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THE CONSTRUCTION OF LOCAL ROAD SAFETY ISSUES: WHEN LAY AND PROFESSIONAL DISCOURSES COLLIDE

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by

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ABSTRACT

THE CONSTRUCTION OF LOCAL ROAD SAFETY ISSUES: WHEN LAY AND PROFESSIONAL DISCOURSES COLLIDE

STEPHEN CLIFFORD BALL

Highway Authorities in the United Kingdom have jurisdiction to control, maintain and improve the local highway network, and the Road Traffic Act 1988 places a duty on such authorities to take preventative measures to reduce road casualties. As such, engineers working for the Highway Authority are on the 'front-line,' and are required to deal directly with lay concerns relating to road safety.

This study investigates the nature and characteristics of how local road safety issues are raised and how engineers respond to such issues in a local authority setting. A grounded theory methodology was applied in the collection and analysis of this data, and in the generation of subsequent emergent themes. Datasets were established containing textual data from correspondence between the lay public and the authority, and from local press reporting. This was augmented by 47 semi-structured interviews with engineers.

The analysis demonstrates that road safety issues and their construction, form a distinct genre. There are certain characteristic structural elements and argumentative approaches, which are oft repeated, in lay formulations of road safety.

Road safety issues are played out in a contested field, although engineers may have, in theory, the 'expertise' that grants them authority to assess, diagnose and implement mitigation measures; in practice they have little autonomy or control. Regulatory restrictions, political interference, resource impoverishment and a volatile public, severely limit engineers' independence and discretion. In dealing with the exigencies and pressures of day-to-day front-line public service, engineers deploy certain strategies for 'managing' the public. These pragmatic strategies are examined in order to establish how engineers can best effect practical action, in the face of competing and often conflicting demands.

In examining the rhetorical organisation of lay argumentative strategies, a 'popular epidemiology' of road safety is recreated. This term, borrowed from Brown (1992), encapsulates a folk philosophy with respect to accident causation and the measures that are considered necessary or appropriate to ameliorate/eliminate identified issues.

It is suggested that *in vivo* formulations of road safety issues, such as the '*accident waiting to happen'* are founded on vague premises, and constitute a category mistake. Projections from phenomenally troubling, yet largely unsubstantiable events, to those with profound material consequences, are neither necessary nor certain. In making decisions on substantial capital investments, engineers, by necessity, are required to assess competing sites on a more epistemically secure metric, namely the police road casualty record.

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Author's Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee. Work submitted for this research degree at Plymouth University has not formed part of any other degree either at Plymouth University or any other establishment.

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1. Introduction

It is estimated that an astonishing 1.2 million people are killed in road accidents worldwide each year (World Health Organisation, 2004). Whilst a significant number of these are within developing countries, non-trivial numbers are found in the developed world. In the United Kingdom, the Department for Transport report that in 2010 some 1,850 people were killed in road collisions and a further 22,660 were seriously injured[1] (Department for Transport, 2011).

Road traffic collisions are a significant public health issue at all scales of analysis. The consequences of such collisions are profound. Every day, people lose their lives or have injuries so severe that they are life changing. Furthermore, there is an untold cost of pain and suffering that is felt by the friends and families of those involved. Beyond this road traffic accidents and collisions have financial and economic implications in terms of lost income, the cost of caring for injured parties, the loss of output to the economy, and the not insignificant costs of the resultant material damage. Furthermore, there is immeasurable emotional distress and misery that is caused by the *fear* that road safety issues induce. Humans respond in different ways, and it is likely that the distress caused by road safety fears, impacts on activities and conduct, in unknown ways, introducing modes of behaviour that they would not have otherwise voluntarily engaged in. Thus communities may be severed by roads

[1] A serious injury is defined as 'An injury for which a person is detained in hospital as an 'in-patient,' or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushings, burns (excluding friction burns), severe cuts, severe general shock requiring medical treatment and injuries causing death more than 30 days or more after the accident.' Source: Department for Transport (2011) *Reported Road Casualties in Great Britain: 2010 Annual Report*, Statistical Release, 29th September, 2011. London: DfT. http://assets.dft.gov.uk/statistics/releases/road-accidents-and-safety-annual-report-2010/rrcgb2010-00.pdf [Accessed: 20th January, 2012]

that bisect them, children may lose the freedom to play and walk to school because of road safety fears, and the elderly may lose social contact resulting from concerns over crossing a busy road. Road safety is therefore a significant issue at many levels of analysis, and its impact affects the lives of many people, whether they be highway engineers, public officials, enforcement officers, medical professionals, residents, road users or the friends and loved ones of road casualties.

In the United Kingdom, delegated powers are given to local Highway Authorities who are given jurisdiction to control, maintain and improve the local highway network, with due deference to the statutory controls laid down by parliament and the directives of the Department for Transport. The regulatory responsibilities of the highway authority are enshrined within the Road Traffic Act 1988. This Act places a duty on local highway authorities to undertake a programme of measures to promote road safety. This programme should include, at a minimum, the following activities: studying accident records, taking preventative measures and reducing the possibility of road traffic casualties on new infrastructure. The basic components of this programme are therefore: investigation, prevention and road safety auditing of new or proposed infrastructure (Department for Transport, 2009).

The local authority is often the focus for expressions of concern relating to past, present or future road safety issues. Thus, areas with manifest casualty problems or sites with perceived problems or future plans for highway provision fall within the remit of the local authority. Embedded within most authorities are

groups of officers and professionals responsible for maintaining the highway and designing and implementing accident mitigation measures. By and large these are civil engineers who have come to specialise in highways and transportation. It is these engineers who constitute what Michael Lipsky referred to as 'street-level bureaucrats' (Lipsky, 1980) – that is, public servants, who are at the front-line and spend much of their working lives engaging with the public, and crucially, exercise some control over allocating scarce resources.

The intersection of lay and professional discourses, surrounding road safety, is often fraught with tension and divergent perspectives. Road safety issues provoke strong emotions and in many ways demand prompt attention, especially where the consequences of things 'going wrong' can be catastrophic, both at the individual level, but also in terms of the cost to society as a whole. The public are reliant on engineers to mitigate or solve problems for which they have delegated responsibility. Engineers, in turn, have to reconcile conflicting interests and duties resulting from the need to act as public servants, conform to professional and regulatory standards, and; to respond to political/organisational imperatives.

In a sense, engineers have a monopoly on road safety in that they become the 'gatekeepers' and are the medium through which local road safety improvements are engineered and implemented. However, this monopoly is not exercised from a position of unadulterated power. Road safety is a highly contentious field and there are many competing views that seek to be heard and assert their claim for attention. Consequently, as this study will demonstrate, professional engineers

experience difficulties projecting and maintaining their professional voice, and exercising their authority.

This is an important area of work which has significant implications for local democracy, service provision, the efficient use of resources and more importantly, public safety. The effective communication between lay and professional communities is essential for promoting services that are informed by, and meet the needs of local communities. Furthermore, local authorities recognise that, to a degree, they need the support of the general public and need to work with, rather than against local people. However, at the same time as professionals and custodians of the public purse, engineers need robust and accountable systems for rationing scarce resources. In addition, they must be able to assert their professional voice in the area of expertise to which they have been trained, namely highways and transportation, so as to introduce measures that will have maximal effect on the casualty and accident record. The readiness to listen and cooperate with the public, needs to be tempered by the limitations of budgets and the need to be able to filter requests in order to expunge the spurious from the real. Further, in assessing the content of lay discourse, engineers must be able to disentangle useful information from the extravagances of rhetoric, which is often deployed to promote a particular interest or view. Breaking down the lay-professional divide is essential for a more positive co-existence, whereby the public are confident that public servants are sincerely listening to their concerns, and engineers feel they are directing their expertise and resources to those cases that genuinely deserve their attention.

This thesis is an exploration of the work of front-line highway engineers and their ‘encounters’ with the public. Furthermore, it is focused on how issues of road safety are constructed and deliberated on both sides of the lay-professional divide.

A constructivist grounded theory methodology was adopted (Charmaz, 2006). Data was sampled, coded and structured in broad accordance with an orthodox grounded theory approach as first outlined in the seminal work of Glaser and Strauss (1967). The point of departure from the more positivistic stance of the originators is in the mode of analysis and the means by which emerging themes are generated. Furthermore, in analysing data, an interpretative stance was taken that was informed by phenomenology. Ensuring that data collection and analysis progressed concurrently, enabled emerging themes to remain faithful to the data; and avoided forcing preconceived concepts and theory onto emergent categories. Further, by being attentive to the arguments and modes of expression found in the original data, a more nuanced and sensitive analysis was possible. In this way grounded theory and the interpretative paradigm complimented each other. Phenomenology places emphasis on first person accounts and renditions of events, whilst grounded theory ensures that authentic accounts of meaning and action are first and foremost founded on the data.

The analysis is based on three core datasets that serve to capture issues, perspectives and arguments from the various parties who contribute to local road safety debates. The study is based on the activities of a highways design office within a shire local authority. This office has some 60 staff that develop highway

and transportation schemes, and is comprised of civil engineers, technicians, transportation planners, road safety professionals and other specialist support staff. A dataset was constructed from correspondence sent to the authority, on matters relating to road safety, this included letters, e-mails, reports and phone messages received over a three year period (2006-2009). A second dataset was constructed from media reports taken from three local newspapers over the same period. In order to get an insight into how such correspondence and reports were received, semi-structured interviews were conducted with 47 technical staff. These interviews explored the experience that engineers had of public engagement, how they approached such encounters, and their underlying philosophy and practices with respect to road safety engineering.

In order to analyse the transcripts and the textual data in the corpora, a grounded theory approach was adopted. The thesis is organised in the following manner. **Chapter 2** offers a review of the literature that is salient to this study. The chapter opens with a discussion of the public service reform agenda that has seen the introduction of a raft of initiatives that seek to introduce efficiencies, empower local communities, induce a private sector ethos and reinvent the relationship between the state and its citizens. The second section explores the conceptualisation of professions and experts, outlining their characteristic features and modes of operation in their respective working environments. The privileged status of the professions is considered, along with the measures and provisions for sustaining power relations through market controls, licensing through professional bodies and credentialism. A further section explores lay-professional discourse, citing the paradigmatic example of the clinical encounter

and doctor-patient interaction. Attention is then focused on Lipsky's notion of 'street-level bureaucracy' (Lispky, 1980). Street-level bureaucracy provides a framework within which to explore the practical application of policy at the mundane level. In this setting front-line public servants have to balance due deference to organisational imperatives whilst dealing with the practical exigencies of everyday encounters with a demanding pubic. Finally, in concluding this chapter, this study is positioned in the context of the literature and the gap in the knowledge that it attempts to fill.

Chapter 3 details the methodological orientation of the study. The fundamental concerns of phenomenology are discussed, and how this impacts on how individuals comprehend the world. This is followed by a discussion of the notion of 'discourse,' what this means, and how it influences individuals and groups. Attention then turns to ethical issues pertinent to this study and the measures taken to protect participants. The three datasets that inform the study are then the focus of attention, including their sampling, storage and processing. The final section of Chapter 3 discusses how a grounded theory methodology was applied to the study material; more specifically how sampling, coding and analysis was integrated in order to develop the core emergent themes that are the subject of the subsequent chapters.

Chapters 4 to 8 discuss in detail the findings of the study arranged as five major themes, namely: Road Safety as a Genre; Contested Space; Managing the Public; Lay Argumentative Strategies and Popular Epidemiology. **Chapter 4** contends that road safety issues represent a genre. That is, there is a characteristic way of

presenting and ‘packaging’ a road safety issue. Letters and media reports follow certain patterns and have a morphology that is oft repeated. The correspondence reveals a number of understandings and assumptions, including that of: the environment in which they live; measures that can be taken to mitigate perceived or manifest problems; the operation of local government; and, expectations as to the level of service correspondents expect to receive. At the heart of this genre is a set of structural components that are in evidence in most of the textual data analysed. These include: the Purpose/Objective, the Category Entitlement, the Argument, the Evidence and the Request.

A second major theme is the contested nature of road safety (**Chapter 5**). Tensions exist between the lay public on the one hand, and on the other, the engineering professionals who deal with road safety on a daily basis. Compounding these tensions is the political environment in which these issues play out, and the influence of elected representatives and policies/legislation on the outcomes possible or available. The emotive nature of road safety, at times, unduly influences normal processes. Engineers are trained to be objective, empirically grounded and follow well established methods and procedures, and are averse to ‘outside’ pressures. The territory in which road safety issues inhabit, is a domain of stress and conflict. Emotional outbursts, attribution of blame and recriminations, political moves and the exercise of power, make for a volatile work environment.

‘Managing the Public’ is the third theme **(Chapter 6)**. This draws heavily on the interview data and the experience that engineers have of working in the

contentious field of traffic engineering and in particular, road safety. It explores the pressures that are faced from: a demanding public; a professional practice that is heavily regulated; working in a resource impoverished work environment; and, the exigencies of day-to-day working life. This theme draws out some of the strategies and tactics involved in handling the public, and the 'emotional labour' (Hochschild, 1983) necessitated by front-line encounters.

The analysis of incoming correspondence to the authority and the press reports leads to the fourth theme which examines the Lay Argumentative Strategies presented in the assorted texts **(Chapter 7)**. The focus is on the rhetorical organisation of the arguments including: the phraseology used, the evidential support, the expectations of correspondents, and hypotheses of the reasoning behind the arguments presented. It will be shown that many of the texts are highly prescriptive, that is rather than defer to expert opinion and input; correspondents believe that they know what the remedy is, and have an expectation that their recommendations will be followed. The lay public, as represented in this sample, display an inherent belief and confidence in their ability to understand, diagnose and remedy a given problem. It is also this belief that leads to such a keenly contested domain. Engineers are faced with a battle to persuade the public that their intuitive/common sense understanding may have limitations, and that there are other ways of conceptualising and remedying an issue

The final theme is a condensation of all the previous analytical chapters. The themes together provide an insight into lay understandings of accident causation

and the expectations that the public have for resolving any perceived ills – in short, it presents a 'Popular Epidemiology' **(Chapter 8)**. This term, borrowed from Brown (1992), encapsulates the notion of a folk philosophy of how accidents are caused and the measures that can be made to ameliorate or eliminate road safety issues. The terrain of road safety is an area that encompasses both the phenomenal and the empirical. The public, by and large, give primacy to the former and are suspicious of the latter, especially when embodied in the form of official statistics. This means that, the principal argumentative structure for lay reasoning, is reliant on phenomenal experience, rather than events that have exhibited material consequences, and are captured in official records. The whole structure of much lay rhetoric is dependent on presenting the 'near miss' or the 'accident waiting to happen' as the primary justification for capital expenditure. From the perspective of the engineer, such data has a precarious ontological existence. The perception of fear has no empirical referent, engineers are trained to assiduously rely on 'facts' – the gold standard for such data is the 'Stats 19' database[2] – a continuous record of road traffic accidents, developed and maintained by the police. It will be argued that the 'accident waiting to happen' is in many respects a category mistake, it conflates the ontologically distinct domains of phenomenal road safety fear with that of events that lead to material consequences, that is damage to vehicles, property and infrastructure and/or personal injuries.

The thesis closes (**Chapter 9**) with a discussion of the findings and a concluding commentary on the implications of the study. The discussion starts by

[2] This is named after the form that police officers fill in to record a road traffic collision.

considering the tendency for lay reporting to reify road safety, thereby adding conceptual distance between the collision and the human agent. In doing so this naturalises events in a manner that is conducive for blaming non-human entities. The primary candidate for blame, being the road, and the road environment. In this way a pathology is conferred on the road, it is argued that such a tendency is harmful, and erroneously deflects attention away from the true causal factors that contribute to accidents. The notion of 'instant experts' is revisited, this represents an *in vivo* ascription to members of the public who fallaciously proclaim to have highway engineering knowledge based on their experience as road users. Attention then turns to the nature and consequences of communication breakdown between the lay public and professionals, and the damage that this does. Much of the discord between the respective parties lies with varying perspectives and discordance over the acceptable standards of epistemic justification. Engineers argue that many claims and statements by the public, are simply not justified, or do not permit warranted assertibility. The final section of this thesis contemplates what it means to be an engineer and how this plays out in real-life, everyday practice. Being a highway engineer in a local authority requires being able to call forth a range of skills that transcend the technical. An empathetic philosophy is necessary in order to maximise the benefit of encounters with the public. Further, retaining an open mind can facilitate the retrieval of useful information that may be hidden in a fog of rhetoric.

2. Literature Review

2.1 Introduction

This thesis is concerned with the contingent practices of local authority officers during the course of their daily work in providing public services. Moreover these officers, as well as being public servants, are professional engineers and so come with the attendant responsibilities and perspectives that professional membership entails. This dissertation focuses on the domain in which professional engineers work and the encounters which such practice entails, more specifically the nature and character of front-line encounters where engineers interact with a lay clientele. In this context, the objective of this chapter is to consider the salient literature and set the scene for the ensuing story of lay-professional encounters and the struggle for jurisdiction over technical knowledge.

Section 2.2 provides a discussion of the public service reform agenda which provides a backdrop against which this study is set. This is important since it contains the contextual conditions that frame the study, and suffuse the prevailing outlooks captured in the data.

Section 2.3 considers the workings of the professions and the role of experts as custodians of esoteric and specialised knowledge. Professions and expertise are, arguably, even more important with the coming of the Knowledge Society – the ever increasing specialisation of knowledge domains that are associated with modern societies, that become beyond the purview of the common layperson. However, the need and development of such niche areas are under threat by

forces in society that seek to democratise knowledge, reducing barriers so as to induce a more ethically just distribution of knowledge and how it is used.

Section 2.4 draws on the work of Michael Lipsky (1980), who in his influential book *Street-level Bureaucracy* presented a rationale for front-line bureaucratic encounters. Lipksy's conception of the pragmatic engagement of public service at the mundane level, provides a useful basis for framing this study. Finally, Section 2.5 identifies the gap in knowledge that this study seeks to address.

2.2 Public Service Reform

2.2.1 Introduction

The past 40 years has witnessed a never ending agenda for the reform of public service provision. Wave after wave of initiatives have sought to rationalise the way public services are provided, and conceptions of what is expected, both of the state and of its citizens. Although badged under various labels such as New Public Management, Governance, Best Value etc. the underlying theme is to unleash administrative reforms that improve the quality of the services being provided, whilst reducing the attendant costs. Allied to these initiatives is an aspiration to reduce the size of state bureaucracy, while providing greater user choice, introducing private sector efficiencies and satiating the ever increasing expectations of an informed public (Filkin, 2007; Finch, 2007). This agenda for public service reform has been near-universal and has been seen across the globe.

The British variant of such reform agenda has been characterised as being notable for its radical and far reaching scope, as well as its especially adversarial style – by which central government has fought with its own civil service and local government in order to introduce wide-ranging changes (Clark, 2000). Burdensome budget deficits resulting from the escalating costs of providing public services, led to profound rethinking of the welfare state. Despite periods of full employment, the costs of maintaining the welfare state were seen as spiralling out of control. The resultant fiscal crisis which resulted in the Labour government seeking a loan from the International Monetary Fund in 1977, was merely seen as confirmation that the welfare state and the post-war citizenship regime was unsustainable and in need of radical overhaul (Needham, 2007). Initial criticism emanated from the right of politics where critiques focused on an anti-Keynesianism slant that sought to control expenditure along monetarist lines.

Clark (2000) discerns four post-war phases of reform in Britain, namely: (i) 1979-1982 Thatcher reforms; (ii) 1980's Conservative reforms; (iii) 1987-1997 cultural change, and (iv) post 1997 Blair and the Third Way.

The pre-occupation with public service reform first came to the fore with the Thatcher government of 1979. The coexistence of high inflation and high unemployment following the oil crisis of 1973-1974 focused minds on the precarious state of the British economy. Much of Thatcher's resulting macro-economic strategy was dominated by a monetarist restructuring of the economy, and prevalent in such a strategy, was the need to reduce public expenditure

(Exworthy and Halford, 1999; Pawson and Jacobs, 2010). Part of the associated political discourse was paternalistic in character, in that it sought to bring a wayward public sector under 'proper' control (Exworthy and Halford, 1999). The perceived failure of the welfare state in dealing with the ills of society and in provoking public sector funding crises, engendered the seeds for a right-wing ideology that sought to 'roll back the state' (Hannigan, 1988). Concomitant with this philosophy was the promotion of the principles and practices of financial management, organisational downsizing and disaggregation.

The second phase, which lasted until the late 1980s placed a much greater emphasis in evaluating public service organisation in terms of efficiency, value for money and performance (Clark, 2000). Re-organisation in this period sought legitimacy by invoking private sector values and ethos, to drive down costs. Existing public sector organisations were parodied as being lumbering, inefficient bureaucracies, laden with red-tape and unresponsive to consumer needs (Pawson and Jacobs, 2010). Public sector transformation was seen to require the transfer of private sector models, introducing new forms of public sector provision that mirrored those in the private sector, that were upheld as virtues of lean, efficient and competitive organisations.

The third phase of Clark's taxonomy (Clark, 2000), included the period from 1987 to the Blair government of 1997. This phase featured wide ranging public sector reforms that sought to bring a cultural change to public service organisations. The key components featured: the introduction of market-type mechanisms; alternative forms of funding arrangements (e.g. the Private Finance

Initiative of 1992); decentralisation of the management and production; and, the transition in status from service users to consumers (Clark, 2000). Of especial note was the Citizen's Charter (1991) that gave consumers of public services rights and sought to ensure that public service providers responded to consumer needs. In this way government was seen to provide a more participatory type of democracy, akin to the liberal individualist conception of citizenship (Needham, 2007). Service users were empowered and were seen as important drivers in the design and operation of the services they used. The Charter sought to expose procedural bureaucracy in the spirit of fairness and transparency. The Citizen's Charter effectively created a contractual relationship between the individual and the state, empowering individuals, who were told what to expect from services and how to seek redress, if service provision fell short of this standard. In short, this period of Conservative government had transformed the welfare state from one that was paternal to that which was more participatory for the individual. Furthermore, the changing complexion of public service organisation and delivery was strongly steered by the paramount necessity of Conservative macro-economic imperatives, namely: pursuing low inflation, fiscal restraint, privatisation and the advocacy of managerialism (Needham, 2007).

The fourth phase of Clark's classification follows from the election of the Blair government in May 1997. With its Third Way rhetoric, the Labour government sought to promote a new alternative to the welfare state that differed from the old left and the more recent conservative right (Powell, 2000). Some commentators are yet to be convinced of how distinctive the Third Way really was, and many saw it as the continued evolution of policies and philosophies set in train by the

preceding Thatcher and Major governments (Mayo, Hoggett and Miller, 2007). For example, elements of what has been globally labelled New Public Management (NPM) were merely consolidated by Blair, in particular the creation of internal markets (especially in healthcare and education), and the externalisation of service provision. Where the Third Way has been distinctive is in the promotion of choice for consumers. By engaging with public service users and giving them voice, New Labour has sought to 'consumerise' provision by giving public service users some form of choice between competing public service providers (Clark, 2000). Furthermore, by empowering individuals, new forms of organisation were conceived that transcended the traditional public/private split. That is, citizens were encouraged to provide their own provisions through the community and voluntary sectors and in so doing were more tailored to communal needs and reduced the ultimate burden upon the state. In harnessing choice, the Third Way sought to provide the means to choice by promoting an audit culture, where consumer choice was informed by performance information translated into league tables (Mayo, Hoggett and Miller, 2007). The implication being that through transparency and availability, performance information would drive out inefficiencies by shaming those who perform poorly. Individuals were given a degree of autonomy to exercise consumer mobility in choosing preferred suppliers of services, and in so doing providers were forced to re-model themselves on their commercial counterparts in order to woo 'customers' and survive (Jordan, 2005).

Together these four phases represent a radical transformation of the public sector. The paternalistic post-war welfare state has been re-created as a

‘competition’ state. Successive governments of varying ideological complexion have driven a range of policies to reduce public spending, minimise bureaucracy, commercialise areas of provision and give users additional voice and choice in selecting services (Evans, 2009).

2.2.2 The limitations of Traditional Bureaucracy

Conventionally, orthodox bureaucracy is portrayed as being monolithic, slow, unresponsive and wasteful (Meier and Hill, 2005). Whilst conservative attributes of conformism, standardisation and routinisation were once tolerated; they were never embraced by the recipients of public services. Increased self-determination on the part of the citizen has sought to redress the balance in the state-citizen relationship, and reject the model of the paternal state that conceptualised the service user as a dependent and grateful recipient. The bureaucratic tendency to revert to rules and the deployment of seemingly excessive means-end rationality can engender an adversarial relationship between service users and service providers (Exworthy and Halford, 1999; Hill, 2007).

There can be no doubt that the changing landscape of public service provision is as much driven by the changing face of the public as opposed to being led by government and those that provide such services. Rising intolerance of the bureaucratic torpor and perceived inefficiencies of state provision has led to a concomitant rise in scepticism and a certain loss of trust in state apparatus. The public have become wary of the motives and objectives of those in high places and feel that their concerns are not being heard (Lyons, 2007). There is a sense that there is a loss of legitimacy in traditional forms of authority, as a more

confident public is able to challenge officials and to assert their rights (Stoker, 2007). This loss of authority is not restricted to politicians and public officials, but also encompasses the challenges that professionals now experience in the course of their practice and the questions that are now asked over their provenance over esoteric and previously unassailable knowledge. It is argued that the changing character of the citizen is a response to wider changes in society for which the state has not kept up. Rising expectations have been fostered by the 'digital age' where information is not only available instantaneously, but also opens up new epistemic worlds that were previously all but inaccessible. Further, technology driven private sector service patterns sees more sophisticated means of capturing and satisfying customers, not least in offering value for money, high quality customer care, endless choice, rapid service and perpetual availability (that is 24 hours a day, 7 days a week and 365 days a year). In addition, substantive increases in personal incomes has led to rising citizen wealth, such changes further exacerbate both the expectations of individuals, as to what they can afford, but also in their ability to seek alternatives and demand the service they expect (Hill, 2007; Needham, 2007).

2.2.3 Citizenship, Responsibility and Empowerment

Integral to the public service reform agenda, has been the intention to reinvent government and to refashion the relationship between the state and the wider public (Aigner *et al*., 2001). The objective is to streamline service provision into a more responsive and consumer led mode of operation, which ultimately leads to a smaller state. This requires a radical rethinking of what the state does and how it is delivered. Much of this reform is led by the necessity to respond to a

more demanding and expectant electorate. In the recent past government was elected and the public by and large was content for elected bodies 'get on with it' (Diamond, 2007: 17), and provide public goods and services as they saw fit. However, contemporary publics are less willing to remain as 'passive and grateful recipients' (Filkin, 2007: 220) for public services, delivered in exchange for taxed income. A better educated and, generally, less deferential public necessitates a concomitant attention to service users' needs and wishes. In attending to this rapidly changing landscape, governments have strived to decentralise service provision, and devolve power, encouraging a more active and responsive citizenry (Stoker, 2007). Through devolving power and autonomy, reshaping delivery structures and empowering citizens, it is envisaged that more responsive and efficient services can be offered that meet local demand and promote a more trusting and less adversarial relationship with the public.

The perceived failure of the state to deliver, at both the national and local levels, has prompted the promotion of a new citizenship regime (Needham, 2007). As part of this change there has been the desire to share the responsibility of delivering services with a newly empowered citizen. Active citizenship renegotiates the contract with the electorate, thus transforming the public from passive recipients of services to active agents in their formation and mode of delivery. The rhetoric of empowerment thereby alters the balance of power and entails a more responsible and active citizen that demands community engagement (Woods, 2006). Attendant with this change is a desire to regenerate the civic sphere and engender local commitment and ownership to solving local

problems. Devolving and decentralising power structures seeks to promote civil society by giving 'voice' to local people and their communities (Caragata, 1999). Local empowerment can be conceived as returning a fundamental civil right to individuals, and offers a way of rejuvenating local politics (Burton *et al*., 2004). By decentering government it is hoped that new ways of conceiving and framing issues can be achieved, thereby revitalising staid and out-dated delivery modalities. Active citizenship and local participation anticipates that traditional public services can be reconfigured in novel and interesting ways, representing new content and solutions that reflect local determination (Leadbeater and Cottam, 2007). The radical reform agenda suggests that the orthodox conception of the state as an enabler is outmoded, and seeks to replace it with a devolved model that redistributes power away from the state towards individual citizens. Likewise the focus for services orientates toward 'outcomes' rather than 'inputs' – organisations become refocused on meeting local needs as opposed to abiding by rules and regulations, and on results and not methods (Exworthy and Halford, 1999).

Other than promoting civic responsibility and local self-determination, it is assumed that local determination will facilitate a rise in allocative efficiencies, that is the local shaping of services can be more aligned to local requirements *vis-à-vis* more centralist models (Rossiter and Byrne, 2007). Such a version of provision promotes the status of the individual in society and redefines citizens more as active consumers than passive recipients. The consumerist rhetoric of reforms as well as empowering individuals has concomitant implications with respect to individual responsibilities. In this way it is incumbent on individuals to

seize control of ‘one’s life projects’ (Needham, 2007: 204), facets of which had previously been sequestered by the state.

Decentralisation seeks to reduce the yoke of bureaucracies that has previously hemmed in local delivery managers who have been encumbered by the weight of officialdom and red tape. In post-bureaucracy, the organisation becomes client centred and no longer has an ever lingering eye on the centrist core. Decentralisation emphasises the importance of clientele and seeks to embed them within organisational decision making chains. The cult of individualism is such that diversity is celebrated and heterodoxy is embraced as a sign of a healthy and vibrant democracy. No longer does the state know best, rather decision makers need to be informed by local wisdom. Freed of constraining ties to a corporatist centre, managers can be more attentive to local needs and be more responsive to changing circumstances (Dobel, 2005).

The moves to reduce bureaucracy and the layers of constricting regulatory procedure that have blighted orthodox bureaucratic governance, seeks to promote efficiencies and encourage a leaner and more viable form of local government (Meier and Hill, 2005). Decentralisation affords local managers more discretion and devolved budgets anticipate that the added financial responsibilities will inculcate managers to strive for greater value in procuring services. However, it is recognised that a truly decentralised conception of public services must also make provision for local authorities to secure more independence and autonomy, through greater freedom to raise and borrow money to fund local initiatives (Finch, 2007).

A further intentional implication of such decentralisation is the transfer of risk away from central government toward the newly empowered, namely, local organisations and individuals. Choice at the local level is made at risk, with devolved decisions and consumerist autonomy, comes the allied risks of making poor or non-maximal choices. In this way citizens and the local service providers take on extra responsibilities as being risk bearers and must face the consequences when outcomes are not as anticipated or are inferior to those of one's neighbours who made alternative choices.

2.2.4 Transparency and Accountability

Enmeshed in the reform agenda is a reconfiguration of the relationship between the state and its citizens. Rhetorical shifts towards transparency and openness are intended to mitigate the sometimes adversarial co-existence that has coloured this relationship. In doing so, it is hoped, that a trusting attitude can be forged to return to the democratic ideal of a state that is sympathetic to citizens' issues and is more attuned to serving the public as opposed to directing them. The shift to more democratic engagement necessitates that policy actors redefine their conception of the lay public, which dispenses with more patronising versions that suggest that the state and its experts know best. Assimilating lay views and incorporating the public in decision making processes is seen to engender a more participatory citizenship and render service provision open to scrutiny and testing, so as to demonstrate impartiality, responsiveness and equity. Civic empowerment supports the decentralisation ethos of recent reforms that devolves power downwards and outwards making use of new technologies and local

networks in order to enable communities to exercise more ‘voice’ and control over their local services (Lucas, 2007).

Transparency and openness is further achieved, it is argued, with the move towards benchmarking and league tables. The liberation and decentralisation of devolved power, the reduction in red tape, is accompanied with the requirements for managers and services to provide performance information. The intention being to publish such information widely so as allow all stakeholders to evaluate the relative performance of services on the basis of standardised and objective criteria (Meier and Hill, 2005), the paradigmatic cases being in education and in health. As well as going some way to demonstrating to funders the financial accountability of local service provision, benchmarking and league tables also fuel the consumerist ideal. That is, in virtue of publishing performance information, in principle ‘consumers’ can assess the relative merits of competing providers and choose accordingly (Needham, 2007). Of course the quasi-markets in which many service users exist, do not afford any real choice, a classic case being that of the police (Rossiter and Byrne, 2007).

2.2.5 Consumers and Choice

In the recasting of the public, the transformation has seen users of services moving from being dependent recipients to active participants or consumers. Central to this change has been the notion of choice; the sovereign consumer has a new volitional status to determine their own future, as powers are wrested from state providers (Needham, 2007). In this revolution individuals and local groups are given more say and control over the shape, form and character of local

services that were previously centrally determined (Rossiter and Byrne, 2007). Such an approach valorises the individual and with its consumerist logic sustains an 'individualistic ontology' (Needham, 2007: 35). The subjective experience and wishes of individuals is given primacy over the needs of the professional, the bureaucrat or the politician. Empowering individuals by way of consumerist rhetoric aims to personalise service, leading to more intimate relations between professionals and consumers. Service provision and expectations thus become more a matter of negotiation between parties in contrast to professionals determining what service is appropriate or available. Such changes have profound implications for how professionals, as service providers, must operate. No longer is arms length, disengaged professionalism an acceptable mode for discharging state services, rather professionals must cede some ground and approach requests for service in a more open and engaged way, that permits the exploration of alternative novel and personalised solutions that would not have been countenanced under the paternalistic regime of 30 years ago (Leadbeater and Cottam, 2007).

The shift in the balance of power seeks to induce a private sector ethos and the perceived efficiencies that are associated with this sector. Consumer choice, it is argued, leads to a more attentive and responsive provider, who will drive down cost, and improve service provision and the availability of alternative options in order to woo 'customers.' Although more difficult to engineer in public services, the notion is that money will follow customers and so engender allocative efficiencies (Exworthy and Halford, 1999; Hill, 2007). Customers and their delegated budgets would in a perfect market, fund services that are locally

determined and desired, whilst, inefficient and less customer orientated services would fail.

2.2.6 Managerialsm versus Professionalism

The introduction of public service reforms has seen the rise of an apparent tension between public service professions and the advent of significantly increased managerial control. The assault on professional powers have been led the rise of a new managerial class that sequesters power from professionals, as a needs-led model of professionally determined service provision, reconfigures to one that is orientated to market-led accountability (Exworthy and Halford, 1999; Warehurst and Thompson, 2006). It is often portrayed that managers and professionals form different and distinct groups with conflicting ideologies and objectives. Whilst the professional is seen as being altruistic and independent, the manager is cast as being self-interested, conventional and conformist with respect to organisational goals (Halford and Leonard, 1999). Further, the managerialist tendencies leading to the publication of league tables and the public shaming of professional misconduct have, at times, antagonised and vilified professionals (Flynn, 1999). Public service professionals have thus experienced a radically changing landscape of practice, not only have they had to endure the onslaught of ‘creeping managerialism’ (Coyle, 1988 cited in Halford and Leonard, 1999: 102) on the one hand, they have also had to come to terms with the empowerment of the consumer and the rising autonomy of the lay client (Needham, 1999). This antagonism between the rising power of public service managers and the professionals who are at the core of service provision, has promoted new ways of conceptualising internal responsibilities. Arguably, a

better way forward is to eliminate the manager-professional antipathy, by converting professionals into managers with their own delegated budgets and cost centres (Flynn, 1999).

2.2.7 Summary

Political modernity is marked by a radical refashioning of the state-citizen relationship. Perceived failures of traditional bureaucratic forms have provoked radical reforms that promote decentralisation, local autonomy, the drive for efficiencies, consumerism and the transfer of risks from state to individuals. The reform agenda has sought to retake lost ground that has seen public sector delivery organisations fall short of the level of service offered by the private sector. Fuelled by rapid technological advances, consumer expectations have changed, and a more informed and educated public presents a new challenge to public service providers. Despite the loss of autonomy, local government remains especially important in a reconfigured state. Delegated powers, local accountability and decentralisation, arguably enhance rather than diminish the status of local government. Further, the close proximal relations between local officials and their public, ensures that local government remains an important political institution (Filkin, 2007; Needham, 2007).

2.3 Professions and Expertise

2.3.1 Introduction

Knowledge is seen to be socially distributed in that levels of knowledge and the possibilities for attaining knowledge are not evenly spread across society (Meditsch, 2005). This differentiation means that whilst to individuals there is

always some knowledge that is available through our experience within our ecological settings, other knowledge is mediated through those who 'know.' The prototypical case being the esoteric knowledge that is produced, maintained and controlled by the scientific community. In this way asymmetries in the distribution of knowledge results in a functional dependence between lay persons (who have need of such knowledge) and experts (who are its custodians), this forms the basis for a parasitic reliance on those who know. The sheer complexity of modern industrial-technical society merely serves to cement this dependent relationship (Maranta *et al.*, 2003; Leadbeater and Cottam, 2007). Furthermore, as outlined below, powerful professions serve to maintain the 'distance' between laity and the professions by means of credentials, certification and legal controls that limit practice (Fuchs, 1992).

Expertise broadly refers to the possession and practice of skills and knowledge that distinguish 'experts' from novices and lay public (Ericsson, 2006). Expertise, whilst sometimes having an innate component, is more often associated with long periods of training and dedication to a field (Chi, 2006; Ericsson, 2006). Professionalism on the other hand is argued to be an occupational category which tends to have the following characteristic features:-

> [T]he possession of an established body of systematic knowledge; a commitment to altruistic service to the client; the existence of an occupational association; the membership of which is to licence to practice; a high level of educational achievement among practitioners; and, considerable autonomy at work (Laffin, 1986: 20).

2.3.2 Discretion and Autonomy

One of the defining characteristics of professional organisation is the desire and ability, to a greater or less extent, to be free to practice within certain peer determined parameters. As custodians of an esoteric body of knowledge that has been achieved through extensive training and the acquisition of scarce skills, affords the professional certain rights and privileges. Such specialisation encourages a belief in sovereignty over this knowledge and a desire to be free from evaluation by others (Freidson, 1986). By way of justification, professionals promote occupational ideologies that are intended to demonstrate their worth to society and to their self-legitimising behaviour (Brante, 1988).

Discretion and autonomy are prized attributes for professionals, enabling them to deploy their expertise in a free and unencumbered manner. This extends to being autonomous self-directing subjects, who are able to choose the appropriate technical means for providing the goods and services under their purview (Freidson, 1986; di Luzio, 2006). The archetypal example being the general practitioner who is largely free to diagnose, treat and refer their patients as they deem appropriate. There are parameters that bound this freedom; more specifically these surround resource constraints and the professional expectations with respect to conduct, competence and performance (Harrison, 1999).

Part of the justificatory premise, is that this arrangement is beneficial to society. That is, professionals are naturally orientated to the common good, to the public interest and they can be trusted to use this autonomy with judicial care (Pfadenhauer, 2006). Integral to this position is the presumption of moral and

ethical standards that maintain 'affective neutrality' (Brante, 1988: 120); that is, to practice with a commitment to universalism, to treat all clients alike. To do so is to be service orientated, to eschew private and personal gain and to maintain a disinterested integrity with respect to their work and their clients (Flynn, 1999). This level of autonomy necessitates a profound delegation of responsibility to professionals that deviates from normal democratic ideals. Furthermore, the levels of discretion that have hitherto been vested in professionals bears testament to the efficacious character of this relationship and the success that professions have in persuading governments and the wider public of their self-exercising responsibility (Brante, 1988; Turney, 2001).

The legitimation of professional autonomy rests on the reliance of professions to self-govern. That is, autonomy is rested with professions on the understanding that their practice will be policed and organised by governing professional bodies. In this sense it is 'organised autonomy' (Freidson, 1988 cited in Macdonald, 1995: 5), professions are sheltered and licensed by the state, and individual practitioners are assessed, certified and disciplined by peers. Thus, it is largely only physicians who are vested with the responsibility and authority to judge another physician's performance (Flynn, 1999).

2.3.3 Monopoly, Self-Regulation and Credentialism

Professions are distinguished by their powers to monopolise certain areas of knowledge and practice. Such autonomy creates forms of organisation that are essentially self-referential and self-regulated, constituting an autarchic form of social system (Brown, 1993). Such powers are delegated to professions on the

understanding that self-regulation is achieved through professional oversight and peer review. Professional bodies are expected to set the parameters and normative boundaries of expected performance and acceptable behaviour and conduct. Thus for example, again drawing from medicine, in the United Kingdom it is the General Medical Council who is responsible for regulating the professional conduct of doctors, and it is medics who engage in such oversight (Bradby, 2009).

Professions are often established with the legal authority of the state and have officially sanctioned market shelters for professionals therein. Legitimation is perpetuated by organised ideologies that promote the higher learning of members, their moral inscrutability and the altruistic nature of their work in labouring for some notional 'public good' (Freidson, 1986; Brante, 1988). Highly professionalised and mature occupations, classic cases being law, medicine and accounting, have a strong social density, exert strong controls on membership, and therefore by extension, have robust exclusionary mechanisms in order to maintain members' privilege (Fuchs, 1992).

The traditional strength of professions to self-regulate has enabled them to sustain some non-democratic facets that would not be tolerated in other social domains. Indeed, the very success of the stronger professions has been achieved through rigorous strategies of subordination and exclusion for those practicing allied or para-occupations (di Luzio, 2006). Social closure is sustained through legal privilege, accreditation, certification and licensing. Dominance and monopolisation limits entry into the field and further promotes ideologies of the

special status of those privileged to be ‘inside’ the respective profession. Marketability of skills is sustained by scarcity and limiting the access to professional members. The value of the profession is not in terms of having superior knowledge *per se*, but in the transactional value that such knowledge attracts. Limiting licence to practice merely serves to diminish supply and in so doing inflates prices. Economic value can be further augmented and secured, by judicious market segmentation, in this way cosy arrangements with allied professions can ensure that there is little or no overlap in the services offered under their jurisdiction.

The social density of professional groups ensures solidarity and helps perpetuate myths and conceptions of professional practice. By strictly controlling professional discourse and refusing to countenance alternative conceptions of certain knowledge domains, professionals can further a self-sustaining ideological position. Sanctioning one world-view serves to denude and discredit alternative competing conceptions. Conflicting viewpoints can be de-legitimised as being: anomalous, un-sanctioned, un-scientific and not recognised, with its proponents being caricatured as being frauds, quacks, eccentric or merely misinformed. Alignment to one epistemology serves to promote it as the one ‘true’ version of how the world is, maligning alternative views seeks to preserve the monopoly of knowledge creation, certification and dissemination (Maranta *et al.*, 2003).

Professional restrictions and controls as well as sustaining professional autonomy and longevity, also serves to promote certain rewards and status.

Whilst arguing that control and licensing are necessary to protect clients, and ensure the highest standards of professional skill and conduct, less charitable perspectives argue that professions seek to maximise market value and the life chances and quality of life for its members, through restrictive practices (Brante, 1988). Seen in this way there is a more insidious side to the market shelter offered to professions. Social closure and exclusivity of membership are more damaging to the wider public interest in that they are not afforded the same security, status and financial rewards in their occupational classes. Furthermore, the professional project strives to increase client costs, limit supplies and access to sanctioned practitioners, whilst rendering large number of practitioners free from the scrutability of the public gaze.

The power and control exercised by the stronger professions is not bounded by the impact their practices have on clients. Strong professions can 'capture states' (Evetts *et al.*, 2006: 109) in that they have significant bargaining powers when negotiating with governments on issues such as licensing, working conditions and pay. To this end whilst policy makers may attempt to influence and mandate professional practice, most especially through budgeting, their complete control and direction is not assured (Gleeson and Knights, 2006). On their part, professions work vigorously to avoid control and supervision by non-professionals, and this is best achieved that demonstrating that self-regulation is effective and that cases of gross misconduct are followed by heavy professional sanction (Lipsky, 1980).

One of the primary mechanisms by which professional bodies can restrict access to their respective domain, and thereby preserve their market monopoly, is through credentialism. The justification for such moves is in virtue of the need to protect clients and to demonstrate that licensed professionals meet some minimum standard of competence (Laffin, 1986). Professions are largely knowledge-based occupations where elevated epistemological status is valorised and indeed is a prerequisite for practice. Knowledge and epistemic superiority in an esoteric body of knowledge, is normally attained through a sustained period in tertiary education in specific disciplines and may be accompanied by vocational training and in-practice experience (Freidson, 1986; Evetts *et al*., 2006). The resultant candidate thereby acquires along the way the necessary, professionally endorsed array, of degrees, diplomas, certificates etc. In addition, many governing bodies (including in our case engineering), provide professional qualifications that attest to the ability to practice, in this category are included articles of incorporation and chartership. Controlling professional practice in this way this facilitates a market shelter and effectively constitutes an 'occupational cartel' (Freidson, 1986: 63), distorting normal labour market conditions. At times this arrangement is state sanctioned, with certification boards and the issuance of licences is endorsed by government departments. Such endorsement is an acknowledgement of the effective oversight that professional bodies have in maintaining high standards, promoting innovation and development, and sanctioning those that fall short of such standards (Evetts *et al.*, 2006).

Whilst credentialism serves to acknowledge the acquisition of formal knowledge and training, it is important to recognise that this is merely one facet to

professional control and practice. There has been much work done that seeks to uncover the acculturation of neophyte professionals into specialised worlds of sub-meaning (Atkinson, 1995; Sharrock *et al.*, 2003). For example, medics have been found to develop and acquire a 'clinical mentality' whereby constant immersion in practice encourages particular modes of thinking and acting (Atkinson, 1995). Acculturation and socialisation within the parameters of the group, especially in the clinical context, comes with a deep irony. For it is somewhat of a paradox that for a profession that prizes individuality, that medics can be so complicit to a socialisation and ideology that bounds the normative expectations of behaviour and propagates conservative modes of thinking (Harrison, 1999).

Furthermore the limited virtues of credentialism can be exposed when the activities of professional work are examined in more detail. For example, in the heat of practice, formal knowledge may not be readily accessible or appropriate for dealing with the exigencies of front-line practice. Instead practitioners must rely on a more embodied form of practical or pragmatic judgement that calls forth tacit knowledge and sedimented stocks of knowledge acquired through years of practice (Polyani, 1983; Schon, 1991). The clearest manifestation of such action, that demonstrates the limitations of formal knowledge systems are the cases where acknowledged 'experts' reach radically divergent conclusions from the same factual beginnings (Brante, 1988).

2.3.4 Specialised Discourse

As we have established the professions are custodians of esoteric bodies of knowledge. Allied to this stewardship is the tendency for professionals in everyday practice to engage in forms of specialised discourse, that is, forms of talk and framing that can be distinguished from lay discourse or *doxa* (Brown, 1993). Prominent features of such talk include the adoption of abstracted, impersonal reasoning, distinct linguistic registers and seemingly arcane and obscure language that is in need of 'translation' for non-professional audiences. Such discourses are important since they generate discrete sub-universes of local meaning, and are the medium through which specialised knowledge and understanding is produced and reproduced (Berger and Luckmann, 1966; Atkinson, 1995).

Further, the acquisition of and participation in professional discourse, takes on a symbolic significance in that it demonstrates commitment to the professional identity and a mastery of a technical language and grammar that transcends the mundane (Cohen *et al.*, 2005). The value and worth of specialised discourse is only sustained, if it serves some purpose in communicating the nuances of technical knowledge that cannot be carried by ordinary language. Furthermore, specialised discourse must be carried by a minimal level of intersubjective agreement between professionals. More significant problems come when professionals attempt to communicate to lay person on technical matters. Arguably, the most studied form of professional-lay discourse is that of the clinical encounter between doctor and patient, in the remaining part of this section I will examine this classical form of encounter.

Medical practitioners enter into dialogue with patients carrying the normative standards with respect to conduct, behaviour and the display of minimum levels of competence. Certain anticipated behavioural traits further serve to retain professional composure and facilitate professional control in such encounters. For example, by effecting a 'detached concern' (Lief and Fox, 1963 cited in Garot, 2004: 742), and adopting a 'matter of fact' attitude (Lupton, 1997: 570) doctors can eliminate many 'social' aspects of the encounter, and display due deference to technical/professional issues *vis-à-vis* the personal. Furthermore, commitments to doctor-patient confidentiality further aid to elevate the moral status of the medical practitioner.

The medical encounter is of such profound sociological interest because of the seemingly radical juxtaposition of different cultures (Atkinson, 1995). The historic tendency for clinical encounters to minimise the personal and to medicalise the patient, seems grossly incongruent with the existential angst that may have brought the patient to seek diagnosis. In addition, whilst some physical 'data' can be acquired from patients by way of samples, tests etc., the patient's qualitative input is still of profound import for diagnosis. The medical encounter becomes the confluence of discrepant worlds and differential knowledge and with it come different expectations of treatment and outcomes. Incongruent assessments of illness lead to breakdowns of medical-lay communication and can leave either or both parties somehow dissatisfied.

The patient by seeking a consultation, is entering the 'sick role' (Lupton; 1997: 569). To a degree this concedes ground to the practitioner and acknowledges that

they do not possess the knowledge or means to get well. In doing so they are complicit with the notion that there is a competence gap between themselves and the practitioner and thereby constitutes a submission to a relative ignorance (Heath, 1992). Such behaviour exhibits deference to the medical system, the knowledge and expertise contained therein and sustain power relations. On their part doctors seek to appropriate and objectify the patient's problem. In doing so, the problem or condition is transmuted from that of individual biography to categories of clinical classification that transcends the individual. Unless deftly handled (cf. the iconic doctor's 'bedside manner'), this classificatory aspect to clinical interactions can leave the patient unsettled and dissatisfied with the dehumanising consequences. The objectification of the client, although necessary for rendering the illness comprehensible in the context of the professional stock of knowledge, can be misread as merely an insensitive form of bureaucratic processing. Furthermore, to the patient, the adoption of an occupational register, the exotic and mysterious lexicon of the medic, further serves to estrange the patient (Fleischman, 2001).

The prototypical portrayal of the medical encounter largely emphasises the asymmetrical relations involved. The dyadic encounter between professional and patient is presented in terms of power relations, the knowing doctor and the subservient and dependent patient. The encounter becomes politicised when emphasis is given to the unequal relations of the participants. The high status of the doctor and the vulnerable position of the ill and largely medically ignorant patient, presents a sharp gradient of power. Whilst at face value it represents the micro-social play of power of the individual consultation (Atkinson, 1995), in

reality it constitutes the manifestation of their relative positions in the wider social system. High status, acknowledged expertise and the significant cultural capital associated with those that practice medicine, relatively disadvantage the patient. In the medical encounter this status is reinforced and the needs of the patient (urgent, pathologic, chronic or otherwise) preserve and sustain this asymmetry, regardless of the patient's status outside of the encounter (Atkinson, 1995).

Professional control of the consultation is maintained since doctors are esteemed by society and dispense skill and expertise that permits them to have a warranted jurisdiction over a knowledge domain. Professionals remain in control through such warrants and can promote authority by commanding the encounter. That is, physicians may deploy conversational structures that restrict patient interaction, and constrict available conversational avenues and trajectories to those conforming to medical conventions. The play of power and the due deference traditionally reserved for doctors, results in considerable professional autonomy, to the extent that their pronouncements have rarely been challenged (Heath, 1992).

The organisation of the consultation constitutes one of the numerous ceremonies associated with medical work. The encounter is replete with symbolic displays of power that suffuse the ensuing communicative event. The waiting room, the formality of introductions, the accoutrements of the medical landscape (the white coat, the stethoscope, the clinical chart etc.) serve to emphasise the specialised and alien world in which the patient enters. Consultations follow well worn

trajectories of information gathering, diagnosis, referral or treatment, dispensing of drugs and the setting of appointments (Heath, 1992). The asymmetry of relations is made abundantly clear as the patient comes to realise that the doctor determines the 'patient's pathway' (Bradby, 2009: 39) through the labyrinth of health care provision. For it is the doctor that refers to specialists, access to drugs and medicines, and access to palliative and therapeutic procedures.

However, traditional doctor-patient asymmetries are under attack from more enlightened perspectives that attempt to move away from medical paternalism. Accompanying the consumerist agenda in wider public sector reforms, attempts are being made to reframe the clinical encounter in a way that empowers service users (patients) and affords them more say in the range and form of care they are given. This model of patienthood conceives the ill person as 'an active consumer' (May, 2007: 38), who is more of an equal partner in assessing, choosing and managing their health problems. Such a vision represents a radical departure from the orthodox conception and status of the patient, the patient-centred model wrests power from the practitioner and elevates the clinical status of the patient's 'voice.' This reconfiguration of the clinical landscape attempts to redress the perceived moral deficit associated with clinical paternalism. Conceding to patients is framed as recognition of the 'expertise' that resides with individuals in virtue of their accumulated experiential knowledge of their bodies and health. Whilst such knowledge in itself is not seen as a replacement for practitioners' knowledge and expertise; it is seen to augment formal knowledge, providing a reservoir of understandings that facilitates more informed clinical decisions, whilst promoting more morally defensible doctor-patient relations.

2.3.5 Summary

Throughout history the professions have been respected members of the community, and constitute a valorised and esteemed social grouping. The rise of the professions has mirrored the technocratic ideal embodied in the Enlightenment project, to perfect human affairs by promoting professional expansion and the organisational differentiation of knowledge. The contributions of professionals are generally valued by society, because of their exceptional displays of skills and competence, and since the products of their labours are seen as crucial to sustaining modern society. Professional autonomy is accepted in return for strong peer review and a commitment to altruistic public service. Professionalism not only leads to an unequal distribution of knowledge, but in addition, it leads to profound social dimensions such as prestige, privileges, rewards and power. More recently, the rising self-determination of the lay public has questioned and challenged this autonomy and has refuted suggestions that lay ways of knowing are necessarily inferior. The privilege and right of professions to exercise domain control has been called into question – is it right for selected individuals to control and authorise knowledge on behalf of wider society? The rising educational standards evident in modern societies, coupled with the surfeit of information available to lay persons, mean that challenges to professional authority are more prominent and are made by people who are now more able to make such challenges.

2.4 Street-level Bureaucracy

2.4.1 Introduction

Bureaucratic institutions are integral to modern civic and social life, they are said to afford 'social productivity' (Nedelmann, 2001: 70) in the sense that they are responsible for the production of many social goods and services for which there are no alternatives. Their function is to ration and supply basic services to their public, and in so doing, define and shape the lives of many citizens. Their authority resides in the powers invested by the state and their rules and procedures for dispensing services become publicly known and largely accepted (Bickhard, 1992). There are certain features that are associated with institutional service providers, most notably: ability to pay does not determine the eligibility for service; there is a sole provider (usually the state); service users do not pay at the point of service; the service is regulated and monitored by the state; and, the service is afforded a degree of market protection (Needham, 2007). Modernity has been characterised by the proliferation of formal reason and rationality embodied in vast bureaucratic organisations with byzantine structures that resist simplification. The growth of such organisations is so prevalent and extensive that it is seen to rationalise the pervading lifeworld;[3] and in so doing, techno-bureaucratic organisations colonise and suffuse all aspects of the private sphere (Outhwaite, 2000).

The experience that citizens have of the state is often mediated at a mundane level, through encounters with *relatively* low level officers and professionals. In

[3] The lifeworld can be taken to be the terrain in which every day conscious experience is played out. It represents the 'mental space' in which our subjective experience is formed and is constitutive with respect to our meaningful engagement with the world (Jay, M. (2009) The Lifeworld and Lived Experience. In Dreyfus, H.L. and Wrathall, M.A. (Eds.) *A Companion to Phenomenology and Existentialism*, pp. 91-104, Chichester, West Sussex: Wiley-Blackwell).

this section I will explore the notion of 'street-level bureaucrats' as introduced by Michael Lipsky in his influential book (Lipsky, 1980). In this book he states:-

> I argue that public policy is not best understood in legislatures or top floor suites of high ranking administrators, because in important ways it is actually made in the crowded offices and daily encounters of the street-level worker (Lipsky, 1980: xii).

In this way, the discretionary powers of officials at the front-line represent the practical application of policy and come with all the attendant contingencies that are associated with serving a heterogeneous citizenry. Street-level bureaucrats are crucial since they dispense, ration and determine eligibility for public services for which there may be no alternative. Furthermore the very proximity of street-level bureaucrats renders them conspicuous; they become the 'face' of the organisation and the gatekeepers to coveted services (Fredison, 1986). It is these proximal relations and the discretionary powers bestowed on them, which result in street-level bureaucrats being the focus of many public controversies (Lipsky, 1980).

2.4.2 Rules and Rationality

Modern bureaucracies have been established that venerate certain core values, most notably: duty, conformity, reliability and punctuality (Kalberg, 2004). The orientation towards such modalities can on the one hand be seen as anachronistic and staid, whilst for defenders of bureaucracies, they are argued to be the key drivers to promoting equity, prudent resource allocation and the universalisation of public services (Cheney *et al.*, 2004). To a degree there is much evidence to suggest that bureaucracies conform to Weberian typifications of the rational application of abstract rules (Kalberg, 2003). The all-pervading assimilation of a

philosophy that esteems due procedure; results in bureaucracies becoming institutional edifices founded on rationality (Maynard-Moody, 1989). The ethos of means-end rationality assures that organisational action is orientated towards applying methods that are appropriate for a chosen end or value (Elliot, 1998). Deference to abstract rules serve as a framework within which to make decisions and ensure that action is organisationally congruent. Means-end rationally promotes an ideology and rational discourse that is committed to decision making that is sustained by evidence rather than beliefs (Maynard-Moody, 1989). More critical analysis may suggest that values and beliefs are not expunged from bureaucratic decision making, but rather that they are rendered less visible in a discourse saturated with notions of rational action in pursuit of unimpeachable impartiality.

Bureaucratic rationality sustains an institutional ideology that orientates officer action and behaviours, but fundamentally, especially in the context of this study, influences the character of engagement between officers and their clients. A belief in a certain legitimate order is endorsed that sets the boundaries for what is ‘normal’ and expected, and what is deviant or pathological (Bickhard, 2004). Rules and procedures serve to maintain these boundaries and to offer mechanisms and sanctions to control deviance and institutionally incongruent thinking. Abstraction and rules seek to effect a technical ideal, and the concomitant formalisation is seen as being impersonal and taken to its extreme, de-humanising (Elliot, 1998).

Officer diligence to formal procedures and institutional regulations that generate cases, that are to be assessed against a set of formulaic rules, fosters behaviours that become the pejorative characterisation of bureaucracies. Unresponsiveness, sloth, lethargy, torpor and inflexibility suggest that whilst striving to maintain equity and fairness to the denizens of the state, the public reception to the application of means-end rationality is problematic. Whilst front-line officers may have an, albeit begrudging, appreciation of the purpose and role of institutional procedures, their lay counterparts may have a less sophisticated comprehension of their necessity. Furthermore the cult of procedure, can instil internal tensions as well, as professionals serving in public bodies are similarly bound by regulations that stifle their natural zest to preserve professional autonomy (Freidson, 1986).

Defensive positions on rule-following serve to emphasise how they protect workers from role tensions (Lipksy, 1980). By insisting on the application of due process, institutions can insulate workers from the claim of prejudice and favouritism. By focusing on institutionally relevant and measurable parameters such as age, gender, income etc. individual cases can be transformed into bureaucratic categories that evade contestation.

2.4.3 Clients and Cases

The adherence of street-level bureaucrats to rules and hierarchical procedures comes with an associated existential cost to service users, in that their individuality is subsumed in institutional imperatives (Kalberg, 2004). The street-level bureaucrat is taught to assiduously avoid the individual, in the sense

that non-bureaucratic relevant personal characteristics, such a personality, charisma and moral opprobrium, must be excluded from decision making so as to ensure impartiality. In so doing relations in the street-level encounter are dehumanised, irrational and emotional aspects, that elude quantification and calculation must be eliminated (Elliot, 1998). Institutional bureaucracies are engaged in mass processing, that seeks to maximise the volume of transactions that can be conducted at minimal officer effort. This then necessarily introduces a tension in encounters where there is a conflict between institutional objectives and client centred goals (Lipsky, 1980). As Lipsky (1980: 44) suggests: 'The fundamental service dilemma of street-level bureaucracies is how to provide individual responses or treatment on a mass basis.'

The front-line service worker constantly has to negotiate the boundaries that surround encounters and distinguish between institutionally sanctioned agency and that which is not. This becomes the 'dilemmatic space' (Hoggett *et al.*, 2006: 766), the ceaseless task of circumscribing the limits for any given encounter. Therefore the lived practice of officer contact is a ceaseless struggle to sustain interpersonal relations with clients, that are necessary in any societal interaction, yet maintain sufficient distance in order to align actions to the needs of organisational mass processing.

Certain prototypical behaviours have been observed in street-level bureaucrats so as to minimise these tensions. Clients can be homogenised through the use of labels and stereotypes (Best, 2002; Seymour and Sandiford, 2005). Stereotypes become useful coping mechanisms for dealing with the sheer heterogeneity that

confronts them in client biographies. Labels and stereotypes become shortcuts for simplifying the diverse client population into more manageable groupings. Clients become treated as cases that can be compared with other cases for ease of processing. Prior cases become reference points that may set precedents for certain courses of action (Heimer, 2006). By reverting to cases and classification the street-level bureaucrat can better manage the sheer complexity that they encounter on a day-to-day basis, classification, becomes a device for rendering routine what would otherwise be an existentially troubling event. Ambiguous situations and aberrant clients can be transformed into pre-experienced categories, fitting into 'bureaucratic slots' (Lipsky, 1980: 59), which designate certain forms of treatment or course of action. Thus whilst the individuals may confront the encounter as individuals, with unique biographies and personal problems, they are transfigured into cases, stripped of core personal attributes and reduced to those factors that are institutionally recognised and important. This can be troubling for clients who are faced by 'the brutal realities of triage' (Lipksy, 1980: 118), where personal angst offers little leverage in persuading street-level bureaucrats to deviate from prescribed trajectories. Clientele become more or less accustomed to expectations of officer rule-following. In service domains for which there are few, if any alternatives, clients are 'taught' how to behave and learn what aspects of biography and circumstance are institutionally relevant (Hupe and Hill, 2007).

2.4.4 Rationing and Resource Impoverishment

In economistic terms there is no theoretical limit to the demand for free public goods (Hill and Hupe, 2002). The problem that street-level bureaucrats therefore

face, is the irresolvable problem between unbounded demand and finite resources. This problem is seemingly only exacerbated by the countervailing tendency for central governments to significantly reduce many local service budgets as part of the public service reform programme.

In such circumstances officers are forced to ration limited resources against much larger needs. Chronic resource shortages provoke service outlooks that orientate towards finding rational ways to allocate resources and prioritise needs. The never-ending demand for service, leads to chronic and sustained shortages, demand is such that it is almost never adequately covered and with infinite demand, could never be satiated (Lispky, 1980). Furthermore, a characteristic feature of public services is that the demand for their services can be highly volatile and unpredictable, classic cases being those of police services and medical care, where public order and ill health can at the point of local service delivery, evade epidemiological mapping. This tendency for excessive peak demand can impose great costs on the service and the individuals at the front-line. Extreme pressures, demanding clients and impoverished resource allocations, serve to sap at the morale of front-line workers and erode their occupational esteem. Clients too, are often profoundly affected by demand peaks, as extreme and unpredictable demands lead to long waiting times for service, broken appointments and hurried/impersonal treatment (Lipsky, 1980). System overload merely exacerbates insensitive triage, as harassed service workers revert to seemingly excessive rule adherence and categorisation so as to cope with exigencies that may not be apparent to the client.

Extreme chronic resource shortage introduces certain pathologies to service work. A ‘cycle of mediocrity’ (Lipsky, 1980: 38) may be sustained, whereby pressures are such that front-line workers are not able to improve their service. Improving throughput can be counterproductive as it simply reduces waiting times which are, in turn, merely met by further demand, returning the service to the previous equilibrium. It is seemingly a paradox, that should service workers seek to be more flexible and responsive to clients, it does not improve their working conditions, for it simply unleashes further demand and raises client expectations of minimum service levels (Lipsky, 1980). In these conditions service workers are in an unremitting quest to survive and move from one crisis to the next, with no real hope of ever reducing case loads to a level that can substantially improve the service they can offer or the conditions in which they work.

2.4.5 Discretion

The impact of policy is often only considered at the aggregate macro scale, without due consideration for those who are at the front-line who have to act and dispense according to policy directives. The gap between politicians, senior/middle managers and, those who have to deliver services, can become problematic at the point of delivery. Front-line officers may feel under great pressure to perform in an arena for which they are ill-equipped and are unable to provide the level of service they would wish (McDonough, 2006).

Faced with such pressures working in this ‘corrupted world of service’ (Lipsky, 1980: xiii) street-level bureaucrats attempt to artfully make the most of a poor

situation. Discretion and officer choice becomes a necessary imperative to cover for the exigencies of front-line encounters that do not always match the black and white confines of proscribed rules and regulations. They therefore become ‘ingenious rule appliers’ (Shotter, 1993: 62), flexibly interpreting policy in order to cope with presenting circumstances.

High case loads, episodic peaks in demand, result in high degrees of uncertainty, the only thing that is certain is that front-line officers cannot match the latent demand and they are unlikely to fulfil their mandated responsibilities (Lipsky, 1980). In these conditions the pragmatic application of discretion becomes a device to cope with the strains of everyday practice. The unrelenting press of client demands and organisational responsibilities necessitate methods by which they can shortcut ‘red tape’ in order to dispense service as their judgement suggests. This is not to say that street-level bureaucrats are unrestrained by rules, regulations and policies, but rather they are able to exercise a degree of discretionary freedom in their application. Thus clients can be ‘made to fit’ bureaucratic categories, if the officer believes they are deserving of service. Creative licence in rule following and novel interpretation becomes expedient for managing cases. Furthermore, professionals embedded in public service organisations are often granted higher discretionary powers than other occupational groups. Professionals due to the specialised nature and monopoly over certain service domains are permitted certain technical autonomy to practice within institutional boundaries (Freidson, 1986). Such discretion can have profound implications for the well-being and access to service that clients receive. Officers become gatekeepers for services and are able to, for example,

certify illness and disability, and open avenues for eligibility for government support programmes and treatments.

Discretion and autonomy in the context of street-level service provision is therefore seen as a necessary component of pragmatic service delivery. For officers it remains an essential coping device to circumvent otherwise unworkable rules and procedures. The sheer contingencies brought by high episodic case loads, resource impoverishment and the diversity of clients and their circumstances, preclude complete rule adherence, discretion is a necessary component in the working life of front-line public service workers.

2.4.6 Summary

Bureaucratic institutions constitute an essential and major part of modern life. In dispensing public goods and services, mass-processing is required to ration scarce public resources to those who are deemed eligible. The responsibility to dispense public services befalls, what Michael Lipsky termed ‘street-level bureaucrats’ – front-line public officials who see demands for service manifested in their everyday encounters with lay clients. Whilst bureaucracy, in its traditional form, valorises a means-end rationality, that favours rule following and calculation; the problem for street-level workers is how to deal with the existential problems of clients, in a social encounter, whilst still meeting the minimum system imperatives of the organisation. The street-level bureaucrat must devise a pragmatic strategy of practice that goes some way to satisfying clients’ needs, with minimal resources, and without incurring organisational

sanction for violating coveted rules and regulations. This is the daily dilemma that confronts the front-line public service worker.

2.5 Gap in knowledge

This study attempts to fill a gap in the existing literature. Whilst there is much literature on professional-lay encounters, much of this focuses on professions and public services which are high status and/or have significant autonomy at the front- line of service delivery. Arguably, doctors, the police, teachers, lawyers and social workers fall into one or both of these two categories and have been amply covered in the literature. The following constitutes a very small selection of the literature examining front-line professional practice for a number of occupations: social workers/welfare officers (Musil *et al.*, 2004; Brodkin, 2011); general practitioners (Hughes, 1982; Checkland, 2004; May, 2007); police officers (Novak *et al*.,2002; Hall, 2011); probation officers (Ugwudike, 2011) and, teachers/educators (Eden, 2001; Marrow, 2009).

The point of departure for this study is that traffic engineers are conferred with *both* low status, and ultimately, low operational discretion. As this study will demonstrate, highway engineering is in a sense a 'hidden profession,' whilst traffic engineers are highly trained and custodians of an esoteric body of knowledge, the lay public are reluctant to grant them jurisdiction over highway matters. Further, this denial serves to denigrate the skill and expertise that these professionals have and as such diminishes the status of highway engineering as a professional discipline in its own right. In addition, whilst engineers are *seemingly* custodians of authority and discretion, in the sense that they are the

‘gatekeepers’ for road safety engineering, this is in reality a fallacy. As the findings of this study unfold, it will become apparent that engineers, in a practical sense, have very little latitude or discretionary power to deviate from prescribed paths. This is, in part, a manifestation of the highly regulated constraints imposed by highway law and the rules and regulations prescribed by government departments, that engineers are bound to follow. Moreover, the lowly status of the highway engineer, in the eyes of the laity, denudes their professional ‘voice.’ Engineers are unable to fully exercise their authority and bring their expertise to bear, in a manner that befits their training and skills. Whilst engineers may pronounce on an issue, their voice is largely lost in a contested arena that is filled with systemic and political imperatives, and the influence of an increasingly powerful public. In examining this niche profession, a unique insight is available to the everyday problems that these highly trained engineers encounter in providing front-line services. Such services, whilst being highly consequential to public safety, are largely not esteemed by an antipathetic, or at best, sceptical public.

3. Methodology

3.1 Introduction

This chapter provides details of the methodology and methods adopted in this study, that enabled the analysis and development of emerging themes that are the subject of the remaining parts of the thesis. The chapter is arranged in four parts, namely: section 3.2 outlines the philosophy that informs the study and shapes the interpretative strategy adopted; section 3.3 highlights a number of ethical issues that had to be considered in undertaking such a study; section 3.4 details the three principal data sources upon which the research is based; and finally, section 3.5 explicates the grounded theory methodology that guided sampling, coding, analysis, and the generation of the emergent themes. To conclude there is a discussion of the acknowledged weaknesses of the study and suggests on how it might be improved.

3.2 Methodological Philosophy

This thesis documents research undertaken following a constructivist version of grounded theory. This approach builds on the more positivistic leanings of the original conception of the methodology as first reported in the seminal monograph of Glaser and Strauss (1967). A grounded theory approach was not foundational to this study, rather it was adopted after some preliminary work had begun. Although other approaches were considered, notably narrative and content analysis, it was felt that grounded theory offered a systematic and complete methodology by which to structure both data collection and the subsequent analysis of qualitative data. In particular, the constructivist approach to grounded theory appealed to the desire to remain faithful to the meaning and

experiences that actors *themselves* brought to interpreting the lifeworld (Charmaz, 2006).

Whilst grounded theory provides the framework for the systematic organisation of sampling, coding, analysis and production of emergent themes, there are other methodological influences that have shaped the interpretation and reporting of the findings that follow in subsequent chapters. More specifically, the philosophical underpinnings and the interpretative stance, are informed by phenomenology, and the notion of talk and text as discourse. The following sections elaborate in some detail on the formative issues that structure interpretive phenomenological analysis, and the defining qualities of discourse. In so doing, I hope to illustrate their salience and role in shaping the character of this research endeavour.

3.2.1 Phenomenology

Phenomenology is an interpretative approach that attempts to understand social reality through individuals' accounts of their experiences. In this way it is consistent with a Weberian philosophy that sees the function of social science as being the accomplishment of *verstehen*; that is, to attain the subjective meaning of everyday social action (Schutz, 1967; Morgan and Drury, 2003). Phenomenology pays attention to how individuals comprehend their everyday reality and how actors organise and construct the accounts of their experiences. The emphasis remains with subjectively framed versions of their lived reality, in doing so it is hoped that the interpretation of subjective accounts will manifest a

worldview, revealing how actors construe and confer meaning in their renditions of experiences and events (Locke, 2001; Morgan and Drury, 2003).

The emphasis is very much on the individual, and seeing the world from the perspective of the subject in question. The, so called, 'eidetic reduction' demands that the researcher must 'bracket' the experience and refrain, at least initially, from drawing theoretic or analytic conclusions that would draw on the second order experience of the observer. In this way the researcher must adopt the 'natural attitude' (Gearing, 2004). The essence of this interpretive endeavour is to draw out the meanings that individuals bring from social action, and how they themselves interpret them (Denzin and Lincoln, 2005). Phenomenology presupposes that the inner life of the individual finds an outward expression in their social action, and in the accounts they give of their lived experiences. This perspective is conveyed in the oft quoted truism of Weber: 'one need not have been Caesar in order to understand Caesar' (Harrington, 2001: 311); and so it is not necessary to participate or experience first hand events, in order to comprehend what they mean for third parties. Attentive examination and interpretation of accounts can reveal the subjective meaning of phenomena. In affording primacy to experience, phenomenology places emphasis on the phenomenal character of reality (Ferguson, 2006). Individuals cannot escape the ebb and flow of experience that suffuses their lived reality. We are wedded to our conscious experiences of the world, and developing ways of knowing and confer meaning according to these experiences and how we construct our worldview. Interpretive phenomenology is committed to exploring and bringing out this experiential reality in order to comprehend how it shapes both individual

and collective action (Tieszen, 1992). In doing so it attempts to provide a more nuanced understanding of subjectivity that grasps the qualitative diversity of lived experience (Kvale, 1996).

A defining concept of phenomenology is that of lifeworld. This represents the day-to-day set of presuppositions and experiences that the individual encounters. Its very mundanity means that is a commonplace and unproblematic background to everyday existence (Habermas, 1984). Our lifeworld represents the horizon through which we encounter the world and is bounded by the totality of our experience and the workings of our intensional activities (Harrington, 2000).

The lifeworld constitutes our orientation to the world; its commonplace character means that it is a taken-for-granted aspect to our psycho-social existence. The world that we encounter on a daily basis has a largely enduring and familiar character, that is taken as given and needs no further explanation or analysis; this is immediate experience, prior to interpretation. The natural attitude as defined by Schutz is the basic orientation of the individual to the world and encompasses all background assumptions and meaning structures that sustain a continued meaningful existence against the flux of everyday life (Schutz, 1967; Ferguson, 2006). Our lifeworld forms the base upon other knowledge and understanding is accreted, it is the foundation upon which a meaningful world is built. This initial foundation for worldly comprehension is taken from an intuitive grasp of our surroundings, it represents the ‘moment of constituting meaning’ (Vandelvelde, 2001: 60) that is presented to consciousness as being self-evident and leads us to believing this is how the world is. Our perceptions and intensional consciousness

thereby in a very real sense constitutes ‘data’ – these are, the constituent parts, that contribute to the lifeworld and the natural attitude that we adopt (Diemers, 1999).

It is important to comprehend the lifeworld as our primary encounter with the world, it is our ‘primordial orientation’ to the world (Ferguson, 2006), and for us has an intuitive grasp prior to any description or conceptualisation. These formulations are as Schutz detailed, constructions of the first degree, prior to all standpoints and reflect our natural perception (Diemers, 1999; Ferguson, 2006). These feelings and values are what one intuitively grasps from our surroundings, unencumbered by conceptual thought and analysis. To Schutz, scientific knowledge and theoretical knowledge represented knowledge of the second degree. That is, they represent first degree knowledge of the world that is worked upon, and to a degree abstracted from experience (Diemers, 1999). Nevertheless *all* knowledge is ultimately founded on the paramount reality of human experiences. The lifeworld is not necessarily rational in any sense, there can be no assumption that our intuitive natural attitude to the world need follow the confines of rationality. The natural attitude is not bounded by the limitations of rational thought and is free to constitute a paramount reality that encompasses all the foibles, vagaries and idiosyncrasies of individual expression.

Although our primary experiences are as individual observers, of the world that envelops us, we are social beings that live in a social world dependent on co-existence and co-operation. To integrate the lifeworld into a social context it is necessary to conceptualise it as being common. This world that I see and take for

granted is, in essence, the same world that you see. The commonality in expressions, feelings and actions presupposes an alignment in lifeworlds – and intersubjectivity is the bridge between subjective worlds (Murakami, 2003). In a sense the presupposition of intersubjective alignment depends on *doxa*, a world where a common sense underlies prevailing reality. The play of *doxa* is seen in the mundane reasoning of individuals in their everyday life, and the assumptions they make about their taken-for-granted existence in the world. Phenomenology attempts to give primacy to an interpretative stance that seeks to examine mundane reasoning and the common sense world as it is experienced and articulated (Thomason, 1982).

Despite the presumption to a common world and the prospect of intersubjective agreement between sentient beings, phenomenology is ready to acquiesce, through necessity, to individual autonomy over meaning-making. As Nietzsche proclaims: 'Perspectival 'seeing' is the *only* kind of 'seeing' there is, perspectival 'knowing' the *only* kind of 'knowing'' (Nietzsche, [1887] 1986: 98, italics in original). Individuals see things in different ways and respond to like stimuli in variant ways (Tresch, 2001). Every representation that an individual makes, in response to phenomenal experience, takes on some kind of aspectival hue, the individual brings to the interpretation the essentially individuated situated meaning that is theirs and theirs alone. In the embodied phenomenology of Merleau-Ponty (1962), it is the body which structures experience and it is 'the body which constitutes the anchorage of our perceptual limits and affordances' (Archer, 2000: 127). In this way, individuals may acquire different lifeworlds that afford different interpretations and meanings to the same external stimuli

(Aspers, 2006). The signature of the individual is given in the interpretation that is ascribed to their paramount reality.

The implications of this perspectival view are far reaching. An immediate consequence is the essential distanciation it introduces between the world and the percipient. In this way facts themselves are simply not available, the world we inhabit is merely what we interpret it to be (Thomason, 1982). The primacy of the subject in phenomenology is everything, for without a perceiving subject there could be no object as such (Aspers, 2006). Perspectival viewing challenges the notion of an objective reality, since our perceptions are saturated by the aspect in which it appears to us. The constitution of meaning is inextricably suffused with existential values and feelings that imbue our subjective interpretation. Since, with this in mind, the prospect of finding an objective reality is elusive, meaning and facts are not something that are 'out there' awaiting discovery. Rather, meanings are crafted and worked on, and each moment of meaning is, in some small way, different as Prior says 'there can never be a final once-for-all interpretation of anything. To understand is to understand differently' (2003: 112). Human experience is forever renewing knowledge and perspectives, we are forever transitioning from one horizon of meaning to another. The quest for facts in themselves is futile, we are condemned to a perspectival view of the world constituted by our subjectivity (Thomason, 1982; Rogers, 1983).

The beginning of the inquiry for phenomenology, is the moment in which meaning is constituted. Central to this inquiry is the notion that facts are not

given, but are brought into being through consciousness. The world is meaningful because our consciousness discloses the world and makes it meaningful (Aspers, 2006). Our perception is directed towards objects in the world which are brought into consciousness through the volition of the percipient, the breadth and scope of this perceptual awareness constitutes the horizon for meaning-making (Ferguson, 2006). Our conscious involvement with the world is relentless, consciousness becomes the endless foundation of experience, 'without consciousness, there is nothing to be said or done' (Giorgi, 2005: 76). An integral concept for phenomenal consciousness is that of intentionality. That is, consciousness is always directed, it is always the consciousness of 'something,' the object of our attention.

The flow of experience to our conscious being would be largely meaningless, unless it was worked on through reflective thought. Intelligibility and meaning is given to acts of intentionality, because as humans we seek a meaningful and coherent world (Giddens, 1984; Baerveldt and Voestermans, 2005). Meaning is not inherent in our sensory engagement with the world, rather meaning has to be given through a synthetic process that entails reflection of one's conscious thoughts (Hauser, 2006). The account that we give may not be the only one, but it is that which we deem to cohere with our forethoughts and our comprehension of the world at that moment in time. It is thus contingent on the circumstances that envelop us and the historical conditions that ground our knowledge.

The bringing of meaning to the flow of phenomena, that is brought by intentional consciousness, is necessarily an individual affair, at least initially. For it is the

individual, that must first accomplish an understanding of the sensory information at hand. However, this is not to say that sensemaking is undertaken in a social vacuum, and that the sensemaker is forever bound to his or her existential world. As with Heidegger's *Dasein*, the construction of the meaning is achieved through a 'being in the world' (Vandelvelde, 2001; Ferguson, 2006). Furthermore, comprehension of the world is a productive affair rather than merely being reproductive of past comprehensions. In this way, phenomena are actively worked on in a constant struggle to find meaning, in the vagaries of day-to-day existence (Turner, 2003). The understanding that we bring today, is shaped by our past experiences, and the experiences that bring us to our contemporary existence. Consciousness and thought are thus bound to the experience of the individual (Clegg, 2006), and experience is seen as the basis upon which thought is founded Our current thoughts are therefore inextricably tied to our existential experiences, as Scruton notes:-

> There is no description of the world that can free itself from the reference to experience. Although the world that we know is not our creation, not merely a synopsis of our perspective, it cannot be known except from a point of view which is ours (1997: 102).

Therefore our conceptual thought and the meaning we bring is contextual. Meaning is imbued with feeling and past thoughts, and is shaped by our place in the world and the awareness of the present (Turner, 2003; O'Brien, 2006).

The comprehension of the present necessitates the use of sedimented knowledge and experiences. These stocks of knowledge built-up through past encounters with the world shape the meaning for future comprehensions. To generate a coherent worldview, we rely on past recollections to structure thought to create a

mundane reality that we can rely on (Ferguson, 2006). The reliance and deployment of schemes of interpretation, that have in the past proved reliable and trustworthy, serves to sustain the ontological security we need as humans. It is through mechanisms of trust and reliance, that we can face the world each day, knowing that what was true yesterday will largely be upheld today.

The sedimented knowledge we come to hold are informed by the cultural background that suffuses our existence, and the social *milieu* in which we are embedded. This background is largely taken as given and is seen as unproblematic, it forms the common sense or *doxastic* conception of how the world is. The individual interpretation we bring, draws on locally derived materials available at the time, that can be interleaved with past comprehensions, in order to generate a newly crafted and integrated conception of the present. Comprehensions though, are individuated, since we live in separate, albeit overlapping, worlds. The horizon that presents itself through consciousness is only one of many possible horizons that exist in the totality of existence. We each live fragmented lives, that is, they are merely a small part of what is possible (Schutz, 1967). Therefore, there are 'degrees of freedom' (Giorgi, 2005: 79), that limit and constrain the world we see and the sense that we can make of the fragmented whole. In this way knowledge and understanding becomes stratified, it is limited by the experiences we have and the world it which we actively engage in. Our outlook is formed by the horizons with which we encounter the world and is made-up of sedimented knowledge, which shapes expectations and understandings, of future events. Drawing on experience and the stocks of knowledge that are the residue of past experience, we create

typifications of how the world is (Ferguson, 2006). Typifications help build a common sense world, where past structures and meanings are taken to be diachronic and to hold both in the present, but also the future. Typifications are thereby naturalised and form the natural attitude with which the percipient faces the world. To objectify past structures and meaning, is to be reliant on their enduring qualities that define underlying reality, and enable the individual to focus on more pressing needs.

Although phenomenology is attentive to the moment of constituting meaning, this is not the end of inquiry. For the intuitive grasp of phenomena does not reach full meaning until it is worked upon by the reflective being. That is, the full import of conscious experience is not realised until it is manifested by conscious deliberation. This is necessarily a higher order activity that is performed after the first order imbibement of conscious experience, it is akin to apperception – the re-working of what has passed our conscious existence (Gorner, 2001). This individuated conception of thought and meaning-making is troublesome for objective thought. Since true objectivity would seemingly be impossible, perspectival thought is perhaps the only kind of comprehension we can have. Whilst we can labour so as to eliminate our analysis of preconceptions and forethoughts, we must be attentive to the circumstances that have led to our being.

This outline of the phenomenological understanding of the meaning-making endeavour, aims to demonstrate a consistency within the broader grounded theory framework. That is, a phenomenologically informed interpretative

analysis of the construction of meaning is closely aligned with the grounded approach of Glaser and Strauss, where meaning, analysis and ultimately theory is grounded in the experiences of those who are studied. The development of themes and use of *in vivo* codes in grounded theory, seeks to found the resultant analysis in the experiential worlds of participants. Further, by remaining close to the data, the analysis can retain the 'voice' of the author as opposed to that of the researcher. In maintaining a close alignment between data and subsequent analysis, the research can minimise the distance between the words and texts of participants, and the conceptual categories that emerge.

3.2.2 Discourse

This thesis sets out to examine and understand the competing discourses that surround road safety. Prior to this analysis it is necessary to examine a conceptualisation of 'discourse' that will serve as a reference point for subsequent analysis and discussions. Burr (2003: 64) provides a useful entry with the following definition:-

> A discourse refers to a set of meanings, metaphors, representations, images, stories, statements and so on that in some way together produce a particular version of events. It refers to a particular picture that is painted of an event, person or class of persons, a particular way of representing it in a certain light.

Although they may at times overlap, a discourse can be seen as a discrete way of representing and can be distinguished from other discourses. In a sense the discourse is regulated, its integrity lies in its ability to be able to reproduce modes of representation with little appreciable change (Mills, 1997). Its

distinctive properties may be regulated by linguistic register, vernacular, frames of reference or ideological content. Discourse therefore constitutes a way of representing a subject and may be governed by tacit or explicit rules that control its reproduction. The persistence of a discourse may rely on an insidious ideological underpinning, where permissible forms of thought and talk are embedded in social institutions who control the reproduction of such discourses (Slayton, 2007). Crucially, discourse is communicative, it is generated by communicative practices whether they be oral statements, texts, conceptual terms or modes of expression that constitute recognised ways of discussing the issue at hand (Cohen *et al*., 2005). It is important to recognise that discourse cannot be merely reduced to language, rather it comprises a system that structures our way of perceiving some state of affairs. In this way, above and beyond the influence it has on talk and text, it colours our behaviours, thoughts and values, and in so doing can organise our conception of social reality (Mills, 1997; Gee, 1999).

Studies of discourse tend to be qualitative in character. This is since merely quantifying texts, fails to achieve the analytical penetration, which more interpretative approaches can offer. It is only by attending to the qualitative character of discourse materials that we can comprehend the work done by particular constructions. Further, it is by focusing on the subjective qualities of talk and text, which a more nuanced understanding can be reached, where subtle textual formations can have profound consequences that would elude a quantitative analysis.

Discourse, as conceptualised here, is not some passive medium, a conduit for conveying messages. Rather it has a constitutive role, it is *active* in shaping thoughts and meanings. In this way, as Putnam and Cooren (2004) note, rather than being an artefact it is generative and productive. This capability is found in the recursive property of texts, where discourse, in whatever form it is manifested, is not merely reflective of thought, but creates it and shapes further meanings. Conceived in this way, discourse is wrested from the private realm of the individual, discourse creates public worlds through meaning-making structures sustained through intersubjective agreement. This constitutive role sees discourse as more than mere language, it forms byzantine structures and systems that support ways of seeing. Following Foucauldian thought, this sees discursive structures as the inextricable intertwining of ways of speaking, with ways of thinking (Burr, 2003).

Discourse continually builds and renews, regenerating itself and in so doing reflects aspects of social life and orientates the relations that we have with others. Through talk and text social identities are built, and ways of thinking come to determine a normative social order. Discourses resist external perturbations that threaten the 'normal order,' and systemically attempt to retain an equilibrium, which preserves the integrity of the modal form. In preserving a normative order, discourses are by definition evaluative, they maintain a stance towards the world and necessitate choices of expression and thoughts from the spectrum of possibilities (Baker, 2004; Frow, 2006). Discourses tend to be self-referential; in so doing, order is more easily retained and controlled. To speak from *within* a discourse is to speak for the discourse, it represents the personal

commitment to this rendition of reality. The enactment of discursive regimes is to ensure their continued existence and to tacitly condone this version of how the world is. The choice of one discourse by necessity affords primacy to one version of comprehension at the expense of others. When adopted unthinkingly, the current discursive practices can evade critical scrutiny, and become *doxastic* – it is just the way the world is (Smith and Kulynch, 2002).

Seen in systemic terms discursive constructions attempt to minimise disturbances that seek to disturb or corrupt ordained ways of thinking. In this way discourses can be seen as essentially stable entities, which are largely preserved by those who have an interest in sustaining such worldviews. Institutions, for example, represent stable communities that promote and sustain institutional ways of thinking and have 'interpretative communities' (Moran *et al*., 2006) that have a commonality forged through shared practices, outlooks and governance. However, this does not render the discourse immune from revision. Discourse can be contingent and dynamic. The constitutive role of discursive formations necessitates that they are reflexive and attentive to their ecological settings. Whilst not bringing wholesale changes to the superstructure of any given discourse, this dynamic reflexive stance can lead discourses to change trajectories and to assimilate new values and ideals. Discursive practice is always contextually contingent, meanings are subject to re-negotiation and revision – no meaning is ever singular nor fixed (Bishop, 2005).

There are always numerous discourses that surround any object that seek to define an object or a state of affairs (Burr, 2003). The objective of this thesis, is

to explicate a number of attendant discourses that seek to create road safety as an issue in a multiplicity of ways, dependent on vested interests, position and responsibilities. In focusing on 'lay' and 'professional' modes of expression, this is not to deny that others co-exist. Thus, for example, there is a 'regulatory' discourse that enshrines its proclamations in highway law and policy directives. Although, as discussed in later chapters, highway engineers have a tendency to align with the regulatory discourse, they are not entirely congruent with the boundaries of this discourse and departures from its central tenets are in evidence.

The co-existence of numerous discourses means that each must vie for position and compete in order to achieve voice. Each discourse will try to discount different perspectives and values, and attempt to promote its own version as being veridical and worthy of attention. Each discourse presents a different rendition of 'how the world is' and attempts to sustain a particular subject position. This is not to say that discourses are entirely whole or monolithic. At times discourses fracture and fragment, giving different perspectives and outlooks. Institutions may strive to promote a unified discourse, yet at times can speak with different voices, that reveal the plurality of worldviews and ideologies. The public sphere, as conceived by Habermas (1984), is even more prone to polyphony. As public discourse is unbound from institutional ties, and is free to fragment, it thereby attains a vast array of tones and ideologies according to prevailing interests and tastes (Pensky, 2001). Indeed, plurality can be seen in individuals – rather than being conceived as speaking from a unified position, individuals can switch between discourses according to whim, or

according to the role they are sustaining at that time. Thus, in the interviews conducted for this research, it was apparent how participants frequently and readily switched between maintaining a 'professional' discourse, and to that which sustained a discourse as a 'member of the public.' Such transition was advertised with such discursive markers as "well, my own view is…." or "speaking as an engineer I….."

In the competition between the multiplicity of voices surrounding an object, each will contest and vie for position. The ultimate objective is for that discourse to be taken as true, that is to constitute the truer rendition for some state of affairs over another version of events. By this means, truth is seen to be historicised and contingent. The validity of a statement or its truthmaking properties are seen allied to a dominant discourse and the credence with which that version of reality is held. Truth, in this light, is seen as a transient notion, forever evolving and adjusting as the hegemonic discourse itself revises and develops. Truthful statements cannot be judged by some absolute standard, but are judged in the particular historical context within which they are uttered (McLennan, 1992; Hall 2001). Discourses therefore remain powerful vehicles for transmitting knowledge, and setting normative standards for society to follow. Karin Knorr-Cetina (2001) introduces the notion of 'epistemic cultures' these represent institutional and scientific communities that control and legitimise specialised forms of knowledge. These cultures produce, warrant and authorise knowledge in certain areas, making it esoteric and accessible only to those who meet certain institutional standards. They therefore shape the way certain aspects of life are constructed and seen. Those who 'control' the discourse, carry voice through the

‘institutional force’ and authority which is vested in sanctioning bodies, whilst voices outside these communities remain muted and non-authorised.

Access to discourses can be at a number of levels. As well as institutional membership, a range of other factors and means can represent barriers to technical and institutionalised discourses. Qualifications, technical vocabulary, access/contribution to technical literature, linguistic registers, proximity to the sanctioning body, can all control and restrict access to a discourse. Institutional power and control over discourse is maintained by limiting those who can legitimately speak for the discourse. In so doing, control is maintained over structures that authenticate the knowledge production and pronouncements of those on the ‘inside’ whilst negating the validity of those on the ‘outside.’ In this way the control of discourse is seen as a power issue. Those who guide and legitimise knowledge, guide the way in which objects can be meaningfully talked about. By extension, in limiting conceptions of the world to the authorised versions, they constrain how objects can be talked about in other ways (Hall, 2001). Discourse then has real and tangible consequences. Discourse is more than a mere amalgam of talk and text. The power of discourse is seen in the authority that it commands in controlling knowledge, thought and behaviour (Gergen, 1999; Dick and Cassell, 2004). Discourse is therefore seen as being an important resource, which is why efforts to control and influence discourse are jealously guarded (Brown, 1993).

Discourse can also be postulated to operate at an unconscious level and be insidiously instrumental. Discursive frameworks can be saturated with

ideological content and encourage a particular version of events and modes of expression that are unconsciously reproduced by communicants. So versed and omnipresent are such modes, that participants may be unaware of how their thinking, talking and participation in the world, is ideologically shaped (Fairclough, 1985). Whilst language and discourse is endlessly re-configuring and re-defining itself, this may be within conceptual degrees of freedom, that inhibit truly liberated thought. In this way, as Habermas elaborated, communication can be 'systemically disturbed' in that it is regulated by power relations (Eagleton, 1991: 128). The control and legitimising of discourse can therefore be hegemonic, the promotion of one view necessitates the occlusion of another. The available space for discourse is constraining and shapes the conditions for further discourse. Hegemonic control limits the form for expression and alternate explanations, it becomes a bounded space with finite possibilities (Torfing, 1999).

Discourses are not comprised of discrete statements or rules, but rather are comprised of labyrinths of structures. In this way they are systemic, with internal structures that support and give strength to certain views and outlooks. As evolving entities, discursive formulations change and morph into new forms. The meaning of an utterance is therefore only valid in the historical circumstances in which it was created. According to Foucauldian thought, although the meaning of a statement is taken outside of the statement by an interpreter, it *belongs* to the discursive realm in which it was created (Chalaby, 1996). This conception radically relativises the interpretation of discourse, whereby the meaning of a text is only truly understood in the discursive processes that generated it

(Eagleton, 1991). This historical comprehension of a discourse valorises the moment of creation and the circumstances under which a discourse was active. Utterances from within a discourse, are made using locally available material, and based on what is commonly taken as 'true' at the time. This material will draw on background cultural knowledge and understandings, borrowing from what are available at that moment of time. This cultural knowledge will contain commonly available assumptions, traditions, habits, ways of thinking and prejudices that constitute the *doxastic* thought of the day (Crossley, 2004). Statements, texts and other discursive forms are not created in an abstract social vacuum, but in some way reflect the circumstances and conditions in which they were voiced (Baerveldt and Voestermans, 2005).

The power of discourse is seen in how it can structure and shape the thought of individuals. We live in a discursive world and our apprehension of reality is given by the discourses in which we are immersed. These discourses contain structures and modes of reason, which are saturated with normative content and values (Much, 1992; Burr, 2003). We are conditioned to see the world in a particular way and are likely to see states of affairs as 'normal,' whilst label others as being 'pathological' (Potter, 1996). The value systems embedded in discourses thereby have an important constituting function, they do not merely serve to label but actively shape how we act, judge and behave (Brown, 2006).

For discourses to stand alone it is necessary to disaggregate them from the world in which they are enmeshed and consider the properties and circumstances that set them apart from others and given them certain enduring properties. Although

discourses are implicated in social relations and the relations with other discursive genres, they are inherently inward looking. It is from within, that discourses muster strength to affirm their structure and to reproduce into new variant forms. The strength of a discourse is drawn from its coherence, the ability to see and describe the world from a united worldview. To sustain this worldview, explicit or in less formal systems, tacit rules, are followed that govern acceptable discursive practices. The governance may extend to vocabularies, rules of engagement, procedures for communicating or repertoires of reasoning and acting (Brown, 2006).

Earlier in this chapter reference was made to the ideological import of discourse, where the more insidious implications of discourse were suggested. That is where discourses were taken as given and became *doxastic*, colouring worldviews with unspoken assumptions of how social reality is (Smith and Kulynych, 2002). Discourses cohere in that statements from within the same discourse are consistent and supporting of other statements. There are therefore webs of connections between parallel statements, which maintain and sustain the whole. However, in a more active sense, the statements are seen to accrete and help provide the foundations for further allied discursive practices. This is the constitutive function of discourse, to provide support and strength for renewal and continuance (Putnam and Cooren, 2004).

The enduring presence of some discursive structures becomes so embedded that they can take a naturalised form. Institutional discourse, in all its variant forms, offers some of the more persistent modes of expression and meaning. Their

diachronic properties are manifested in the reified character they can adopt. Institutional thought and ways of acting can become taken for granted, meanings become so familiar and taken to be true, that they are not even discussed or challenged (Cicourel, 1985). The ways of seeing for institutional actors become so accustomed to the organisational perspective, that it becomes second nature to think and act in these terms. Indeed it may be difficult to escape the shackles of the formally adopted discourse to comprehend other, more liberated perspectives. In this way locally determined ways of seeing and knowing, produce differential knowledge, where the character and nature of available information is dependent on social position and the discourses in which one is active and participates in.

The stability and preservation of institutional discourses is maintained through strictly limiting terms of reference and permissible meanings. Further protection to institutional and professional discourses is afforded through specialisation. Discourses can become differentiated through the use of technical language and by adopting specific linguistic registers for conveying information between communicants. Not adopting these assumed codes can be seen to denigrate the content of an utterance and marks any statement as being ‘outside’ the normal, accepted and legitimate modes of expression. There are substantive implications that follow from the differential knowledge and specialisation of discursive expression. The quest to sustain the worldview by one form of discourse, necessarily delegitimises and marginalises another. The adoption of specialised vocabularies and registers, together with restrictions on access to permissible knowledge, preserves a distanciation between one discursive world and others.

In seeking to promote and reproduce one worldview, barriers are constructed to communication between disparate parties. Intersubjective agreement and the Habermasian notion of an 'ideal speech situation' become unsustainable (Habermas, 1984).

Discourse has been introduced in this chapter of the thesis because it is a methodological issue. To grant the notion of the plurality of discourses is to recognise that there are competing voices and varying constructions on any subject. Discourses have methodological implications, in that the researcher must be attentive and aware of varying forms of issue construction, each vying to be heard, each wishing to be the final word. Polyphony necessitates careful reading so as to disaggregate separate discursive strands from the background noise. It is not adequate to determine the status and role of the authorial voice, since shifting subject positions can initiate and borrow from different discourses. Further, any analysis of discourse must be critical and aware of local circumstances that are responsible for its creation. Discourses reflect the worldviews of those that participate, they contain cultural assumptions, accepted modes of reasoning and values, which both limit and shape the manner in which issues are constructed. The materials of discourse, be they letters, documents, polices, protocols, or the words of actors – represent a valuable resource enabling the researcher to re-construct and, to de-construct the discourse within which they were created

3.2.3 Reflexivity

As a researcher undertaking qualitative inquiry, it was necessary to approach the study from a reflexive standpoint. That is, prior to entering the field, to consider

the part my own values and attitude might play in determining the shape and scope of the study (Hesse-Biber, 2007). Reflexivity is seen as a 'turning back on oneself' (Outhwaite, 1999: 14), a critical appraisal of what I bring to the study as an individual, and the resultant interpretation that is brought forth. Reflexivity, as conceptualised here, does not constitute some narcissistic tendency, but is an appropriate self-awareness of the nature and character of qualitative research. For whilst objectivity is earnestly strived for, complete detachment, is simply not possible (Taylor, 2001). Researchers do not have *direct* access to the minds and experiences that generate talk and text. The documentary information, and interviews that form the 'data' for this study, need questions to be asked of them and for interpretation to be made of what follows this questioning. The analysis of discourse can lead to multiple interpretations. Words and phrases may render alternative readings, and be loaded with semantic ambiguity that await the unwitting and the unvigilant (Riessman, 1993). The researcher is therefore themselves, an active participant, in the research process, and the product of their labours is formed by the interpretation that *they* give to the data (King, 2004). Any inferences made, and conclusions drawn need to be set against the biography of the author and the processes and circumstances that generate them. For the researcher is a human instrument, a conduit for accessing knowledge, comprehension and eliciting meaning (Holstein and Gubrium, 1985).

With this reflexive stance it is appropriate for me to position myself in the context of this research endeavour and the circumstances that brought me here. At the time of writing I have some 25 years of experience in the field of transportation. I first found my feet in the cut and thrust of a consulting

engineering company, where profit was king and traffic engineering entailed the pursuit of technical solutions that could be sold to clients. My day-to-day duties were wholly in the somewhat abstracted world of transport modelling, where highway networks and their users, are subsumed in complex computer models and their interactions determined by mathematical formulae. In this hermetic world transportation *seemed* the very embodiment of the technical idyll, and the public seemed merely distant recipients of our endeavours – their input and interference in our daily labour was entirely minimal. This all changed when in 1994 I moved to work within a local authority highway department. Initially, I was engaged in more modelling work, preparing transport strategies and solutions for communities in which I lived. However, this work took on a much different character to what I had been used to in my days with a consultant. The public and political reality of preparing solutions became my paramount reality. The means by which abstracted solutions get translated to things-on-the-ground took on a very different hue. The everyday practicalities of public engagement, seeking political assent and conforming to the byzantine layers of policy and regulations that govern highways, took centre stage. Whilst in recent years I have moved away from scheme delivery *per se*, and into providing services that support engineers in their work (for example, project management, financial monitoring and control); I have remained within a highway engineering *milieu*. It is during this time, especially within the local authority context, that I have been struck by the competing tensions and voices that surround the highway. This is no more so than in road safety, where personal injury, strong emotions, vigorously defended viewpoints, and underfunding, provide a volatile mix. It is as a ‘professional observer’ to this contested arena, that the seeds for this

research were sown. That is, a desire to, in a systematic, yet nuanced way; apprise the meaning that the assorted parties bring to the varying constructions of road safety issues.

So although not an engineer myself, I have spent my entire career being surrounded and working with professional engineers. This confers both advantages and disadvantages with respect to conducting this study. Initially, I will focus on the former, where I will argue that the experience I bring to this research has positively contributed to its explanatory power. Having worked for 25 years in the industry, I have, to a large degree, *lived* the same pressures, emotions, confusion, despair and dramas, which engineers recant in my investigations. This closeness to the field enabled me to comprehend the full import of what was conveyed. Further, it is only through reflection, that I have realised that I speak the same 'language' as engineers and other transport professionals. Highway engineering is largely a sub-discipline of civil engineering, and comes with its own specialised vocabulary and vernacular. This is an amalgam of technical terms emanating from civil engineering itself and more specialised terms, peculiar to transportation. This is augmented by the regular peppering of references to key legislation, policies and technical documents that represent the everyday horizon through which engineers see their work. This familiarity with the vernacular enabled a more immediate grasp of the content of letters and the expressions used by engineers in interviews. Further, it meant that it was not necessary for participants to 'translate' their dialogue when answering questions, rather that task befell me when writing this thesis.

The familiarity I had with the working environment and the way the profession is organised and functions; enabled the pursuit of more penetrating lines of inquiry in the course of the study. My knowledge and appreciation of workings of a local authority highways department, enabled me to readily establish a rapport with respondents and was able to empathise with the issues and problems they brought to the discussion. Finally, although not an engineer by profession; my knowledge and ability to communicate on the same terms as engineers, further assisted rapport, in that I was not seen as a threat. I was conceived as an 'insider,' thus interviewees were able to conduct a frank and candid discussion without seeing me as part of management or an emissary of the larger corporate body. In short, I was seen as being 'one of them.'

Such closeness to the field must be tempered with an equal measure of caution. Tales of 'researchers turning native' and the need for immersion in the field of study are legion in the literature of ethnography and anthropology (e.g. Rock, 2001; Tresch, 2001, Bryman, 2004). In this case however, it is more a reversal of the normal ethnographic order, that is, rather than 'researcher turned native,' I was more 'native turned researcher.' The implications of this closeness, impacts on the ability to attain sufficient distance to remain as objective as possible (in previous sections we conceded that pure objectivity is impossible); and true to the data. In a sense, this becomes an ethical and moral issue, the researcher must ensure that professional standards are upheld and individual predilections are expunged as far as possible. Consequently my reflexive positioning in this study necessitated an elevated self-awareness, of how my past experiences may bias any reporting, and distort the rendition contained in this thesis. To this end this

required me to retain extra vigilance, in attempting to acquire the necessary analytic distance, so as to produce a critical and fair appraisal of the findings and any conclusions made.

In recognising my insider status, I am attuned to the impact that this may have on the reporting of results. My experience in the field assists with affecting an emic perspective, that is attaining the view of the native (Murphy *et al.*,1998). In doing so it is appreciated that this is not the portrayal of an objective reality, but is one saturated with the views and perspectives of those living this reality, and as such is phenomenologically rich. Whilst acknowledging the implications of this perspective, it is not seen as a weakness *per se*, but rather an opportunity to understand the world and describe it from a niche point of view. Whilst every effort is made to achieve some balance in reporting (for example by using correspondence and media reports to give lay perspectives), it is necessary to be explicit about my closeness to the work of traffic engineers. There are those that argue that such empathetic understanding and subjectivity do not discount such work as being scholarly, so long as there is transparency in data collection procedures, analysis and the status of the researcher (Murphy *et al.*, 1998; Nielsen, 2007).[4]

[4] Howard Becker gave a more radical perspective on insider research and believed that researcher values in reporting were an occupational hazard, but not necessarily fatal to the research:

We can never avoid taking sides. So we are left with the question of whether taking sides means that some distortion is introduced into our work so great as to make it useless. Or, less drastically, whether some distortion is introduced that must be taken into account before the results of our work can be used….Our problem is to make sure that, whatever point of view we take, our research meets the standards of good scientific work, that our unavoidable sympathies do not render our results invalid. (Becker, H. (1967) Whose Side are we on? Social Problems, Volume 14, pp. 239-247).

3.3 Ethical Considerations

3.3.1 Introduction

In all social research ethical issues remain of paramount importance throughout the course of a study, and need to be integrated into the research design. Further, these issues should be considered at *every* stage including: the initial conception of the research; the collection of data that informs the study; the analysis of results and reporting of findings; and, the subsequent storage and disposal of research records. In later sections of this chapter, the specific measures taken to maintain ethical standards are detailed with reference to the correspondence dataset, the media dataset and the interview transcripts. In this section I will outline the broad principles that guided the ethical orientation of this research. The overarching objective was to undertake research practices that were consistent, wherever possible, with the University of Plymouth's *Ethical Principles for Research Involving Human Participants* (University of Plymouth, 2010). Further reference was made to ethical guidelines published by a number of professional bodies; most notably, the Social Research Association (SRA, 2003) and, the British Sociological Association (BSA, 2002). In addition, due consideration was necessary, in order for the research to be compliant with the relevant legislation, more specifically: the Data Protection Act 1998; and, the Copyright, Designs and Patents Act 1988.

3.3.2 Avoiding Harm

Most ethical considerations remain questions of judgement. Ethical debates and guidelines can provide assistance and inform the research to maintain an ethically responsible stance, but they cannot in categorical terms state *precisely*

what is right or wrong. Rather it is left to the researcher, to consider at all stages of the research, the implications of the decisions made in research design and in conducting the research. Nevertheless, it is clear that some core ethical principles must be upheld; most notably avoiding harm, informed consent, confidentiality and ensuring legal compliance.

It is necessary for the researcher at the outset to consider the implications of conducting the research. That is to consider and anticipate the range of potential consequences that may follow from the research, whether that be to individuals, organisations/institutions or to the researcher themselves (SRA, 2003). This means due forethought should be given, to reasonably predictable outcomes resulting from the research, and how these may impact on those involved. At times this may lead to difficult choices in balancing the needs of various competing interests (SRA, 2003; Bryman, 2004). The strategies deployed need to ensure that all research activities minimise the potential harm to participants, and those likely to be affected by the research, no matter whether these risks are physical or psychological. In the context of social research, the harm most likely to be caused is psychological, which follows from the distress caused by unwanted disclosure, the invasion of privacy and a failure to maintain confidentiality (Israel and Hoy, 2006). Therefore ethical issues extend to the character and scope of inquiries that can be reasonably made without causing participants such harm, whether wittingly or unwittingly. For example, due consideration needs to be made prior to interviewing of what can reasonably be asked, whether it places the respondent under unnecessary duress, and to what purpose it might serve in the context of the study as a whole (Kvale, 1996).

Sensitivity and ethical prerogatives thus guide how far to pursue an inquiry and to what extent one persists. Once again this is a matter for reflexive decision making and considered judgement, and indeed may vary interview by interview.

Central to ethical considerations is the requirement to uphold confidentiality. That is to safeguard the participant from the intentional or unintentional disclosure of sensitive information (however defined), and information that may reveal their identity or that of others. This means that the identity of participants is concealed through the removal of names and other identifying features that could either directly, or through some deductive process reveal them (Bryman, 2004). Given that anonymity and privacy are of such paramount importance, the researcher needs to question whether it is necessary or even appropriate to record and hold certain kinds of sensitive data at all. The specific measures used in this study to protect identities in the correspondence and interviews that formed the data of this study are provided in sections 3.4.2 and 3.4.4, respectively.

Finally, with respect to harm, it is incumbent on the researcher not just to think about malfeasance – the negative consequences of ill-advised research conduct, but also to aim for the allied principle of beneficence. The latter guides researchers to direct their research in such away that it has positive outcomes, that is, the knowledge gained through research adds to understandings and in some way provides a positive contribution to society, no matter how small (Kvale, 1996). Beneficence therefore demands that the researcher considers the broader philosophical implications of what is to be gained from the research, balanced against the potential harm that may be done.

3.3.3 Informed Consent

Wherever possible the researcher is tasked with gaining informed consent from those that participate. To be fully informed participants need to be made aware of the following issues:-

- The purpose and scope of the study;
- What, if any risks may result from participation;
- How the study is funded and supported;
- How the participants will be asked to contribute;
- How their contributions will be used and reported;
- What measures will be made to preserve confidentiality;
- The steps taken to securely store all data and records; and,
- Their right to withdraw from the study at any time.

In airing these issues, the participant can engage in the research process, being as well informed as is practicable on their role in the study, and how it may affect them. In so doing, the researcher has ensured that the participants have contributed on a purely volitional basis and, are aware, that should they wish, they can withdraw from the study at any moment (SRA, 2003; Israel and Hoy, 2006).

3.3.4 Legal Compliance

A further ethical consideration is whether the researcher is fully compliant with any relevant legislation. The primary legislation that is pertinent to this study is that of the Data Protection Act 1998 and the Copyright, Designs and Patents Act 1988.

The Data Protection Act 1998 covers the storage and maintenance of records that contain personal data for living persons. This may include data such as: name, address, national insurance number, e-mail address, place of employment etc. (SRA, 2003). The act specifically details the responsibilities for the maintenance of such records including their storage, usage, dissemination and disposal. As detailed in section 3.4.2 the data that comprised the correspondence corpus, constituted secondary analysis of a prior archive. It is permissible under the act to use such data (that is secondary data) for research purposes (University of Kent, nd.). In Section 33 of the act states that such usage is permitted provided:-

> (a) that the data are not processed to support measures or decisions with respect to particular individuals; and,
>
> (b) that the data are not processed in such a way that substantial damage or substantial distress is, or is likely to be, caused to any data subject (Data Protection Act, 1998: 32).

Further the data can be processed for research purposes, provided that 'the results of the research or any resulting statistics are not made available in a form which identifies the data subjects' (Data Protection Act, 1998: 32).

The above has been included to establish the legality for the secondary analysis of data held by the highway authority for the purposes of research. However, the need to meet the requirements of the Data Protection Act can be totally obviated if personal information and identities are removed from the data entirely (SRA, 2003). Once this has been done, then the anonymised data is no longer subject to the act. It was this latter strategy that was adopted during this study, personal information was deleted from the records and the reduced dataset was held

separately, in a secure location, but without any referents to individuals, job titles, place names, organisations etc.

Media reports from local print media have been used in this study and excerpts from such reports have been reproduced in later sections of the thesis. In the case of these reports, named persons have been retained so as to preserve their integrity. The rationale for this decision is based on the fact that the material is in the public domain, and has been in wide circulation prior to this analysis. This also carries with it the presumption that the reporting is fair and accurate, and that by reproducing such reports I am not perpetuating a misrepresentation of the truth. With respect to the legal conditions of reproduction, the Copyright, Designs and Patents Act 1988 makes provision for such use with respect to 'research and private study' and in Section 29 (1) it states the relevant principles of 'Fair Dealing':-

> Fair dealing with a literary[5], dramatic, musical or artistic work for the purposes of research for non-commercial purposes does not infringe any copyright in the work provided that it is accompanied by a sufficient acknowledgement (Copyright, Designs and Patent Act, 1988: 24).

Now that the ethical foundations for the study have been set, it is necessary to turn to the detailed consideration of how data was selected, collected, organised and analysed.

[5] Section 3 (1) says a 'literary work' means any work, other than a dramatic or musical work, which is written, spoken or sung (Copyright, Designs and Patents Act, 1988: 3).

3.4 Methods

3.4.1 Introduction

This section will detail the methods deployed by this study to yield empirical data for subsequent analysis. The three sets of data collected are essentially of two forms, namely – documentary evidence, and that collected during semi-structured qualitative interviews. The documentary data formed two datasets drawn from correspondence received by the highway authority and that taken from local print media. Sampling was both purposive and theoretical, involving an recursive process of data collection and analysis that followed that proposed by Glaser and Strauss (1967). More detailed consideration of the practicalities and implications of such sampling are contained in section 3.5.2. For practical purposes the documentary sampling was confined to the period 2006-2009, inclusively. This period was essentially arbitrary, but provided sufficient material on which to capture a wide range of documents and issues, and the author had no prior reason for believing that this selection would be materially different from the preceding or following years. Prior to my active engagement in the field, and the purposive sampling of data which was to become my final sample, there was a period of unfettered exploration of candidate materials. The intention was to examine the character and scope of the subject matter so as to inform the research design process. This period proved to be most instructive, and meant that I entered the field, with a better appreciation of what I was to encounter and the problems I may face. This stage was augmented with informal discussions with colleagues which focused on the substantive field of inquiry and canvassed for their perspectives on tackling this field. Finally, I was also able to reflexively call on my past experience in highways and transportation and use this to

consider what the main strands of the research may be, and how I could best investigate them. It is important to stress that this was merely to set a loose framework around which to orientate the study, and was conscious of the need to avoid premature foreclosure of themes, and to force subsequent data into preconceived themes. Glaser and Strauss (1967) and subsequent authors on grounded theory, of both orthodox and constructivist variants (Locke, 2001; Charmaz, 2006; Birks and Mills, 2011) repeatedly espouse the need for conceptual categories to remain open, and to be recursively revised and updated through the research process.

Especial attention is given in the following discussions to the interview data and the philosophical and practical aspects related to its collection. This is since the interviews were seen as the primary source of data and unlike extant documentation, permitted a reflexive investigation, exploring participants' views, conceptions and experiences.

Figure 3.1 attempts to encapsulate the data collection and analysis process and will be relevant to the discussions in the remaining parts of this chapter. The figure draws together the assorted aspects of the process including: preparation, data collection and sampling, the development of codes and the steps which contributed to the resultant emergent themes. Each box represents a discrete stage in the research process and is numbered accordingly. In the following text reference will be made, from time-to-time, to the stages in the research process, when so doing, the respective referent will be displayed in square brackets. Thus [5] refers to the pilot interviews and so on.

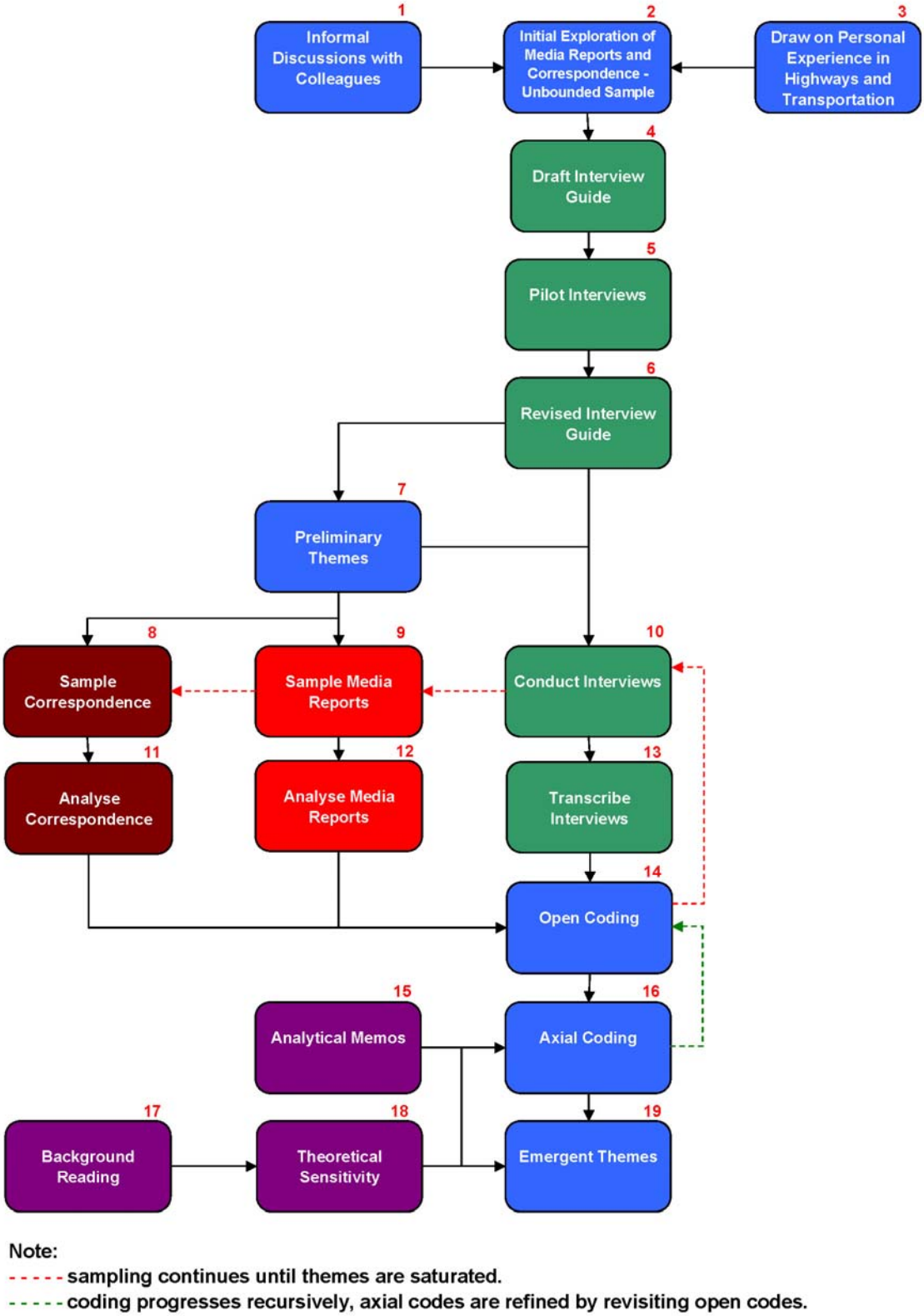


Figure 3.1: The Data Collection Process and Development of Emergent Themes

3.4.2 Correspondence Dataset

A corpus was constructed from documents sampled from an in-house content management system held by the highway authority. The system has been in use by the highways department since 2002, and in March 2010 held some 750,000 documents. This documentation represents correspondence from the lay public to the highway authority and documentation generated by the authority. It also included some intra-organisational material such as reports, memos and e-mails. Content is data stored as scanned images or embedded files and cover a diverse range of media, including, but not exclusively: letters, e-mails, faxes, reports, photographs, drawings, reports, memos, minutes and records of telephone conversations. In many ways this documentation encapsulates the primary modes by which the highway authority and in particular, the engineers, who are a focal point of this study, communicate with the wider public. Whilst much communication takes place via the telephone (and does feature in later analysis), face-to-face encounters between the public and the highway engineer are *relatively* exceptional. Further, certain bureaucratic protocols insist that a written record must be made or received so as to accord with decision making rules.[6]

The database is only available through a password and is held on a secure network. The records are held in the system and have a number of fields that help to index content. Among such fields are: subject, reference number, Parish/Town, Region (an internal administrative boundary), road number,

[6] For example, in the context of Traffic Regulation Orders (TRO's) that cover such things as speed limits, parking restrictions, weight limits etc. it is a statutory requirement to only accept objections in written form.

document type (letter, e-mail, report etc.), letter date, date received and key words. For the purposes of this study the content management was sampled according to two principal fields, namely: subject and key words [8]. Further, as outlined elsewhere, the search was bounded by the three year period 2006-2009 which was taken as the date on the letter, as opposed to the date received. The 'subject' and 'key words' served in providing a first filter for data reduction, although it was recognised that the quality of these categories was at the mercy of the subjective vagaries of the assorted administrative staff that entered the data into the system. Attention focused on correspondence that was 'incoming;' that is from the lay public to the highway authority, and was pertinent to this study [7]. Pertinence was determined by the focus of this study, namely there was some content which referred to road safety, regardless of whether it was the primary focus of the correspondence or whether it was of lesser importance in the thread of the letter/e-mail. The highway authority receives much correspondence on issues for which it is responsible, and some for that which it is not. This first filter served to focus on salient documents and eliminate those that were solely related to: drainage, highway maintenance, footways and byways, court cases and parking restrictions. All documents considered, constituted initial requests or observations/responses to media reports and were to generic mailboxes or addresses rather than to named individuals. Thus most of the considered content was addressed to 'The Highways Department,' 'Road Safety Department' or to supposed heads of service such as 'County Surveyor,' 'Head of Highways' or 'The Chief Engineer.' In this way, such correspondence can be conceptualised as a variant of an 'open letter,' consisting of observations, queries and requests to a non-specified recipient, but written with an assumed

audience in mind. To a degree the letters are therefore monological, since the letters are the first contact, they have not yet become part of a dialogical chain, and the author has to imagine a recipient, an audience (Yates, 2001).

Iterative immersion in the data and the constant comparison with conceptual themes continued and sampling continued until the core themes were 'saturated' (see section 3.5.2). Excerpts were coded, grouped into themes and these textual segments became the correspondence dataset [8], [11], [14], [16], [19]. The final dataset held content from 185 documents that were all either letters or e-mails from the lay public to the highway authority.

Previous sections have established the need for compliance with legal constraints that surround using such data, more specifically to accord with provisions of the Data Protection Act 1998. Provided that the secondary use of such data is for research and educational purposes, then such use is permissible provided that other aspects of the Act are followed. More specifically these constraints pertain to the maintenance of security and confidentiality of any information that reveal the identity of living persons. However, the provisions of the Act can be avoided if all personal information is removed from any held records. Therefore to instantiate this move, all excerpts were redacted prior to transfer to the dataset. All personal and identifying information was removed, this included a wide range of material including: names, addresses, road numbers, place names, businesses and organisations, landmarks and, vehicle registration details. In removing such data the dataset remained beyond the purview of the Data Protection Act 1998 and, every effort had been made to expunge the link

between the corpus and any individual, and in so doing confidentiality and security was maintained. This in no way diminished the quality of the remaining texts, for the analysis focused on the evidence and lines of argument put forward and in many ways personal data played no part in this analysis.

Although the process outlined above can be perceived as secondary analysis on a pre-existing data set, the data is considered to be first order material. That is, it was produced for a purpose other than research and therefore represents naturally occurring data, texts produced in natural settings and were found in a 'raw' or unprocessed state – untainted by research interests.

3.4.3 Media Dataset

A lesser, but useful, dataset was constructed from local print media reports for the period 2006-2009. This dataset entailed the retrieval of articles from three publications: *The West Briton*, *The Cornish Guardian*, and *The St Austell Voice*. All the sampling *within* these publications was purposive and theoretical; the selection of these titles was one of convenience. Hardcopies of the above publications were available in an accessible archive and were largely complete.[7,8] As with the correspondence data, sampling and analysis continued in an iterative process [9], [12] and in parallel with the sampling analysis of interview transcripts and correspondence records. Sampling necessitated the manual sifting through records to find articles and items of relevance to the study. As with the correspondence dataset, this sought to find material that contained road safety as

[7] The original intention had been to use a searchable database, however the database in question was withdrawn from use at an early stage in the project and so an alternative source was sought.
[8] Although the hardcopy record was not entirely complete, 347 of the 468 possible issues were available for inspection, constituting 74% of the whole.

a core constituent part. Excluded from the record were the many court cases featuring motoring offences, and issues related to off-road safety issues such as incidents and comments on footways, bridleways and cycleways. The majority of articles were reports of accidents and incidents, comment on road safety issues either by the public or by public institutions (parish and town councils, the police, motoring organisations). In addition, some useful material was found in the respective ‘letters pages’ for each publication, where more often than not the weekly ‘postbag’ would contain at least one item on road safety that found publication. Finally, there were other news items that reflected initiatives pertaining to road safety and these too had a number of sources, but most commonly (in no especial order): the police, central government (including Department for Transport and the Highway Agency), local government, schools, residents’ associations and other voluntary bodies representing specialist groups of road users (such as equestrian and cyclists’ interests).

Sampling proceeded iteratively to augment initial records with further data as the coding progressed and expanded [9] [12] [14] [16]. The refinement and evolution of codes meant that some material that was adopted earlier was dropped, whilst other material entered at a relatively late stage. Selected material was retained in a dataset of excerpts which was organised according to the assigned codes.

As previously mentioned (see section 3.3.4) use of such material is permitted for research and education purposes provided it is accompanied by the appropriate acknowledgement as to its source. Further, in subsequent chapters I make use of

some illustrative examples without making any amendments, that is, redacting names, places etc. The rationale being that these excerpts are from material that is in the public domain and has seen widespread publication/circulation prior to this study.

3.4.4 Interviews

The interviews and the subsequent analysis of their transcripts constituted the primary data upon which this study is founded; and, therefore I will go into some detail as to the philosophical grounding that orientated their conception and the practicalities that surrounded their execution.

This study undertook semi-structured qualitative interviews with a range of personnel from within the highways department that formed the research setting. The qualitative interview has been characterised as ‘a conversation that has a structure and a purpose’ (Kvale, 1996: 6), and provides a sensitive and penetrating method for capturing data. Moreover, by remaining flexible and reflexive it is possible to shape the interview according to the dynamics that the encounter opens up. Further, by attending to the participants’ language and expression it is possible to explore research issues on their terms and the meaning that they bring to the topic (Kvale, 1996; King, 2004). By providing space for narrative, unexpected turns and tangential paths, a more nuanced understanding is possible, of the issues surrounding a topic area, in ways that cannot be anticipated in advance. In approaching the interviews I adopted a stance akin to ‘active interviewing,’ as proposed by Holstein and Gubrium (1985). This conception of interviewing, attempts to eliminate the traditional

asymmetry between interviewer and interviewee. In doing so, it concedes that the interview is a social encounter, in which an interactive process is undertaken in order to produce new knowledge. It was hoped that in adopting such an approach it would eliminate the associated power relations associated with orthodox interviewing and would generate an atmosphere in which the participant feels freer to talk about their feelings or experiences. Through an active engagement in the interview, the intention is to support co-operative mutual disclosure with a view to attaining a negotiated understanding of a topic (Johnson, 2001).

The researcher in this way is seen as unavoidably implicated in the production of knowledge. The interview is therefore a collaborative site that is conducive to open discussion as opposed to a more stilted affair that can arise from repeated question and answer sequences. It is argued, that the interviewer can never totally eliminate their contribution to the process – whether in the framing of question, the transcription of responses or in the interpretation of meanings, the researcher is always an active ingredient. Rather than seeing interviewer involvement as a contaminant, it is seen through a more positive light of being able to bring something to the encounter whether it be other experiences, alternative views, or speculative lines of inquiry that emanate from the forerunning discussion. Active interviewing therefore requires the researcher to be reflexive of the interview context, and to seize unexpected opportunities for exploring new ground in different ways (Gubrium and Holstein, 2001; Johnson, 2001; Charmaz, 2006).

Prior to the first interviews, a free and unstructured engagement with the field was undertaken. This involved my first encounters with material that would later contribute to the correspondence and media corpora detailed in previous sections [2]. In addition, informal discussions were held with colleagues in order to test ideas and approaches that I was considering [1]. Further, I was also able to reflect on my past experiences, and focus on the issues and questions that had stirred me to pursue this inquiry in the first place [3]. Together, these items were condensed into a draft interview guide [4]. It was through this preliminary research and my background knowledge of local contextual circumstances, that I was able to draft questions that were more penetrating and pertinent, than if I had not completed these stages. The interview guide itself was conceptualised as just that, a guide, a tool by which to steer the interview process and was not intended to be slavishly followed. Indeed digressions and unexpected turns are to be embraced, for they often represent new ways of meaning that are important to the participant, but may have been overlooked initially by the interviewer (Johnson, 2001; DiCicco-Bloom, 2006). Indeed, Johnson, (2001: 111) urges researchers to at times let go of the shackles of a rigid interview guide and 'go with the flow.' That is, to a degree, let interviews take a natural course, constrained only, by the need to cover some minimal ground in the allotted time. It is this flexibility and attentiveness, which renders qualitative interviewing its power, the ability to attune to local circumstances and adapt accordingly.

The guide lists topics and themes that are intended to be covered and contain prompts to ask questions using certain language and phrases (Smith *et al.,* 2009). Once again, the guide used was locally informed by practices and procedures

known to be in operation. The interview guide was also subject to many revisions and changes, it was itself, a flexible and informed instrument. Questions and themes were dropped, amended, or added during the course of the interview programme. Reflection on the 'interviews in action' recognised that some forms of question and some areas just 'didn't work,' and were subsequently revised or omitted altogether. Likewise additional questions were introduced, to test new ideas informed from reading or through sampling media and correspondence. Further, other questions were introduced in what Holstein and Gubrium (1985: 46) term 'spillage;' that is the responses to prior interviews informing subsequent ones.

The draft guide [4] was constructed to cover a number of core themes, amongst them were:

- Insights into road safety and the engineering perspective of such issues;
- How engineers received and responded to lay arguments/presentations;
- What resources they call upon in formulating solutions, and responding to the public;
- What institutional/regulatory factors influenced their work;
- Engineers' reactions to 'stock' lay argumentative strategies e.g. 'an accident waiting to happen;'
- Experiences of dealing with the public and the recall of notable events and encounters; and,
- Methods by which engineers approached public engagement.

Pilot interviews were conducted prior to the main sample [5]. The objective was to test the interview guide and to establish the practicalities of conducting interviews such as duration, venue, recording, making notes and the general

receptiveness of the participants to the topics and questions. Four pilot interviews were held, they were essentially self-selected, in that advantage was taken to interview staff who were leaving their current posts in order to either take up positions in new organisations or were being seconded to other departments. Although there was some revision and adjustment to the protocol [6], they largely went as envisaged. Nevertheless, they were useful for gauging the pace of the encounter and for eliminating a degree of ‘rustiness’ and nervousness of the interviewer, so that subsequent interviews could be performed in a more accomplished and confident manner.

The ultimate sample contained some 47 interviews; sampling proceeded on an purposive and theoretical basis [10]. That is, informants were selected in order to capture a variety of different perspective and roles, further those selected were likely to have knowledge of road safety from an engineering perspective and had experienced interaction with the general public on such issues. The sample was theoretic in the sense that sampling continued until saturation was reached, and no new or added depth was attained to the core conceptual categories (see section 3.5.2, below). The sample covered a range of personnel within the engineering section, including early career technicians, road safety specialists, professionally qualified engineers and those whose function was primarily managerial.

Interviews were scheduled at least a week in advance, and I gave the proviso that the participant could re-schedule at any time should work commitments dictate. I was fortunate that I did not have any refusals and all invited, participated, largely

at the designated date and time. The interviews took place in a room that was quiet and free of distractions and interruptions. The interviews were recorded digitally and duration was typically 90 minutes, although they ranged from 40 minutes to over two hours. The interview began by outlining the scope and nature of the study, how it was funded and how it would be reported. I then gave an indication of the format of the interview and how long it might take. I then proceeded to cover the ethical protocol I followed, as contained in the Consent Form (see **Appendix B**). Specifically I advised the participant:-

- Participation is entirely voluntary;
- The right to refuse to answer any question;
- Freedom to withdraw from the discussion at any time; and,
- The right to withdraw their 'data' from the study within two weeks.

Given the circumstances surrounding the project, I sought to reassure them that this was not a 'management project,' in that it was not motivated or instigated by management or the wider corporate body, neither was I reporting to them.

I then advised them that I would like to record the interview, and to assure them that the recording would be securely stored and would not be heard by any third party. Further, I outlined how in reporting, all names and information that may identify the individual, would be removed. I then sought their signature and their consent to proceed.

Every effort was made to develop a rapport with the participant, in particular I emphasised that I was interested their own views and opinions, and as such there

were no right or wrong answers. The key objective with rapport is to develop an atmosphere that is conducive to free and unfettered discussion, and not encumbered with any notions participants may have of what the interviewer 'wants' to hear (Kvale, 1996). Rapport necessitates that the respondent feel that they can trust the interviewer and can 'open up' and convey their own views and feelings. Further, reflexive interviewing means careful listening and attention to non-verbal behaviour that may suggest the participant is uncomfortable or agitated by a line of questioning.

Interviews were subsequently transcribed verbatim, but not to a level that would be sufficient for a micro-linguistic analysis such as with conversation analysis or ethnomethodology. Therefore it did record paralinguistic utterances such as 'uhms' and 'errs,' together with other features that are evident in the general messiness of everyday talk such as pauses, false starts, repetitions and fractured sentences (Poland, 2001; Riessman, 2001). However, in the excerpts that appear in later chapters some minor 'tidying' has been effected in order to render them more readable. As Atkinson (1995: 12) notes there is a 'tension between readability and fidelity' in representing interview texts. Careful attention was made to any 'adjustments' so as to remain faithful to the original text, whilst making it accessible to the reader. Such adjustments are seen as being permissible by a number of commentators provided that the meaning is not altered in any way (Atkinson, 1995; Poland, 2001).

There were some insightful excerpts that could not be reproduced in this thesis on confidentiality grounds. That is, after much anguished deliberation, it was felt

that even with the removal of names and job titles etc. there was sufficient revelatory content to deductively disclose the identity of the informant. Therefore, with a view to minimising the risk to the individual, and to afford them maximal protection, such material was not reproduced. Arguably, it was my closeness to the field that held some advantage here, for a more 'distant' researcher may have missed the subtly of phrase or choice of reference, and what this exposed of its author.

In order to protect identities, as opposed to attributing excerpts according to job title, the following tripartite division has been made: (i) Technician, (ii) Engineer and (iii) Manager. The objective being to indicate the relative career position of the respondent; whilst not giving sufficient resolution which could be revelatory and, lead to identities being established by deduction. Highway staff in the organisation studied tend to work towards obtaining Engineering Council accredited professional qualifications that are awarded either through the Institute of Civil Engineers or the Institute of Highways and Transportation.[9] The type (i) Technician group would be characterised by early career staff who have or are working towards the Engineering Technician award (EngTech). Type (ii) Engineers are mid/late career staff that are either incorporated engineers (IEng) or are chartered engineers (CEng) and may or may not have an engineering degree. The final category, (iii) Managers, include staff with qualifications as detailed for type (ii), that is are IEng or CEng qualified, but have a substantive

[9] Although these are the two primary institutes to which highway staff in this sample were members, there were in fact numerous others including: the Chartered Institute for Logistics and Transport, The Transport Planning Society and the Society of Road Safety Auditors. Given that these institutes and societies are related to specialist transportation fields, it is possible to get a sense for the fragmented professional organisation of engineering. Indeed Macdonald captures this well by calling it a 'Balkanised profession' (1995: 170).

managerial function that constitutes the bulk of their day-to-day activities as opposed to design *per se*. The nomenclature used in subsequent chapters for interview excerpts is illustrated by the following example: (I2, Technician) – denotes Interview number 2 and the participant was classified as a Technician.

3.5 The Development of Emergent Themes

3.5.1 Introduction

The resultant emergent themes and the relationships between them, as reported in the chapters that follow, were created and developed using a grounded theory methodology. The *process* followed, in large part, resembled the classical rendition of grounded theory as espoused by Glaser and Strauss (1967). Although, as discussed earlier, a constructivist variant of grounded theory was adopted; this variant manifests itself most in the development and interpretation of emergent themes (Charmaz, 2006). The core features of the broader process being: theoretical sampling, varying levels of coding (e.g. open and axial), memoing and theoretical sensitivity – all of which will now be discussed in terms of their operation and function in the context of this study. The reader is reminded that the interrelationships and position of each these features are illustrated in **Figure 3.1**.

Grounded theory represents a distinctive approach to research problems that is especially suited to facilitating a qualitative inquiry in a systematic and rigorous manner. It is distinctive because it features a number of conceptual components that serve to integrate data collection, analysis and to generate analytical conceptions. Further, in its many variant forms (Locke, 2001; Charmaz, 2006;

Birks and Mills, 2011), it can be adapted to suit the needs of the researcher, the scope of the study and the limits imposed by the availability of data. Nevertheless, in whatever final form or whichever school of grounded theory is adopted and applied, the essential features of application remain the same, namely: – a close engagement with the study area/fieldwork throughout the life of the study; a commitment to discovery and to developing emergent categories; and, a rejection of *a priori* theorising (Locke, 2001). Whilst the range and scope of emergent categories and theories are free to manifest themselves as the study progress, the only bounds are set by the researcher, limiting the area to be studied and by making commitments to certain philosophical orientations that will be used to evaluate any finding (Green *et al.*, 2007).

As previously detailed (see section 3.2) an interpretative stance was taken, whereby the meaning individuals and groups brought to the study was interpreted phenomenologically. It is argued that such an interpretative stance is entirely congruent with grounded theory, that seeks to find explanations and meaning in the data, and using the terms, language and modes of expression that are used in mundane, everyday existence. Constructivist grounded theory is positioned in a post-positivistic tradition, that recognises and encourages flexibility in the research process and liberates the inquirer from rigid and prescriptive procedures (Ryna and Destefano, 2001). The constructivist revision to grounded theory acknowledges the place and role of the researcher as an active ingredient in interpretation, and eschews positivist attempts to portray the products of research as being entirely value free (Clinton, Totterdell and Wood, 2006). In constructivist renditions of grounded theory the researcher does not

start the inquiry with ‘a mental blank slate’ (Olesen, 2007: 423), rather the researcher comes with a certain amount of contextual ‘baggage’ that informs the interpretation. Rather than being seen as a contaminant to interpretation, it is valued as a catalyst for providing a richer, more nuanced appreciation of research material. In this way *both* data and analyses are social constructions and are contextually grounded in the time, place, culture and circumstances of their production (Charmaz, 2006).

Fundamentally, grounded theory is founded on the inversion of the standard scientific model. That is as opposed to the hypothetico-deductive mode of research where, theory (hypotheses) precedes testing against data, in grounded theory the operations are reversed – data collection precedes theoretical postulating (Locke, 2001). This process initiates analytic induction, where empirical observations lead to explanatory thought, and repeated collection/analysis seeks to add further refinement and resolution in resulting explanations. A further fundamental feature of grounded theory is that it is generative, it seeks to find explanation in and from the data, rather than through prior theorising. In this inductive approach theories and knowledge emerge from the local meaning taken from the data, and a commitment is made to these meanings, in advance of extant alternatives that may reside in the literature or with other theorists. Allied to this notion of unfettered emergence is the desire to avoid ‘forcing’ the data, that is to fit data into pre-existing categories; for to do so would be to disable one of the more powerful features of grounded theory, namely for new and possibly unique categories and relationships to *emerge* from the local setting in an unimpeded way (Charmaz, 2001).

In eschewing prior theoretical commitments, the researcher can remain true to the data in question, and analytical forms emergent from the study are faithful and entirely grounded in local data and not made to fit preconceived categories. A further characteristic of grounded theory, is that the inductive emergence of conceptual categories is progressively refined. The inductive analysis relentlessly seeks to re-generate into 'improved versions,' which successively offer more explanatory power; and, are veridical with the world as disclosed by participants and documentary data. This continued recursive relationship between data and theory, seeks to perfect explanations and provide maximal congruence between theoretical constructs and the world revealed by the data.

Grounded theory methodology is also distinguished by the early turn to analysis. Unlike other approaches where data is collected until the sample is completed and then the researcher focuses on analysis; in grounded theory analysis begins from the very beginning of the study, as soon as the first fragments of data have been collected. This early commitment to analysis keeps conceptual thought close to the field, and permits a more reflexive intertwining of data collection and analysis. Further, analysis can then encourage early theoretical thought and the potential connections between categories and thus inform further engagement with the field.

3.5.2 Theoretical Sampling

In the previous section attention was drawn to the early commencement of analysis. In a similar fashion the activities associated with sampling for cases may continue well into the study, alongside analysis and theoretical

determination. Indeed it is this concurrent sampling and analysis which is seen as a characteristic and foundational feature of grounded research inquiry (Locke, 2001; DiCicco-Bloom and Crabtree, 2006). In this way theoretical sampling (as it is labelled in grounded theory) is responsive to the data, as opposed being determined and fixed prior to entering the field. Therefore data collection and analysis go hand-in-hand, and 'data collection never gets too far ahead of analysis' (Corbin and Strauss, 2008: 144). This permits a more responsive engagement with the field that affords more congruence between the questions that the research generates and the cases being sampled. Thus subsequent sampling can be informed from the analysis of prior samples, and can be directed to those informants or documents more likely to contribute to emerging research questions. Furthermore, the questions asked of latter samples can be honed to offer more penetrating and apposite inquiry. This responsiveness, gives the sample a dynamism that is not always available, to say, sampling frames wedded to a probabilistic philosophy. In this way purposive sampling necessitates some strategic choices and decisions that seek to alter the trajectory of a study by finding those cases that are more likely to inform the research (Bryman, 2004). The essential difference between theoretical sampling and other more conventional modes is that the former is orientated to concepts whilst the latter focuses on cases or persons. Theoretical sampling derives its power from being concept driven, committed to purposely sampling in order to enrich the study and add explanatory depth (Corbin and Strauss, 2008).

Theoretical sampling proceeds recursively with analysis until 'saturation' is achieved. Saturation constitutes a state in which each additional case offers no

further insights or dimensions to conceptual categories. The implication being that concepts and categories are so fully dimensioned that further sampling is essentially futile and is unlikely to give the researcher any new material that will add, in a substantive way, to the existing analysis. It is acknowledged that to a degree, this is a matter of judgement. However, the explicit rationale being that the researcher is sufficiently close to the field and intimate with the 'twists and turns' of their data, that they develop an intuitive feel for the moment of saturation. Indeed it is this closeness and immersion in the data that renders the 'grounding' for the conceptual and theoretical insights that emerge. Theoretical sampling requires a commitment on behalf of the researcher to ceaselessly strive for the deepening and enrichment of conceptual categories. This endeavour is necessarily an on-going affair, sampling is not something confined to the early stages of the study but must be an on-going activity that proceeds iteratively with analysis. A reflexive and analytically informed sampling should provide a richer body of material upon which to work and provides a more flexible approach to research design that is informed by the emerging needs of the study. This is since, the conceptual categories that are of importance to the study, are not known in advance but rather, emerge *from* the data.

3.5.3 Open and Axial Coding

In order to move forward and to handle the mass of talk and text collected through theoretical sampling, it is necessary to reduce the data. Data reduction is the process by which raw data is segmented and condensed through removing excess content that serves no analytical or descriptive process. Reduction is the very process by which data is simplified, abstracted and transformed into a more

manageable and relevant form (Silverman, 2001). The process begins with the fracturing of data into segments, thus for example, a long interview transcript may be broken up into fragments, where each fragment has analytic meaning on its own, when separated from the surrounding text. These segments or fragments are then coded, and labels are attached in order to facilitate sorting like segments. The code becomes a tag, a means for categorising segments of data with a succinct label or as Charmaz (2006: 45) suggests, ‘an analytical handle.’ The code becomes a summary of content and if necessary can be elaborated in a code book, however, from experience, it is better to have codes that are intuitive and self-explanatory and do not need further translation. Often segments will have a number of attributed codes, a fragment of text may have content that contributes to more than one conceptual category and needs to be coded accordingly.

In grounded theory there have evolved a multitude of coding schemas, this study has remained faithful to the original rendition that envisaged a two-step process involving: (i) the initial ‘open’ coding, that requires the researcher to assign a preliminary code to a segment, and (ii) more refined and focused codes or ‘axial’ codes [14][16]. Open coding requires the researcher to eschew any theoretical considerations and pre-conceived notions, and develop codes that emerge from the data. They are open since they are free and subject to regular and repeated revision. Indeed the early stages of coding may indeed be unnervingly chaotic, as new ideas and prospective codes emerge from each reading and each new sample case. In time these codes will stabilise and reduce, the very immersion in the field and the researcher’s daily encounters with the materials that make the study, instils an intimate knowledge of content and the researcher develops an

intuitive ‘feel’ for the data. The skill, is in translating or converting an ineffable understanding of one’s data into a tangible and usable code.

Above all, although elegance and simplicity are sought with respect to open codes, they are provisional and will be subject to revision. The objective is to begin the data reduction exercise so as to facilitate the journey to a more analytical and abstracted comprehension of the data. At the same time the codes should remain close and faithful to the data. In this way it is often beneficial to adopt *in vivo* codes, that is, codes that preserve part of the language and mode of expression of the participants. Often such codes ‘shout out to be used,’ and have an ineluctable grip on the researcher, that demands that they cannot be ignored. Many *in vivo* codes are so very powerful because they contain assumptions, modes of reasoning and worldviews that are pivotal in determining how actors see and behave in the world.

Axial coding represents the second phase of coding. It seeks to consolidate open codes and make them more focused. Axial coding necessitates the search for linkages between codes and the categorisation of coding structures into broader analytic themes. The linkages offered by axial coding serve to integrate categories, and provide a broader framework, to position and hold all analytic categories (Charmaz, 2006). The concurrent and iterative process in which sampling, analysis and coding takes place, enables new integrative axial codes to be tested with the data, and allow further refinement and revision as necessary.

3.5.4 Memoing

The writing of analytical memos within grounded theory serves a number of functions. Since codes are necessarily restrictive in terms of their available narrative, an alternative mode of analytic expression is afforded my memoing. The essential idea is for the researcher to indulge in unfettered analytical thinking, in a spontaneous and informal manner; thereby giving some ‘analytic space’ in which to work (Locke, 2001). For it is only through ruminating and reflecting on the daily travails, that is made up of sampling and coding, that analytical insights are truly brought to bear. As with coding, memos can be conceived as beginning with simple descriptive observations, but as the study progresses they can be more informed, abstract and integrative in their role and content (Corbin and Strauss, 2008).

Although there can be many resultant purposes for memos, one of their pivotal roles with a grounded theory approach, is to elaborate on and develop codes [15] (Charmaz, 2001). That is to raise codes above a nominal label to a conceptual category. Memos serve to distil thoughts about the codes and introduce interpretations of the data. In memos, researchers can develop a narrative containing a ‘story line’ for what is believed to be happening, compare and contrast cases, suggest hypotheses to explain observations and generate questions for further sampling.

As previously suggested, memoing is intended to be liberating and not constrained by formality or conventions. The emphasis should be on spontaneity and unencumbered expression, it be conceptualised as a form of ‘free writing’

(Birks and Mills, 2011). Such ideas may ebb and flow with the flux of creative life - periods of rich insights and fervent activity, may be followed by those that are barren and infertile – where progress seems to be stilted or stalled altogether. The essential point being to capture and treasure these insights whenever they may happen and in whatever unrefined and naïve form you are able to express them. Over time these memos will accrete, some will be forever lost, superseded by more recent thinking, whilst others will be constantly mined, and provide a rich vein of insights and thinking, that is sustained throughout the study. Memos then, are fundamental to integrating data, categories and conceptual thought, they are enriching and deepen the complexity and quality of the analysis. In writing memos the researcher is forced to be reflexive, and to contemplate the import and connections that tie strands of data and codes together.

3.5.5 Theoretical Sensitivity

The original formulation of grounded theory methodology promulgated an almost puritanical approach with respect to the literature. Glaser and Strauss (1967) insisted that researchers should approach the field, without any preconceived ideas or knowledge of the field to be studied, which could be considered conceptual or theoretical (Hesse-Biber, 2007). The thinking being that such preconceptions would contaminate thought, and lead to the forcing of data into categories contrived from forethought and *a priori* reasoning. Such contamination would interfere with a purist model, which saw the inductive emergence of categories being essentially reliant on the data, and not what the researcher brought to the inquiry. However, over time there has been a general consensus that such an approach is neither reasonable nor indeed possible

(Hesse-Biber, 2007; Corbin and Strauss, 2008). That is, no researcher enters the field unencumbered by theoretical insights, no matter how crude or unsophisticated they may be. Further, most researchers choose to study a field because of some intrinsic interest in the subject area, and it is infeasible to suggest that the researcher can expunge prior thought. A more pragmatic approach is to try and limits one's own imprint on initial coding schemes and try and remain as close and faithful to the data as is possible.

Such remoteness from the literature is not envisaged as being a permanent state of affairs that persists for the duration of the study. Rather, it is meant to endure for the early part of the study during the initial engagement with the field, and the initial open coding of textual fragments. During this phase Glaser and Strauss entreat the researcher to read widely and from eclectic sources in order to enrich their comprehension and to draw comparisons and insights from fields that may be adjunctive to that of primary interest. To this end, my own forays into the literature took me into diverse worlds and disciplines for which I had little prior knowledge. Amongst the areas that attracted my attentions were philosophy (epistemology, phenomenology, notions of truth, vagueness, common sense), rhetoric, linguistics (discourse, semantics, speech-act theory), organisational studies (institutions, bureaucracy) and sociology (social studies of science, public understanding of technical discourse, lay-expert encounters) [17]. This eclectic reading helped to draw insights and parallels with my own experiences and contact with the field. Such reading, coupled with more focused and apposite literature searches, goes some way to achieving the theoretical sensitivity envisaged in grounded theory [18]. Drawing from the literature, the reflexive

researcher attempts to integrate and inform later stage (axial) coding and memoing, with insights and concepts borrowed from such reading. In doing so, axial codes can be refined to achieve more congruence between local data, conceptual analysis and the explanadum. This is not to force data, but to see if the data can be better explained by existing theories or whether local circumstances require a different reading and explanation.

3.5.6 Emergent Themes

The emergent themes that are documented in the subsequent chapters represent the culmination of the application of grounded theory methodology to the field under study [19]. It is argued that adopting such a methodology provides an effective means to systemise qualitative research in a manner that is both recursive and progressive. The iteration, between sampling and coding, ensures that the research stays close to the data, and that the codes that emerge, are both faithful to the data and integrative. Further, the concurrent analysis and sampling ensures that later samples are informed by prior samples, leading to more penetrative and salient questions being asked of the data. The methodology is thereby progressive, in that analysis is continually in a state of refinement, where sensitivity is maximal and leads to an on-going honing of conceptual schemes and interpretations. With it comes a sustained engagement with the field, and the material that makes the study, thus ensuring that the researcher has constant and intimate knowledge of this material and is able to formulate conceptual categories that are truly grounded and offer greater explanatory power.

3.5.7 Limitations of the Study

The methodology and methods adopted by this study were sufficient to produce rich and vibrant datasets that were productive in the sense of leading to numerous conceptual and analytical themes. Nevertheless, in hindsight, there are elements of the study that may have been approached differently and arguably would have resulted in a better study.

The interviews were especially rich, and this was no doubt assisted by my 'insider' status, however more could have been attained by earlier analysis of the interview material. Although there was some preliminary analysis of early interviews, more thorough analysis of responses could have led to more sophisticated questioning in later interviews and avoided redundant repetition. Furthermore, more attention could have been given to the status of the respondent and how experience and qualifications affected responses. The interview sampling was in truth more exhaustive than theoretical, in reality there were simply no more design staff to interview! By being more attentive to the content of responses I would have realised that saturation of analytic concepts and themes was probably achieved at c.30 interviews.

The two datasets that augmented the data from the interviews, namely that of incoming correspondence to the authority and press reports in local print media were attempts to achieve some semblance of balance. That is, to capture the voice of the lay public in road safety debates. Whilst there is substantive value in the content of these two datasets, and they do, I believe, capture the nature of lay-professional interaction, there is some sense that they are the vicarious or

more distant voices of the public. On reflection, a more balanced approach would have sought to undertake interviews with the public in order to get a more vibrant and less distant public 'voice.' Furthermore, the most glaring and fundamental weakness in my portrayal of the public is that it is constituted by those who wrote or spoke on matters of road safety. This is surely a mere subset of a mute and largely silent greater public. In addition, there is perhaps a 'gap' in the study in that the voice of politicians is largely absent. Given that the play of events takes place in a political organisation, and that many road safety issues take on a political hue, this is an apparent shortcoming. Any future study in this area would clearly benefit from trying to triangulate perspectives from the three corners of the debate (public-professionals-politicians), and attempt to draw in the pressures and viewpoints of elected members.

Finally, there will be those who consider my 'insider' status as an impediment to achieving a balanced perspective to this research. This is a difficult charge to defend, however I was aware and conscious of the need to try and capture and assess both perspectives of the lay-professional divide throughout this study. In presenting data and analyses I attempted to capture numerous positions and the limitations and pressures felt by both. Especial effort was made to try and put forward the frustrations that the public may face in dealing with bureaucratic interactions and the reality of the phenomenal fear that road safety concerns engender. If nothing else, it is hoped that my insider status, has helped to capture the 'voice' of a specialised niche of public service professionals in a nuanced and thoughtful manner.

3.5.8 Summary

This chapter has explored the philosophical underpinnings that supported and guided the chosen methodology. More specifically it was acknowledged that the study was phenomenologically driven, that is to say that the overarching paradigm was interpretative in stance, attempting to expose the lifeworld of participants and the meanings that they brought to the study. The discussion then proceeded to introduce the notion of 'discourse' as a medium for framing alternative versions of the road safety debate. At this point attention then turned to the reflexive position of the author and the implications of 'insider' status and what this brought to the study.

Earlier in this chapter the ethical implications of dealing with human research subjects were considered. Furthermore, details were provided of the measures and precautions that were introduced to protect participants from unintended harm and disclosure. The three core datasets were then introduced, namely: the correspondence database of incoming mail to the highway authority; the media database of local press reports in the print media, and the interviews with highway engineers.

The discussion then considered the methods by which data were collected in accordance with a constructivist formulation of grounded theory, more specifically key components of grounded theory such as sampling, open and axial coding, memoing and theoretical sensitivity. The discussion then proceeded to outline how the emergent themes emanated and were captured by analysis. The chapter then concluded by considering the limitations of the study and how

different facets of the research could have been enriched by adopting different approaches.

4. Safety as a Genre

4.1 Introduction

The letters and e-mails that form the correspondence dataset for this study, represent a large and rich body of *naturally* occurring textual data. It is naturally occurring since it is largely initiated by the public in response to concerns and issues in the highway environment that merit their attention and is not contrived, in any way, by the needs or goals of this research project.[10] Rather, the research project is in a sense, parasitic, feeding off the primary data, which is the endless flow of correspondence received during the day-to-day operations of managing the local highway network.

It is my intention to demonstrate the 'road safety issue,' as manifested in both correspondence and media reports, is a 'genre.' That is, road safety issues are presented in certain characteristic forms and have recurring features that are oft repeated. In addition, correspondence between the lay public and the highway authority has a number of conventionalised registers, modes of address and tactical approaches with respect to raising an issue.

The objective of this part of the thesis is to look in some detail at the morphology of safety issues, disaggregating communications into their constituent parts. The purpose is to identify the 'work done' by the respective component. Each component contributes in some way to the overall communicative effect and is necessary in the quest of achieving illocutionary force (Austin, 1975).[11] Thus, for

[10] Consultation responses being an exception, where the public respond to material issued by the organisation. These represent a small proportion (c.<5%) of the corpus.

[11] The 'illocutionary force' of a sentence is the originator's intention when making such an utterance e.g. demanding, promising or warning. This is derived from J.L. Austin's (1975) '*Speech Act Theory*'

example, for an argument to be sustained it needs adequate supporting evidence. An argument without evidential support, or with tenuous/flimsy evidence can fatally weaken the overall illocutionary effect.

This chapter will look at the 'tasks' done by the constituent parts and how the analysis has found that certain trajectories are followed from the opening statement to the closure. However, this is not to deny that some correspondence defies genre boundaries, some are archaic and demonstrate an unnerving lack of logical consistency between adjacent arguments. As such the letters represent a wide range of competencies with respect to grammar, spelling, and comprehension. In addition, the letters reveal a spectrum of knowledge pertaining to procedural matters, the organisation, responsibilities for managing the highway and of technical knowledge.

The following sections introduce five recognisable constituent parts that are found in most, but not all, of the correspondence surveyed.

4.2 Purpose

It is common for the letter or e-mail in question, to begin with some form of declarative statement giving an indication (often explicit) of the purpose of the communication. At times the opening shows a clear and unambiguous intent of what will follow and sets the trajectory for the subsequent text. In doing so 'the Purpose' sets both the tone and boundaries of the text. For example, the

and has accompanying concepts of the 'locutionary act' (the actual physical act of performing the utterance) and the 'perlocutionary act' (the resultant cause consequential from making the utterance): Austin, J.L. (1975) *How to Do Things with Words*, Oxford: Clarendon Press.

following is an illustration taken from the opening line of a letter received by the council:-

> I would like to draw your attention to a potentially dangerous traffic hazard in Woodland Avenue.[12] (Letter, 3rd June, 2007)

This can be seen as intending to be informative ('draw to your attention') and geographically bounded ('Woodland Avenue'). Further, the reader is alerted to the fact that the likely content will be restricted to road safety issues ('traffic hazard') and is likely to be reporting on issues of phenomenal fear[13] *vis-à-vis* recorded accidents ('potentially dangerous').

The following example represents a more assertive and expectant variant of 'the Purpose':-

> I write to request your immediate intervention to ensure the road through Atlantic Village is immediately made safe for all road users. (Letter, 14th July, 2008)

This example clearly marks its intent, with expectations of action. 'The Purpose' is presented as a 'request,' but rather than being deferential, is more demanding in tone and effect. As such it represents a demand for service, an emboldened statement of intent. The sense of verve and urgency is conveyed by the active adverbs ('immediate' and 'immediately') that advertise to this being a pressing issue, where time is of the essence. The final clause is seemingly altruistic and

[12] All place names have been replaced by pseudonyms in order to preserve confidentiality and yet to make the excerpt more readable and accessible.

[13] I borrow from Husserl an understanding of 'phenomena.' Husserl says 'A Phenomenon, then, is no 'substantial' unity, it has no 'real properties,' it has no real parts, no real changes, and no causality…a 'phenomenon' comes and goes; it retains no enduring, identical being that would be objectively determinable as such in the sense of natural science' (cited in Ferguson, 2006: 47). This conception of a phenomenon is carried throughout the remaining parts of the thesis.

all-encompassing; the issue does not pertain to one group of road users, residents or interests, but is transcendent and affects 'all road users.'

Another common *entrée* is 'I am writing to complain about….' – this opening is likely to give the reader a fair impression that a presumed grievance will follow, and to a degree alerts the recipient that adversarial content will ensue.

A further point to note is that 'the Purpose' frequently assigns indexicals and thereby denotes the voice or voices responsible for the communication. For example, the paradigmatic orientation is via a sole correspondent denoted by the first person pronoun 'I,' as follows:-

> I would like to raise my concern….(e-mail, 24th September, 2008)
>
> I am writing to bring to your attention…..(Letter, 8th August, 2007)

However, a less commonly seen variant is to assume an indexcical representing two or more persons, for example:-

> We are writing to raise our concerns…..(Letter, 7th April, 2009)
>
> We the undersigned (242 persons) urgently request…(Letter, 23rd September, 2009)

'The Purpose' of the letter is often closely allied to 'the Request' (see section 4.7 below). The distinction of 'the Purpose' is that it represents the work to be done by the letter as set-out by the correspondent – and by and large is outlined in the opening paragraph. A part function of 'the Purpose' is to perform an organisational task, which is to orientate the reader to the upcoming topic or the

issue at hand. Thus it has a key role as a structural component, anchoring subsequent content and providing a contextual reference. As seen in the examples above, the purpose may define the contextual boundaries for: geography, issue, group(s) affected/responsible and authorial voice.

4.3 Category Entitlement

'The Category Entitlement' is another key component of any correspondence. Its role is to align the author to a specified group or identity that they wish to be associated with.[14] By committing to this alignment the author believes there is added-value over and above that which they have as an unaligned individual. It is not unusual for the correspondent to claim to be a 'resident.' The implication being that being a resident in close proximity to the location that is an issue, that they have a legitimate voice based on geography and experience. At times this is used as a means of devaluing the institutional view by virtue of 'locals know best' or by extension engineers are not local and thus have less knowledge/understanding of the environment in question. At times category entitlements are subject to quantification to add emphasis, the classical form of this is 'I have lived on this road for 25 years.' Other forms of entitlement attempt to add authority to the submitted views so as to differentiate them from the 'ordinary' general public. So for example 'ex-civil engineers,' 'ex-driving instructors' and 'ex-policeman' are well represented in the council's postbag. The resident is the most commonplace, but other frequently occurring categories are: 'the parent,' 'the mother,' 'the tax payer,' 'the horse rider' and 'the shop owner'/'businesswoman.' All of these are used to sway arguments by adding

[14] Categories are also in evidence in the dataset for defining and labelling 'other' groups, normally for contrastive purposes, and identifying deviant behaviour. Classic examples seen in the corpora include: 'boy racers,' 'rat runners,' 'HGV drivers,' 'tourists' and 'holiday makers.'

warrant to statements, and to position and align the author to a legitimate and relevant grouping for the problem at hand. Of course categories are not necessarily mutually exclusive and correspondents can and do claim to be a member of several categories and in doing so attempt to compound their net worth. The following are representative examples taken from the datasets:-

> I have lived in Moortown for 32 years – speeding vehicles have always been a problem. I have lived in Woodland Close for over 9 year and there has always been in that time a more severe problem with cars speeding. (Letter, 24th November, 2008)
>
> As a highly experienced driver, accident free for over 40 years…. (Letter, 10th May, 2009)
>
> I am a safe driver, over 50. (Letter, 1st August, 2008)

As noted above, professional allegiance (past or present) is common, as is the adornment of post-nominal letters to signify professional or academic qualification, for example:-

> John Kirkland, a civil engineer who lives opposite the junction described the improvements as an accident waiting to happen. (*West Briton*, 26th June, 2008)
>
> I don't usually talk rubbish I was once a Northtown Councillor with Safety and Efficiency interests. (e-mail, 22nd January 2009)

A variant of the category entitlement are indexicals. I take these to be typified by first person possessives such as: *my* child, *my* grandma, *my* car, *my* property etc. These are referents that seek to personalise the *communiqué*, emphasising the first person investment in the issue at hand. At times their entry can seem incongruous with the surrounding tone. Thus letters can largely adopt a formal and somewhat abstract register, but then suddenly deviate into an excursus concerning their personal-domestic conditions. No doubt this is included to qualify their authority on the subject, but it can leave the reader unsettled,

questioning the relevance of this personal window into the life of an otherwise anonymous correspondent.

Clearly, category entitlements and indexicals have ‘work to do’ – they are signposts that aver and testify to an author’s worth and are introduced to demonstrate their qualification to hold a certain view. Few letters or e-mails are without them.

4.4 The Issue

At the heart of the correspondence is ‘the Issue.’ This represents the fundamental concern that the correspondent is drawing to the attention of the council, and wishes to be addressed in some form. Since this thesis is related to road safety, this (road safety) is present in all data included in the datasets in some shape or form. The most orthodox document therefore is where safety is the sole issue of concern and is explicitly raised. However, safety may be just one of many issues put forward and at times the references to it can be quite oblique. Thus, a letter may have illegal parking as its core content, but note safety as a secondary consequence of such parking. I have tended to refer to this as being ‘safety as an adjunct’ issue. It is introduced, perhaps as an aside or as a deliberate strategy, to add weight to other arguments. As I will discuss elsewhere there are certain rhetorical ‘points’ to be won by adding safety as an argument (see section 7.5).

The following are two representative excerpts that are taken to constitute ‘the issue’ in the respective documents:-

> We (the undersigned) believe our neighbourhood has a unbelievable high volume of traffic that continually exceeds the speed limit. (Letter, 3rd March, 2008)
>
> For some time now I have felt concerned that the routes available to parents walking their children to Treetops Primary School are dangerous and unacceptable. (Letter, 1st October, 2007)

'The Issue' is a central construct of the correspondence and may appear in the opening lines of the communication or in other extremes appear after following a long and, sometimes, tortuous path leading to this focal point. What is clear is that the issue is what provokes the correspondent to devote time and energy to writing to the authority. 'The Issue' is inevitably closely allied to other components, in particular 'the Purpose' (the reason for writing) and 'the Request' (the aspirational outcome).

4.5 The Evidence

The evidence represents the supporting material put forward and called upon to sustain an argument. This evidence can take several forms ranging from documentary evidence appended to letters and e-mails, witness statements to accidents/incidents,[15] hearsay, third party reporting (for example, what was reported in the media) and reference to other documents such as legislation and minutes of meetings. By far the most prevalent is first person reporting of an event (accident or incident). This is often presented in the form of an extended narrative, that itself may be augmented by sketches and photographs. Hearsay and 'folk stories' are also common, personal statements by the author may be supplemented the 'voices of others' – by way of validating and corroborating

[15] I distinguish 'accidents' from 'incidents' in terms of material consequences. Accidents are manifested in material damage and/or personal injury – whilst incidents do not. Thus a 'near-miss' would be classed as an incident under this typology.

their stated experience. The importance of the evidence is that it is seen and presented, as being sufficient warrant for action in whatever form is present in the request.

There are frequent attempts to add quantification to evidential submissions.[16] These may range from quasi-quantifications such as 'there have been *many* accidents on this road' to more enumerated versions 'vehicles drive through the village at *60* mph.' By way of illustration I have included three examples below from the correspondence corpus:-

> I have witnessed vehicles travelling at 50-60 mph on this village road, and with a school, families with children and pets, I expect that as in other villages you will take action to reduce speeds. (Letter, 18th January, 2007)
>
> There have been fatal and very serious injuries to pets, scrapes along cars, wing mirrors lost and tyre tread marks imprinted in the road when fast vehicles drive along Forest Road. (Letter, 11th September, 2007)
>
> It became apparent to us almost straightaway that 80% of all drivers going through the hamlet are breaking the speed limit. And unfortunately I don't think by a little bit, I would say in excess of 60mph. (e-mail, 17th February, 2009)

Quantification is a well-used stratagem to add rhetorical force to an argument. It serves to emphasise and dramatise a point, indicating scale and magnitude. Often it is the numeric quantity that is emboldened in the text or furiously underlined in a desperate attempt to catch the eye of the recipient. The reader is drawn to the very appearance of quantification, numerals 'jump' out of the page, in what is

[16] This can be taken for what Norrie (1998: 705) calls 'naïve empiricism,' whereby 'quantitative figures are commonly fetishised as being synonymous with objectivity.' (Norrie, A. (1998) The Limits of Justice: Finding Fault in the Criminal Law. In Archer, M., Bhaskar, R., Collier, A., Lawson, T. and Norrie, E. (Eds.) *Critical Realism: Essential Readings*, pp. 702-722. Abingdon, Oxon: Routledge).

otherwise a sea of undifferentiated characters. Further, quantification as well as serving as emphasis can be used to indicate precision. This may be to mimic the numeracy of the physical and engineering sciences, where numbers are valorised, and the public's belief that rigorous and objective analysis has quantification as its gold standard. The turn to quantification is a means to enumerate a problem that otherwise might remain semantically vague, and so words such a 'many,' 'frequent,' and 'huge' may be substituted for a numerical equivalent. The veracity and accuracy of the number is very difficult to determine, however I will demonstrate in later chapters that engineers make a pragmatic assessment based on engineering experience – the accumulated wealth of tacit and tangible knowledge that they rely on to perform their daily tasks.

4.6 The Argument

'The Argument' has a pivotal role in the construction of a road safety issue. It represents the key reasoning and rationale for the subsequent request.[17] Its very centrality means that it is covered in more detail elsewhere (see Chapter 7, Lay Argumentative Strategies). For the present I will just emphasise the revelatory impact of 'the Argument.' The form of argument deployed reveals the correspondent's understanding of their environment, and to a degree their cosmology. In pursuing a line of argument, they may reveal their comprehension of accident causation and the factors that are relevant in estimating risks and evaluating road safety. In the basic linear model 'the Argument' is intrinsically

[17] Habermas (1984: 18) provides an instructive discussion on argumentation: 'We use the term *argumentation* for that type of speech in which participants thematise contested validity claims and attempt to vindicate or criticise them through arguments. An *argument* contains reasons or grounds that are connected in a systematic way with the *validity claim* of a problematic expression. The 'strength' of an argument is measured in a given context by the soundness of the reasons; that can be seen in, amongst other things, whether or not an argument is able to convince the participants in a discourse' (emphasis in original).

linked to a structural sequence: Issue ➔ Evidence ➔ Argument. The issue of concern is first raised, this is then supported by drawing on available evidence and the argument to act is then formulated. Of course there are many variants of this; a common version of this is where there are feedback loops, so that the sequence is repeated several times, with each new issue being followed by its own evidential support. For single issue correspondence, an issue may be raised once, then go through a sub-routine where evidence then argument is iterated through two or three times. The following represents argumentation in action from the body of an e-mail requesting the installation of traffic calming features:-

> Please hurry up and help us get what Southern District Council put in many of their villages – speed bumps. They are very effective and inexpensive to construct. Seatown for example has them and they've made a world of difference to the safety of the village. (e-mail, 1st July, 2009)

This example draws on observations made in a neighbouring town, where the desired traffic calming features ('speed bumps') are purported to be effective in improving road safety and inexpensive. On what basis road safety has been improved or how the cost for such measures was determined is unclear – it is likely to be based on an intuitive assessment rather than factually grounded. Further, it is also important to note the error in attributing the features in Seatown as being implemented by the district council. In this case the 'Southern District Council' is not the Highway Authority and would not be permitted to make modifications to a public highway.

In summary, ‘the Argument’ is therefore the central part of the correspondence which seeks to reason. The rhetorical force of the letter is evaluated in the persuasive power of the arguments put forward. A cohesive, logically consistent and evidentially supported argument, can change or influence decisions and can impact on significant capital investments. However, an argument that falls short of these standards can dilute the impact of the letter and raise questions as to the real import of the issue put forward.

4.7 The Request

‘The Request’ represents the ultimate objective, as stated, by the correspondent. It is uncommon for an item of correspondence not to have some form of demand on the recipient. This may range from a request for information, an investigation of the issue at hand, to a demand for physical works to be undertaken on site. There are two common approaches, these see the request either at the ‘head’ or the ‘tail’ of a structural sequence, as follows:-

[a] Request ➔ Issue ➔ Evidence ➔ Argument

[b] Issue ➔ Evidence ➔ Argument ➔ Request

In [a] ‘the Request’ appears early in text and a sequence of moves are made to support this request. In the alternative model [b], a path is taken that builds up to the ultimate request. The issue is introduced, validated by evidence and supported by an argument that leads logically for a request for action. The type [b] model often sees the request allied with the closing statements, where the last words converge on the expectations and aspirations of the correspondent. The following represents a type [a] request at the head of a letter:-

> I would like to know the possibility of installing some traffic calming measures in the road I live in, would it be possible to lay down some speed bumps. (Letter, 31st August, 2008)

Whilst the following is a type [b] taken from the conclusion of a letter:-

> Some sort of traffic calming system needs to be applied to this road outside our house, to make life a lot safer and quieter.
>
> Please look into this matter and I look forward to hearing from you. (Letter, 13th July, 2007)

The closing remarks represent the convergence of a number of threads (Purpose, Issue, Evidence, Argument) that ultimately lead to the request. In addition, there is a sense at times that it represents a 'divide,' the terminus of one voice, in expectation of another. The closing is the transference of responsibility to the 'other,' or in metaphorical terms 'the ball is now in your court.' This is ably illustrated in the following examples:-

> I can rest in the knowledge that I have done all I can to avert a tragedy….if there is one this correspondence heads straight for you. (Letter, 23rd July, 2008)
>
> I felt that I had to write to you to make sure you are aware of the dangers listed, the guilt of a casualty will then not be on my hands for not speaking up. (Letter 1st August, 2008)

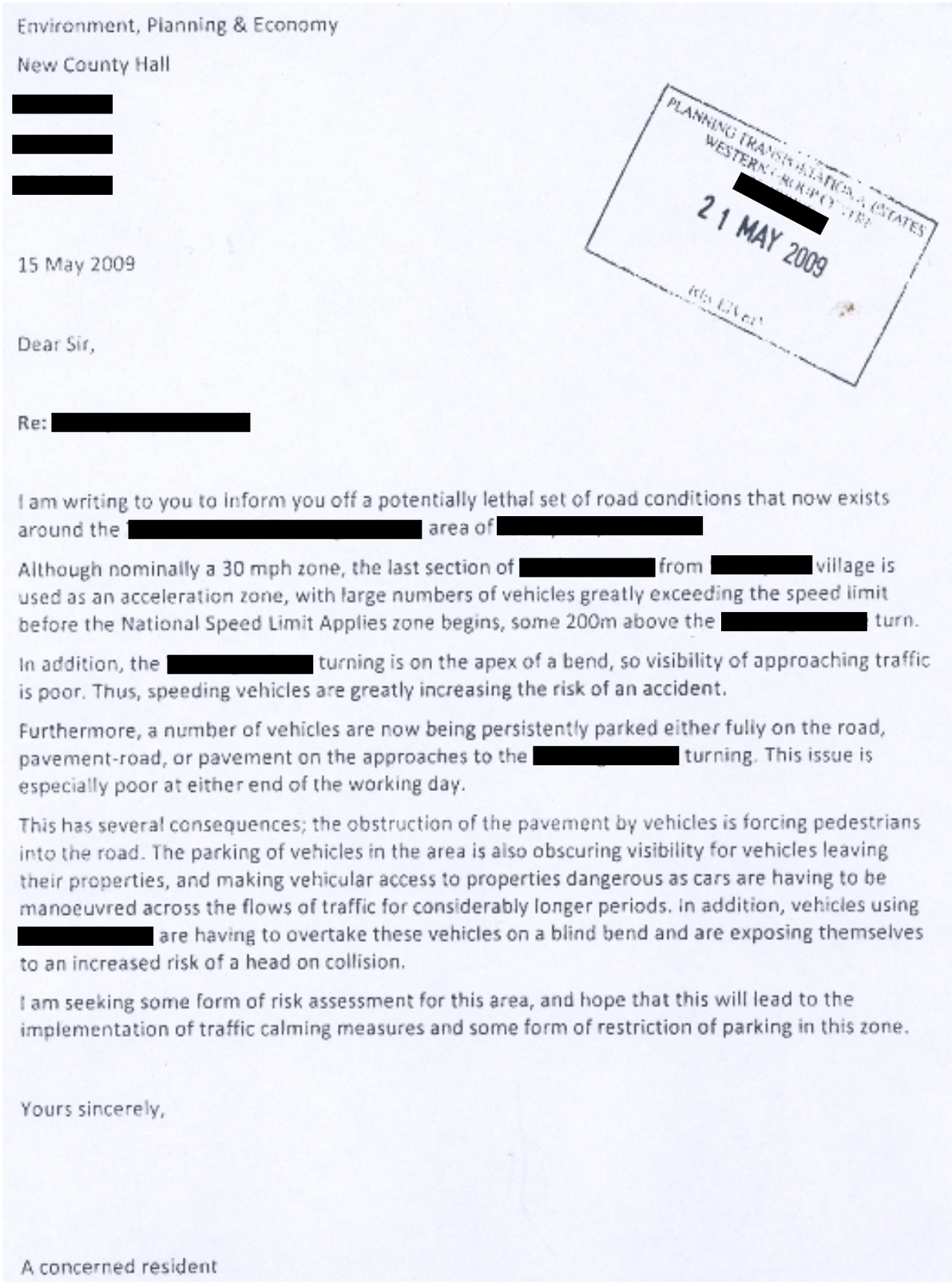
4.8 The Morphology of a Sample Document

4.8.1 Introduction

By way of illustrating the rhetorical components described in the previous sections of this chapter, a sample document has been included. The original document taken from the correspondence dataset, has been redacted to protect the author's anonymity, and has been included as **Figure 4.1**. Whilst **Figure 4.2**

contains a facsimile of this document, with the addition of line numbers (column 1) and; the placement of suggested rhetorical components (column 3). In addition, to facilitate reading, redacted content has been replaced by proxy names as displayed in italics.

This document is in many ways paradigmatic of its genre and it is argued contains the basic rhetorical components seen in letters and e-mails the authority receives, namely: Purpose, Category Entitlement, Issues, Evidence, Argument and a Request. Further, the issues and arguments put forward are supported by anecdotal evidence from first person experience; there are projections to a future (deleterious) state of affairs; the deployment of a category entitlement to bolster any views put forward, the use of linguistic devices to effect illocutionary force, and ultimately, a request for service. Whilst in many ways this is typical for the genre, there are a number of features that, I will argue, render it atypical and as such interesting.



Environment, Planning & Economy

New County Hall

[redacted]

[redacted]

[redacted]

PLANNING TRANSPORTATION & ESTATES
WESTERN CORPORATE
[redacted]
21 MAY 2009

15 May 2009

Dear Sir,

Re: [redacted]

I am writing to you to inform you off a potentially lethal set of road conditions that now exists around the [redacted] area of [redacted]

Although nominally a 30 mph zone, the last section of [redacted] from [redacted] village is used as an acceleration zone, with large numbers of vehicles greatly exceeding the speed limit before the National Speed Limit Applies zone begins, some 200m above the [redacted] turn.

In addition, the [redacted] turning is on the apex of a bend, so visibility of approaching traffic is poor. Thus, speeding vehicles are greatly increasing the risk of an accident.

Furthermore, a number of vehicles are now being persistently parked either fully on the road, pavement-road, or pavement on the approaches to the [redacted] turning. This issue is especially poor at either end of the working day.

This has several consequences; the obstruction of the pavement by vehicles is forcing pedestrians into the road. The parking of vehicles in the area is also obscuring visibility for vehicles leaving their properties, and making vehicular access to properties dangerous as cars are having to be manoeuvred across the flows of traffic for considerably longer periods. In addition, vehicles using [redacted] are having to overtake these vehicles on a blind bend and are exposing themselves to an increased risk of a head on collision.

I am seeking some form of risk assessment for this area, and hope that this will lead to the implementation of traffic calming measures and some form of restriction of parking in this zone.

Yours sincerely,

A concerned resident

Figure 4.1: Document 'A'

Line No.	Correspondence – Letter from 15th May, 2009	Rhetorical Component
[1]	Dear Sir,	
[2]	Re: *Tumbledown, Sea Town*	
[3] [4]	I am writing to you off a potentially lethal set of road conditions that now exists around the *North Road-South Lane* area of *Tumbledown, Sea Town*.	**Purpose**
[5] [6] [7]	Although nominally a 30mph zone, the last section of *North Road* from *Tumbledown* is used as an acceleration zone, with large numbers of vehicles greatly exceeding the speed limit before the National Speed Limit Applies zone begins, some 200m above the *South Lane* turn.	**Evidence/Issue**
[8] [9]	In addition, the *South Lane* turning is on the apex of a bend, so visibility of approaching traffic is poor. Thus, speeding vehicles are greatly increasing the risk of an accident.	**Evidence/Issue/ Argument**
[10] [11] [12]	Furthermore, a number of vehicles are now being persistently parked either fully on the road, pavement-road, or pavement on the approaches to the South Lane turning. This issue is especially poor at either end of the working day.	**Evidence**
[13] [14] [15] [16] [17] [18]	This has several consequences, the obstruction of the pavement by vehicles is forcing pedestrians into the road. The parking of vehicles in the area is also obscuring visibility for vehicles leaving their properties, and making vehicular access to properties dangerous as cars are having to be manoeuvred across the flows of traffic for considerably longer periods. In addition, vehicles using North Road are having to overtake these vehicles on a blind bend and are exposing themselves to an increased risk of a head on collision.	**Evidence/Issue** **Evidence** **Argument** **Evidence/ Argument**
[19] [20]	I am seeking some form of risk assessment for this area, and hope this will lead to the implementation of traffic calming measures and some form of restriction of parking in this zone.	**Request**
[21]	Yours sincerely,	
[22]	A concerned resident	**Category Entitlement**
	Notes: Italics denote the introduction of a proxy name in order to preserve the identity of the correspondent and/or addresses/properties listed in the original document. The document is otherwise replicated, including any spelling, grammatical or typographical errors as found in the original.	

Figure 4.2: Facsimile of Document A

4.8.2 Purpose

The prototypical way to commence an initial communication (that is the *first communiqué* with the authority on a new issue) is to identify the purpose or inherent objective that presumably motivates the author to write or e-mail. This letter conforms to the genre by advertising in the opening line that the communication intends to be informative – 'I am writing to inform you' (Line 3, hereafter denoted by (3)). The full import of this information is then immediately conveyed such that the circumstances are considered to be 'potentially lethal' (3). Thus in the opening salvo, the letter signals the author's over-arching objective as being to alert the recipient to some state of affairs that the intended recipients are presumed to be ignorant of, that is, it is new information that the authority does not have, but would find useful. The gravity of the proclamation 'potentially lethal' (3) carries with it a semantic load that intends to elevate its status, thereby commanding attention and distinguishing it from more mundane issues.

4.8.3 Issues

There would seem to be a number of issues that are introduced by the author. That is, the central problems introduced in this document relate to: the excessive speed of vehicles (9), anti-social/inappropriate parking of vehicles (13,14), and the limited visibility both through natural elements of the road alignment (8) and through being impeded by parked vehicles (14).

4.8.4 Evidence

The author draws in some quite detailed and sophisticated evidence, from presumably first-hand experience. We have the acceleration of vehicles (6); vehicles exceeding the speed limit (6); limited visibility at the junction (8); parked vehicles which are either entirely or part-parked in the carriageway (10-11); the access and egress of vehicles to private properties (14); parked vehicles forcing pedestrians into the road (13-14) and finally, vehicles forced to overtake parked vehicles on a 'blind bend' (17-18).

What is perhaps unusual about this correspondence is the lack of indexicals, it is common for the author of such correspondence to refer to specific events though the use of personal pronouns such as 'the other day *I* saw' or 'only yesterday *we* witnessed.' Instead, in this document we get the construction of a problem that 'now exists' (3), and is devoid of existential attachments, the overall effect is therefore to situate the information as from a neutral observer *vis-à-vis* an active participant in the conveyed scene.

4.8.5 Argumentation

This correspondence as we have seen, is couched as being informative – it seeks to inform the highway authority of a set of road conditions/circumstances that are, in the eyes of the author, hazardous. Then through the introduction of a sequence of thoughtful and considered evidence, the author constructs the potential hazards that exist, namely: excessive speeds in advance of the change of speed limit (6-7); pedestrians forced into the road (13-14), access and egress

from properties (14-15); turning vehicles at the *South Lane* junction (10-11) and hazards for general vehicular traffic overtaking parked vehicles (17-18).

Having introduced the issue, supported by evidence and arguments for the nature, cause and effects of such problems, the author builds up to a request for 'some form of risk assessment' (19). It is hoped that such an assessment would be a precursor leading to 'traffic calming measures' and 'some form of restriction of parking' (20). In this way the trajectory of the letter follows a path that is broadly:-

Purpose ➔ [Evidence ➔ Issue ➔ Argument] x 2 ➔ Request

That is, between the initial notification of intent and the ultimate request, there is a loop or sequence of Evidence, Issue, and Argument that is iterated twice in this example. This is of course a somewhat simplistic assembly of the document, and especially since components as evidence and issue are not necessarily so easy to disaggregate and tend to have blurred boundaries – indeed evidence, as presented, could stand itself as an issue even if not explicated as such.

In order to clarify the distinction that is made between Evidence, Issue and Argument, the following shows the disaggregation of the main body of the sample document according to the tripartite description adopted.

Sequence 1

Component	Description	Line Reference
Evidence	Large number of vehicles exceed the speed limit before the National Speed Limit begins. South Lane is on the apex of a bend affords poor natural visibility.	(6-7) (8)
Issue	Speed of traffic and visibility of approaching traffic is poor.	(6-7), (8-9)
Argument	Speeding and limited visibility increase the risk of an accident.	(9)

Sequence 2

Component	Description	Line Reference
Evidence	Vehicles persistently parked on approaches to South Lane and vehicles obstruct pavement and inhibit visibility.	(10-11), (13-14)
Issue	Pedestrians are forced into the road + parked vehicles impede vehicles accessing and egressing their properties.	(13-14)
Argument	The impediment to visibility leads to increased risk and danger – not only to vehicles leaving private driveways but also to those who have to negotiate past the parked cars on the 'blind bend.'	(15-16), (16-18)

Figure 4.3 Evidence-Issue-Argument Sequences in Document 'A'

4.8.6 The Request

The request is itself interesting and generally atypical of the dataset as a whole. The correspondent requests for a risk assessment to be undertaken (19) even though they pre-empt its findings with expectations of traffic calming and parking restrictions (20). This approach in a sense concedes ground to the Highway Authority and seems to recognise that within the machinations of such a bureaucratic and accountable organisation, there is a need for some formal method of appraisal that is required prior to action and the commitment of public

funds. This is very much unusual, it is far more common for the author to assume that their request will be taken at face value, and there is no further need of evidence or assessment. By way of contrast consider the nature, tone and demands of the following excerpt:-

> What the hamlet needs right now, at the very least, are road humps and red flashing speed reminder signs well in advance of the hamlet at both ends. Of course speed cameras, although unsightly, would also help. A 20mph speed limit instead of the current too fast 30mph would also help.
>
> I look forward to seeing works in the hamlet within a few days along the lines described above that will make this road significantly safer. (Letter, 14th July, 2008)

This point on expectations is closely allied to the prescriptive nature of road safety dialogue which is covered in more detail in Chapter 7.

Returning to Document A, as already mentioned, even allowing for the need for a formal and therefore officially sanctioned assessment, the correspondent anticipates an outcome leading to traffic calming and parking restrictions. This is suggestive of an informed person who is knowledgeable about measures that are within the purview of the highway authority to introduce. For example, frequent demands are made on the authority to enforce speed limits, but this is an issue for the police not the council. A final point on the request, in suggesting traffic calming and parking restrictions they select measures that are both entirely in tune with current transportation thinking (cf. IHT, 2007), and represents a well-grounded and realistic assessment of potential outcomes.

4.8.7 Category Entitlement

Another point of departure is the deployment of a category entitlement which comes late in the document. Indeed, it is only at the very end that the author appends the closure ‘A concerned resident’ (22), no other clues to the person are available. It is quite unusual for the correspondent not to sign the document or to include the originating address. This does seem to be quite odd, what have they gained or what risks are associated with submitting their name/address? Is it that they fear censure for proposing measures that may be unpopular with their neighbours, i.e. parking restrictions? The essential consequence of this form of the closure is that the correspondence is irretrievably monological and one-way. In offering no name or contact details the correspondent is avoiding/preventing continued dialogue. Thus whilst they have been motivated to write and voice their concerns, their commitment would appear to end there. This is striking, yet in accord with the previous content, that is bereft of personal pronouns and indexicals.

4.8.8 Projection and Prediction

It is commonplace for correspondence to engage in personal projections and predictions to some future set of affairs, that are believed to be possible events, as a consequence of ‘doing nothing.’ For convenience I draw a distinction between projection and prediction, in the sense that the former extends from an existing condition and amplifies or intensifies it, thus a ‘near miss’ may be postulated as a ‘possible serious accident’ in the making. By contrast a prediction may be the foretelling of some future calamity with no apparent referent in the present, other than phenomenal fear and is stated as a fact and is often presented

in a categorical manner with an apparently unimpeachable degree of certainty. The following, according to the aforementioned typology, is taken as a prediction:-

> North Road has become a race track for some drivers and a fatal accident is an inevitable outcome if this is not addressed. (Letter 7th August 2007)

I would suggest that the document presented in **Figure 4.1** and **4.2** engages in a prediction, the letter begins with the reference to 'potentially lethal road conditions' (3). Further, this line of argument is sustained by the use of 'risk' on a number of occasions (9), (18) and (19), implying the *potential* for some deleterious state of affairs to obtain. This document does not draw in any specific known incident, accident or set of events – rather it speaks of 'potential' for harm and an 'increased risk of a head on collision' (18). The adoption of risk carries a more sophisticated comprehension of safety issues – that is, as opposed to more absolute statements of certainty (e.g. 'somebody will be killed'), a more nuanced appreciation of hazard is presented whereby the potential for injury is a calculus. This piece of correspondence is couched as a reasoned forewarning that the calculus of risk has passed a perceived probabilistic threshold, whereby an adverse event, with serious personal consequences, is more rather than less likely to occur.

4.8.9 Register

The overall tone of the document is of reasoned and informed argumentation. The author attempts to bridge the gap between 'the resident' and 'the engineer' by adopting terms and expressions that can be *assumed* to be part of the

everyday vernacular of the recipient. That is, the author although undertaking an essentially monological exercise, 'imagines' or anticipates the recipient, and adopts a register in accordance with those expectations.

Thus for example '30mph zone' (5), 'acceleration zone' (6), 'National Speed Limit' (7), 'traffic calming' (20), all appear to be attempts to communicate in terms they expect the engineer to readily comprehend and subscribe to as legitimate knowledge/forms of expression.

Further, a number of other points suggest a more nuanced understanding of the situation at hand. For example, there is an appreciation of premature acceleration of vehicles in advance of leaving the 30 mph limit (6). Further, there is an explicit connection made between the relationship between speed and risk (9), whilst there is also an implicit recognition of the severity of incident that is likely to ensue from a head-on collision (18). In addition, the author alludes to the transient and changing state of conditions as they draw attention to the parking problems being 'especially poor at either end of the working day' (12).

4.8.10 Emphasis

The degree of emphasis and stress deployed is relatively modest for the genre, and once again appears as considered and thoughtful. Though the opening gambit sets the scene with a '*potentially* lethal' (3) set of circumstances, the severity is not overplayed, if anything the preceding 'potentially' serves to attenuate. There is an assessment that '*large* numbers' (6) of vehicles that are '*greatly* exceeding' the posted speed limit. This is of course conjecture and is

dependent on what exactly constitutes ‘greatly.’ With reference to the parking of vehicles on the carriageway, the problem is characterised as a number that are ‘*persistently* parked’ (10), implying a more endemic than ephemeral issue. Finally, the problem for pedestrians is presented as a *fait acompli*, that is, pedestrians are the unfortunate victims of anti-social motorists that results in ‘*forcing* pedestrians into the road’ (13-14).

4.8.11 Attribution of Blame

The document is somewhat neutral with assigning blame – yes, aspersions are cast towards speeding motorists (6), (9), and those that park on the footway (10-11), (13), but these road users are not explicitly held accountable. Instead remedies are suggested to influence and direct their behaviour, as opposed to being subject to censure, Likewise no attempt is made to implicate the highway authority for neglecting their duties or for maintaining a network configuration that is hazardous or that jeopardises public safety. Instead, the issue is presented as something that has arisen over time, with traffic and behaviour that is perhaps inconsiderate; and unthinking, but that can be overcome by re-engineering the road environment. Other more animated responses would have asked for punitive measures to be taken directly against speeding motorists or for those who parked their vehicles with little concern for safety.

In contradistinction, the following two excerpts clearly assign blame and responsibility to the highway authority:-

> Members [of the Parish Council] feel very let down by the Council, remain very concerned by the traffic situation and now

> seek effective action by Southern Council to calm the traffic which uses Coast Town. (Letter, 20th May, 2008)

and;

> Instead of carrying out 'improvements' your department has created a situation where accidents are more likely to happen than prior to the works. I do not appreciate my hard earned money being totally wasted on such schemes, let alone the fact that a normal stretch of road has been transformed into a 'danger zone.' (Letter, 23rd January, 2009)

Whilst the following attach blame to identified groups or individuals:-

> Drivers speed down this road and don\'t [sic] care to look round [sic] the corner. One motorbike driver wanted to overtake a car down the same road, he tried overtaking around the corner and crashed into another vehicle……we are talking about innocent lives lost because of careless driving. (Letter, 31st May, 2008)

and;

> The behaviour of drivers across the moor between the two cattle grids is unbelievable at times. Many, many drivers overtake at great speed – often chatting on their phone. Will it take a major incident to trigger some action? (Letter, 4th February, 2008)

The latter is in many ways especially apposite to this study. Whilst highlighting the irresponsibility of 'many, many drivers' who travel at speed, overtake and attempt to talk on the phone, the onus for rectifying this set of conditions is implied in the final statement: 'Will it take a major incident to trigger some action?' The elevated hazards that are presented, in the circumstances portrayed, are not essentially as a result of some highway defect or failure, they are present because motorists are not able to moderate their own actions. In particular, mobile phone use and non-compliance with speed limits can be seen as 'social problems,' that is, issues that are beyond the scope of orthodox highway engineering.

4.9 Summary

This chapter has presented the ‘road safety issue’ as a distinct genre. That is, the lay presentation of road safety issues, as seen in the correspondence and media reports surveyed in this study, has a distinctive and characteristic form that is oft repeated. The indentified constituent parts of this genre are: ‘the Purpose,’ ‘Category Entitlement,’ ‘the Issue,’ ‘the Argument,’ and ‘the Request.’ In order to elucidate further these components and facets of the genre, a sample document was deconstructed so as to identify the morphological components from which it was created. The final section in the chapter considers the attribution of blame that is surprisingly absent in the sample document. By way of contrast, examples are drawn in from the corpora, where blame is assigned both to the highway authority on the one hand and on the other to named groups or individuals.

5. Contested Space

5.1 Introduction

The domain where safety issues are raised and debated is highly contested. I will attempt to show how this region is subjected to numerous forces and arguments, that serve to diminish the voice of the professional and therefore the ultimate authority that engineers carry. Road safety engineering falls in a contested space bounded by the public, politicians and professionals.

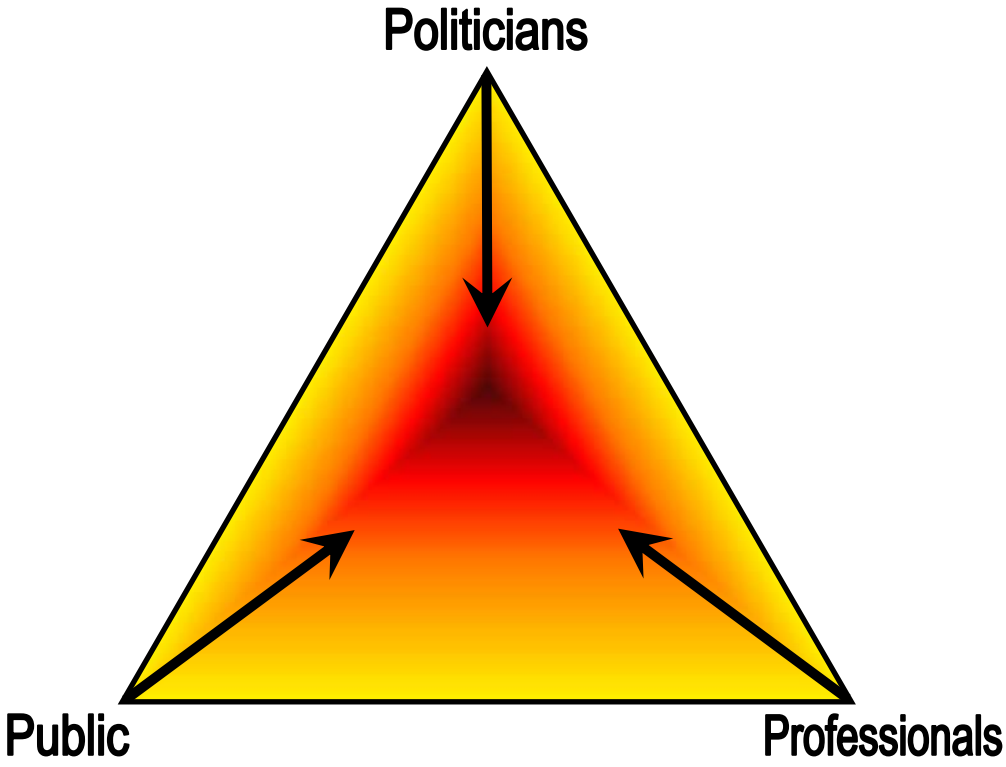


Figure 5.1 Contested Space

Since it is the highway authority that is responsible for local road safety,[18] engineering professionals in this study, by and large, reside within the authority,

[18] Further details of the responsibilities of Highway Authorities are available in Orlik, M. (2007) *An In Introduction to Highway Law*, 3rd Edition, Crayford, Kent: Shaw and Sons.

namely the Council.[19] They are faced with conflicting allegiances and demands, that at times are difficult to reconcile or resolve. As practicing engineers, they have demands placed upon them by their profession and the complex legislation that surrounds the road environment.[20] In addition, they have duties as public servants to listen to the demands of the public, and act as directed by the local policies and procedures. Further, they are inextricably enmeshed in a political organisation, where forces are brought to bear upon them to make decisions on non-technical grounds. These forces collide in many areas of public service, but arguably road safety is one of the more contested arenas, with many stakeholders and many voices contributing to the debate. Indeed, at times engineers, as relayed in the narratives told in interviews, present an environment in which they are 'under siege,' subject to a volatile public, who have no problem in asserting their views. There is much 'emotional labour' (Hochschild, 1983) done by engineers who have to deal with the hostility of an at times virulent public. Of course the engineer is most likely to encounter those who feel passionately about an issue, and are motivated to write, e-mail or phone. Nevertheless, these encounters are often fraught and fuelled by passion. Abuse, hostility and emotional blackmail, are as much the terrain of being a highway engineer, as crafting a technical solution to a physical problem. Highway engineering is, as one interviewee memorably said, is really 'people engineering' (I28, Manager)[21] – that is, it is inextricably tied to the humans who drive cars, cross the road, ride

[19] There is a small element of professional services that are supplied by external consultants. However, the bulk of road safety engineering is fulfilled by an in-house design team.

[20] Adams (1995: 31) alludes to this in his discussion on legislation associated with mitigating risks, by saying 'The most regulated activity of all is motoring. Most road traffic law is justified on safety grounds' (Source Adams, J. (1995) *Risk*, London: Routledge).

[21] (I28, Manager) denotes: Interview number 28 and held with a senior officer whose primary activities can be classed as managerial. The tripartite division of roles also includes 'Technician' and 'Engineer.' For a fuller explanation of these categories the reader should refer to page 111.

their bikes or live adjacent to roads. There is no escaping the impact that engineering decisions have on people.

The growing confidence of the wider public to challenge authority and make demands of professionals has changed the working landscape of engineers in recent years. Experienced engineers talk of an erosion of their authority and a public demeaning of their skills and expertise. Road safety knowledge is no longer exclusive or privileged; the terrain has been seized by a much wider audience. Habermas' (1984) notion of the colonisation of the public sphere, by a technical-bureaucratic complex, would seem to be reversed here. Engineers protest that their voice is not heard and their skills are not brought to bear, but sacrificed for short term political gain or by the emotional reasoning of an ever powerful public.

The growth of an information society, where knowledge is readily available, results in a lay public who is comfortable to challenge the sovereignty of experts over traffic and safety issues. The rise of a litigious society, and the impact of the Freedom of Information Act (2000), results in engineers adopting a defensive stance, always on the back foot. This reverse-colonisation of expertise, the self-determination of local people to shape the road environment in their backyard, comes at a price. Schemes may rise and fall on the wave of public opinion, regardless of their technical merits, and what impact they may have (or not have) on casualties. In acceding to political pressure and the voice of the public, engineers have lost esteem. The connection between the configuration of the road environment and sound engineering practice becomes more tenuous, distant

and increasingly inconsistent. The precedent set by adopting one set of politically motivated measures at one location, may render a defence of its use elsewhere, more difficult.

5.2 Exposure

There is a sense that the demise of professional autonomy and the rise of people power or the finding of 'voice' amongst the lay public is self-inflicted. The commitment to consult, on almost any form of highway improvement, has in some ways sanctioned the public voice:-

> We spend a lot of time on consultation to the point of being stupid……I think we have empowered them over the years, seeking their opinion and pandering to their wishes, to a point where they think it is their right to choose what they have on the road and you always get the 'I pay my road fund licence, I pay my taxes, I paid your wages.' They wouldn't go to a hospital and say that to a nurse would they? (I21, Manager)

This has opened the profession to additional scrutiny and has engendered a belief that consultation responses will be listened to, and more importantly acted upon. Highway engineers complain that their exposure to public criticism leaves them vulnerable in a way that is not felt by other professions. One engineer reasoned:-

> I mean it is almost as if you go for a brain operation and you question the way the neurologist is going into your skull – 'are you sure you know what you're doing? Can I have a bit of input into that?' where do you we draw the line? There's transparency, [and] there's lunacy! (I27, Technician)

The move to near universal consultation on highway schemes has eroded the authority and status of highway engineering. By giving voice to the lay public, it

has inadvertently signalled that highway engineering is a lesser discipline, in that decisions on the shape and form of the road environment can be delegated to the public under the loose supervision of the experts. Consultation thus has real and practical consequences for those working at 'street-level,' including the practices they are required to adopt in their conduct with the public:-

> It means…..we and every single highway authority in the country are unable to deploy their expertise without asking people – who know nothing about it, what their opinion is, because it is 'proper' for the public to know. I mean even down to the terminology which we are told to write in our letters. We are a technical department and we've been told by a political body what typeface to use, how to word our letters, what language to use. (I27, Technician)[22]

In this way consultation practices de-technicalise a profession, which stretches back through half a century, which has been built on fastidious attention to detail and has established a powerful empirical record of how vehicles, people and the road environment interact (Laffin, 1986).

Engineers complain that this level of exposure is a times costly and counter-productive. Consultation comes at a price; it diverts scarce resources to producing material suitable for public consumption, and results in engineers performing non-technical activities for much of their time. Further, consultations can be long and drawn out, increasing the time from scheme conception to construction. A small number of objections can absorb significant resources in order to overcome or placate. Engineers are alive to the vicissitudes of

[22] This interview was undertaken at the time of a strong corporate directive on the format and style with which officers were expected to communicate with the public. This even extended to 'banning' the use of certain technical language and jargon in such communication. This latter directive drew an especially strong reaction from engineers, who felt they had to 'dumb down' letters, and believed, in consequence, a certain lack of precision followed from forgoing words and terms that were deemed to be 'jargon' or inaccessible to the lay public.

consultation, they understand its role in fulfilling a democratic responsibility to inform and listen to the public they serve. They recognise that it would be wrong for a political organisation to 'purport to know best at every level and dictate what goes where on our highway network' (I35, Manager). Indeed more than being an obligatory function and a moral imperative of the authority to engage the public, some of those interviewed, appreciated the public were integral to effective highway engineering:-

> The public are an asset. We depend on the public ultimately, to fund a lot of the work we do through the taxation systems, we need to engage them as partners, to bring them on board. We don't want to be living in a bubble – in a different world from the public, we need to have our feet firmly on the ground so that we can solve the problems that the public perceive to be problems. (I16, Engineer)

Further, rather than just being morally right to consult, there are tangible benefits from consultation. Engineers cannot hope to have the in-depth appreciation of all local circumstances, and are keen to draw out this local knowledge in designing better schemes, and taking into account local circumstances that may have evaded them without consultation. In this way, although at times, painful and frustrating, consultation is seen by some as a necessary evil, a *fait acompli*:-

> I think we have to [consult] it is the process we are given, we have no choice. It is trying to prove that we are not godlike, we do get it wrong and a consultation is a good way of finding out if we have got it right or wrong. (I8, Engineer)

In this way consultation is seen as a 'sounding out' of proposed changes to the highway, a method by which the public acceptability of plans can be gauged. If successful, then it is seen as a worthwhile step in progressing a scheme.

Adjustments can be made in the light of local feedback ‘which then makes the whole process a lot smoother’ (I25, Engineer).

However, at the same time they are wary of being directed by consultation responses that bear the hallmarks of petty and self-interested motivations. Engineers are trained to be objective, to ignore the apparent idiosyncrasies of local circumstances, in favour of the uniform application of measures across the highway network. The demands of local people should be evaluated in the context of the wider, long term needs of the whole travelling public. In consultation responses, engineers often only hear the voice of the aggrieved few, they crave to hear from the silent majority, who may offer complicit support for a scheme.

5.3 Stigma and Bureaucracy

Undoubtedly some of the hostility and frustration that is vented on engineers is a result of the difficulties dealing with a large and somewhat amorphous bureaucracy. The public are at times aghast at the (slow) speed with which queries are answered and fail to appreciate the full cost of highway infrastructure. The anonymity of the organisation serves to fuel discontent, and decision makers seem remote from local feeling. Engineers are characterised as being anonymous, in an inaccessible County Hall, who rarely venture to the other parts of their jurisdiction and thus cannot fully comprehend the import of local circumstances. By way of illustration the following illuminating comment was made by a councillor in an article contained in the *Cornish Guardian*:-

> Under the new unitary authority local people will have the opportunity to decide traffic issues themselves, and not have to refer them to faceless bureaucrats in the hope that somebody will take notice and do something. After all who knows better about local traffic problems than local people. (*Cornish Guardian*, 22nd August, 2007)

Directing queries in themselves can leave individuals floundering, the monolithic organisation is sub-divided into countless departments and units, each with their own area of interest. At times, responsibilities transcend departments and jurisdiction is confusing and bewildering – even for those on the inside! Dealing with the bureaucratic machine can be frustrating and time consuming. Phone callers are passed from person to person, as attempts are made to match the callers interest with an officer with a concomitant role. Likewise letters are passed from desk to desk, each transfer representing a further degree of convergence. During my analysis of correspondence it was not unusual for a single letter or e-mail to have been on the 'desks'[23] of 5 different officials – in ever decreasing circles, downwards towards lower echelons. The following being the prototypical path for highway matters:-

Corporate Director ➔ Chief Engineer ➔ Design Group Manager ➔ Team Leader ➔ Engineer

Each successive step fuelling the dismay of the author as to why it takes so long to get a response, and cannot anyone take responsibility for answering?

[23] Although there is still some residual circulation of paper correspondence, most circulates electronically and is embedded in content management systems as described in section 3.4.2.

The highway engineer also finds themselves castigated as public servants, through the nature of what they do, the product of their labour – and not just because they are council workers. The introduction of engineering works is often seen as a negative adjustment that affects the road user (but not necessarily the resident) in a deleterious manner, this is nicely captured with the following excerpts from experienced staff:-

> Yes they hate us because we never seem to be doing anything they like, we're slowing them down or telling them they can't park. I mean it's generally negative things that we are putting on the highway isn't it? We very rarely giving them something that they like, gone are the days when we gave them a nice bypass….so it's generally because we inconvenience them in some way. (I38, Manager)

> It is the sort of thing that gets unrewarded, it is the sort of profession where people see road humps going in – they don't like road humps, 30mph signs instead of 40 [mph] and they see traffic engineers in a sort of negative way. Someone who lives along a road that has been calmed will have a very positive view. Generally though, people's views of road humps is a negative one. Traffic engineers are associated with traffic engineering works which they see as negative since it impedes them, it slows them, it delays them. (I16, Engineer)

Indeed, it is this fundamental dichotomy between the need to manage and calm movement and speeds on the one hand; and on the other, the desire to increase accessibility and throughput (which can essentially be reduced to volume times speed), that leads the engineer to be at the centre of such conflicting views and needs. In this way, the engineer has an unenviable task, of trying to negotiate a path through such competing requirements and desires.

The high cost of infrastructure is difficult for the public to appreciate and is a key source of tension. The public have trouble comprehending that a *seemingly*

simple scheme can cost substantial sums of money and take months (if not years) to implement. The escalation of costs can often exceed the grasp of the public due to the hidden aspects of scheme delivery, of which the most prevalent are: consultation, land, cost of moving/modifying underground services and legal/regulatory aspects (especially Traffic Regulation Orders).[24] These high costs, coupled with the perennial diminution of highways budgets, means that year-on-year less can be achieved on the ground, in terms of physical works. Demand for service *always* exceeds the available resources (*a la* Lispky, 1980) – and so 'I'm sorry we don't have the funds' becomes a reflexive retort to unsolicited demands. However, this message is not always easy to convey and can be received with hostility:-

> People get tired of hearing of budget pressures, and that's because their Council Tax keeps going up and yet at the same time they hear about budget pressures and having to make cuts, cuts in service – they can't reconcile the two things. (I16, Engineer)

Of course funding issues work both ways, and as protectors of the public purse, officers come under attack for committing scarce funds to schemes for which some members of the public see little worth:-

> Council tax is again on the increase. It is so easy to spend other people's money when you can increase the revenue each year even though 'capped.'
>
> We are then threatened with a cut in services. Councils seem to sometimes have an inability to establish the difference between what is essential expenditure and what isn't. Highways particularly, seem to spend when not needed and don't spend when it is necessary. (*West Briton*, Letters Page, 8th March, 2007)

[24] A Traffic Regulation Order is a legal instrument as defined by the Road Traffic Regulation Act 1984, to regulate, restrict or prohibit vehicular traffic or pedestrians on a road. Typical examples are in the form of speed limits, one-way streets, banned turns, weight limits and parking restrictions.

So as well as having to turn down requests for works, engineers have to work doubly hard to ensure that what they do commit to is defendable, and accountability is paramount in a world of ever increasing scrutiny.

The contested space of road safety is allied closely to its position within the local authority. Engineers frequently reported the stigma associated with working for the council – 'useless bloody council workers.' The publics' antipathy to public servants is tangible in the interviews, letters and media reports, which form the data for this study. The council worker is popularly conceived as being lower down the 'food chain.' The council is seen as the employer of last resort for those unable to secure employment in the 'real world.' The constant barracking and public humiliation as a result of council gaffs, which are so readily reported in the media, engenders a belief of incompetent staff repeatedly making mistakes and squandering public money. Council workers become the Keystone Kops of the local community, bungling fools with little grasp of reality, hiding behind the layers of bureaucracy that separate the officer from the real world. At times this stigma and lack of professional self-esteem overspills into the private lives of engineers:-

> I do find it quite embarrassing to say that I work in council highways, in effect because there is a certain stigma attached to it. I never tell people pro-actively – if I am forced to tell people what I do, I do so reluctantly. (I21, Manager)

The denigration of the council worker is completed with the role of being a public servant. An oft deployed strategy is to play the 'taxpayer card.' That is, the persuasive force of an argument rests on the fact that the individual believes they have a right to demand service on the grounds that they pay their taxes.

Engineers recounted the frequent recourse to this line of argument, sometimes re-packaged as ‘I pay your wages.’ The inference being: you work for me, now do as I tell you! This demand for service both bewilders and amuses engineers, who point out that they are taxpayers as well. However, more importantly, as public servants it is their duty to be the custodian of the public purse. The local demand for service always outstrips resources, no matter what the prevailing macro-economic climate might be. On this basis engineers are *always* allocating scarce resources, engineers are constantly searching to reduce costs and to introduce value engineering. The ‘tax payer card’ like the ‘accident waiting to happen,’ are worn clichés for engineers, who encounter such arguments on a daily basis, with seemingly no connection with their assessment of merit. These clichés become part of the landscape of dealing with the public; however they fall into the background and are scarcely part of the conscious life of a practising engineer, they take on a sub-liminal existence.

5.4 Non Technical Aspects of Engineering

One engineer characterised his job as being ‘9/10 politics and 1/10 engineering’ (I28, Manager). The inescapable intrusion of politics into the daily life of the engineer is more than apparent. Significant parts of the job for practising engineers remain handling people and the various groups and interests who influence scheme design and implementation. At times engineers get caught unawares, schemes can ‘blow up in people’s faces’ (I31, Technician) – a seemingly innocuous minor improvement can become an ‘issue’ and subject to the volatile influence of public, press and politics. There is at times a sense that some events can engender a Durkheimian ‘collective effervescence’ (Shilling,

1997), a communal upwelling can propagate a tide of dissent that demands attention. What was a technical issue, the application of widely used engineering principles, becomes a 'problem site,' needing careful attention to handle the sometimes conflicting goals of introducing a scheme and assuaging local concerns and aspirations. Handling people becomes a deft skill, attempting to turn them around and convince them that the experts know best. However, given the poor perception that local authority workers have, and the belief that highway engineering is a non-discipline anyway, this can be hard to achieve. Further, politicians are apt to complicate things by pulling rank, and insisting that they want a particular path to be pursued, following intense local lobbying from their constituents. Engineers talk exasperatedly of their advice 'falling on deaf ears' (I35, Manager), and being expected to do what they are told. This becomes demeaning for engineers who feel their voices are not being heard, or at least, not being listened to seriously:-

> The frustrating thing is being told to put something in, that you know is fundamentally wrong…..You understand it's a political organisation, we've got our own expertise, we seek advice from others – there's no one right or wrong answer. Sometimes we've got preferences, sometimes there are national preferences we veer away from slightly – but there is generally an acceptable span, an envelope. It's when we are told to move outside those areas by a layman, a politician – it's more than frustrating. (I35, Manager)

Ultimately there may be concessions in the final scheme delivered, that lead to the technical integrity of the scheme being compromised. Engineers lose out in the struggle, that sees political imperatives gaining ascendancy, and are told to acquiesce on a point on the grounds of political expediency. The political dimension can, at times, be hard for the engineer to countenance, for they cannot

reconcile politics with what they see their role as a professional and technical exercise:-

> Very often it is a political decision to do something…..I don't agree with political decisions anyway, we are not paid to make political decisions, I am paid to make engineering decisions. (I38, Manager)

In many ways, the primacy of the political over the technical, is seen as an affront, it erodes professional status and demotes the engineer to being subservient to political ends. Asked how it felt to be in this position one interviewee reported:-

> Very frustrating and it is kind of demeaning as a professional I think, you've got 20 years experience, you've got 4 or 5 years at college, some people have degrees in civil engineering and you're just a puppet. (I21, Manager)

At other times engineers characterise engineering in a local authority is part of a 'big game' (I2, Technician), in the sense that politics is an integral part of their work and the system necessitates that engineers engage in the political game in order to further technical ends. This may mean that ground is conceded to politicians with a view to the bigger picture, a strategic move with an eye on a much larger goal:-

> It's not worth cutting off your nose to spite your face, so we may give up on some things in order to smooth the way for other things with our 5 year LTP[25] Programme – sometimes you've got to give up something to gain the rest of the Programme. (I35, Manager)

[25] The Local Transport Plan (LTP) is where Highway Authorities outline their proposals for transportation projects and programmes over a 5 year period. The LTP programme is a means by which authorities can bid for funds to sustain these schemes and is the primary source of funding for many authorities.

Therefore expertise and expert knowledge becomes politicised, drawn into the realm of politics and the vagaries of public opinion. Whilst some try to fight it, others concede it is just part of the job and 'goes with the territory' (I3, Engineer). Old-school professional engineers[26] may stubbornly fight their ground, refusing to concede on principle. This is in part, because they have cut their teeth in an era when engineers were respected and the public had less say. In addition, as is very apparent from the interviews, many are wary of the need to protect themselves. The consequences of implementing a scheme that is flawed are substantive. A poorly designed or constructed scheme may result in serious injuries or fatalities. This professional ethic is aptly captured in an interview with an engineer, who discusses the potential consequences of his decision making:-

> If I've disagreed with something when I've been asked to approve something in a……report or whatever, I've disagreed with what's proposed, I've actually said so. I've recommended abandon [the scheme], because I feel as a professional officer we have a duty to use our professional judgement, and if the scheme is crap, say so. If it goes pear shaped, and I approve something I whole heartedly disagree with and there is an accident, it will be my name in court- 'Mr Smith, Engineer, you approved it.' (I38, Manager)

Given the litigious society and the access to previously privileged information, as afforded by the Freedom of Information Act 2000, engineers are keen to protect their interests and record in detail their recommendations – even if ultimately these are overturned by political imperatives. The younger wave of engineering technicians and designers may not be so resistant and are less assertive and confident in expressing their views.

[26] By distinguishing professional engineers, I am referring to those that have qualifications issued by the respective professional body and are Chartered or Incorporated.

The technical pursuit of a solution to a complex engineering problem becomes loaded with a range of other factors, which can at times outweigh and distort a scheme; taking it down a radically different trajectory from that conceived by the engineer. In trying to accommodate these other factors, engineers perceive that they are being asked to deal with 'social problems,' rather than engineering problems. Thus demands for the local authority to find remedies to a poor safety record become more challenging when the primary factors are use of mobile phones, alcohol, drugs or merely the general disregard for local speed limits. Finding solutions to some of these issues becomes more challenging and allies a traditional engineering approach with those responsible for education and enforcement. Physical measures can be introduced to remedy some of these ills, but they do not get to the root cause of the problem. Thus, to an extent, disregard of speed limits can be countered through the deployment of vertical and horizontal deflection (e.g. road humps and chicanes, respectively), but this does not tackle the core problem, failing to observe the posted limit. As car ownership increases and traffic volumes grow, the road environment becomes a more volatile and contested arena. The side-effects of the exponential growth in mass mobility, places ever greater demands on local authorities to solve problems to domains that are beyond the traditional confines of the engineering discipline. More and more they are called on to deal with the ills of society, anti-social behaviour as manifested in the culture of 'boy racers' or the creative routing of vehicles down inappropriate roads in congested networks ('rat running'). The following excerpts are typical examples of such social ills that are presented to engineers to solve:-

> Groups of youngsters roar through the village, back and forth at speed on noisy machines – mainly at weekends in the summer. Many do not wear crash helmets (hence they can be seen to be young riders) and some machines appear to be untaxed. (Letter, 20th May, 2008)

> what [sic] a number of residents would like is humps put on the road to the run up to the lights, so that drivers would have to reduce there [sic] speed, which would also reduce the noise level we all have to put up with. every [sic] evening we have to put up with the youngsters reving [sic] there [sic] cars and wheel spinning away. which [sic] as far as I'm concerned is lowering the value of all our property's [sic]. (Letter, 27th April, 2007)

Engineering becomes more and more a question of mitigation and containment, second-guessing behavioural responses to schemes and curbing the excesses of anti-social behaviour. In doing so they are caught in a maelstrom of conflicting views, there are those who feel that the application of treatments does not go far enough, and every road should be calmed. At the other extreme, is a view that individual freedoms are being removed, and resources are squandered due to the misbehaviour and actions of the few. The following are illustrations of the latter:-

> The actions of a few reckless people who think the laws of the road do not apply to them lead to vast amounts of taxpayers' money being spent unnecessarily. (*Cornish Guardian*, Letters page, 27th August, 2008)

> I think that it is disgraceful that we all have to suffer just because a few drivers can't drive carefully. (Letter 14th August, 2007)

The endless struggle between vehement and diametrically opposed viewpoints remains the everyday battleground for the front-line engineer. Consensus and harmony are rare commodities in matters pertaining to highways and transportation. Competing standpoints vie for position, and attempt to gain influence through amassing supporters and gaining political 'buy in.' At times

the engineer can be engulfed by a storm that they had not seen coming, and for which they have little protection. Reversion to core bureaucratic behaviours such as reference to policies, rules, protocols; and above all the confines of highway law, becomes the refuge and haven from which they can work and practice.

5.5 Struggling for Self Esteem

What emerges is that highway engineering is struggling to maintain its self esteem. With poor rewards and low status, the highway engineer in the local authority is embattled. Recruiting new blood to this once proud profession is becoming harder and harder. Highway engineers talk of being the 'poorer cousins' of their engineering brethren. In the hierarchy of status and rewards, highway engineers fall behind their counterparts in mechanical, structural, aeronautical and civil engineering. They are in the words of one interviewee 'second class engineers' (I24, Engineer). This is partly attributed to the ever diminishing appeal of engineering as a profession which in itself is closely coupled to the erosion of status and the poor salaries available:-

> We are not investing in traffic engineers. What do we pay the manager of McDonalds £30,000? – and after 4 years of university….we are paying them [traffic engineers] £15,000 – well who would want to be a traffic engineer? (I33, Engineer)

The low status of highway engineering is further compounded when coupled with falling within the confines of the local authority. The ever increasing exposure to scrutiny through a public empowered by near universal consultation, and the loss of strategic power to voice their expertise, at the expense of conceding to political imperatives, has left the profession weak. There was a

resigned and forlorn outlook expressed by public sector engineering professionals captured in this study:-

> I suppose we are fair game aren't we? We are sitting drinking tea all day aren't we? Whereas, a doctor, it's like wooooah saves lives! It is down to respect isn't it? (I3, Engineer)

> I do think they do have an opinion that we're rubbish, useless bloody council workers interfering and we don't know what we're doing and we're not professional. You're a council worker and therefore you must be a tosser. (I21, Manager)

The authority of highway engineers is denuded by a culture that does not recognise its worth. Whilst doctors and surgeons are deemed to be knowledgeable about illness, this does not extend to highway engineers knowledge of highway safety. The rise of the 'informed public,' and a culture that has afforded self-determination to challenge and voice opinion on anything and everything, has eroded the credibility of engineers. Familiarity breeds contempt, the access that the public has to engineers and the political decision making process has promoted a belief that they (the public) know best and that their aspirations will be manifested by deeds. The regular 'council bashing' that is found in the press is sustained in correspondence and the everyday dealing of engineers. In the contested area of traffic and road safety, the odds are increasingly stacked against the engineer finding voice. It is only in the safeguard of rules and regulations that the engineer can find some form of support and solace. The recourse to regulations can be both a necessary and a strategic move to prevent the installation of a scheme promoted by the public that is 'not legal.' Engineers spend many hours attempting to inform a

disbelieving public, that what they want is not permitted by law and so cannot be countenanced.

A further consequence of the rise of the lay expert and the growing confidence of the public is that highway engineering is conceived of as 'non-science,' it becomes de-technicalised in the eyes of the public. That is to say the public deny that there is a technical and scientific basis for highway engineering measures and expertise. The following was part of a letter published in the *Cornish Guardian*:-

> Highway engineers think roads are science. You count the traffic, feed it into a computer, press a knob and Bob's yer [sic] uncle, out pops the result – roundabout or no roundabout.
>
> They hate being told what to do by politicians and detest being seen to surrender to road safety campaigners. Safety campaigns are not science. (*Cornish Guardian*, Letters Page, 7th March, 2007)

This kind of outlook promotes a form of epistemic fallacy,[27] where the limits of knowledge are considered to be equated with what is known and experienced (Patomaki and Wight, 2000). Thus the lay public are apt to conflate highway engineering with what they can see and encounter on a daily basis. This is the bane of professional engineers who have to endure what they see as an infringement of their professional expertise:-

> That has always been one of my pet hates, they always think they know your job better than you. I think it is because everybody drives and they think because they drive, they can understand roads and because they don't look particularly challenging to design. They don't understand the nuances of what we do, so there is this feeling that there is just this bit of road. They are not

[27] Epistemic fallacy is discussed by Critical Realists in their criticism of more idealistic, non-material philosophies of the world (Patomaki and Wight, 2000).

> thinking outside of their particular vehicle they don't think about anyone else. (I26, Engineer)

Engineers often bemoaned the collective myopia they experienced in dealing with the public. So wrapped-up in the parochial concerns of their world and self-interests, that they were oblivious to the wider issues, and subtleties of scheme design. The visible network and infrastructure is only part of the environment which the engineer has to work with. A whole range of other factors come into play which may escape the lay observer. Amongst these are, *inter alia*: underground services, land ownership, drainage, environmental concerns and planning long-term maintenance. An experienced manager ably articulates the broad compass of the practising engineer:-

> The public don't fully understand what we would say are hidden aspects of a project. What the public might not foresee is that actually there are underground works that are necessary to put in, there might be a lot of hidden plant, in other words hidden services that which either have to be protected, [or] diverted. There might be drainage issues with the construction which we have to bear in mind, there might be land issues that we aren't aware of, that aren't in the boundary of the highway and we need to procure land from third parties. There might be a perception as to what they feel is the best measure when in fact the solution might be completely contrary to their understanding of the situation. (I28, Manager)

Correspondents and consultees are apt to be blind to the needs and considerations of other road users. The engineer has to embrace the full range of road user types – pedestrians, cyclists, heavy goods vehicles, emergency services and public service vehicles – to name a few. These each come with constraints and requirements, the engineer has to weave a course of action that somehow blends these respective demands, or make the difficult and inflammatory choice to exclude them. It is these activities that make some aspects of highway

engineering sub-liminal to the public, they are not consciously aware of the factors that influence and determine the final infrastructure that they see and use on the road.

Almost all the public have daily encounters with the road network. Roads, junctions and, travelling in general, become part of the everyday fabric of life. The consequences of this are that familiarity, with road layouts and highway infrastructure, leads to a belief that there is not much more to highway engineering than meets the eye. Thus in a sense, as one engineer observed: ‘everyone thinks they are traffic engineer’ (I18, Technician). The general public, in virtue of having intimate experience of driving, and using the road network on a daily basis leads, by extension, to a belief that they can design roads. They become ‘self appointed engineers’ (I46, Technician) and have confidence in stating their views and opinions on the grounds of extensive experience. The road becomes reduced to merely tarmac bounded by kerbs, and traffic signals become little more than coloured lights. This common over-confidence leads to extravagant claims regarding competence to both design road infrastructure, and knowledge as to how to solve given problems. It is not uncommon for the public to over-reach their capabilities, in terms of comprehending a given problem, and recommending a course of action to mitigate this problem. At the root of this confidence is the familiarity with the road environment and the projection of engineering competence based on driving experience alone. One interviewee came up with an interesting analogy to capture this sentiment:-

> I suppose if you got your first aid certificate you wouldn’t think you were a surgeon, [but] if you drive a car and all that, you think you can do what we do. (I18, Technician)

The challenge to professional authority becomes immense as engineers have to deal with a public who think they know best. This is never truer, than with respect to the highway outside their place of residence. The extended familiarity with this piece of highway, and their own self interest lead to innumerable problems. The very proximity and personal investment of this stretch of road coupled with the apparent distance and disinterest of the engineer leads to conflict. The resident cannot countenance that a third party could or should know how to make alterations to public highway that they consider their own.

Familiarity has given the public an undue sense of understanding that roads are simple and has engendered an inflated view of their capacity to remedy ills and solve highway engineering issues. The concession to political imperatives and the extra voice given to public concerns through public consultation has reduced the authority of highway engineers. Highway engineering has, to a degree, lost its ability to assert its views, its proclamations and advice have become marginalised and now forms an adjunct to the sway of popular opinion. As engineers struggle to be heard, an ever confident public discard technical advice as outmoded, locally uninformed and insufficient to meet their aspirations. Engineers become pariahs who want to thwart local determination to shape the local highway network, argued on the back of ‘locals know best.’ The over-confidence in traffic matters exuded by the public, coupled with the reduced voice of engineers results in highway engineering becoming ‘the hidden profession’ (I24, Engineer). That is, a profession with a weak identity and unable to convince the public of its technical grounding or ultimate worth. Discussions with engineers brought out a strong sense of ever-receding professional status,

fuelled by an assertive public whose ‘voice’ had strayed beyond their capabilities, and what was beneficial for managing and promoting a highway network that safe for all users:-

> They think they have got the right to challenge, they have got the right to an opinion, but they don’t necessarily have the right to tell us we are doing the wrong things. They can tell us they don’t agree with it, but they don’t give us respect as professionals – I don’t think we get that, I think it is diminishing rapidly. (I21, Manager)

5.6 Summary

This chapter has surveyed the terrain in which engineers operate on a day-to-day basis. It has been depicted as a ‘Contested Space,’ where an empowered public have an ever-increasing voice that is seen to denude the engineers’ jurisdiction over the professional domain for which they were trained. Engineers in this study conceded that, in part, the situation in which they found themselves was self-made. That is, widespread public consultation exercises have themselves empowered the public who now realised this invitation to be heard, and furthermore, expected engineers to act according to their wishes. It was suggested that part of the conflict, that constituted the domain where the lay public and professionals engage, was brought by the antagonisms provoked by bureaucracy. The apparent torpor and deference to rules only served to raise the ire of the public, who often felt that engineers were merely trying to fob them off with insincere gestures and incessant rule-following. Attention was then drawn to the non-technical facets of an engineers working life. Few engineers in their training had been prepared for such aspects, yet effecting a remedy for the highway cannot ignore the political dimensions of such actions, nor the necessity

in ‘selling’ the remedy to the public. The chapter attempted to bring to the fore struggle and frustration that these pressures brought to professional engineers who, at times, felt that their technically elegant and effective solutions were watered down for political expediency. The final section of the chapter suggested that highway engineers were in a sense struggling to retain their self-esteem. The profession, as portrayed by the engineers interviewed for this study, were unsure of their status and at times felt like ‘second class engineers,’ in that they were less esteemed than their professional ‘cousins’ in civil, structural or mechanical engineering. This was in part felt to be a question of remuneration and the low perceived technical worth of highway engineers. Furthermore, the certain lack of protection that engineers felt in the local authority environment, meant they were seldom able to exercise voice in an authoritative and categorical manner. Finally, the very exposure of the public to highway infrastructure has led the public to the fallacious view that there was little more to highway engineering that they could see as a motorist. Highway engineering was perceived by the public as a non-science or at best a contrived discipline with little especial merit. Such a setting suffused the dealings of engineers with the public and did little to make them feel valued and appreciated, and respected by the public they served.

6. Managing the Public

6.1 Introduction

In this chapter the daily work of the highway engineer is examined in some detail. More specifically attention is given to the manner in which they approach their contact and engagement with the public. In the first section engineers are seen to come to terms with the notion that they are the 'gatekeepers' for road safety engineering, that is though politics, finance and policy are of some import, it is the highway engineer who is the conduit for delivering safety engineering schemes on the ground. In performing this 'gatekeeper' function it is incumbent on the engineer to engage with the public, whether through formal consultation exercises or through more spontaneous queries and complaints. The discussion then considers the adversarial nature of these interactions and the 'emotional labour' that this necessitates. That is, in maintaining the expected professional stance, engineers are required to set aside personal views and feelings, and at times have to 'bite their lip.' Attention is then turned to some of strategies that engineers adopt in order to get through the working day and 'survive' encounters. To 'outsiders' these may seem like cynical and manipulative manoeuvres; however to those at the cut and thrust of everyday road safety engineering, these are the pragmatic and necessary moves to get the job done. The final section considers how engineers come to reflect on their work and how they adopt a philosophy for engagement. Paying particular attention to more experienced engineers, it examines how they come to terms with the contested arena of road safety and how they contextualise encounters as part of their duties.

6.2 Encounters

As acutely observed by one interviewee, highway engineering is ultimately 'people engineering,' it is intrinsically tied to the needs of end-users and cannot be seen as a purely technical exercise. As they elaborate:-

> I always have a term that I use when I discuss [highway] engineering with other people, whether it is professionals or the public, and I term our engineering as 'people engineering' – because there are so many different users that we have to consider when we're designing anything and because it is designed for people – every single user is considered to be an expert because they have some form of experience of using the provision in the past. (I28, Manager)

A substantial part of the working life of a practising engineer is spent in dealing with people or engineering for people, whether they are other professionals from a disparate range of disciplines, councillors or the public at large. Indeed in many ways highway engineering, set in a local authority (*vis-à-vis* that conducted by consultants), is the embodiment of street-level bureaucracy as envisaged by Lipsky (1980). It represents a front-line between service providers and service users, and encounters are often fraught with tension, as the expectations and demands of 'clients' cannot always be met. The engineers are in essence the 'gatekeepers' of road safety, in the sense that as highway authority officers they have a monopoly on the provision of road safety engineering services. In this way the authority becomes a focal point for many issues and tensions, because it is the authority and the engineers and officers who work therein, that ultimately direct, sanction and implement highway safety improvements.

The 'coalface' of highway engineering in this context, can be an emotionally charged domain, especially where issues of safety are concerned. Safety is an

inherently emotive issue – near misses, casualties and fatalities provoke strong responses and demands that are sometimes fuelled by feelings and impulses that struggle against the bureaucratic and procedurally orientated actions of the organisation.

Highway engineers are constantly encountering the public whether, through formal processes or via queries and requests relating to their services. The exposure to the public and the scrutiny that engineers now operate under has never been greater. Consultation is a near universal activity for all types of schemes, the public are better informed as to what to expect and what their rights are; and, the Freedom of Information Act 2000 has given them greater access to what were traditionally hidden processes. The engineer is always dealing with scarce resources, and the demand for engineering services and products always outstrips its availability. This rationing ultimately leads to winners and losers, the losers are naturally aggrieved and seek redress.

Despite the efforts of officers to promote an open and friendly face to the local government, for some it still represents a monolithic bureaucracy that is inhuman and overburdened by procedural tendencies. The encounters that engineers have with the lay public are often fraught and loaded with tension. At one level they speak a different language – the engineers recant laws, policies and regulations that frustrate the public. To the engineer the public can appear naïve, preoccupied by self-interested motivations and unwilling or unable to listen to their expert advice. Long service and personal biographies marred by battles, can leave a jaded and negative perspective of public engagement:-

> Yes people are selfish, people are stupid, people are NIMBY's[28] – you don't really get many you can engage with….it's just members of the public isn't it? (I3, Engineer)

Too much exposure to this facet of the public can eventually erode the vitality and outlook seen in the neophyte engineer:-

> You see new people starting and they are full of enthusiasm and everything, and then it sort of becomes beaten out of them doesn't it? They become a cynical bastard. (I3, Engineer)

At times an unbridgeable chasm seemingly exists between these two worlds. One inhabited by an engineer who is hemmed in by budgetary constraints and the latitude afforded by regulations, and the other by the public who is cynical of any form of government and unwilling to concede on what is to them a matter of principle. Engineers who have spent many years at the front-line, know that they may only see one side of the public, and this can be difficult to endure, especially when they believe that what they are providing is ultimately beneficial for the road user or resident:-

> I think when you are doing some of these schemes, it just feels like a never ending wave of negativity coming towards you. You are doing it for a good reason and you think why can't you just see what we are doing? (I45, Technician)

Of course this does not characterise all encounters, at times engineers are able to meet the needs and wishes of the public and productive dialogue is achieved that converges on an outcome that is mutually acceptable. Engineers have on occasions disclosed that given time, they have been able to reason with the public and convince them that the intended course of action is indeed the right

[28] NIMBY: Not In My Backyard.

one. Nevertheless, from the engineer's perspective, these positive outcomes are to a degree rare, and most encounters have some degree of tension that is not ultimately resolved, that is, one party is left dissatisfied with the outcome. The engineers know only too well that the public they experience during their working life may not representative of the wider public 'out there.' Engineers largely see one side of the public - the aggrieved, the angry and the vocal. The wider public become the silent majority, whose very silence is taken for a general acquiescence for what they do. The 'angry punter,' the 'nutter on the phone' and the 'serial correspondent' become everyday fare and at times the subject of office folklore, as memorable encounters are recounted, as battle scars and rites of passage.

This research is largely focused on documentary evidence in the form of correspondence (letters and e-mails), which of course are devoid of body language and non-verbal cues. However, not all communication between the engineers and the public is asynchronous or documentary. In this section I will draw on interview accounts of public engagement in the wider sense, that is, including face-to-face meetings (on-site meetings, public exhibitions etc.) and in telephone calls. The objective of this section of the study is to describe the problems they encounter as a professional at the 'coalface' of public service. It will examine the conflicts they encounter, the emotional labour done, and the strategies they deploy for getting through the day. This is important since it represents the arena in which road safety issues are raised, negotiated and at times resolved. It constitutes the domain where understandings and knowledge claims are tested and philosophical differences come to the fore. Further, it is

where the engineer in many senses is most stressed and the pressures of public service come to bear. Circumstances may necessitate the application of firm resolve, pragmatic concessions or the opportunity for creative solutions to seemingly intractable problems.

6.3 Emotional Labour

Following the lead of Hochschild (1983) it is abundantly clear that engineers are engaged in 'emotional labour,' at least, for part of their working day. That is, in engaging with the public or councillors, engineers have to adopt a persona that is consistent with the model for expected professional and institutional conduct. As one respondent reported:-

> When you speak to a member of the public you're not absolutely yourself, you are acting your job role. (I27, Technician)

This 'acting' requires engineers, at times, to manage their emotions so as to convey a professional objectivity that belies their inner or 'true' feelings. This can, as attested by interviewees, be challenging and difficult. Members of the public often deploy emotive terms and call on emotional levers as part of their rhetorical strategy. Engineers are called upon to 'bite their lip' and suppress their true feelings no matter what.

The front-line worker is constantly assailed by a demanding public. Local authority 'bashing' is a sport that seasoned officers are all too familiar with. The double ring of an engineer's phone[29] acts as an alarm, a warning signal of a potentially 'hazardous' encounter, when you pick up the phone 'you don't know

[29] A single ring denotes an internal call, whilst external calls are characterised by a double ring.

who you are dealing with' (I34, Technician). Engineers are on their guard and prepared for an adversarial encounter. Previous sections have alluded to the poor perceived worth of local authority staff and their service. Consistent with this belief is the way that staff are sometimes treated by the general public. Abusive calls, manipulative use of emotional blackmail, threats, and angry people shouting down the phone are all too common occurrences. These are sometimes accompanied by the well worn arguments of 'I'm a tax payer, I pay your wages' and 'useless bloody council' etc. Engineers are familiar with these provocative approaches and sagely affect a wry smile when recounting 'war stories' from the front-line. Most long in the tooth engineers have favourite tales they tell about classic encounters. Here are two of the many stories that spilled out by eager narrators during the interviews:-

> I went to see someone at the post office in Northtown, I was talking alright with the postmistress, and then the husband came down and he got really arsey and stormed off. By the time I had got back to the office, the bloke had phoned and turned it completely around and said I had told him to 'fuck off' and walked off and slammed the door. (I21, Manager)

> It's generally emotional blackmail, so people will say someone is going to get killed. I did a local safety scheme near Coast Town and I met with the parish council and they brought half the population of Coast Town with them and they stood there and accused me of being about to kill residents.
>
> That is not a nice feeling, you are thinking about people's safety and when people say that, it is almost as if you haven't thought of that. But actually, I've got children myself – that's the first thing I think about is safety – what would it be like if my own children had to use that on a daily basis. (I46, Engineer)

Traffic and transportation clearly is an emotive subject, the most intense displays of emotion are evidenced when adjustments are made to the highway adjacent to where others live. With both parties (public and engineers) barriers

and boundaries are drawn, issues become a question of ‘us and them’ or ‘inside versus outside.’

Day-to-day encounters with the public result in engineers being subject to a never ending series of claims and demands. There is a very real sense that they encounter ‘extreme case fatigue.’ When every letter and every caller claims to have a candidate site for the next fatality – establishing a datum point can be difficult. The engineer becomes cynical and sceptical of all claims made by those on the ‘outside.’ The experience from past claims and the sheer statistical improbability of what is proposed, reduces the perceived worth of *all* such correspondence:-

> You have heard it so many times before and you know that accidents are not just going to pop out of thin air because you are going to put in a scheme and stuff. But you have to switch off the emotional side because it is a very emotive thing when people say death is going to be popping up all over the place when you are trying to put a scheme in. That is the affect they are trying to achieve – so you have got to try and not get too emotionally involved from that point of view. (I9, Technician)

Engineers fall back on trusted sources and reliable data. Whilst this is largely the casualty record, a long and robustly prepared database emanating from police records, serious note is also taken of issues raised by other professionals. Thus for example an observation by a planner, policeman or surveyor is likely to carry much more weight than an emotive, superlative laden missive from the public. Extreme case fatigue devalues all such claims, their very frequency and inconceivability negate their content. Engineers become immune, they filter out this aspect of the communication and look for other material that may have some worth.

The burden that falls upon the engineer can be significant and not without personal consequences. Threats and abuse are at times beyond the call of duty, yet they have endured such assaults with little recourse. Some are ready to concede that it is just part of what they are paid to do, accepting it as an unsavoury aspect of an otherwise bearable job:-

> If someone wants to shout at you down the phone, I just let them shout at me and then go 'Ok, thanks for that, I still can't do anything you want, bye.' (I17, Technician)

Others are more ready to challenge the abuser and put down the phone. The exasperation and even anger in stories retold by engineers is palpable. They would love to respond, retaliate or simply say 'look I'm a taxpayer too'- but feel hemmed in by the tacit expectations that govern their labour.

Many engineers are aware of what to expect and have a sense that the public merely want to 'let off steam.' They often give the public the benefit of the doubt, recognise that for whatever reason they are unduly upset and have temporarily morphed into an unpleasant and abusive person, that has only passing resemblance to the 'real' person.

Engineers recognize that the impassioned person merely wants to vent their spleen, and that by chance, they are the unwitting recipient to this outburst. Further at times the enraged person may also realise that they have gone too far:-

> I think the gentleman felt quite strongly over a number of situations and it just happened that I was at the other end of the phone at the time, so I don't think it was personal, I think it was just the case of him not being able to get his way over a range of schemes – it was just a person letting off steam – and in fact they

> phoned up ten minutes later to apologise once they'd calmed down. (I32, Technician)

In this state communication is barely possible and certainly is far removed from the ideal speech situation posited by Habermas (1984). Indeed at times engineers suggest it is barely dialogue, the caller is so agitated that they are unable to listen or engage in a reasoned conversation, these are the legendary 'Mr or Mrs Angry,' retold in engineers' folk tales. As one engineer said when you get one of these 'you can speak to them all day and they won't listen to what your answers are' (I23, Manager). Fortunately, not all such encounters are so fraught or adversarial. The most aggressive and unpleasant events are often associated with telephone calls which have been sparked by the start of physical works or the receipt of a consultation package that outlines proposed works. Some conversations may begin in an incendiary manner, but can, given time and some skilful input, transcend into more meaningful dialogue (more on this below). Letters and e-mails, by virtue of their respective mediums, tend to be less aggressive and with less abusive content – although at times this is only a matter of degree. Given the immediate access to an engineer via telephony – it is assumed that the close proximal relation between the event provoking the anger, and the avenue to vent this anger, is one of the reasons for such intensity in public-engineer telephone encounters. Undoubtedly related factors are the additional effort that is required to put pen to paper or to commit to the typed page. Further, the lay public encompass a wide range of competencies, when it comes to articulating problems, emotions and making requests. To a degree the telephone call can circumvent some of the concerns that more anxious and less confident members of the public have around written communication.

The engineer may also face more subtle aspects of their role that require emotional management. There is often a necessary requirement for the engineer to promote a scheme, or align to a policy, to which they have 'personally' consider to be wrong or misguided. Nevertheless, they have to maintain a pretence of having some ownership in the issue and defending it where necessary. This can lead to at a minimum awkward moments or at worst significant periods of inner turmoil, the engineer fights the urge to 'spill the beans' and has to defend schemes that 'you know are crap' (I31, Technician). Here is where the real emotional work is done, the public face is maintained and there is a significant chasm between the 'front stage' and 'back stage' areas (*à la* Goffman, 1959) – and 'if only the public really knew' moments. Delivering other people's schemes (that is not designed and developed by the engineer in question) may be part of the job, but it is more difficult when you are unable to see its worth, and doubly difficult when you are being assailed by a hostile public. At these times maintaining a 'front' is difficult and contriving arguments to support the scheme take on a strained manner. Some engineers readily concede that they do not even try, they display a distance from the scheme and indicate that it is sponsored by a third party and they are 'just doing what they're told to.' Unlike engineer-owned schemes, where the engineer invests personal effort and skill in promoting the scheme and seeing it through, 'unloved' schemes are left to drift in the sea of public opinion. The lack of ownership and 'buy in' on behalf of the engineer, can add to the emotional labour necessitated in day-to-day activities:-

> You would hope to think that an intelligent process had been completed…but when a politician just comes to us and says we want to do this and you don't agree with it, you just have to

> defend bad decisions like that and go through the consultation. Then if no one responds [to the consultation] you have got to go 'damn' and it [the scheme] goes in. (I3, Engineer)

> I found it quite difficult, you have been told to put a scheme in and you don't actually agree with it. You get a brief, you put it [the scheme] in and you get lots of adverse comments and you find yourself agreeing with those people. It can be very difficult to defend that scheme when if it had been outside my house I would have been one of the objectors. (I14, Engineer)

Even if engineers make a vain attempt to defend and promote a design for which they personally see little worth, the public often develop an intuitive sense that detects that the heart of the engineer may not be fully in support of the proposal. As one engineer reported you should not underestimate the intuitive appreciation that the wider public has: 'You do have to be a bit careful, because they do know when you are trying to pull the wool over their eyes' (I9, Technician). Insincere attempts to advocate a scheme soon fall foul of the public, who are quick to pick up on any faltering moments when a scheme is presented.

The frustration that is encountered in the airing of road safety issues is not confined to the public. Engineers too, at times are exasperated by some aspects of scheme work, that they feel are demeaning or of an administrative nature. They often feel as if their many years of training and experience are being squandered dealing with an antipathetic and unenlightened public. One engineer despaired at the use of her time stating that 'I think my time is better spent engineering than writing poncey letters' (I19, Engineer). She was not alone, many bemoaned being taken away from the technical aspects of their job (for which they were trained), to do more menial tasks such as phone calls and letters to the public (in which they had not received any training). Engineers feel they

should be engineering and were envious of colleagues in structural engineering and other professions, who were able to practice their skills, largely unencumbered from public scrutiny and public engagement. If encounters with the public had been more productive and positive, then this aspect of the engineer's life would have taken on a different hue. As it was encounters were coloured by the adversarial nature and the futility of attempting to convince a largely hostile public of a scheme's worth. Again and again engineers find themselves thwarted by parochial concerns, whilst they are tasked with adopting universal policies, upholding the consistency of the network and managing strategic needs. This is expressed well by the following perspective on engineering practice:-

> We are working to national, local policies, standards, regulations, we're trying to provide a consistent output that maybe relates to similar other sites, so a driver or some other road user, would find that when they get to that particular site it is consistent with anywhere else in the country. Granted there are different variations with layouts of buildings, driveways etc., but trying to get people to understand it isn't necessarily just that one location that you are looking at. (I24, Engineer)

The time spent on consultation and public engagement can be notoriously difficult to gauge in advance. Even seasoned engineers get it wrong. A substantial carriageway improvement which was thought to be controversial, may 'sail through' the consultation phase. On other occasions, seemingly innocuous schemes, can suddenly for no apparent reason, become the focus of great attention and controversy; and in the eyes of the engineer, attract disproportionate attention relative to the net worth of the scheme. For some, the public engagement side becomes all consuming, devouring time and draining financial resources – it becomes a full time job in itself. Engineering, that is *real*

engineering – drawing, designing, site visits, surveying, pricing materials - becomes a refuge, something that is yearned for.

6.4 Strategies

Despite the frustration and the discomfort that public engagement can entail, it is part of the job. As a result engineers have developed skills (unconsciously or consciously) at dealing with ‘difficult people’ and articulate methods by which they approach this aspect of their work. Whilst most loathe this part of their job and hanker for the technical, there are a small number who relish the challenge and thrive on the buzz of an argument, a heated debate or a difference of opinion. For most, regardless of their initial stance on pubic engagement, the prize of persuading the public and reversing views is highly rewarding and cherished as a personal victory. Most engineers have a rich store of tales from the front-line. They recount vivid narratives of battles won and lost, memorable quotes, extraordinary actions and political dramas. Many accept that they have learned the hard way. Early career engineers, overly naïve and anxious, commit ‘schoolboy errors.’ Nothing stays etched in the mind so much as a public humiliation, a flogging in the media or a dressing down by the Chief Engineer. Yet in these calamities and moments of despair, engineers gain experience. Experience, that is stored away, to be called on to guide tactics and strategies for approaching and conducting future engagements.

Engineers recognise that the opening salvos of an exchange can be volatile and prepare accordingly. The early phase of ‘blowing off steam’ is a characteristic feature of the angry phone call. The caller breathlessly vents their spleen,

releasing pent-up anger and frustration at some perceived injustice, error or failure by the council. Officers know that this is often just a passing phase, and give the aggrieved time and space, to get things off their chest. Tactically, this is not the time to respond, instead they wait, absorb the blows and prepare to recover ground with a more measured and nuanced response. That is, they know that a reflexive emotional response, whilst may be rewarding in the short run, may not be the best strategy for long term gain. It is uncanny how many times engineers reported that the early stage intensity of encounters is often in contradistinction to the remaining parts of the dialogue. The early stage virulence is something that must be endured, the officer is the passive recipient, biding their time, waiting for the right moment to mount their defence. Once this phase is over, engineers frequently recalled experiences of 'turning around' their assailant – through reasoned argument, reversing the original stance of the aggrieved. Consider the following:-

> When people come to you they are not very rational, but I think if you take the time to listen to what they say and then talk to them and explain things to them, often it is possible to win people around. So I think sometimes they need to get it off their chest – 'What's the flaming council doing now?' (I46, Technician)

> They are just frustrated I guess, like anyone would be if it is something outside their house. They want to ring up and let all their steam out and once they have had their chance to get that off their chest, they listen to what you have to say, then sometimes – like eight times out of ten, they will kind of, maybe, understand and by the end, they are like joking and laughing. (I4, Technician)

Once becalmed this is when the real work is done. The engineer must summon their full experience and resources to try and win over the caller or correspondent. The strategic use of empathy is a common tactic:-

> You can offer sympathy with the complainant, you don't have to agree [with them], but you can say 'I understand your concerns, I do understand' – I can always return to the councillor or the client with these concerns and I don't find that a difficult issue. (I36, Engineer)

> I think on the phone you have to empathise with them a bit and you have to give them the 'oh I'm really sorry about that' and I am kind of 'Mr Nicey' on the phone. (I3, Engineer)

In the hiatus following the original assault, the engineer empathises with the issues and concerns raised. They purposely expose themselves emotionally to demonstrate the human side of the organisation. By talking through empathetically, they seemingly align themselves with the person on the 'outside,' perhaps indicating that they can see their point of view, but perhaps they are hamstrung by the regulations or have been forced into making this decision. Through judicious displays of concern and by conceding some minor ground to the public, they then have a platform for mounting their main riposte. At times this may be a well-rehearsed line of argument; engineers may have faced the same form of argument and objection, many times before, if not for the current scheme from others like it in the past. It is unusual for the public to enter a debate with a line of argument that the reasonably experienced engineer has not encountered previously, in some shape or form. Whilst stressful and at times fraught, some do genuinely enjoy public engagement and some are confident that through skilful debate and careful use of examples 'they will come around to your way of thinking' (I9, Technician). One engineer likened the interaction with the public as 'psychological chess' (I21, Manager) – a kind of game to outwit the other in argument and persuasion. Some concede that they effectively toy with the public, perhaps by introducing certain ideas to throw them off the scent, or

by letting them talk at will so as to 'let people trip themselves up' (I21, Manager).

Most engagements begin with caution, as the engineer is unsure who they are dealing with. Part of the early parts of an exchange is to feel out the identity of the person. It is a dynamic process that evaluates what they say and the manner in which they say it, so as to cross reference with ideal types constructed from previous encounters. Is it the 'Mr Angry' who may be impassioned and virulent but with very little content, or is it 'The Mrs Know it All' – the educated, well-informed combatant, whose high motivation has resulted in you being assailed by statutes and references to obscure legislation? Early stage encounters are regularly characterised by defensive engagement – being careful of what and how much is said. Over-commitment can be hazardous, as one engineer explains how he has to temper his compulsion to offer fuller explanations so as not to get drawn in, and offer further 'ammunition' to the correspondent:-

> Yes there is something quite rewarding in countering [arguments]. But on the other hand I've always said when you're replying to letters you need to bear in mind, the more information you give them, the more ammunition you are giving them as well. They will nit-pick about the time you did the [speed] monitoring – we measured the speeds between 10 o'clock and 3 o'clock – 'oh you took the wrong speed measurements, no wonder you've got different results' – the more information you give them, the more they will tear it apart. So to some extent you're better off not giving them too much. (I38, Manager)

Some acknowledge that they are purposely 'woolly' in responses, so that they cannot be tied down to commitments or statements that will be used against them later. Being limited in responses, and under-committing, is also a strategic tool to avoid protracted contact. Serial correspondents can consume vast amounts of

officer time, often with dialogue that is ‘going nowhere’ – forever stuck in a rut where both parties disagree and are unwilling or unable to concede on a point. Engineers are especially keen to avoid any form of ‘letter tennis,’ the endless play of letter-response repeated over and over, with no sense that the dialogue is converging on a resolution. Nevertheless, as public servants, engineers are required to respond to all correspondence no matter how futile it may seem:-

> Other people you deal with….you can speak to them all day and they don’t listen to what your answers are they have got their own agenda and it doesn’t matter what you say to them, you are not going to change them….Sometimes people, they just come from a completely different viewpoint, they have got their viewpoint which is not the same as most of the population, but whatever you say to them, you are not going to change them, you are not going to change their viewpoint….Yes there is little point in continuing the correspondence because we have a different viewpoints, but unfortunately some people in the department expect us to answer all letters no matter how protracted the correspondence. (I23, Manager)

Engineers witheringly tell tales of being caught up with an obsessed correspondent who doggedly sticks to the task, writing endless letters. For the engineer these people are often misguided, blinded by some form of parochial myopia, unable to see the bigger picture and listen to the grounds for the institutional response. The more letters that are sent/received, the more entrenched the engineer becomes, resolute in sticking to their task - it becomes a matter of principle.

The tools of the trade for practicing engineers are the experience they can call upon to replicate previously successful argumentative strategies and standard forms of response. The so called ‘standard letter’ is that which may be a simple acknowledgement of receipt, perhaps confirming that ‘all responses will be

considered and a decision made in due course.' This perfunctory letter fulfils the minimum requirements expected of the organisation without offering any clue as to how the issue raised was received. This is the classic manifestation of 'defensive engagement' – it seeks to maintain the obligatory aspects of institutional civility whilst not entering into a debate or a defensive retort. Its aim is to terminate the correspondence at this point and prevent 'letter tennis.' Further, it is also a pragmatic approach for dealing with what can be a sizeable mailbag. Some consultations provoke substantial responses and it would not be feasible or practical to tailor letters to fifty or so correspondents.

The responses to consultations are often of varying quality. Whilst previous sections have focused on the sheer energy and effects of dealing with negative encounters with the public, that is not to say they represent all interactions. The skill for the engineer is being able to sort out the valuable information from that which is merely rhetoric. Engineers are happy to admit that they do not know everything about local site conditions and the intimate knowledge that residents have can be a rich resource to tap into:-

> If someone lives in an area, a problematic area, I understand and acknowledge that there will be lots of embellishment that will go on. But certainly if you try and pare down that embellishment away from the 'actual' (if there is such a thing), then I think, yes, that people have a better understanding of the activity in that location, on a daily basis, far more than we would. (I6, Engineer)

Residents in the course of their correspondence may reveal some aspect to local traffic conditions such as unusual manoeuvres, heavy goods vehicle behaviour or diurnal parking habits that can materially affect a scheme. Listening and acting on these pieces of information is part of the learning process. Nevertheless, the

interviewees were wary of the quality of some anecdotal records. 'The Miss Marple Syndrome' – was how one engineer characterised it, that is, just like the fictional Agatha Christie detective, they too had to discern the truth in a myriad of conflicting testimonies. For every incident/accident there were innumerable versions of it, each competing for attention, each wanting to be heard:-

> The Miss Marple Syndrome – well I have just made it up! Thinking about how good people are about reportage. You observe unexpectedly something happen, like a road accident, and then you are asked to recount what happened – and many witnesses would probably give a different answer. 'Yes, the driver had a green jumper on and was driving a blue car' [and another would report] 'blue jumper, driving a green car', and it is fundamental things like that which are reported so inaccurately which I class as the Miss Marple Syndrome. (I35, Manager)

Such is the character of the evidence often supplied, that it is logically incompatible and infeasible for all of it to stand – something has to give. Deftly sifting the evidence and trying to find the 'truth,' meant a cautious and sceptical approach to lay evidence was adopted.

6.5 A Philosophy for Engagement

Engineers are forced by necessity to come to terms with public engagement. Despite whatever reservations they may have of the virtues or vices of listening to lay arguments it becomes enmeshed into their routine. Days are spent aside from the technical, on writing e-mails, answering phone calls and sorting through the contents of in-trays. To do this, they must move towards a philosophy of engagement, which negotiates meanings and outcomes, in such a way, as to retain their professional authority and self-belief, despite the near constant onslaught.

A major plank to this philosophy is the recognition that as a public servant it is part and parcel of their job description: ‘But you know it is par for the course, it comes with the territory I guess. You can’t please 100% of the people all of the time’ (I3, Engineer). There is a resigned belief that you just have to ‘take it on the chin’ and move on. The level of criticism can be quite intense, especially for the neophyte. It is only with time and experience, that you can put the encounters into some kind of context and rationalise the interaction:-

> When I first started it was quite hard to take the criticism, because if you have put a lot of time into something, if you design something, it’s your work and it gets absolutely slated – it’s, to begin with, quite difficult to deal with. But now it’s…you know the reasons why you do something and whether something will work – you are a bit more sure of yourself. (I11, Engineer)

Whilst the public has the upper hand and is *largely* free to be aggressive and abusive, the engineer is restrained by the professional and ethical standards set by the institution. Naturally, this can be notoriously hard to effect; suppression of natural emotions can, at times, only thinly be disguised and barely concealed. A key methodological approach by experienced engineers is to ‘know your limits’ (I20, Technician); that is, to fully comprehend the boundaries that envelop acceptable dialogue, what information you can divulge, and that which could get you into trouble. Experienced staff recognise when they getting into dangerous territory and then head for an ‘exit strategy’ in order to extricate themselves from any potential hazards, even if this is just a temporary respite:-

> I think remaining calm is the main thing – because once you start to lose it, the whole thing goes out the window. Remain calm, and if there is still an intense, fiery attitude that’s becoming unmanageable – then just put down the phone, let the situation calm down, either they try again or you try again. (I15, Manager)

A further strategic approach is that of 'Defensive Engagement' – being cautious and constrained on first contact. The objective being to gauge the person you are up against, and trying to match against a typology of the lay public ideal types that become part of the fabric of office folklore. This dynamic process of probing and carefully listening, to the content and mode of responses, enables a reflexive and on-going assessment of continuing dialogue. One engineer talked of having feelings that were tantamount to a 'sixth sense' – an intuitive understanding, after a few moments of dialogue, as to who they are dealing with and whether the will support a scheme/proposal or not:-

> [Q]uite often when you pick up the phone and you can hear somebody, you can tell pretty quickly that they're looking to basically have an argument or call you stupid for proposing something. (I7, Technician)

This early assessment helps guide the engineer as to whether the exchange is likely to yield positive results or is a 'lost cause.' The angry resident, who vents their spleen, may only wish to voice their disapproval and despite the best efforts of staff does not listen to what is said to them and is not willing to concede *any* ground. Others remain perpetually optimistic and maintain that ultimately 'everybody has a nice side to them' (I41, Technician) – recognising that the first encounter with the public may be a result of extreme duress and the member of the public will not appear in the best light. However, the crucial part of the dialogue becomes after the hiatus, following the initial release of anger. It is then, when the engineer can attempt to be most persuasive, and aim to reverse the position of the caller/correspondent and hope to win them over. In essence, most officers realise that highway engineering, as with most aspects of local government, depends on a minimal level of co-operation from the public in order

to carry out its day-to-day activities. It would be foolish to alienate and provoke the people for whom you provide the infrastructure.

It may raise the ire of well trained and experienced professional engineers, but most concede that the public do not recognise traffic engineering as a fully fledged technical discipline. This is encapsulated in the view that ‘everyone’s a traffic engineer.’ Their very familiarity with the highway network coupled with the many invisible facets of a highway engineer’s work, results in a public who is confident in professing skill in managing traffic. The reasons for an accident or collision are to the public, often self-evident, as are the measures necessary to prevent further collisions and injuries. Engineers begrudgingly realise that the burden of proof lies with them to show otherwise. Their task remains to see through the sea of evidence and anecdotal information that is thrust before them, and to act on what is relevant and probable. The subjective and emotionally charged content of what is often presented, may conceal an issue of real concern, the fundamental skill is to see through the fog of threats, superlatives and extreme case formulations – so as to ground any actions on firmer foundations. Further, engineers need to distinguish the systemic problem, from that which is idiosyncratic. Accidents have a strong stochastic element to them, engineers must try and establish whether an accident represents random noise, a chance element, or is indicative of some greater underlying problem to which they can apply their skills. Engineers are taught to practice their craft based on a sound evidential base, and this will always err to institutionally sanctioned and ideally institutionally led data. Distinguishing ‘when a problem isn’t a problem’ (I13, Technician) becomes paramount.

To some degree, engineers feel it is part of their duty to educate the public, though not in a demeaning or paternalistic manner – but rather in an informative way. This is necessary, in part, to correct the misinformed or the uninformed. It was recognised that highways and transportation is a complex arena, whose regulations and control often evade public comprehension. At times it was necessary to convey some of this complexity to the lay public and navigate them through the lifeworld of the engineer. In doing so, the public may to some degree understand the boundaries of what is possible in the highway environment and thus engender more realistic expectations of outcomes. Other than elucidating the regulatory constraints, which so often thwart local aspirations, engineers can draw on extensive experience so as to advise on effective action to remedy a given problem. In responding to requests for particular kinds of measures and treatments, engineers can impart their knowledge on the anticipated effectiveness of such measures. This is often necessary, as the lay public are susceptible to fall for the appeal of panaceas that fallaciously offer much, yet frequently deliver little.

Too often the engineer is faced with parochial concerns, that whilst may have some existential worth to the individual, are beyond the remit of the local authority, who is trying to maintain and develop the network for the whole populace. Divesting issues of their self-interest becomes a core skill for the engineer, who must balance one viewpoint against a plural and largely silent public. Engineers in negotiating the meaning of their day-to-day encounters come to realise that they largely deal with a sub-set of the wider population:-

> I've got a more negative opinion of the public simply because you deal with people moaning, whinging and objecting about stuff all the time, which isn't a true reflection of what people are really like. But yes I think it has made my opinion of the public a little bit biased, but I didn't have a great opinion of the public anyway before I came here. (I11, Technician)

This sub-grouping is not representative of the wider population. It is necessary for officers to constantly have to remind themselves that their encounters are to a degree skewed, even though their primary contact is with those who are disgruntled or unhappy with the service provision. Indeed, through this process of placing interaction in context, they are acknowledging the responsibilities they have to the wider public and not just those who shout the loudest. Interviewees in recognising that public service involved dealing with the rough and tumble of angry 'punters,' rationalised this, with the view that it was simply not feasible to keep all parties and interests happy, this was the essence of the political arena in which highway issues are played out:-

> [T]here are always people who want what we do and those people who don't want what we do, we are never going to please everyone. (I4, Technician)

The voices of dissent, although at times vociferous, resource consuming and uncomfortable – were not the whole story, and engineers were mindful of the role that this perspective had. There were always those who would appear so angry, so apoplectic with rage, and motivated by self-interested concerns that they were beyond reason – inaccessible to normal modes of argument and persuasion. To the combatants these were the 'lost causes,' the persons who, no matter what tack you assumed, were unassailable in terms of winning them over.

Not all engineers were able to assume this wider perspective. A number had been scarred by entrenched battles in the past and had never experienced positive and enlightened dealings with the lay public. For these engineers, their viewpoint was constricted and they reported a narrow conception of the public; frustrated and even bitter about having to deal with a public, who wasted their time, distracting them from 'real' engineering and unable or unwilling to listen to, what for them, was a cogent and rational argument. Their conception of the public was forever wed to their experience of troubling personal encounters with a limited subset of the population. These individuals were the most likely to resort to formulations based on the 'other,' differentiating the 'inside' from the 'outside.' The inside, being rational and benign, whilst the outside, represented territory beset by dangers and was inherently irrational.

6.6 Summary

This chapter has explored the means and approaches by which engineers engage with the public. In doing so, engineers come to acknowledge that their vocation is not merely a technical exercise, indeed to use an insightful *in vivo* phrase, highway engineers are engaged in 'people engineering.' That is, they cannot divest their work from the human dimension to highway engineering, whether that be considering the end-user (motorists, cyclists, pedestrians etc.) or in dealing with other 'interested' parties (e.g. residents, businesses, politicians etc). Consideration was then given to the character and nature of the 'coalface' of professional public service, drawing on Lipsky's conceptual frame of 'street-level bureaucracy' (Lispky, 1980). It was then suggested that engineers undertake significant 'emotional labour' (Hochschild, 1983), that is, having to

conceal and suppress their ‘true’ feelings when engaging with the public in order to maintain a professional demeanour. The chapter then proceeded to explore some of the experiences of engineers, as recounted in interviews. Experienced engineers willingly spoke of classic encounters with combative sections of the public. Such encounters were often framed as being foundational, in that they marked a certain rite of passage, from which the engineer learnt a great deal about the true nature of public engagement. Furthermore, experience had taught the engineer to be wary or even cynical of oft used superlatives and in so doing engendered ‘extreme case fatigue’ – the suspension of belief, in the reality of what was told to them. Another dimension to emotional labour was constituted in promoting schemes in which they did not truly believe were the best course of action. At times the engineer had to ‘sell’ such schemes, and affect a pitch promoting a scheme that belied their true beliefs. In order to survive public engagement, engineers often had strategies – built-up from countless experiences drawn from their professional careers. Tactics and stratagems included, *inter alia*: allowing the space and time for the angry public to ‘blow off steam;’ affecting empathy to appease and develop rapport, and; being cautious in supplying information that may used against oneself, that is to perform ‘defensive engagement.’ The chapter concludes by formulating a philosophy for engagement. The latter is constituted by how the engineer comes to negotiate meanings and outcomes in what is a highly contested field. More experienced engineers are sanguine about their role; they know that the contested character of their work ‘goes with the territory.’ Furthermore, they recognise that they could never expect to please all the public, and it is part of their professional role as a public servant to try and rationalise the public. Many conceive of their role as

having to educate the public, that is to, in a non condescending way, dissuade them of the appeal of ‘magic bullets’ and panaceas, that in reality, form no practical engineering solution to a complex problem. Together these approaches to public service constitute a philosophy that guides professional engineers through the intricacies of public engagement.

7. Lay Argumentative Strategies

7.1 Introduction

The aim of this chapter is to outline some of the arguments used to try and persuade the highway authority – whether this be to convince the authority of some problematic situation, to demand for something to be done, or to object to some proposed change to the highway network. It examines some of the argumentative strategies deployed and the adroit, or otherwise, use of rhetorical moves that aim to provoke action and response. Arguments are rarely edifices that stand alone; they are supported by webs of reasoning that interconnects purpose, category entitlements, and requests. Above all, the standing of an argument lies or falls on the supporting evidence that can be mustered in its favour. Arguments show strong inter-linkages with evidence, referring back to first person experiences, hearsay and third party reporting.

Other general features of arguments that are worthy of mention include quantification and emphasis. Many correspondents augment their reporting with quantifiers – this may be in terms of supporting evidence or in the argument itself. Some of this quantification may be grounded in personal research – for example, the resident who counts cars, heavy goods vehicles or pedestrians crossing the road. Quantification would appear to wish to mimic the most valorised model of knowledge, that is, the natural sciences where enumeration and quantification are the norm. Further, in providing numerical information, it signals that it is seeking to persuade, based on the rationality that those numbers contain. That is, through enumeration there is literally weight in numbers, and the numbers speak for themselves.

A completely different stratagem and one that is covered in more detail below (see section 7.5); is to dispense with scientific-rationalistic arguments, and to invoke the emotional appeal. This line of approach is reliant on provoking a like response in the recipient, and will depend on the normative force of the arguments contained therein. Emotional appeals seek to reach the humanistic side of the organisation, often calling on first person experience to convey the necessity for action.

A common feature of many argumentative strategies is that which attempts at maximising effect, as achieved through the liberal use of emphasis. Thus declarative statements are almost always bold and emphatic, few claims are hedged. Rather statements are said with authority as backed up from first person reporting, and category entitlements that (in their eyes) sanction them to have a valid and influential voice. There is an appeal to the intuitive rightness of a declarative statement. The power and rhetorical force of such an argument is thought to lie in its very self-evidence, a truism that needs no further explanation or justification.

The strong response that some issue or event stirs, is often directly conveyed in the subsequent communication. Arguments are presented in forceful statements and claims that, in themselves, are provocative – they are intended to elicit a response. As previously outlined, it is largely those who most agitated by an event or issue that are stirred to write or phone. Therefore it is not altogether unsurprising that the correspondence that this generates should be couched in strong and provocative tones. In some ways, it is as if the author anticipates that

their voice will be lost in layers of bureaucracy, or that past experience has frustrated them gaining suitable access or response from the bureaucratic order. Frustration is intrinsically tied to the argumentative stance adopted, letters may begin with combative and adversarial overtones.

A final general point is that rhetorical strategies are commonly multi-track. That is to say the pursuit of an end goal or purpose is achieved by maintaining several strands to the argument. Thus an argument may be made on rational-evidential grounds initially, but then be coupled with an emotional appeal. Likewise, the grounds for pursuing an objective may be reliant on a number of fronts of which safety is just one. For example, the control of parking in a residential street may have access for residents in terms of equity, as a primary argument, but this is augmented by claims for reducing congestion, minimising environmental pollution or safety. Indeed safety is often added to arguments (playing the 'safety card'), so as to bolster arguments founded on other issues. In this sense, safety is an adjunct; it is added on to augment a structure otherwise organised around a non-safety issue.

7.2 Bureaucratic Responsibilities

In previous sections the local authority has been characterised as being 'an easy target' (I32, Technician). The wide range of responsibilities of the organisation, the apparent slowness to respond to change, and the significant burden that the general populace feel, in terms of taxation remittances, means that the local authority is readily blamed for any shortfalls of service.

Some of the antipathy for the local authority could be tied to priming effects of local media. Thus adverse press reports of the performance of the council help to influence and shape views. High profile cases (both local and national) of misconduct, maladministration, general incompetence, and the abuse of expenses by elected officials, all serve to cast a shadow on those who work on front-line services.

> The media – newspapers, television, news outlets, they are, at the end of the day an entertainment business. They do inform, but they also rely on their readership and a news item of 'nothing bad happened today' will not increase the audience, and yes there is for media sake and entertainment sake there is a disproportionate amount of bad news and people always like the pantomime villain being trotted out – 'the wasteful council' and so on……..We are a pretty easy target, it's a faceless body, it's always easy to dislike the pantomime villain if he [sic] hasn't got a face or if he has a mask, and yes stories of mismanagement always sell. (I32, Technician)

The manifestation of this poor perception of local authority services is conveyed in the arguments seen in road safety issues. The aforementioned 'taxpayer card' carries with it sentiments regarding the waste of public money and bureaucratic incompetence. The adoption of 'I pay your wages,' as an argumentative strategy represents an attempt to wrestle power and decision making from public servants to the lay public. It seeks to re-claim the powers vested through elected members and legislation, on the subtext that the council is inefficient and to a degree incompetent. The adoption of the 'taxpayer card' is a method that seeks, or believes there is a legitimate claim, to 'service on demand.' That through qualification as a taxpayer there is an entitlement to immediate service and that the council worker, as a public servant, has a duty to meet these demands. The demeaning manner, in which some of these requests are put, is indicative of the

status of the local authority, and its staff, to at least part of the populace. The adoption of the ‘taxpayer card’ would only be of merit if the requests met minimum standards, amongst these include: [i] that there were sufficient resources to meet all requests; [ii] that the request was technically feasible and sound; and, [iii] the request had no detrimental effects on other users, the local economy or the environment. Fundamentally, the inability to meet criterion [i] means that service on demand falls at the first hurdle. As Lispky (1980) expertly explains, the demand for public goods is infinite. Engineers are in a constant struggle to ration resources between competing demands, each with their own particular claims to exclusivity.

The arguments deployed are also testament to the rising self-determination and confidence of the lay public. Former days when there was deference to the views and decisions of the Chief Engineer or the County Surveyor have long gone. The public are better educated, have greater access to information and have much higher expectations of what they can expect from the council. Argumentative structures are concomitantly more adversarial with claims and demands, and espouse rights, responsibilities, and duties. It is not uncommon for letters to quote parts of legislation, report verbatim from policy documents, or to threaten to engage legal advice/action. The rise of the ‘litigious society’ has seen a culture whereby the public are ready to challenge and claim against perceived injustices and maladministration at any opportunity. This is closely linked to ‘compensation culture,’ whereby all forms of claims are made against the council in an effort to seek financial recompense and reward. The growth of such activity is allied with the rapid circulation of stories in the media and on the

internet, where successful claimants have recovered large sums from local authorities, deemed not to have met their responsibilities. Such a culture is further fuelled by the rise of advertisements that promise ‘no win, no fee.’ Many of these argumentative strategies are present in the evidence collected as part of these studies. Engineers are only too aware of the consequences of their decisions and the increasing scrutiny that surrounds their work. Defensive engagement becomes the norm, engineers are wary about commitment and restrict the information they release. Hyper-sensitised by press reports, landmark rulings and office folklore – they see threats on many fronts and read ulterior motives, in letters and phone calls, which may not exist. The demands and uncertainties that arise from seemingly random Freedom of Information requests, promotes an atmosphere where engagement is strained, and officers are unwilling to commit to paper, words that could be misconstrued or used against them. Alternatively, reports are written or documents filed with Freedom of Information in mind, that is, scrupulous care is taken to evidence that due process has been followed.

7.3 The Nanny State

In the previous section the notion of ‘compensation culture’ was introduced, this has led to the proliferation of claims made against public bodies in the hope of receiving financial recompense for some misdeed. Associated with this tendency is the notion of the ‘nanny state’ where all aspects of life are in some respects controlled and covered by public service of some form or other. The nanny state seeks to control, or is given responsibility for, all aspects of individuals lives and thus if there is some form of breakdown, then the state is to blame.

Engineers readily testify to the manifestations of nanny state thinking in their daily interactions with the public. One manifestation is the tendency to attribute blame, though characteristically it seeks to not incriminate the individual(s) involved, but blame some external agency or body. Thus the classical formulation of this in road safety, is to deny the individual was culpable in an accident situation, and to argue that 'there is something wrong with the road.' A case in point is the following extract from a local press report:-

> A woman injured in a car accident recently on the dangerous Bodmin Road in St Austell has joined a campaign to make the hotspot safer…. 'There is something wrong with the road, which is why there are so many accidents. There needs to be more safety warning signs on the road.' (*St Austell Voice*, 16th July, 2008)

Wishing to attribute blame of course is not new, it is fundamental with the way humans come to terms with events and negotiate meanings. Road safety being an inherently emotive domain, with highly significant material and personal consequences, sees blame at the forefront of many arguments. However, rather than being seen as something inherently tied to road safety, blame was perceived as a culturally endemic problem:-

> We are almost encouraged to blame [someone] and the adverts you see frequently on television for you to make a claim if you have an accident. They're all like saying 'somebody must be to blame', and you must follow it up and we will help you do it – point the finger for you. (I46, Technician)

Engineers struggle daily with the impact of the blame culture as they try to disentangle highway defects from driving errors. At times though, it seems to front-line engineers, that the blame *always* seems to come back to them:-

> Yes, well there is a theory is a motorcyclist drives along a single track carriageway road at 130 mph, and his back wheel slips on a white line, that is our fault. So we tend to address it, we put in passive measures[30] to protect motorcyclists…..If a motorcyclist comes flying past you at 90 mph on a wet road and falls off, all of a sudden it is our fault because the bends the wrong camber or there is a chamber in the wrong place or whatever else! (I27, Technician)

The impact of the nanny state mentality is that it discourages personal responsibility – 'they always want to blame someone else for their error' (I34, Technician). Further as one engineer cynically observed 'let's blame somebody - I might get thousands of pounds' (I37, Technician). The rise of the nanny state sees individuals relinquish responsibilities for personal actions and consequences, and these are reluctantly sequestered by the state. Engineers are told to be careful with their designs, to think through any aspect which could leave the authority exposed to future litigation. A clear manifestation of this is the proliferation of signage on the roadside. Consider the following comment made with respect to a rural road:-

> On the Mill Hill approach to Southdown there is in fact just one [warning sign].
>
> This is an absolute minimum requirement, I have been led to believe.
>
> It is the case that of the roadside signs that any driver might reasonable [sic] expect to see:-
>
> - Slow
> - Queuing on bend likely
> - Concealed turning
> - Road narrows
> - Concealed entrance
> - No pedestrian footway

[30] 'Passive' safety refers to changes in infrastructure or street furniture to mitigate the consequences when such objects are hit by out of control vehicles and their occupants/riders. For example, a post or column may be frangible so as to collapse when hit by a vehicle, thus reducing the possibility or severity of personal injury.

- Single track road
- Oncoming vehicles in middle of road
- Give way

Not one is in place.

It seems that traffic management at this very problematic and dangerous road has been neglected for many years. (Letter, 2nd February, 2007)

The knock-on effect of the nanny state arguments is that engineers are increasingly reluctant to innovate, they practice 'defensive engineering.' The rise of law suits and the perceived threats that engineers feel, are conducive to conservatism in design. Things are done 'by the book;' creativity is equated with danger and is stifled at root. Paramount concern is given to protecting yourself and your organisation, innovation is no longer esteemed but as seen as a risk:-

I'll just do that because it is a safe option, if I do that and I put in traffic calming in there or a build out and a cushion then I can't get into trouble and I can't be criticised because that's how it is all over the place. So people, I think, are frightened to use innovative ideas and push the boundaries a bit. I think, anyone who has genuine imaginative ideas, doesn't get to progress them because of the structure of the council. (I21, Manager)

Accountability was thus a key criterion in the engineer's mind when modifying the highway. However, some believed that the blame culture had exacerbated this aspect of the decision making and design process, and it now had a pervading influence of current practices:-

If you were to put something in that you thought was absolutely radical and a good idea and someone should have done it before – and then someone has an accident, then you would probably be hauled up and asked why you had done that.

I think 50 years ago people weren't so conservative, but nowadays every one is very conservative and concerned about their design being called into question and into court – because

> drivers don't want to takes responsibility these days, they would rather blame someone else. (I14, Engineer)

7.4 Parochial Myopia

Parochial Myopia is the rather inflated term I have used to describe the pre-occupation of arguments to reflect the local, short term interests of the correspondent and the correspondent alone. It is only natural for an individual to promote and argue for issues which they believe materially affect them. Further, it is clear that the motivation to write or phone is primarily tied to those concerns for which the individual has some association with. Time and energy (both emotional and physical) are precious resources in modern times and the effort that needs to be summoned to communicate with a bureaucratic organisation is reserved, in general, for issues that are especially provocative.[31]

The personal investment of the author to the question at hand is beyond question. Arguments are extensively constructed to outline how the issue does or will impact on them and suggestions are made regarding requested remedies or actions that unashamedly promote self interests. The close attention of residents to the highway in the immediate vicinity of their property, is apparent in many documents analysed. Highway adjacent to property is frequently 'adopted' by residents and taken to be theirs. Possessiveness is thought to equate with ownership and the final arbiter on any alteration or addition to this piece of highway is often believed to rest with adjacent resident, a form or riparian rights, if you will.

[31] Inevitably there are exceptions to this, there are a number of 'serial' correspondents who feature with undue frequency in the mailbag/mailbox of the council. Further, in the letters pages of the local print media analysed, there were a small handful of recurring authors who wrote at length on a disparate range of subjects.

Local traffic management issues are arguably focused on three key areas: parking, congestion and road safety. A regular stream of communication is received on these issues at the micro-level, that is individual streets and junctions. NIMBYism is rife, as coveted parking spaces near properties or neighbourhoods are vigorously defended. For many consultations on highway improvements the default position for respondents is objection. That is, the natural stance is to resist change and maintain the *status quo*:-

> In the majority, I think people's initial reaction to projects is not rational because most fear change. if they are able to get past that, then the majority probably become rational because they are able to get past that initial fear, start towards understanding why you are doing something. There are people that remain irrational you know and have a perfectly valid opinion if you like, there is nothing wrong with having a strong opinion. But it doesn't necessarily take into account anybody else's needs or requirements so they have a very specific agenda. (I26, Engineer)

On occasions engineers recognised and acknowledged this reflexive response and understood that it was their job to enlighten, encourage and if necessary coerce the public and, perhaps make them see things in a different light:-

> Work on them, and people can either see that a scheme works or need to be coerced into what you are doing. People's nature is against change, so they will initially be negative generally on what you are doing unless they can see an overall picture, if they can see that you can bring them around to your way of thinking. (I9, Technician)

Safety is a powerful argument for change, but at times at the micro-level, parking concerns remain of paramount importance. The pressures of parking and the desire to park outside one's property are such that it is jealously guarded, and even if it means compromising safety, parking may triumph in the reasoning for taking or not taking a course of action.-

> West Town was the worst one, we put loads of [parking] restrictions in because the fire engine couldn't get out, and they complain because they need to park….but I think they would complain more if their house burnt down. It doesn't matter if the kids are knocked over – 'but I've got to park outside my house.' (I13, Engineer)

At times some sections of the public exhibit dual value systems, parents clamour for a 20 mph near the school of their children, but are happy to drive through other neighbourhoods at more immodest speeds. Residents campaign for traffic calming on their road, but object to such measures on other roads because it will increase journey times on their way to work.

For the engineer these represent a conundrum. The engineer rightly has to listen to the needs and concerns of the frontagers affected by any scheme. However, consideration also needs to be given to the more strategic aspects of the highway and how changes affect all users, local or otherwise. It is the engineer's job to disentangle the holistic concerns from those that are merely parochial, and steer a path that best serves strategic interests without inflicting undue harm on local conditions. Perspective is everything, and engineers feel they are best placed to have this network-wide view, and adjudge the respective merits of local concerns:-

> I think they have a rather bizarre idea of road safety. Well they need to put things in perspective don't they? They'll say something's unsafe when clearly it isn't any more unsafe than the rest of the road network. (I38, Manager)

At times for the engineer the problem is often one of perspective. Giving 'voice' to the public can be a problem since it is seen to legitimises views that are

sometimes founded on an excessively narrow perspective. This is one engineer's take on their experiences of local proclamations of road safety issues:-

> You have got to take it with a pinch of salt, because if you ask people their opinion you do two things, first you tell them that their opinion is hideously important, and they start playing up to it to a certain degree, and secondly, you have to be aware that they are staring at one piece of road that they are interested in and no other road. So they will tell you 'I've seen some terrible things,' and they might have, but you've got to filter out the bits you want and the things that you think are relevant and tie that in with what you have seen and tie that in with the accident record and how it feels when you drive it….it's part of the jigsaw puzzle. (I36, Engineer)

A further tension arises with respect to time frames. Parochial myopia is inherently short-termist. That is its primary orientation is to the 'here' and 'now,' in a sense the phenomenal intensity of the present negates any future consideration, the future benefit of a course of action is mentally amortised. Horizons are foreshortened and conceivable arenas for action are condensed to the present and the near present. Engineers, although conscious of the present have strong orientations towards the medium and long term. Highway infrastructure, even in its most modest form, can cost prodigious amounts of money,[32] further as a physical edifice; it can remain for substantial periods of time. These two reasons alone result in engineers planning highway provisions with a view to the future, that is, although having an eye on the present day, they are consciously planning for situations 5-10 years hence. Designs therefore, as a

[32] By way of illustration, the Medway Council website referring to the cost of traffic calming measures says: "Most of the measures are expensive, varying from £5,000 for a simple traffic island to between £1,000 and £7,000 for a road hump. On top of this cost, there will have to be changes to traffic signs and often the street lighting as well. The total bill can be very high, a typical scheme would cost £50,000. This is why the proposals have to be put into a priority order in order to ensure money is well spent."
source:
http://www.medway.gov.uk/transportandstreets/roadshighwaysandpavements/roadsafety/roadsafetyengineering/trafficcalming.aspx [Accessed: 19th November, 2011]

matter of routine, incorporate future developments (housing, retail and other commercial), traffic growth and the effects that other new infrastructure may have on traffic circulation and volumes. These requirements result in frequent tensions between the short term aspirations of residents and the long term goals of the engineer.

Finally, the unwary engineer can get caught out through some disguised arguments that try and cloak the underlying self-interested motivations. Some authors, evidently self-conscious of appearing to promote too selfish arguments, dress debates, as if they were pursuing wider or other issues. Arguments may be posited on the grounds of public interest or even the morality of a situation, but really constitute attempts to bolster their arguments though higher level reasoning so as not to advertise their own self-interested concerns. Connected to the notion of disguised reasoning, is the practice of 'ontological gerrymandering' (Potter, 1996). This term is meant to encapsulate the tendency to be selective with respect to the evidence and arguments used. Arguments are carefully constructed so as to present some state of affairs, whilst missing some pivotal or salient points that would render such arguments questionable or redundant. In essence, this amounts to 'packaging' – the skilful crafting of presentations, so that they affect the maximum rhetorical force and eliminate any potential grounds for refutation. The engineer develops an innate sense for what is true and plausible. Summoning this sense and the tacit craft of praxis, the engineer performs a super-evaluation, a 'reality check' with what he or she is being told. Adopting a critical eye as a natural stance, the engineer is initially reluctant to admit lay evidence on the basis of credulity and engineering reason.

7.5 The Emotional Appeal

By way of crude classification, arguments presented can be conceived as being grounded in rational-logical reasoning or emotional. There is an inevitable blurring at the edges of this contrived distinction, but it a useful first step, in disaggregating argumentative styles. Rational-logical reasoning attempts to ground arguments on the basis of specified arguments. It represents a pragmatic approach to tie an argument to a logical path, where issues are supported through explicitly worked reasoning. For example, the request for speed controls may be made on the grounds that there have been a number of accidents or near misses and that excessive speed is a significant contributory factor. In contrast, emotional arguments represent reflexive modes of persuasion that appeal to affective reason, as opposed to rational arguments *per se*. Thus a request for lowering a speed limit may be made by suggesting that if something is not done then there will be children killed. As indicated above, the distinction between rational-logical and emotional is to an extent synthetic, both appeals have their own internal logic, but one is predisposed to elevating the emotional.

Road safety issues are inherently emotive. An experienced engineer in the course of our interview noted that there was a lack of proportion in some of the responses to perceived safety issues, and the proclamations were dependent on many factors that may or may not play out:-

> I think there is a lot of hysteria especially to do with accident stuff – 'someone is going to die' – there are so many factors that come into that – it could happen, it might not. (I29, Technician)

Near misses, collisions, extensive material damage and, above all, personal injuries provoke strong reactions. The emotions raised by such incidents and accidents are powerful, and at times do engender hysteria – an uncontrollable and non-rational assessment of a certain set of circumstances. These emotions may be impassioned and fleeting, burning with intensity for a short period of time, but with a short half-life. Alternatively there are those emotions that linger and fester, the fatal accident that is recalled and recounted 10 years after the event. Either way, the engineer has to face the anguish, despair and fury that may accompany an emotional appeal. As previously suggested, emotional appeals result in 'emotional labour,' the engineer is trained and expected to be objective, and not to have an emotional investment in any set of circumstances. Nevertheless the public are artful at attempts to embroil them in an emotional argument, and the engineers cannot extinguish their own human sensibilities. Suppression of emotions becomes strained, maintaining a professional comportment in the face of hysteria and the associated threats and accusations becomes exceedingly difficult.

It is because of this that such attempts are made to reduce an argument to the emotional, in an attempt to appeal to the very humanity of the engineer, which is purposely concealed and abstracted in bureaucratic 'distance' and rule-following. Emotional labour is most commonly done in response to attempts at 'emotional blackmail' – the persuasive argument for action aimed at generating some inner guilt or moral responsibility to a course of action. The following represent typical emotional appeals:-

> I would hate to be putting a speed bump on that road after one of our children is knocked down going to youth club. (E-mail, 17th June, 2008)
>
> I hope you can make this road safer before a tragic accident occurs. (Letter, 18th August, 2007)

This not only personalises and suggests individual culpability, but also adds the emotive force of the helpless victim and the terrible consequences of inaction. As one interviewee noted 'they try to tap at your heartstrings' (I27, Technician), the emotional appeal aims to convince by activating responsibilities as an *individual* to act. In this sense the emotional outpourings can at times appear cathartic, they represent a release of pent-up feeling. In another sense they perform a kind of absolution, the transference of 'guilt' from the individual to another.[33] Culpability is handed over lock, stock and barrel to the authorities – if anything goes wrong they can say 'well we told you so!'

Inextricably intertwined with the emotional appeal is extreme case formulation. That is the liberal use of superlatives to define an object or event, a projection of circumstances that are nothing short of tragic. The engineer encounters a dystopic vision that is bleak, extreme, and full of human tragedy. Consider the following formulations of extreme cases, purporting some inevitable tragedy:-

> Locals say North Road is being used as a race track and fear it is only a matter of time before there is a serious accident. (*St Austell Voice*, 22nd August, 2007)

[33] Lupton (1997: 563) provides an insight into Freud's notion of transference and counter-transference and says: 'Transference is usually used to refer to the patient's displacement and exteriorising of feelings and phantasies they developed in their early relationship with their parents onto the therapist. Freud noticed in his work with his patients that their phantasies tended to be transferred to him, as a figure of authority, and that in doing so the patients would often unconsciously treat him as a father-like figure.' (Source: Lupton, D. (1997) *Psychoanalytic Sociology and the Medical Encounter: Parsons and Beyond*, Sociology of Health and Illness, Volume 19, Number 5, pp. 561-579).

> Speed humps, speed cameras, a 20 mph, set of illuminated signs – anything to avoid the inevitable fatal accident. (Letter, 17th January, 2007)
>
> I sincerely believe that a fatal accident is inevitable unless this problem is addressed effectively. (E-mail, 11th December, 2007)

Emotional appeals are most frequently supported by first person testimony. The individual expresses a category entitlement based on witnessing an event, knowing the person(s) involved or through proximity to the action. Such appeals are of course extremely hard to challenge and validate. However, experience has taught engineers to be cautious about admitting such evidence. It would be imprudent to tell the witness that their word is of little standing, but in reality the engineer is sceptical and cynical of such claims and outpourings. Individual subjective recollections of events do not meet the evidential standards admitted by engineers. The following excerpts highlight the discrepancy found by engineers between what is reported to them and what evidence they can find:-

> People often think it is much worse than it is, they may think they have seen lots of accidents, they may think there has been lots of accidents but when you actually look in the records – the police reported accidents, you often find that there has been hardly any. (I46, Technician)
>
> I mean….what they perceive might be something completely different to what the reality is. Once you look into it and investigate it further you really find there is no problem. (I47, Technician)

The hysteria and extreme formulations that accompany many of these reports only add to the engineer's scepticism. Credibility is only eroded through emotional and rhetorical excesses. Heartfelt though they may be; the exposure of the engineer to extreme case formulations results in desensitising them to this line of argument. Faced with a daily onslaught, tales of doom and gloom the

engineer develops a ‘thick skin’ (I47, Technician), and black humour in order to get through the day.

In a similar manner to that of the ‘taxpayer card’ an analogous concept is that of the ‘safety card.’ Since the maintenance and pursuit of public safety is at the heart of local authority activities, and is especially important in highway matters, safety can be used as a persuasive wedge in many arguments. Playing the ‘safety card’ becomes a key strategic tool because the author knows that the highway authority and engineers must take such matters seriously and cannot dismiss them without due consideration. Whilst in some matters the central argumentative plank is safety, in others safety is more of a side issue, brought in at some late point to seal an argument by adding another structural component. In such cases safety is an ‘adjunct,’ a somewhat peripheral issue added as an aside, to further lend weight to an already developed argument. Safety as an adjunct is a useful ploy to attract attention and is valuable in that it trumps many other counter arguments. Thus denying action on economic grounds can become indefensible, if a course of action or inaction has a material and demonstrable impact on public safety. In this sense safety is a convenient argument that can be raised in almost any traffic issue, and *has* to be taken seriously.

7.6 An Accident Waiting to Happen

‘An accident waiting to happen,’ and all its variants (see **Appendix C**), represents the paradigmatic formulation for the genre. Its very frequency and usage is at times breathtaking, endlessly recycled and re-packaged. The phrase clearly has a hold on popular psyche and is embedded into folk psychology. At

times it performed a role as the sole argument in a letter, all evidence, category entitlements and requests ultimately converging on this one phrase. At other times it was a supplementary argument, used to augment other reasoning, but left to the concluding statements, as if to land a final devastating blow.

The force of the argument rests on the apparent self evidence of the situation. That is, if nothing is done, the experiential evidence collected so far suggests that an accident will happen, *ergo*: something must be done. It is the very inevitability of a situation that is presented, a *fait acompli*, a necessary truth. By advertising a given problem, the author is giving advance notice so that an otherwise inevitable outcome can be avoided. The force of reasoning being that presented with such a set of circumstances that it is common sense to act. Likewise by not acting on such privileged information the recipient is, to a degree culpable, and defying the laws of common sense. As well as having an emotional content, there is also an integral appeal to reason. This being that anyone who is possession of such information and has the power and resources to prevent an event occurring, must *surely* act – it is what any reasonable person would do.

The use of such argument is normally activated by first person experience. It is most commonly associated with an incident, that is not necessarily resultant in damage or personal injury and comes under the ambit of the ‘near miss’ or ‘close call.’ A common variant revolves around projecting from a minor accident to something much more significant. Such projections are commonplace,

Appendix D looks at this aspect of road safety formulation in some detail, and presents a typology of forms.

At times it may not be a single event that provokes the communication but a 'feeling,' a sense that something is untoward and potentially hazardous. It is this first person testimony of phenomenal fear that is so difficult to handle. The engineer cannot deny the person the feelings that they experience or the projections they may have – but at the same time have trouble admitting them as adequate evidence that meets the empirical standards that they are accustomed to dealing with.

This is the core of the problem – personal assessments of an 'unsafe' situation are notoriously difficult to challenge, but also to corroborate, validate, or defend in any way. A number of points follow from this, firstly, as previously mentioned the engineer is unable to deny the existential encounter that is reported to them – to do so would denigrate the public and demean their experience.[34,35] Secondly, establishing the verisimilitude of the events recounted is impossible without other third party contributions – which is a most unusual occurrence. Finally, engineers are subject to substantive rules, regulations and not to mention significant scrutiny, which control how they allocate scarce resources. Such measures are in place to ensure that the public purse is protected and decision making is both transparent and in accordance to need. First person

[34] Pollner (1987: 70) talks of the 'politics of experience,' in the context of a traffic court, whereby the denigration of personal experience is effected through discrediting personal accounts as somehow being defective or misguided and are not officially sanctioned. (Source: Pollner, M. (1987) *Mundane Reason: Reality in Everyday and Sociological Discourse*, Cambridge: Cambridge University Press)

[35] Fuchs (1992: 22) argues that modernity sustains a 'privacy cult' whereby the self is portrayed as a 'sacred object' and challenging personal experiences violates a sacred social taboo. (Source: Fuchs, S. (1992) The Professional Quest for Truth: A Social Theory of Science and Knowledge, Albany: State of New York Press)

phenomenal reporting does not sit well with such mechanisms, engineers are required to provide supporting information for any decisions, testimony of lay public of potential hazards generally falls short of the necessary evidential standards.[36]

Accountability is a central watchword for the front-line engineer, and lay proclamations of 'an accident waiting to happen' whist advertising a heightened phenomenal sense of fear about a location, fails to provide the accountability the engineer needs. In this sense, 'an accident waiting to happen' is devoid of meaningful content. Fighting a rearguard against scarce resources and unlimited demand for these resources, the engineer is forced to make difficult decisions. One respondent succinctly summed up the bare facts of the situation that the engineer must face:-

> If we went and spent a load of money wherever you *think* there is [likely to be] an accident….we wouldn't be able to afford the other place, where there *were* accidents. We need proof, there is a problem. (I13, Engineer)

Processes and procedures are in place to handle this excessive demand and distribute resources according to need, and engineers are so well versed in this, that it becomes like a mantra: 'Yes 3 injury accidents over 3 years in 300 metres, that is what we go by and this is our listing' (I12, Technician). In this way engineers have a rational means of focusing their attention on sites which have a demonstrable problem.

[36] The use of 'generally' is intended to indicate that there are exceptions to this. On occasions a collective phenomenal fear can carry a degree of momentum, and coupled with political support, lead to measures being taken. This may be even if there is no manifest accident/casualty record for this location.

In the course of their work engineers have to defend this protocol and explain to the public how they ration resources, this can often provoke the rejoinder ‘so someone has to be killed before you do something?’ In handling this response and the initial espousal of ‘an accident waiting to happen’ this is how one engineer countered such claims:-

> No, I explain to people on the basis of that emotional argument, that we get that argument about every single driveway in the county and therefore there is a rational basis for looking at those things and we do take their concerns seriously.
>
> Well of course if somebody were killed here, we would inevitably give it a higher priority, but that doesn’t mean we are waiting for somebody to do that. We spend the money and direct our attention in a rational way and because we have the wider view, the wider context, that we can place their bend compared to every other bend in the county. We are able to do that in a better way than they are. (I36, Engineer)

Following on from this was a sense that many engineers were not willing to admit perceptions of an inherent safety problem as being legitimate in themselves. That is, in essence if there had been no recorded accidents, there was no problem:-

> Well obviously, you are not going to put something in unless there has been an accident happen here. I think that is the right way to do things and I agree you should have to wait for an accident before something goes in, because if there is no accident you don’t need to do anything. (I1, Technician)

This of course is a whole different outlook that goes beyond resource impoverishment as a reason for not acting. This explicitly denies that the concerns over road safety equate to a ‘real’ problem and they are reduced to just fears. According to this philosophy, phenomenal fear is not a warrant for capital

expenditure. One engineer went further in distancing perception from reality itself:-

> If the records show a problem then we can do something about it. If there were no records of anything happening there, it is a perception not a reality. (I19, Engineer)

From the engineers perspective the phrase ‘an accident waiting to happen’ is a well-worn and over-used phrase that is heard on an almost daily basis. For them it is merely another extreme case formulation with little or no empirical standing, and is just another part of the hysteria surrounding road safety. Their over-exposure to this line of reasoning means it becomes effectively redundant; they are empty words in a letter, the wasted breath of conversations. Rather than being seen as merely rhetoric, the adoption of this argument actually carries a negative sign. Its inclusion in a letter ‘takes away’ from the general worth of the remaining parts – it suggests a resort to off-the-shelf formulations, rather than original and considered argument. In this way it becomes the prototypical lazy argument.

The usage of this phrase can also have strong emotional intent attached to it as well, especially when attached to the vulnerability of certain groups that carry additional emotive force for example, children, the disabled and the elderly. A standard variant to that discussed so far is for it to appear in the form of a couplet, such as ‘it’s an accident waiting to happen, does somebody have to be killed before you do something?’ The second element to the couplet, adds the emotive force, the moral imperative that invokes the very necessity for action. Extra persuasive force is demanded when ‘somebody’ is substituted for ‘a child’

or ‘an elderly person’ – these especially vulnerable people evoke a stronger emotional pull, and are used with this intent. At times the argument is phrased so as to raise it to the level of blackmail as in ‘it’s an accident waiting to happen, if *you* don’t do something then a child will be killed.’ This form of personalisation is common, its indexical quality is to imply personal responsibility and potential guilt – it is a foil against the dehumanisation that bureaucratic organisations can engender. This is illustrated in the following excerpt:-

> We call on *you* to help us solve this potential fatal problem and grant us some appropriate traffic calming signs. (My emphasis) (Letter, 26th October, 2007)

At times discrepancies arise between local recollection of accidents and incidents and the police accident record, this is often a source of tension.[37] The following press report averred to this discrepancy:-

> People who live on the busy winding road have described it as an accident blackspot and the council’s figures are just the tip of the iceberg, with crashes occurring along the stretch at least once a week. (*Cornish Guardian*, 29th October, 2008)

First person testimony is so abundant and so varying in standard that it can be difficult to accept and act upon. Further, years of experience has taught the engineer to be cautious and wary of lay predictions. This is since forecasts of impending accidents and certain fatalities have often failed to be realised. One engineer told me how she religiously checks the accident record every summer[38] for ‘her site,’ to see if there have been any recorded incidents/accidents – none

[37] There is much discussion in the traffic engineering literature concerning the veracity of the official record of road traffic accidents, for example: Ward, H., Lyons, R. and Thoreau, R. (2006) *Under-reporting of Road Casualties – Phase 1*, Road Safety Research Report No. 69, Department for Transport, June 2006.

[38] There is a lag between the occurrence of an accident and its availability in the accident record. Traditionally a full record for the preceding year is available in the following spring.

have occurred in the five years she has been doing this. With the extravagant over-use of this phrase and the apparent limited worth of the forecasts contained therein, engineers pay short shrift to such proclamations. Instead they rely on what is to them the 'gold standard,' which is the official accident record.[39] This record remains the ultimate arbiter because it comes from a trusted source, it is consistent in its reporting, stretching over 20-30 years, is rigorously assembled and engineers are familiar with it. In a sense it has become an 'industry standard,' a benchmark to validate any claims.

The rupture between lay and engineering conceptions of road safety is also founded on another key distinction. The lay public have expectations for the highway authority to be proactive rather than reactive. For the engineers, given the dubious ability and poor record of the public being able to forecast road safety issues to any degree, investing significant sums of money on such questionable testimony is inherently unwise. Further, reiterating a point made earlier, the local authority is always resource impoverished. There is not enough funding to adequately treat all those sites that have a manifest safety record, let alone divert scarce resources to those that *may* be a problem. Therefore, as numerous respondents alluded to, in responding to the question: 'does somebody have to be killed before you do something?' the answer enginees are never able to give, is the truthful and unpalatable reality, that some form of recorded injury may well be necessary to merit it receiving attention. The disjuncture between lay and professional approaches to road safety is nicely captured (albeit in a

[39] The national system for collecting and reporting information about road accidents is known as STATS19 – named after the form that police officers complete following a road traffic accident. The system has been in operation since 1949 (Broughton, J., Markey, K.A. and Rowe, D. (1998) *A New Systems for Recording Contributory Factors in Road Accidents*, Transport Research Laboratory, TRL Report No. 323).

somewhat distorted way), in the following extract from an article that originally appeared in the *St Austell Voice*:-

> Only a series of deaths would make the case for installing road improvements at a notorious accident blackspot in Roche, its county councillor has concluded.
>
> Roche representative Brian Higman says as there had been not been a fatality along the B3274 at Higher Trezaise the justification for the stretch to be included in the authority's local transport plan, which undertakes major road improvements, could not be proven.
>
> "It is a dangerous place but I know my case would not be proven. There is no proof to justify the spending. There will be a death or serious injury for certain because people don't adhere to the speed limit unfortunately." (*St Austell Voice*, 16th January, 2008)

The front-line of lay-engineer encounters are filled with this conflict, a demand for the authority to be proactive in the face of some perceived danger, and the engineer who is sceptical of such claims and severely resource constrained.

7.7 The Prescriptive Character of Issue Construction

A characteristic feature of the road safety genre is the high degree which the lay public raise issues in a prescriptive manner. By this I mean that as well as identifying a problem, they go further and prescribe the remedy to cure or mitigate the perceived ill. At times the degree of prescription can be very specific detailing exactly what measures they expect to see and those that would not be acceptable or adequate for the case in hand. The following is a somewhat eccentric rendition of the prescriptive mode:-

> I live in Coast View, Sea Town, the speed limit is 30 mph, far to [sic] high, with old people living in the area. I would like to see it reduced to 10 mph and put in about 6 road humps in [sic], life is far more important than death. (Letter, 7th May, 2008)

Prescription is another manifestation of the confidence in which the public esteems its own knowledge and comprehension of the road environment. It represents several steps beyond the mere recognition of a problem. Arguably the standard trajectory may be of the following form, for a simple case:-

[a] Issue Identification ➔ [b] Hypothesise Causal Factors ➔ [c] Select Measures to Mitigate/Eliminate Problem ➔ [d] Implement.

The content of much correspondence from the laity includes elements of [a] and [c] above, but [b] is given only cursory treatment and [d] is left to the engineers. The everyday encounter that the lay person has with the road environment encourages them to believe that traffic engineering is largely self evident.

This tendency for prescriptive engagement is further testimony to the growing self-determination of the public. There is an unwillingness to defer to experts or even to consent to expert deliberation over the matter. Take the following press report:-

> Mandy Rance-Mathews, a Treverbyn Parish Councillor, who fought to get traffic calming measures along the dangerous B3274 Bodmin Road for more than 10 years says lowering the speed limits on parts of the stretch from 40 mph to 30 mph and installing vehicle activated signs is not enough……Mrs Rance-Mathews believes installing speed cameras and priority gateways would be a more effective way to reduce the amount of crashes. (*St Austell Voice*, 22nd October, 2008)

The following is a similarly prescriptive excerpt from the correspondence corpus:-

> I would urge you to take some action with this stretch of road and would be grateful if you could let me know whether there are any plans to make drivers aware of the dangers of this corner.
>
> Please could I suggest the following:
>
> 1. Continue with the 40 mph speed limit past the [landmark], but reduce it to 30 mph after the corner, allowing plenty of time for drivers to slow down, then resuming 50 mph after the bend as per the current restriction.
> 2. Install working speed cameras on both sides of the road.
> 3. Install a flashing 30 mph speed limit sign.
> 4. Resurface the road with red tarmac.
>
> (e-mail, 19th March, 2009)

Engineers are seemingly *told* what the remedy is, rather than being asked to give their advice. In this sense in many cases the dialogue is such that the engineer is reduced to being an 'implementer,' merely a facilitator in carrying out the wishes of the public. The arguments put forward to support this form of exchange largely rest on the grounds that, in the eyes of the public, the problem and the associated solution, is not at all a technical problem. There is a concomitant incredulity on the part of the public, that engineers cannot see it that way, and they are unnecessarily complicating what is in essence something very simple. This is often allied to a parochial possessiveness, in that they are often providing commentary on a section of highway that is close to their residence. Its very proximity to their home means that it is cherishingly guarded and they know what is best. Local knowledge is believed to have primacy over any knowledge that a seemingly distant engineer in County Hall may have. In this way there is qualification through experience, the proverbial 'I've lived on this road for 20 years' is submitted as a legitimate claim to knowing what is best.

Engineers pride themselves on their objectivity and believe that their very distance from the site, rather than being a hindrance, is indeed beneficial and a positive attribute. They recount stories of members of the public who have such a personal attachment to an issue, that they are unable to 'see or think clearly.' At other times it is their passion for a cause that occludes reasoned thought:-

> You encounter one or two irrational ones from time to time, because they are fervent about their cause, sometimes they have been so caught up in it they have lost sight of everything else. (I14, Engineer)

Their emotional engagement with the issue at hand is seen to cloud their view and they may miss some important situational dynamics. It is this parochial myopia that makes first person testimony from residents, so suspect and unreliable.

A further important aspect to the prescriptive character of issue constructions is in the belief that the measures proposed or taken, in some way, do not go far enough. This is what I term 'scope deficit,' the belief that the issue at hand requires a much more extensive or radical treatment than that which is taken forward by the council. Here is an illustration of this point taken from the local press:-

> A notorious traffic blackspot on a main road outside of St Austell is having its speed limit reduced after months of campaigning by residents – but they say the measures are not enough.
>
> The B3274 road through Ruddlemoor has seen at least an accident a week, according to residents who live in the village.
>
> He [Mark Tucker] said "These plans are a waste of taxpayers money, it's like building a chair with two legs."

> "It's a waste of time trying to control traffic unless they are going to do something quite radical." (*Cornish Guardian*, 15th October, 2008)

It is suggested that there are number of reasons that might lead to a tendency for the council's schemes to be viewed as scope deficient. Firstly, as we have seen, road safety is a very emotive issue and there is a tendency for strong reflexive responses. The public demands a strong response to an incident, often much stronger than the engineer is willing or able to provide. Secondly, highway engineering is to a degree conservative, it seeks to have a measured response to a situation using past experience as a guide as to what is likely to be successful or not. Engineers try and resist the emotional fervour surrounding an incident so that they can strip out the emotive content and endeavour to understand 'what is really going on.' Thirdly, for practising engineers in the current economic climate, scope deficit is really a consequence of a resource deficit. For all schemes, funding is extremely limited and engineers are constantly having to 'prune' schemes, that is pare them down to the bare essentials. Fourthly, the public have a very limited conception of the true costs of engineering works on the highway. Engineers are frequently bombarded with calls to introduce substantive schemes, that themselves would be significant civil engineering feats and would come with a concomitant price tag. In this category I include the demands for bypasses, tunnels and bridges – as well as the more mundane; the roundabout, the Pelican crossing and the footway. All can have substantial capital costs that are usually significantly underestimated by the public:-

> Well much of what we are doing, is tweaking at the edges, you can't afford to do anything different…..Sometimes they will say 'that's all very well but that's not solving the problem, what you need is a bypass' – what you are proposing might be costing

> £300,000 and what they are proposing might be costing £30 million. (I23, Manager)

Finally, the highway network is very heavily regulated, and as discussed elsewhere, the deviation from standards and regulations can expose the authority to unwanted litigation. Much scope deficit can be attributed to public aspirations for schemes and measures that the authority cannot deliver legally or procedurally.

One final point is necessary with respect to the prescriptive character of road safety arguments, and this relates to the causal chain. This will be covered in more detail in the Chapter 8, but for the moment it is important to note that the prescriptive nature of requests presupposes a full comprehension of the causal chain leading to accidents. Without this presumption any measures being prescribed would have no link to the contributory factors that are at issue. Thus a request for traffic calming is made assuming that excessive speed is a problem and that traffic calming is the appropriate response to this. Measures are identified based on the intuitive appeal of infrastructure seen or experienced on other parts of the network, but they may not be the *appropriate* measure for the case in point. Therefore are one engineer perceptively discerned:-

> The problem is people say what they want and also say what they need, what they need isn't necessarily what they want. (I42, Technician)

This prescient assessment also has another dimension, in that some measures may be appropriate, yet are unpopular with some sections of the public. Thus classically, many residents want vehicle speeds reduced near their property and

yet do not want to have to negotiate traffic calming features that are physical and depend on vertical deflection, as in the now ubiquitous traffic hump.

The public are vulnerable to succumbing to illusory promise of panaceas. In particular there is at times an unquestioning faith that lowering the speed limit will bring a concomitant reduction in vehicle speeds and eradicate the worst excesses seen on the road in question. Engineers are experienced at recognising this fallacy, setting speed limits is very much a question of judgement, that is assessing what is the ‘reasonable’ limit for the road. An unrealistically low limit merely brings it into disrepute and it is likely to experience widespread non-compliance.

Further, most demands for lower speed limits, raise questions about the internal logic and consistency for the arguments put forward. That is since, in most cases, a lower speed limit is requested to negate the excessive speeds travelled by the minority of motorists. A reduction in speed limits is unlikely to tackle this specific issue, since limits are in general observed by the main body of traffic and there will always be a minority who disregard the limit, no matter how high or low it is. Engineers are faced with trying to convince the public that their proposals, in all likelihood, would not be effective in mitigating the given problem. In a non-demeaning way, engineers talk of having to ‘educate the public,’ that is, persuade them that their prescriptive requests are in reality unfounded, and the prescribed measure may in fact have no impact.

It perhaps says something of the lack of trust between the parties, that the public at times resist these attempts by engineers to offer their expert advice and feel they are being 'fobbed off.' These convictions and beliefs die hard, the lay public can be resilient and resistant to professional judgements. At times when there is a groundswell of opinion and the issue become politicised, then the engineer can be out-flanked and measures are implemented against their better judgement. Nothing is more damaging to professional self-esteem and the store of engineering judgement than a 'political decision.' Engineers painfully recount stories of their advice being over-turned by political imperatives, and in the aftermath, anxiously look for evidence that vindicates their original decision.

7.8 The Engineering Perspective

Throughout the interviews I explored how engineers consider and respond to the various argumentative strategies deployed by the public. To do so requires engineers to negotiate a meaning of what the intent and import of what is presented to them. From this pragmatic rendering of meaning, and drawing on past experience, the rules, regulations and policies that surround their work, and their engineering *nous*, they can respond as they see fit.

It is common for engineers in talk to emphasise the grounded nature of their responses, and to draw a distinction between their commentary and that of the public. At times it appeared as if they were constructing two worlds, the world that they inhabited, which was grounded in the practicalities of implementing engineering schemes that accorded with the demanding regulatory framework and were achieved within the tight budgetary constraints set. In contrast, some

members of the public lived in another world, a world with endless resources and free of most constraints – regulatory or budgetary. To the engineers they work in the 'real one':-

> [W]e work in the real world, and the in real world there are all sorts of constraints that are put upon you, almost anything constrains our design so that's the trick balancing the constraints you understand and it is having that overlay experience to make that decision about how much of the guidance you will follow and how much you will allow the constraints to determine what you are doing. (I26, Engineer)

Residents and road users are apt to have only consideration for *their* concerns and their needs – these are often very local and very short term in perspective. In contrast, the highway authority has a responsibility to all users and is responsible for maintaining the whole network.[40]

Consistency on the network is both a local as well as a national priority. That is, it is considered especially important that road users recognise roadside features (junction layouts, signing and lining) and know what to expect from the highway – no matter where in the country they are. Such an outlook militates against significant local deviation from national standards. It is for this reason that traffic engineers are seen to be conservative, forever stifling the creative ambitions of the public. This is not to say that engineers do not get frustrated with the constrained environment in which they find themselves. At times they too would like to experiment and express themselves creatively. Some do find some small ways to find a release for their creative tendencies, working within the rules but

[40] To give some impression of scale, the following are road lengths in miles, as reported by the Department for Transport for a number of local authorities in Great Britain in 2010: Bedfordshire 1,454, Buckinghamshire 2,015, Cornwall 4,572, Devon 8,094, Dorset 2,685, Lincolnshire 2,732, Norfolk 6,259, Shropshire 3,232 and Somerset 4,918 (Source: *Road Length Statistics, Statistical Release*, June 2011).

in unorthodox ways or perhaps by combining roadside features in unconventional, yet sanctioned ways. This becomes thinking 'within the box' – ultimately constrained, but providing just enough scope to follow a path less travelled. Some relish the challenge of inventively working within the constraints, as one engineer suggested 'there is more than one way to skin a cat with traffic engineering' (I28, Manager). In this way some engineers see their task as requiring *extra*-creative skills and vision; they do not have the luxury of working on a blank canvas. Instead they are forced to operate within a litany of constraints – political, procedural and technical. Such a set of circumstances requires more creativity, to weave a path to a successful solution, not less.

However, ultimately the bureaucratic order prevails, to make this point a senior engineer said, in rehearsing an argument with the public:-

> I know what you are saying about a sign which says 'watch out giraffes,' but there isn't one in our book…. We can only put a sign up that is in the book.[41] (I21, Manager)

The maintenance of the bureaucratic order and the resilience of rules and regulations are ultimately seen as a good thing by engineers. Without standards, a dystopic vision is foretold by engineers of anarchic chaos on the roads. A state of dissonance would prevail, infrastructure would be built and maintained to varying standards and idiosyncratic methods of controlling traffic and pedestrians would spring up at the whim of local wishes. In addition, engineers are wise to the protection that rules and regulations afford them. Firstly, by

[41] The 'book' is a reference to: *The Traffic Signs Regulations and General Directions* (2002), London: The Stationery Office. The latter is the list of prescribed signs and lines that can be used on the highway in the UK. Any deviations from this require specific authorisation from the Department for Transport.

aligning schemes to the standards they have a ready-made defence against doing otherwise. Demands for a certain form of treatment can be denied by the simple (and at times convenient) retort of ‘can’t do it, sorry it’s permitted by the regulations.’ Secondly, and I would suggest of ever increasing importance, is the protection that rules and regulations afford against litigation. The rise of the litigious society, a more voracious and savvy public, results in engineers responding to incidents with a reflexive eye on the courts. For engineers to step outside the protective cloak provided by standards, is to expose the authority to undue risk.

Negotiating the emotional turmoil surrounding traffic and road safety issues poses a different set of challenges to the engineer, and requires specific skills to handle adroitly. The most able engineers, in a technical sense, are not necessarily those most adept and skilled at dealing with the public. For some, public engagement is the unpalatable part of the job; for others it is a necessary evil, it goes with the territory, and for yet others still, it is a challenge to be relished. Savvy engineers are all too aware of the volatile character of public opinion. They are aware that problems and crises can appear out of nowhere, a seemingly innocuous event, or a mundane alteration to the layout of a junction in some rural backwater, can provoke an almost infeasible response. Verbal abuse, vitriolic letters, hostile press reports, and rarely, even threats of physical violence, can be part of the day-to-day working environment that the engineer is faced with. Keeping a calm head, is the mandatory requirement, for those faced with these situations, not getting drawn into the emotional maelstrom, and maintaining a professional detachment.

For new scheme implementation local 'uproar' is seen time and time again. Battle weary officers talk of the inevitable discontent that *any* change brings – 'their immediate reaction is can't do that, it's terrible' (I26, Engineer). The default response, the reflexive stance is to object to anything new and to change. New infrastructure or modification to existing highway layouts are often accompanied by proclamations of elevated risk and impending doom. For those who have been through this response, this is all too familiar and their general retort is twofold. Firstly, it is acknowledged that all schemes exhibit this tendency to some degree or another and so it is not immediate cause for concern and over-reaction. Engineers talk of allowing things to take their natural course, allowing new layouts and infrastructure to 'settle down' or 'bed in.' No matter how much forethought and consideration has gone into prior design, the behavioural response of road users cannot always be anticipated in advance:-

> Whether it's the right solution? You don't know (that's one of the drawbacks), until you actually build it and sometimes you don't know it's the right solution until you build it and actually see it working. (I40, Technician)

Initial confusion and angst surrounding the change can subside as drivers and other road users become familiar with the new configuration. Provided no 'major' events (that is resulting in personal injuries) occur during this settling in period, there is no immediate need to invoke remedial measures. Secondly, engineers like to the opportunity to 'talk through' concerns with those that raise them. Past events have taught engineers that lay concerns can be unfounded and even quite irrational. Discussing on a one-to-one basis can often move the debate beyond the initial objection phase and on to more reasoned dialogue. Stories are

regularly re-told of being able to ‘turn around Mr Angry,’ once the initial emotional furore has cleared.

Being an engineer, in its idealistic form, is acting as the ‘voice of reason’ (I32, Technician) - a dispassionate, rational and considered response. Perhaps there are parallels to be drawn with medical professionals, who are asked to make important judgements and decisions at times of emotional duress. The engineer, like the medic has to disentangle the emotional factors from those that matter, disregard the hysteria and focus on the primary causal factors. Traffic engineering may well be ‘people engineering,’ but it is still engineering – still requiring the practical application of a body of knowledge to solve real problems. At times this means taking the flak and making unpopular decisions: ‘I look like the bad guy for saying no and they look like a knight on a white charger’ (I36, Engineer). The engineer needs to see through the tumultuous wave of public sentiment. Perspective and objectivity are everything, and the fact that a view is widespread or common does not necessitate that it is true. Thus force of numbers should not be confused with truthmaking.

Engineers recognise that it is their professional responsibility and duty, to remain true to their training and stay strong in the face of contrary opinion. Cowing to popular sentiment, is in a sense, abdicating their post. Engineers are required to show resolve to ensure that reason is not sequestered by emotion. The dutiful engineer is one who acknowledges the responsibilities they have to their profession and to the organisation to which they work. Conceding to strenuous public appeals may offer short term relief, but is dangerous on a number of

grounds. Firstly, it neglects your professional duties, to pursue the course of action that is right in engineering terms. Secondly, it is dangerous since should something go wrong, then it is the highway authority who is culpable. Thirdly, it sets a precedent, once a contrary decision is made, then there are grounds for it to be repeated elsewhere and it can open the metaphorical 'floodgates.' Finally, public opinion is notoriously ephemeral and nebulous. What may have been the sentiment of the time is difficult to substantiate. Public opinion can have a limited 'half-life,' and public recollections of past moods can be conveniently absent.

7.9 Summary

This chapter has outlined a number of strategies by which the lay public present road safety arguments and attempt to effect action. One approach is to invoke the bureaucratic responsibilities of the highway authority as enshrined in notions such as duty of care and as public servants meeting taxpayers' demands. The discussion then moved to consider the emergence of the nanny state and the implications that this brought to bear on engineering professionals. At the foreground of this discussion was the rise of a 'blame culture' and the expectations for the highway authority to be seen to engineer for almost any eventuality. The implications of the nanny state was seen in the conservative design philosophy that engineers pursued in response. Radical and creative thought was dampened by the threat of litigation when things go 'wrong.' The next section contemplated 'parochial myopia' – that is the persistent pursuit of arguments that were excessively local and short term. This presented a problem for the engineer, who sought to find solutions that were compatible with strategic

interests, that is not only network-wide, but also solutions that would have longevity. Attention then turned to the emotional argument by way of stimulating action. The emotional appeal presented a difficult conundrum for the professional engineer, requiring sensitive handling and at the same time to carve a path through any emotive rhetoric that fogged objective thought. The discussion then tackled the classic *entrée* for many lay arguments, the proverbial 'an accident waiting to happen.' The discussion considered the rise and use of this prototypical phrase and the manner in which it was received by road safety professionals. Closely allied to lay presentations of road safety issues, was the suggestions of both causes and the remedies necessary to eliminate such problems. In this sense, lay arguments were highly prescriptive evincing a strong presumption of comprehending the road environment and the engineering means to mitigate against road safety issues. The final part of the chapter outlined the engineering perspective of lay road safety formulations, and the rationalisation of their task in the face of typical arguments presented to them. Engineers attempted to affect a dispassionate disposition, disengaging from any emotional furore and look at a problem with a 'cold engineering head.'

8. Popular Epidemiology

8.1 Introduction

The title of this chapter is borrowed from Brown (1992) who used the term in a study evaluating the differences in lay and professional assessments of environmental contaminants and the risks they posed in Woburn, Massachusetts. More specifically Brown defined popular epidemiology as:-

> The process by which lay persons gather data and direct and marshal the knowledge and resources of experts in order to understand the epidemiology of disease, treat existing and prevent future disease, and remove the responsible environmental contaminants (Brown, 1992: 267).

In a similar fashion, in this chapter I want to touch on some of the philosophical issues raised by the popular epidemiology of road safety. By this I mean through the discussions with engineers, the analysis of correspondence and press reports, it is possible to hypothesise about lay cosmology concerning accidents, their causation and their mitigation. Naturally, we need to be reminded that the analysis is in a sense pre-biased, the correspondence and press reporting tends to reflect the voices of the few rather than the majority. Those so moved as to write or phone, are largely those who feel there is an issue to be addressed – they are the concerned, the aggrieved and the angry. The views and opinions of the absent silent majority can only be surmised.

8.2 Solution to Everything

Whilst the public may not have confidence in the council to undertake its duties and responsibilities to their liking, there is a sense in which they exhibit a confidence in the abilities of engineering. To a degree there is a feeling, even by

engineers, that the public have at times an undue belief in what engineering can do and can achieve. One engineer characterised this belief as the naive assumption that engineering can 'solve all the evils of the world' (I22, Engineer). This view that there was a solution to everything and that engineering could find that solution, whilst endearing to engineers, was also symptomatic of the public's poor grasp of reality. Solutions proffered or expected were beyond the resources of the cash strapped council. Whilst a solution *may* be available for a given problem, the harsh reality of front-line service provision means that difficult decisions need to be made, even for sites with a historic accident record:-

> There may be a fairly minor accident problem and the solution to it is to spend £100 million, but that is obviously not usually possible or appropriate – so in theory there is possibly a solution to every problem, but in practice there isn't. (I23, Manager)

In exploring the quest for an engineering solution in interviews, I was frequently told that most things *could* be engineered and a solution to most problems could be found – but as with the excerpt above, there were qualifications. Solutions could be found, but they may not meet universal favour, since there were significant trade-offs between road users:-

> Yes there is a solution to every problem, but it is not a solution that is going to satisfy everyone. So there is no right solution to every problem, but there is always a solution that will satisfy a number of people – but you will never satisfy everyone. (I14, Engineer)

Engineering in this way, was conceived as an eminently pragmatic endeavour, which is cognisant that the 'perfect' solution is probably unattainable. Instead engineers must strive for a 'solution' that maximises the outcomes, within the confines of a framework, delimited by competing interests, regulatory

restrictions and budget constraints. For example, facilitating pedestrian movements across a busy road may be achieved at expense of increased delays to motorised traffic (for example, the Pelican crossing). Likewise mitigating for delays, a subway may be seen as a solution, but this may be rejected on cost grounds (tunnelling and sub-surface groundworks can be notoriously expensive). To counter this, an over-bridge may be considered, but this may be unfavourable on environmental grounds (visual intrusion) or because landtake is necessary, and so on. The engineering perspective is always to emphasise the pragmatic realities of real world design and construction. Engineers are only too aware of the 'banana skins' that lay undetected at the beginning of every design process.

The faith in engineering expressed by the lay public is also a manifestation of road safety as a reified phenomenon. By this I mean that by the very process of parcelling road safety as a problem for engineering, objectifies it and adds distance between the object and any personal/human implications associated with accident causation. The road and the traffic in a reified version is there to be tamed and controlled. It becomes a natural phenomenon that demands human intervention (engineering) to make safe, or at a minimum, lessen the negative impact. Perhaps the engineering profession is to a degree blameworthy and complicit in propagating this view in the very language and names of measures commonly deployed, the paradigmatic, of course, being the widespread adoption of traffic 'calming.' **Appendix E** elaborates on the notion of road safety as a reified form of discourse.

The reliance and demands for an engineering solution to almost any malady on the highway is a point made earlier with respect to 'social ills.' Engineers recognise that many of the issues that they are presented with, are not necessarily best ameliorated through an engineering approach. Thus the engineer may be faced with an accident history that has primary causation factors related to alcohol, drugs, mobile phone use or more mundane anti-social behaviour. Whilst there may be some engineering response possible to mitigate the effects of a collision when these factors are involved, the root of the problem lies elsewhere.

Further, the 'solution to everything' approach to road safety engineering is reliant on panaceas. That is the undue belief that a particular feature will have the favourable effect no matter the context of the particular application. One engineer recounted being lobbied by local residents to introduce a 30 mph speed limit on a rural road and how their engineering advice fell on deaf ears:-

> I mean one situation…..you go down to Park Corner on the Seatown Road and there are lots of accidents on this really nasty bend. And they [the residents] were absolutely determined that this 30 mph is going to work for this very short section – but those that are travelling around too fast, are still going to do so whether it is 30 or not. They could be done for that [speeding], but there would need to be a policeman there all the time when they do it – so it's not really the answer. (I19, Engineer)

Traffic calming and (lower) speed limits feature high on the list to remedy the ill effects of excessive speed. However, their application does not guarantee the desired impact and both may have adverse side effects not considered by the public. Traffic calming may divert traffic to alternative routes, thus merely displacing a problem. Similarly, traffic calming can increase road noise, prove difficult for emergency services and public service vehicles, and reduce the

kerbside parking that is available. The ‘solution to everything’ panacea that is attributed to traffic calming needs to be tempered by engineers assessing its suitability to the context in question.

The affinity to panaceas and the readiness to pick ‘off the shelf’ solutions is widespread. It is also tied with the tendency for the council to be reactive rather that proactive. Irrespective of the resource constraints that limit the degree of pro-activity the council engage in, the promise of panaceas to meet *perceived* ills is greeted with caution. Engineers are sometimes loath to interfere with the road environment, even if there is a perceived problem. This is even more the case for a site where there has been no recent (typically the last 60 months) casualty history. There is a common belief amongst engineers that if a road is considered to be hazardous, motorists drive accordingly with an extra sense of caution and due care. Likewise, potentially more hazardous conditions pertain when motorists perceive no danger and metaphorically ‘switch off.’ Being pro-active may at first blush be an admirable strategy, but making adjustments to a *statistically* safe road may be professionally unwise. This is clearly a point of rupture between the quest of popular epidemiology to solve perceived ills, whilst the professional applies a pragmatic sense of engineering caution that is misconstrued by the anxious public. In addition the intuitive appeal to panaceas and ready-made solutions can reflect the inherent self-interest in such requests. The appeal of a panacea, in that it appears to offer the promise of an ideal, however in reality, it is a method to short-circuit proper problem solving, and thinking through the consequences. To one afflicted by parochial myopia that is inconsequential. The side effects are just that, collateral damage that may be

necessary in achieving the pursued aim, they represent the 'friendly fire' casualties of traffic engineering.

Engineers were realistic as to what they could achieve and how far they could contribute to reducing the casualty record. The ultimate limit to casualty reduction fell with driver behaviour, as one interviewee succinctly apprised:-

> [A]t the end of the day you will never get zero accidents happening, because there are so many muppets out there driving around aren't there? (I3, Engineer)

The quest for eliminating all road casualties, whilst being admirable and morally right, was ultimately seen as being unrealistic and Utopian. Engineers can contribute towards this ambition, but there needs to be a recognition that other factors are at play, and at some point for certain problems or sites, concede that 'engineering isn't the answer now' (I10, Technician). That is, you cannot engineer your way out of all problems and there needs to be a recognition; that drivers have a responsibility too:-

> There are always going to be road accidents regardless of what aspirations [there are], there will be a level at which we can control conflicts on our network. We do know that most, a fair degree of our accidents are effectively created by driver error or driver distraction or driver behaviour. It's no longer the case that it's an engineering defect which creates the problem, although that is a contributing factor. (I28, Manager)

The onus, in this interpretation, is on the motorist. The engineer can assist by making the road environment as safe as is practicable – but the decisive contribution is from the road users themselves. Engineers are aware of the limits to their own contribution, and concede that at times there is little they can

sensibly do and the burden should rest on others. Reliance on engineering is fallacious and ultimately harmful, in that the reification of road safety issues, distances road safety issues from the road user – it diminishes responsibility and culpability.

Often the contribution of engineers comes with respect to minimising the severity of an accident should it happen:-

> You can help reduce the severity of the accident and I guess you can probably reduce the likelihood of the accident. I am not sure you can design it out completely – even on the safest road you will get someone who's going to act the idiot and is going to kill or injure themselves and maybe others. (I38, Manager)

There was a palpable frustration transmitted in interviews with engineering staff, about the seemingly denuded responsibility afforded to the driving public. The 'blame culture' and 'council bashing' afforded the highway with undue responsibility for the accidents and injuries seen on the local road network. Engineers, all too familiar with first hand experience of reading accident reports and being familiar with casualty sites wanted to redress this imbalance. For them countless accidents were *primarily* due to driver error, whether it be due to over-confidence in their abilities, non-amelioration when faced with different driving conditions or simply due to inattention. The sheer statistical force of attendant circumstances raised fundamental questions in accident causation:-

> I would say because there is human error involved somewhere along the line. I mean you have a stretch of highway that is used by quite a number of people every day, each of them not having an accident and then you have one, two or four accidents within a few months or something and you ask yourself why are all these other people not having an accident? So I think generally whether

> a highway is less hazardous or more hazardous, boils down to the person using the highway appropriately. (I14, Engineer)

The reflexive turn to engineering to find a solution, at times, perpetuated this reified discourse. The search for engineering solutions merely confirmed public suspicions that 'there must be something wrong with the road.' The quest for an engineering fix, in response to certain events, can become self-defeating. Roads are straightened, flattened and widened to make it more manageable for the motorist, but all this may do, is simply encourage faster transit speeds and accentuate the problem by increasing the accident severity.[42]

> I think particularly in this country, there is a culture of don't care irresponsibility, again if we were given a more open hand to introduce the measures we thought to be effective, then we could do it, but there is still a big element of driver behaviour in there no matter what you do, you can put all the signs you want up, you can superelevate bends, you can put drainage in to stop it ponding, and someone will just get round it and go faster, next time faster, faster, faster. (I21, Manager)

8.3 The Nanny State Revisited

Previous sections have outlined the thesis for the manifestation of the nanny state in the context of public safety issues. Suffice to say, the adherence to a nanny state philosophy represents a certain cosmology, a view of the world, either as it is or as it should be. There is an inextricable tension here between the poles of, on the one hand, personal responsibility and on the other, the responsibility afforded to the state. In the road environment and in the case of road safety the view is decidedly foggy. On the one hand personal responsibility is espoused

[42] There is a well known relationship between vehicle speed and accident severity, for example see: Taylor, M.C., Lynam, D.A. and Baruya, A. (2000) *The Effects of Drivers' Speed on the Frequency of Road Accidents*, TRL Report 421, Transport Research Laboratory, Crowthorne, Berks.: TRL Limited.

with respect to normatively acceptable behaviour, with the best example being with the opprobrium associated with drink driving and, more recently drug impaired driving. On the other hand, possibly fuelled by litigation, is the rise in the regulatory governance of highways that sees a need to warn the public of everything from speed cameras to migratory toad crossing ahead.[43] Taken in an abstract way, this reliance or dependence on signing to sustain safety can be seen as absurd, as one engineer suggested:-

> Actually if we stick up some bits of tin [warning signs] by the road, everything will be fine and you won't kill yourself! (I36, Engineer)

Engineers are well aware of this increase in regulation, and the expectations that society has, as these comments illustrate: 'we live in a culture where we have to have cotton wool around us all the time – or somebody might claim' (I46, Technician). Indeed, compensation culture leaves engineers in frenzied fits of cold sweat and anxiety attacks – seeking to reassure themselves that they have not left any scope for a potential litigant.

In the quest to go that step further and warn of any potential hazards, the divide between personal and institutional responsibility shifts. The domain of existential care is diminished as the state takes the reins, colonising new territory. The realisation of this is reflected in the thinking and arguments offered in the construction of road safety issues. Drivers are given the benefit of the doubt, if an accident is caused the primary suspicion is with a defective carriageway in some shape or form. There may be acquiescence of *some* driver culpability, but

[43] The migratory toad crossing ahead warning sign is a prescribed sign (no. 555.1) in the *Traffic Signs and General Directions*, London: The Stationery Office (2002).

the primary suspicion is that ‘there is something not right with the road.’ So in an accident that occurs in a heavy downpour, a defective surface is proclaimed as the main culprit, and not the fact the driver failed to ameliorate the speed of their vehicle according to the prevailing conditions. Road users get accustomed to thinking that there is an infrastructure designed to protect them at all times, and if not they will receive due warning. By not being honest and proclaiming that the accident or problem site was not something that engineering could reasonably mitigate, engineers were doing a disservice both to themselves but also the public:-

> Again I think we try and find a solution where really we should have the balls to say there is nothing wrong with this, it’s driver behaviour let’s look at ETP – education, training, publicity, let’s look at driving standards, cos that’s another thing that I think has gone downhill since I took my driving test. I think the standard of driving on the roads is appalling, we’re all selfish, too busy, on our mobile phones, driving is just a means of getting from a to b, it’s an inconvenience – so people don’t pay attention to their driving and then they crash or something happens and their knee jerk reaction – ‘it’s a dangerous road, It’s a dangerous bend.’ So we have to do something because we can’t say to the public…..there’s nothing wrong with the road it’s your crap driving. (I21, Manager)

There is a time when a professional needs to offer their expertise in an open manner, that is not clouded by political niceties, otherwise the true facts of the matter may never get revealed:-

> If you went to a doctor and said my arm hurts when I play tennis, he would say well don’t play tennis! (I21, Manager)

The rise of the nanny state and the accompanying protection and rights of the motorist is augmented by the reification of traffic as a problem (see **Appendix E** for further examples). That is, by objectifying road safety it becomes a natural

phenomenon that is removed from the control and responsibilities of the driver. Thus the seemingly innocuous, and oft repeated phrase: ‘cars drive too fast down this road’ is the very embodiment of a reified outlook, it detaches the vehicle (the object) from the driver. In expressing the issue in this way it presents the problem as being an issue of engineering the vehicle *vis-à-vis* an issue of driver behaviour. Reification in this way is a further factor that contributes to nanny state thinking and propagates a diminished view of driver responsibility over their actions:-

> There is this presumption that everyone must be protected from….the consequences of their mistakes, therefore rather than the accident being attributable to individual stupidity and being said straight, we blame the road and stick a 40 mph speed limit or something like that, which actually is self-defeating, I think, because we are not telling people they have responsibility for their own life.
>
> I mean the nanny state does have this presumption that they can impose an external control and solve the problem. (I36, Engineer)

Although onerous and at times frustrating there were others who were willing to be more forgiving to the public. The attribution of blame to the highway or the authority, whilst often being seen as unfair, was also considered to be a reflexive human reaction. Applying emphatic rationality, they could understand the roots for this behaviour:-

> Well I don’t know we are still blamed for all the accidents that happen and I just think we shouldn’t be held accountable any more. Well somebody has to be blamed don’t they? If a member of my family had died, I would want to blame someone and I would find it very difficult to accept that it was just human error. It’s an automatic thing, I think there are some people that take it to the extreme, but I just think it is human you automatically want to find someone to blame and say it is your [the council’s] fault. (I17, Technician)

8.4 Over-determination

There is strong sense that popular epidemiology, at least in the evidence collected as part of this study, is over-determined. By this I mean that the factors believed to be causal with respect to the road safety issue are overly-reduced and simplified. A single causal factor, perhaps speed, is offered as being the single overriding factor. Assertoric statements by the public leave no room for doubt, they are provocatively phrased so as to be seen as the only contributory cause and possible reason for some state of affairs. The over reductive nature of such statements and articulated world views are understandable. In comprehending the lifeworld it is necessary to simplify, – the sheer complexity of the world, as encountered by our phenomenal consciousness, demands reduction. The lay tendency to pare down causal factors to the minimum is a manifestation of this process, discarding what are believed to be extraneous factors. It is also plausible to suggest (see section 5.5) that lay over-determination is, in effect, committing an epistemic fallacy. That is, conflating what is with what is known. In this way ontology is equated with epistemology, the limit of what is experienced is believed to be coterminous with what can be known. Therefore over-determination is *necessary* because the laity do not have access to all the contributory factors resulting in events and incidents, nor to the entirety of factors responsible for their phenomenal experience. Over-determination effectively supervenes on the practical realities of comprehending the lifeworld, it is a necessary consequence.

To the engineer too much is discarded in lay formulations. Road safety operates in a complex domain and multiple factors are *always* found in the causal chain.

As one respondent attested, 'we are not making widgets' (I44, Manager), engineers are dealing with a very complex and dynamic set of circumstances, necessitating the interaction between humans and the highway infrastructure. Seen in systemic terms, this represents a complex open system that is constantly in flux, and may not be recursive in the sense that the same input conditions always produce the same events. Complexity and system dynamics mean that engineers are wary at predicting potential accidents sites:-

> I think there are so many variables that come into any accident, I would love to be able to predict where the next accidents were going to occur because that would solve a lot of things, but I think there are so many variables that come into it, that you couldn't really. (I10, Technician)

Accident epidemiology as practiced by traffic engineers is orientated towards mapping extant casualty and accident histories so as to identify 'problem sites,' as opposed to predicting new casualties *ex nihilo*.

The road environment presents a heady mix of potential contributory factors and a near-forensic approach is necessary to disentangle the various dynamics at play.[44] The fundamental areas that come in to play are that of the road environment, the vehicle, the driver, and the activities of other road users. Engineers acknowledge that some factors may fall 'below the radar,' and the public may not know, or be expected to know, of their full import. At other times they focus on some factors at expense of others as attested by one interviewee:-

> People cause accidents. The quality of driving is the primary thing and people will point to factors which are often secondary to other

[44] Indeed a forensic approach *is* adopted when investigating road fatalities as laid out in the *Road Death Investigation Manual* (2007), Association of Chief Police Officers-National Policing Improvement Agency, Wyboston, Bedfordshire.

> things. It is my firm opinion, and most people who have got a lot of experience with accidents, will probably do the same as well, that whilst you may pick on certain factors like speed for example, speed is often the secondary, even if it is overt because it is not the speed *per se* but the inappropriateness of that speed or the fact that the person hasn't been paying attention whilst doing that speed. And probably the single biggest factor in accidents is inattention, not concentrating on what is going on. (I36, Engineer)

The selection and reliance on intuitive primary factors in accident causation is problematic, though perhaps psychologically rewarding. Often engineers are asked to deal with problems that are manifestations of temporal sequencing, there may be substantive delays between events, their consequences and the knowledge and understanding of their causation:-

> Well quite often these facts are not known until you get to the inquest anyway. So when there is all the news the day after a bad accident, a fatal accident or whatever, the facts are just not known. (I22, Engineer)

Thus a fatality, where a vehicle leaves a road and impacts with a roadside object with some force; can through lay epidemiology, be assigned to a speeding problem. However, in the ensuing inquest, many months hence, it is disclosed that the driver had a blood-alcohol level three times the legal limit. In this case the lay public attaches to the secondary factor, but the primary factor evades attention.

Even though the primary cause may generally become known some time after the furore of the accident, engineers still find that the initial conjecture and hypothesis is steadfastly held on to. The lay public can be reluctant to let go of their initial beliefs and the intuitive grip that they hold. In this way the focus of resources can be on salving a political desire, and seemingly moral imperative

for action, over a more considered appraisal of accident causation. Lay appraisals of causation are nearly always over-reductive and so miss or discard other factors with real import to the event, and experienced engineers at times have to counsel their younger colleagues:-'There are always more factors, the situation is always more complex than it first seems' (I16, Engineer).

Engineers facing the emotional turmoil following an accident, yearn for a more considered and rational approach, that called for a less impassioned, but more candid appraisal of events. When discussing emotional labour in lay-expert dialogue this is how one engineer articulated his frustrations, the incident in question being apocryphal:-

> Oh my word, I think back to all those years and the things I've bitten back! – Uhmm wait until you know the facts, wait until you understand the issue, listen to the technical arguments as well as the emotional ones before you make up your mind, as in, yes I know somebody has died there last night, but it's not the world's worst road and the fact that he was drunk and on drugs and not wearing his seatbelt, talking to his girlfriend on his mobile phone at the same time, might have had something to do with the fact that he went off the road and hit a tree. (I36, Engineer)

It seems plausible that the over-determination of road safety issues, as well being aligned to a basic human need for complexity-reducing is also closely associated with the needs of blame. Blame *requires* clarity, it does not admit ifs and buts. To blame something or someone demands, ideally, a single identifiable object. The culture of blame is borne out of the nanny state culture and the ready recourse to legal action.

The encouragement for reflexive attribution of third party blame and to seek redress through compensation characterised the cultural *milieu* that engineers found themselves in. Where maladies are blamed on third parties or reified in objects, it serves to encourage a diminishing sense of personal responsibility that arguably is led by parental role models:-

> I think parents have to take some responsibility themselves. We all try and cater for people, but unfortunately in life there are going to be interactions, not just on the highway, but in all sorts of areas where peoples lives and health is put at risk, but that is part of living. I think parents need to take some responsibility, and I think people don't these days. When I was a child if I'd tripped over the kerb, my mother would have picked me up and slapped me for not looking where I was going. Now the mother says: 'poor darling I must sue the highway department.' (I14, Engineer)

The demise of personal responsibility sees a readiness to blame other things, by reducing issues and events to a single (external) focal point, the accuser can abdicate from their own responsibilities and transfer all liability to a ready-made target:-

> It is easier to blame rather than admit that humans have that variation and error [in their driving behaviour]. It is easier to blame the pothole or small crack, that must have been the reason why matey took the bend at 90 mph and fell off the bend, that couldn't have been just because he was driving too fast! (I26, Engineer)

The accident blackspot is a common construction in popular epidemiology. This is the notion that a particular road or junction is inherently more dangerous than the surrounding network. The engineering approach to this is consistent, the orthodox response is to defer to the accident record and look for a manifest record of collisions during the history of the road in its current configuration. Further, and pivotally, consideration may be given to exposure, that is, the

number of collisions in relation to the number of vehicle movements through the site. Junctions are often the target of blackspot branding, however by definition they represent the confluence of multiple vehicle streams and therefore higher volumes and so would expect to have, in absolute terms, a higher number of incidents. The engineer will appraise the situation in terms of the number of accidents, their severity and the degree of exposure.

Blackspots enter popular epidemiology through a slightly different route. Since junctions are inevitably places of conflict, since converging and diverging vehicle streams have to cross paths, there is an accompanying feeling of higher risk. Junctions, more than any other part of the highway network, are responsible for more ‘near misses’ and minor collisions. Folklore captures these existentially troubling events, and can even magnify and intensify the reality of the situation into a contrived accident blackspot, which may not merit this designation according to the accident record. The fundamental rupture here is between the public perception of elevated risk and the engineers reliance on an epistemically proven record of increased accidents, taking into account exposure.

Blackspots are also reifying in their effect. They treat the road safety issue as an objectified defect, and make the road, junction or location the focus and not the road user or their behavioural engagement with that location. In this way, a pathology is created, the road is deemed to be at fault. Its common currency diverts attention and propagates the all-enveloping belief that ‘there must be something wrong with the road.’

Blackspots can also emanate from projection. A series of near-misses and minor accidents can be elevated in status from a modest problem of relative high frequency low consequence events, to 'a fatality waiting to happen' (see **Appendix D** for examples of projection from the corpora). Thus there is a projection from one state of affairs to something much more dramatic and consequential. Sticking with the junction, for convenience, we have seen that in themselves conflicts are an almost inevitable feature defining the essence of a junction. There is always a degree of tension between converging and diverging traffic streams – and so incidents and unplanned events are a fact of life.[45] Secondly, the crucial step of extreme case formulation, from perhaps damage-only consequences, to those that are fatal is a profound move that will be treated in more detail in the following section. Suffice to say that most projections to fatalities, in engineering terms, seem to be unfounded; they have no evidential basis for suggesting a dramatic increase in the casualty severity expected.

A further point is worthy of mention with respect to blackspot construction and this is with regard to temporality. Blackspots are often created from the occurrence of a small number of events within a relatively short period. Their close succession in time intensifies them as an experience and they become locations of *frequent* events by virtue of recent recollected history. However, accidents and incidents relative to the size of the highway network, and the sheer number of vehicle movements, are relatively rare events (note again the concept of exposure). Further, as well as being rare they often display characteristics of randomness in *time* as well as in their geographical expression. Thus accidents

[45] Signalised junctions and grade separation (where streams are kept apart through elevation differences) attempt to mitigate for conflicting vehicle streams.

have long been considered to have a high stochastic content. The realisation of a number of events in a short period of time (say 12-24 months) may not necessarily reflect a significant underlying accident problem. This is the effect of 'regression to mean,' where random events exhibit a high frequency in one or two years, may be followed by a substantive drop in subsequent years; and over time the distribution regresses to the mean for the distribution.[46] The practical realities of this, are that engineers' focus on long term trends and records, typically over a period of 60 months. On the other hand the public focus on the apparent deterioration of safety as evidenced by a number of events experienced in a relatively short period of time. Of course, the engineers' caution and espousal of the unreliability of the short term accident record, does nothing to assuage the public who interpret the apparent inaction as bureaucratic torpor.

Finally, there are comparisons to be made by the previous point and the status of fatal accidents. Fatal accidents inevitably attract a high degree of attention and are highly emotive events. There is a crescendo of public and press attention following a fatal event, and they are often frequently accompanied by calls for immediate action and such like. 'Chasing' fatal accidents can be seen as a poor use of limited funds, yet it is difficult to evade the furore that surrounds them:-

> There are certain schemes I have worked on, I'm trying to think of a couple where there have been accidents, I'm thinking of fatal accident sites. Yes we've gone and proposed changes because of a fatal accident at a site, whereas you look at the accident in isolation you realise *that* person was waiting to have an accident, whether it was on this particular corner or another corner. Reacting to isolated incidents can, in my opinion, not be the best

[46] Further information on regression to mean and other statistical properties of accidents can be found in: DTLR/TRL (2002) *Road Safety Good Practice Guide for Highway Authorities*, June 2001, London: Department for Transport, Local Government and the Regions.

> thing, although we do tend to do that as a highways department. (I32, Technician)

The notion of ‘chasing’ a fatal accident is meant to convey the sometimes futile attempt to remedy the site at which a fatal accident occurred. Given that any form of accident is a relatively rare event, a fatality is a *very* rare event. Unless there is some supporting evidence that the location has a previous and sustained casualty history, finding and justifying measures to mitigate can be difficult, save for the fact that there has been a recent fatality. In addition, given the significant stochastic content to accident epidemiology, focusing on one point on a network of many thousands of kilometres, might seem irrational. In addition, it should not escape attention that the ensuing, inquests and accident reporting suggests primary or secondary factors in accident causation, that are beyond the purview of engineering, in particular the speeding motorist who ignores all posted limits or the driver whose judgement is impaired by alcohol or drugs. Naturally, the fatality in a sense *demands* attention and scrutiny, but the reality for the engineer may be that it is an extreme, random event with no apparent engineering remedy. Even less politically palatable is, if a scheme could be implemented, would it stand the test of an emotionally cold economic rate of return?

8.5 Category Mistakes

The recurring problem found in lay-professional dialogue on road safety issues can be considered as a question of epistemology. **Figure 8.1** presents three notional domains. The first being that of ‘Normality’ – that is, where everyday activities are maintained without any especial concerns with safety. In all probability such a domain is not likely to exist or be sustained for long, human

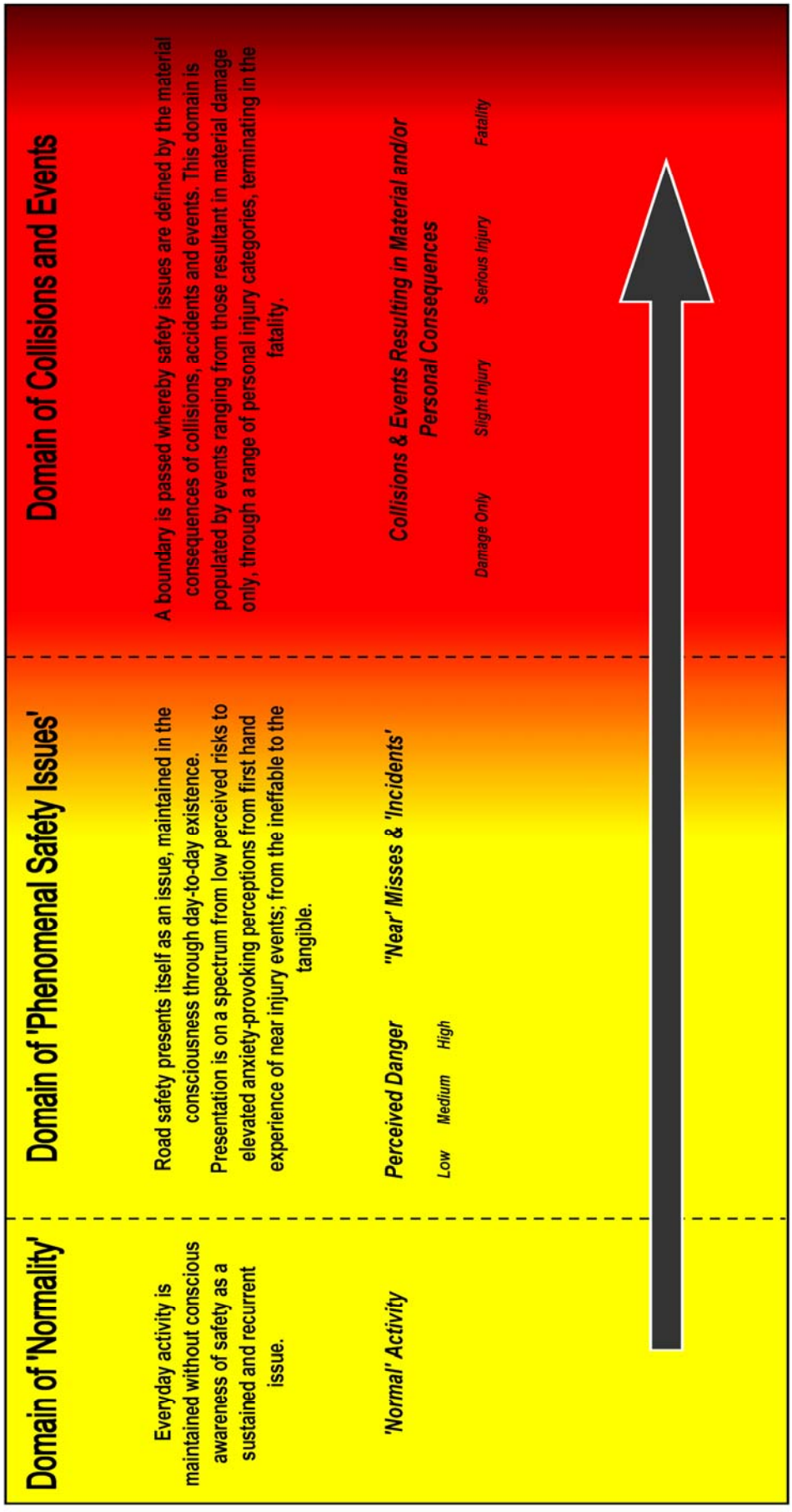


Figure 8.2: Domains of Road Safety

beings are forever guided by the instinctual drive of self-preservation and find perceived dangers lurking in all dark corners. The second domain is of 'Phenomenal Safety Issues' – this is characterised by an elevated state, where the individual is aware of increased risks sufficient to raise anxiety and personal angst. It entertains both relatively low levels of perceived danger those that are to a degree ineffable and extends to those that are high in terms of anxiety. As well as general fears and senses, this domain are also be populated by incidents and events that are vividly recalled, these may the 'near misses' and 'close calls.' I label this domain as 'Phenomenal' to denote the inherently idealistic character of its existence, that is other than the recollection of participants or witnesses there is no manifest material record or consequences of these events. The final domain, is that of 'Collisions and Events.' This is the domain when these events are defined by their material consequences. These may range from material damage to vehicles, property or infrastructure to personal injury. This domain extends from the minor damage that might be sustained in a low speed collision to the fatality.

What engineers contend is that when the lay public project from a near miss to 'an accident waiting to happen' they are committing a category mistake. They are transcending a fundamental boundary from phenomenal experience to that of events or collisions, which in traffic accident epidemiology is a giant leap. Fundamentally, there is little correlation between phenomenal fear and accident causation. It would be imprudent to make resource rich decisions, based on the grounds of phenomenal fear. In the collision of worlds (lay and professional) this represents a significant barrier to overcome. Engineers become frustrated with

what they see as an over-reliance by the public on first person experiences, and the conflation of fears with data which is epsitemically esteemed.

Further the forceful claims made based on these opinions and experience threaten the professional voice:-

> That is a big hurdle to overcome in our jobs – everyone knows better than us – we are happy to listen to their opinion, we are happy to listen – the public don't understand what is the difference between what is an opinion and what is wrong. And they're trying to overturn our professional judgement or technical standards that we are following, and use their opinion to say that what you are saying is wrong….I wouldn't want to write off their opinions in any way, even though they may be misguided in treating their opinions as facts. (I35, Manager)

The implication here being, experiences are restricted to the vagaries of subjective reporting, whilst other evidence is deemed 'factual' because it can be objectively validated and verified. For the part of the public they are frustrated because they see intransigence in refusing to act on their first person testimony and take umbrage, at seemingly, not being believed. Engineers must be wary of entering this hazardous territory – for they cannot be seen to deny another's experience. Further, in the world of lay epidemiology, road safety should be proactive and not reactive as practiced by engineers. Engineers are dependent on 'hard' data records to justify expenditure and be accountable:-

> In terms of accident remedial measures we can only work where there are accidents, and we can't work on near misses or hearsay. We can only spend money on where we can prove that we can reduce accidents. (I45, Technician)

For the engineer hearsay and first person testimony are inherently problematical. Establishing any kind of rational assessment of personal reporting is fraught with

problems. As this study has found, road safety in all its constructions, denotes many things to different people. Different people can experience the same event, yet report it in profoundly different ways, reportage is notoriously varied in quality and in its veracity:-

> It is based on perception and that varies from person to person. How safe something is, depends on you upbringing and what you are taught as a child as well as your experience as an adult. What is safe for one person would be unsafe to another and a lot of that depends on personality, how much inherent risk you are willing to accept. (I26, Engineer)

Fears and concerns are both difficult to authenticate and at the same time difficult to refute (Rosnow and Fine, 1976). Validating and verifying the statements of the public is not a feasible venture, yet relying on them to make significant human resource commitments or capital expenditure is not tenable either. Engineers resort to relying on epistemically proven records that conform to their professional outlook, and the training they have had, that says that evidence is king. However, not all evidence is alike, first person testimony falls short of the minimal evidential standards that they require to defend the allocation of scarce resources amongst competing sites. Such are the limitations of resources and the number of locations with a manifest casualty record,[47] that engineers treat locations with a recorded casualty history in advance of any other concerns. Further it was the function of the engineer to contextualise any claims made by the public. Whilst events and conditions may indeed be existentially

[47] By way of illustration to indicate the scale of road safety problems, the following are the number of reported killed or seriously injured (KSI) resulting from road traffic collisions for a number of UK counties in 2010: Bedfordshire: 259, Buckinghamshire 295, Cornwall 198, Devon 384, Dorset 349, Lincolnshire 462, Norfolk 353, Shropshire 163, and Somerset 238. For England as a whole in this period there were 21,255 KSI and 164,114 slight casualties. For definitions of casualty categories, the reader is referred to note 1, page 9. Source: Department for Transport (2011) *Reported Road Casualties Great Britain: 2010*, Annual Report, London: Department for Transport.

troubling, it is necessary to assess the case with other competing claims for resources:-

> To some degree you have to accept what they tell you they see from day to day, but you also have to bear in mind that they have a coloured view or biased view, like the 'I see accidents here every day' maybe they do see near accidents here everyday but there are probably near accidents on every junction down the road. (I38, Manager)

Therefore undue familiarity with one locale can sensitise individual reporting and diminish the sense of perspective and context.

Road safety issues as phenomenal experience have a precarious ontological existence, they are ephemeral, nebulous and ambiguous – notoriously difficult to pin down. Varied reporting, extreme case formulations and rhetorical moves to grab attention, merely serve to cloud the terrain, leaving engineers even more suspecting of lay testimony. The proverbial 'accident waiting to happen,' to the engineer, is a purely metaphysical statement:-

> They think it might work, because they are extreme- 'its an accident waiting to happen, must somebody be killed' – but they are meaningless, if there was factual evidence to back them up – fair enough and we would say yes somebody does have to be killed. But some random accident when you have got 20,000 cars on that road is insignificant, to put it harshly. (I3, Technician)

'The accident waiting to happen' therefore says both nothing and everything, it is an empty statement because it is grounded on very little evidence, yet promises an event of some unknown magnitude, at some unspecified time, in a boundless future. At the same time, from the engineer's perspective, the statement is epistemically vacuous, there is very little 'data' to work on, the statement is

based on first-person or perhaps third person hearsay, that cannot be corroborated or evaluated in any meaningful way. Fundamentally, the conjecture that an accident, serious injury or even fatality *will* happen, that is, it is a necessary and inevitable consequence of inaction has no basis. The extreme case formulation whilst having rhetorical attributes (dramaturgy, moral imperatives etc.) has no causal foundation – there is no *necessary* link between phenomenal experience and material consequences. That is, in the terms of **Figure 8.1**, 'The Domain of Phenomenal Safety Issues' is separate and distinct from 'The Domain of Collision and Events.'

One final point is worthy of note with respect to category mistakes. This is with the usage of 'accident' as a descriptor for events leading to material consequences in road safety. Numerous engineers keenly pointed out that this is really a misnomer and attributing events on the road as 'accidents' was itself a category mistake. As one engineer explicated his reaction to the 'accident waiting to happen' together with the possible riposte for introducing measures at locations where there was no proven record:-

> My first instinct is to laugh, accident, well again I will say 'it's an accident waiting to happen' by saying there is no such thing as a dangerous road, we don't call them accidents any more, they're collisions. An accident is where a chimney pot falls and hits you on the head, an accident is not where one driver behaves badly and crashes into another – that is not an accident, that's a collision. Because the council have always been slated for only going on collision and injury statistics to introduce schemes, but now we'll get criticised for putting in schemes where people haven't been killed – so which do you want? (I21, Manager)

To many an accident represents an act of providence, an act of god with no human intervention. This may include such rare events as the bolt of lightning or

a tree falling onto a car. In recent years there has been a move in highway engineering to try and change the semantic inference associated with ‘accident.’ This has been achieved by substituting ‘collision’ for ‘accident.’ The semantic intent is to convey that accidents are indeed acts of god, for which there can be no possible attribution of blame and entirely beyond both prediction and anticipation. In contradistinction, the collision represents an event to which some party can be held accountable, and thus has a human factor as a constituent part. The collision, which may be the unintended consequences of actions, does result in material damage that could have been avoided if alternative actions had been taken. In this way, highway engineering is trying to convey that accidents are truly rare events which humans can do very little about, whilst collisions are inherently the consequence of human action regardless of whether they were intended or not. Highway engineering is reluctant to admit too many acts of providence. Whilst a collision that may occur as a consequence of a deluge, an exceptional downpour leading to excessive surface water on the carriageway, it would not be seen as an act of god. That is since, in engineering terms, it is incumbent on the motorist to drive according to prevailing conditions.

The semantic distinction that is embodied in the usage of accident versus collision, whilst being a valiant attempt to transmit culpability, is likely to fall on fallow ground. The notion of an accident is ingrained in culture, and is used by the public and engineers alike, to cover a range of events and consequences. In addition, the common usage of the term does not distinguish between those events that can be attributed to someone or something, and those that are acts of god, the main semantic load being to signal that no prior intention was involved.

8.6 An Engineering Philosophy of Praxis

In this final section I want to outline the manner in which engineers come to terms with the realities of their day-to-day activities as they attempt to weave a course that combines: meeting the expectations of the profession of which they belong; the aspirations of the public who they serve; and, the constraints of the organisation in which they work.

Engineers on the whole are appreciative of the role they have to play in the contested space that is road safety engineering. Whilst they are all too aware of the limitations and constrictions that they work under, they are more pessimistic about whether the public or politicians are cognisant of this. The eternal truth of the matter is that they are engaged very much in 'people engineering' as much as highway engineering. The role of the engineer in contributing to casualty reduction was to a degree constrained by circumstances that were beyond their immediate control:-

> I think there is a limit, because you are dealing with something that involves human interactions as well. It is not just talking about the road, we can engineer a perfectly safe road and somebody will still have an accident on it, because they will fail to read the road correctly, drive to the current conditions or just not paying attention……..[T]here is only a limited amount that you can do, some people wilfully, or not, drive their own way, and there is only so much that we can put on them. (I26, Engineer)

Second guessing driver behaviour and responses to changes in the highway network is notoriously difficult. Whilst an engineer may be confident that they have designed a scheme to standards, and have adopted a layout or configuration that has been used countless times before, the behavioural response of the road

user needs to be monitored and evaluated on scheme opening (and thereafter). It is for this reason, that engineers concede that the traffic engineering is very much a pragmatic and reflexive discipline. In many ways it is a craft, tacitly understanding the nuances of a new site, a new problem and drawing on experience to generate a potential solution. However, that is not the end of it, there is an acceptance of the necessity for trial and error and to monitor the performance of the highway post-construction:-

> They can all be designed to standard and look good, but it is not until it is built, you can see how people actually drive on it and then you can use further engineering methods to try and stop them having accidents. (I13, Engineer)

The foibles and vagaries of the road user dictate that no solution is ever ready-made or perfect. Infrastructure designs can assiduously follow standards and best practice, however each application can vary in some small way that can impact on safety and effectiveness.

The engineer is savvy to the fact that there are clear limitations to their task, and ultimately the rise and fall of a scheme, may be at the mercy of driver behaviour. One cynical respondent, aware of the boundaries of public culpability suggested that: 'the only thing they understand is enforcement or crashing' (I21, Manager). The tenet behind this statement being that the public are incapable of driving according to conditions or of following orthodox highway engineering tools (warning signs, lines etc.), without recourse to some form of punitive enforcement. If enforcement is absent then a number of motorists will simply drive beyond their abilities and crash. This sentiment is carried further in the now proverbial 'an accident waiting to happen,' as previously reported, one

imaginative interviewee said it is more likely '*that person* was waiting to have an accident' (32, Technician).

The tendency to objectify and reify road safety has been covered elsewhere (see section 8.2), but it is the repeated efforts to 'blame the road' that reinforces, in the eyes of the engineer, this readiness to abdicate from personal responsibility. The culture of blaming the road as enshrined in the accident blackspot, serves to direct attention away from motorist and road user and onto the road environment. The engineer's timorous suggestion to the public, that human factors were at fault, is met with incredulity and scorn. This is not to say that the road environment and its design is without blame, but rather that there is a substantive preponderance of human factors in accident causation that are beyond the remit of highway engineering. Road safety engineering can creatively curb some of the worst excesses of the driving public, but it is unable to eradicate them entirely:-

> We are sort of getting to the point now, with a lot of our locations and schemes, where engineering isn't always the answer now and we are moving more towards behavioural change, cultural change and trying to influence people attitudes, to speed particularly, because you could engineer a road as safe as we think we can, and people will still come off and have accidents. (I10, Technician)

Possibly no *engineering* measure can save the motorist who is travelling at 30 mph over the posted limit or who is driving impaired by a blood-alcohol level well in excess of that permitted by law. These are issues for education and enforcement. However, this distinction is not always drawn by the public, and engineers are asked to treat what they see as 'social problems' that do not necessarily have an appropriate engineering response. The emotive furore surrounding a serious or fatal accident becomes clouded by an impetus that

demands action. At these times public, press and political pressure can seek to find a ready made engineering solution to a dramatic and consequential event – when really what is needed is an objective assessment of the wider contributory factors with a “cold engineering head” (I26, Engineer).

Whilst the exchanges between lay and professionals may seem to be characterised by parties talking past one another, it is important to state that this is not true of all encounters. At some level engineers recognise that it is their public and professional duty to engage with the public and to try and work with them to enhance the network and ultimately reduce casualties. Whilst at a superficial level engineers may appear to be scornful and sceptical of lay pronouncements and claims, there is a sense that they carefully sift reported material, as important information may lay partially concealed in the fog of rhetoric. Further, candid engineers were cognisant of their own fallibility and the boundaries of there capabilities:-

> We do stupid things and the public are quite right to turn around and say that it doesn’t work. Whilst the public is an uncomplicated beast, that doesn’t mean to say that there isn’t a collected intelligence out there and I think fundamentally they can be right about many things. (I36, Engineer)

In this way, discarding all lay discourse would be foolish; the careful appraisal of feedback can be instructive and can educate the engineer to how their designs are perceived by the end-users of their labour. Whilst the public may not know the remedy for a given problem or even the cause, there is a sense that they have an intuitive appreciation as to when something was amiss with a road layout:-

> Sometimes you can instinctively feel what is a well designed road, you might not be able to identify it, but you can feel comfortable travelling on a road or you can feel less comfortable driving down a road, say a country road. If you ask a member of the public who wasn't aware of the technical aspects they might have a feeling on it, even though they don't know the technical reasons behind it. (I32, Technician)

Thus, the experienced engineer never totally discounted lay reporting, but rather treated such discourse as a resource, to be carefully scoured and reflected on in search of some important insights that cannot be readily obtained through other means.

This is not to deny the damage that is done through the essential character of front-line engagements, that is the vociferous, aggrieved few who become the routine encounters experienced by public sector engineers. The all too common proclamation of 'an accident waiting to happen,' leaves the engineer unmoved. Its value is negated by its sheer prevalence, and its ability to predict in any way, is entirely unproven. To the engineer the statement does not make any productive contribution, they remain empty words, a tiresome cliché that is bandied about with little thought. The statement is metaphysically open to all possibilities and vacuous, and if taken literally could be extended to the entire road network. Of course this is not what is intended, the implied semantic load is that the site in question, has an elevated probability that an accident is likely, based on experiential data.

However, engineers are sceptical of first person testimony, experience has shown that the epistemic worth of such information is limited, in short it is untrustworthy. Instead they rely on data that is trustworthy and familiar, which

has been internally verified and entirely consistent – in short the gold standard for engineers is the police accident record. Engineers, I am sure would like to borrow from Wittgenstein, and say "the world is the totality of facts, not of things" - where I take 'things' to be abstract personal experiences (cited in McGuinness, 1988: 300).[48,49]

In short, the contested space discussed herein represents the disjuncture of two epistemic worlds or cultures (Knorr Cetina, 1999). The difference in outlooks and philosophies can at times be profound. The lay public demands a proactive response as a consequence of first person phenomenal experience, and the perception of fear. By way of contrast, the engineering philosophy is to rely on internally accredited records and to discount experiential data as being untrustworthy and metaphysically open. The 'accident waiting to happen' is a common construction that carries intuitive appeal and is a ready made rhetorical device to provoke action. Unfortunately, its currency is diminished still further every time it is uttered. The extreme case formulations that often accompany it are more often unfounded. Instead the engineer must deal with the practical realities of working in a resource impoverished environment and must, by necessity, deal with those sites which have a manifest record in terms of material damage and personal injury, they operate in a manner which is *ex post facto.* So

[48] This is a somewhat naïve and positivistic reading of Wittgenstein, where 'facts' are taken to be aligned with the correspondence theory of truth and are as Clegg (2006: 342) suggests 'foundational realities independent of consciousness.' In contradistinction 'things', are metaphysical composites, the product of the conscious subject.

[49] Fuchs (1992: 45) is also instructive on this point and says 'Semantically facts are statements without modalities. Facts have no visible authors and appear timeless and universal,' and furthermore (1992: 47) 'By adding modalities statements are transformed into more subjective and idiosyncratic beliefs.' (Source: Fuchs, S. (1992) *The Professional Quest for Truth: A Social Theory of Science and Knowledge*, Albany: State of New York Press)

partly by design and partly by choice road safety engineering is reactive. The collision of these two worlds in the contested space that embodies street-level bureaucracy and front-line encounters, leads to many frustrations and misunderstandings. No doubt engineers could be more forgiving over lay naivety in formulating road safety issues and the emotive force which they bring to bear; and the public for their part, could be more appreciative of the restrictions that limit the engineers ability to respond to their claims and demands and, comprehend that capital investments cannot be made on experiential data alone.

8.7 Summary

In this chapter we have attempted to reconstruct a ‘popular epidemiology’ of road accidents. Borrowing this term from work by Brown (1992), it is argued that by critically assessing the arguments and evidence put forward by the public in road safety debates, it is possible to create a lay cosmology of road safety. More specifically, in assembling these arguments it is possible to discern common threads in lay understandings of accident causation and the means by which they can be mitigated. The discussion then moved on to consider the prevalence of the view that engineers could solve all the ills of the world. To a degree this was dependent on the intuitive appeal of certain panaceas that were recurrent in the cultural context of this study. The most prevalent being lower speed limits, traffic calming or the perennial call to introduce speed cameras. Allied to the belief that ‘one solution fits all’ was the notion of road safety as a reified concept. By which it is meant, that road safety was seen at times to be a purely engineering matter, a technical exercise that was somehow remote from the users of the road. This analytic distance between the road environment and

the users was a dangerous one from the perspective of the engineer, whose rejoinder is: ‘it is not the road that is dangerous, but rather the people who use it.’ The recourse to engineering measures was often incongruent with the root cause of ‘the problem.’ Thus engineers were, at times, incredulous when they were asked to engineer a problem that they saw as primarily social rather than physical. Whilst engineering measures could mitigate against some problems, those associated with alcohol/substance abuse, mobile phones or merely anti-social behaviour were clearly less easy to ‘engineer’ against. Returning to the notion of the ‘nanny state’ the discussion then turned to predilection of lay correspondence and media reports to blame the road for some malady. This blame culture sought to attribute a collision or an accident to some defect with carriageway, and shunned away from individual culpability and responsibility. In this way the state (in this case the highway authority) was seen to have maximal responsibility and the domain of existential duty was diminished. The manifestation of this for practicing engineers was a profound professional caution that led to conservative solutions and stifled creativity out of fear of legal censure. A further critical facet of lay epidemiology was the sense that accident causation was over-determined. That is, lay accounts of both causation and mitigation measures tended to be over-simplified and naïve. Engineers were assiduously taught that accidents were multi-causal, that is, in most cases there were many contributory factors that led to an event – (over) focusing on one factor alone, would lead to the wrong diagnosis. It was also suggested that it was not uncommon for the public to commit category mistakes, by which they project from one state of affairs to another. Thus, whether out of belief or for rhetorical effect, lay arguments would confuse phenomenal safety issues with the

domain of events and collisions. Thus the proclamation of ‘an accident waiting to happen’ often contained a projection from a near-miss event to forecasting the certainty of a harmful physical event. As noted in the discussion, the intent is often merely rhetorical; to raise the status of an issue to a category it does not belong. This may be so, but it does damage to the fragile lay-professional co-existence, and fosters distrust of the veracity of lay proclamations. In the final section, a philosophy of praxis is elucidated. That is, by elaborating on how engineers approach road safety engineering and in particular accident causation. In this rendition engineers talk about the pragmatic nature of their work, as if a craft in picking up the nuances from site visits and the casualty record. This version of professional practice highlights their sensitivities to human factors in the road environment and the limits of their powers. In so doing, they conceded that a zero casualty record was not feasible, rather it was their task to minimise casualties given the significant constraints of their role. Although often sceptical of the public, they always listened for there were at times, substantive local understanding, which was consequential and helped to comprehend the nuances of a problem site. Above all, the cold treatment that engineers often displayed in their dismissal of lay views, needed to be seen as a pragmatic requirement of working in a heavily regulated, hostile and resource impoverished environment.

9. Discussion and Concluding Remarks

9.1 Introduction

This thesis has, through the use of a grounded theory methodology, explored alternative constructions of local road safety issues. Specifically, separate discourses have been identified, one reflecting lay perspectives, and another that is constituted by professional engineers working for a local highway authority. These discourses in many ways are separate and distinct. This thesis has examined the character and ground upon which these discourses intersect, and the issues that arise from this interaction.

Preceding chapters have determined that lay correspondence (letters and e-mails) on road safety issues can be considered to be a genre. That is they contain specific and distinctive features that are oft repeated, and display rhetorical features designed to effect action. Furthermore, in their construction and use of stock phrases, they reveal: a comprehension of accident causation; an understanding of potential mitigation measures; and, expectations of what part they or the highway authority have to play in the realm of road safety.

The intersection of these two principal discourses has been characterised as a contested area. Opinions and facts are disputed, and at times divergent. The resultant tension can lead to fractious encounters between parties, who may see the world and issues from contrasting perspectives. The lay public may wish to see immediate action, to what is perceived to be a real and threatening. Engineers may not recognise such a threat, and revert to bureaucratic procedures to

evaluate such issues. Such action, or inaction as read by the public, is misinterpreted as institutional torpor, which merely adds to the tensions.

The pressures that were faced by engineers were examined in some detail. Engineers at times found themselves in an invidious position – caught between an aggressive public, a resource impoverished environment that severely limited action, and, the constraints from working in a highly regulated environment that severely narrows the range of permissible options. To get through such encounters, engineers had to reflexively manage their interactions, deploying strategies such as empathy and defensive engagement, coupled with calling on extensive experience to see them through such emotional labour.

The argumentative structures of lay presentations were examined. Common themes and repetitive lines of reasoning were found and exposed. In presenting arguments the lay public often sought recourse to institutional responsibilities to maintain a safe road environment. Such arguments were often coupled with emotional levers, so as add extra rhetorical weight. The arguments deployed and the evidence proffered were often found to be weak, and lacking a compelling cohesiveness, that engineers required in deploying scarce resources. Further, a significant portion of analysed correspondence, exhibited excessively local concerns, otherwise formulated as ‘parochial myopia.’ This narrowing of perspective is one that engineers could not afford, since their purview extended to all road users and the strategic maintenance of an extensive road network.

Borrowing from Brown (1992), notions of popular epidemiology were considered in the context of the data collected. That is, a more unified conception of lay explanations of accident causation and mitigation. The classical formulation in road safety is 'the accident waiting to happen.' This phrase and closely allied variants of it, appear with exceptional regularity. In many cases it was seen to be a category mistake, an unjustified projection to some state of affairs, which was categorically different from that experienced. Further, lay epidemiology contained expectations that fuelled notions of the nanny state and the diminution of personal agency and responsibility; and a reliance on engineering solutions to solve all problems. Furthermore, lay epidemiology relied on reified discourse that dislocated the agentic contribution to accident causation, and required the highway authority to engineer solutions to what were essentially social problems. Lay epidemiology also exhibited significant over-determination. That is incidents and events, were over-reduced and found to be a consequence of a single errant factor. In contrast, engineers were trained to see accidents as multi-causal, that result from complex interactions between road users and the road environment.

In this concluding section further commentary will be made on the findings of this study, and the implications it has for lay-professional dialogue and the discourse surrounding road safety in general. In assessing the lay presentation of road safety issues, it is reasonable to portray the corpus as a distinctive genre, that is there is evident a natural rhetorical organisation exhibited in the letters, e-mails and media reports surveyed. There were common, recurring structural components that embodied the typical representation of a perceived problem, and

as such, these components and their organisation defined the genre. Further, it is important to emphasise that the observations made by the public were, on the whole, were entirely rational. That is ascription of blame has suggested causal factors as being responsible *vis-à-vis* fate and providence. Thus accidents, though widely acknowledged as being unintentional events, are ascribed as the consequence of actions (or inactions) that precipitate adverse outcomes. Blame directed to the highway, the highway authority or the road user, represents a rational construction of accident causation that negates providential interpretation. Indeed in some ways there may be excessive rationality applied, more of this later.

9.2 Reification and Ascription of Pathology

The reported reification evident in lay constructions attempts to naturalise such phenomena. However, engineers in their discourse attempt to redress this tendency by conceptualising road safety issues as being inherently determined socially, rather than being 'naturally' occurring events. Lay attempts to reify the causes of accidents through naturalisation, is seen as shifting domains. Reification distances the essential connection between the resultant event and the causes that precipitated it. It is a manoeuvre to shift blame from the social world constituted by road users to that of the physical world – the highway environment. In the eyes of the engineer, the lay public are too ready to assign pathology to the road environment and in particular to both the material aspects of the road: alignment, layout, surface, and drainage; and, to its regulatory control: speed limits, parking control, restriction on movement and enforcement. This pathology is often considered by engineers to be misplaced and erroneous.

The over-determination of accident causation, coupled with the failure to adequately assign culpability to the road user, both diverts attention and resources from more plausible explanatory factors and also serves to promote a fallacy reliant on panaceas and 'magic bullets.' That is, an overly naïve conception that a complex problem can be remedied by a simple engineering fix. In reality, many incidents and accidents on the highway can be mitigated, to a degree, by engineering, but engineering can only go so far. The majority of incidents are caused by human failure of some sort – in short, accidents are not caused by roads, but by people. Further, the cosmology of engineers is such that not all accidents are viewed as being pathological *per se*. That is to say a certain level of accidents is seen as being 'normal' and to be expected. The reasoning being that a zero accident rate, whilst a desirable target, is not a practical proposition. After all, the primary causation for accidents and their associated injuries are people – and people come with their attendant frailties and failures that contribute to accidents on the road.

9.3 Argumentative Adequacy and 'Instant Expertise'

What is clear is that many engineers do not believe that the arguments put forward pertaining to road safety fears and their mitigation are adequate. Not only does the public present insufficient empirical evidence, but what they do offer has low epistemic worth, but also the experience of engineers suggests that such formulations are rarely realised. It is not that lay presentations are entirely unsupported by evidence; it is rather that the evidence is neither reliable nor sufficient for the engineer. Further, it is generally not in a format that is usable or compatible with institutional requirements for making capital investments. The

arguments deployed by way of justification presume a causal connection between the events observed (e.g. speeding, near misses etc.), and the event that they forecast, namely the collision, the accident or the personal injury. Such a causal connection is fraught with complexities, that tax and test the most experienced road safety engineers. Whilst speed is acknowledged to be an important contributory factor in accident causation (Taylor *et al*., 2000), it is the attendant contextual factors that are especially important. Thus for example, it may be that it is the relative speed differentials that are important rather than absolute speed *per se*. In this was lay formulations are over-determined and in latching onto singular causal factors are excessively reductive, omitting other factors that are significant in any causal explanation. Further, engineers were inclined to feel that the lay public went beyond the limits of their skills and knowledge when recommending or prescribing solutions to mitigate a perceived problem. Though they may intuit a problem, the diagnosis, at least in the eyes of engineers, fell short of a professionally acceptable analysis and deficient with respect to proposed remedies. The apparent simplicity of the road environment encourages the public to become ‘instant experts’ or ‘self-appointed engineers.’ This fallacy is revealed in the naive solutions proffered that are deficient on a number of fronts, namely by offering solutions that are: [a] reliant on panaceas or ‘magic bullets’ that are presented as a solution to all ills e.g. the frequent calls for 20 mph speed limits; [b] focus exclusively on one road user group without consideration of the needs of others; [c] have significant resource implications that could not be met with current budget ceilings; [d] have implications that would not be politically palatable; and, [e] suggest infrastructure or restrictions

that are not sanctioned by highway law, the Department for Transport or local policies.

9.4 First Person Testimony and Inscrutability

There are also substantive issues related to the evidential 'material' with which engineers are asked to respond to. In essence, accounts of issues related to road safety are experiential in character, there is little indirect or secondary evidence to sustain such claims.[50] Whilst such first person experiential data are phenomenally rich, they tend to be epistemically impoverished, in that they do not lend themselves to independent validation. Their epistemic worth is further diminished by their subjective content, use of exaggeration/extreme case formulations to promote one's cause, and the vicissitudes of individual expression. Experiential data is rich, in virtue of the remarkable sensitivity of people to their contexts. Further, this sensitivity is often tuned to sensing danger in an ineffable and semi-liminal way. That is, it is often difficult to define or to adequately put into words, and this itself is a fundamental problem. Since communication is reliant on an intersubjective understanding between author and recipient, the attempts to describe the indescribable are bound to result in inadequacy and communication breakdown. Such breakdowns can have important consequences, as one engineer averred: 'If you can't even see the problem then you can't find the solution' (I9, Technician).

[50] An observant engineer may on visiting a site, detect limited amounts of supporting evidence in the form of skid marks, damage to street furniture, or broken glass/plastic, that in some way, corroborate with the impression of conflict and collision. Further, there is increasing use of technology such as data loggers and CCTV, which offer some vicarious experience of issues and events contained in reportage.

Further, the nature of such events, means that they are statistically rare and lack the durability needed for validation. These events are often fleeting and transient and elude verification. To a degree, they become ethereal events, they are spoken of but never seen. Their existence, though very real and vivid to the witness, and yet they have no tangible referents for the engineer to work on. In addition, they often lack replicability, only in exceptional circumstances do they repeat or are capable of repeating in some experimentally controlled fashion. Thus the metaphysical nature of fear and the reports that emanate from it, renders it unsusceptible to validation and verification. It is this inscrutability that presents a major problem for engineers who are versed to accept a very different epistemology. The bureaucratic system that distributes and allocates scarce resources must do so according to more secure referents than first person testimony. To admit the experiential data presented by the public would necessitate drastic revisions to epistemological standards, knowledge and assignment of categories, such as ‘unsafe’ and ‘dangerous’ would be democratised but would come with their own concomitant problems. For engineers comparing the merits of competing claims for attention would be fraught with difficulty, as their respective worth may be dependent on style, rhetoric, coherency and choice of language, as opposed to more objective metrics that they are trained to analyse. The central problem remains that ‘unsafe’ and ‘dangerous’ are referentially ambiguous, in the sense that they do not lend themselves to universal determination nor can they be epistemically evaluated to everyone’s satisfaction.

Road safety issues often appear in statements with predicates that are semantically vague, and thus it is not possible for a road to be determinately safe or determinately unsafe. Safety comes in degrees and occupies a space with fuzzy and changeable boundaries. Notions of fear and danger are existentially grounded; that is, more often than not they emanate from first person experience. The reportage of this experience varies according to the intensity of the experience to the individual, their previous encounters, their life history and their disposition with respect to risks and the degree of rhetorical flourish they apply to such reportage. Safety issues in this respect are therefore highly indexical – although at one level road safety is a broad category or concept, statements of fear and danger are highly individualised and contextual, reflecting specific local circumstances and perspectives. Conceptualised in this way, road safety is not a transcendental category that has some universal metric or can be measured by a standard that satisfies all. Rather, 'safety' is an issue with intrinsic existential qualities that is subject to local interpretation and assignment. Further, safety or rather the lack of it, is essentially vague in a philosophical sense. Whilst the degree of safety can be postulated in terms of incidents or casualties, it remains a continuum and a section of highway cannot be categorically safe nor categorically unsafe. It is not, at least in the eyes of practitioners, a matter of bivalence, rather it is a contextual judgement relative to other sites and subject to the perspective of the viewer. The continuum alluded to above, encompasses at one end phenomenal fear and near misses, and collisions with casualties at the other. However, the readiness of the lay public to project and predict that phenomenal fear is a precursor for an inevitable accident or casualty, is seen as committing a category mistake. This spectrum is marked by one or more

discontinuities that separate events laden with phenomenal intent from those that manifest themselves in accidents and collisions resulting in material damage and personal injury. This ascription of a category mistake, is because, there is no path dependency between phenomenally troubling events and those with more severe material and personal consequences. There is no basic causal link between phenomenally powerful events and others that are forecast. The projection represents a leap between categories that is neither necessary nor certain.

To the engineer lay proclamations of ‘an accident waiting to happen’ not only represent the commitment of category mistakes, but such statements also do not afford the degree of empirical adequacy that is needed to support capital investment decisions. These claims are not verifiable by any meaningful metric to the engineer, and thus remain largely metaphysical utterances. The ‘accident waiting to happen’ is vacuous because it says everything and yet says nothing. On the one hand it is open to all possibilities, and yet is so semantically vague that it commits to no single eventuality. Arguably, the very fact that a location is perceived to be ‘unsafe’ in a way makes it safer. That is, the elevated consciousness of risk and danger may attenuate behaviour and thereby render it safer. Likewise, engineers often attest to the belief, that road users are most vulnerable when they are oblivious to danger, and so a highway alignment that ‘doesn’t feel quite right’ might engender a concomitant attention to driving behaviour and an elevated awareness of one’s own vulnerability.

It is with this in mind that an ‘accident waiting to happen’ may be reformulated by engineers into something that they can meaningfully used. Thus they may

convert it into a recognition that certain locations on the highway may entail an elevated risk when negotiating them. They are not inherently 'dangerous' *per se*, but greater caution needs to be exercised when using this part of the network, in virtue of higher volumes, unusual turning manoeuvres, limited visibility, mix of traffic types, excessive speed differentials etc. It is therefore argued that the circumstances surrounding this location are such that they sensitise the public to the increased risk, but this does not necessarily translate into the inevitability of some calamity, i.e. a serious personal injury. Indeed, at times for this very reason the manifest record may be safer than other locations for which the public perceive no inherent problems.

Whilst notions of 'safety' and 'danger' present problems for institutional responses and evaluations, the prevalent appeal to 'common sense' in lay argumentative structures has an equally precarious status. In order to remedy some given problem there is often the resort to 'common sense' as a justification for effecting action or pursuing some course. Appeals to common sense are difficult to handle for bureaucratic organisations. Common sense is a vague and amorphous concept that evades accurate mapping. It is put forward as a rhetorical device to add leverage to arguments by appealing to a concept that is held to be intuitively virtuous, and a metaphor for communal assent. Yet it eludes precise definition and is conceived differently, meaning different things to different people. To an institution that is instrumentally rational, common sense *per se*, is not a justification for resource allocation. Rather, resources are allocated according to prescribed policies that seek to expunge ambiguity and vagueness. Indeed policies and regulations seek to conform to an ideal of

maximum clarity and precision in order to facilitate their practical application. Rhetorically, by introducing common sense, the author is trying to impute a notion of consensus that may or may not exist. In this way by implicating a wide appeal for a view, the rhetor is seeking to add credibility to their assertion. Further, it attempts to ascribe to a proposition a form of universal validity. The appeal to common sense invokes a seemingly unassailable reasoning, based in the supposed force or support, placed in widespread communal assent. However, in practice common sense is existentially founded and is constituted in the world view of the individual, it becomes an argument of convenience, to impute one's own view into that which is purported to be widely held.

9.5 The Moral Status of Road Safety Issues

I now wish to turn attention to the normative and moral aspects that road safety engineering entails. By classifying a site or problem as an 'accident waiting to happen' the author eliminates its neutrality. Whilst accidents, as classically formulated, are morally neutral they are acts of god, unforeseen and unintended; by advertising that an 'accident is waiting to happen,' this results in a change of status. The pure accident is morally neutral, but the 'accident waiting to happen' confers responsibility to those who both have this knowledge, and the means of changing circumstances, such that the 'inevitable' can be avoided. The contestation of road safety issues and the associated blame directed towards the authority, in part, is revealing of lay epidemiology. In the case of apportioning blame after an event, the premise is that the event was avoidable and so by extension predictable. Clearly, this premise reveals a cosmology that no longer sees such accidents as acts of providence or chance, but rather as events that fall

within the purview of rational appraisal and mitigation. The attribution of blame seeks to censure those accidents that are deemed to have occurred, either through miscalculation or some other form of institutional negligence, such as mismanagement.

A morality is also entailed in the implications of personal accounts. In conveying rich first person phenomenal experience, and exposing existential angst, private experiences become a public concern. Public remedies are sought for personal ills. Although of course, the individual will attempt to argue that their personal experience has supra-individual consequences that merit public treatment. Nevertheless the original site for the problem, is in the consciousness of the percipient, it is this bridge between personal experience and communal consequences that is fraught with difficulties. A further dimension with moral import surrounds the deployment of emotional arguments, and the general emotional background that suffuses road safety issues. In many ways, that should be unsurprising, since the consequences when things do go wrong, are significant and life-changing both for individuals and for society as a whole.

9.6 Communication Breakdown and Lay-Professional Discord

The preceding paragraphs have presented some of the key problems that surround lay constructions of road safety issues. These issues have implications for the conduct and character of lay-professional dialogue in this domain. To the public the bureaucratic torpor, and the deference to rules and regulations seem excessively rational. The emotional turmoil surrounding an incident, that induces phenomenal fear or results in serious personal injury, provokes strong reactions

that demand concomitant actions. The apparent intransigence of the engineer, to act in a manner *expected* by the public, propagates a view that the authority is deaf to public fears, and; that it is divorced from the situational realities that ordinary people encounter living beside roadside environments or using such facilities. To the engineer, they are being asked to respond to a situation based on dubious evidential support, and that needs a full and proper investigation in order to determine the nature, character and potential remedies to the constructed problem. This at the very heart of the problem that has been the subject of this research, the rupture between the expectations of the general populace, in the face of some perceived safety issue, and the manner of the institutional response. Communicative rationality at times breaks down because each party is unsure of the sincerity or veracity of what the other says. Words are often exchanged, but neither communicant is entirely content with the verbal transaction or outcome. In essence, the exchanges are characterised by tension, which can impede entirely, open discourse and convergence on a resolution that meets the needs and aspirations of both parties.

Lay constructions of cataclysmic and dystopian happenings on the highway can be seen from two viewpoints. They can be taken literally, as reflections of true beliefs, or they can be taken to be rhetorically inflated renditions of what the author believes. Of course, in reality the issues captured in this study are likely to reflect a synthesis of these two positions. In what follows, the consequences of these two readings are discussed. In the case of the application of exuberant rhetoric, it not the case that engineers consider such a presentation of road safety issues to be made *ex nihilo*, there is no doubt that there is *some* basis upon which

such claims are made. The issue is that they have no reliable way of disentangling the 'real' import of the issue from the rhetoric that surrounds it. A climate of suspicion pervades such claims, and this introduces pathology to the communicative event. The correspondence analysed as part of this study is largely rhetorical in nature, that is, the communication intends to persuade. The rhetorical structure conforms to a format that contains components of purpose specification, issue construction, arguments, the provision of supporting evidence and ultimately a request for service of some form. The reception of the rhetor, is to a degree antipathetic or at minimal, sceptical. Rhetorical extravagance and at times provocative stances, diminish the positive reception of such discourse.[51]

Rescher (2000: 97) said: 'our standard cognitive practices incorporate a host of fundamental presumptions of initial credibility on the absence of evidence to the contrary.' What I propose is that in this thesis, this relationship is inverted when engineers receive lay formulations of road safety. What I have attempted to convey in preceding chapters is the fundamental scepticism with which engineers approach lay proclamations of hazards and risks. This is, in a sense, a necessary response given the rhetorical extravagance and unreliability of a large part of the information presented to them. In order to see through the fog created by exuberant claims and suspect first person testimony, engineers revert to safer ground and institutionally acceptable evidence. This is not to say that lay evidence is entirely discarded, but rather that it is validated by reference to the

[51] Of course the rhetorical configuration of road safety issues is not confined to the lay public. The highway authority and the engineers therein, engage in a techno-bureaucratic rhetoric aimed to present road safety arguments in a light promoting organisational values and presenting the institution in a favourable way.

‘gold standard,’ namely the police accident record. In this way extreme case formulations are therefore ultimately counter productive, and can engender scepticism and even hostility on the part of the recipient. This point was made well by Perelman and Olbrechts-Tyteca (1969: 467) in their seminal treatise on rhetoric:-

> The speaker often runs this risk: exaggerated emotion, or out of proportion with the object, the purpose aimed at, or the nature of the arguments suggests pretentions that will make the whole argumentation seem weak.
>
> Either in advance or after delivery, the effect of some arguments can be played down by attributing their effect to factors inherent in the person of the speaker, instead of to their own value. Everything granted to the person will be subtracted from some of his manifestations.

One of the essential problems in the lay-professional divide is that of ‘convergence’ (Perelman and Olbrechts-Tyteca, 1969). That is, the rhetorical impact of lay argumentative strategies fails to converge with the worldview of the engineer, or at least their worldview when acting in the role as a professional. The ‘hearer’ does not attach the same degree of importance to the arguments presented by the ‘speaker.’ The affinity of both parties, to fundamentally divergent epistemic and ontic systems, ensures that one party speaks past the other.

As we have seen projections from ‘near miss’ phenomenal events to accidents and personal injury are prevalent. Yet, engineers would argue, that the premises for such projections are largely without secure foundation, although such projections are logically possible, they are not logically probable. Indeed, given the number of vehicles on the network, and the number of conflicts possible, the

number of personal injury accidents as a proportion of potential conflicts, is infinitesimally small. The move from ‘near miss’ to an incident involving material damage and/or personal injury, is not certain and does not necessarily follow any definitive causal explanation. Fortunately, most lay proclamations of impending catastrophe and carnage on the highway are simply not realised and counterfactual, they are not borne out by the facts. Whilst there is no doubt that many accidents go unreported, and thus evade the ‘official’ record, there is good reason to believe that it represents the most comprehensive and robust record of accidents available, especially those involving serious injuries or fatalities.

The consequence of the aforementioned facts is that first person testimony is effectively downgraded by the engineer. Although having primacy for the correspondent, such is the rhetorical exuberance and implausibility of some material, that the engineer is unable to trust it. The veracity of the information and the sincerity of the author come into question. With such imponderables and the institutional requirements to justify and document all capital expenditure, the engineer is forced to defer to a trusted and consistently presented data source, namely the police casualty record. This officially sanctioned record of the extant geo-temporal distribution of injury producing collisions represents the bedrock upon which investment decisions and casualty reductions strategies are based.

Emanating from this study is the key question, how does the institution treat and handle the expressions of phenomenal fear that it encounters on a daily basis? How can it usefully apply these expressions of fear and how can it respond to the public, without being demeaning, or appear in an overly-cold bureaucratic light?

Indeed as engineers in this study have conceded, the public do have many valid points to make about road safety. More specifically, there is an innate ability held by the collective mass of road users, to detect a road environment that may be less safe than the surrounding network. At times the public are able to rely on an intuitive sense, as experienced road users, to discern some impact of the highway that unsettles them, and the authority would be wise to listen to these concerns. However, in a sense the public and the engineers, as found in this study, talk past each other. There are differences in motivations, aspirations, comprehensions and roles. This means that whilst the two discourses overlap, they are never entirely coterminous. It is the area where commonality exists, that affords the best opportunity for extending mutual comprehension and agreement. By building on areas of shared understanding and values, the obstacles in the regions of discordance can more easily be overcome. However, to do this both parties must cede some territory. Engineers need to be more open to local issues, concerns and the existential angst that they bring to bear. Further, the engineer must see through the fog of rhetoric, in order to overcome their natural aversion to the form of issue presentation found in lay road safety discourse, so as not to overlook essential content.

9.7 Epistemic Justification and Warranted Assertibility

The engineers who contributed to this study displayed a bureaucratic affinity, that is to say that their actions and expressions are closely aligned, not only to the organisation they worked for, but also to their profession. This is not to say they that they were not empathetic to the concerns and needs of the lay public, but rather that system imperatives trump other needs. Pursuance of a path that

deviates from that, which is not sanctioned by law, by policies (local and national) and by the Department for Transport, is rarely countenanced. In line with the above conditions, engineers would tend to argue that lay formulations of road safety issues, by their standards, did not afford warranted assertibility; that is, the consequences proclaimed or predicted, in many arguments presented, were not justifiable on the grounds of the evidence presented. They may warrant further investigation, but they did not warrant any degree of certainty that inaction would necessarily result in collisions or personal injury. The apparent aversion to certain forms of data and evidence is predicated on institutional requirements and professional conditioning that *demand* maximal justification. Road safety can be more exacting than other domains for the following reasons:-

- Any decision regarding public safety needs careful scrutiny, the implications of making the wrong decision can impact on thousands of road users every day and have catastrophic consequences;

- The highway authority is part of an institutional organisation that has to be accountable with respect to how it makes decisions, and the reasons for including/excluding one site or user group over another;

- Severe resource limitations preclude all sites of merit from treatment. Therefore to rationally allocate those scarce resources to those locations that need it most, requires a robust and effective means to distribute limited public monies; and,

- Safety is at times a nebulous concept and as this thesis has demonstrated is subject to various interpretations and contestations. Therefore, to a degree, it is incumbent on the highway authority to share the burden of proof in determining what is and is not 'safe,' and to evaluate proclamations of hazards in a controlled, equitable and exhaustive manner.

Engineers can be characterised as tending to favour a verificationist conception of what is true, namely: 'x is true iff [52] x is provable or verifiable' (Horwich, 1998: 239). The verificationist needs to assuage their own scepticism by *actively* engaging in the investigation to prove or disprove a matter. The engineer needs to see the data or evidence for themselves, and this lessens the epistemic worth of first person testimony. Of course the accident record is an existing dataset, that has been compiled and reported by unknown third parties, but crucially it is a *trusted* source. Though not entirely free from error or flaws, the inherent problems embodied in the record, are at least, within known bands of confidence. It is for this reason that the police accident record goes some way to fulfilling the criteria of an epistemic ideal for practicing highway engineers. The record has the following valued virtues:-

- Independent of those claiming safety issues;
- Officially sanctioned and maintained;
- Adopts universal and consistent reporting styles;
- Diachronic and permits the analysis of trends;

[52] Iff is a form of notation used in philosophical logic that is equivalent to: 'If and only if.'

- Devoid of emotive content;
- Primacy of ‘objective’ over ‘subjective’ content;
- Quality assured through training of personnel, validation and spot-checks; and,
- Consists of metrics consistent with highway engineering practices (e.g. casualty categories, road numbers, OS grid references, vehicle types etc.).

Although engineers overwhelmingly subscribe to an epidemiological approach to casualty reduction and defer diligently to the casualty record, they still leave enough room to admit random noise. Thus whilst they acknowledge that accident patterns can be revealed through mapping and careful analysis, they also recognise that within the broad patterns revealed through such work, there is still a residual element that is assigned to chance. This is not to say that the admission of stochastic variation in event causation falls outside of the rational discourse of engineering, but rather that this discourse embraces a degree of uncertainty as is inherent in statistical probability. At times, this concession is divergent from a lay worldview that eschews providential explanations entirely, and seeks to account for all events. In a sense, engineering epidemiology does not permit the degree of precision that is forthcoming in the forecasts emanating from lay epidemiology.

9.8 Being an Engineer and Professional Voice

Highway engineers experience difficulty in finding voice. The contested arena of highway engineering and road safety, results in professional voices being stifled by a vociferous public unwilling or unable to accede to their professional

knowledge and grant them to be experts in matters pertaining to the highway. This study has found that engineers have significant responsibilities (morally, professionally and legally) with regards to public safety, yet do not have the degree of respect or authority afforded to other professions (e.g. doctors). Whilst engineers maintain, that highway engineering and road safety engineering, is an esoteric body of knowledge requiring both extensive experience and training, the lay public are, at times, unwilling to grant them jurisdiction over this knowledge. Lay over-determination of road safety issues (both in terms of causation and mitigation) seeks to sequester this domain from experts, and render it subject to popular pronouncement. Whilst it is only right that residents and road users have their say on road safety issues, there are dangers from excessive democratisation and the diminution of professional guidance on such matters.

Although the interviews with engineers were dominated by the voice of 'the professional,' other voices were also present. Engineers clearly exhibited a strong affinity to their discipline and the ethical standards that it entailed, often reporting that their first duty was to behave as a professional and uphold professional standards. Furthermore, as a professional embedded within a local authority, a secondary voice, that of a 'public servant' was heard. The latter represents an affiliative orientation to the goals and purposes of the organisation for which they worked; and, if necessary, concede some engineering ground to the pragmatic demands of public service. In addition, at times other registers and discourses were invoked during discussions, that reminded the interviewer, that as well as being professionals and public servants; they too were ultimately members of the public who paid taxes, had accidents, had been on the 'wrong

end' of bureaucracy, and had an emotional attachment to the world. In this way the plurality of voices that were heard, is testament to the conflicts that are faced every day at the front-line by local authority engineers.

Being a practising engineer is more than just a technical exercise. This is probably especially true for those who undertake their engineering role within a local authority. Technical expertise that calls on a specialist body of knowledge is merely one part of what the engineer can be asked to do in the course of their daily work. As much as anything, they are employed to see through technical tasks, contingent upon the vagaries of political aspirations and direction. Being a public servant, albeit in a technical capacity, necessitates negotiating with the public and handling the associated emotional labour. Solutions which are technically elegant and resourceful, amount to little, if the general public and the political masters cannot be won over. This is in every sense the essence of 'people engineering.' People are instrumental not only as advocates and supporters for scheme implementation, but also as end-users for the 'products' of engineers' labour. Previous sections have identified the deference by engineers to the official record and the antipathy with which meets first person lay testimony. A more positive footing would be to view the public as a resource, valorising their experiential knowledge as being a valuable adjunct to the official safety record. In doing, so this would concede, that local knowledge can offer valuable 'data' and insights that are largely inaccessible to the engineer and would precede official awareness (Brown, 1992). The skill is knowing how to disentangle rhetoric and embellishment, from the *new* information being

conveyed; and, to resist the temptation to dismiss such missives as entirely vacuous or void.

Whilst the engineer attempts to become the expert in the art of the possible, this negotiation of a contested field that entails troublesome decisions, which *in extremis*, can be matters of life and death. The engineer must weave a path between the limitations of resource impoverishment, technical difficulties, institutional and regulatory control, and evaluating claims (meritorious, inflated or otherwise) of hazards and risks on the highway.

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Appendix A: A Glossary of Conceptual Terms

Bolstering

This term is used to indicate the rhetorical use of multi-track argumentation to support a given request. That is to posit separate and distinct argumentative rationales to support a given course of action, where each rationale is intended to compound and elevate the worth of the overall argument. For example, an access restriction may be proposed on the grounds that it would [a] reduce traffic volumes by eliminating 'rat running', and [b] reduce pollution. Thus the suggestion is founded on both a safety argument (less traffic, therefore less conflicts) and an environmental argument (no through traffic means reduced vehicle emissions).

Contested Space

This term is used to capture the degree of conflict that characterises the domain of the road safety issue. The public, politicians and professionals all have a vested interest in road safety matters. This research suggests that the growing self-determination of the public and the increased exposure of engineering, through near universal public consultation, have eroded the status and esteem of engineers. In Habermasian terms this represents a reverse-colonisation, the public are making substantive inroads into the techno-bureaucratic organisation.

Defensive Engagement

This term was deployed to characterise the cautious approach which engineers have when engaging with the public. It is the manifestation of a climate of suspicion, where engineers are nervous about volunteering 'too much' information, which may be used against them at a later date.

Domain of Collisions and Events

This represents a field where safety issues are defined by the material consequences of collisions, accidents and events. This domain is populated by events ranging from those resultant in material damage only, through a range of personal injury categories, terminating in the fatality. This is the domain in which the engineer traditionally operates, directing capital expenditure based on the manifest safety record.

Domain of Phenomenal Safety Issues

In this domain road safety presents itself as an issue, sustained in consciousness through day-to-day activities. Presentation is on a spectrum from low perceived risks to elevated, anxiety provoking perceptions, based on first-person experience from the ineffable to the tangible.

Extreme Case Fatigue

This is an expression to capture the over-use of worst case scenarios in lay formulations of road safety. Such dystopic pronouncements are in such common circulation that they have lost their effect on engineers – they become empty words, overlooked and devoid of meaningful content.

The Hidden Profession

A description offered by an engineer during an interview to reflect the status of highway engineering in the eyes of the public. Whilst the public may be cognisant of aeronautical, mechanical and structural engineers, they are largely ignorant that highway engineering exists as a professional discipline. In dialogue with engineers, the public reduce highway engineering to maintenance and construction, but little else.

Instant Experts

An *in vivo* term used by an engineer to express the tendency for the public to profess knowledge and understanding of a technical area for which they have had no formal training. In doing so the public, at times, in the eyes of engineers, dogmatically hold beliefs and demand measures that are against sound engineering judgement. In so doing they remain over-confident in their knowledge, and confuse a knowledge of roads and traffic as experienced through driving, with an ability to engineer a road environment.

Interaction in Context

The process by which engineers have to remind themselves that the public they encounter are merely a subset of the wider population. The exposure of engineers to adverse comments, objections and complaints, needs to be balanced against the great silent majority who are largely mute to the engineer. The responsibility

to the greater public means that, at times, engineers must temper their actions in the face of the hostile few. The silence of the majority is taken to mean they are generally complicit with the activities and objectives of the council.

Miss Marple Effect

An *in vivo* term used by an engineer that captures the diverse nature and quality of reported evidence. Named after the fictional Agatha Christie detective, who has to use her guile and experience, in order to find the truth amid a wealth of seemingly illogical, and contradictory evidence, offered by dubious witnesses. Likewise the engineer has to evaluate the veracity of, at times, conflicting statements as to the character and cause of the problem that they face.

Parochial Myopia

This term tries to capture a number of aspects to lay formulations of road safety. Firstly, correspondence is excessively narrow in scope, preoccupied with micro-geographical domains, principally the highway adjacent to the author's property. Secondly, much dialogue is motivated by self-interests and is unable to see or countenance the needs of others. Thirdly, as well being narrow in a geographical sense, concerns are narrow in a temporal sense. Present issues are hyper-realised at inflated value, future gains are amortised to a near zero value.

People Engineering

A term coined by an engineer that reflects the inescapable human side to traffic engineering. Engineers may wish to focus on the harder aspects of engineering, but ultimately they cannot avoid dealing with people whether as users of the infrastructure, as taxpayers, as people having business interests or as residents.

Safety as an Adjunct

This term expresses the auxiliary use of safety as an issue to bolster an argument otherwise founded on some other central theme. Thus, an item of correspondence may have as its central theme the issue of anti-social parking practices, and the inconvenience this causes, but have safety issues introduced late in the argument in order to 'shore up' the principal rhetorical thrust.

The Safety Card

This term is used to denote the adoption of safety as an issue to add rhetorical force to a given argument. Since safety is a primary concern for the highway authority it in many ways ‘trumps’ other considerations, including cost and economy. Cynical engineers argue that, on occasions, safety becomes a contrived issue, introduced as an argumentative strategy merely to score extra ‘points’ in an argument. The public are aware that since safety is not something that a public body can take lightly, and so whether the safety argument is authentic or not becomes immaterial, since the bureaucracy is obliged to investigate such claims to a certain minimal level.

Selective Disclosure

This is a term that is closely allied to defensive engagement. It reflects the widespread practice of limiting what information is released to the general public. Disclosure is limited to protect individuals from undue scrutiny or, more often the case, to prevent information to be misused or misinterpreted. Excessive disclosure opens the way for protracted dialogue between engineers and the public, which consumes scarce resources.

Scope Deficit

A common occurrence is for the public to claim that the measures suggested or implemented by the Highway Authority do not go far enough. Engineers respond on two principal points; firstly, that public expectations are unreasonable and not in any way grounded in the technical or financial realities that they face, and; secondly, the public have a tendency to overreact to situations and want to respond to incidents in a disproportionate manner.

The Taxpayer Card

An argumentative strategy deployed by the public used as a ploy expressing a ‘demand for service.’ The intention being to signal that, through paying taxes, this qualifies them to certain rights and demands on the service providers.

Transference

Akin to the sense used in psycho-analysis, but intended to denote the conveyance/consignment of responsibility (as opposed to emotion) from the correspondent to the highway authority. In this sense, there is both a cathartic and a dutiful aspect to the transfer. Firstly, in alerting others to potential highway safety issues, there is a sense of ‘release’ from the burdens of holding this pressing issue. Secondly, in fulfilling this communicative action, the correspondent has, as it were, completed their ‘contractual’ duties as a diligent citizen.

Appendix B: Interview Consent Form

Consent Form

"The Construction of Local Road Safety Issues: When Lay and Professional Discourses Collide"

I am undertaking a postgraduate research degree through the Faculty of Social Science and Business at the University of Plymouth.

I am researching how issues related to traffic and road safety are constructed by the public, organisations and transportation engineers and professionals.

Thank you for agreeing to take part in my research. Before we begin the discussion I would like to emphasise that:

- Your participation is entirely voluntary;
- You are free to refuse to answer any question;
- You are free to withdraw from the discussion at any time; and,
- You may withdraw your data from this research within 2 weeks

With your consent, this discussion will be recorded. This is purely to enable me to concentrate on listening to your responses and to ensure accuracy when transcribing what you say.

Nobody, except myself will hear this recording. All recordings and any notes of the discussion will be securely stored and protected. No notes or recordings of this discussion will be stored on any Council computer or server.

When the notes are created from the recording, all names and information that may identify you or other persons will be removed.

Under no circumstances will your name or any identifying information be included in the reporting of this research. Parts of the discussion may be used in my thesis and in publications arising from it.

Please sign this form to show that you have read its contents and consent to take part in this research.

Steve Ball

Signature:_____ Print Name: _____

Date: ____/____/_____

Appendix C: Anthology of '*An accident waiting to happen*' and Variants

The following represents a selection (from a much larger set) of excerpts from correspondence and media reports that feature the phrase *'An accident waiting to happen'* or some closely allied derivative. The intended purpose is to demonstrate the sheer prevalence of such constructions in everyday road safety discourse.

i It can only be a matter of time before there is a serious accident. (*Cornish Guardian*, 22nd August, 2007)

ii We call on you to help up solve this potential fatal problem and grant us some appropriate traffic calming signs. (Letter, 26th October, 2007)

iii I feel this is an accident waiting to happen. (Letter 6th January, 2008)

iv Speed humps, speed cameras, a 30 mph set of illuminated signs – anything to avoid the inevitable fatal accident. (Letter, 17th January, 2007)

v Put bluntly, this is a dangerous area of road which is just waiting for a very serious accident to occur. (E-mail, 20th August, 2007)

vi I sincerely believe that a fatal accident is inevitable unless this problem is addressed effectively. (E-mail, 11th December, 2007)

vii Villagers, apart from being in a state of constant anxiety, fear that an injury or fatality will happen sooner rather than later. (Letter, 20th May 2008)

viii Just how many deaths does it take before action is taken. (*Cornish Guardian*, 29th October, 2008)

ix How long before someone is involved in a serious accident? (*St Austell Voice*, Letters Page, 19th March, 2008)

x A very serious accident has been likely here for some time. (Letter, 1st September, 2007)

xi Locals say North Road is being used as a race track and fear it is only a matter of time before there is a serious accident. (*St Austell Voice*, 22nd August, 2007)

xii I am certain that it will only be a matter of time before there is a major accident involving these vehicles. I have seen several 'near misses' as cars are forced to slow down. (*West Briton*, Letters Page, 1st March, 2007)

xiii Please don't overlook this suggestion, do something, before somebody is killed. (Letter, 18th June 2008)

xiv John Kirkland, a civil engineer who lives opposite the junction described the improvements as an accident waiting to happen. (*West Briton*, 26th June, 2008)

xv Everyone who lives alongside the road believes it is a big accident just waiting to happen. (*West Briton*, 26th June, 2008)

xvi The traffic is travelling much too fast down the sloping Woodland Crescent. An accident waiting to happen! (Letter, 4th July, 2007)

xvii It would be sensible to be pro-active and put some traffic calming measures in place before the inevitable happens and a pedestrian is killed or seriously injured along this stretch of road. (Letter, 30th June, 2007)

xviii There are too many blind bends and you just have to take a chance and go when you think it is clear, but the traffic comes round so fast that there will one day be an accident. (Letter, 13th July, 2010)

xix Something really needs to be done before next summer – or before a tragic accident happens. (Letter, 18th October, 2007)

xx However the top of Rejerrah, between Cubert and St Newlyn East is an accident waiting to happen. If ever there was a need for speed bumps or a roundabout this surely has to be the place. (*West Briton*, Letters Page, 6th September, 2007)

xxi Prevention's [sic] must take place before a serious fatality occurs. (Letter, 14th March, 2008)

xxii The speeds people do morning noon and night is [sic] horrific. A multi-car pile up here is inevitable and when it happens people will take notice and realise that something serious needs to be done. (*Cornish Guardian*, 15th October, 2008)

Appendix D: A Typology of Projections

Typology of Projections

It is possible to construct a typology of constructs that emanate from the correspondence and are allied to the proclamations of 'an accident waiting to happen.'

Common to all is a projection from one state of affairs [a], to some future predicted state [b]. The move from [a]➔[b] has a number of forms:-

[i] Phenomenal fear to accident
[ii] Phenomenal fear to injury
[iii] Phenomenal fear to fatality
[iv] Phenomenal fear to tragedy
[v] near miss to accident
[vi] near miss to injury
[vii] near miss to fatality
[viii] near miss to tragedy
[ix] minor incident to major incident
[x] minor incident to injury
[xi] minor incident to fatality
[xii] minor incident to tragedy
[x] serious injury/fatality to further major incident
[xi] serious injury/fatality to further serious injury
[xii] serious injury/fatality to fatality
[xiii] serious injury/fatality to tragedy

Further, all types lead to a projection from either [1] a repeat event of the same magnitude e.g. from a serious injury collision to *another* serious injury collision, or [2] an escalation of event magnitude e.g. near miss to fatality. Type [2] projections are far more commonplace.

The differentiation between fatality and tragedy, is an interesting further dimension, to projection portrayals. It is clear that the semantic load of 'the tragedy' is in some way in excess of 'the fatality.' The latter designates the mere loss of life, whilst the former denotes a greater loss not merely to the victim but also to family, friends and ultimately to society. Therefore the rhetorical force of the projection, to some potential tragic state, amplifies the import of the information being conveyed.

Examples:-

Accident of Unknown Severity ➔ Fatality
I hope something can be done to remedy this situation and thus prevent further accidents and the eventual, inevitable fatality. (Letter 14th August, 2007)

Minor Incident ➔ Fatality
Fears of a fatal accident on a fast stretch of road between St Austell and Newquay used regularly by tractors have grown following an accident earlier this month.

A car and a tractor's trailer collided on the A3058 near St Stephen blocking the road for an hour on Friday, October 10. (*Cornish Guardian* 22nd October, 2008)

Near Miss ➔ Fatality
As it stands at present, it is only a question of time before someone is killed while walking through the centre of town.

I have personally witnessed a number of near misses between members of the public and vehicles driving illegally into Boscawen Street. (Letter, *West Briton*, 13th November, 2008)

Minor Incident ➔ Major Incident
Although in the past there has been only minor accidents, looking forward, there is the potential for quite a serious accident. (Letter, 1st November, 2008)

Phenomenal Fear ➔ Accident
I just feel that this road is extremely dangerous and sooner or later an accident will occur. (Letter, 29th March, 2009)

Appendix E: Examples of Reification from the Local Print Media

The following excerpts are taken from the local print media corpus as outlined in Chapter 3. They were chosen in order to exemplify the manner in which road safety issues, and more specifically accident collisions, can be reified with respect to the reporting of events. Reification has been defined as 'the apprehension of the products of human activity as *if* they were something other than human products' (Berger and Luckmann, 1966: 106 – italics in original). In this way reified discourse provides an 'ontological fixedness' (Thomason, 1982: 88) that separates phenomena from how and why they were produced (Giddens, 1984).

The following texts illustrate a dislocation between the events and human actions, that is the accidents and incidents are reified and abstracted, so that they appear to be remote from human input and more importantly, distance the event from the attribution of blame to a human subject. Some incidents are reported in such an abstracted manner that it seems they may be merely reporting errant interactions between autonomous machines, and humans were not even present or that injuries sustained were some form of non-causal epiphenomena.

It is likely that with respect to media reporting this is a deliberate and conscious decision to present events as such so as not to attribute blame to potentially innocent parties and the ramifications that ensue from such false claims (moral, ethical and legal). Nevertheless, this propensity to reify can be seen to be ultimately harmful, as readers are encouraged to think such accidents are manifestations of road environments or vehicle defects, as opposed to road user error and the consequences of human agency.

I A woman injured in a car accident recently on the dangerous Bodmin Road in St Austell has joined a campaign to make the hotspot safer….'There is something wrong with the road, which is why there are so many accidents. There needs to be more safety warning signs on the road.' (*St Austell Voice* 16th July, 2008)

Ii A women escaped serious injury after her car flipped onto its roof in Nanpean on Friday morning.

The motorist driving a red Peugeot 106 sustained cuts and bruising in the accident which happened at Currian Lane shortly after 8am. (*St Austell Voice*, 14th May, 2008)

iii A three car accident in Par partially blocked the road during rush hour on Tuesday morning.

Three blue cars collided before 9am; a Renault Clio, Kia Cerato and a Vauxhall Corsa. (*Cornish Guardian*, 14th January, 2009)

iv A motorist was cut free after their vehicle left the road at Mevagissey in the early hours of Saturday. (*St Austell Voice*, 28th November, 2007)

v The emergency services were called to an accident involving a car and a lorry in Perranarworthal on Monday morning. The crash took place on Cove Hill just before 10am, and fire crews from Falmouth and Camborne helped ambulance paramedics to deal with a casualty and make the scene safe. (*West Briton*, 8th January, 2009)

vi At 2.47am on Thursday, November 29, a white Honda Prelude, registration J540 CAK was seen driving dangerously in the St Austell Area before being involved in an accident in Treverbyn Road, where the car was rolled onto its roof. (*St Austell Voice*, 5th December, 2007)

vii A motorist suffered scratches to his face after his car hit a wall in between Roche and Whitemoor on Saturday.

The white Merecedes van crashed at about 11.30am. A fire crew from St Dennis made the vehicle safe. (*St Austell Voice*, 28th March, 2009)

viii Last Wednesday morning police were called to an accident on the A30 at Bodmin, after a lorry driver was left trapped in his vehicle after it collided with two cars, again as result of ice. No one was seriously injured. (*Cornish Guardian*, 30th December, 2009)

ix A road in a clay country village had been branded a ‘serious accident waiting to happen’ by residents living there.

The corner at Trendale, Higher Trezaise, just outside Roche has been highlighted as a possible accident blackspot after several incidents involving cars losing control on the road. (*Cornish Guardian*, 25th March, 2009)

x A driver and passenger were lucky to escape serious injury when their car veered off the road and into a stream in Porthleven.

Firefighters and ambulance crews were called to Methleigh Bottom, near the recreation ground on Sunday, after a car ploughed through thick undergrowth before coming to a stop with two wheels in the river. (*West Briton*, 17th December, 2009)

xi A 25 year old man had to be cut from his car after it hit a wall in Par on New Year's Day. The man was taken to Royal Cornwall Hospital at Treliske with a broken eye socket, a serious cut to his face, a leg injury and cuts and bruises. (*Cornish Guardian*, 7th January, 2009)

xii Ice caused a car to skid off the Porthowan to Mount Hawke road and land on its roof in ditch on Friday night.

The driver was unhurt but the car was damaged in the incident which happened at about 9pm. (*West Briton*, 24th December, 2009)

xiii An accident prone bridge near Roche has been damaged yet again after a lorry smashed into the structure.

No one was injured in the crash at the Goss Moor Iron Bridge, despite a lorry losing its roof. (*St Austell Voice*, 31st January, 2007)

xiv A motorist received a shoulder injury after their car went up a hedge at Tregrehan Mills on Saturday Morning. The crash involving a silver Ford Mondeo estate happened near Linhay Close shortly after 8am. A fire crew from St Austell attended the crash scene. (*St Austell Voice*, 26th November, 2008)

xv Two off duty fireman rescued a woman from her sports car after it flipped onto its roof last Wednesday.

The Car overturned on a stretch of dual carriageway in Truro Road heading out of St Austell at about 8 am after colliding with an Audi. (*Cornish Guardian*, 12th November, 2008)

xvi Traffic was delayed when two people carriers collided on the roundabout outside the Royal Cornwall Hospital.

Police and firefighters had to close a section of the A390 after the crash between a Renault Espace and Volkswagen Tauren just after 7pm on Friday. (*West Briton*, 12th June, 2008)

xvii Two motorists received minor injuries after a car flipped onto its roof in St Dennis last Wednesday.

The blue Mini Cooper crashed outside St Dennis Fire Station in Robartes Road at about 8.40pm. (*St Austell Voice,* 11th March, 2009)

xvii A dangerous road claimed yet another victim when a car careered off the tarmac, through a fence and down an embankment.

In the latest crash, the 19 year old passenger of a blue Ford Fiesta suffered serious head injuries, near Trethowel.

The two men, both from St Austell, were travelling towards their home when their car suddenly careered off the road just north of the Trethowel exit.

The accident is the latest in a string of crashes leading to death or injury along the B3274 which has gained a reputation as a deadly stretch of road. (*Cornish Guardian*, 30th April, 2008)

xviii A road traffic collision on the A38 brought chaos to the area's roads on Tuesday as drivers experienced heavy delays.

A Blue Suzuki GSF 1200 was involved in an accident with a green Honda Civic at around 10.26am on the Northbound carriageway. (*Cornish Guardian*, 14th November, 2007)

xix A motorist from St Austell escaped with minor injuries after his vehicle ended up on its roof in Pentewan.

The Peugeot convertible crashed along the B3273 on Friday at about 9.15am. (*St Austell Voice,* 7th February, 2007)

xx Motorists received minor injuries after two cars collided in St Austell on Friday morning. (St Austell Voice, 30th September, 2009)

Although reified discourse is the dominant one, there are examples of non-reified discourse seen occasionally. The following three illustrations indicate some form of human agency that was implicated in the reported incident:-

i A 21 year old Truro woman flipped her car on to its roof near Carnon Downs on Monday. (*West Briton*, 2nd August, 2007)

ii A man was arrested by police on suspicion of drink-driving following a road crash in Penryn in the early hours of Sunday.

The driver, from the Truro/Penryn area, is thought to have spun his vehicle off the road and gone into a hedge on the A30 near the Treluswell roundabout, just before 1am. (*West Briton*, 21st December, 2009)

iii A motorcyclist was injured after he was forced to take action to avoid being hit by a vehicle overtaking him on a bend of an unclassified road between the A391 and A30 near Lanivet. (*Cornish Guardian*, 2nd December, 2009)

References for Appendix E.

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