies
☐	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

DEALING WITH THE PUBLIC	Will people be dealing with public	Yes	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. interviews, observing	Examples of risk: personal attack, causing offence, being misinterpreted. Is the risk high / medium / low? Low risk. Interviews with members of the public about criminal behaviour might be contrued as a threat or breach of privacy.		

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk
☐	all participants are trained in interviewing techniques
☐	interviews are contracted out to a third party
☐	advice and support from local groups has been sought
☐	participants do not wear clothes that might cause offence or attract unwanted attention
☒	interviews are conducted at neutral locations or where neither party could be at risk
☒	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

All interviewees will participate on a voluntary basis and will not be coerced.

WORKING ON OR NEAR WATER	Will people work on or near water?	No	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. rivers, marshland, sea.	Examples of risk: drowning, malaria, hepatitis A, parasites. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ lone working on or near water will not be allowed
- ☐ coastguard information is understood; all work takes place outside those times when tides could prove a threat
- ☐ all participants are competent swimmers
- ☐ participants always wear adequate protective equipment, e.g. buoyancy aids, wellingtons
- ☐ boat is operated by a competent person
- ☐ all boats are equipped with an alternative means of propulsion e.g. oars
- ☐ participants have received any appropriate inoculations
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

MANUAL HANDLING (MH)	Do MH activities take place?	No	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. lifting, carrying, moving large or heavy equipment, physical unsuitability for the task.	Examples of risk: strain, cuts, broken bones. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangement for MH is followed
- ☐ the supervisor has attended a MH risk assessment course
- ☐ all tasks are within reasonable limits, persons physically unsuited to the MH task are prohibited from such activities
- ☐ all persons performing MH tasks are adequately trained
- ☐ equipment components will be assembled on site
- ☐ any MH task outside the competence of staff will be done by contractors
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

SUBSTANCES	Will participants work with substances	No	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. plants, chemical, biohazard, waste	Examples of risk: ill health - poisoning, infection, illness, burns, cuts. Is the risk high / medium / low?		

CONTROL MEASURES **Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangements for dealing with hazardous substances and waste are followed
- ☐ all participants are given information, training and protective equipment for hazardous substances they may encounter
- ☐ participants who have allergies have advised the leader of this and carry sufficient medication for their needs
- ☐ waste is disposed of in a responsible manner
- ☐ suitable containers are provided for hazardous waste
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

OTHER HAZARDS	Have you identified any other hazards?	No	If 'No' move to next section If 'Yes' use space below to identify and assess any risks
i.e. any other hazards must be noted and assessed here.	Hazard: Risk: is the risk		

CONTROL MEASURES **Give details of control measures in place to control the identified risks**

Have you identified any risks that are not adequately controlled?		
	NO ☒	Move to Declaration
	YES ☐	Use space below to identify the risk and what action was taken

Is this project subject to the UCL requirements on the ethics of Non-NHS Human Research? ☐

If yes, please state your Project ID Number

For more information, please refer to: http://ethics.grad.ucl.ac.uk/

DECLARATION The work will be reassessed whenever there is a significant change and at least annually. Those participating in the work have read the assessment.

Select the appropriate statement:

- ☐ I the undersigned have assessed the activity and associated risks and declare that there is no significant residual risk
- ☐ I the undersigned have assessed the activity and associated risks and declare that the risk will be controlled by the method(s) listed above

NAME OF SUPERVISOR

SIGNATURE OF SUPERVISOR DATE