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HOUSEHOLDER RESPONSES TO FLOOD RISK

THE CONSEQUENCES OF THE SEARCH FOR ONTOLOGICAL SECURITY

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A thesis submitted to Middlesex University in partial
fulfilment of the requirements for the degree of
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ABSTRACT

As the recent floods in the UK have shown, most householders in at-risk areas are not prepared for floods. In fact, even amongst those who know they are at risk, less than 10% have taken any practical steps to prepare for flooding.

This research attempts to explain that phenomenon by examining the effects of the rhetorical strategies that lay-people employ to help them cope with household flood risk. Looking at at-risk householders who have been flooded, as well as at those who have not, it combines close textual analysis of spoken interviews with secondary analysis of survey data to identify the rationalities that structure lay-people's talk and behaviour on the issue of flood risk.

The low take-up of mitigation measures, it concludes, can be explained by the fact that householders prioritise the reduction of anxiety over the reduction of the risk of physical harm. Anxiety is familiar, predictable and causes immediate harm; flooding is unfamiliar to most residents, is unpredictable and is represented as difficult to control. As a result, householders eschew mitigation measures if they are uncertain of their efficacy and if they feel they will make them more anxious. Instead, they choose to protect a representation of life that enables them to feel secure.

If state agencies are to influence householder responses to flood risk, it is suggested, they need to understand this rationale and to work with it. In order to increase the take-up of mitigation measures they should minimise the anxiety associated with taking mitigation measures – avoiding messages that provoke fear responses, making flood risk mitigation seem a normal part of home security and providing householders with individually tailored advice so that they feel less anxious about making a mistake when they choose which measures to implement.

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KEY TERMS AND CONCEPTS

Household flood risk mitigation	The reduction of the potential damage that would occur if the surrounding area were flooded to a depth higher than the floor level of the home
Household flood protection	The implementation of measures to prevent or slow the ingress of water into the home
Household flood resilience	The implementation of measures to limit the damage if water enters the home and to speed recovery after a flood
Social representations theory	A theory that asserts that people's representations of the world are a result of conformity with existing cultures and norms from within social worlds with which they are particularly familiar. According to the inventor of the theory, Serge Moscovici (1961), the purpose of these representations is to familiarise the unfamiliar. This occurs via a process of <i>anchoring</i> , in which concepts and images from familiar representations are absorbed into the new notion, and <i>adjustment</i> , in which the new, unfamiliar notions are changed to make them fit in better with existing representational structures.
Social identity theory	Social identity theory (Tajfel 1982; Turner 1982, 1985) looks at the role that social groups play in determining thoughts, feelings and behaviour. Starting from the idea that <i>categorisation</i> is essential for the creation of understanding and identity (Tajfel 1972), it argues that successful self-categorisation as a group member is a necessary part of functional success in the social world and is therefore an important goal for most individuals. Self-categorisation, furthermore, is said to prompt social comparisons with other members of the group, leading to pressure for conformity of thought, feeling and action.

Discourse analysis	<p>A highly contested term that is normally used as a synonym for <i>conversation analysis</i> or, in <i>critical discourse analysis</i>, to describe the elicitation of broad historical systems of meaning that are relatively stable.</p> <p>In this thesis, the term is used in a way that combines these two meanings, and is held to signify the close linguistic analysis of texts for elicitation of the broad systems of meaning that underpin people's talk about flooding and flood risk.</p>
Ontological security	The feeling of existential safety and meaningfulness gained from a belief in the continuity of one's own identity and existence; a state desired above all else by humans (Giddens 1991).
Practical consciousness	A phenomenologically real version of the world, which exists in a realm outside of normal, every-day conscious reflection and is expressed in habitual behaviours (Giddens 1991).
Logistic regression	A statistical regression technique suitable for analyses where the outcome variable is categorical.
Multicollinearity	The existence of significant correlations between predictor variables in a regression analysis. Multicollinearity violates one of the assumptions on which the theory of regression is based.
Inaction effect	A general tendency towards inaction, resulting from the fact that – unless there is a specific social obligation to act – action is more likely than inaction to attract criticism and blame. (See Zeelenberg <i>et al</i> 2002)
Self-handicapping	A theory in psychology (Jones and Berglas 1978), which posits that people who are concerned to protect their self-image will favour behaviours that externalize failure and internalize success.

1. Introduction and chapter outline

Over 1.5 million people in England and Wales have a greater than 1 in 75 annual chance of experiencing a flood (Evans *et al* 2004). This number is likely to grow. Indeed, precipitation has increased by between 10% and 40% across northern Europe over the last century and there is evidence of an increase in the intensity of daily winter precipitation in the UK (McCarthy *et al* 2001). This trend is set to continue. The Intergovernmental Panel on Climate Change considers it “very likely” that heavy precipitation events will become more frequent as global temperatures rise (IPCC 2007 p8), and an independent study commissioned by the UK Government predicts that by 2100 the probability of fluvial flooding will have increased by between 100% and 300% (Evans *et al* 2004).

Meanwhile, the UK Government has concluded that it is impractical to defend all those who are at risk of flooding. Investment in defences, it has said, needs to be focussed on those areas “where there is the greatest risk in terms of probability and consequence” (Defra 2005: p7). In areas where the ‘risk’ is less – it is implied – individuals and communities need to learn to live with the risk and should prepare for flooding that will inevitably occur one day. Hence, the Government’s vision in its *Making Space for Water* strategy (Defra 2005 p14) states that the public should not only be more aware of flood risk, but should also be “empowered to take suitable action” to mitigate that risk.

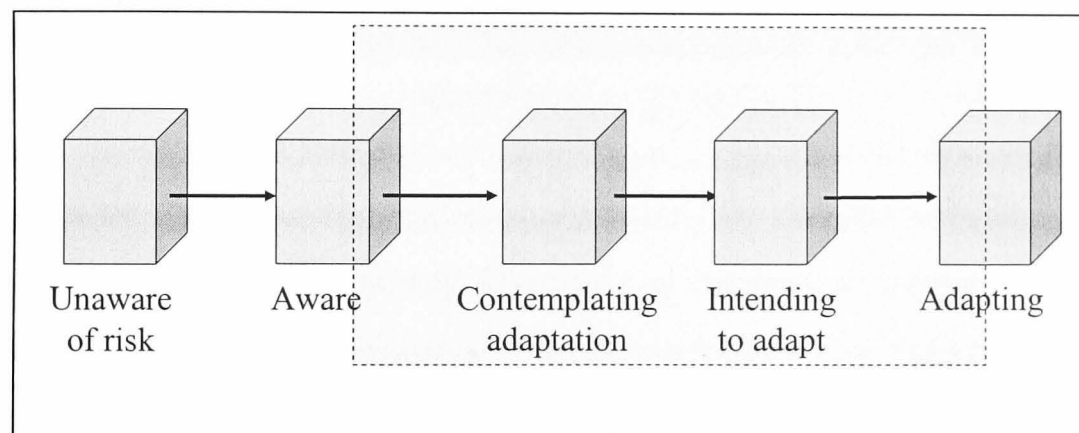
The need to implement this vision has gained in urgency because of the events of the summer of 2007. In the wettest May to July since records began over 240 years earlier (Met Office 2007), Britain suffered the most damaging inundation since 1947, with Hull, Sheffield, Gloucester and Tewkesbury amongst the areas badly hit. Thousands of householders were badly affected, ten people are reported to have died because of the floods and heavy media coverage of the events ensured that awareness of flood risk increased right across the UK.

What impact these events will have on the behaviour of at-risk householders, it is too early to tell. Early indications are, however, that they have failed to respond to the Government’s attempt to delegate responsibility for flood risk mitigation. Although 60%

of at-risk residents in England and Wales claim to be aware that they live in a flood risk area, only 6% of those with no experience of flooding have taken any action to prepare for floods and reduce possible damage¹, and this figure only rises to 39% for those who do have flood experience². Awareness of flood risk, it seems, is not sufficient provocation for mitigating behaviour. For some reason, most householders who know that their homes are at risk of flooding do little or nothing to prepare for it.

This research aims to understand why that is so by examining the effects on flood risk mitigation behaviour of the rhetorical coping strategies employed by lay-people who live in flood risk situations. The focus of the research is shown by the shaded area in Figure 1, which is a simplified, linear representation of the process that householders must go through before they can adapt to flood risk.

Figure 1 The focal area of the research, shown on a simplified risk-adaptation model



Adapted from Prochaska and DiClemente (1994) and Weinstein and Sandman (1992)

This thesis is not concerned with the people in the first box in Figure 1 – the 40% of at-risk residents in England and Wales who claim not to be aware of the risk. Neither is it concerned with how the awareness levels of people in this group can be improved. The area of interest lies further along the adaptation process. This thesis asks what it is that prompts people to move from a state of awareness to one of the three final boxes in Figure 1, where they either contemplate adaptation, develop an intention to adapt or implement adaptations to flood risk. What, it asks, are the barriers to these transitions, and what are the factors that promote movement from awareness to active adaptation?

¹ Figures on awareness levels and at-risk response levels are from the author's analysis of data collected for the Environment Agency in 2004 (BMRB 2004) ($N = 938$ and $N = 489$).

CHAPTER 1: INTRODUCTION

The thesis begins with the assumption that people construct for themselves understandings of flood risk and flood risk responses; that rather than simply absorb, unchanged, information that they are given about flood risk, they assimilate it into pre-existing social representations of flood risk and flood risk responses. This research investigates the nature of those representations, as well as how they are used in speech about flood risk and their functionality in householders' attempts to cope with that risk. An understanding of these representations and discourses, it is assumed, will help explain the lack of pre-emptive household-level responses to flood risk, and will inform the wider discussion on human adaptation to environmental hazards.

The main body of the thesis begins, in **Chapter 2**, with a rehearsal of the background to this study. The chapter includes a brief description of the physical causes of floods and of their impact – both at the societal level and on individuals. It then goes on to consider the development of public policy response to these impacts and asks why government is increasingly trying to engage individual householders in flood risk management.

This is followed, in **Chapter 3**, by a discussion of the theorisation of risk behaviour and the position within that theory that is taken here. The chapter describes how individualised theories of risk have dominated discussion in the field of *natural hazards*³ just as they have in other risk areas. Social models of risk response, it argues, have been somewhat neglected, while explanations for 'maladaptive' behaviour have been sought and found at the level of individual psychology. Whilst accepting the importance of the individual level of explanation, the chapter argues that behaviour and behavioural motivation are dependent on the representational context in which the individual operates – in other words, they depend on representations that are themselves the result of the assimilation of images and ideas taken from the wider world. Social representations theory (Moscovici 1961) and social identity theory (Tajfel and Turner 1986) are proposed as conceptual lenses for viewing these representations, while a discourse analysis approach is suggested as the analytical tool for discovering which representations are used, and how and when they are used.

² The 39% figure is the result of analysis by the author of survey data collected by MORI in 2005. This dataset is described in Chapter 4 and known in this thesis as the 'FHRC dataset' ($N = 276$).

³ I.e. earthquakes, floods, naturally occurring radon etc.

CHAPTER 1: INTRODUCTION

Chapter 4 goes on to explain and justify the methods used for the collection and analysis of data for this thesis. It describes the epistemological and practical reasons for the predominantly qualitative approach that is used, and details how data sources were selected, how fieldwork was conducted and how the data was analysed. The later chapters also include secondary analyses of two large sets of quantitative data collected for previous research. The findings of these analyses are used to challenge, support or complement the findings of the qualitative analysis. These surveys, too, are presented in Chapter 4, along with some reflection on the reliability and validity of the data collection methods and a description of the statistical methods used in this thesis for their analysis.

Chapters 5 to 9 present, in some detail, the analysis of the data. In these chapters, each major conclusion is illustrated with a detailed analysis of at least one extended portion of textual data, and – wherever appropriate – by analysis of data from one of the two surveys. In this manner, **Chapter 5** describes three social representations that were found to be key to respondents' construction of flood risk response – the representations of 'nature', 'society' and 'home'. Chapters 6 to 9 then look at the discourses that underpin those representations, with **Chapter 6** concentrating on discourses on the causes of flooding and **Chapters 7 to 9** focussing on discourses around the subject of responding to flood risk.

Chapter 10 draws together the findings of the previous five chapters, giving them a broader theoretical framing from established theories in sociology and psychology and focussing on the theme that unites these chapters – the theme of anxiety management and ontological security. The final chapter, **Chapter 11**, summarises the findings of the thesis and offers the reader an initial exploration of the implications of those findings for public policy.

2. Policy context

2.1 Introduction

Flooding costs the UK about £1.4 billion every year (DTI 2004) and damages the physical and mental health of householders who are affected by it (WHO 2002; Tunstall *et al* 2006; Tapsell *et al* 1999; Tapsell *et al* 2003; Tapsell and Tunstall 2001). In the light of the flooding of approximately 27,000 UK homes in June and July 2007, government funding for flood risk management is set to rise from £500m per annum to £800m per annum (Richardson 2007) and the topic seems likely to remain a policy priority. As global warming begins to look like a certainty, natural hazards such as flooding are likely to become increasingly common and the need for the UK to adapt will become critical. Flood risk management is therefore a topic of growing public policy importance and a better understanding of public responses to this risk is urgently needed.

The UK Government has recognised this need. The department responsible for flood risk policy – the Department for Environment, Food and Rural Affairs (Defra) – recently commissioned research into the role of social science research in the formulation of flood risk management policy⁴ and is taking steps to try to ensure that the social scientific perspective is integrated into the analysis and formulation of its flood risk management policies⁵.

This thesis tackles one key part of the policy agenda in that area – the question of why most people living in at-risk areas do not take any practical steps to mitigate the risk, and how they can better be encouraged to do so. An overview of previous academic work on this and related subjects is given in Chapter 3. This chapter, however, gives a brief introduction to the type of flooding that is experienced in the UK, to the harm that these floods bring to individuals and society, and to the various ways in which the state is trying

⁴ The project is known as ‘Supporting the development of a strategy for social Sciences for flood and coastal erosion risk management R&D’.

⁵ At the time of writing, Defra was seeking to recruit a “placement fellow” from academia in order to “bring academic insight into providing guidance to policymakers on aspects of social science in relation to flood and coastal erosion risk management.” (Defra 2007)

to reduce the scale of this harm. It also describes the practical measures that individual householders can take to protect themselves against flooding.

2.2 The causes and consequences of floods in the UK

Floods in the UK have numerous natural causes. Fluvial flooding occurs when continuous and prolonged precipitation saturates the soil, leading to rising water tables and overland flows; when sudden changes in air temperature lead to rapid snowmelt, or when short, intense periods of precipitation overload the pathways that normally carry rainwater away. Sea surges and tidal floods, meanwhile, are caused by a combination of high tides, low atmospheric pressure and strong offshore winds, which force unusually high levels of water towards coasts and estuaries.

There is strong evidence that some of these types of flood are becoming more common. For example, there is now general agreement amongst meteorologists that global warming is a reality. Temperatures in Europe as a whole increased over the last century by 0.8°C (McCarthy *et al* 2001) and by 1°C in central England (Defra 2004). This trend is expected to continue, leading to rising sea levels and changing patterns of precipitation. An independent study commissioned by the UK Government predicts an increase of between four and ten times in the probability of coastal flooding by 2100 and an increase of between two and four times in the probability of fluvial flooding (Evans *et al* 2004). Precipitation is already estimated to have increased by between 10% and 40% across northern Europe over the last century and there is evidence of an increase in the intensity of daily winter precipitation in the UK (McCarthy *et al* 2001).

Human activity too has contributed to increases in the frequency of floods. Fluvial flow rates during floods peak earlier and at a higher level where urbanisation has reduced surface absorption (Smith and Ward 1998) and floods can be caused or exacerbated by the design of urban drainage systems or by modifications to fluvial geomorphology such as river straightening and culverting.

The development of floodplains for residential purposes and the urbanisation of river catchments have not only changed the pattern of flooding, they have also transformed it

into a major natural hazard that increasingly threatens life and property. Changes in demography, growing demand for housing and policies favouring the development of brown-field sites are exacerbating that effect by maintaining the pressure for more homes to be built on at-risk land. Developments such as the 250,000 new homes proposed for the Thames estuary floodplain (Environment Agency 2003) suggest that the rate of residential encroachment may not be slowing down and that, in the future, an increasing number of people and assets may be at risk of household flooding.

Perhaps the most widely recognised aspect of this risk is its financial dimension. Already today, floods in the UK cost an average of £1.4 billion every year, a figure that is predicted to increase by between two and thirteen times by 2080 (DTI 2004). Some estimates put the total cost of the 2007 floods as high as £6 billion (Observer Newspaper 2007). Concerns about these figures remain the primary criteria of the UK Government for determining priorities on flood defence expenditure.

Until recently, the effects of flooding on human health have been given somewhat less emphasis in the UK than the financial costs, perhaps because deaths and serious injury have been relatively rare. However, residents themselves consider non-monetary impacts more important than monetary ones (Parker *et al* 1983, Green 1988) and recent research has given support to this prioritisation by revealing the extent to which household flooding damages the mental and physical health of residents.

As long ago as 1970 there was evidence of floods causing increases in usage of health services (Bennet 1970). Today, flooding is particularly associated with gastro-intestinal problems, respiratory illness and skin irritations (Tapsell *et al* 1999; WHO 2002; Tapsell *et al* 2002, and RPA *et al* 2003), with about half of all flood victims reporting that such adverse physical effects occur immediately after a flood and a third reporting that they occur in the post-flood weeks and months (RPA *et al* 2003).

As well as the direct physiological impacts of flooding, there are also psychological effects. According to Lazarus (1966), psychological stress results from an imbalance between the perceived demands on a person and their own evaluation of their capacity to cope with those demands. The demands on flooded householders are great. Not only do

they have to deal with the fear and disruption of the flood event itself, but also with the practical disruption that follows and with emotional consequences, such as anxiety about exposure to water-borne contaminants and viruses (Green 1988, Ohl and Tapsell 2000) and guilt that they inadequately protected their homes (Tapsell and Tunstall 2001).

According to Lazarus (1966), the three factors that enable people to cope with stressful situations are perceived self-efficacy, the availability of effective support networks and financial resources. All three of these, however, are themselves threatened by the flood experience. Coping capacity is undermined by increased strain on family relationships, the loss of a sense of the home as a safe refuge and the dispersal of supportive community networks (see Tapsell and Tunstall 2001). Perceived self-efficacy is undermined by the loss of identity resulting from evacuation and the destruction of personal items (see Ohl and Tapsell 2000, Tapsell *et al* 1999) and by disruption to the normal routine (Lutgendorf *et al* 1995). Financial resources are stretched by the need to pay for the replacement of damaged goods until insurance payments come through⁶. The resulting imbalance between demand and coping capacity is thought to cause a number of mental health problems, including chronic fatigue syndrome, post traumatic stress disorder and adjustment dysfunction⁷ (Tapsell *et al* 2003, Tapsell and Tunstall 2001, RPA *et al* 2003).

2.3 Strategies for flood risk mitigation

For a large part of the twentieth century, the main strategy used to mitigate the threat to life, health and property was *flood defence* – the use of large-scale engineering schemes such as floodwalls, barriers and flood diversion channels to reduce the probability of floodwaters making incursions into populated areas.

At around the turn of the century, however, a number of major flood events were instrumental in shifting the government's focus away from engineered solutions⁸. In 1998, the English Midlands was hit by a number of major inundations that caused widespread

⁶ Floods cause an average of about £30,000 of damage in each effected household (RPA *et al* 2003).

⁷ Which is described as being evidenced by flashbacks, sleep disorders, depression and a reluctance to recall the disaster event.

⁸ As Johnson *et al* (2004) point out, shifts in national flood risk management policy often seem to be the result of major flood events.

material damage and disruption. Official reviews of the floods (Environment Agency 1998, Environment Agency 2001, NAO 2001) not only noted that defences had been inadequate to the scale of the flooding, but also admitted that it was not practicable to build defences that were adequate for all such eventualities. This event, together with renewed flooding in 2000 and the realisation that weather patterns might be changing in a systematic way, led to an acceptance that not all communities could be protected from floods. In future, it was now said, flood defences should be expected to *reduce* the flooding of residential areas, not to *eliminate* it (NAO 2001 p6). The government now admitted that, no matter how good the flood defences, there would always be a residual possibility of some properties being flooded (Defra 2004, 2005).

This realisation is in harmony with a general trend in government thinking. It is now considered in a number of policy areas to be more effective, morally preferable and politically advantageous to encourage individuals to act in their own self-protection rather than to rely on the state (Halpern *et al* 2004). The state seems to be partially withdrawing from its protector role and is increasingly encouraging members of the public to share responsibility for their own protection.

In flood risk management, this ideological shift is expressed in a desire to “empower” the public to participate in flood risk management (Defra 2005 p14). This has resulted in a ten-year awareness-raising programme, a revamping of the system for issuing flood-warnings and a series of initiatives to encourage the public to take proactive steps in preparation for possible floods.

An analysis by the author of data collected in two recent surveys suggests that the early results of these efforts were not encouraging. By 2004 – three years after the initiative began – although 60% of at-risk residents of England and Wales claimed to be aware that they lived in a flood risk area, only 17% said they were aware of how to protect their homes against flooding⁹. In 2005, only 6% of those with no experience of flooding – and 39% of those who did have flood experience – had taken any action to mitigate the flood

⁹ Data source: BMRB Social Research (2004). *N* = 938.

risk¹⁰. In fact, take-up levels were so low that some members of the nascent flood protection industry claimed that the industry was struggling to achieve economic viability (Whitehead 2004). The Government therefore launched a feasibility study into ways of improving take-up rates (Defra 2005).

A range of options is available for individuals who wish to mitigate the risk of household flooding. These include measures that can be taken during a flood or once a warning has been issued, and longer-term measures that need to be put in place beforehand. This study is interested in the take-up of the latter category of measures – i.e. responses to flood risk rather than responses to imminent or actual flooding. Such longer-term measures can be subdivided into two categories: *protection measures*, which prevent, minimise or slow ingress of water into the home, and *resilience measures*, which reduce the damage if water does enter the home.

Household level protection measures

Floodwater can enter homes by numerous pathways (Figure 2): through the gaps and cracks around doors and windows; through spaces left around service entry points (telephone lines, sewage pipes, vents etc.); through air-bricks; directly through the walls; by ground seepage through the floor, and via pipes connected to the sewage system (CIRIA and Environment Agency 2003).

Although it is not normally possible to keep water out of a home once it has reached its perimeter, protection measures can slow its ingress and provide householders with more time for the removal to safety of people and possessions. Figure 3 shows some of these measures. These include:

- the installation of removable barriers for walls, doors, windows and air-vents
- the installation of non-return valves to prevent backflow from overloaded sewers
- the replacement of suspended timber and concrete floors with solid concrete floors
- the re-pointing and chemical waterproofing of brickwork.

¹⁰ Data source: RPA et al (2005). $N = 276$.

Figure 2 Methods of floodwater ingress into homes

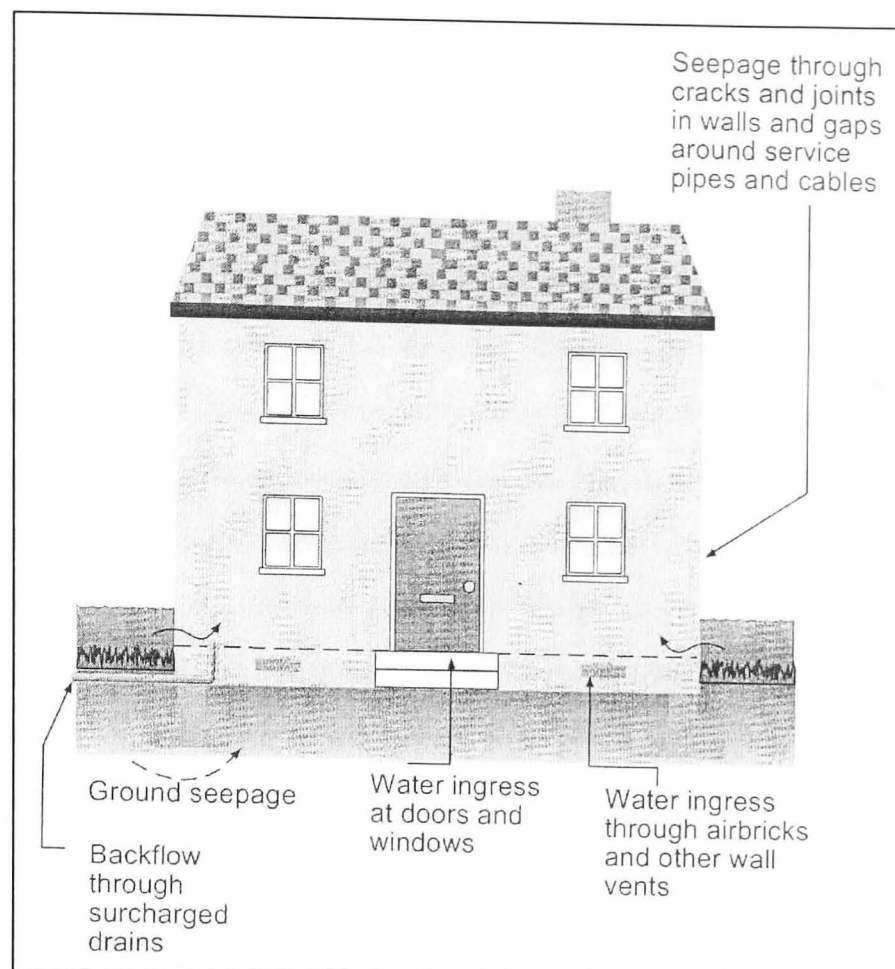


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Even if all of these measures have been taken, seepage is still likely, and it is sometimes recommended that a pump is purchased to extrude water that does gain ingress.

It costs between £2,000 and £4,000 to provide floodgates, window boards and covers for airbricks and service ducts (Bowker 2007). Additional measures can add to these costs. Anti-backflow valves retail at about £500 and pumps for at least £250 (National Flood Forum 2003). Professional advice on these matters from a chartered surveyor or structural engineer costs upwards of £300 per day, with experts in flood protection charging about £600 per day (*ibid*).

The effectiveness of sandbags and other removable barriers depends on householders receiving adequate warning of an impending flood so that they can put them in place in time. In England and Wales, those who wish to receive warnings of floods or of a raised risk of flooding can register with the Environment Agency's *Floodline Warnings Direct*

flood warning service, which informs households when there is a flood alert for their area and updates them as alert levels rise or fall. In some areas, local flood-wardens keep in touch with the Environment Agency and pass information on risk levels to neighbours.

Figure 3 Protection measures for mitigating flood risk

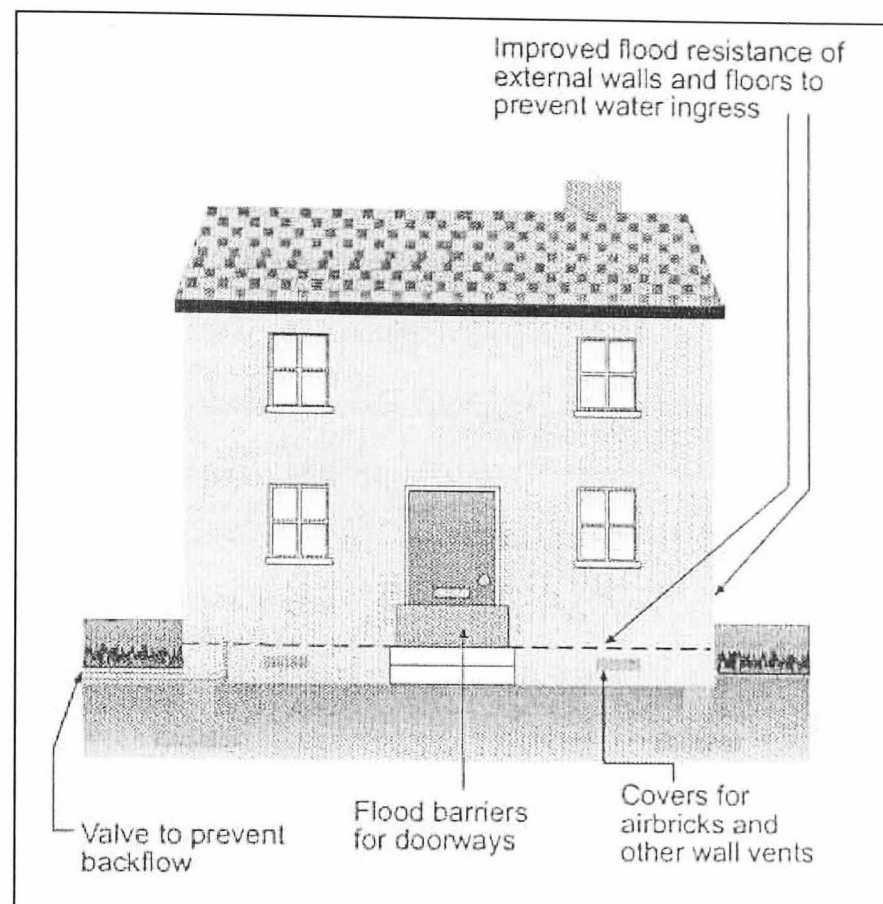


Image reproduced from DTLR (2002). Crown copyright.

In spite of the promotion of these measures by the Environment Agency, the number of flood wardens in England and Wales remains low and registrations with the flood warning system are lower than had been expected. Anecdotal evidence suggests that households sometimes withdraw from the warning scheme because of the stress caused by false alarms. Furthermore, warnings are more effective in some areas than in others. Where the catchment feeding a floodplain is large, the lead-time between the precipitation of an event and the arrival of a flood is relatively long and warnings can be given days or weeks before a flood occurs. Tidal flooding and coastal surges too can normally be predicted with some accuracy. In contrast, warning times for flooding from ‘flashy’ rivers¹¹ and

¹¹ That is, rivers whose levels tend to rise and fall quickly.

from surface water are short, making it unlikely that absent householders will have sufficient time to travel home and put in place demountable barriers.

Household level resilience measures

As a result of these problems, and because flood protection can normally only delay flooding and rarely prevents it, the National Flood Forum – an organisation representing flood victims – advises at-risk householders to prioritise resilience measures over protection measures (Holland 2004).

Figure 4 Resilience measures for flood risk mitigation

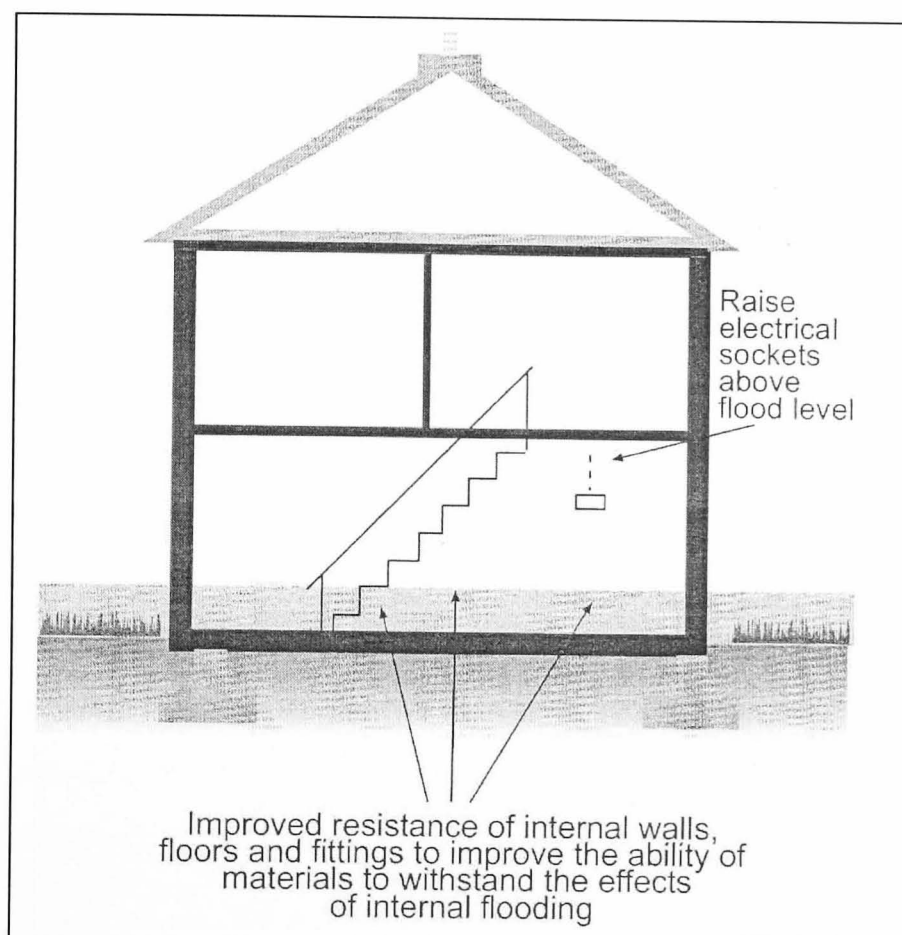


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Resilience measures decrease the vulnerability to damage of the inside of homes. They also facilitate faster recovery from floods. Measures such as the use of water-resistant building materials, the raising of electrical wiring, the use of flood resistant kitchen units and the purchase of carpets that can be easily removed to safety would normally only be undertaken as part of a planned refurbishment. Others – for example, the elevation

(upstairs or onto shelves) of financially or emotionally valuable items such as electronic appliances, photos and music collections – can more easily be introduced at any time. See Figure 4.

2.4 Conclusion

Floods, it has been shown in this chapter, are not only costly in financial terms but also in terms of the damage they can cause to mental and physical health. In spite of this, attempts by the state to encourage householders to mitigate the risk of flooding seem, largely, to have failed. Although publicity about mitigation measures has been made widely available, and although awareness of the risk has increased, the proportion of floodplain residents who take such measures is still low.

This thesis sets out to explain that phenomenon. In doing so, it will argue that analysts place too much emphasis on the consequences of flooding; that these are not always the most important motivator of flood risk response, and that anxiety-management is often a more important driver of behaviour than the desire to mitigate the risk itself. It will be asserted that it is this prioritisation that leads some householders to reject the idea of taking practical steps to reduce the damage and disruption that a flood would cause.

The next chapter sets the scene for this argument by reviewing the evidence on risk response in general. Criticising the dominant paradigms in risk research, it introduces some theoretical perspectives from social psychology that will be used to demonstrate how people's responses to flood risk can be self-protective without involving practical risk mitigation measures.

3. The terrain of risk theory

The study of human responses to flood risk has become somewhat separated from the study of risk more generally. Historically, it has often been argued that the risk of naturally occurring phenomena such as floods, earthquakes, forest fires and naturally occurring radon should be dealt with separately from other types of risk (Brun 1992, Johnson and Tversky 1983). As a result, the study of *natural hazards* remained, in large part, the preserve of behavioural geographers (Fordham 1992) and became somewhat isolated from other relevant disciplines such as social psychology and sociology.

To redress the theoretical imbalance brought about by this separation, this study adopts a multidisciplinary perspective. Critiquing the psychological cognitivism that continues to dominate natural hazards research, it draws on theories from sociology and social psychology as well as from geography. Breaking with the emphasis on self-contained individualism found in much flood risk research, this chapter argues that cognition and behaviour are inextricably linked to their social context – simultaneously defining it and being defined by it – and that this context is therefore a central factor in determining risk responses. It is suggested that householders inhabit a common-sense world in which socially constructed metaphors are the organising agents for individual thought and action, and that social identity and group belonging are key influences on the selection and use of these metaphors.

In other words, whilst acknowledging the validity of the cognitive approach, it argues that other levels of analysis¹² have been neglected in flood risk research and that this has caused some predictive aspects of householder response to be overlooked. This study is firmly located within the phenomenological tradition, which sees everyday lay understandings as the foundation of social life. The socially situated nature of cognition, it argues, has been under-appreciated in the study of public responses to flood risk. By addressing that lack, the study will explain why householders behave in ways that might otherwise seem irrational.

¹² Doise (1980; 1986) describes four different levels of analysis: the intra-personal, which looks at the mechanisms that individuals use to organise their experiences; the inter-personal, which looks at specific, situated interactions between people; the positional, which takes into account the social positions that people

The chapter begins with a discussion and critique of the two main paradigms in risk research: cognitivism and structuralism. Seeking to establish for this study a common ground between these two approaches, it then calls on the insights of two theories from social psychology that articulate individual motivation with social forces. The first of these, social representations theory (Moscovici 1961, 1984, 2001; Purkhardt 1993; Wagner 1994; Wagner and Hayes 2005), looks at how scientific knowledge is assimilated into commonsense, everyday understandings of the mental and physical world. The second, social identity theory (Tajfel and Turner 1986), looks at questions of self-categorisation and group belonging.

3.1 The cognitivist approach

Historically, the main social science paradigm in risk research generally and in the sub-discipline of ‘natural hazards’ has been cognitivism (Watts 1983; Fordham 1992; Lupton 1999). Cognitivism, as the term suggests, focuses on the processes of mental cognition and strives to understand the processes by which data about the world is assimilated and transformed by individuals. Its tacit underlying assumption is the validity of the *stimulus-organism-response* model. Within this model, the nature of the risk itself is taken as given and it is individuals’ cognitive and behavioural responses that are of interest – “the hazard is taken as the independent variable and people’s response to it as dependent” (Douglas 1985: 25). Furthermore, the nature of this response is assumed to be determined by rational calculations of cost and benefit. People are considered to be *utility maximisers* (see for example Becker 1974, Ajzen and Fishbein 1980, Sutton 1982).

One consequence of the reliance on this model has been a tendency to concentrate research on how the stimulus is perceived by a given individual and how this relates to his or her prior knowledge. Two aspects of perception have generally been the foci – the completeness of the knowledge that people have available to them and the way in which they analyse this data. Although the former focus is still much evident in the literature¹³, Simon’s (1957) highlighting of the “constraints” on human computational capacity and

bring to a situation; and the ideological level that considers systems of ideology (see Wagner and Hayes 2005).

¹³ For example, see Bostrom *et al* (1992); Atman *et al* (1994) and Wagner 2007. See also Institute of Civil Engineers (2001) and Defra (2005) for examples of how policy documents often assume that behaviour is driven by information.

the failure of public information campaigns to have a significant impact (Kates 1962; Sims and Bauman 1983) have led to an increased focus on the manner in which individuals process information about risk.

The question of how people analyse risk information, what they analyse and when they do so remains, therefore, the dominant issue in cognitive risk research. For example, the study of *heuristics* looks at the every-day mental short-cuts people employ when they are thinking about risk (e.g. Kahneman and Tversky 1972 and 1973) and research into the *dimensionality* of risk investigates the underlying features of a risk that determine its perceived seriousness (see Slovic 2000). Findings from both these schools can usefully be applied to the topic of flood risk. The importance of flood experience for flood risk response (see Penning-Rowsell 1976; Sattler *et al* 2000; Lindell and Perry 2000; Grothmann and Reusswig 2006), for example, can be explained by the heuristic known as *vividness bias*¹⁴; the *recency effect* helps explain why, as the experience of an event fades into the past, its influence on behaviour diminishes (see Sattler *et al* 2000), and *representativeness bias*¹⁵ explains why (as Nisbett and Ross 1980 demonstrate) people find it difficult to relate to probabilistic descriptions of event frequencies. Similarly, the identification of the “dreadfulness” dimension as one of the main factors influencing public perceptions provides a useful insight into differences between the perception of flood risk and other household risks¹⁶.

Although such insights into risk perception are immensely valuable, they can only offer a partial explanation of risk behaviour. This is because cognitivism focuses on what Doise (1980; 1986) calls the *intra-personal* and *inter-personal* levels of analysis¹² and fails to take sufficient account of the social positions that people bring to a situation (the *positional* level of analysis) and of the role of ideological systems (the *ideological* level of analysis)¹⁷.

¹⁴ the tendency to emphasise evidence that is concrete or emotionally interesting (Nisbett and Ross 1980)

¹⁵ the assumption that recent patterns of events are representative and can be used to predict the future (Nisbett and Ross 1980)

¹⁶ See the later chapters in this thesis.

3.2 The structuralist approach

In structuralist approaches, by contrast, underlying cultural structures, hierarchies and categories play a central role in the search for an understanding of risk response and risk perception (Lupton 1999).

In the field of risk, there are two main structuralist schools of thought: *cultural theory* (Douglas 1985, 1992; Douglas and Wildavsky 1982; Thompson *et al* 1990) and the so-called *risk society* thesis (Giddens 1990, 1991, 1994; Beck 1986/1992, 1997, 2006). Due to the continuing tendency to make a categorical distinction between ‘natural hazards’ and ‘technological risks’ (see above), these have had little impact on studies of flood risk. Their relevance to the topic of this thesis is discussed below.

Cultural Theory

According to cultural theory, people do not respond to all the risks around them – they actively choose which risks they will take into account in their behavioural decisions. Furthermore, they do so as collective social entities rather than as individuals. As Mary Douglas puts it:

Whatever objective dangers may exist in the world, social organisations would emphasise those that reinforced the moral, political, or religious order that holds the group together. (1966: 87)

This view contrasts sharply with that of the cognitive paradigm, which – according to Rayner (1992) – still has a tendency to represent people as passive, isolated recipients of independent stimuli.

A second important contribution of the theory is the suggestion of variation in the extent to which people are group oriented. Some of the early formulations of culture theory (e.g. Thomson *et al* 1990) took an essentialist approach to this question, attributing differences to personality and assuming that people would at all times and in all circumstances display the same degree of conformity. However, Rayner (1992) and Douglas (1992) have sought to assert the established social psychological principle that conformity is itself context

¹⁷ Some cognitive psychologists (e.g. Smith and Semin 2005) have recently begun to address this issue by

specific and that people change their group-self orientation according to the circumstances¹⁸.

In contrast with cognitive theory, cultural theory shifts the emphasis away from the individual and toward the group. Furthermore, it suggests that the preservation of group identity may sometimes be a more important determining factor in risk response than considerations of individual material loss or damage to individual health. We return to this theme later in the chapter, when we introduce *social identity theory*.

The Risk Society thesis

The second of the structuralist approaches, the *risk society thesis*, highlights the changes wrought on Western populations' feelings of security by the loss of religious or magical certainty and by the increasing division of labour. In so doing, it not only contributes a much-needed temporal dimension to discussions of natural hazards and flood risk but also – and more importantly for this thesis – emphasises the importance of feelings of security.

Modern society, according to this thesis, is more reflexive than its predecessors were. Its identities and beliefs, instead of being fixed in the aspic of custom and tradition, are ongoing self-reflexive creations. This, it is argued, makes contemporary individuals more vulnerable to the effects of risk. The certainty once provided by tradition, religion and magic has been replaced, in the modern world, by a less secure faith in science. It is not that life has become more risky, or (as Beck (1986/1992) argues) that the risks have become less visible¹⁹. What is new in the contemporary Western world is not the extent or visibility of the risks but the way they are socially represented. Whereas in the past, floods, disease etc. were seen to be controlled by God or by magic, they are now increasingly represented as the result of human action.

looking carefully at social context, but it is as yet unclear what this will mean for risk research.

¹⁸ Douglas (1992), for example, claims that orientation is more towards the collective if it is the group rather than the individual that is perceived to be under threat and if the survival of that group is seen as important to the individual's integral purposes.

¹⁹ Typhus and the 'black death' were, after all, equally as invisible as contemporary threats such as SARS or the perceived dangers of genetic modification; and floods and flood risk are equally as visible now as they were in the past – and perhaps more so, due to all the television coverage they receive.

Furthermore, in contrast with the assertions of the key Enlightenment thinkers, the increased knowledge provided by science has, it is argued, meant more uncertainty rather than less (Giddens 1994). As long as people were able to have faith in science, it acted as an effective substitute for belief in the supernatural; but science has proved less phenomenologically omnipotent or omniscient than the gods of past ages, and trust in science has been eroded by post-modern doubt. The result, the proponents of the risk society thesis contest, has been the loss of a teleological view of life and of the world. All certainty has gone; neither God, magic nor science can any longer be represented as having control over the forces that people encounter in their lives. Global warming is a prime modern day example of this. Although blame for climate change is commonly attributed to human action, solutions are – more often than not – represented as out of reach and discourses of the supernatural are, in the main, entirely absent from the debate.

According to Giddens, this loss of a teleological world-view threatens to undermine people's sense of what he calls *ontological security* (Giddens 1990, 1991) – the emotional stability they gain from avoiding doubts about the continuity of their own identity and existence. Freedom from such doubts, Giddens argues, is the state that all humans desire above all else and the state that they strive for from birth. To compensate for the loss of religion and magic, people fabricate for themselves a faith in some kind of providence. Giddens call this *fortuna*. Compared to teleological belief that is based on religion, *fortuna* is said to be less codified and less explicit. Giddens describes it as a 'practical consciousness' – a phenomenologically real version of the world that exists in a realm outside of normal, every-day conscious reflection. He argues that the enquiring scientific rationality of the modern age continually undermines *fortuna*, which only survives as a "half-hearted superstition rather than a truly effective psychological support" (1991:30).

It is this weakening of the teleological perspective that threatens to make today's risks more emotionally devastating than those of the past. People's fates are increasingly represented as being in their own hands and Giddens argues that this makes them feel less secure rather than more secure. Where once, destructive natural events could be seen as part of God's plan and as evidence of His omnipotence, they now seem to happen in spite of science, to demonstrate the weakness of the scientific paradigm and to undermine ontological security.

3.3 The importance of emotional needs

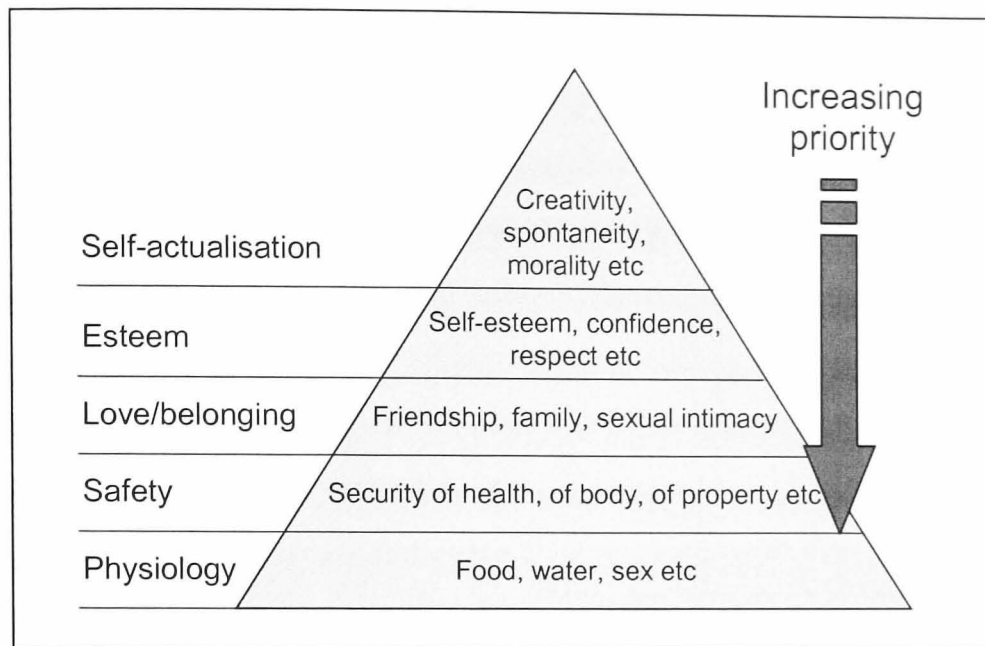
According to Giddens, people respond to this loss of a teleological worldview by creating representations of the world that bracket out all existential threats to their sense of security. On the other side of this “protective cocoon” of representations “chaos lurks” (1991:36-40), so the cocoon is defended against alternative representations and discourses that seem to threaten it (1991: 39-40).

Beck and Giddens do not explore the implications of this cocooning on the practical aspects of risk response. These implications, however, are the topic of this thesis, in which it is suggested that the defence of the protective ‘cocoon’ is one reason for the low take-up of flood risk mitigation measures. In their flood risk responses, people, it is argued, will often prioritise emotional security needs over the needs of physical or material security.

This argument would seem to contradict the usual assumptions about prioritisations of need. Maslow’s well-known hierarchy, for example (Figure 5), insists that food, water, sex, health and security of property will always take precedence over emotional needs (such as the need for love, esteem, a sense of spontaneity etc.)

If Maslow’s hierarchy were applied to situations of flood risk, one would expect householders to prioritise the protection of their physical health and possessions over all other considerations. In practice, however, only a relatively small percentage of people who are aware of the risk take any physical preparatory measures. It will be argued in this thesis that rather than protecting themselves and their homes, householders often delegitimise the very idea of protection; that rather than prioritising physical and material safety, they shore up the notion that they are safe; and that rather than looking after their physiological health, they protect their sense of identity. The assertion will be made that when it comes to flood risk, the prioritisation of need is somewhat different to that suggested by Maslow and that ontological security (the need for belonging, esteem and self-actualisation) is given priority over more physical needs. See Figure 6.

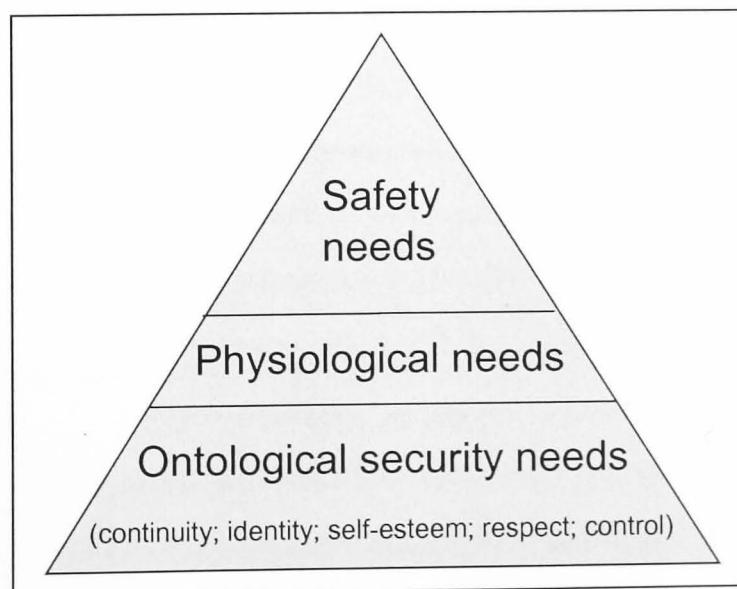
Figure 5 Maslow's hierarchy of needs (shown as a pyramid, with the prioritized needs at the bottom)



(Based on Maslow 1943)

This inversion of Maslow's hierarchy prompts two questions: in what circumstances do people prioritise emotional needs over physical needs, and why do they do so? These questions are applied to the issue of flood risk in Chapter 10, but in the paragraphs below, they are addressed from a more general perspective.

Figure 6 A proposed hierarchy of needs for long-term threats represented as less controllable

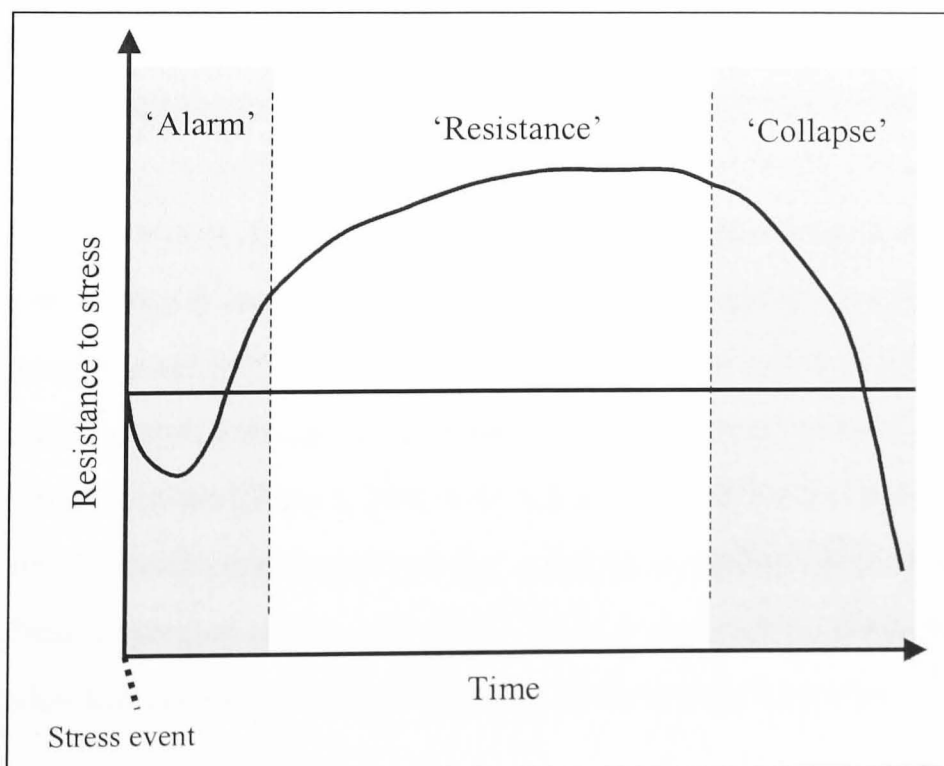


3.4 Circumstances in which ontological security is prioritised over physical security

The question of the circumstances in which emotional needs are prioritised over physical needs is answered in the literature in two ways. One answer is that Maslow's hierarchy only applies to immediate threats and not to longer-term phenomena such as flood risk. A second is that the emotional focus implied by the inversion of Maslow's hierarchy results when there is a perceived absence of control over the situation. These two possibilities are discussed in the following paragraphs.

According to Selye (1956; cited in Cox 1978), anxiety-provoking circumstances prompt three response stages (Figure 7). The first two of these are an initial 'alarm' stage, in which response capacity initially falls and then rises above its starting point, and a 'resistance' stage, during which coping capacities are at their maximum. If the threat is long-term, however, people are likely to enter into a third phase, which Selye calls 'collapse'. In this third stage, response capacities fall away rapidly to below their initial level and, according to Smith *et al* (2003), the long-term presence of anxiety can cause learned helplessness and cognitive impairment.

Figure 7 Selye's 'General Adaptation Syndrome'



(After Selye (1956 cited in Cox 1978))

Selye's distinction between long-term and short-term anxiety is not always made clear in the literature, which – according to Averill (1987) – often conflates the different response stages. We see this in the work of Giddens, who fails to distinguish adequately between the short-term anxiety caused by an actual disruption of everyday routines and the long-term anxiety that is provoked by on-going threats to that routine, and who on one occasion suggests that it is the experience of events that destroys ontological security (1990), but elsewhere argues that it is the anticipation of those events that is important (1991). This same confusion is evident, too, in the research on the impacts of flooding on mental health, which sometimes muddles the consequences of the floods themselves with the consequences of the anxieties that they provoke.

A second explanation for the prioritisation of emotional needs is Folkman and Lazarus's (1980; Lazarus and Folkman 1984) argument that responses to physical threats are more focussed on emotional dimensions when the situation is perceived as less controllable. It will be demonstrated in this thesis that this is indeed the case for flood risk – that a perceived lack of understanding and control of the flood situation dissuades people from considering practical mitigation measures.

Both these explanations for an emotionally based response can be seen as functional. Long-term exposure to risk not only leads to a collapse in response-capacity. If combined with a perceived lack of control, it can also lead to long-term anxiety, which can damage mental health and, according to Martin (2003), impair the immune system.

In other words, just as proponents of cultural theory argue that people 'manage' their risk perception in order to protect their social structures, so too it is possible to argue that people manage their representations of risk in order to protect their sense of their own security and, consequently, their own physical and mental health. Hence, a key question for this investigation is how the management of these representations is conducted – what strategies are employed to keep existing representations intact, what the implications of these strategies are for the uptake of household-level flood risk mitigation measures, and what kind of householders are most likely to employ them.

Empirical investigations into social structure and flood risk response

Of these three dimensions of the central research question, only one has previously been addressed to any significant degree in the literature – the issue of what kind of householder is most likely to take mitigation measures against flood risk. Even here, however, there is a paucity of reliable evidence. Studies that look for associations between flood risk response and socio-demography are rarely replicated and are seldom reported with sufficient information on technical issues such as sampling, response rates and statistical reliability. A summary of this evidence is, however, presented in the following paragraphs, along with findings from research into earthquake risk, which was considered sufficiently similar to be comparable.

One socio-demographic factor to have been considered is *social grade*. Social grade categorises households according to the occupation of the head of the household or the chief income earner. These are divided into six broad groupings (see Market Research Society 2002):

- A** Professionals, very senior managers in business or commerce and senior civil servants
- B** Middle managers in large organisations, principle officers in local government and the civil service and top managers / owners of small businesses or educational establishments
- C1** Junior management, owners of small establishments and all others in non manual positions
- C2** Skilled manual workers and manual workers with responsibility for other people
- D** Semi-skilled and unskilled manual workers
- E** Those dependent on the state in the long-term; e.g. through sickness, unemployment or old age

Social grade has been considered in two studies. The first, conducted in the Severn catchment area by Penning-Rowsell (1976), found no significant association between social grade and risk response. The second, more recent, report (Ipsos UK 2005), although claiming to have identified an increased tendency to prepare for floods amongst social grades A, B and C1, was limited to older people and provided no information on the statistical significance of the finding.

The evidence on education and income is still less conclusive. Grothmann and Reusswig (2006) found no correlation between flood risk response and either education or income, while Lindell and Perry (2000) – in a meta-study of research into earthquake risk – identified three studies that had detected small correlations between response and income, two that had detected correlations with education and a further one that had found correlations with neither. The evidence on risk perception is equally inconclusive. While Rundmo (2002) found no evidence of an association between education and risk perception amongst Norwegians, a US study by Flynn *et al* (1994) found a negative association between risk perception and both household income and education and Armaş (2006) also found a negative correlation with education.

It is possible that the contradictory nature of the findings on social grade, education and income is the result of the analytical methods used, for it seems likely that the three predictor variables are inter-correlated, and the analyses may have not been sophisticated enough to distinguish direct influences on response from influences that are mediated by one of the other two variables.

The influence of gender has been even harder to establish. This is because response to hazards such as flood risk occurs at the level of the household, whereas surveys tend to engage individuals as respondents. There is a mismatch, in other words, between the empirical unit and the behavioural unit, and any analysis of the role of gender in flood risk behaviour would have to control for household composition. No examples of such an analysis were found in the literature. Unlike risk response, risk perception occurs at the individual level, so the evidence is clearer. There is a consensus in the literature that females perceive environmental risks in general (Flynn *et al* 1994, Slovic 1997, Rundmo 2002, Palmer 2003, Armaş 2006) and flood risk in particular (Flynn *et al* 1994; Tunstall *et al* 2006) as greater and more problematic than do males.

Few other demographic variables have been investigated with any rigour. As regards age, Rundmo (2002) and Armaş (2006) found a weak correlation with risk perception, but neither Penning-Roswell (1976) nor Grothmann and Reusswig (2006) found any association with flood risk response. Meanwhile, other variables have only been reported on once in the literature. Tunstall and Tapsell (1994) indicate that concern over fluvial flooding reduces with the familiarity of the source of the flood; Fielding *et al* (2002) found that protective action is negatively associated with length of residence, and Grothmann and Reusswig (2006) report that it is most strongly associated with property tenure.

In all, therefore, there is little reliable empirical evidence on the influence of socio-demographic factors on flood risk perception and response. Income, social grade and education may have some effect, but the evidence is hard to disentangle; women may perceive natural hazards generally as more problematic than do men, but it is less clear if this applies to flood risk in particular; and there is some evidence that owner occupiers and those more familiar with the risk and the physical source of the risk (e.g. those who live by flooding rivers or use them recreationally) are more likely than others to take mitigation measures.

3.5 Weaknesses of the cognitivist and structuralist approaches

It is sometimes argued that structuralism and cognitivism are complementary; that the one identifies the heuristics that people use, while the other considers the social means by which these biases are selected within particular situations (see Rayner 1992). In practice, however, research based in either epistemological schools has tended to share the same weaknesses. Three of these are discussed in the paragraphs that follow.

The focus on risk perception

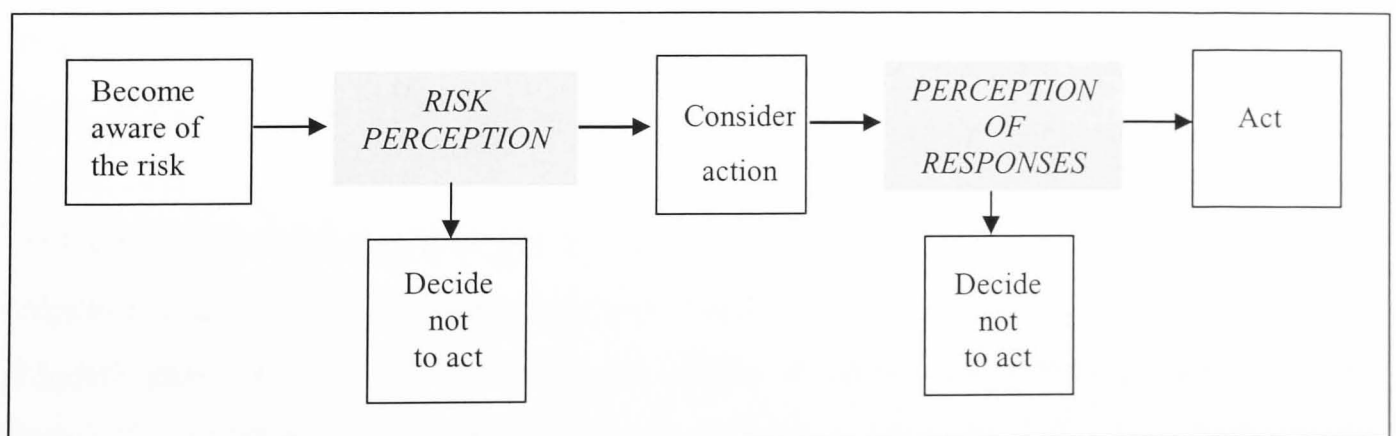
The first of these weaknesses is a tendency to focus on risk perception to the neglect of response perception. This tendency seems to be founded on the assumption that

manipulating risk perception is the most effective way to influence behaviour²⁰. This assumption, however, is not borne out by the evidence. Only eight out of 23 studies of residents in earthquake zones found a significant correlation between risk perception and adjustment (Lindell and Perry 2000); studies of flood risk have either found no association at all (Kates 1962; Parker 1976) or else only a small association (Grothmann and Reusswig 2006) and work by Weinstein *et al* (1990) on naturally occurring radon found no evidence of such an association. The relationship between perception and behaviour is complex, and although an understanding of how people perceive natural hazards might be a necessary condition for understanding behaviour, it is not a sufficient condition by itself (Niemeyer *et al* 2004).

How can we explain this? How is it that the perception of risk seems to have so little influence on risk behaviour when it appears, intuitively, that it should be the most important influence? The evidence suggests that the ‘risk perception’ approach has overlooked an important compounding and mediating variable in the risk response equation – the perception of the response itself.

Looking at an idealised view of risk response as a linear process (Figure 8), we see that response perception is closer to the point of behaviour change than is perception of the risk itself. One would expect, therefore, that response perception would have a less mediated impact on behaviour than the perception of the risk itself (see Ajzen 1988).

Figure 8 Representation of risk response as a linear process



²⁰ For a recent example relating to flood risk, see Keller *et al* (2006). The article makes no mention of this assumption being tested, in spite of the necessary data being available.

Many of the studies reported in the literature investigate the impact of risk perception without taking any account of response perception. This might explain the contradictions between the findings in the literature – alluded to above – regarding statistical associations between risk perception and behaviour. Lindell and Perry (2000), for example, point out that each of the eleven earthquake studies covered by their meta-analysis included very different adjustment options as dependent variables. In studies that included more easily achieved measures (for example, purchasing a flashlight and a battery operated radio), the same level of risk perception will seem to have prompted a greater response. In studies that included only more onerous adjustments, the opposite is likely to have been the case. The mediating factor of risk response perception, therefore, will have had a very different influence on each of the eleven studies and is likely to have obscured the influence of the perception of the risk itself.

Insufficient emphasis on experience

A second commonly overlooked influence on risk behaviour is the question of whether someone has personal experience of the risk event in question, and the impact of that experience on risk perceptions and risk response perceptions.

As long ago as the 1960s, Kates (1962) argued that personal experience of floods was one of the biggest influences on flood risk response. Coining the phrase, “the prison of experience” (p132), he said that expectations of losses and expectations of what would be effective action were both primarily products of experience. Floodplain residents who had experienced a flood, he concluded, worked on the assumption that losses from future floods would be identical to their past experiences and that protective measures that had worked once could be relied upon to work again.

There has been much confirmation of these findings, with significant correlations between experience and risk response being found in studies of earthquake-risk (Sattler *et al* 2000; Lindell and Perry 2000), as well as in studies of flood risk (Penning-Rowsell 1976; Tunstall *et al* 2006; Grothmann and Reusswig 2006). Experience of flooding, furthermore, is frequently cited by Environment Agency staff and other flood-professionals as the only effective factor that can influence flood risk responses. This rhetorical prominence alone makes the theory worthy of further empirical investigation.

For this reason, the qualitative sample for this study was drawn both from people who had personal experience of flooding and from people who did not. This, it was hoped, would throw some light on the changes wrought by these experiences on people's representations and discourses. At the same time, survey data on the nature and frequency of people's flood experiences was re-analysed in order to test the statistical relationship between flood experience and behaviour.

Insufficient emphasis on emotion

Alongside experience and the perception of risk responses, a third frequently overlooked factor that influences risk response is emotion. Emotion, neurophysiologists tell us, provides a bridge between the rational and the non-rational processes – the cortical structures of wisdom, subtlety, rationality etc, and the subcortical structures such as biological regulation (Damasio 1994/1996). These bridges, Damasio asserts, have a profound effect on thought and are sometimes primary to rational thought. Indeed, it is argued that emotions are essential for decision-making and that decisions cannot be made on the basis of rationality alone (*ibid*).

This erosion of the image of people as deliberative, analytical information-processors has only slowly been accepted by risk researchers. In spite of Simon's (1957) conclusion that "affected, non-rational factors" were important determinants of behaviour (p200) and in spite of Fischhoff *et al*'s (1978) identification of "dread" as "the characteristic most highly correlated with perceived risk", the importance of emotions was long underestimated (Zinn 2006)²¹. Indeed, only recently has emotion escaped from the margins of academic debates about risk (Slovic 2000)²².

In the field of natural hazards too, there is little published evidence on the role of emotion. Indeed, the evidence that has been published appears to be contradictory. Parker's (1976) finding regarding flood risk response is broadly in line with those of Siegel *et al* (2003) and Sattler *et al* (2000) on earthquake risk. All three conclude that the anticipation of

²¹ Zinn argues that this was true of all risk research disciplines, but particularly of the cognitivist paradigm.

²² This may be because, as Rundmo (2002) argues, affect was seen to emerge as a consequence of an evaluation of rationally attained beliefs, rather than – as Zajonc (1980) asserts – being primary to cognition.

anxiety and the emotional effects of disruption are positively associated with preparedness. With regard to flood risk, however, the only other research reports that mention emotion both reach an opposite conclusion – that anxiety about flooding actually reduces practical responses (Grothmann and Reusswig 2006²³; Tunstall *et al* 1994²⁴).

In order to try to resolve this issue, the question of ‘emotion’ was given particular emphasis in the analysis of the qualitative data in this study.

3.6 Insights from social psychology

As well as addressing the gaps in previous studies that have just been outlined, this thesis also seeks to adopt a more flexible epistemological position. Rather than taking a strictly structuralist or cognitivist approach – and either neglecting or over-emphasising the role of individual agency – the theoretical perspective for this study draws on theories developed in the European school of social psychology to create an account of flood risk behaviour that combines the individualised perspective of flood risk response with the social perspective.

Two social psychological theories are employed to this end. The first, *social identity theory*, explores some of the micro-level social processes underpinning cultural theory’s ideas about the role of group identity in risk perception and response. The second, *social representations theory*, can be seen as applying social constructionism to heuristic theory, exploring the provenance and functional roles of the heuristics that influence flood risk perception and flood risk behaviour.

The broad theoretical argument that guides the overall approach is that made by Giddens in his *structuration theory* (1984) and by Bourdieu in his exposition of his concept of *habitus* (1977; 1990). Both Giddens and Bourdieu argue that the continuing existence of the traditions, moral codes and established ways of doing things depends on their being reproduced by individuals, and that these individuals, therefore, also have the potential to ignore them, replace them or reproduce them differently. Social identity theory and social

²³ The authors claim that the influence on behaviour of emotional defence mechanisms (fatalism, denial and wishful thinking) is second in importance only to flood experience and tenure.

representations theory provide the tools for understanding the mechanisms by which this reproduction occurs and by which individuals make their choices.

Social identity theory

Like cultural theory, social identity theory (SIT) (Tajfel 1982; Turner 1982, 1985; Abrams and Hogg 1990; Hogg and Abrams 1988) looks at the role that groups play in determining thoughts, feelings and behaviour. Starting from the idea that *categorisation* is essential for the creation of understanding and identity (Tajfel 1972), it argues that successful self-categorisation as a group member is a necessary part of functional success in the social world and is therefore an important goal for most individuals.

Self-categorisation, it is asserted, prompts social comparisons of the self with other members of the group, leading to pressure for conformity of thoughts, feelings and actions. People rely on those with similar categorisations to themselves for both information about social reality and for approval of their beliefs, feelings and behaviours. Ultimately this produces conformity to what is known as the *group-prototype* – the hypothetical person who embodies the group's core ideals. The stronger the desire to belong to the group, the stronger the conformity to this prototype will be and the more the behaviour of the individual will be transformed by his or her group membership.

This is not presented as a deterministic process. Individuals choose to what extent they want to conform to group norms and are free to choose which category of people to identify with. According to SIT, the outcomes of this second choice are context dependent – people's identities are multi-faceted and the facet they choose to emphasise at any one time depends on the situation. On each occasion, it is argued, they choose the dimensions of identity that are most salient to the circumstances of that occasion and they select the social category – and social identity – that provides the closest fit along those dimensions (Hogg and Abrams 1988). When the issue in question is flood risk, the anecdotal evidence suggests that the most salient social dimension is likely to be the degree of exposure to that risk. Even where no salient groups exist, one is likely to form between the people who share the same risk exposure or the same experience.

²⁴ Tunstall *et al*, unfortunately, do not provide supporting evidence for this finding.

SIT is a functionalist theory. It maintains that social groups exist for the benefit of their members – including for the reinforcement of their self-esteem – and that to obtain this benefit, groups maximise the positive difference between their representations of themselves (the *in-group*) and their representations of other groups (*out-groups*). Hence, it is said, they focus their attention on those aspects of in-group identity that they perceive as most positive and on those aspects of out-group identity that they perceive as most negative – accentuating the former and attenuating the latter. For example, it is argued later in this thesis that a group of respondents characterised the local authorities according to a perceived weakness – lack of technical competence – but characterised themselves according to a perceived strength – an ability to avoid becoming ‘unnecessarily’ anxious. By means of this selective emphasis, it will be asserted, they enhanced their representation of their own group relative to that of the local authority and thereby bolstered their images of themselves.

This incentive for in-group members to keep their social constructions unchanged can have consequences for blame attribution and hence, also, for behaviour. In the illustration just given, for example, maintaining the positive image of the in-group implies blaming the flood risk on an out-group and avoiding the attribution of blame to the in-group. The need to blame an out-group limits in-group members’ freedom of behaviour. If they themselves act to reduce the risk, this might be seen as an admission of responsibility and as weakening the positive image of the in-group. Flood risk reduction measures, in other words, are likely to be judged not only on their physical effectiveness and on their perceived impact on the attribution of blame to the individual, but also according to their anticipated impact on blame attribution between groups.

This assertion of in-group identity can also be seen as a reaction against the rising trend towards individualisation (Bickerstaff and Walker 2002) and what Foucault (1991) terms *governmentality*. Under advanced liberalism, it is argued (Rose 1996; Raco and Imrie 2000), rule by regulation is gradually being replaced by the promotion of what the state decides are ‘responsible’ individual behaviours. Government is increasingly seeking to influence as well as to command and is using the discourse of individual responsibility as an alternative means with which to control its population (Raco and Imrie 2000). What is

seen from within the cognitivist standpoint as a strategy to avoid changing habitual behaviour and save decision costs (Lindbladh and Lyttkens 2002) can therefore be seen from within the governmentality paradigm as a form of resistance against this attempted control and, consequently, as a defence of social identity. Blaming public bodies is represented as a means of resisting cultural subjectivisation by the state, maintaining the boundaries between the in-group and the out-group and preserving identity.

Social identity theory, therefore, provides a theoretical structure that helps explain the role of the social group in determining flood risk response and helps sensitise the analyst's mind to the social and group dynamics that are at play when respondents talk about flooding. It operationalises aspects of Giddens' structuration theory and Bourdieu's *habitus*, allowing these macro-level concepts to be applied at the micro-analytical level.

Social representations theory

A further aspect of social identity is the shared adherence to common forms of representation (see Jodelet 1991). These shared ideas are sometimes known as *social representations*.

The question of how such representations are formed and structured is the topic of a theory founded by the social psychologist Serge Moscovici (1961, 1973 and 1984). According to this theory, representations of the outside world are phenomenologically real simplifications – or “caricatures” – of the world and of the information people receive about it (Wagner and Hayes 2005: 136). Based on familiar, easily visualised images, they are consistent with existing cultures and norms and are derived from worlds with which the individual is particularly familiar (Rouquette and Rateau 1998, Wagner and Kronberger 2001). They are, in other words, the result of a process that makes the unfamiliar familiar.

For example, in the earliest application of this theory Moscovici (1961) describes how, in popular 1950s France, the newly arrived concept of ‘psychoanalysis’ became assimilated into the more familiar social representation of Catholicism. The psychoanalyst became associated with the catholic priest, the therapy session with the sacrament of the confession etc. Psychoanalysis became *anchored* in the imagery of religion and its

otherwise opaque meanings *adjusted* to conform to religious rationalities. A new social representation was thereby formed – an amalgam of the new theory of psychoanalysis and the reassuringly familiar traditions of Christian practice.

Indeed, alongside the preservation of social identity, the need for reassurance is the key motive behind the assimilation of new concepts and ideas into existing social representations. As Giddens says, “chaos lurks” on the other side of our familiar, everyday representations (1991:36), and we each develop a “protective cocoon” to bracket out anything that seems to threaten them (1991: 39-40).

Moscovici’s theory of social representations provides one way of conceptualising the formation and maintenance of this ‘cocoon’. Proponents of his theory depict people’s representations of the world as consisting of networks of representational elements that cluster round a central, protected core (Abric 1984; see also Tafani and Souchet 2002, Meier and Kirchler 1998, Bangerter 2000). They argue that any unfamiliar concept or theory that impacts on an individual or group only normally penetrates to the outer layers of the representation. Entangling itself in this periphery, it generates new meaning relations between itself and the original representation (the process of *anchoring*), while at the same time, the peripheral elements of the original representation change to accommodate the unfamiliar concept (the process of *adjustment*). In other words, although the new concept becomes assimilated into the existing representation (*familiarisation*) the representational core remains unchanged.

The peripheral elements of the representation are the interface between the core and the concrete situations and facts that people encounter in their everyday lives. Being what Flament (quoted in Abric 2001) calls the “shock absorbers” of social representations, they assimilate alien conceptions without allowing the core part of the representation to be challenged, for they have the capacity to adapt and adjust.

According to social representations theory, core representational elements are protected in this way because of their pivotal role in giving meaning to the more peripheral elements and determining the links that hold them together (Abric 2001). This gives coherence and strength to individual and group identity (Joffe 2003; Martin Sanchez 2005; Philogène

2001), saving it from being overwhelmed by new ideas, and protecting self-esteem (see Jahoda 1999). The core is decontextualised (Philogène 2001), whereas elements of the periphery exist in the context of the external environment, acting within, and reacting to, information and feedback from the outside world; and the core is ideological in its origins (Abric 2001), whereas the periphery converts that ideology into attitudes to concrete situations (Moliner and Tafani 1997). It is for these reasons that the core is most resistant to change (Abric 2001). Indeed, core elements can be compared to Giddens' "assumptions", which protect people from the "chaos" of existential uncertainty and protect their sense of ontological security (1991: 36).

Although core elements are surrounded by these layers of peripheral, protective representations, they are not immutable. In a process of circular translation between the levels of the super-individual and the individual, both social groups and individuals are able to change them (Wagner and Hayes 2005). So too, if it is sufficiently vivid, can experience.

This thesis presents three such core elements that were identified in the data analysis (Chapter 5) and that were found to play a key role in protecting ontological security against the threats associated with flood risk (Chapter 10). Consistent with the tenets of social representations theory, it found these core representational elements to be resistant to external influences and only found evidence of change where there had been first-hand experience of severe flooding.

Although social representations theory offers some valuable tools for this study, it is vulnerable to two fundamental critiques. The first of these is a criticism of the claim, by some of the proponents of the theory, that representations discovered in writing and speech are real mental structures has been criticised by discourse analysts such as Potter and Wetherell (1987). Following in the linguistic tradition initiated by Wittgenstein (1958), Austin (1962) and Halliday (1973, 1994), they argue that language is essentially rhetorical rather than communicative and cannot be assumed to reflect any kind of stable mental state²⁵. Agreeing with this critique, the theory is used in this thesis not to try to

²⁵ Though see van Dijk (2000) for a contrary argument

discover people's mental representations but, rather, as a set of theoretical guidelines for exploring the representations that are used and reproduced in spoken interactions. The social representations identified in this study, in other words, are assumed to be intersubjective – rather than personal, mental – constructs. This interpretation of social representations theory is consistent with the view that it was always intended to be a vague, open theory (Ibañez 1992) and that its primary function should be exploration rather than demonstration (Räty and Snellman 1992). It is consistent too, with the aims of this project, which argues – after all – that decisions about risk response are always made in an intersubjective, social context.

A second critique regards a distinction made by Moscovici between everyday knowledge, which he describes as being vulnerable to the forces of anchoring and adjustment, and knowledge that is scientific and data-driven, which he implies is not. As Jahoda (1988) points out, this distinction relies on the premise that scientists are more able than lay-people to engage in reflexivity and that their representations are therefore less vulnerable to the phenomena of anchoring and adaptation. This assumption, however, does not stand up to empirical analysis, which exposes scientific thought as equally as vulnerable to distortion by what we might call representational drag (Kuhn 1996) and as embodying “social and cultural prescriptions in its very structure” (Wynne 1982, 1996: 21). This criticism suggests that the theory should be applied to a wider range of knowledge than Moscovici initially intended. Originally proposed as a theory of the assimilation of scientific ideas into popular knowledge, the elimination of any absolute distinction between scientific and lay-knowledge allows social representations theory to be applied to the reception by *any* social group of *any* set of representations that is perceived as alien and threatening to its identity – including, for example, the representation of flood risk as a source of danger.

Moscovici's theory, like SIT, creates a bridge between sociological and psychological perspectives on thought and behaviour (Farr 1993, Wagner 1994, Purkhardt 1993, Flick 2002, Wagner and Hayes 2005). Moscovici brings social determinism and individual agency together under one theoretical umbrella by arguing that although the interpretative template exists at the level of the individual, it has socio-historical roots and is grafted onto the individual from a higher social level. Social representations are presented as both

historically determined and open to change over time; as socially determined and open to adaptation by individuals.

Social representations theory, therefore, helps create a more balanced approach to the investigation of householder responses to flood risk. The argument that representations are critical for the maintenance of ontological security – and are therefore themselves protected by the people who use them – can help explain why risk messages that contradict these representations might sometimes be rejected and why people do not always take practical steps to prepare for flooding.

3.7 Summary

Although talk about risk is influenced by both individual and social representations, it has been argued here that the nature of the phenomenon makes flood risk particularly amenable to the effects of socially determined schema. Both social representations theory and social identity theory differ from other models of human thought by emphasising the socially adaptive nature of the manner in which information is categorised and filtered. When the situation calls for it, people have recourse to social identities and social representations that provide them with social reinforcement for their self-concepts and with protection for their sense of ontological security. In such cases, the requirements of formal rationality are sacrificed in favour of an associational, theory driven and relational rationality.

The literature on flood risk and other, similar, environmental hazards has yet to consider the social aspects of risk response in any great depth. This study has aimed to fill that gap. Using a discourse analytic approach, it investigated what social representations of flood risk and flood risk response are used by householders when they discuss the subject of flooding, how the choice of representation relates to social identity and how this affects behaviour. The next chapter presents the data collection, analysis and overall research design that were employed to address these questions.

4. Research design

This chapter outlines and justifies the general methodology of this study. It also describes the process and methodology of the research and how it seeks to address the existing gaps in the theory that were identified in the previous chapter.

The aims of the research were to identify representations and discourses of flood risk and flood risk response, to analyse their use by householders and to consider the consequences of their use. It is important to note that the objective was to find out *what* people say about flooding and flood risk and *how* they construct, frame and negotiate meanings in relation to these subjects. For this reason, it was necessary to gather data that would contain these constructions, framings and negotiations. In other words, in order not to impose the framing of the researcher onto respondents and restrict their responses to those that the researcher had anticipated, the main data collection method had to be unstructured or semi-structured. The key empirical technique employed in this thesis was therefore the recording and analysis of semi-structured interactions with householders from flood risk areas.

To maximise the range of discourses and representations that would be identified, and to add depth to the understanding of their use, fieldwork was carried out with a broad variety of respondents and in a variety of formats – including one-to-one interviews and focus groups, but also the more innovative setting of friendship and family groups.

A second strand to the research was the secondary analysis of data from two surveys of at-risk households in the UK. Secondary analysis, “the extraction of knowledge on topics other than those which were the main focus of the original survey” (Hyman 1972 p1), has both advantages and disadvantages.

Its main advantage as a method is that it introduces more data into the analysis without the need for additional time- and resource-consuming data collection (Dale et al 1988). In this study, the use of survey data in addition to qualitative data enabled the analyst to look at the research question from two different epistemological perspectives. This encourages a more reflexive mode of thinking, adds depth to the analysis (see Gaskell and Bauer 2000) and reduces the chance that findings are artefacts of the method (Galtung 1967 p437).

Secondary analysis also has the ethical benefit that by avoiding the need for further data collection it minimises inconvenience to respondent groups (Dale et al 1988).

The main drawback of secondary analysis is the analyst's lack of control over the validity and reliability of the survey and of its appropriateness for his particular purpose. This makes it particularly important that the methodology and fieldwork documents of the original survey are inspected critically, that fieldwork documents are carefully inspected and that any weaknesses in these areas are given careful attention in the reporting of the research.

The reliability and validity of the surveys that were used in the analysis is discussed in the paragraphs that follow, while the results of the analysis of the survey data are included alongside those from the qualitative analysis (i.e. in Chapters 6 to 10).

The remainder of this chapter describes the methods just outlined, giving detail of sampling methods, fieldwork tools and the techniques used for data analysis. The first sections of the chapter deal with the qualitative research and the survey analysis is dealt with last.

4.1 Sampling and recruitment

The aim of the qualitative part of the study was to identify – and understand the use of – the main discourses and representations used by householders in flood risk areas. The target population, therefore, was all those who lived in flood risk areas and who could reasonably be expected to use such discourses and representations – i.e. householders who were exposed to the risk and were also aware of that fact. Sampling was also, therefore, *purposive*: respondents were selected so as to provide adequate coverage of all the factors that the literature had suggested might be predictive of flood risk response.

It is important to note that no assumptions were made as to the extent or accuracy of people's understanding of the risk. In order for there to be representations of the risk for the research to uncover – and in order for people to have made some kind of response to the risk – it was critical that they knew of its existence. Being the very objective of the

research, the nature of these representations and responses would not have made suitable sampling criteria.

Sampling criteria

The seven factors used as selection criteria for the fieldwork areas and individual respondents are shown in Table 1. All but one of these was chosen because of evidence in the literature concerning its relevance to flood risk. No such evidence was forthcoming regarding the influence of household structure, but because it was thought that households with particularly vulnerable members might view the risk of flooding differently than other households, this was nonetheless included as a criterion. Given the limited size of the sample, however, it was only possible to target one type of vulnerable person, and young children were chosen over elderly or disabled people in order to simplify recruitment – houses with children are more common than households with other types of vulnerable people and are more easily identified by the presence of prams, toys etc.

Table 1 Sampling criteria

Primary criteria
1. Characteristics of the risk for that home
2. Experience of household flooding
3. Household tenure
4. Social grade, education and income
Secondary criteria
5. Respondent gender
6. Presence of young children in the household
7. Proximity of the home to the nearest river

Flooding experience was one of the key criteria. As discussed in Chapter 2, experience is often cited in the literature as the most important of all factors influencing risk perception and response. In order to explore the influence of this factor on people's social representations and choices of discourse, the sample was designed to include both people who did have experience of household flooding and those who did not.

These criteria were then used to select three fieldwork areas from an initial list of thirty potential areas provided by the Environment Agency. To ensure that discourses and social representations of flooding would be in active use in each of the areas, all those in the

initial list of potential fieldwork locations had experienced a recent flood or near-miss event or lived in locations known as flood risk areas for other reasons – for example, because of historic floods that were still clearly remembered. Furthermore, all the areas had a high to medium probability of flooding, as defined by the Environment Agency²⁶. Areas were then selected from this list that, it was thought, would maximise variation across all seven of the sampling criteria. Data on the likely characteristics of flooding was provided by the Environment Agency and postcode-level data on the other criteria was obtained from the Acorn Index of neighbourhood level social data (see CACI 2005).

Fieldwork areas

Three areas were chosen in this manner: a part of North London that had recently experienced flash-flooding; a housing estate in Reading that had recently been threatened by ground-water and sewer flooding and a number of streets in Reading that were near the Thames and were regularly threatened by floods. In one of these three areas flooding was likely to be deep and sudden, while in the other two it was possible to give residents several days' notice of impending floods and the depth of flooding was less extreme (criterion 1); one of the areas had recently been flooded, while the other two had not (criterion 2), and one of the areas was within sight of a major river, a second was near a river but not within sight of it and the third was not near a river at all (criterion 7). The inclusion of the estate of housing association homes in one area and the mixed nature of the housing in a second area promised to facilitate the recruitment of both tenants and homeowners (criterion 3)²⁷ as well as people from a range of social grades, educational attainment levels and income bands (criterion 4). Although the small number of qualifying households in each of the areas made it impractical to set quotas for any of these criteria, the sample was monitored during recruitment in order to ensure that no major imbalances occurred.

Each of the three fieldwork areas is briefly described in the paragraphs that follow.

²⁶ According to the Agency's definition, an annual probability of greater than 1:100 counts as 'high' and a probability of between 1:100 and 1:200 counts as 'medium' (Environment Agency 2007).

²⁷ It was anticipated that because of their relative scarcity in flood risk areas, tenants would be more difficult to recruit than owner-occupiers. Only 30% of households in England and Wales are rented (Office for National Statistics 2001) and only between 10% and 25% of respondents to flood risk surveys are tenants (see Appendix H).

Area 1 – North London

Awareness of flood risk was extremely high in this first area, a northern suburb of London from which thirteen respondents were recruited. The flood risk in this area is the result of topographical funnelling that concentrates run-off from a large elevated area onto several low-lying streets, causing street flooding and the surcharging of sewers into domestic properties. In 2002, 60mm of rain fell in under an hour on the elevated land around this area (London Borough of Camden 2003). This caused flooding that arrived rapidly and without warning and that carried cars along the roads, overwhelmed the local London Underground station and fire station, flooded basement properties and indirectly caused the death of one elderly resident.

The recruitment process in this area was aided by the availability of a detailed local authority report²⁸ on the recent flood, which identified streets that had been affected. Residents reported having been badly shocked and traumatised by the 2002 event and a number said that they had moved out of their homes for several months to allow restoration. Some had also experienced a major flood in 1975 and a less extensive one in 2000. Some residents claimed to be mounting legal and political campaigns against Thames Water – the body responsible for sewers and drains in the area – but according to Thames Water²⁹, there was little prospect of finding a way to eliminate the risk of a repeat event.

The area was otherwise unremarkable. With good transport links into the centre, it appeared to be predominantly inhabited by ethnically white residents. Most of the housing in the area consisted of Victorian terraces – often with basements, and sometimes converted into flats. Some homes were council owned; some were rented from private landlords, and some were owner-occupied.

Area 2 – Reading housing estate

The second area consisted of two streets in an estate of newly constructed housing on the Thames floodplain in Reading, most of which were owned by a housing association.

²⁸ London Borough of Camden (2003)

²⁹ In a conversation with the author in early 2006

Houses were semi-detached or terraced and were slightly bunded³⁰. The estate was separated from the Thames by a playing field and by a marina. The marina prevented direct access to the river, forcing residents to travel for about a mile (2km) if they wanted to access the river.

When heavy rain in the Thames catchment area causes the level of the river to rise, this area is prone to groundwater flooding and flooding from inadequate sewerage. The last near-miss event had been in 2002, when water had flooded the streets and had risen to the doorstep of some houses. Respondents reported that they were warned of raised levels of flood risk by the appearance of pools of water in the nearby playing field. They also reported receiving official warnings before the 2002 flood, and having had time to take delivery of sandbags.

According to the Acorn Index (CACI 2005), the area was characterised by low levels of income, home-ownership and education. Of the ten respondents recruited from this area, one owned her home and the rest lived in social housing and worked in skilled manual jobs or were unemployed. All the households visited by the researcher included young children.

Area 3 – Victorian housing in Reading

The third fieldwork area was on the same part of the Thames floodplain as Area 2 but, unlike that area, was directly next to the river. All but one of the ten respondents from this area owned their own homes and worked in professional occupations, and none of them had young children. Most of the houses were traditional Victorian terraces, but some had been built on bunds to raise them above the anticipated floodwater level. Some also had concrete floors that protected them against groundwater flooding.

Floodwater is transported to this area along three different pathways: directly over the banks of the river, from overflowing drains and from beneath the ground. Awareness of the risk was high and was kept alive by the regular inundation of some local gardens and a popular local footpath, as well as by memories of a major flood in 1947, which was still

³⁰ That is, they were built on a slight bund, or mound.

spoken of by many residents and commemorated by a photograph in a local shop. The home of one pair of respondents was particularly low-lying and was known as the first to be affected by any flood.

Recruitment

Participants from all three areas were recruited in person, on the doorstep. Although labour-intensive, this method of recruitment provides a more heterogeneous sample than other approaches. Only certain types of people, for example, are likely to reply to an unsolicited letter; and recruiting via community groups excludes those types of residents who do not join those groups.

Homes were called on between two and four times, with visits occurring at different times of the day and week in order to try to reach the widest possible range of people. The offer of a cash gift³¹ of £20 in return for participation was also intended to encourage the participation of people who might otherwise not have wanted to take part. Off-the-record comments by a number of respondents suggested that this incentive had been an important factor in their decision to take part.

In the initial phase of recruitment, residents were sent letters about the research before being approached personally (see Appendix D). When asked, however, most of these householders claimed not to have read these letters, so this practice was discontinued and residents in subsequent phases of recruitment were only sent letters after they had agreed to take part (see Appendix E).

In spite of the measures just described, some self-selection of respondents was inevitable. People are more likely to agree to participate in research if they respond positively to the recruiter on a personal basis or are predisposed to be supportive of the aims of the research or of research in general³². Other types of resident systematically excluded themselves. In Area 1, one doorstep comment suggested that some people refused to take

³¹ Describing the payment as a “gift” ensures that it does not need to be declared as taxable, nor taken into account in benefit calculations.

³² The over-representation of university academics, for example, may indicate greater support for the notion of research.

part because of a reluctance to revisit painful memories associated with past flooding. Although such refusals will have biased the sample towards less anxious householders, they also serve to confirm one of the major findings of the research – that anxiety avoidance is a prominent response to flood risk.

The profile of the achieved sample is shown in Appendix A.

4.2 The focus groups

Data was obtained from the 37 respondents in this research using a combination of focus groups and interviews. The first of these methods, the *focus group*, aims to provoke the expression and negotiation of social representations in open discussions amongst homogeneous groups of people. In the successful focus group, members interact with each other as well as with the moderator, a sense of group belonging facilitates greater confidence and spontaneity and a group dynamic emerges as participants leave behind their initial dependence on the facilitator. According to Gaskell (2000), focus groups can reveal attitude change and opinion leadership, giving insights into consensus emergence and disagreement handling. Focus groups are frequently utilised to elicit lay talk about risk issues (e.g. Petts *et al* 2001; Walker, Simmons, Wynne and Irwin 1998; Golding *et al* 1992) and provide an effective means of identifying socially shared patterns of interpretative behaviour (Petts *et al* 2001). In this research, the focus groups provided insight into the role of social identity in flood risk response and the creation and use of social representations in group contexts.

The author of this thesis – an experienced focus group moderator, who had published work based on this method (Harries and Woodfield 2002, Corden *et al* 2003) – was able to facilitate the focus groups himself. This enabled him to use his in-depth knowledge of the project to steer discussions into the most relevant areas and to avoid less fruitful diversions (see Seale 1998).

Achieving the right number of participants in each group is another challenge faced by the researcher. According to Krueger (1994), the ideal group size is between six and nine participants. In larger groups, he argues, the lack of opportunities for expression will

frustrate and potentially alienate participants, while data richness will suffer if the groups are too small. The achievement of this ideal size is dependent on the proportion of people who attend groups after they have said that they will. In this research, ten people were recruited for each group, but a high proportion did not attend. Two of the groups eventually consisted of only three participants each; one consisted of four participants, and only two met Krueger's ideal. Given this attrition rate, more respondents should perhaps have been recruited for each of the groups. Due to the time-intensive nature of the recruitment method used, this would have placed a much greater burden on the researcher. The use of a specialised respondent recruitment agency would have avoided this difficulty. However, it would have had the disadvantage of depriving the researcher of the contextual knowledge that is an incidental outcome of the recruitment process.

As well as the size of the groups, there is also the question of their composition. Ideally, focus groups should be homogeneous but with enough variation among participants to allow for contrasting opinions (Krueger 1994). In this research, the aim was to achieve homogeneity on two of the key selection criteria, social class and flood experience, in order to facilitate the study of shared discourses and representations, which it was assumed would be dependent on these two factors. For this reason, each of the groups was recruited from streets with a common flood history and the make-up of each group was designed to consist of people from the same social class.

Even where groups are well chaired and are of the right size and composition, their effectiveness as data collection tools can be undermined by nervousness among the participants. A number of steps were taken to counter this:

1. The aims of the project were explained carefully both in doorstep conversations during recruitment and in confirmation letters sent out afterwards. They were also rehearsed at the start of each group.
2. The moderator was careful to portray himself as professional, interested in what participants had to say and non-judgemental.

3. In order to create a relaxed atmosphere, hot drinks and biscuits were provided for all the groups. In addition, venues were chosen that were familiar to the respondents and that provided an informal setting.

A copy of the topic guide used is shown in Appendix C. Although the exact format of each group varied according to the direction taken by the discussions, all the groups covered participants' experiences of flooding and their responses to the risks of house-fire, burglary and flood³³.

Audio recordings were transcribed verbatim by professional transcribers. Copies of the full transcripts are available on request.

Group 1 – professionals with experience of sewer surcharge flooding

The first group, Group 1, consisted of four professionals – two married men with teenage children, one single woman and one single man – two of whom lived in flats and two of whom lived in terraced houses. The group was held on a weekday, from 7pm to 8.30pm, in the local public library. Consistent with the other groups (and the semi-structured interviews), participants had been offered a £20 incentive, which they received once the group had finished.

Group 2 – non-professionals with experience of sewer surcharge flooding

A second focus group was held with skilled and semi-skilled manual workers from the same area as Group 1. Doorstep conversations with the participants had suggested that greater formality was likely to act as a deterrent to attendance, so the group was held in one of their homes.

³³ The inclusion of fire and burglary as well as flood risk was designed to encourage participants to be more reflective and to reveal more sharply their flood-related social representations. Fire and burglary were selected as comparators because of the certainty that they would be of salience to the householders in the sample. All homes, after all, are at risk of fire and burglary, and these risks are prominent in the prominent consciousness. This ensured that – as was the case with flood risk – all the respondents would have been aware of these risks and would have had the opportunity to take measures to mitigate them. Although other natural hazards may, at first sight, seem like more useful comparisons, it would have been difficult to find households that were exposed both to flood risk and to any of the other common hazards in the UK. In fact, the human provenance of fire and burglary³³ adds to their usefulness as comparators rather than detracting from it, for the contrast with flood risk helps highlight the role of the 'natural' characterisation in determining risk responses.

Two of the participants were unemployed males in their late 30s; the third was a retired woman. One of the men lived with his elderly mother in her terraced house that included a basement floor, while the second man lived by himself in a split-level council flat with a basement floor. The woman lived alone in a terraced council house with no basement.

All of the respondents had been severely affected by the 2002 flood. Two of the participants reported having had to evacuate their homes after the flood and one described having feared for her life. All three had spent considerable amounts of money on restoration after the 2002 event but – for reasons that were not made clear – neither of the two council tenants had been able to make claims on their insurance. A less extensive event in 2000 had only flooded one of the participants' homes.

The group was held at 7pm on a weekday and lasted for an hour and a half. The two men talked more than the woman did and the discussion was characterised by expressions of agreement and mutual affirmation.

Group 3 – council house tenants with experience of a near-miss event

The participants in group 3 lived in terraced houses on an estate of 10-year-old housing association homes half a mile (1km) from the river Thames. All but one lived with partners and children; two were unemployed; one (the only woman) described herself as a housewife, and the remainder were skilled manual workers. All the participants lived within close proximity of each other and had been acquainted before the group. None had experienced flooding in their homes, but all except one had been resident at the time of a near-miss event two years earlier, when floodwater had almost reached the front doors of their homes.

Conversation in the group was lively and free flowing, a clear group dynamic emerged and research themes were dealt with thoroughly. However, the group expressed reservations about the subject matter before the formal start of the group, saying that they could not see how the proposed topic could form the subject of such a long discussion.

This attitude was reflected in the general tenor of the discussion, in which the dominant message was that the participants did not consider it necessary to worry about future flooding because of the possibility that it might never occur.

Group 4 – professionals with experience of a near-miss event

The fourth group was held in a church centre one and a half miles (3km) from the respondents' homes. This group was also held on a weekday evening, but at the later time of 7.30pm, to allow people to attend who commuted into London. The size of the group may have been limited by the venue, which was not well known outside of its immediate locality, and by the televising of an important European Championship football match on the same evening.

The participants were between 35 and 50 years of age. One, a product manager for a retail company, shared his house with a friend; the second, a personnel manager, lived with her husband and child, and the third, a computer software specialist, lived with his partner. Both the men lived in Victorian terraced houses on a street perpendicular to the Thames and the woman lived in a 1930s semi-detached house by the river. None of the three had experience of flooding in their homes, but two had witnessed the flooding of their streets in 2002. One of the participants had only recently moved into the area, while the others had each lived in their properties for over ten years.

This unit of fieldwork might be better described as a *group interview* rather than as a focus group (see Finch and Lewis 2003). Although the men established some rapport, the woman's circumstances appeared to set her apart³⁴. Due also, perhaps, to its small size, the participants interacted more with the facilitator than with each other and there was little group dynamic or spontaneity.

Group 5 – residents on an island on the Thames

In order to add breadth to the range of residents included in the analysis, one group was analysed that had been conducted for a separate study (McCarthy *et al* 2006) by another

³⁴ She was older than the others, was the only woman and lived in a larger property that was less at risk of flooding and was in a more desirable location.

experienced moderator. The group members were all recruited by one of the participants, a man who was recognised by the Environment Agency as the local flood warden.

All six of the participants lived in small, raised wooden houses on an island on the Thames. They are of particular interest because they had made a conscious choice to live on the island in spite of being aware of the risk of flooding. The group was not facilitated by the author, who is therefore less familiar with the context of the data production.

4.3 The Depth Interviews

The second method of engaging participants was the *depth interview*. As with the focus group method, in the depth interview it is considered ideal for researchers to conduct their own data collection (Seale 1998). The author therefore conducted these interviews himself. An experienced social research interviewer, he had previously conducted research into numerous sensitive issues (see Harries 1998, 2000a, 2000b; Harries and Woodfield 2002, Corden *et al* 2003) and was therefore familiar with the difficulties posed by emotive topics and well placed to deal with the distress that sometimes exists around the subject of flooding.

Interviews were included alongside focus groups for two main reasons: firstly, because interviews give the researcher more time and opportunity for in-depth exploration of the nature and provenance of social representations – i.e. by prompting respondents to elaborate on their utterances and by probing the meaning of terms they use; and secondly, because the use of a second method enables the inclusion in the research of people who are not confident enough to participate in groups or for whom they are inconvenient.

Consideration was also given to the disadvantages of this method. Whereas the cut-and-thrust of a well-run group can encourage participants to be spontaneous, in a depth interview they are more likely to try to construct responses to please or impress the interviewer. Steps were taken to minimise such reactivity (see Gilbert 1993). A second danger in one-to-one interviews is that respondents will believe that the interviewer is the sole expert on the subject under discussion; that he must be deferred to on matters where there is any suggestion of disagreement, and that he must remain in control of the

interview. This perception can have a deleterious effect on respondents' willingness to be open about their own views, making the interview less dialogical³⁵ and therefore less data-rich. An interviewer can minimise this effect by bolstering respondents' confidence and thereby encouraging them to speak in an open and spontaneous manner (see Gilbert 1993). One means of doing this is by demonstrating that their comments are being listened to; another is to redefine what Fairclough (2003 p17) calls the *genre* of the interaction – encouraging respondents not merely to respond to the interviewer's promptings, but actually to take some control of the agenda of the discussion. Both these techniques were used extensively in the interviews conducted for this research.

For some respondents, a further means of creating a more data-rich event is to interview them in the company of friends or family. On the assumption that social representations and flood-related discourses will be more evident when people engage with those who provide the every-day social context, paired interviews were employed several times during this research. The aim was always to combine people who might naturally be expected to discuss household risks and other matters with each other. Thus, joint interviews were held with friends and neighbours; with married couples; with a mother-in-law and son-in-law who shared the same home, and with a married couple and their son. Whereas there was evident success in some cases, married couples sometimes seemed to sacrifice dialogicality for unanimity, making it difficult for the researcher to expose their assumptions and representations.

All interviews were conducted in respondents' homes, this being more convenient for respondents, making non-attendance less likely and – because of the familiarity of the setting – putting them at their ease. Inevitably, the home environment also presented extra distractions, such as interruptions from neighbours, children and telephones.

Interviews were conducted in a semi-structured style. That is to say, each interaction covered the same topics, but these were not necessarily introduced in the same order or with exactly the same prompt; and initial questions were followed up with probes that led directly from the responses given. In other words, no attempt was made to standardise the

³⁵ A dialogical text is one that encompasses a variety of conflicting discourses and views (see Fairclough 2003)

format or wording of the interviews. This approach is supported in the methods literature (see for example Silverman 1993 p104) and is in keeping with the interpretative style of analysis (see below), which problematises the notion of replicability in human interaction and sees it as an advantage for respondents to be able to impose their own language, priorities and formulations onto the interview process. Sue Jones gives something of the flavour of this approach:

An interview is a complicated, shifting social *process* occurring between two individual human beings, which can never be exactly replicated... There cannot be definitive rules about the use of open-ended questions, leading and loaded questions, disagreements with respondents and so on. Such choices must depend on the understanding researchers have of the person they are with and the kind of relationship they have developed in the encounter. Some relationships may allow, without destroying trust or comfort, much more of the to-and-fro of debate between two human beings than others. What is crucial is that researchers choose their actions with a self-conscious awareness of why they are making them. (Quoted in Seale 1998 p205-6)

In keeping with these principles, the emphasis in the interviews was on allowing respondents to use their own words and concepts and thereby to reveal their representations of the subject matter. To this end, a relatively non-directive style was adopted and respondents were encouraged to talk freely rather than just respond to the interviewer's questions. This is similar to the approach taken in the narrative interview (Bauer 1996) and the problem-centred interview that is used in life-course history research (Witzel 2000). It involves drawing a person into telling a story in their own words by interviewer interventions such as 'tell me more' or phatic (semi-verbal) cues such as 'uh-huh' (Seale 1998).

The topic matter of this research, however, does not easily lend itself to story telling. Respondents seemed far more ready to tell stories about dramatic and emotionally charged events than they were to tell them about their responses to an abstract risk. It was important, therefore, to get respondents into the habit of talking freely before broaching the core topic of the research, so they were encouraged to tell the story of their flood experience (where relevant) or to describe the area they lived in.

4.4 The overall pattern of the qualitative fieldwork

In all, the qualitative fieldwork for this project consisted of five focus groups and twelve interviews with individuals and small family and friendship groups (Table 2). In total, 38 respondents were involved in the fieldwork.

Table 2 The overall pattern of qualitative fieldwork

	Area 1	Area 2	Area 3	Area 4	Total	<i>Number of respondents</i>
Focus groups	2	1	1	1	5	21
Family interviews	1	0	2	0	3	7
Friends interviews	1	0	0	0	1	2
One-to-one interviews	3	2	3	0	8	8
TOTAL	6	3	7	6	17	38

There is no prescribed ideal for the number of interviews and groups in a qualitative study, but according to Gaskell (2000) two principles should be applied to determine the extent of the fieldwork: manageability and theoretical exhaustion. On the question of manageability, he argues that the number of interviews and groups must be kept low enough to allow the researcher “to almost live and dream the interviews – to be able to recall each setting and respondent, and the key themes of each interview... to bring to mind the emotional tone of the respondent” (p43). The point of theoretical exhaustion is reached, he says, when the researcher feels that successive research events are yielding nothing that is significantly new. These criteria informed decisions about the size of the qualitative sample in this thesis.

4.5 Analysis

As Gaskell (2000) makes clear, keeping the sample to a manageable size is particularly important in qualitative research because of the intensive nature of the analysis. The method used in this study, discourse analysis, being more intensive than most, this consideration was of particular importance.

The meaning of the term ‘discourse analysis’ is highly contested (Marvasti 2004). This is partly because the term ‘discourse’ itself is understood differently in different disciplines. In its simplest definition, the term is a synonym for *conversation analysis* and ‘discourse’ describes the units of text that form the data for a detailed linguistic analysis (see for example Coulthard 1977). A second form, *critical discourse analysis*, seeks to elicit broad historical systems of meaning that are relatively stable over time (Foucault 1971; see also Mottier 2002) and to understand how they reproduce and transform relations of meaning.

In this thesis, an amalgam of both these approaches is used. Close linguistic analysis is combined with holistic analysis of whole texts in order to elicit the broad systems of meaning that underpin people’s talk about flooding and flood risk.

The approach is, broadly, the method described by Potter and Wetherell (1987). They argue that there is no one fixed method of conducting discourse analysis. Analysts, they say, should be sensitised to the different strategies used by texts to construct meaning and should read them with these strategies in mind, uncovering meanings and constructions that might otherwise be overlooked. Analysts must constantly ask: “why am I reading this passage in this way? What features [of the text] produce this reading?” and they must critically interrogate their own presuppositions and unexamined techniques of sense-making (p168).

It is important to be clear about what is meant in this thesis by ‘discourse’. Although the Foucauldian concept of ‘discourse’ as a historical system of meaning has been widely adopted in the social sciences, it is still common for the term to be used to denote a sample of text. In fact, both meanings are often used in the same context, which sometimes generates confusion. To avoid repeating this mistake, the term is only used here in its Foucauldian sense, denoting not the raw data (the interview and focus group texts), but rather the systems of meaning that inform the production of that data and shape the way people talk about flooding, flood risk and flood risk responses. In other words, in this thesis, ‘discourses’ should be understood to signify the objects that the research set out to reveal, and ‘discourse analysis’ as the process by which this was attempted.

Accordingly, the definition of ‘discourse’ that is used in this thesis is adapted from those used by a linguistic discourse analyst, Fairclough (2003), and a critical discourse analyst, Hajer (1995, 2002) – see Box 1.

Box 1 Definition of a ‘discourse’

In this study, a discourse is defined as an ensemble of ideas, concepts and categories through which meaning is given to physical and social realities, and which is realised through the linguistic features of spoken and written texts.

The analytical methods

Although the term ‘discourse’ is used here in its Foucauldian sense, the analytical method employed in this thesis differs significantly from orthodox critical discourse analysis. Firstly, there is the lack of emphasis on relations of power. ‘Power’ is central to critical discourse analysis (Willig 2001), which looks at the role of discourses in “constituting and sustaining unequal power relations” (Phillips and Hardy 2002 p25). Taking its inspiration from the discursive psychology of Potter and Wetherell (1998), the primary focus of the method used in this study is the nature, functionality and impact of the discourses, rather than whether, how and by whom these discourses might be imposed. The second main difference is the emphasis on the linguistic features of texts, as called for in Fairclough’s (2003) exhortation to engage in “textually orientated discourse analysis” (p2). This emphasis is justified by the belief that meaning is constructed by language and the use of language, and that language has what Austen (1962) calls ‘performative power’ – the capacity to have force as well as meaning (see Potter and Wetherell 1987).

Although language is a key focus of the analysis, its relationship to thought and mental constructs is problematised. This reflects the ongoing debate in the discipline of discourse analysis. Most discourse analysts (e.g. Potter and Wetherell 1987, Billig 1996, Mottier 2006) argue that utterances cannot be assumed to give any direct insight into the mind of the speaker or writer and that analysts should only comment on the text and not try to make inferences about the individual. As Potter and Wetherell put it:

Given the essentially performative and lexical nature of language use, how can researchers construe it as a neutral record of secondary phenomena, [such as] cognitive or mental states? (1987 p145)

Taken to its extreme, this perspective would imply that interview analysis could only teach the researcher about the interview itself and not about the people being interviewed or the society of which they form a part. It can be contested, however (e.g. Silverman 1993), that discursive practice always reveals something of the representations that lie behind it. This, indeed, is the view of some discourse analysts (e.g. van Dijk 2000, Hollway and Jefferson 2000, Parker 1992), who claim that although language does not provide a *neutral* record of thoughts and intentions, it can be analysed in such a way as to reveal the underlying mental states that led to its production. Hollway and Jefferson (2000), for example, draw on the techniques and theories of psychoanalysis for this purpose.

This remains an unresolved (and perhaps irresolvable) issue. Essentially, it is the responsibility of the analyst to be cautious in drawing conclusions about respondents' intentions and to frame findings accordingly. Hollway and Jefferson seem to go too far in this respect, claiming a little too much certainty in their interpretation of respondents' subconscious motivations. As Giddens (1993) reminds us, any interpretation that goes beyond the text itself is an exercise in a double hermeneutic. The analyst not only interprets the text, but interprets the respondent's own interpretation. In this thesis, although inferences are made from the text regarding the motivations of householders, these conclusions are couched in such a way as to emphasise the epistemological 'leap of faith' that this involves.

The problematisation of the link between speech and thought in discourse analysis is perhaps one of the reasons why this method seems rarely to have been used by the proponents of social representations theory, who generally claim to be able to identify mental constructs by the analysis of texts (e.g. Wagner and Hayes 2005). Discourse analysts, indeed, tend to be critical of social representations theory for this reason (e.g. Potter and Wetherell 1998; McKinlay *et al* 1993; Billig 1993). Although some of these criticisms are certainly justified, social representations theory retains two advantages over discourse theory: it pays more attention to the question of the structure of social representations than discourse theory appears to pay to the structure of discourses, and it

appears to have given greater consideration to how these meaning structures are defended under situations of threat. For these reasons, although discourse analysis provides the analytical framework, the concept of the social representation is employed as an analytical tool within that framework. Billig (1993) condones this approach – albeit in the field of attitude research.

This is far from being an orthodox approach to research into social representations. Moloney and Walker use a similar method, but they only analyse “what type of language was used” (2000 p208) and appear not to look at discourses and at the issue of rhetorical intent. More commonly, social representations are elicited using quantitative content analysis (for example, Bangerter 2000; see Doise *et al* 1993). This technique, however, can be criticised for abstracting cognition from its social context (Rouquette 1995). By grounding itself in the analytic tradition of discourse analysis, this study aimed to be more rigorous than most investigations of social representations and thereby to address the criticism of “vagueness” that is sometimes levelled at social representations theory (e.g. McKinlay *et al* 1993: 146).

The process of discourse analysis cannot be automated. Computer software packages can help with the mechanical tasks involved, but cannot perform the interpretation itself (MacMillan and König 2004; Kelle 2000). The task is therefore an intensive one. After being recorded, professionally transcribed, checked against the audio recordings and then corrected, each of the texts from the interviews and focus groups was analysed in the following rigorous manner.

The analytical process

Following Willig’s (2001) recommendation, the first stage of the analytical process was to read each transcript and re-listen to the recordings in order to experience as a reader (and listener) the discursive effects of each text. These impressions were noted down for inclusion in later stages of the process.

Next, a simple pro forma was created for each interview. As each interview was read and re-read, relevant features were inserted, along with quotes and line numbers from the transcripts. As the analysis proceeded, new headings emerged and were added to the pro

forma. This process is functionally equivalent to the ‘coding’ process used in most *computer aided qualitative data analysis* (CAQDAS) applications.

The analytical headings in the pro forma are shown in Table 3. The first group of headings reflects the themes that emerged from the literature review and the researcher’s own intuitions, and reflects the topics included in the topic guides. This deductive approach to the analysis was complemented by the inductive emergence of themes that respondents themselves introduced to the interviews and groups. Some of these – i.e. “representations of ‘nature’”, “representations of ‘home’” and “is flooding exciting or is it traumatic?” – were added to later versions of the topic guides.

The third and final group of themes consists of meta-linguistic features of the texts. The first, “Core metaphors”, cuts across the themes in groups 1 and 2 and was only assigned a theme of its own to sensitise the analyst to its importance. The process of recording the rhetorical and performative features of the texts, meanwhile, helped contextualise the content of all the other categories.

Table 3 Theme headings used for the analysis of interview and focus group data

Theme heading	Examples of analyst’s comments from the data
1. Researcher categories included in the initial topic guide	
Likelihood of flooding	<i>Rob says that he was told that he and his neighbours would be evacuated if it rained again on one particular night. He claims, however, that the authorities will “never let it get that bad.”</i>
Consequences of flooding	<i>Malcolm puts little rhetorical emphasis on the practical consequences of the flood and is very ‘matter-of-fact’ on the topic.</i>
Causes and responsibility	<i>Susan and Kate argue about who is to blame for flooding – nature or the Environment Agency.</i>
Representations of the idea of pre-emptive flood risk action	<i>Martha states that life should be “carefree”. If anti-risk measures interfere with her life by being inhibiting or impractical, they will make her feel more anxious.</i>
Representations of particular measures	<i>Joan comments that having fittings for a floodgate would be a “bit depressing”, because it would constantly remind her of the risk.</i>
Actual measures taken – and reasons given	<i>Adriana says she kept her sandbags after the flood – in case it happened again.</i>
Comparisons with household fire	<i>According to Marcello, fire is a bigger worry than flooding because it happens more quickly and is more harmful.</i>

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Comparisons with burglary	<i>Elizabeth says that burglary is worse than flooding because burglars are less “predictable”</i>
Social pressures and interactions	<i>Clarissa says that after the flood, neighbours exchanged lots of “folk knowledge” about making insurance claims – but they did not talk about risk responses.</i>
2. Categories identified from the data	
Control	<i>Craig argues that you cannot do much to prevent water from coming up through your floor.</i>
Materialism	<i>George and Margery play down the importance of material losses incurred during floods.</i>
Role of education and knowledge	<i>Members of the focus group of housing association tenants in Reading recall lots of advice they have read in leaflets from the Environment Agency. But they are derogatory about it. (Perhaps because it is normative for them to despise the advice of ‘officials’?)</i>
Representations of ‘home’	<i>Harry states that the external appearance of their homes is important to lots of people. He describes this as “vanity”.</i>
Representations of ‘nature’	<i>Vikki’s description of nature during a flood is as something alien, frightening and malign; she personifies nature.</i>
Is flooding exciting or is it traumatic?	<i>According to Shereen, flooding is neither exciting nor traumatic. It is just “one of those things” – like finding dry rot in an old house.</i>
Emotions	<i>Travis expresses anger towards those he blames for the flooding. (But maybe this is no more than a show of solidarity with his friend, Freddy?).</i>
3. Researcher categories added during analysis	
Core metaphors	<i>Elizabeth describes unpredictable threats as “alien” and as emanating from people who are “on another planet”.</i>
Rhetorical structure	<i>Freddy constructs a dramatic narrative with a clear morality and a happy ending. When the proper authorities understand what is happening, he says, justice will finally be done.</i>
Respondents’ intentions in the interview	<i>Luke attempts to project himself as a competent protector of his family.</i>

The right-hand column of Table 3 contains examples of the comments that were recorded in the coding document. Several characteristics of these comments are worth referring to:

- This stage of the analysis is a form of data reduction and therefore constitutes an interpretation of the texts and not merely a reorganisation. At the same time, the analyst retained an impression of the interview as a whole. As the analysis progressed, he repeatedly referred back to the transcript in order to refresh that impression.
- The purpose of the notes was to mark points that warranted further investigation later in the analysis.

- The notes include some more overt interpretation. For example, the comment that Travis’s talk of feeling angry might have been an expression of solidarity with his friend, rather than a description of his own feelings.
- The phrasing of the comments reflects the ontological status given to respondents’ utterances. The repeated use of terms such as “Travis expresses”, “Rob says” or “Martha states” highlights the fact that the texts are a record of what people *said* and do not necessarily represent their actual beliefs. For example, it is impossible to know whether Martha really does think that life should be carefree or whether her statement to that effect is no more than a rhetorical ploy.
- Some of the notes refer to the absence of comments on certain themes³⁶. For example, Malcolm’s lack of emphasis on the damage caused by the flood in his home was considered significant and was noted down for later consideration.

These notes reflected not only the superficial content of respondents’ talk but also salient rhetorical and syntactical features. This helped construct a picture of the social representations and associated discourses that lay behind the key utterances on each of the themes. As recommended in the methods literature, this included an analysis of the “local context of data production – the interaction between the interviewer and the respondent” (Rapley 2001).

Once notes had been made on all the interview and group transcripts, those referring to the same theme were drawn together and each of the themes was analysed across the totality of the sample. This allowed the analyst to compare and contrast cases and to identify patterns relating to the demographic or other characteristics of the respondents.

An example of linguistically oriented analysis

To illustrate the process of linguistically oriented analysis – and to show how a detailed, contextual analysis of a quote can provide a deeper understanding of its meaning and construction – an analysis of a part of a text is presented here. This excerpt is taken from an interview with Elizabeth, a professional owner-occupier from the London fieldwork

³⁶ See Potter and Wetherell’s (1998) recommendations on the conduct of discourse analysis.

area, who lives with her husband and three young children in a basement flat that has twice come close to being flooded. In the passage below, Elizabeth compares flooding with burglary³⁷. We saw in Table 3 that Elizabeth rates burglary as worse than flooding because it is less predictable. This excerpt reveals the context in which this utterance occurs.

Interviewer Why water behind burglary?

Elizabeth Because, you know, [*soft voice*] it's... well it's not inanimate, is it?... because it moves, but you know, it's not... Fire for the danger, burglar because [*pause and sigh*] I suppose it just... you know, another person, somebody who [*pause*] could react in an unpredictable way; whereas I suppose water is predictable. You know,

it's going to go to the lowest point and rise upwards. That's what it's going to do. A burglar – who knows what they're going to do? Are they just... do they want to burgle? Do they want to attack you? rape you? murder you? Are they, you know, are they looking for their next fix and they're just

[*pause*] on another planet, because they're sort of [*soft voice*] um, sort of drug-crazed. Sounds a bit 'Daily Mail', but you know what I mean.

The first thing to notice about this text is the hesitation in Elizabeth's opening monologue. Asked why she has rated burglary as worse than flooding, she softens her voice, intersperses her talk with pauses, and sighs. Although this behaviour is ambiguous, it seems likely that it indicates uncertainty. Furthermore, her comments are heavily modalised, with terms such as "you know" and "I suppose" and tag-questions such as "is it?" all indicating a reduced commitment to the views being expressed (see Fairclough 2003). All of this suggests that Elizabeth, in this first paragraph, is searching to find a suitable justification for her comment about floods being less severe than burglary, but that she is not comfortable with any of the reasons that she is able to express.

The artificial paragraph breaks in Elizabeth's speech indicate the points at which the modality of the text changes. In the second paragraph, instead of modalised statements, we now see the assertive phrases, "it's going to go" and "it's going to do", which indicate that Elizabeth is making a truth claim. Having groped around for something certain in the first paragraph, she now seems to have discovered an argument that she can present with confidence – the argument that water behaves in a predictable manner. The rhetorical significance of this discovery is marked by the semantically redundant phrase, "That's

³⁷ See Appendix H for a guide to the notation used throughout this thesis in the presentation of interview

what it's going to do", which refers to the previous sentence and emphasises it. Elizabeth's talk has gained in confidence at this point, so she is able to deliver her next utterances with far more assertiveness. There is no hesitation now; she employs simple, interrogative sentences with no modalising tag questions and uses grammatically incomplete sentences (substituting "Rape you?" and "Murder you?" for 'Do they want to murder [or rape] you?').

In the third paragraph the modality of the text changes again. There is a pause, Elizabeth's voice softens again and we see a reappearance of modalisation ("sort of" and "you know what I mean"). This appears to mark a different kind of hesitation from that in the first paragraph. On this occasion, it is as though Elizabeth knows what she wants to say but hesitates because of the effect she fears this might have on her self-presentation. This interpretation is supported by evidence both inside and outside of the text. Elizabeth is a civil servant and qualified solicitor; the interviewer felt that her demeanour in the interview suggested she considered herself his social and intellectual equal³⁸, and she generally gives considered and thoughtful answers to his questions and is self-reflexive. This image of sophistication, however, is out of keeping with the register she adopts in this paragraph, where "they're just on another planet" and "drug crazed" suggest the linguistic repertoire of a tabloid newspaper rather than that of a legal professional. The new modalisation perhaps acknowledges that fact and invites the interviewer to excuse the lexical shift. Indeed, the final sentence of the paragraph could be seen as an example of what Levinson calls 'self-repair' (1983 p340). By intimating that she has knowingly borrowed from a linguistic repertoire that is not her own, Elizabeth disassociates herself from the source of that repertoire and avoids being categorised with what, it appears, is to her an undesirable social identity – that of a reader of the Daily Mail.

This analysis adds to the understanding of the note in Table 3 ('Elizabeth says that burglary is worse because burglars are less "predictable"') in a number of ways. For example, it suggests that Elizabeth's justification of her view is an example of *post hoc* rationalisation. The evidence of the first paragraph points to a lack of a conscious reason – at the time of her initial assertion – for rating flooding as less worrying than burglary. The

transcripts.

³⁸ recorded in the interviewer's notes

interviewer's question, "why?", may have implied to Elizabeth that he required of her a more rational reason for her view, and may have made her feel obliged to find such a reason. The reduction in modality between the first and second paragraphs coincides with her 'discovery' of this rational reason and hints at the role it might be playing in the text.

This does not negate the value of Elizabeth's utterance as a piece of data, but it does change its ontological status. Given the analysis of the context of the utterance, it would be incautious to assume that Elizabeth's stated rationale for favouring flooding over burglary is in any sense a permanent part of her belief system. However, by choosing this explanation rather than any other, Elizabeth demonstrates that it is one of the more available defences for her earlier statement. It may not be a fixed belief, but its cognitive availability suggests that it forms part of her representation of home and household risks.

A final comment on this text relates to the two metaphors in the third paragraph: "on another planet" and "drug-crazed". Elizabeth uses these metaphors in spite of apparently feeling uncomfortable about how this might reflect on her character and judgement. This must be significant. It may be that the representation of burglars as "alien" is such a core part of her representation of burglary that it cannot easily be omitted if the subject arises. Alternatively, knowing as we do that metaphors are often used to obscure and to hide (Lakoff and Johnson 1980), we might speculate that the constructed contrast between burglary (which is represented as alien ("on another planet") and unpredictable ("drug-crazed")), and flooding (which, by implication, is represented as more predictable and less alien), is a strategy to obscure the unpredictability of flooding and thereby reduce flood risk related anxiety.

In the example textual analysis just given, a number of tools and terms were referred to that are particular to close linguistic analysis. These are explained in the glossary of linguistic terms and concepts at the start of this thesis.

4.6 Survey analysis

Although the main form of data analysis informing this thesis was qualitative, statistical methods were also employed wherever they offered a triangulated perspective on any of

the findings. The combination of qualitative and quantitative methodologies in a ‘mixed method’ approach has become increasingly popular in recent years (Bryman 1992). As Bryman (1992) and Hammersley (1992) argue, the fact that the qualitative and quantitative traditions emerge from different epistemological traditions does not mean that they are innately dependent on those traditions, and it is entirely valid to employ quantitative methods in support of an interpretative method. As an example of methodological triangulation, quantitative analysis is recognised as a means of enhancing the design of qualitative research (Brannen 1992).

It is important, however, to be clear on the role of quantitative analysis. Triangulation is often promoted as a means of improving internal validity (Brannen 1992), but in reality, the different preoccupations and contrasting strengths and weaknesses of qualitative and quantitative methods mean that findings can be neither compared nor integrated (Bryman 1992). In this thesis, quantitative and qualitative findings are seen as complementary – reflecting different aspects of the multi-dimensional reality of flood risk response. In fact, inconsistencies between the results of the two methods are viewed as positive because they prompt reflexivity about the findings (see Gaskell and Bauer 2000; also Agar 1986 and Coulon 1995).

The ‘RPA’ dataset

The two sets of survey data were used in this manner.

The first of these was collected in England and Wales in 2002 by Market Opinion Research International (MORI), in a study designed by Risk and Policy Analysis Ltd, the Flood Hazard Research Centre, Economics for the Environment Consultancy Ltd. and the University of Newcastle (see RPA *et al* 2004). This will be referred to in this thesis as the ‘RPA’ dataset. The relevant parts of the survey questionnaire are shown in Appendix K.

The original aim of this survey had been to develop instruments to measure the health impacts of flooding and it is from this perspective that it had previously been analysed (see Tunstall *et al* 2006). The inclusion of a question on behavioural responses (Figure 10), however, meant that it could also be used to triangulate the qualitative research in this thesis. The response options for this question were pre-coded and presented to respondents on a show-card.

Data had been collected from 1,510 respondents, but not all these cases could be used in the analyses in this thesis. As the main interest of the original survey was the impact of flooding on health, some questions were only asked of the two-thirds of the sample who had experienced flooding³⁹, who were prompted for detailed information on the nature and consequences of the “worst” of the recent floods they had experienced. Furthermore, of those with no experience of flooding, 73 claimed not to have been aware of the flood risk before the interview. As this study is looking at people’s responses to flood risk, and as it is axiomatic that people who are unaware of a risk cannot respond to it, these 73 respondents were excluded from the analysis.

Figure 9 Question on flood risk in the RPA survey

<p>QA5. Have you undertaken any of these prevention measures?</p> <ul style="list-style-type: none">a. Take out household insurance against floodingb. Keep sand and bags in the propertyc. Keep ditches and the drains around the property cleand. Built walls around the propertye. Purchased water pumpsf. Keep alert for flood warnings during high-risk monthsg. Avoid buying expensive downstairs furnishingsh. Avoid keeping irreplaceable items or goods of sentimental value on ground floor of my home at all or certain timesi. Other (WRITE IN)j. Did not take preventative actions / None of these
--

(RPA *et al* 2004 – Annex 3)

As Figure 10 shows, prompts were not included for all of the various property-level measures that are available to householders. Amongst the protection measures, floodgates, airbrick covers, floodskirts and waterproof doors were amongst the options that were omitted from the list of options. Similarly, although two resilience measures were prompted for (see g. and h.), no mention was made of water resistant plaster, raised electrical sockets, water resilient kitchens etc. Although this does not necessarily represent a fault in the original design, it does limit the types of analyses that could be applied to the dataset in the context of the research aims of this study. For example, the dataset cannot be interrogated in relation to resilience measures as a whole, but only regarding the type

³⁹ That is, flooding above floor-level

of measures that are listed in the question. This limitation will be reflected in later discussions of the analyses.

A summary of the other main characteristics of the survey is given in Table 4.

Table 4 Key characteristics of the RPA dataset

Sample size	1510
Response rate	77%
Fieldwork area	SE England, Midlands, Northern England, Wales
Sample frame	Areas that flooded between 1998 and 2002
Methodology	Face-to-face interviews
Predictor variables	For all respondents Flood experience, awareness of the flood risk, respondent's level of education, proximity to the nearest river, length of residence in current property, tenure, presence in the home of children under 10, presence of an elderly person, number of floors in the property, social grade, household income Additional predictors for those with experience of flooding: Number of times flooded above floor level For the worst of these floods: - whether it had resulted in a member of the household moving out - whether it had resulted in a member of the household consulting a doctor - number of weeks spent living elsewhere.
Experience of household flooding	983 respondents had experience of being flooded 527 did not

The 'FHRC' dataset

The second dataset had been collected in a survey commissioned by the Flood Hazard Research Centre as part of its work on a research project for the Department for Environment Food and Rural Affairs⁴⁰ (see Tunstall *et al* 2006). Fieldwork was conducted by Market and Opinion Research International (MORI 2005) during early 2005, and involved households that had been flooded in the previous five years. The questionnaire used is shown in Appendix L.

A summary of the main characteristics of the survey is given in Table 5.

⁴⁰ project number FD2014

Table 5 Characteristics of the FHRC dataset

Sample size	278
Response rate	Not reported
Fieldwork area	Essex, Cambridgeshire, the Severn floodplain, the Yorkshire Dales and Ridings, the Cumbrian coast, Cornwall, S. Wessex, Kent, N.E. London, the Oxford and Reading areas
Sample frame	Households flooded since Autumn 2000 that had not been included in previous major flooding surveys
Sampling	Census-sample (with recruitment target numbers for each area)
Methodology	Face-to-face interviews
Predictor variables	Flood experience, respondent's level of education, length of residence in current property, tenure, presence of children under 10, presence of an elderly person, number of floors in the property, social grade, household income
Outcome variables	Writing a flood-plan Flood insurance Reducing the value of downstairs furniture, removal to safety of irreplaceable items / items of sentimental value, fitting of tiled floors or removable carpets, fitting of flood resistant kitchen units, raising furniture off the ground, use of water-resistant plaster, raising electricity sockets, removal to safety of valuable items. Installing pumps, building walls round the property, installing new drains, cleaning drains, keeping sandbags in the property, installing flood gates, installing air-brick covers
Experience of household flooding	94%

Although the main aim of the survey was to calibrate a model of the economic benefits of flood warnings, the author was able to add three questions that relate more directly to this thesis. The first two of these were pre-coded questions designed to establish which, if any, flood protection and resilience measures respondents and their fellow householders had taken (Figure 11). The issue of intention was made explicit in both questions because it was important to distinguish actions taken with the intention of reducing the risk from those taken for other reasons.

Figure 10 Questions on flood risk response in the FHRC survey

- Q52. While living in your current home, have you done any of the following?
(If “Yes”: Was this before or after your recent/most serious flood?)
- a. Obtained sand-bags and sand in case it floods in the future?
 - b. Kept ditches and drains especially clean in readiness for flooding?
 - c. Installed water pump(s)?
 - d. Bought flood gates?
 - e. Bought air-brick covers?
 - f. Built new walls or drains to protect your home against flooding?
 - g. Taken out insurance-cover against flooding?
- Q53. Have you acted to reduce the damage that water would cause if it got into your home, for example by... (If “Yes”: Was this before or after your recent/most serious flood?) (No/Yes before/Yes after)
- a. Buying cheaper or more flood resistant ground floor furniture?
 - b. Laying tiles on the floor or replacing fitted carpets with roll-up carpets or rugs?
 - c. Replacing old kitchen units with more flood resistant ones?
 - d. Permanently raising furniture, washing machines etc off the floor?
 - e. Using water-resistant plaster on the walls?
 - f. Making a written plan of what to do in case of a flood?
 - g. Moving electricity sockets higher up the walls?
 - h. Moving valuable items off the ground or upstairs?
 - i. Moving sentimentally important items off the ground or upstairs?
 - j. Something else to limit flood damage? (*interviewer asked to note down details*)

As Figure 11 shows, prompts were not included for all of the various property-level measures that are available to householders. Amongst the protection measures, floodgates, airbrick covers, floodskirts and waterproof doors were amongst the options that were omitted from the list of options. Similarly, although two resilience measures were prompted for (see g. and h.), no mention was made of water resistant plaster, raised electrical sockets, water resilient kitchens etc. These omissions do not necessarily represent a fault in the original design, but they do limit the types of analyses that could be applied to the dataset in the context of this study. For example, the dataset could not be interrogated in relation to resilience measures as a whole, but only regarding the type of measures that are listed in the question. This limitation will be reflected in later discussions of the analyses.

The third question that was added for the research in this thesis used a closed rating design to explore the influence of factors that might affect respondents’ willingness or ability to

implement risk mitigation measures. Respondents were presented with fourteen statements that the flood risk literature and discussions with professionals had suggested might represent explanations for flood risk response. Respondents were asked to say how strongly they agreed or disagreed with each. See Figure 12.

Figure 11 Question on barriers to flood risk mitigation in the FHRC survey

<p>Q54. How strongly do you agree or disagree with the following statements? (strongly agree / tend to agree / neither agree nor disagree / tend to disagree / strongly disagree / no opinion)</p> <ul style="list-style-type: none">a. I don't know what I could do to protect my home from floodingb. I don't have the money to spend on protecting my home from floodingc. There aren't enough good tradesmen and builders around to adapt my homed. No-one in my household has the DIY skills to adapt my homee. I prefer not to think about scary things like floodsf. Flooding is unlikely to threaten my home again in the near futureg. Even if my home were flooded again, it wouldn't be very badh. I've got more important things to worry about than being floodedi. I'm a person that doesn't worry much about thingsj. We don't expect to be living here very much longerk. The Environment Agency has protected my home from floodingl. The Environment Agency should protect my home from future floodingm. When it comes to selling my home in the future, I wouldn't want potential buyers to know that my home sometimes floodsn. It's not up to me to protect my home from floods – that's my landlord's business
--

This dataset will be referred to in this thesis as the 'FHRC' dataset.

Validity and reliability of the datasets

Before going on to describe the analysis of these two datasets, it is important to consider the question of their validity and reliability as they apply to all the various elements of the data collection process.

Sampling

Unlike interpretative research, the validity of survey research relies on the sample being *representative* of the target population. The validity of survey data is therefore more sensitive to the sampling method used.

Both surveys used similar sampling methods. The RPA survey used what is known as the *clustered quota* method. Fieldwork areas were chosen by the research team and interviewers were set targets for the numbers of at-risk and flooded respondents to be interviewed in each area. The FHRC survey used *clustered census sampling*. Fieldwork areas were chosen by the research team, but all the residents of those areas were approached to participate in the survey. As neither of these sampling methods is fully randomised, the achieved samples will not be fully representative of the population.

In practice, however, fully random sampling is rarely used because of the time it takes to recruit the less accessible part of a random sample – i.e. residents who spend little time in their homes and who fail to respond to recruitment letters. In reality, therefore, most survey research suffers from imperfect sampling and the methods used in these two surveys do not fall short of industry standards. Nevertheless, it is worth noting that because of the lack of randomness, hard to recruit groups, such as younger people, are likely to be underrepresented (see Raab *et al* 2005).

Recruitment

It has not been possible to verify the quality of the recruitment methods used in the two surveys. However, a common proxy measure for the effectiveness and quality of recruitment is the response rate. This should normally be at least 70% (Seale and Filmer 1998). On this measure, the rate of 77% achieved by the RPA survey suggests a relatively good recruitment process. Data on response rates for the FHRC survey had not been collected.

Even a 23% non-response is a serious matter if the distribution of the non-respondents is non-random across important variables, so it is helpful to check the overall quality of an achieved sample by comparing its demographic profile with that of the target population. As there is no reliable statistical information for the population of UK households in flood

risk areas, the achieved samples were compared with general population figures instead (see Appendix J). This comparison revealed four areas of possible bias in the datasets. Firstly, both samples have higher proportions of over 55s and lower proportions of 18-34s compared to the average for England and Wales. Secondly, the proportion of homeowners in the FHRC dataset (91%) is higher than that for the UK as a whole (69%). Thirdly, a higher than average proportion of respondents in the RPA dataset was qualified to degree level or above (22%, compared to 18% for England and Wales as a whole). Finally, it is worth noting the high proportion of people who belong to the social grades A and B and the low proportion of those belonging to D and E in the FHRC dataset and the high proportion of C2s in the RPA dataset.

Demographic patterns in England and Wales as a whole may not reflect those in flood risk areas, so although the differences between demographic patterns in the datasets and those in the general population may be the result of sampling and recruitment problems, they may also reflect the natural demographics of flood risk areas. Nevertheless, it is worth bearing in mind that any attempt to generalise from the sample to the at-risk population may under-represent the data characteristics associated with younger people and tenants and over-represent those associated with postgraduates and certain social classes.

Questionnaire design

The quality of the data collected in a survey is also influenced by the design of the questionnaire. Designing a questionnaire to incorporate both measurement validity and reliability is notoriously difficult, with potential problems being caused by poor intelligibility, contextual influences, framing effects and question threat (Foddy 1993). Such problems are best detected by questionnaire piloting and testing (*ibid*).

It is unclear exactly how rigorously the questionnaires for the two surveys were checked for this kind of problem. Although RPA *et al* (2003) state that the RPA survey was piloted in order to – amongst other things – “test the questions” in the questionnaire (p23), the report of the pilot (*ibid*) gives no details of how this was done or of whether any of the questions were changed as a result of the tests. Many of the questions in the FHRC survey, meanwhile, “were derived from instruments that had been tested and used in previous research on flood warnings and response” (Tunstall *et al* 2006), but no details are given of

the rigour of these tests. Furthermore, the questions added to the FHRC survey for this thesis were not tested at all due to a lack of time in the survey timetable.

Where there is some doubt over the adequacy of question testing, an alternative is to inspect a questionnaire for face validity (see Seale and Filmer 1998). This is important where secondary analysis is being performed and the focus might be on parts of the questionnaire considered less important by its original designers. Such an inspection exposed two problems for the proposed secondary analysis of the RPA dataset.

The first problem is the positioning of the question on flood risk response. It is considered best practice to ask core questions further into a survey, so that when these questions are asked, respondents will already have built up a rapport with the interviewer and will have had time to awaken their memories of the subject in hand. Perhaps because this question was not core to the research question for which the survey was initially conducted, it was positioned early in the survey. This may have made it difficult for respondents to recollect what flood risk mitigation measures they had taken, especially as they may also have been distracted from the question by the anxieties that usually mark the beginning of an interview.

The second flaw in the suitability of the RPA survey for the secondary analysis in this thesis is a *question order effect*. Question 4 (“Are you aware that this area is defined as a flood risk area?”) may have prejudiced responses to Question 5 (the question about flood risk response) by prompting respondents to think they would compromise their self-presentation if they answered “yes” to Question 4 and did not answer “yes” to any of the options in Question 5. Similarly, respondents may have thought they would look foolish if they said “yes” to any of the options in Question 5 once they had already answered “no” to Question 4.

Finally, the range of possible statistical tests is limited by the fact that some variables relate to the household and others relate to the individual respondent. Only if it is assumed that there is homogeneity across all adults in the household, therefore, can tests of association between these two groups of data be justified. In the case of gender, for example, such an assumption would clearly not be valid, for the gender of one

householder cannot be taken to represent the gender of the whole household⁴¹. For this reason, gender was excluded from the analyses. In the case of educational attainment, the argument is more marginal, for it can justifiably be assumed that there will be a strong correlation between the educational levels of different adult residents in the same home. Education was, therefore, included in the analyses.

Fortunately, the relatively large sample size of the RPA survey means that the problems with the questions are unlikely to have significantly affected the finding.

Statistical methods

The paragraphs that follow describe the bivariate and multivariate statistical methods that were used in the analysis of the two datasets. As all the outcome variables are dichotomous (e.g. whether or not a household had implemented a resilience measure), only non-parametric measures could be used (see Bohrnstedt and Knoke 1994).

All the analyses were performed using the statistical package, SPSS 11.5.

Bivariate analyses

The main bivariate test used was the *chi-squared test*. The chi-squared test assesses the likelihood that there is a relationship in the population between two variables. The use of the test is only valid if none of the expected frequencies in any cell of a two-by-two crosstabulation fall below five and – for larger tables – if less than 20% of expected frequencies fall below five (Liptrot and Sanders 1994). Neither of these circumstances was encountered in the analyses shown in the thesis.

When a significant association is found to exist between two variables, it is often useful to know the magnitude of that relationship. The most important and most commonly used measure of association for cross-tabulations is the *odds ratio* (OR^{FiRj}) (Bohrnstedt and Knoke 1994). This has the advantage of being easy to calculate and – owing to the familiarity of ratios and likelihoods in everyday life – of being easy to interpret. According to Bohrnstedt and Knoke (1994), however, a technically superior way of

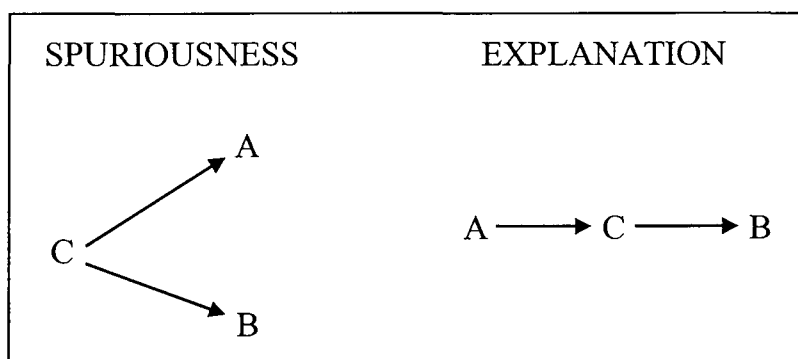
⁴¹ Such as assumption would be fallacious. With the obvious exception of single-person households, many –

measuring the magnitude of a relationship is provided by methods that employ the *proportionate reduction in error* technique. One such measure for dichotomous variables is a correlation coefficient called *phi adjusted* (ϕ_{adj}). This is calculated by making a small adjustment to the correlation coefficient *phi* (ϕ) to compensate for the fact that phi's maximum values are limited by the size of the marginal values in the cross-tabulations (see Bohrnstedt and Knoke 1994 pp167-168). An equivalent measure for variables of more than two categories is *gamma* (G). Both *phi adjusted* and *gamma* vary between -1 and $+1$, with 0 representing no association and the polarity signifying the direction of influence.

Multivariate analyses

Wherever it was appropriate, multivariate techniques were used in preference to bivariate techniques. Multivariate techniques have the advantage that they reduce the effect of spurious associations and discriminate between direct associations and associations via intervening variables. For example, a covariation between a predictor (A) and a flood risk response (B) might be the result of a third variable (C) having a common influence on both – *spuriousness*; or else C might be an intervening factor that transmits the causal effect from A to B – *explanation* (Figure 13).

Figure 12 Two roles played by a third variable in a revealed bivariate relationship



(From Bohrnstedt and Knoke 1994: 239)

Modelling the relationships between variables with multivariate contingency techniques allows the analyst to explore these possibilities. In the words of Bohrnstedt and Knoke,

if not most – households include both men and women.

the value of such techniques lies “in [their] capacity to estimate the relative importance of several hypothesised predictors of the outcome variable of interest” (1996 p263).

The most commonly used multivariate contingency technique, linear multiple regression, assumes, however, that the error terms – the differences between the expected and the actual values – will be normally distributed (Bohrstedt and Knoke 1994: 333). The violation of this assumption where the outcome variables are categorical can be avoided by performing the regression on the probability (p) of the value of the variable being one ($p(R_j) = 1$) instead of on the variable itself (R_j). However, this, in turn, creates a new difficulty – the possibility of an expected value of the probability being greater than 1 – which would be meaningless.

The logistic transformation gets over this additional difficulty by taking the log of the likelihood ratio ($p / (1 - p)$). This is sometimes called taking the logit, and is expressed as:

$$\text{logit}(p) = \log(p / (1 - p))$$

The logit scale is symmetrical around the value of 0.5 (which is equivalent to a probability of 0). Whereas p can only range from 0 to 1, logit ranges from negative infinity to positive infinity. As a result, the error terms are normally distributed in spite of the outcome variables being categorical.

Another assumption of regression techniques is that there is no significant collinearity between predictor variables – i.e. that there is an absence of *multicollinearity*. Multicollinearity can cause overly large standard errors in regression coefficients, which can result in *type II errors* – variables wrongly being shown as not significant (see Tabachnick and Fidell 1996). Analyses of multicollinearity were therefore performed before each logistic regression and changes made to the analysis where necessary. Following recommendations by Field (2005), multicollinearity was assumed to be within acceptable levels if the value of the maximum *condition index* was less than 10, the tolerance level of each of the variables was less than .2 and the average VIF value of the variables was close to 1.00.⁴²

⁴² For a detailed explication of these conditions, see Field (2005)

Once the check for multicollinearity had been successfully performed, logistic regression was performed using combinations of the *forced entry* method and *backward elimination*, the two methods recommended by Field (2005) for exploratory work of this nature.

4.7 Conclusion

There is no easy way to discover the social representations and discourses that householders use when they consider the question of flooding and flood risk. Respondents cannot simply be asked what these are, for they are rarely consciously accessible and even if they are, the desire to manage self-presentation will often cause them to be kept hidden. For this reason, the empirical research conducted for this thesis relies heavily on hermeneutical methods, looking for meanings that are embedded in the language, the register and the style of people's talk.

Such interpretations are, inevitably, contestable. For this reason, the qualitative method is complemented by the analysis of two large survey datasets and qualitative findings are, wherever possible, tested against the statistical analyses of the survey data.

The statistics, furthermore, give some indication of whether the discourses and representations identified in the qualitative analysis are associated with patterns of flood risk mitigation. Although, intuitively, it might seem that people's talk about flood risk should have some correlation with their behavioural response, this assumption should be tested wherever possible. The analyses of the survey data address this issue. Although they are rarely able to test actual causality, they are a more powerful test of association than interpretative analyses of small samples. Qualitative methods can suggest why a particular discourse could discourage respondents from protecting their homes, but it requires quantitative methods to test whether or not people who do use this discourse take such measures less (or more) often than those who do not.

Even when the strengths of both quantitative and qualitative methods are combined, it is still not possible to give a definitive account of why householders do or do not take practical steps to mitigate flood risk. Social issues are so complex that any one study can only hope to provide a partial view of what is a multi-faceted reality. Coming from a methodological approach that is new to the field, however, this thesis is able to add a new dimension to that understanding.

5. Social representations

The next five chapters present the bulk of the empirical evidence that underpins the core arguments of this thesis. This, the first of these chapters, presents the evidence for the existence of four social representations that are of particular significance for the protection of ontological security against flood risk. Chapters 6 to 9 go on to look at the main discourses that are used by householders to protect these representations. Finally, Chapter 10 knits the evidence from the previous five chapters into a theoretical framework and takes a more detailed look at why householders use the representations and discourses that have been identified in the previous chapters.

In each of these five chapters, empirical findings are presented alongside one or more illustrative passages from the transcripts. Following advice given by Wengraf (2001), long enough excerpts are provided to give readers access not only to the utterances that illustrate the points being made, but also to the context within which they are uttered. This is intended to lend transparency to the arguments in this thesis and allow readers to judge for themselves the quality and appropriateness of the interpretations. Due to constraints on length, only a small number of such illustrative excerpts are presented for each conclusion, but these are supported by shorter extracts from other interviews and – where the available survey data allows – by relevant statistical analyses.

In this chapter, four representations are presented that are central to the construction of flood risk and flood risk response: the social representations of ‘home’, ‘society’, ‘nature’ and ‘self’. Each of these is based on shared understandings and is therefore essentially social in nature. Each of these, too, can be critical to the protection of ontological security, allowing groups and individuals to employ the strategy of denial against the perception that flood risk poses a real danger to security.

5.1 Representations of ‘home’

In the contemporary Western world, people usually consider their home as more than just a material convenience or a financial asset. The pervasive social representation of ‘home’ comprises the positively connoted notions of continuity, safety, relaxation, privacy and

familial affection (Saunders 1989, Smith 1994). Originally a bourgeois view of the seventeenth century (Haraven 1993), this representation is now shared by other social groups in the UK (Mallett 2004). Some writers go even further, giving ‘home’ a religious significance and seeing each person’s image of him- or herself in his or her home as a metaphor for God’s position in heaven. The home, from this perspective, is a fixed and sacred spot that represents the centre of a person’s universe, and from which they attempt to create a version of that universe that fits in with their desires (see Cooper 1976).

This idealised representation of ‘home’ remains important even where, as is often the case (Douglas 1991), it does not reflect the lived experience. Whatever the tribulations they might face in their homes, as people spend time in a house or flat, the routines they develop there, the aspects of their identities that they project onto the fabric of the building and the accretion of personal and inter-personal memories all imbue the place with their sense of who they are (Tuan 1974). Any invasion of the home by a ‘foreign’ substance such as water therefore threatens a person’s idea of their identity and undermines ontological security (Dupuis and Thorns 1998). As a result, forced relocation after flooding is associated with deterioration in mental health (Ohl and Tapsell 2000, Tapsell *et al* 1999).

Amongst the sample in this study, the importance of representations of ‘home’ reveals itself in respondents’ apparent reluctance to consider mitigation measures that might reduce conformity to the idealised image. The two following excerpts illustrate this: one from an interview with a 46 year-old professional married home-owner who, two years previously, had come home to find that a sudden flash-flood had washed through the ground floor of her home; the other from a focus group with home-owning professionals, who had also been affected by flash-flooding.

- Interviewer [...] If you were able to do things you could just leave in place and forget about... I don’t know what that might be. It might be... raising your doorway for example; your floor a little bit; taking some measure permanently. Would that be better?
- Martha Probably – if, let’s say, um, cost permitting. And also, I think we don’t really want to [*pause*] change it – I like my house to look nice – I don’t want to have a door that is, like, a bit daft because I raise the [*laughs*]. And each time when we have friends or people coming through, you say well, you know, ‘can you please step higher’ [*laughs*]. That just, um – I don’t know.
- James Another thing. Our next-door neighbour has lived in the same house for really ages. They put in a cellar door because some of the water came from the road and went down the

cellar stairs in front of the house. They put in a door, the sort of thing they use... you see in a submarine [Vikki *laughs*] ...that you can seal

Tom With a hatch

James You know, so it's got

Paul The full rotary...

James [*Lots of laughter makes speech unintelligible.*]

Tom A periscope!

In both cases, the idea of straying from the idealised representation of 'home' seems to provoke discomfort. A home, the respondents suggest, should look "nice" and not "daft"; it should conform to what one expects of a home and should not have doorways that oblige you to "step higher" or doors like those of a "submarine". This suggests that people expect the loss of the physical characteristics of the stereotypical home to lead to the loss of the comforting characteristics that conform to that stereotype. If conformity to the visual part of the representation is lost, so too is the rest of the representation – including the elements that provide emotional security.

A third excerpt that illustrates the same point is taken from a focus group of working class respondents: Travis, an owner-occupier who has a separate, self-contained flat in the basement of his house; Freddy, a council tenant whose only bedroom is in the basement of his split-level flat, and Pauline, who lives in a terraced council house:

Interviewer [...] I mean, someone I spoke to, he got – what do you call it? – some really strong bit of wood, and he did it himself. And it wasn't as good as this super-duper plastic thing, but he got it set up – 'cos he lives near a river, this bloke, that sort of might flood, and he also has sewage coming up in the street. And he got this big whacking board that he can screw in across his front door. So it's cheaper. I don't know what it cost him – probably a hundred Quid or something like that – um...

Travis Yeah but then again, you'd feel like a prisoner [*laughter*] – a prisoner in your own home, in it [*laughter*]!

Pauline Yeah, prisoner in your own home!

Travis Prisoner in your own home [*laughter*] [...] you might get squatters moving in while you're out! [*Laughter*]

Freddy The trouble is, you've got no flood coming in, but then a fire starts and you've had it! [*Laughter*]

In this discussion, the suggestion that 'home' might need to be defended against floods seems to provoke fears over the loss of the notion of 'home' as a place of safety. Rather than picturing 'home' as a safer place when it has floodgates installed in it, the respondents associate flood barriers with increased vulnerability: in response to the mention of floodgates, they spontaneously begin to talk of restricted freedom ("prisoner in your own home"), invasion ("you might get squatters moving in") and danger ("then a fire

starts and you've had it!"). Once breached by an acceptance that some kind of defence is needed, the representation of 'home' as a place of safety is felt to be at risk of crumbling away entirely.

A final aspect of the representation of 'home' is seen in an interview with Malcolm, a home-owning management consultant who lives with his wife and adult sons. Malcolm's case is interesting because – as this passage shows – he acknowledges the role of geographical context for defining the degree of physical safety that is necessary for a home to feel ontologically secure:

Malcolm [...] at the seaside you look at these [floodgates] and you just say to yourself, 'well this whole area is at risk'; whereas I don't think we've actually quite acknowledged that this whole area is at risk – the whole time anyway. It's an occasional risk. Whereas at the seaside, people have [floodgates] because the frequency of high winter-tides means that every year there's a real danger of being flooded. I've also seen it in places like Godalming, for instance, where the river flows through quite a steep, narrow valley, and at the bottom of that are houses around the mill and they've all got these things. So a fact of life: you live in an area that potentially always is going to be flooded, so this is what you do. You've got these barriers that you always have available to plonk in, in front of your door.

Interviewer So what is it that makes this area different to Godalming and the seaside?

Malcolm Well I think it's partly to do with aesthetics. It's partly to do with the ability to actually manipulate these things in the right way, knowing that there is the... eventuality it's going to occur. But it's also, I think, us not having crossed that great Rubicon which says this area is always going to be at risk from flooding. Which is not something we've done. We say there is an occasional risk of flood, but not on the scale that is frequent at the seaside or these steep river valleys.

In this passage, Malcolm creates a connection between the character of 'home' and the character of the area in which it is located. An area where all the houses have "got these [floodgate] things" becomes defined by flood risk and by the presence of a particular response to that risk. 'Home', this suggests, does not have to be safe in any absolute sense; it merely has to conform to the normal degree of safety experienced by other homes in the same area.

Social representations of 'home', these passages suggest, form a part of people's overall feelings of security. If people are to feel ontologically secure, 'home' needs to conform, more or less, to an accepted, normalised image. The representation of 'home' will be protected, therefore, against any suggestion that it is exposed to a high degree of risk.

For example, Travis, Pauline and Freddy employ hyperbole and humour to resist the erosion of this representation (see above). By magnifying the difference between two clashing concepts of home – ‘home’ as a place of safety and ‘home’ as a place requiring defence – they create an exaggerated incongruity. Incongruity being humorous (Morreall (1983), this prompts laughter amongst the respondents. Although laughter is a particularly ambiguous form of oral communication (Gregory 1999; Mulkay 1988), it seems in this instance to be an example of what Konrad Lorenz calls “a controlled form of aggression” (cited in Morreall 1983 p6). The respondents ridicule – and thereby de-legitimise – the invasive idea that ‘home’ is not always a place of safety.

5.2 Representations of ‘society’

Ridicule, hyperbole and humour are just one of the ways in which householders protect the idealised social representation of ‘home’. More important for the argument in this thesis is the protection of ‘home’ by two other representations, including the social representation of ‘society’.

In most of the modern world, society and state are one of the main guarantors of the security of people’s homes. The representation of society, therefore, plays an important role in protecting people’s ontological security against the fear they might otherwise have of natural hazards. If they can continue to represent society as essentially just and effective – as providing rescue and recompense, or better still, as preventing destructive events from ever occurring – then they can continue to believe in the possibility of a home that is safe and secure.

This is illustrated by the case of Freddy, the unemployed market trader. Freddy says that his flat is the first secure home he has ever had and stresses its importance as a “stable base” in his life⁴³. However, he has been flooded twice in the last four years; was on each occasion obliged to move out of his flat for several months, and says that he became depressed as a result of the flooding and would “go crazy if it happened again”. As we see in the following passage, he protects this very fragile sense of ontological security by

⁴³ These comments were made during recruitment and were recorded in the interviewer’s notes. .

clinging to a representation of ‘society’ as both able and desirous to eliminate the flood risk:

- Interviewer But what I’m really interested in is who you think is responsible for protecting your place from flood. Is it the council, or is it you, the tenants?
- Freddy Right, well it’s... it’s two people... it is two people: it’s [the local] council and it’s [the water board].
- Interviewer How about, how about... Some people would say that if there is no way of stopping the flooding then maybe the people themselves should try to stop the water getting in.
- Pauline Yeah, but how can you blame the tenants!
- Interviewer Aaah!
- Freddy It’s up to them to stop the damage really, cos...
- Pauline They should be cleaning the gullies!
- Freddy ...cos, everyone in this area told them exactly what the problem was [*unclear*]. The gully cleaning should be carried out regularly.
- Pauline Regularly; yeah.
- Interviewer So if nothing was going to happen to stop the flooding, would you actually want to try to find out about other things that you could do? Or is it totally the council that’s got to do something?
- Pauline No; it’s the council.
- Freddy Yes, I think it’s the council too. It’s their problem. It’s up to them to keep the buildings at the standard and all that.
- Interviewer But it’s your videos and your carpets that are getting trashed, isn’t it.
- Freddy Yeah.
- Interviewer Cos, like, the council doesn’t lose out by the sound of it. I’m quite amazed really. It sounds like they just lose 500 Quid – which they pay you – and that’s it.
- Freddy Yeah. You know, I think that sooner or later one of the systems is going to realise what’s going on. Some judge somewhere is going to notice this and is going to make them sort it out.

This excerpt illustrates how patterns of cause, blame and solution can be constructed that exonerate the speaker without destroying the representation of the state as the final protector of the home and the individual. Although Freddy blames one part of the state for not preventing the flood (“it’s [the local] Council and it’s [the water board]”), he retains faith in the capacity and desire of the state as a whole to eliminate the risk (“sooner or later [...] some judge [...] is going to make them sort it out”) – which task, furthermore, he depicts as being very simple (“the gully cleaning should be carried out regularly”). The state’s perceived failure in this instance is represented as an aberration rather than a defining characteristic. In this representation, though there might be oversights and injustices, the state remains fundamentally dependable – for these oversights and injustices will always be put right, eventually, by “some judge” or by “one of the systems”.

Few respondents display this complex construction as clearly as Freddy does, but many – as will be discussed in Chapter 6 – attribute blame to the state. This implies a similar representation to that used by Freddy. Blaming a body implies that it retains the capacity

to behave otherwise, and even that – in the normal course of things – it should behave otherwise. It suggests, in other words, a Platonic archetype: a representation of society and the state as essentially just and competent. The discourse of blame protects the notion of a responsible and competent state and this, in turn, helps protect ontological security.

5.3 Representations of ‘nature’

This idealised representation of ‘society’ is less important for the protection of ‘home’ and ontological security if ‘nature’ – the source of the risk – can itself be represented as benign and innocent. Where ‘nature’ is represented as destructive and even malicious, the protective powers of society are of greater importance. Society is perhaps likely to be idealised, therefore, amongst people with greater – and more frightening – experience of floods.

Nature as destructive

In the qualitative sample, ‘nature’ was only represented as destructive by respondents who had experienced floods grave enough to oblige them to evacuate their homes. One such respondent was Vikki (single professional; owner-occupier with basement level utility room and bathroom; two serious floods). Although Vikki participated in a focus group with other flooded householders from her street, she was the only one to have lost essential living space in the floods and was therefore the most seriously affected. It is interesting, therefore, to reflect on the contrast between Vikki’s representation of ‘nature’ and that used by the others. The following excerpt comes from early in the group. It follows a discussion of the character of the local area and is the first time the participants talk at any length about flooding:

- Interviewer [...] I’d like to hear the approximate details of how it was, how quickly it happened and things like that; and anything you haven’t mentioned yet in relation to your own homes I’d be interested in as well.
- Tom Well, we weren’t actually here; we were on holiday in France. It was in August. My son... my son was alone at home and he phoned up and said, ‘I’m standing in the basement with two foot of water going round me and a fountain coming out of the loo. What do I do?’ We said, ‘Get out of the basement’ – he was on his mobile – because we thought there would be power problems with electricity and so on. And um...
- Interviewer How quickly did that happen? Was it very sudden or was it gradual?
- Tom It was fairly sudden
- Vikki It was very quick.
- Tom I mean he’s...

- Vikki Ten past five it started
 Tom Yeah
 Paul It was like a sort of curtain of water.
 Vikki The sky always... when it happens it looks yellow. You get this weird... you can just tell it's one of those summer type things and the sky gets this really yellowy tinge to it and then you just feel this pressure, and then it just... it just... it's just as if someone's turned millions of taps on, and it just comes down like you can't believe. You couldn't go out in it. And very, very quickly the road fills up really, really fast. The gullies weren't properly cleaned here, they haven't been properly... they weren't as regularly cleaned as they should have been. Um [coughs] immediately the – I looked out of my window – it became a river in the road, and um...
- Interviewer In a matter of...?
 Vikki Oh, it was just in a matter of minutes. It took maybe ten minutes, and um I could see a car moving down the road. One went down towards the [name of landmark] bit, down there
 Tom Was it floating, or...?
 James It was driven.
 Vikki No, it was floating: no one was in it! And it was just... It sounded like somebody had got... opened some huge great drum of water; because it was crashing down into my basement, and then I heard this bang, which was my fridge-freezer falling over downstairs in my utility room. It just floated up and then just crashed over, um, and, um I called the fire brigade, but they couldn't come for five hours, which by that time the water had...
 James It was probably because they were really busy and it was complete gridlock
 Vikki Well, the fire station was flooded too. They couldn't get out.
 James There was a lake outside the door.
 Paul Because that drain floods quite often. It doesn't have a major [unclear]. I think that one of the things that maybe we need here is a three-dimensional model of the area because the real problem is that Hampstead is a biggish flattish hill, and it all comes hurtling down [name of road], down [name of other road] – at us, and we are defenceless
- Tom Yeah
 Vikki Yes, it travels up [sic] from Hampstead
 James But also there is a much gentler slope up [name of third road]. If you... If I walk from my house, if I walk up to [name of third road] it's a gentle slope but even so the water would – because of the force of gravity – would come down towards us because of the natural sort of shape of Hampstead.

The first thing to note is the difference, in the first part of the passage, between Tom's descriptions and Vikki's. Tom (married; professional; owner-occupier) gives a very measured description, as revealed by the absence of adjectives, superlatives and evaluative terms⁴⁴. He also de-legitimises the discursive authority of his description, by using reported speech⁴⁵ and revealing in his preamble that he was not witness to the flood. In contrast, Vikki uses direct speech and employs superlatives (e.g. “very, very quickly”; “immediately... it became a river”; “like you can't believe”) and onomatopoeic terms (“bang” and “crash”).

These two, distinct, styles of speech provide very different framings for the descriptions of the flood and can be seen as indicating different representations of ‘nature’. Tom's

⁴⁴ and also by the tone and cadence of his voice, which cannot be replicated here

⁴⁵ According to Fairclough (2003), reported speech is one of the least authoritative forms of talk.

narrative suggests a representation of nature as benign. Nature is given no agency and no blame: water is described as “going round” and “coming out” but there is no attribution of responsibility.

Vikki’s text employs a different representation, as is revealed in at least three aspects of the text. Firstly, the use of the terms “weird” and “like you can’t believe” suggest a break with normal events. Secondly, the description of the behaviour of nature during the flood (the yellowing of the sky, the sensation of pressure and the presence of a river in a road) depicts the situation as alien and threatening. Finally, the personification of nature in Vikki’s similes (“it’s just as if **someone**’s turned millions of taps on,”; “it sounded like **somebody** had got... opened some huge great drum”), in the tale of the driverless car and in the use of passive phrasing seems to suggest the action of a hidden agent⁴⁶.

It is clear from the interview as a whole that this representation of nature has exposed Vikki to emotional insecurity. We can see in this passage an attempt to use a representation of society as an alternative defence of that security. This is evident in the one stylistic break that occurs towards the end of the first long monologue – “[t]he gullies weren’t properly cleaned here, they haven’t been properly... they weren’t as regularly cleaned as they should have been.” Unlike the rest of the description, this utterance is evaluative (as suggested by “properly” and “should”) and devoid of adjectives and hyperbole. It marks an interlude during which the threat to ontological security posed by the nature-destructive representation is briefly countered with notions of blame, which – as was argued above – call forth the protective notion of a protective society.

Vikki’s representation of nature and her associated emotionality is contested by the other group members, in what is a struggle between two ways of talking about flooding. Vikki, as has been seen, uses colourful imagery, flamboyant language and overt emotional content, and represents nature as wild, alien and untameable. Early in the excerpt, she interrupts Tom’s carefully couched and equivocal statement (“It was **fairly** sudden”) with a more extreme evaluation of ‘nature’ as destructive (“It was **very** quick”). Later we see a reassertion of a more benign representation of nature by the other participants, as

⁴⁶ The use of the passive is normally said to occlude consideration of agency. In combination with the strong personification of nature, however, it can be argued that it here creates a sense of hidden agency.

indicated by the use of causality (“It was probably because [...]” – James; “Because that drain floods quite often” – Paul; and “because of the natural sort of shape of Hampstead” – James) and of scientific terminology (“three-dimensional model” – Paul; “force of gravity” – James).

The struggle between these two representations continues throughout the focus group. In the following excerpt, for example, Vikki interrupts James’s modalised (“I think”; “perhaps”), empirical (“there are some people I know”) and emotionally abstract (as indicated by the use of the generic personal pronouns, “you” and “one”) reflections with her own un-modalised truth statements (e.g. “It doesn’t affect you in the same way”; “your aggravation is different”), superlatives (“actually”) and personal statements (e.g. “you’ve actually got a house”; “I can’t even live”).

- James [...] If [flooding] happened, let’s... I mean – to take a ridiculous example – if it happened every day, you wouldn’t actually live there; every six months, I think one would perhaps take some {major action.}
- Vikki {But James,} you’ve actually got a house!⁴⁷
- James Yes I know, it affects us absolutely {differently}
- Vikki {It doesn’t affect you} in the same way as it does me, I can’t even live in my own home any more, you know! I actually have to move physically out, so {your aggravation is different}
- James {Yes I agree}, yes, there are some people I know in [name of road] who live in a basement flat, that’s it...
- (Note: brackets – {} – signify overlapping speech)

The contested nature of this excerpt is indicated by the frequency of the interruptions and over-talking. The subject of this contest is not the factual content of what is said, but the choice of frame. Vikki’s more personal and emotional interjections challenge the validity of the representation of ‘nature’ as something that is to be responded to rationally. James, on the other hand, expresses agreement with Vikki’s comments but continues to use the register of rationality. This is repeated in the following passages:

⁴⁷ During the flooding, Vikki was obliged to evacuate her flat for a number of months, because essential areas (especially the toilet) were rendered unusable. James’s house, on the other hand, was only flooded in less essential areas – i.e. in rooms used for storage.

- Paul [To Vikki] I'll tell you the solution to your problem, and that is a dry-composting toilet
Vikki [Laughs]
[...]
Vikki But you still get flooded
Tom If it floods...
Paul Well yeah, but it wouldn't come up the toilet, cos there wouldn't be any connection.
Vikki Yeah
James You'd have no waste pipe.
Vikki Yeah, but then I lose two rooms in my house and part of the value; so I just prefer to move.
- Paul [...] if we're taking the matter of the water coming in, there ought to be sort of sluice boards with drop-down slots with rubber...
[...]
Vikki I'm sorry, but it's happened to me twice. You've just got to see it! It's five feet of sewage!
We're talking really nasty sewage
Paul A non-return valve is only a butterfly valve; it's like a flap
Vikki Yeah, I don't think it would work!

Two other respondents in the qualitative sample display similar discursive behaviour to that of Vikki: Freddy (Camden; single; unemployed; council flat with basement level) and Pauline (Camden; retired widow; council house). It could be argued, of course, that Vikki, Freddy and Pauline are simply more emotional characters than the other respondents are. This explanation, however, relies on an understanding of human personality as something that is fixed and context-independent – an understanding that was rejected in Chapter 3. On the other hand, the fact that these three respondents have experienced the most serious flooding suggests that it may be their experiences of flooding that have caused them to adopt a different representation of 'nature' and to talk about flooding with greater emotionality. This would be consistent with Kates' (1962) claim that flood risk response is determined mainly by experience – a claim that is supported by statistical analyses in Chapter 6 (Table 6 and Table 7). Chapter 10 will consider this explanation more thoroughly and will use social psychological theories to further explore reasons for the differences in representation and behaviour.

Nature as benign

As already suggested with regard to Vikki's fellow focus group participants, the common representation of 'nature' amongst at-risk householders with no experience of traumatising floods is as something benign. This representation is consistent with the dominant contemporary Western view of nature, within which the destructive aspects of 'nature' are only recognised as existing outside of the normal spectrum of human-environment relations (see Hewitt 1995), where 'nature' is represented as a realm of

essentially positive moral power and where the historical equation of nature with sin is rejected (Macnaghten and Urry 1995; Soper 1995).

We see this representation in the interview with Florence (see the passage quoted in Chapter 6, p118). Florence implies that floods are harmless when “nature” is left to “run” things and there is no intervention by the authorities. She associates “natural” flooding with an idealised, safe past, in which water was somehow guaranteed never to rise beyond the doorstep, and in which other localities were seriously flooded but hers was not. Natural flooding is depicted as predictable, manageable and relatively acceptable (“[natural] floods will happen: the river is a risk, we’re ready to take it”).

This benign representation of ‘nature’ is shared by a number of respondents in the sample. In the following excerpt, for example, George and Margery (an elderly retired farm-worker and his wife who live in a private rented house), are comparing flooding with burglary⁴⁸:

- Margery [...] we’ve had about five burglaries but...
 George We[‘ve] had the door kicked in since the flood, haven’t we?
 Margery Yeah.
 George The back door.
 Margery Yeah.
 Interviewer How does that compare with water coming in? I’m asking a lot of people this – how they compare different things.
 George I’d sooner have water I think.
 Interviewer How comes?
 [Over-talking – not transcribed]
 George It’s a natural phenomenon, isn’t it.
 Margery You can’t help that.
 George Water, to me... it’s natural – apart from all the buildings created it – you might say.
 Interviewer Yeah, yeah.
 George It’s a normal... natural phenomenon, I think – flooding. It’s from rain and flood, isn’t it. Act of God you could... Would that just about cover it? But burglary, I think...
 Margery Somebody’s... I mean, the last time they’d been literally everywhere: every cupboard; every drawer; everywhere – even my shoe cupboard. To think that somebody’s been...
 George It’s an infringement of privacy really, isn’t it?
 Margery Yeah, what annoyed me most: he’d actually laid on the bed, which [*laughs*] I was cross about, but that is I mean... [*Pause*] other than that we’ve...
 George We weren’t too – well, we weren’t unduly perturbed, were we?
 Margery No, ‘cos he didn’t do no damage, did they?

⁴⁸ The couple had twice experienced ground-water flooding in their home. Margery, in addition, had been evacuated as a child during the 1947 floods in Reading.

Asked why he would sooner be flooded than experience a burglary, George answers: “It’s a natural phenomenon, isn’t it.” If George is adhering to the *co-operative principles* (Grice 1975) that usually govern conversations – and we have no reason to think that he is not – then we must assume that he considers this a relevant response; and because the relevance is not present in the semantic content of the phrase, he must be assuming that: 1/ something that is natural is better than something that is not, and 2/ the interviewer is likely to share this belief (i.e. that the representation is a socially shared one).

George’s comparison of flooding with burglary suggests that it is also the moral neutrality of ‘natural’ flooding that renders it more acceptable – in contrast, for example, with burglary, where the intent and malice attributed to the burglar make it less tolerable. This is consistent with the literature, which asserts that people tend to find environmental losses far more serious when they are caused by human actions (Brown et al 2005). It is also a recurring theme amongst the respondents. In Margery’s talk, the salient moral dimension seems to be “infringement of privacy”⁴⁹; in Susan’s statements, it is the failure of state authorities to perform their duty; and in the interview with Florence, it is the perceived injustice of the treatment of the in-group by an out-group. Furthermore, Elizabeth (professional; owner-occupier; married mother of three; Camden; two near-miss events) implies the neutrality of nature when she contrasts it with “untamed sort of alien force[s]” such as car drivers that threaten her children’s safety. Each of these cases associates immorality with human behaviour while representing ‘nature’ as the prototype for benign moral neutrality. Being represented as ‘natural’, flood risk is therefore seen as less distressing than other, human-made, risks.

The interview with Martha supports that conclusion. Martha (married, Malaysian-born professional; home-owner; one flood experience) also compares flooding with burglary:

Interviewer How does that... compare to flooding? Remember...

Martha [Burglary] is more frightening. [Flooding]... that is more sad: you come home and your home is like a tip; it upset you; but the thing is, you know, it’s like, um, it is unpleasant,

⁴⁹ There is a suggestion in the text that material loss might be more important to Margery than the moral dimension. Although Margery says that she was made “cross” and “annoyed” by the burglars’ behaviour, she concurs with her husband’s statement that they were “not unduly perturbed” by the burglary because it caused little damage. This self-contradiction can be explained by a difference of perspective between husband and wife, with the latter not wanting to be seen to disagree with her husband. This conclusion is consistent with the interview as a whole, which was generally very consensual.

- um, and you feel so helpless. But with this one, it frightens you, um, because your house is not secure and people... you know, you have been intruded, by... by...
- Interviewer In a way – sorry [*apologising for interruption*] – in a way water is an ‘intruder’ as well, isn’t it?
- Martha It is... but then you see, you don’t... you don’t actually say... this is like, um... um, I think this is like, um, it’s one of those natural disaster that um, you accept it more readily than being say, being attacked by another human being. I think it is a different intrusion.

Two linguistic features of this passage are of particular interest. The first is the adoption of the generic personal pronouns “you” and “your”. Coming after a passage of speech (not shown) in which Martha uses only ‘me’, ‘I’ and ‘my’, this suggests a change from an orientation toward personal representations to an orientation toward representations with a more social basis. It suggests, in other words, that respondents believe the representation of nature as benign to be a social representation. A second notable feature is the frequent pausing and the use of the phatic “um”. These occur only after Martha begins to try to justify her representation of ‘nature’ (i.e. from the end of the fourth line) and can be interpreted as a sign that she rarely seeks to justify the representation, and that it is part of what Giddens (1991) calls *practical consciousness* – the set of semi-consciousness assumptions that guide much of every-day behaviour.

5.4 Representations of ‘self’

The last of the four representations that are being presented as critical for the protection of ontological security against flood risk is the representation of ‘self’ – or better, the representation of the self as *competent*.

Competency self-images, like ontological security, are an important human need whose creation and maintenance is a key motivation for behaviour (Elliot and Dweck 2005). However, although the main motivation for the protection of perceived self-competence is normally considered to be the protection of self-worth (e.g. Rhodewalt and Vohs 2005), a second, additional, reason is suggested here – the part played by perceived self-competence in the protection of ontological security. This will apply more in some behavioural domains than in others, but is likely to be particularly significant for the areas being considered in this thesis – crisis response and prevention. People, it is argued, will feel more ontologically secure with regard to household-level hazards if they can represent themselves as competent at minimising the risks and dealing effectively with the hazards. Such self-images can compensate for weakened representations of ‘nature’.

‘society’ and ‘home’ that would otherwise leave ontological security exposed and vulnerable. Perceived self-competence, in other words, provides an alternative line of defence for ontological security.

As a result, where clear rhetorical efforts are made to bolster competency self-images, this can be a sign that the sense of security is felt to be at risk and that ‘home’ is not providing adequate protection. This is the case with Luke (Reading; housing association; father of two young children; no flood experience). Like Kate, Susan and the island inhabitants, there is evidence that Luke’s capacity to represent his home as a place of safety has been compromised – in his case by the loss of a previous home in a divorce settlement:

- Interviewer You see, some people tell me, ‘My house has to look nice; I don’t want these things sticking out of the walls that no one knows what they’re for; it’s got to look like a house that’s comfortable, that’s friendly and not...’
- Luke Do you find them a bit hideous and, like, uninteresting.
- Interviewer What, those...?
- Luke I mean, I mean...
- Interviewer Or the people? [*Laughs*]
- Luke No; the people... It’s a bit sad how, like, how... do you know what I mean? This type of person obviously takes great pride in their house, which is quite a in-built thing, you know. It’s like hundreds of thousands of years ago, like the cave, like, they painted on the walls.
- Interviewer Yes, they did.
- Luke I know the paintings on the cave were for the culture purposes, but it all goes back to that. Now, me, I mean, it’s like I said, I’ve owned houses in the past which, like, my ex-wife has got, so you can understand where I’m coming from. I’ve learnt the hard way that there’s more important things...

Luke – this excerpt suggests – has, “learnt the hard way” that ‘home’ cannot always be relied on to protect him against the trials of life. He seems, as a result, to have rejected the normative social representation of ‘home’ as a place in which one takes “pride”. Describing people who are proud of their homes as “hideous and [...] uninteresting”, he implies that such an attitude is atavistic (“It’s like hundreds of thousands of years ago, like the cave like, they painted on the walls”).

Neither is there any indication in the text that Luke looks to a particular representation of ‘society’ for his security. He projects himself as self-sufficient, as responsible for the protection of his own household and as capable of that protective role, and represents himself as protector rather than protected; as the giver of aid rather than its recipient, and as not belonging to the majority. This is illustrated in the following quotes, where – for the benefit of the reader – the phrases most relevant to this point are highlighted:

I'm a man, you know, a man with like a family, so of course **I'm going to be, you know, protective of my family.**

I know most of like the floodplains around here, because I fish you see. [...] and I can, like, read the land quite well, know what I mean?

I understand the physics in [flooding] enough to keep us safe.

I think I've got the brains to cope with [protecting my home from flooding].

The electricity would be off; well it'll trip out anyway. But oh yeah, I'd make sure of that! But **I don't think a lot of other people round here would be like that** at all.

I'm quite adaptable, I adapt quite fast to my environment and, like, I'm a, a, a practical-minded kind of person [...].

Listen, listen! Can I give you some aspect of like of the work I do now, right? **I do a lot of council tenant work** and I write a lot, right. And it's the people with alcohol problems and er addictions, right.

I haven't come out of like the same mould, you know – God has shape-shifted out a bit like, you know. I'm not... the things that concerns other people really don't concern me, you know – about the car, getting extension on the house. You know, it's all insignificant to me.

I would seriously hurt [any burglars] **if I found 'em in my house** [...] I'd fuckin' hurt em...

The rhetorical importance of this representation of the self is demonstrated by the insistence and force with which it is communicated and by the signals of vulnerability when it is perceived to be under threat. Already in the above quotes, there is evidence of this assertiveness (“oh yeah, I'd make sure of that!”; “I'd fuckin' hurt 'em”; “Listen, listen!”). This is echoed elsewhere in the interview. Luke uses technical terms and concepts that seem intended to impress (e.g. “the weave of the sack”; “a very solid medium”); he contradicts and corrects the interviewer openly (“No, no, no, no... I'm saying [...]!”), and he shows signs of discomfort when he suspects the interviewer might be acting in a condescending manner (“you know all the answers (Interviewer: [Laughs] No I don't.) before I say 'em! (Interviewer: I've got ideas, but I don't know the answers.) I know you do. I know you do.”) and of triumph when the interviewer shows weakness (“Crikey Moses you don't even know the facts!”). The text conveys the sense that the maintenance of a competency self-image is a higher priority than the reduction of the physical risk and that the *feeling* of security is being protected above *material* security.

Where Luke protects his competency self-images by demonstrating his knowledge of flooding and flood-protection, others do so by denying the relevance of competency in this area – i.e. by representing water as uncontrollable and thereby indicating that mitigation measures would be useless. This is illustrated by the case of Martha (Malaysian-born married professional; owner-occupier):

- Interviewer If you were able to, um, change something in your house to make it safer, would you want to do that?
- Martha No; I wouldn't know how to. The only thing that I thought now that I've thought of it, perhaps the way to do it is to actually have stone floor.
- Interviewer Hm.
- Martha Then at least we don't have the inconvenience. You can't stop nature and then also the house... there's only so much you can do... um, to, you know, stop the flood; it's a natural disaster.

Martha's comments seem rather surprising at first. Asked if she would want to make her house "safer", she replies that she would not. We know from elsewhere in the text that Martha has described feeling distressed at the possibility of a second flood. So why does she claim not to want to ameliorate the impact of such an occurrence? The answer provided by the text is that she "wouldn't know how to" stop water from entering her home; that you "can't stop nature", and that you cannot, therefore, stop a flood. Martha's claim to have no desire to protect her home may be nothing more than a desire to protect her competency self-images by representing nature as uncontrollable.

A passage in which Martha compares flood risk with the risk of house-fires further illustrates this.

- Interviewer One could argue, 'I don't want to think about fires, so I won't have smoke alarms; I won't do anything against it.'
- Martha No that's not true, I disagree with you.
- Interviewer How's it different?
- Martha Well this is a habit. You see, if it is... Funnily enough this morning I was filling a survey form for "God"; a survey: 'Do you believe in God?' and all that.
- Interviewer Aha.
- Martha I think that, you know, 99.9% of uh... um, some of the crises, that you can actually do your bit to keep it under control. Flood, I can't. I can't actually control the weather.

This passage is distinguished by the sudden introduction of the subject of "God" in the fifth line. One of Grice's (1975) 'rules' of normal conversation, the principle of *relevance*, states that people will only normally make contributions that they believe to be relevant to the discussion. As Martha shows no sign elsewhere in the text of intentionally breaking this principle, we can assume that she believes her comment about God to have some contextual relevance. On this basis, the subsequent three sentences should be read as meaning that although people can 'do their bit' to control most "crises", only God can be held responsible for the weather and for any resulting floods. In other words, acts of

nature are equated to acts of God and cannot, therefore, be controlled by humans (“I can’t actually control the weather”).

Two elements of the text suggest that this representation of ‘nature’ may be a response to a perceived threat to her self-presentation: her confession of inadequacy (when she says that she “wouldn’t know how to” make her home safer), and the interviewer’s implication (in the second passage) that her inaction in the face of the flood risk might be motivated by a desire to avoid thinking about it. Neither of these reflects kindly on her self-image – the first might suggest ignorance and the second, a lack of courage. It is perhaps not surprising, therefore, that she responds on both these occasions with the argument that nothing can be done about the risk. Representing floods as natural, God-driven – and therefore inevitable – justifies Martha’s inaction and preserves her self-presentation.

A second illustration of this way of protecting competency self-images is provided by the focus group of semi-skilled residents of a housing association estate in Reading. The following extract from that group is taken from a discussion of the idea of replacing fitted carpets with floor tiles to make homes less vulnerable to flood-damage:

- Nick [...] say you got a lump of concrete in a box, about two inches thick; you put... you fill that box up with water and you leave that over a certain amount of time. That water will go into the concrete and pop.
- Rob That’s right.
- Ed Damp.
- Interviewer So that will go through the filler between the tiles?
- Nick Well, no.
- Jackie No.
- Nick It would soak through the concrete.
- Jackie It soaks...
- Interviewer But you’ve got tiles on top?
- Nick Yeah, but you’d still...
- Stuart In between the tiles, there’s only grout.
- Interviewer Yeah, that’s what [*inaudible*].
- Ed Yeah, they’re only grouted, aren’t they?
- Jackie So you’d need to replace that anyway, so...
- Nick It would still soak through.
- Ed Water gets everywhere, doesn’t it; it can find its way through...
- Jackie Water will go any place it wants to go.
- Rob Water damage is probably the worst, you know.
- Interviewer Sorry? Water damage is the worst?
- Jackie And water will go where it wants to go.
- Rob Aye [*inaudible*].
- Ed If there’s a way, it’ll get there.

The interesting feature of this passage is the switch from a precise, technical register (e.g. “grouted” and “two inches thick”) to the use of less contestable generalisations based on what Petts *et al* (2001: 53) call “lay logic” (e.g. “water gets everywhere” and “water will go any place it wants to”). This coincides with the interviewer’s probes and his challenging of the respondents’ technical competency (“So that will go through the filler between the tiles?”; “But you’ve got tiles on top?”). One can conclude from this that, finding that their perceived competency at assessing pre-emptive measures is under threat, the respondents parry the attack on their self-images by falling back on arguments that invalidate the very idea of household-level mitigation measures.

5.5 Summary

The representations of ‘nature’ and ‘society’, it has been argued, are essential for the protection of the representation of ‘home’ as a place of safety and identity. If nature is represented as essentially harmless, then there is no need to fear flooding and ‘home’ can continue to be conceived of as safe; and if nature is conceived of as potentially harmful, then representing society as an effective protector of its individual members still allows ‘home’ to be considered safe. If, on the other hand, neither of the representations of ‘nature’ and ‘society’ serves to protect ‘home’, then the competency self-image is the last remaining barrier to the threat to ontological security presented by flood risk.

The questions of what happens if these protective representations fail and of how people can learn to do without them are considered in Chapter 10. The next four chapters, however, consider the discourses that sustain these representations and that allow householders to continue to deny the threat posed by flood risk.

6. The causes of flood risk: Discourses of luck, normality and blame

Chapter 5 having looked at the key social representations in discussions about flood risk – representations of ‘nature’, ‘society’ and ‘home’ – the next four chapters consider the discourses that householders employ to protect those representations. Chapters 7 to 9 focus on the discourses that concern flood risk response. This chapter, however, concentrates on those discourses that relate to the causes of that risk: one discourse that constructs flooding as unlucky; one that attributes blame for flooding and flood risk, and another that concerns the issue of whether flood risk is accepted as normal. In a quest to protect their ontological security, householders sometimes use several of these discourses simultaneously, if when they appear logically inconsistent.

Chapters 6 to 9 also assume the existence of one further discourse. This, the Pre-emptive Action Discourse, represents as desirable the adoption of long-term household level measures to protect the home against flooding or to improve its resilience (see Chapter 2). Unlike the other discourses mentioned in this study, this discourse does not arise unprompted in the interviews and focus groups. This, rather, is the discourse promulgated by the Environment Agency in its attempts to foster increased household level flood risk mitigation; and it is the interviewer, and not the householders, who introduces this theme into the discussions. Part of what Chapters 6 to 9 describe, in fact, is householders’ rhetorical use of other discourses to de-legitimise the Pre-Emptive Action Discourse.

6.1 The Luck Discourse

One of the key discourses used to de-legitimise the idea of pre-emptive action is the Luck Discourse. This discourse invalidates the idea of pre-emptive action by constructing flooding as a matter of chance and denying the existence of any pattern to where and when floods occur.

An example of the use of this discourse is found in the interview with Shereen (a single professional with no flooding experience, who lives in a basement flat). The following

passage is prompted by the interviewer's introduction into the interview of the Pre-Emptive Action Discourse and his probes into the reasons for an assertion by Shereen that she would not consider implementing any mitigation measures.

- Shereen [...] I don't know, I think it would have to be [pause]... I guess I'd have to be flooded or it would have to be more regular for me to go to the expense of [installing a flood-gate].
- Interviewer Is expense the kind of thing that's just deciding...?
- Shereen It would be one of the things.
- Interviewer I think it's something like 300 quid or something.
- Shereen Yeah, for 300 quid I'd get a wardrobe to replace the rack in my bedroom, you know. You live on your own in Zone 2 in London and 300 quid is a lot of money. So yeah, it would be an expense I'd have to think really hard about. Probably an easier decision to make if you had already been flooded.
- Interviewer That's really the critical thing, isn't it?
- Shereen Yeah.
- Interviewer If you've not experienced it...
- Shereen Hmm.
- Interviewer Do you know why that would be so critical for you?
- Shereen Um...
- Interviewer Why would that make the difference?
- Shereen Because I'm usually quite lucky, so I think... just hope that luck was on my side. I'd just wing it.
- Interviewer [Laugh] What's your – difficult question to ask – attitude to risk generally in life? I mean are you a 'play safe' person?
- Shereen I'm fairly safe but then every now and then I surprise myself by taking risks. But no, I play fairly safe.

The key event in this passage is Shereen's characterisation of herself as "lucky". This would probably be interpreted by cognitive psychologists as evidence of *optimism bias* or *over-optimism* (see Saarinen 1982, Slovic 1998). However, although such interpretations describe *what* is happening, they leave unanswered the question of *why* Shereen introduces the issue of luck.

Looking at the passage as a whole, it seems that Shereen is searching for a way to counter the assumption that she should be taking pre-emptive measures. Initially, she uses a materialist discourse, arguing about the "expense" of taking protective measures and about opportunity costs ("for 300 quid I'd get a wardrobe"). The use of modalised forms of speech⁵⁰ ("I don't know", "I think" and "I guess") and the presence of the pause indicate, however, an uncertain commitment to the veracity of this discourse, and it is at this point that the Luck Discourse is introduced. The chance of being flooded had earlier been framed within a loosely scientific discourse of return frequencies ("Well, if it was

⁵⁰ i.e. speech constructions that fall between categorical assertion and categorical denial

every five years, I won't be here in 2007.") There is a shift now to an entirely different kind of framing, for in saying that she is "lucky", Shereen de-legitimises the scientific discourse. The likelihood of flooding – she implies – is associated with the nature of the individual concerned: Shereen is a "usually quite lucky" person; therefore, she is less likely to be flooded.

The rhetorical nature of the comment about luck is suggested by Shereen's answer to the interviewer's subsequent question about risk taking. When he asks whether she is a "play safe" person, the question is phrased in a leading way, implying that Shereen will win the approval of the interviewer if she answers with a 'yes'. It is significant, therefore, that although she follows his lead by saying that she is "fairly safe", she subverts this answer by admitting to sometimes "taking risks". This suggests some kind of approval of risk taking, particularly as she uses the positively connoted terms "surprise" (rather than, for example, the more negative terms 'shock' or 'disappoint') and the equally positively connoted "wing it".

This use of the Luck Discourse is further illustrated by the case of Martha (Camden; married; solicitor; owner-occupier; experience of street flooding):

- Interviewer How often do you think it's likely to flood? Do you have an idea of that?
Martha My God! [*Laughs*]. You are asking questions that I wouldn't like to think! Um, well, if... judging from what I heard from the people around this area, I think generally speaking, I think [name of her locality] in the past tends to flood like every fifteen to twenty years. Um, so hopefully... by which time I will have moved out of this area.
Interviewer Does that sound kind of okay? Fifteen to twenty years is acceptable...?
Martha Well, I don't know. I think if it's going to flood again, um, very soon, I think we will have difficulty selling this house. I think it will discourage people from, you know, buying. It becomes... That means this area has got a reputation of flood.
Interviewer Has it, oh.
Martha Um, I mean, you know, one in ten years even, it's just one of those things; you're just unlucky probably. And also I think I wouldn't want to live here, live in this house because if it floods again in the next two or three years, I would rather leave. It is uh, unpleasant and disruptive and for weeks it just smells.

This passage, like the excerpt from Shereen's interview, is characterised by modalised speech forms and hesitation. Martha opens her reply to the interviewer with a claim that she would prefer not to think about the frequency of flooding in her area. Then, she qualifies her comments with five occurrences of the term "I think" and one use of the term

“hopefully”. As in Shereen’s interview, this is followed by a switch to the luck discourse (“it’s just one of those things; you’re just unlucky probably”).

Once again, it is important to look at the reasons for this switch to a discourse of luck and to know what function it performs in the text. One explanation would be to see it as Martha’s reaction to her uncertainty, as expressed in the previous lines. Mention of another flood has resurrected unpleasant memories of the previous event (the “disrupt[ion]” and the “smell”). Attributing any such recurrence to further bad luck seems to make it less likely to occur, helps dispel the negative images and reduces the latent anxiety in the discussion.

An alternative interpretation is that the discourse is a means of avoiding blame. This is evidenced by Shereen’s interview. Shereen justifies her assertion that she would rather spend £300 on a new wardrobe than on a floodgate by saying that £300 is a lot of money for someone in her circumstances (“you live on own in zone two in London and 300 quid is a lot of money”). Although semantically this comment is purely descriptive, the location in the text lends it the performative power of a justification. ‘I am not to blame for taking this attitude’, she seems to be saying; ‘it is not a result of my free choice; I am constrained by the difficult financial circumstances that result from my living in such an expensive part of England.’ The subsequent introduction of the Luck Discourse can be seen in a similar light; for the term ‘luck’ connotes “events that are beyond control” (Collins English Dictionary 1999) and therefore suggests an attempt to avoid blame. If flood is attributed entirely to ‘luck’, there is nothing you can do about it and you cannot reasonably be held to blame.

In one interview, the link between luck and blame is made explicit. Harry, a 22 year-old student, lives with his professional, owner-occupier parents. Their semi-detached house in London was flooded while his parents were on holiday and only Harry and his brother were at home. The following quote from Harry is taken from a phase of the interview in which he and his parents are comparing flooding with burglary:

[...] if a flood happens, it damages your property, but you can’t blame someone. I know that burglary is often blameless, because you don’t have a face to put to it. But you know that someone has been in your home and has invaded your privacy and has taken things from you in the most kind-of spiteful and low-

down way. But a flood will sort of take from you, but it's just bad luck; it's not anything to do with someone targeting you and being horrible; it's just something that's happened and you are completely powerless against it.

In his comment about burglary, Harry implies that there is no question of blame where there is no known perpetrator (“I know that burglary is often blameless, because you don't have a face to put to it”). This constructs a representation of the ‘victim’ as someone innocent and entirely without responsibility. Subsequently, floods are described as “bad luck”, a term that also implies and suggests that flooded householders are “powerless” against flood risk.

Who uses the Luck Discourse?

The evidence of the qualitative data suggests that the use of the Luck Discourse might be most common amongst those who have a single experience of flooding and – to a lesser extent – amongst those who have only had a few, less serious, floods. This hypothesis was examined statistically using data from the FHRC survey.

Although the survey questionnaire contained no direct questions about luck, use of the discourse can be deduced from some of the questions that were asked. The steps in this deductive process are as follows:

1. If use of the Luck Discourse reduces flood risk perception...
2. this may lead to a reduction in flood risk mitigation.
3. Therefore, if the Luck Discourse is associated with a single experience of flooding then a statistical relationship may exist between experience of flooding and risk perception, and between experience of flooding and the implementation of response measures.

This suggests that the Luck Discourse itself should be associated with flood experience, such that where M is mitigation measures and W is worry about flooding:

$$pM_i \text{ flooded} = f(\text{no of floods experienced})$$

$$pW_i \text{ flooded} = f(\text{no of floods experienced})$$

An analysis of the data confirms both these hypotheses. Table 6 and Table 7 show that people in the FHRC dataset who have been flooded more than once are 1.44 times more likely to claim to be “worried”⁵¹ about further flooding than those who have only been flooded once and that they are 2.12 times more likely to say that they have taken measures to mitigate the risk. This suggests, therefore, that the use of the Luck Discourse is indeed most common amongst householders with experience of a single flood.

Table 6 Cross-tabulation of number of times flooded with worry about further flooding

	How worried are you about the possibility of your property being flooded during the next 12 months?		Total
	Indifferent / not worried	Worried	
Flooded once	279	504	783
Flooded more than once	54	140	194
Total	333	644	977

$N = 977, \chi^2 = 3.87, df = 1, p < .05, \phi_{adj} = .10$

Table 7 Cross-tabulation of number of times flooded with implementation of mitigation measures

	Implementation of any protection or resilience measure?		Total
	No	Yes	
Flooded once	305	481	786
Flooded more than once	45	151	196
Total	350	632	982

$N = 982, \chi^2 = 16.49, df = 1, p < .000, \phi_{adj} = .19$

⁵¹ In this context, the term “worried” is likely to be interpreted by respondents as a synonym for ‘concerned’. The variable, therefore, should be taken as a measure of respondents’ estimation of the likelihood of a flood – i.e. their flood risk perception.

6.2 The Normality Discourse

Predictably, respondents in the sample who have experienced more than one serious flood⁵² use a discourse that represents flood risk as part of the normal state of affairs rather than as unlucky. There are six such respondents in the qualitative part of this research: Ivan and Andy, who live on an island on the Thames that has been flooded twice in seven years; Vikki and Freddy, who have on two occasions been forced to vacate their flats due to flooding; and George and Margery, who have twice experienced household flooding⁵³. An additional respondent to use the discourse is Elizabeth, whose home has been almost flooded on two occasions, but who has never suffered any material damage.

The use of the Normality Discourse by George and Margery is illustrated in the following passage, where they describe what they deem to be the warning signs of an impending flood.

- Margery Like I said, we go by the drain out the back.
George It comes out the drain.
Interviewer You showed me that.
Margery Yeah.
George So the ditch gets water in it, then it... a bit on the lawn...
Margery Then the garden.
George Then it comes up the path

This passage is characterised by the use of the grammatical tense that Crystal (2004 p102) calls the *habitual present*. The habitual present describes events that continue to be repeated, so its use in this passage (i.e. “comes out”, “gets water in it” and “comes up”) constructs flooding as regular and ongoing. This notion is given further support later in the interview, for George says of the signs that warn of flooding that they have occurred “quite a few times”, implying that he represents the risk as fairly normal.

The other respondents who employ this representation do so more explicitly than George and Margery. Vikki says that the floods come “every two years”; Freddy is scornful about a suggestion that a recent flood was an unlucky “act of God”; Elizabeth argues that

⁵² Based on a subjective interpretation of the perceived impact of each flood.

⁵³ As a child, Margery also experienced the 1947 flood, during which she and her family were evacuated from their home.

flooding “goes with the territory” because she lives in a basement flat in an area that has flooded before; Andy describes flooding as a “normal occurrence”, and Ivan says that he has tried to work out a system for predicting the next flood, thereby implying that he thinks of them as occurring with regularity. All of these comments suggest an expectation that floods will recur with regularity and are not a chance, unlucky event.

These respondents have all been flooded more than once, suggesting that repetition might be an important factor. Why should this be so?

Representativeness bias would be one explanation (see Nisbett and Ross 1980). The theory of representativeness bias postulates that humans normally assume that recent patterns of events are representative of future patterns. It could be argued that because of this bias, single flood events would not suggest any pattern and would be dismissed as a one-off event, but that subsequent floods would prompt people to project the pattern of occurrences into the future and begin to think of flood risk as ever-present. However, although the theory of representativeness bias provides a plausible cognitive explanation, evidence from two respondents suggests that the explanation might be emotional as well as cognitive.

Sally and Jill both took part in a focus group of residents of a small Thames island that is vulnerable to tidal and fluvial flooding. Both these respondents experienced two floods during the previous six years, which had severely inconvenienced them by making access to the mainland very difficult. In the following passage, the interviewer introduces the idea of houses that float when there is a flood. Initially, the group’s response (not shown) pertains directly to this suggestion, and it is discussed humorously. Subsequent comments by Sally and Jill, however, indicate that the topic of the floating houses has prompted them to reflect on the question of the frequency of flooding and on how they would feel if they were to represent floods as happening with regularity:

Interviewer I was wondering about that; because in Norway, well, you know, floating houses is the thing that they’re looking at as an idea.

[...The participants discuss this idea...]

Sally I would move [home], to be quite honest with you. I mean, I think that’s the reality. I think...I mean I feel quite...

Jonathan I think you’d have to be flooded a couple of times in a few years to do that, wouldn’t you?

- Sally Yes, in my head I've thought, 'well you know if this is going to happen again, you know, I'd be tempted to move'.
- Ivan⁵⁴ Yes, that's what I thought at first.
- Sally You know, it's lovely and it's perfect and it's wonderful, but no, I'm not going to risk... You know, like most people on the island, most of our capital is in our house, and I'm not going to risk that, and at the same time I think, 'well I won't live here when I'm old, because I can't do it'.
- Jonathan Surely if you're going to do that, then surely the first time that your house floods properly the value of it will go down won't it?
- Morris Oh no, advertise in a diving magazine [*laughter*] and sell it to a diver!
- Jill I'm in that thinking process. If I thought there was another...
- Andy⁵⁴ Yes, but you've got to get out before the flood.

One of the most striking characteristics of this passage is reference by both Jill and Sally to thought and thinking (Sally: "in my head I've thought"; Jill: "I'm in that thinking process.") This can be interpreted in two ways.

The first interpretation concerns the fact that Jill and Sally are in the company of their cohabiting partners, Andy and Ivan. If neither woman had ever discussed with her partner the possibility of moving house because of the flood risk, it might be thought provocative to mention it for the first time in public. To prefix any mention of the idea of moving house with "I've thought" or "I'm in the thinking process" modalises it and makes it less likely that it will be interpreted as an aggressive rhetorical stance. Jill and Sally might, in other words, be speaking in this way in order to protect their relationships with their partners.

Alternatively, it is possible to see the modalisation as applying to the flood risk itself and as a means of self-protection from full emotional exposure to the reality of the risk. Although there is nothing in this passage to indicate how Jill feels about the flood risk, Sally's first comment indicates that having floating houses on the island would signify to her an unacceptably high frequency of flooding. Both her hesitation ("I think..."; "I feel quite...") and the semantic content of her utterance suggest that the idea of such frequent flooding provokes anxiety. The use of the past tense in the phrase, "in my head I've thought", could therefore be intended to distance her from the thoughts and feelings by locating them in the past, and the term "in my head" may be an attempt at objectifying them. This distancing and depersonalisation of the flood risk can be seen as a self-

protective discursive strategy. Jill's utterance, "I'm in that thinking process", could likewise be intended to create distance between the speaker and the expressed thought; as could the subjunctive phrasing "if I thought", which locates the risk in a hypothetical, unreal realm.

Although Jill and Sally have enough evidence to conclude that flooding will be a regular occurrence, they seem to hesitate to reach this conclusion in order to avoid the anxiety that it might provoke. As a result, they neither employ the Luck Discourse nor represent flooding as something regular, and appear to be in a state of uncomfortable limbo in which their discursive representation of flood risk is unclear.

The use or rejection of the Normality Discourse is also associated with representations of local geography. There is evidence that householders are less likely to use the discourse if they do not perceive what one might call a *normalised geography of risk* – that is, if they do not represent the location of their home as the kind of physical environment for which flood risk is the normal state of affairs. There are two illustrations of this in the data. One respondent, Elizabeth, implies that she accepts flood risk as normal because she lives in a basement flat and associates basement flats with flooding:

If you live in an area where it has flooded before and you live in a basement flat then in a way [flooding] kind of goes with the territory really. (Lines 126-8 in the interview transcript)

You know, there are always issues with drains and damp rise... you know, rising damp, drains – if you live in the basement. There always are, and we kind of... we knew that. I mean it would be nice if there wasn't but [*pause*] as I said, it comes with the territory. (Lines 134-7 in the transcript)

Even Elizabeth's choice of words hints at the relevance of geography. The use of the term "territory" ("goes with the territory"), although idiomatic and metaphorical, emphasises the importance of the aspect of location.

As we saw in the previous chapter, a second respondent, Malcolm also makes an explicit association with geography by rejecting the notion that his home is in the kind of area that one would expect to flood and arguing that only "seaside" areas and "steep river valleys" qualify as normalised geographies of flooding (see p79). It is worth adding, for the

⁵⁴ Ivan and Sally are cohabiting partners; as also are Andy and Jill.

purposes of the current discussion, that Malcolm's way of talking about risk shares some of the features of Jill and Sally's discussion (see above). Like them, he seems to resist representing flood risk as normal; and like them, he shows ambivalence on the question of flood frequency. Although he says that the risk of flooding is only "occasional", when he says that he has not "acknowledged that this whole area is at risk", the use of the term "acknowledged" implies that he believes the risk to be much greater than he is willing to admit to himself. In other words, in a discursive representation of the risk that is internally inconsistent, Malcolm appears to simultaneously deny and affirm the continuous presence of the risk. His rejection of the Normality Discourse, this suggests, is a rhetorical attempt to suppress an awareness of the severity of the risk.

Malcolm's use of the Rubicon metaphor in the same passage hints at the role played by anxiety-avoidance in determining what is considered a normalised geography of risk and what is not. The River Rubicon marked the boundary of Julius Caesar's province and its crossing by him in 49 BC marked the start of his war with Pompey. In the modern context, 'crossing a Rubicon' retains its associations with hazard and adventure, but also has the more general meaning of "tak[ing] some step from which it is not possible to recede" (Brewer's Dictionary of Phrase and Fable 1962 p788). Malcolm's use of the term therefore implies several things: that to represent the flood risk as constant would be to move into a realm of increased hazard; that such a move is voluntary; that it is irreversible, and that it is therefore a difficult step to take. Given these implications, it is no surprise that Malcolm hesitates to "cross that great Rubicon which says this area is always going to be at risk from flooding". Like Jill and Sally, he persists instead with a more ambivalent representation of the flood risk.

'Crossing the Rubicon' and representing flood risk as part of the normal state of affairs, it seems, increases the likelihood that a householder will feel obliged to prepare for floods. The Luck Discourse, on the other hand, undermines the Pre-Emptive Action Discourse and probably makes proactive flood risk responses less likely. It is therefore important to understand how householders make their selection between the two discourses. We have ascertained in the two preceding sections that the representation of flooding as 'unlucky' appears to have an instrumental function in talk: it reduces anxiety, diminishes the perceived need for householder action and frees householders from the fear of being

blamed. Increased experience of floods and an association of the local environment with a normalised geography of flooding may encourage householders to see flood risk as a normal part of life rather than as an exceptional and unlucky state of affairs. The abandonment of the Luck Discourse, however, is represented by respondents as an irreversible step towards greater anxiety and is therefore approached with hesitation. As a result, some householders appear to reside in a state of limbo in which they neither employ the Luck Discourse nor represent flood risk as normal.

6.3 The Blame Discourse

Alongside the Luck Discourse, a second means by which respondents de-legitimise the idea of pre-emptive action is by employing what we will call the Blame Discourse, a discourse that is widely recognised amongst people working in the field of flooding. By representing flooding as entirely controllable and blaming it on human incompetence or malice, this discourse allows householders to absolve themselves from responsibility and from the need to take action.

Within the Blame Discourse, floods are represented as essentially human-made rather than natural. ‘Nature’ tends to be represented as benign, as described in Chapter 5. ‘Society’ – as also described in Chapter 5 – is represented as capable of protecting its citizens from flooding, as obliged to do so and as to blame for any floods that do occur.

We see this illustrated by the quote from Pauline (p81), in which she conflates responsibility for causing floods with responsibility for mitigating their impact. We also see it in the interview with the two friends, in which Kate (single mother; one young child; no flood experience) does not use the discourse but her friend Susan (lives with partner and young children; experience of street flooding) does:

- Kate People say lots of horrible things about this estate [*laughs*], but you know, people that live here, it’s ours; you know, it’s ours. We’re all here together in this estate, I think.
- Interviewer And yet it’s not your responsibility as householders to kind of get the sandbags ahead of time and...?
- Kate Well I think, yeah.
- Interviewer ...and stuff like that?
- Susan No, I don’t. I actually think it is the responsibility of the housing associations and the councils and the Environmental Agency to make sure that we have things like that, you

- know. At the end of the day, and whether you own your own home or not, I still think because it is a natural thing, that it comes down to your local Council – [it is] their responsibility, I believe.
- Kate Yeah but I think, ‘well, why are they responsible for a natural thing, if we’re not?’ Again, it’s wanting somebody to... Okay, you should help...
- Susan No; because at the end of the day, Kate, you know, my attitude is: ‘we pay our Council Tax; we pay for them to look after our environment’.
- Kate We pay for them to look after our roads, we pay for them to put our buses about; but we don’t pay for them to stop a flood. Or be responsible...
- Susan No; so is it our response... but is it then our responsibility to make sure the pumping stations...?
- Kate We’re gonna fight now, aren’t we! [*Laughing*]
- Susan ... is it then our responsibility to make sure the pumping stations are working?
- Kate No. [*Laughs*]
- Susan No; it’s the Council’s! Is it our responsibility to make sure that the banks on the side of the river are high enough? No; it’s the Council’s. Is it our responsibility to make sure all the sewage system’s working? No; it’s the Council’s. Therefore it comes back to the Council.
- Kate Can it be the Council’s fault if we get lots of rain? No; it can’t. But that’s what ultimately causes the flood!
- Susan But then if the pumping stations are working properly... No, but if the pumping stations are working properly, and the drainage systems are working properly...
- Kate Okay, with the last one you had a reason – the pumping station.

In this very dialogical discussion⁵⁵, two opposing discourses on the causes of flooding are plainly evident – as are their implications for the idea of householder-level pre-emptive action. Kate argues that it is rain that causes floods; that floods are natural phenomena, and that they are not, therefore, either the fault or the sole responsibility of the local council. Local authorities, she asserts, might have some role in flood risk mitigation, but residents should also play their part (they “should help”).

Susan, on the other hand, asserts (after a few rhetorical false-starts) an alternative discourse. She contests that the local council is the *de-facto* cause of any flooding because it is responsible for maintaining the physical water-management infrastructure. Furthermore, Susan also links the issues of cause and response, rejecting the idea of individual pre-emptive action on the basis of her attribution of blame to the local authorities.

⁵⁵ A dialogical text is one that encompasses a variety of conflicting discourses and views. The dialogicality of the text shown here is evidenced by the extensive use of quotations. Unless the sources of quotations are themselves claimed as authorities, quotations weaken the power of the claims within them – see Fairclough (2003 p47) – and thereby allow for the validity of other, alternative claims. Thus Kate’s construction, “Yeah

The extract from the interview with Kate and Susan illustrates the fact that the Blame Discourse is not employed universally amongst at-risk householders. Why do some householders use the discourse, and others not?

The Blame Discourse and social identity

The answer would seem to be that the use of the Blame Discourse is associated with social identity and that householders will only blame others if they feel those others to be members of an out-group. This is evident, for example, in the focus group with Freddy (Camden; single; unemployed; flat with basement level; twice flooded) and Pauline (Camden; retired widow; terraced house; flooded once). Three characteristics of the discussion are important in this respect.

The first of these is the depersonalisation of people who work for the local authority and the water authority. This is visible in the semantics of the text. Whether they clean the gutters, dig up the roads or advise on flood risk response, staff are described with the aggregating personal pronouns ‘them’ or ‘they’, or with collective terms such as ‘the council’ or even – on one occasion – simply ‘Camden’ (“Camden just say to get some sandbags”). They are not given names or job titles, nor described with individualising personal pronouns such as ‘he’ or ‘she’. This manner of speech creates and maintains a distance between the speaker and the subject, reinforcing the distinction between the two groups and emphasising the constructed identity differences.

On only one occasion does Freddy break this pattern and refer to local authority or water-authority staff by using individual personal pronouns. A transcription of this occasion is reproduced below, with the use of personal pronouns shown in bold type:

- Freddy [...] **he** said they were going back to the drawing board, and when **he** said it was going to cost them, not hundreds, not thousands of pounds, you know, it could run into big money.
- Interviewer Cost a packet.
- Freddy Cos **he** said, **he** said what they’d have to do, is they’d have to dig up
- Travis the whole street
- Freddy the whole street, **he** said, and put down

but I think, ‘well, why are they responsible for a natural thing, if we’re not?’” is more dialogical than the hypothetical alternative, “If they are responsible for a natural thing, so are we!”

Travis bigger pipes
Freddy bigger pipes in and...

In this passage, Freddy uses the personal “he” to describe a local authority worker, instead of the collective “they” that is used elsewhere. He also gives the worker a more positive evaluation than he gives officials elsewhere in the text. One explanation for this lies in the representation of the official, who is depicted as saying that a plan for a locality-wide solution was going to be drawn up (“he said they were going back to the drawing board”) and as implying that it was going to be implemented (“it **was going to cost them** big money”⁵⁶). This contrasts with the only other officials who Freddy says he has spoken to, and who he describes as only having focussed on household level solutions and who he describes with the generic and distancing epithet “the ones”. The semantic shift from “they” to “he” in the above passage, therefore, suggests an easing of Freddy’s judgement of the out-group – the local authorities. Due to his apparent belief in the possibility of an area-wide solution to the flood risk problem, the “he” of this passage is a more acceptable group-prototype than officials who offered no solution at all or who only spoke of household level measures. This leads to a reduction in the gap between in- and out-group in the discursive representation used by Freddy.

The representation of the residents as an in-group and ‘officials’ as an out-group is also signalled by Freddy’s reference to unanimity amongst the residents. Freddy alludes to this on two occasions – when he says that “everybody else in the area was told the same thing” and when he comments that “everyone in this area told [the council] exactly what the problem was”.

Finally, the in-group/out-group distinction is also suggested by the deprecation of the authorities and the imputation of innocence to the in-group (the tenants). The council, Freddy claims, failed to take the simple measures that would have prevented the floods and that the tenants had told them to take. Elsewhere, the local authority is represented as

⁵⁶ The phrase “it was going to cost them” implies that the costs are going to be incurred and that the solution will be implemented. Had Freddy used the subjunctive mood (e.g. “it would cost them”), there would not have been this implication.

not taking the problem seriously⁵⁷; as not caring about the effects of the floods on tenants (“they just weren’t interested”) and as taking the “disgusting” position of being unwilling to help tenants restore their homes after the floods. The householders, on the other hand, are represented as entirely and obviously innocent. In her most impassioned statement of the whole interview, Pauline exclaims “How can you blame the tenants!” This is typical in-group behaviour. As Lorenzi-Cioldi and Doise (1990) point out, frequent exposure to fellow in-group members favours personalised representations of individual group members, while out-group members are less frequently encountered and so tend to be represented as more homogeneous.

Is the use of the Blame Discourse associated with socio-demography?

If social identity were indeed predictive of the use of the Blame Discourse then one might expect the discourse to be associated with the underlying socio-demographic factors upon which many social identity groups are founded. There is some evidence of this in the qualitative research, where less educated respondents from lower occupational classes seem to be more assertive in their use of the Blame Discourse than other respondents.

Use of the Blame Discourse by people from lower occupational groups

Freddy and Pauline are an example of this. Freddy repeatedly asserts that the flooding was entirely the fault of the water authority and tells the interviewer that in his efforts to get the local authority to eliminate the risk he had raised a petition amongst his neighbours and has won support from his MP. Pauline too (widow; council house tenant; retired unskilled worker; one flood experience), uses the Blame Discourse, attributes responsibility to the local authorities and represents flooding as preventable.

In the following passage, Pauline and Freddy discuss what happened after the most recent flood:

Interviewer [...] So did the council [restore your homes] fairly quickly, or...

Pauline They didn’t do anything.

⁵⁷ Interviewer: “Have they talked about doing anything to stop the water getting in?” [...] Freddy: “They’d probably say, ‘get a boat’ [laughs].”

- Interviewer No, of course, they just gave you money and you did it all yourself!⁵⁸
Pauline Only £500, you know.
Freddy ‘Get on with it!’ That’s what they say, isn’t it!
Pauline They said it was an act of God.
Freddy ‘Act of God’, yes, that’s what I got as well from them. And everybody else in the area was told the same thing.

The key part of this text is the sixth line, in which Pauline makes an indirect report of a comment by the council (“They said it was an act of God”). Taken in isolation, this statement might seem no more than a simple truth-claim. However, because it is preceded by two sentences in which Pauline criticises the local authority for not helping with post-event restoration, it can be seen as a continuation of this theme. I.e. if we assume the existence of a bridging assumption between the two sentences, then “they say it was an act of God” might itself be a criticism of the local authority and Pauline may be implying that the local authority’s assertion was a discursive move designed to exonerate it from responsibility for post-flood restoration. Pauline’s rejection of this assertion (also indicated by the context) suggests that she represents flooding as something controllable by humans and that it should not be blamed on God. Like Freddy, she represents the flooding as entirely preventable and as the fault of the authorities.

A further example of people from lower occupational groups using the Blame Discourse is provided by the focus group of housing association tenants in Reading. Once again, the operation of the Blame Discourse appears to inform the way the causes of flooding and flood risk are represented.

In the course of their discussion, the participants in the group consider three different explanations for the flooding: rising groundwater (“it must have come up through the soil” Ed), over-flowing drains (“it all depends where the storm-water drains go” Nick) and a recently-constructed channel linking the Thames to a nearby lake (“they put a cut-through [...] and it was after they done that, it made it worse” Rob). The explanation the group eventually alights on is the third, and least natural, of these – the water channel. This is most consistent with the Blame Discourse, because it allows the group to project fault for the floods onto the authorities and away from either themselves or ‘nature’.

⁵⁸ The respondents had explained this earlier in the interview.

This representation of the channel as the least natural of the options is revealed in a number of ways. That the channel is represented as artificial is indicated by its association with the term “man-made water” (Rob) and by the repeated reference to its having been created by humans (“if **they** hadn’t of **done** the cut-through” Stuart; “**they done** that” Jackie; “**they’ve put** a cut through” Rob). Furthermore, older human interventions are generally considered more ‘natural’ than are contemporary ones (Soper 1995), so the characterisation of the channel as a recent phenomenon (“I used to walk there with my dog”... “it was after they done that; it made it worse” Rob) also suggests a non-natural representation.

This contrasts with the other two mooted explanations. Although drainage systems are equally as artificial as water channels, these will have been constructed before the respondents became resident in the area, and their construction is certainly not mentioned. They may also be considered as more ‘natural’ by dint of their ubiquity in areas where there is housing. Meanwhile, raised groundwater levels, although not described as either natural or unnatural, seem intuitively the least likely of the three to be considered as man-made.

Use of the Blame Discourse by people from higher occupational grades

In contrast with the working class householders in the sample, the rhetoric of respondents from higher occupational grades suggests a more ambivalent use of the Blame Discourse. These respondents not only blame others for the flood risk; they tend to show a willingness to accept a share of the blame themselves.

Christopher (manager; owner-occupier; experience of road flooding) typifies this approach when he asserts that it is not “anybody else’s responsibility to protect my home”:

Interviewer How does the flood protection thing feel? Does it feel like...? Is it, ‘there’s nothing you can do’? Or is it, ‘it’s not up to us to do it, it should be them stopping the floods’? Or what’s going on there?

Christopher I think um, I think from my point of view, um, I don’t think it’s, shall we say, specifically anyone else’s responsibility to protect my home as such. I do think, you know, the wider issues of how much building there is on green land, shall we say, does have to be addressed [...]

However, although this statement seems to reject the tenets of the Blame Discourse, it is, in fact, highly modalised (“I think um”; “I think”; “from my point of view”; “shall we say”) and the term “specifically” lends further ambiguity to Christopher’s commitment to what he is saying, hinting that he may also, at some level, feel that somebody else is actually responsible for protecting his home.

Both of the focus groups with respondents from higher social grades show this ambiguity about the use of the Blame Discourse. Although they accept that they should be responsible for sharing in the protection of their homes against floods, they express some doubts over the authorities’ willingness to do their part. This doubt is marked by incredulity, born of the representation of flooding as controllable and of society as capable of exerting that control. In the words of James (professional; owner-occupier; basement storage area flooded twice), “[surely] it could be solved” by “an engineer who knows about these things!”

Is the use of the Blame Discourse linked with tenure?

A further possible explanation for the variation in the use of the Blame Discourse is the effect of housing tenure on representations of ‘home’.

Tenure seems intuitively likely to be influential on the way people think about their responsibilities for their place of abode. Furthermore, all the respondents in the qualitative sample who make un-ambiguous use of the Blame Discourse are social tenants and some of them argue explicitly for a link between the discourse and tenure:

- | | |
|--------|--|
| Jackie | If I had own house... |
| Rob | It’s in your interest. |
| Jackie | ...I would be looking after that house. But I stay in a housing association house... |
| Nick | As a tenant. |
| Jackie | ...as a tenant, so it’s down to them. And you can’t... |
| Stuart | It’s the landlords. |

Statistical evidence on the use of the Blame Discourse

In spite of the evidence in the qualitative data, an analysis of the survey data shows no association between the use of the Blame Discourse and housing tenure, occupational class or education. It does suggest, however, the existence of an interaction effect between occupational grade and tenure.

A crude measure of the use of the Blame Discourse is provided by the FHRC survey, which asked respondents to indicate whether they agreed or disagreed with the statement, “The Environment Agency should protect my home from future flooding” ($N = 278$). Although this is an imperfect measure⁵⁹, it is likely to capture the majority of people who use the discourse and is likely to reveal any particularly strong associations.

Table 8 Test amongst householders from low occupational grades for a correlation between the Blame Discourse and tenure

	Expression of strong agreement with the statement, “The Environment Agency should protect my home from future flooding”		Total
	No	Yes	
Working class tenants	4	39	43
Working class owner-occupiers	14	48	62
Total	18	87	105
$\chi^2 = 3.15, df = 1, p < .1$			

The test for an interaction effect could not be performed amongst the higher social grades due to the low number who were tenants. The data does suggest, however, that working class tenants are at least 2.8 times as likely as working class owner-occupiers to use the Blame Discourse (Table 8).

⁵⁹ Agreement with the statement would indicate the use of the discourse, but a failure to agree with it would not indicate its non-use. Respondents might disagree with the statement because they felt that a public body other than the Environment Agency was to blame for flooding or because they did not know enough about the Agency to feel comfortable with the idea of blaming it.

Further evidence of this interaction effect is provided by the interview with Susan and Kate. Susan and Kate are both of the same gender, are both mothers of young children, are both social tenants, are both exposed to the same flood risk, and both are of about the same occupational grade and claim to be close friends. However, we already know that Susan uses the Blame Discourse whereas Kate does not. Furthermore, as the following passage suggests, in spite of their common status as social tenants, this does not result in their having the same representation of ‘home’:

- Interviewer Do you own, part-own your houses, or are they council houses?
Susan No, no, these are Housing Association houses.
Interviewer Housing Association?
Kate But they’re our houses...
Susan Yeah. Some of them... (1)
Kate to us, and we’ve talked about this before, it’s like, owning your own home, so our house previously, it’s erm, these are our homes. I walk through that front door and that is my home... It doesn’t matter whether you own it or not...
Susan Erm, it’s just... (2)
Interviewer [*Whispering*]... that’s interesting.
Kate Yeah, whether I bought it or not, it’s mine; I live there; I decorate it; I put the love in there, you know. I’ve got my neighbours, I’ve got my friends, I’ve got the man over [in] the shop... this is home. This is my home – not just the bricks. That house is mine.
Susan Yeah, I mean it isn’t... (3)
Kate Whether I pay out to buy it or pay out to rent it, it makes no difference. It’s what’s in the house, what you make of your bricks.
Susan Erm, you know, it doesn’t... Whether you own your home, whether you rent your home, whether you’re a squatter...

Although Kate lives as a tenant in social housing, she makes it clear in this passage that she does not want this to be seen as affecting her representation of home (“it doesn’t matter whether you own it or not”). Kate seems, at first sight, to share the same representation as Kate, but a closer inspection reveals evidence that this agreement is, in fact, superficial. Although she expresses agreement with Kate at the end of the excerpt, there is a suggestion in the text that this is a contested issue for the two friends and that she is only agreeing with her for rhetorical reasons. It is Kate and not Susan who first denies the salience of tenure, and Kate three times cuts Susan short when she starts to express her own view on the matter (see (1), (2) and (3) in the passage above). Kate’s view seems to go beyond a feeling for an abstract ‘home’ and to embrace the physical structure that contains that home (“not just the bricks”; “that house is mine”). This level of concern is not evident in the talk with Susan or the other working class respondents.

Furthermore, although the friends do not make any link themselves between education and representations of ‘home’, their interaction with each other does make it clear that they consider education to be an important factor in their social identities:

Interviewer And education?

Susan I am [*pause*] educated!

Interviewer You are educated! [*Laughs*] Fantastic! [*Laughs*]

Susan [*Laughing*] Yeah, a little bit! Yeh, um...

Interviewer But when did you leave school? Do you have a degree, A-levels...?

Susan I left school at 16 and I’m all self-trained. Been in this industry for 14 years and so, it’s a long time to be in it, so I know it pretty well.

Kate I went to a grammar school; I went to college...

Susan Ooooh, hark at you! [*Both respondents laugh*] You’re an intellect and I’m not! And which of us is blonde!⁶⁰

Susan’s hesitation in responding to the interviewer’s first question and her somewhat awkward reply (“I am [*pause*] educated!”) suggest embarrassment and defensiveness concerning her relative lack of formal education. Later, as Susan describes this lack in more detail (“I left school at 16”) and Kate begins to describe her contrasting wealth of education (“I went to a grammar school; I went to college...”) one senses that educational differences play an important part in the relationship and are possibly perceived as a threat to it. Susan’s interruption of Kate can be read as an attempt to forestall that threat and her use of humour (“You’re an intellect and I’m not! And which of us is blonde!”) as a way of making light of the difference. This evidence of defensiveness and rhetorical repair-work suggests that education is actually perceived by Susan as quite a fundamental element of her and Kate’s social identity.

⁶⁰ Kate has blonde hair; Susan does not.

Education, then, looks as though it may be one of the predictors of the use of the Blame Discourse, with less educated people being more likely to use the Discourse, especially if they are also tenants of social housing.

Is the use of the Blame Discourse linked with representations of ‘society’?

A third possible predictor of the use of the Blame Discourse is the representation of ‘society’. It was suggested in Chapter 5 that representations of ‘society’ help some people protect their ontological security from flood risk. Representing ‘society’ not only as capable but also as desirous of protecting its population, it was suggested, was an alternative to representing ‘nature’ as benign. One further aspect of the representation of ‘society’ that was not mentioned in Chapter 5, however, is the issue of how much control it is felt to exert over its members. A representation of society as overly controlling rather than as simply protective may, in fact, be a third determining factor in the selection or rejection of the Blame Discourse.

This representation, too, is most evident amongst the working class respondents; perhaps, as the following passage suggests, because of the lack of control tenants have over the physical structure of their own homes:

- Nick You have to go and write and get written permission for them to come and fix anything on the outside of your house.
- Interviewer Ahhh.
- Rob You can’t put up plant holders, you know the flower plant holders.
- Nick ‘Cause was it last year, the [*inaudible*] on this corner here? (Jackie: Yep.) He had... (Jackie: Andy)...about half a dozen hanging baskets, made the property look really nice and they’d made him take ‘em down. (Jackie: Aye.)
- Stuart Very nice as well. (Jackie: Aye.)
- Nick It made it just a little bit more...
- Jackie The shed as well; the shed they built up at the side of the house, I mean, that house looked fantastic compared to all the years that I’ve stayed on this estate because ours was always getting smashed, weren’t it? [*Laughs*]. Smashed, getting raided and everything.

The state is here represented as unreasonable and overly bureaucratic. The need to get “written permission” for any change to the outside of the house is presented as excessive and as preventing the tenants from improving their own environment (“made the property look really nice and they’d made him take them down”; “the shed as well [...] the house

looked fantastic”). This view fuels the general antipathy towards the state authorities that is displayed in the discussion, and appears to be one of the factors that encourages the use of the Blame Discourse.

The representation of society also seems to be a factor, however, in the case of the one higher class householder who uses the Blame Discourse – Florence, the retired university lecturer who lives in her own house on the banks of the Thames. The issue of control, in fact, is one of the most striking characteristics of the interview with Florence and her son-in-law, as can be seen in the following excerpt, where all references to control are shown in bold type:

Florence [...] Then they started to think about regulating the flooding and opening and shutting the doors of the Thames and that, and I must say that since then, I personally have felt that it was **no longer an act of God** which was happening, but **controlled** by the powers that be. In other words, the last [time] – was it two years ago...?

Marcello Two years.

Florence We weren't there. Erm, we were actually all in Naples but my son returned for New Year – earlier than us. He doesn't live here anymore but, um, he spent the weekend **controlling** things here. Erm, and we didn't get flooded inside, but we felt that **whoever it was**, had decided to flood us, rather than flood the centre of Reading. So my perception is now – from fatalistic, before: 'floods will happen; the river is a risk; we're ready to take it'... Because up to, you know, for about 30 years, we could see the water rising and then decreasing, but I would say that over the last ten years I've become a bit cynical in the sense that **I felt much more regulated** by a central flooding **control**. Which means that if they **decide** to flood us, they will. Even if, erm, **naturally**, the water would spread down in Maidenhead or [*inaudible*], but they've obviously... And we heard it said that they decided not to flood the centre of Reading because there was generators, there was electricity generators and therefore we've... I felt – although I wasn't there, but I was ready to come back – a lot more insecure. Because once you are under the **control** of the engineers and the technicians according to me, erm, they can decide – because it's for the common good, fine – to flood – what did they say? – a hundred houses in Caversham, rather than [flooding] Maidenhead, which had already been flooded without too much **control** i.e. as you know, water you know... Whereas now, here, I feel that **I'm controlled** by, call it 'Big Brother' or the Water Age..., you know, the Environment Agency, the people that **decide**. I mean they've got a good **control** and they know exactly where the water is going to go, because they're **controlling** it. Well, that's my perception of it.

The various derivations of the term 'control' ("controlling"; "controlled" and "control") occur eight times, suggesting that the concept has a core position in Florence's representations of flood risk and flood risk response. Furthermore, as in the interview with Rob, Nick, Jackie and Stuart, the text constructs a difference of interests between those said to have the control (the Environment Agency) and those said to be subject to that control (the residents of the "100 [at-risk] houses in Caversham"). Florence implies that

the needs and preferences of the residents would be ignored if there were a flood (“if they decide to flood us, they will”). “They”, the decision-makers, are represented as faceless and bureaucratic (“whoever it was”; “the powers that be”; “Big Brother”). Indeed, from the residents’ perspective, the people with the control over the situation are an ‘out-group’ – fundamentally different to the residents in their social loyalties and hence also in their interests. When, in the past, she represented flooding as “an act of God”, she says, she was “ready to face it” and able to establish control over it. Now that she represents it as controlled by humankind, she is powerless. It is she herself, now, who is controlled (“I felt much more regulated”).

Florence contrasts being at the mercy of a controlling out-group with the situation in which ‘nature’ is in control. Legitimising her argument by claiming as her authority “older”, longer-term residents, Florence constructs a past in which water went where it was “natural” for it to go. Significantly, she represents this ‘natural’ state as one in which ‘nature’ posed no threat. For Florence, when ‘nature’ is left to its own devices, it is benign:

Interviewer Why is that different to...? Why’s that different from the flooding before?

Florence Because of political decisions, political in the large sense, i.e. regulating the life of a group of people. And they’ve got the powers to decide that the water is going to go ‘there’ rather than ‘there’. Whereas the natural run of things, which is water rising because it’s rained in the Cotswolds and you know, we’re [*inaudible*] so far, and the older people whom I talk to were there before me, erm, they said, “Don’t worry, it’ll flood up to the step and it won’t go beyond.”

From the two excerpts (above) from Florence’s interview, we can see that the text constructs an equivalence between God and nature. If flooding is not controlled by man, it is both “natural” and “an act of God”. Florence appears to use the two concepts interchangeably. In her representation of the past, a god-nature amalgam was allowed to “run” the river, and under its benign influence, the river gave no cause for worry. Now, however, even God and nature are disempowered. Floods are no longer an “act of God”; nor is the “natural run of things” permitted. Now, it is “they”, the anonymous bureaucrats, who are in control.

“They”, the representatives of the state, regulate the lives of the respondent’s in-group, and “they” – exclusively – have power. (The wording is absolute: the state has “the” power, not just ‘power’ or ‘some power’.) Florence’s representation of the situation

includes no arbitration and no consultation: “they” do whatever they want to (“if they decide to flood us, they will”).

We know from the work of Weber (1968) that bureaucratisation can lead to alienation between the populace and the organs of state. In the data from the interviews and groups, although people from all occupational groups sometimes represent local authority staff as belonging to an out-group, there is evidence that this might be more common amongst members of lower occupational grades. The formation of such group identities, according to the theories of Social Categorisation (Tajfel 1972) and Social Identity (Tajfel and Turner 1986)⁶¹, can motivate the adoption of the Blame Discourse, for the accentuation of inter-group differences in favour of the in-group (Abrams and Hogg 1990) results in in-groups having neither a sense of shared blame for flooding nor of shared responsibility for flood risk response.

6.4 Summary

The discussions in this chapter suggest that prevention rather than amelioration is the main interest of householders. Unlike burglary and household fire, however, the causes of flooding lie outside the household and at a remove from the direct control or influence of the householder. Floods cannot be prevented – as can household fires – by the adoption of good practice in the home; nor can flood-water be deterred, like burglars can, from attempting to enter the home. As a result, discourses on flooding are taken not from the local, tangible world of the home, but relate instead to distal, abstract and metaphysical themes such as ‘justice’ and ‘nature’.

In this chapter, evidence was presented of the existence of three such discourses, each underpinned by particular social representations of ‘nature’ and ‘society’. Furthermore, it was suggested that the choice between these discourses is associated with householders’ experience of flooding and perhaps also with their social grade, education and housing tenure, and with the resulting stance toward authority.

⁶¹ See Chapter 4

Within the Luck Discourse, ‘nature’ is represented as tame and benign. Any flooding that does occur is represented as an ‘act of God’: an unpreventable aberration in the usually tranquil natural environment. Unlike burglary, which is represented as malicious, and household fire, which is attributed to human error, flooding is depicted as nobody’s fault but God’s. This discourse was most often used by people with little or no experience of flooding. It provided them with arguments that enabled them to continue to represent their world as a fundamentally safe place and to defend their self-representations against the implication that they should be doing more to protect their homes and families.

In the Blame Discourse, the representation of a benign ‘nature’ is preserved by attributing responsibility for flooding to human beings. Unlike ‘nature’ or ‘God’, these human beings can be criticised, blamed and – potentially – influenced. Hence, this discourse enables householders to continue in the belief that the public authorities are capable of preventing floods from occurring. At the same time, because householders are represented as powerless to influence the situation directly themselves, there is an avoidance of self-blame. The Blame Discourse, in other words, reinforces social identity by laying blame at the feet of a culpable out-group – typically, the local authority or the water authority – while exonerating householders themselves. This discourse was particularly evident amongst less educated social tenants and was used less enthusiastically and less often by homeowners.

Finally, there is the Normality Discourse. In this discourse, flooding is attributed not to chance, nor to human error or malice, but to the physical geography of the area and the normal pattern of weather. Within this discourse, floods are seen as an ordinary part of living in the area; nature is no longer represented as benign and flood risk is represented as ongoing and continuous. One respondent describes the adoption of this discourse as “crossing the Rubicon”. To adopt the Normality Discourse involves casting aside the comforts of the other discourses and stepping into a representational world where ‘home’ is no longer safe and where householders face an ever-present external threat to which they themselves need to respond.

The first two of these discourses illustrate how householders use rhetorical means to try to manage the emotional destabilisation that flood risk brings. Representing floods as

unlucky (and therefore unlikely to occur) or representing flood risk as essentially human-made (and therefore eradicable) is, it is argued, seen as more emotionally sustainable than representing floods and flood risk as a normal part of life. Although these representations might be erroneous when seen from the scientific perspective, they serve the functional purpose of protecting the emotional stability of householders.

This suggests that the heuristic biases identified elsewhere in the risk literature should be recognised as more than just data-processing shortcuts. They play an instrumental role in householders' attempts to manage the emotional impacts of phenomena such as flood risk in the emotional life of householders. Hence, any attempt to correct these biases encounters resistance not only at the intellectual level but also at the level of the emotions.

The evidence presented in this chapter suggests that householders will only begin to take responsibility for managing their own flood risk if they first abandon the representation of nature as benign and controllable. While they retain this representation, they will continue to view floods either as rare and unlucky aberrations or as the fault of some human agency. Of the discourses identified, only the Normality Discourse is compatible with pre-emptive flood risk mitigation, for it acknowledges that flooding is likely to recur with regularity and does not place all the blame on others. As one of the respondents suggests⁶², the transition from one discourse to another can be difficult and is one that householders sometimes shy away from. Those who do cross this 'Rubicon', however, seem more able than others to use discourses that are consistent with action that protects homes, possessions and families.

⁶² Malcolm – management consultant; owner-occupier; lives with wife and adult sons; experience of one flood

7. Flood risk mitigation: Discourses of normality and independence

This thesis contains five main analysis chapters, of which this is the third. The first of these chapters looked at some of the key social representations used by at-risk householders – in particular, their representations of ‘nature’ and of ‘home’. The second chapter, meanwhile, focused on householder discourses on the causes of flooding and flood risk and touched on some of the implications of these discourses for responses to flood risk.

This and the subsequent two chapters take that second theme as their main emphasis, looking at the discourses that householders use when their talk is about responses to flooding rather than its causes. The three distinct groups into which these discourses fall form the subjects for Chapters 7, 8 and 9.

The first of these thematic groupings – and the subject of this present chapter – consists of discourses of ‘normalisation and independence’. The discourses in this group all concern the question of what householders consider to be normal risk response behaviour and the desirability of conforming to (or reacting against) normative pressures. The next chapter, Chapter 8, discusses the articulation of flood risk response with the discourses of materialism and looks, in particular, at the apparent failure of the materialist discourses to legitimise the idea of household-level flood-protection and resilience amongst some householders. Chapter 9 then reflects on the discursive differences between householders who come from a technical professional background and those who do not. It posits the existence of a Technical Discourse and suggesting that householders who are able to use this discourse are more likely to implement flood risk mitigation measures than those who are not able to.

7.1 Introduction

Flood risk response occurs within a social context. The kind of flooding that is the subject of this research is often a collective experience – floods affect whole households and

entire neighbourhoods and rarely affect individuals in isolation. Furthermore, many of the pre-emptive measures available to householders are visible to non-household members and therefore become part of what Goffman (1959) calls the ‘front of stage’ – the public face of the household and its members.

It is perhaps inevitable, therefore, that flood risk response should be subject to some of the many normative forces that pervade society. This chapter considers how respondents themselves harness these normative forces in their talk about flood risk response. What, it asks, is the role of the ‘normal’ in rhetorical arguments for and against pre-emptive flood risk mitigation?

Integral to this question is the issue of identity – and particularly social identity. Chapter 3 argued for the role played by social identity in determining the salience of different normative pressures. This chapter builds on that argument, illustrating from the interviews how the rhetoric around flood risk response is determined (in part) by the ongoing project of identity construction. In talking about flood risk, it is suggested, householders are also managing their self-presentation, and this increases the salience of discourses that relate most closely to identity, such as those associated with social class or gender. Because identity is an essentially conservative force and individuals and groups generally try to protect their identities, respondents use these discourses to justify their past behaviour and to argue against change. Hence, people who have taken little action to protect their homes would tend to use identity discourses to defend their lack of action, whilst those who have taken more measures would use the same discourses to support the fact that they had taken action.

7.2 The Reactive Action Discourse

The most striking example of a normalising discourse that undermines the idea of pre-emptive action is what will be called here the Reactive Action Discourse. Within this discourse, action that is taken far in advance of a threatening event is given a negative representation and behaviour is lauded that is in response to real events rather than to abstract risk.

This discourse is mostly seen amongst people who have never experienced a flood and amongst those who have been flooded but have not suffered severe consequences. An example is the group of six housing association tenants from Reading. This is a highly homogeneous group: all its members are in semi-skilled or unskilled professions; they all live in the same recently flooded street and are all aged between twenty and forty-five. Furthermore, all the participants knew each other before the meeting, and they arrived not separately but in two groups of three – suggesting pre-existing social relationships.

The question of whether or not one should take proactive measures against flooding came up on a number of occasions during this group. The most instructive of these is quoted here:

- Interviewer Some people say that if there might be a flood, you shouldn't have fitted carpets; you should have carpets you can roll up and put upstairs or whatever.
- Nick No I disagree with that because that's the right of the person, of the householder. (Jackie: Ay) Why should you have to put rugs down for the sake of it? It's your house; you put what you want in there.
- Interviewer Right.
- Jackie You make it as comfy as possible (Nick: Yeah) for the family. It's a family house.
- Rob I don't think...
- Nick 'Cause I wouldn't want a little kid like my son or anyone else who's coming into my house, with a laminated flooring down, or a concrete flooring down – because that's what they are underneath – with lino, and put a rug on that.
- Ed [Laughs] No, it wouldn't look good.
- Jackie Schuum!
- Nick You know what I mean? Slip and cracked his head! Then who do you go to for claiming?
- Stuart If you get too many insurance quotes they won't insure you, will they?
- [...]
- Interviewer But is that really the reason? Can you not get, I don't know, get super-duper rugs that don't slip or whatever? Or is it like you were saying, comfort?
- Nick It's comfort, I want warmth under my feet!
- Jackie Aye, it's comfort.
- Stuart I've never seen anyone's house like that, have you? – like it's just concrete floors?
- Interviewer Not concrete, I mean you could have nice lino.
- Jackie Ah but that's what our floors are made of: concrete.
- Nick It's block and [inaudible] concrete and then, er, lino. (I: Right.) And then you're left to do with, what you want with it.
- Rob But people just don't think that way anyway. You don't think, 'oh this happens, I'll get this because this might happen'. People just don't think that. You think, "I'll deal with it when it happens, I deal with it".
- Jackie People don't think, "I cannot get carpet in case we get flooded" [laughs].
- Nick Just deal with it when it's a little bit nearer the time.
- [...]
- Stuart Because it just wouldn't look good, would it? Like I say, concrete floors, you can't have a mat on top of that or... What, just one... How big? Just...
- Interviewer I mean you could have stone tiles on top of it and then rugs on top of that. It depends on what you like.
- Stuart Well then, that still costs money, doesn't it?
- Rob You're still going to get... The flood's still gonna cause damage.

- Interviewer Well the theory is, if you've got stone tiles, you just wash the water off the tiles, scrub them. Carpets, you need to throw away because they get ruined.
- Jackie Ah, but it's sewer water; your tiles are still gonna smell because it gets into the concrete.
- [...]
- Interviewer But you've got tiles on top?
- Nick Yeah, but you'd still...
- Ed In between the tiles, there's only grout!
- Interviewer Yeah, that's what [*inaudible*].
- Stuart Yeah, they're only grouted, aren't they?
- Jackie So you'd need to replace that anyway, so...
- Nick It would still soak through.
- [...]
- Ed And then it starts damaging skirtings and that...

Many aspects of this excerpt deserve further exploration. Its most striking characteristic, however, is that – in spite of its relative brevity – it includes ten different objections to the flood resilience measure under discussion (the use of flood resistant floor coverings). Within the extract, respondents object to this measure on the grounds that:

- it would not be in keeping with their representation of a “family house”
- it would not be comfortable
- it would not look good
- it would create a safety hazard
- the presence of such a hazard might render their homes uninsurable
- they have never seen anyone with their house arranged in that way
- it would involve extra expenditure

and that in the event of a flood:

- it would not prevent floors from absorbing the smell of the sewage
- it would not stop water from soaking into the grout between the floor-tiles
- and it would not protect the skirting boards from damage.

All of these objections could be seen as valid, rational, reasons for not adopting the measure. However, the number of objections made, the rapidity of their delivery and the force of their insertion into the discussion indicate a rhetorical purpose rather than an epistemic one. They are, I suggest, primarily a defensive response to the perceived threat posed to the group's social identity by the interviewer's implication that they should be engaging in pre-emptive measures.

The group's objections to the interviewer's Pre-Emptive Action Discourse take two forms.

The first, a justice discourse, appears only very briefly before falling away. This discourse is verbalised by Nick when he asserts that the measures under discussion are an infringement of the householders' rights ("But that's breaking human rights, init?"). At first sight, this seems a strange position to take, for there is no overt suggestion in the preceding discussion that flood response measures might be imposed on householders. However, members of the group may have been predisposed to make such an interpretation. We know from an earlier passage (cited in Chapter 5) that they are unhappy about restrictions by the housing association on what they can do to the outside of their homes; and the interviewer's notes show that they had to be reassured before the discussion about the independence of the research from the housing association or the local authority. Given this underlying suspiciousness, it is likely that the interviewer's use of the term "should" is interpreted by Nick as suggesting an imposition of the measure, and that the imprecise phrase "some people" ("some people say that you shouldn't have fitted carpets") is interpreted as referring to officers of the housing association or council.

However, it is the second discourse – introduced by Rob – that plays the more central role in the discussion. This is the Discourse of Reactive Action. Responding to the interviewer's attempts to find out what the group thinks of various pre-emptive measures, Rob rejects the whole notion of proactive behaviour. In a statement that seems to want to equate the norms of the in-group with the norms of society, Rob says that "People just don't think that way". This notion is asserted repeatedly; is affirmed by both Jackie and Nick, and remains a theme for the duration of the discussion.

As well as by the tactic of argument and counter-argument illustrated above, the Reactive Action Discourse and hence also group identity is protected, in addition, by the more coercive rhetorical strategy of ridicule:

- Interviewer Why's [a reactive response] better than preparing for it and building flood guards?
Nick Cos you don't... I dunno, it's just...
Rob If I met [a neighbour] today, putting sand in sandbags; and he said to me, 'Just in case it floods'; I'd be thinking, 'he's nuts'. [*General laughter*] 'He's nuts.' Seriously. [...]

- Interviewer How about if your neighbour was bolting [new floodgates] to his door?
Stuart I'd ask him who's paying for it! [...]
Jackie 'More money than sense', I would say!

People who take proactive action are not merely described as in error; they are ridiculed as being “nuts” or as having “more money than sense”. The laughter that greets the use of the former phrase suggests that the group acquiesces with that judgement and that dissent would now imply a rejection of group identity and potential alienation from the group. In other words, the use of ridicule increases the penalty that group members will pay if they transgress the rules of the group. It thereby reinforces group solidarity. If any of the respondents were now to propose proactive behaviour as a strategy, he would risk being labelled as “nuts” and losing his place in the group.

Ridicule is employed in this manner throughout the discussion – often through the use of cartoon-like similes. Preparing for possible floods is compared to never driving a car in order to avoid the risk of an accident (Rob); it is compared to worrying today about getting sunburnt if the sun shines next week (Jackie), and it is compared to becoming timid through excessive fear of robbery (Stuart). Group members vie with each other to find the most extreme simile with which to defend their representation of appropriate risk response. They make no attempt at reasoned argument.

The use of these similes changes both the mode and mood of the discussion. The images they conjure up cannot be taken seriously and the group switches conversational mode from what McGhee (1972) calls “reality assimilation” to what he calls “fantasy assimilation”, thereby evading the need to accommodate discrepant stimuli into existing representational structures. As a result, the core elements of the group’s representation of risk response are safe – defended, now, not only by the plethora of rational arguments listed above, but also by a mode of talking that obscures any information that might otherwise de-legitimise the favoured discourse.

Central to this defence is the assertion that flood risk is better dealt with at the point of a flood rather than in advance of a hypothetical flood. (Hence the repeated phrase, “deal with it when it happens”.) This aspect of the Reactive Action Discourse is also visible amongst other of the householders who have not suffered distressing floods.

An example is provided by Florence, a retired academic, who emphasises the ‘heroic’ and ‘enjoyment’ aspects of reacting to a flood. Florence has experienced flooding in her garden but never in her home. Perhaps for this reason, she appears to associate flooding with pleasant experiences:

- Interviewer So when you say that you think they’re going to allow you to flood, when you said ‘flood’ in that case do you mean water coming into the house rather than... Because the garden would...
- Florence We’ve enjoyed, you know, the ducks came right up to the door. And we know that that’s fun, and you know, we’ve sailed [toy? – *unclear*] boats from the front. I mean, you know, the children... we’ve got lovely photographs – everybody enjoying themselves.

Even when she is asked by the interviewer to consider the consequences if her home itself were to be flooded, Florence’s talk suggests excitement rather than concern. In response to the interviewer’s probing of the reasons for her assertion that she would not consider raising the wiring in her home to make it more resilient to floods, she reveals signs of the ‘heroic’ element of the Reaction Action Discourse and demonstrates how this can undermine the idea of pre-emptive action:

- Florence [...] it might be better [*inaudible*] to put all your, you know, your plugs at a higher level. But I’m not going to have it done unless we have a renovation thing, but it would be part of taking preventative measures. But I wouldn’t have it done specifically now, do you see what I mean?
- Interviewer Because...?
- Florence Because I think it would be quite a lot of money for, erm, something which, because I mean, we would be changing the whole electrical installation. We can do without electricity.
- Interviewer Even if it flooded and the electricity went?
- Florence Yes. We’ve got camping gaslights, you know. We’ve been without electricity during the miners’ strike. We’ve cooked with five miners [*laughs*] while picketing the area power station. We’ve cooked on the open fire and I had two young babies, and we coped without electricity. We just had the camping...

In imagining the loss of electricity supply in a flood, Florence recalls her family’s experience of power cuts during the 1980s miners’ strike. It is notable that she represents these experiences in a positive manner. The repetition of the same sentence form (“**We’ve been** without electricity...”; “**We’ve cooked** with five miners”; “**We’ve cooked** on the open fire”; “**We coped**...”; “**We just had**...”) gives a rhythm to Florence’s words that lends them oratorical force and casts the family’s resilience in a heroic light. Loss of

electricity supply is presented not only as survivable, but also as an opportunity to enhance the self-image and self-presentation of the family. Although cost is presented as the primary reason for not rewiring her home in a more resilient fashion, the positive gloss that is given to the experience of the power cut is used to further de-legitimise this particular resilience measure.

Florence's use of the Reactive Action Discourse is further suggested by her commentary on her neighbour, Nicola (single; retired architect; experience of garden flooding). Nicola and Florence both moved into their riverside houses fully aware that their gardens would sometimes flood. Both, too, reported having become increasingly anxious that the water might also reach and enter their homes. Their reactions, however, were entirely different: Nicola bought and installed a floodgate; Florence says that she chose to rely on the protection offered by her insurance. Florence, furthermore, expresses doubt about the effectiveness of her neighbour's chosen behaviour:

And we didn't want to tell Nicola, but by the time there is a serious flood, how... What are the, erm, polystyrene doors [her flood gate], you know, her thing... It might probably be brittling away, you know. I'm not sure, she's ... She has fitted these things. (Marcello: Mm, you were [*inaudible*]) But I mean, I don't know whether it will they'll be [*affective*].

The opening phrase ("And we didn't want to tell Nicola") hints at a condescending attitude; a desire to protect Nicola from a realisation that the measures she has taken would be useless in a "serious flood". Furthermore, the use of the term "polystyrene" for a structure made of fibreglass may have been an innocent mistake, but may also hint at derision – as might the repeated use of "thing". By contrast, in the following excerpt, Florence comments on Nicola's reactive behaviour during the flood itself; and on this occasion, is far more positive:

Nicola was excellent. She was controlling... she normally gets overexcited but on that occasion, [my husband] said, she was absolutely cool. And they were the only two... the whole area was sort of... and [my husband] had [*laughs*] with his tape measure and er, were reasoning. She's an architect, so she was making calculations and between the two of them, they said, 'it's not going to happen unless, you know, the water'... 'So let's just be sort of, erm, and help each other, and if there are things to move from downstairs... But be reassured.'

The tone and language here is much more positive, indicating approval of Nicola's behaviour. Nicola's architectural training – conspicuous in the previous quote by its absence – is now presented as an explanation for behaviour that Florence considers to

have been appropriate. Florence's evaluation of her neighbour seems to be influenced more by the context of the behaviour than it is by its practical impact. It seems that she judges Nicola harshly in the first instance because she is being proactive and judges her more favourably in the second because she is being reactive. Nicola, in other words, is judging her neighbour according to the precepts of the Proactive-Action Discourse.

For both Florence and the group of housing association residents, floods had approached very close to the thresholds of their homes without quite crossing them. The risk of destruction was visible, but there was no experience of the destructive impact that might have ensued if the water had risen a little higher. Could it be this absence of flood-related distress that leads some people to continue to use the Reactive Action Discourse and to represent floods as 'enjoyable' and as opportunities for 'heroism'?

Four further examples are presented that support this proposition. In the first, a female respondent uses the discourse to describe a near-miss event that caused no damage and that allows her to present herself as heroic and competent. In the second, a woman who was distressed by a near-miss event refuses to use the discourse, even though she is pressured to do so by her friend. In a third, a young man continues to use the discourse in spite of having experienced a severe flood – arguably because his own suffering was negligible. In the fourth, an elderly man remembers a flood that occurred during his youth and gilds the idea of flooding not only with a sense of thrill but also of nostalgia.

1. Elizabeth (professional; married; owner-occupier)

Elizabeth's use of the Proactive-Action Discourse is evident in the stylistic features of her description of her experience of a flood event. Her tale begins when she travels through a rainstorm one day with her three young children and arrives home to find that surface water is about to rise to a level where it would enter under the door of her basement flat:

- Elizabeth The drains were so full outside – [the water] was just about to get in. And so I dumped the children in the house and um...
- Interviewer You had all three then?
- Elizabeth Yes, and I bucketed it onto the grass [*laugh*] and I eventually cleared the drain. And then something must have happened because suddenly the water just sort of sucked away underneath.

- Interviewer And was [*unclear*].
- Elizabeth That's right.
- Interviewer Um, was it a blocked drain or do you know what caused it?
- Elizabeth No, that was, that was the North London flood, the August 2002. It was that day when it was suddenly torrential rain.
- Interviewer Aha.
- Elizabeth And it was the worst... I mean I'd never seen rain like it. I'd gone out with my... a [*unclear word*] pushchair, my eldest daughter who was then five on a bike, and we'd gone to the local park and I was so wet when I came back here. It's just... it was like I'd been thrown in a swimming pool. And the outside – living in a basement – the outside... there was probably about a foot of water. It was just trying to get in...
- [...]
- Interviewer ...you didn't actually have water coming into the house, did you?
- Elizabeth No, no it was trying to. And there was a little bit coming in through the door, you know the... the um, threshold of the flat and it was trying to come in through the air vents. You know you have air vents round the side of houses?
- Interviewer Aha.
- Elizabeth It was just ... it was just about to start coming in.
- Interviewer Just getting up to that.
- Elizabeth Yeah.
- Interviewer If you had to say what kind of feelings you associated with that when it happened, I mean, what was that whole event like?
- Elizabeth Um [*pause*] well it [*sigh*] I actually thought it was quite... Well, eh, you know, I was kind of quite amused by it in a way because... [*Soft voice*] I know this is going to sound bizarre... because I'd been in the park, I had nothing at all... it was like kind of crisis management. I had nothing... nothing to do with the kids. By some fluke I had a rain cover – I shoved all three children in this double pushchair, hooked the bike on the back and sort of walked here and managed to get a taxi for some of the way. And the children were all absolutely soaked to the skins. I was soaked to the skin. I had a tiny baby. Dumped the baby in the house and then it was flooded outside, and it was basically... it wasn't a case that I had sort of thought, 'Oh my god!' and sat down and cried, because I just thought I've got to get rid of this water otherwise we're going to have a flood.
- Interviewer Yeah.
- Elizabeth So you know... [*Sigh*] I try and think in situations like that, but you have to kind of try and laugh about them a little bit because otherwise it's just too depressing... [*Laugh*] life is just too depressing!

This narration of events is given in a lively, positive tone of voice and is accompanied by smiles and laughter. In addition, Elizabeth uses a great many active verbs with herself as the subject (“I **dumped** the children”; “I **bucketed** [the water] onto the grass”; “I **shoved** all three children into the double pushchair”; “I **hooked** the bike on the back”), suggesting that she sees herself as an active and dynamic participant in events. She also employs a large number of dramatic terms (“**suddenly** the water just sort of sucked away”; “it was like I'd been **thrown in a swimming pool**”; “it was **suddenly** torrential rain”; “**by some fluke**”) and superlatives (“**absolutely** soaked”; “it was the **worst**”; “**tiny** baby”). All this can be taken to indicate a desire to present what happened as something exciting – a tale

to be enjoyed, perhaps, rather than a cause for pity or sympathy – and to present herself as having had something of a heroic role in events.

When explicitly asked to verbalise her feelings about these events, Elizabeth admits that she was “amused”, but hesitates about revealing that she took any kind of pleasure in what happened – because such an attitude would “sound bizarre”. This can be read as an expression of a concern that admitting to an enjoyment of the event might be harshly judged from a normative perspective. This might explain why she gives the whole sentence the form of an apology by modalising the term “amused” with “kind of”, “quite” and “in a way”. The tone of these lines, indeed, could almost be taken as confessional, marked as they also are by sighs and a softening of the voice. Although Elizabeth uses the Proactive-Action Discourse, she seems not to be quite sure how far she is allowed to take it. Although her own experience of flooding was not distressing, she appears to be aware that floods are distressing and that it may not be conventionally acceptable to use a discourse that hints at pleasure and thrill, and she may have feared that the interviewer might judge her harshly for doing so.

2. Kate (social tenant; single mother with a young child; no flood experience) and Susan (social tenant; single mother of three children; one near-miss event)

A variation on this same theme is found in the interview with the friends Kate and Susan. Having moved into the area after the 2002 flood, Kate reports hearing all about the flood from her neighbours, who also showed her photos of the event. As the following passages demonstrate, although she acknowledges the negative aspects of the flooding (the first passage), her representation remains generally positive (the second passage):

Susan [...] it is like a prison sentence, isn't it. You're not... you're not able to physically go out; you're trapped, you can't go out. You go out: it's all water; you don't know what's floating in there.

Kate Yeah, because [usually] you go out and you... and you walk around without thinking about it, you just go outside your door, you get in your car or you walk into town.

Susan Yeah.

Kate But having to think about getting where you wanna go...

Susan that it takes away the... the easiness of it. Yeah and the simplicity of your life.

(Lines 88-96 in the transcript)

- Kate So I've heard all the stories and I've seen the pictures and I just think, 'Cool! What fun!' [...] When I first moved here, and it was like, 'you need to put in all these precautions'; 'you need to get this'; 'you need to worry' – and I was like, 'why!' [*Laughs*]. I know everybody that lived through it and that have been here, all my friends, all said, 'you need to worry about the floods'. But I just so don't, because I haven't been here. I look forward to it; yeah, I want a flood!
- Susan Oh God, no!
- Kate [*Laughs*] No, because all these traumatic stories I've heard [*laughs*] – they don't affect me.
- (Lines 140-155 in the transcript)

In the first quote, Kate elaborates on her friend's explanation of why she was anxious during the flooding. This shows the extent of her understanding and empathy. It does not, however, necessarily signal agreement. Indeed, its echoing of the sentiments expressed by Susan could be interpreted as more an expression of solidarity than as a sign that she shares Susan's anxiety. The second quote supports this interpretation, for it suggests that her understanding of Susan's negative emotions has had little effect on Kate's own response to the flood risk. In spite of her friend's protests ("Oh God, no!"), Kate asserts that she actually wants to be flooded; that it would be "fun". As a result, she rejects her friend's invocations to "put in all these precautions". Precautions, she seems to imply, are incompatible with fun; and it is a nonsense to worry about something that you "look forward to". In other words, the Reactive Action Discourse de-legitimises the Pre-Emptive Action Discourse.

Susan, unlike Kate, does claim to be worried by the flood risk, but she too seems to have an evaluative ambivalence in their representation of flooding. Although she protests at her friend's description of flooding as "fun", she acknowledges that she too shares that evaluation, albeit with greater reservations than her friend ("from a fun factor, great – from a personal factor, it was hell").

When they describe how they would react if floodwater threatened their homes, both of the friends respond in a way that makes the experience sound more like an adventure than a trial or a disaster. In the following quote, Susan and Kate discuss how they would protect their possessions if there were a risk of immediate flooding:

- Kate I just think it would be easy. We would just shove it [her possessions] upstairs, stand it in bricks, what's the problem? I don't think, 'oh my house is going to be ruined'.

- Interviewer What would it actually involve? What would you be shoving on bricks, do you know? And what would you be lugging upstairs? Have you got anything in your head – any idea in your head?
- Kate My sofas.
- Interviewer Sorry, your...?
- Kate My sofas.
- Interviewer Your sofas?
- Kate Yeah. Erm ...
- Interviewer Do you have people at home who could kind of carry sofas?
- Kate No.
- Interviewer Or would you carry them?
- Kate No, but I have a next-door neighbour.
- Interviewer Okay.
- Susan Cheers! [*Laughs*]
- Kate [...] Yeah, we've carried sofas!
- Susan Oh we've done all sorts! We don't need no man to help us; we do it ourselves!
- Kate Yeah!

The positive and dynamic language distinguishes the passage from the sections of this interview where the talk is of longer-term, proactive measures. There is no prevarication; only action (“shove”, “stand it”, “carried”, “done”, “do”). The protagonists are depicted as dynamic and heroic, and the talk is characterised by humour and laughter. One interpretation of this would be to see it as a way of evading the anxiety that might be felt with regard to flooding. However, the easiness of the joking in the latter half of the above excerpt suggests that the two respondents are getting pleasure out of imagining how they would deal with the imminent threat of a flood. There is a joyful bravado in the final three lines – a hint of flirtatious showing off, perhaps, in the presence of the male interviewer, and a celebration of the friends' perceived ability to be heroic in a crisis and to cope without male help.

Alongside this legitimisation of reactive behaviour there is also the use of ridicule to delegitimise reactive behaviour. Susan says that it would be ridiculous to fill sandbags while the sun is shining and there is no possibility of any rain, while Kate describes as ludicrous the idea of living with her kitchen appliances permanently off the floor – where, she says, they would be permanently in the way.

In summary, both women make use of the Proactive-Action Discourse and represent flooding – at times – as an opportunity for thrill and heroism. Susan's willingness to do so

seems to be limited by her association of the actual event with fear and a feeling of vulnerability; Kate, however, asserts that she is not limited by any such association, because she has never experienced a flood.

3. Harry (22 year-old drama student; lives with parents; one flood experience)

Harry experienced a sudden flood while staying in his parents' home. Although the event was destructive; it seems to have caused little distress to him personally.

Harry's use of the Proactive-Active Discourse is evident. He expresses disdain toward proactive measures, describing his parents as "obsessed", "anal" and "ridiculously organised" for the time and effort they expended on improving their home's drainage and sewerage. In contrast, he gives a positive framing to his own, reactive, response to the flood itself:

It was... I wouldn't say exciting, but it was kind of bit of a crazy day for me and [my brother]; just to be here and that all come down, and suddenly be next door, wading around in water. And then after that it was kind of just reading about it in the papers and telling your friends.

Although Harry denies the appropriateness of the term "exciting", this denial is belied by the fact that he uses it at all, as well as by his use of the adjective "crazy" (which is positively connoted) and by the implication that he is proud of his experience ("telling your friends"). It is clear from Harry's ridiculing of his parents that he does not feel they share his discourse, and his hesitation about admitting to the feeling of excitement might be a result of a perceived pressure to conform to their position.

In spite of having experienced a serious and destructive flood, Harry – it is clear from the text – does use the Reactive Action Discourse, perhaps because of his lack of exposure to the material impacts and the disruption, which were borne by his parents and not by Harry himself.

4. Sid (retired marine supplies wholesaler; owner-occupier; disused cellar floods regularly)

The case of the final example, Sid, is somewhat different to those mentioned above. His representation of flooding is characterised by a sense of nostalgia as well as thrill:

- Sid You can surmise all you like, I mean it may never [flood] again.
- Interviewer Well, people in flash-flood areas are getting more worried, 'cos they think there's going to be more kind of intense, heavy rainstorms. And if you're... you know with little rivers in London for example, they think...
- Sid Do you know the road from Henley to Maidenhead?
- Interviewer No.
- Sid [*Laughs*]. That really caught it one year! It was impassable actually.
- Interviewer Oh-aye?
- Sid For a while, yeah.
- Interviewer Is that a major road?
- Sid Yeah, it runs parallel with the river! (Interviewer: Oh-ah.) And it came up and up and up and only... only buses were going through it!... at one point.
- Interviewer That's a good vote for public transport isn't it [*laughs*]. There's a lot of flooding all round here, isn't there. People must be quite familiar generally, 'cos of the Thames?
- Sid Yeah, it doesn't seem to happen so much. I mean it never hits the headlines anymore.
- Interviewer Mm, yes I guess that means people... it's not so much in people's heads, is it?
- Sid Back in 1924, the big flood... I say, if you get the chance to see the hairdresser he'll show you a picture.
- Interviewer I'll have to let it grow a bit first. [*Laughs*]
- Sid It hangs in his front, erm, in his saloon there, and people often comment on it and say, "Oh, the good old days," you know.
- Interviewer Do they?
- Sid Well it was the good old days, wasn't it [...]

In the first half of this passage Sid's intonation, his exclamatory style (e.g. "That really caught it that year!"), the violent metaphor ("caught it") and the lyricism (in the phrase "up and up and up") all invoke a sense of excitement. This seems to prompt Sid, finally, to recall a photo that hangs in the saloon of the local hairdresser – which we learn later, is a picture of a boat being rowed along a local street during a past flood. This image, we can assume, symbolises and reflects that excitement – the excitement of an idealised by-gone age: "the good old days".

This anchoring of the feeling of nostalgia around the image of a boat is consistent with what occurs in other interviews, where mention of boats always seems to bring to the representation of flood experiences a sense of safety, adventure and enjoyment. Thus Susan says that she was excited to see boats going along her street during the flood ("we

had dinghies going up and down; hooray!”); Florence describes the enjoyment her family gained from being able to launch toy boats from their back door when their garden was flooded (see above) and Elizabeth justifies her confidence with water (and the subsequent absence of any fear of flooding) by describing how she and her family practiced capsizing their sailing boat while on holiday. The boat, perhaps, lies at the heart of some householders’ representations of flooding, giving them a more positive sheen. The image of the boat is, after all, common in media images of flooding, in which the association is often with the positively connoted experience of rescue. By providing a strong visual anchor for the representation of flooding, the boat image focuses attention on the adrenalin-filled, potentially exciting moment at which the flood occurs, and distracts attention from the drearier, longer-term implications of the event and its aftermath.

The Reactive Action Discourse and ‘edgework’

Power-cuts; carrying furniture up the stairs; giving emergency assistance to neighbours, and “dumping” children in the living room while you struggle to keep the water out of your house – all of these experiences are sometimes represented by respondents as positive experiences. Why?

This question has not been addressed in the literature on flooding, but it has been discussed elsewhere. Katz (1988), in his study of criminality, Lyng (1990; 2005), in his study of dangerous sports, White (1994), in his study of dangerous driving and Fox (1999), in his study of users of Ecstasy all conclude that some people desire risky experiences in order to transcend the tedium and over-socialisation of every-day life and to “affirm facets of self-identity” (Fox 1999 p28). Lyng calls this phenomenon *edgework*, reflecting his belief that people who engage in such activity enjoy the feeling of being simultaneously on the edge of danger and totally in control. White (1994) and Adams (1995) prefer the term *target risk*, and assert that all humans have an ideal level of risk and will, if necessary, create dangerous situations in order to increase their risk exposure to the desired level. Although these theories have not been applied to natural hazards *per se*, work by environmental psychologists supports their applicability. Van den Berg and ter Heijne (2005), for example, demonstrate that exposure to frightening natural environments can provoke feelings of “profound and meaningful positive emotions, such as extreme happiness, fascination and awe”.

The theories of *edgework* and *target risk* provide a possible explanation not only for the existence of the Reactive Action Discourse but also for the phenomena of “flood tourism” (Rosenthal and Bezuyen 2000; Wilson 2006) and the use of floodwater for recreational activities such as surfing (Coates 1999) and swimming (Ramsbottom *et al* 2004)⁶³. People can be attracted, it seems, by proximity to disaster. The experience is appealing because it is incongruous with people’s normal experience of life; and incongruity both entertains people (Morreall 1983) and, as Lyng argues, can provide momentary release from the mundane and over-socialised character of normal life. In the same way, for those who have not themselves experienced a distressing flood, the incongruity of flooding can lend an attractive sheen to its representation.

The Reactive Action Discourse is an assertion of the controllability of floods; it is an expression of the idea that, fundamentally, ‘nature’ and ‘society’ will never allow any flood to occur that is so severe as to be beyond the response capacities of the ordinary individual. It is also, however, an expression of conformity to a social identity: for example, a generational identity in the case of Harry, and a class identity in the case of the tenants from Reading.

Within these identities, the individual is represented as heroic and reactive, rather than ‘obsessed’ with precaution. They are likely to result, therefore, in the rejection of the Proactive-Action Discourse that the Government would like people to adopt.

7.3 Social conformity and social identity

The remainder of the chapter gives examples of other socially anchored, normative discourses.

The following passage provides an illustration from an interview with Clarissa (university lecturer; two adult sons; owner-occupier), Clarissa’s husband and their younger son. The

⁶³ Such activity is not as rare as it might seem. According to Coates, recreational activities in floodwaters cause almost six per cent of known flood-related deaths in Australia.

interviewer has been showing the respondents pictures of mitigation measures⁶⁴, including floodgates:

- Interviewer Can I ask the property owners what they think [indicating Clarissa and Malcolm]? Would it bother you [to have] the kind of things you've seen in the pictures on the downstairs door?
- Clarissa The one on the little house, on the little door that you had at the beginning, you're kind of used to seeing those at the seaside. You see them quite a lot. And they look quite in keeping don't they? They look rustic.
- Interviewer Is that in keeping with here or in keeping with the seaside?
- Clarissa No I don't think it would be in keeping here. I think it would look rather odd. In terms of a little seaside cottage they look part of the cottage don't they? That first one that you had.
- Interviewer It was the green one was it? Oh the blue one; that one?
- Clarissa Yeah, that sort of thing. I mean that doesn't look particularly part of it because it's a different colour.
- Interviewer That's the [unclear]
- Clarissa But little cottages with a little door and a block of wood at the bottom; that looks fine because it looks as though it's all part of the – like having shutters. But here I think it would look a bit like a carbuncle on the house.
- Malcolm Yeah, there's also the other factor which is that at the seaside you look at these things and you just say to yourself, 'well this whole area is at risk'; whereas I don't think we've actually quite acknowledged that this whole area is at risk the whole time anyway.

When Clarissa talks about the colour of the floodgates in the images shown her by the interviewer and describes one of them as looking like a “carbuncle”, the emphasis is on aesthetics. Aesthetics, however, is a form of social convention; the product of fashions that vary temporally and spatially. Clarissa herself acknowledges this when she says that floodgates would be appropriate in coastal areas but not in an inner-London street such as her own. It can be seen, therefore, that the underlying discourse is one of social acceptability.

Clarissa could have related her definition of social acceptability to any one of a number of communities of which she is a member (an occupational community, for example; or a leisure community). Both she and her husband, however, choose their geographical community. The repetition of the term “seaside” to describe the area where she has seen floodgates in use implies that floodgates are represented as appropriate in coastal areas because their use there is conventional and they fit in with the identity of such areas – an identity that includes the notion of being at-risk. There is no convention of using floodgates in the London suburb in which the couple live, and the geography of the area is

⁶⁴ See Appendix F

not consistent with areas in which they have seen them being used. For these reasons, the notion of installing floodgates is rejected.

The discussion with the group of home-owning professionals from Reading reveals a similar discursive construction. The following excerpt occurs at the end of a long discussion about the affect on house prices of installing visible flood protection such as floodgates:

- Christopher Anyone sees that [floodgate] on your house; they ain't buying!
Joan Yeah! [*Laughing*]
Christopher Unless they said 'right, okay everyone on the floodplain in [name of town] – we're going to sweep through'.
Joan That's it yes
Craig 'We're going to do this. You don't have to have it – your choice; your house. But be aware that if you don't have it, you know, you could have substantial problems'. That way it won't de-value our properties nearly as much because everyone will have them, and it will be standard [...]

The substantive content of this text – the assertion that property devaluation will be less severe if flood risk measures become seen as “standard” – will be discussed later in the chapter. What concerns us in our current discussion is the description of how flood risk measures should first be introduced to an area. To this end, we should note that the language imputed to (presumably) the Environment Agency is both declamatory and assertive (“sweep through”; “we're going to do this”; “your choice; your house”; “but be aware”). Why do Christopher and Craig use such distinctive language, and why do they describe news of flood risk and response as being delivered in such a dramatic fashion? Perhaps because they are making an implicit point about local identity: that a change in identity as well as a change in behaviour might be necessary to buoy up house-prices.

At first sight this is counter-intuitive. Why would homeowners want the area they live in to be commonly recognised as at risk of flooding? Surely that would make it harder, and not easier, for them to sell their homes? Although it is not explicitly stated by respondents, an implicit message in a number of interviews seems to be that where a risk is so prominent as to be impossible to deny, then there is more emotional security in sharing the acknowledgement of the risk than there is in keeping it private. We see this expressed by the inhabitants of the island on the Thames, by the riparian owner-occupiers in Reading (Nicola, Florence and Marcello) and by George and Margery. These householders express

a pride in their ability to live where they do in spite of the flood risk and seem to draw strength from the camaraderie that results from the risk being evident and widely-acknowledged. As a result, they are willing to take protection and resilience measures that might otherwise be considered stigmatising.

Instead of being a source of shame, resisting and surviving floods becomes a badge of pride, with householders describing themselves and their communities with positive adjectives such as “stoical” (George), “tenacious” (Andy) and “pragmati[c]” (Sally). Where they are judged to be “in keeping” with the character of the area, flood mitigation measures are actually seen as reinforcing these positive attributions. Hence, the islanders’ use of rubber waders to get to the mainland when a flood cuts them off becomes connoted as a positive mark of social identity that distinguishes the islanders from outsiders:

- Andy I can remember the Environment Agency guy at [name of town]. I was on the other side when it flooded here...
- Jill He didn’t bring any chest waders!
- Andy He came on with little galoshes! [*General laughter.*] That’s how much the Environment Agency knew about what was happening on the river!

[...] these idiots coming down with all their ridiculous things like the Environment Agency coming down in shoes. You know, we told them we were up to our necks in it, or up to our knees in it or up to our thighs in it, so you know, it’s that sort of thing, you know. (Jill)

Oh yes, that was very funny, when everyone realised they had to have chest waders rather than thigh waders – we ended up all in the pub one night all in our chest waders (Sally *laughs*) along with a lot of locals who had come to gawp at the water in the car park because they’d never seen it. And it was almost like something out of Star Wars [*general laughter amongst the group*]. All the rubber fetishists wanted [a photograph] [*general laughter*]. (Ivan)

Thigh-length rubber waders could be seen as a somewhat anachronistic and potentially comic feature of life in London, but the respondents turn this perspective on its head. It is the people without the waders who are stigmatised; it is the outsiders who are “idiots”, who have “ridiculous things” and who “gawp” stupidly; and even supposed experts about the river are depicted as knowing less about it than the islanders do. When it is grafted onto the social identity of a geographically defined group, a measure that might have been a source of embarrassment becomes a source of strength. Thus, when the interviewer asks the group if they feel that measures such as floodgates would damage the image of the

island, Jill's feisty response⁶⁵ and the affirmative laughter that greets it confirm that flood risk plays a positive role in the identity of the group. As we would expect from the predictions of social identity theory, the social identity of the islanders is represented by them as superior to that of outsiders and flood mitigation measures are seen to be socially acceptable because they are seen as in keeping with that identity.

There is also evidence of this phenomenon amongst other respondents. Although Malcolm (senior manager; married with two adult sons; home-owner) has not accepted flood risk as part of the identity of his own area, he suggests that he would find it acceptable if he lived in an area where it did form part of the geographical identity:

at the seaside you look at these things and you just say to yourself, 'well this whole area is at risk'

Malcolm's use of the word "just" indicates that it would be relatively easy to accept the existence of the risk if one lived at the seaside, while the word "well" suggests that the risk is somehow both inevitable and acceptable.

Another example is Florence (retired professional; home-owner). In describing a recent near-miss flood experience, Florence describes the collective response of herself and her neighbours in a way that suggests a positive contribution of the experience to the formation of a local identity:

Everybody was there; we were all involved in the same process of deciding whether the middle pathway was going to be closed – whether the postman would have to deliver or if we had to go and pick up our post. As if we were becoming a kind of a little community which was surviving an act... you know, an act of God [...]

The above quotes demonstrate how shared exposure to a shared risk is represented as a uniting force that binds people together into socially cohesive groups. In contrast, preemptive action against flooding is represented as divisive if it reduces the risk for one or more households but not for all of them. Clarissa, for example, argues against anti-backflow valves on the basis that they "just solve the problem for one person but not for the area as a whole"; household-level measures are described by Sally as "deeply anti-social" and by Morris as "just pushing the problem onto somebody else", and Joan

⁶⁵ "No we're not proud [*general laughter*]! I don't think we've got an image problem, do you?"

(professional; owner-occupier) is critical of one of her neighbours for adding to other people's flooding by pumping water out of her own home. This representation is not universally shared. Craig (professional; owner-occupier) and Christopher (professional; owner-occupier), although espousing the advantages of cooperation, argue that each household should look after its own interests (it is "dog-eat-dog in that situation, you know"). However, the initial response of some householders is to discursively prioritise social justice over individual protection.

7.4 Summary

This chapter has described two contradictory discourses of normality. The first of these is founded on the Romantic notion that normative forces limit people's freedom and prevent them from achieving self-expression. Within this discourse, self-realising freedom is represented as existing in the unusual and the heroic – for example, in the experience of viewing a flood or of responding to an imminent or present flood. This discourse, therefore, represents floods as positive; as opportunities to experience invigorating exceptions to the 'normal'.

The key issue here is control. Lyng (1990) describes an essential characteristic of *edgework* as being the perceived capacity to maintain control of a potentially dangerous situation. *Edgeworkers*, he suggests, do not consider that they are exposing themselves to any real threat when she engages in edgy activities; rather, they consider themselves to be on the edge of danger but totally in control and therefore not actually *in* danger.

The use of the Reactive Action Discourse can also be seen as an attempt to assert control. Temporally distant events can more easily be represented as controllable than can temporally proximal events, because their representation is more abstract and schematic (Trope and Liberman 2000, 2003). As a result, hypothetical future floods are more easily represented as controllable than is the immediate challenge of responding to a present flood risk, and reaction seems to offer more control than does proactive response.

Hence, respondents who use the Reactive Action Discourse represent floods (which are temporally distant) as an opportunity to exert control over their environment, but represent

flood risk mitigation (which is temporally proximal) as more difficult and less subject to their control.

By contrast, the other normality discourse represents the ‘normal’ as positive and desirable. Safety, stability and secure identity are seen to lie in conformity to the norms of the in-group.

Although at first glance these two discourses seem to be in conflict, they can both serve to de-legitimise flood risk mitigation – the first, because mitigation measures are represented as depriving householders of the opportunity to break out of the gilded cage of normality; the second, because such measures are not normative and are therefore perceived as stigmatising. Only when proactive flood risk mitigation measures become perceived as a normal expression of in-group identity (as in the cases of George and Margery and of the islanders), this suggests, will adoption rates increase. Where they continue to be associated with out-group identities, the adoption of such measures will be treated as a betrayal of in-group identity and will therefore be avoided.

8. Flood risk mitigation and discourses of materialism

The previous chapter discussed the social stigma associated with particular flood protection and resilience measures, the association of independence and self-realisation with reactive action and the representation of flooding as something positive. These factors, it was argued, tend to de-legitimise the Pre-Emptive Action Discourse. They lead some householders to argue against individual measures on the basis of social acceptability; they lead others to valorise flood response over flood risk response, and they prompt those who represent floods as ‘exciting’ to question the validity of actions that are characterised by ‘precaution’.

A second group of discourses that emerges from the interviews centres on the question of materialism⁶⁶. Household floods cause disruption, distress and sometimes ill health or injury, but they also cause material loss and damage. This chapter reflects on the role played by material considerations in householders’ discussions of mitigation measures.

8.1 The Materialism Discourse denied

Intuitively, one might expect the discourse of materialism to be used by most householders in flood-risk areas. One of the most evident impacts of flooding is the damage that it causes to homes, cars and other possessions; and the financial cost of these damages often provides the frame for media reports and policy agendas.

In reality, however, respondents sometimes play down the importance of material considerations. Discussion of flooding and flood risk seems often to provoke them to foreground other discourses, some of which contradict the materialist perspective and deny its legitimacy.

⁶⁶ The term ‘materialism’ is used here as it is by respondents in the interviews and not as it is more conventionally used in the academic literature. That is to say, it denotes concern for the protection of material possessions and for financial considerations, rather than for the protection of family, health and everyday practical living.

An example is Martha, a 35-year old married accountant originally from East Asia, whose house was flooded a few years earlier. In the following excerpt, the interviewer asks Martha whether she has moved any of her possessions upstairs to protect them from future flooding:

- Interviewer Have you moved anything upstairs?
Martha No, it hasn't changed.
Interviewer Did you think about that?
Martha No, I wouldn't, uh... I'm a very practical person; I wouldn't actually let these things come into my way of life.
Interviewer Why not? That's interesting.
Martha Well, I don't know. I think it's uh... we are the result of our experience. Um, I had life very tough [*clearing throat*]. I ran away from home from [country in the Far East] because my father wouldn't, uh, want to educate me, so I came here and I worked very hard and I [*clearing throat*] finished my profession – or I started and finished here. Um, so I think you know, I [*pause*] I think I have got this thing... I like nice material things, but once you let it possess you then I don't want that possession because it cease to give me pleasure.

“Material things”, Martha suggests, should take second place to considerations such as freedom from worry. Although the moral of her autobiographical tale is not made explicit, she seems to be saying that having left everything behind once in her life, she is aware of the importance of being free from overly strong material attachments and the worry that such attachments can imply.

Other respondents express similar sentiments. Marcello argues that it is better to lose items in the occasional flood than to locate them where it is inconvenient for everyday life. Florence says that “ ‘things’ [such as] the television can float down the river [*laughs*]. If we want a new one, we just get a new one”. Michael (single; IT professional; private tenant) claims that the loss of possessions would not “destabilise [his] life” enough to justify his doing anything against the flood risk. Luke (married unemployed tradesman; one young child; social housing) says that “[he doesn't] care about, like, the goods in the house; as long as me family's safe”. Elizabeth (married professional owner-occupier with three young children) asserts that, “it's [only] property isn't it? You know, it's not life [*light chuckle*]”. Finally, Shereen (single; professional; home-owner) speaks of the possessions she might lose in a flood as “only things”.

These comments might be nothing more than examples of *post hoc* rationalisation. However, they could also be interpreted in a number of other ways, as described in the following paragraphs.

Interpretation 1 – cultural norms

A certain amount of awkwardness is displayed when respondents talk about the material impact of floods. None of them seems able to find a comfortable term for the concept of ‘material possessions’. They are described variously as “material things” (Martha), “things” (Florence and Shereen), “goods” (Luke) and “property” (Elizabeth). Some of these terms are ambiguous (e.g. “things”). Others have second-order significations⁶⁷ that do not sit easily with the context – Luke’s use of “goods” is archaic⁶⁸ and ‘property’ normally connotes either real estate or the legal discourse.

This does not, of course, necessarily signify the existence of widespread asceticism. Some of the respondents make it clear that they are not rejecting the Materialist Discourse *per se*. For example, as well as claiming that she wants to avoid being “possessed” by material possessions, Martha admits that she “like[s] nice material things”; and although Shereen describes her possessions as “only things”, she also says that she would be “devastated” by the loss of them. Why, then, this simultaneous denial and assertion of the same discourse?

In looking for an explanation, it is interesting to note the lack of mid-register⁶⁹ contemporary words available in UK-English that refer to material possessions. Synonyms for ‘goods’ and ‘property’ belong either to a very formal register (e.g. ‘belongings’; ‘effects’; ‘trappings’; ‘appurtenances’) or to an informal, colloquial style (‘gear’; ‘stuff’; ‘shit’ etc.)⁷⁰. The absence of middle-register terms suggests that the topic cannot easily be discussed in UK-English within the more comfortable, middle-zone of

⁶⁷ A term coined by Roland Barthes (1972) to distinguish connotation from denotation – the ‘literal’ or ‘obvious’ meaning of a word from its culturally embedded meanings

⁶⁸ In modern usage “goods” is normally associated either with trading (where one might speak, for example, of an ‘importer of fine goods’) or – in the phrase ‘goods and chattels’ – with a certain brand of male chauvinism, in which a man’s possessions (his ‘goods and chattels’) were said to include his wives and daughters.

⁶⁹ That is, words consistent with a register that is neither very formal nor very informal – see Coulthard (1977 p34)

speech that is neither particularly formal nor informal. If we accept the socio-linguistic thesis that language reflects the culture within which it is rooted, this linguistic lacuna can be taken to indicate a broad cultural hesitation over discussing the issue of one's material possessions. We see this hesitation in the interview with Luke (married; one young child; tradesman; social housing):

- Interviewer What would you do yourself?
Luke Eh?
Interviewer Because there's a bit of a flood risk here, people tell me... the neighbours tell me.
Luke I've heard there is, but I haven't... I've only lived here about eight months. What er... The God's honest truth, right: I'd just move all my valuables upstairs and er if it floods, it floods. The first thing on my mind is like my children and my wife.
Interviewer Oh yes.
Luke I'd want them to be safe, of course.

In this passage, Luke's first reaction to the interviewer's prompting is to emphasise the protection of his possessions. However, he revokes this emphasis in his next sentence when he asserts that the first thing on his mind, in the event of a flood, would actually be his wife and children. It is as if he realises that he has made a rhetorical mistake and immediately corrects it. As we know from later in the text, Luke wishes to project himself as a man who puts the safety of his family above all other considerations⁷¹. His initial, spontaneous, response threatens this self-projection and is therefore corrected.

A similar phenomenon is apparent in the focus group with middle-class professionals in Reading.

- Christopher Well, by [getting breeze blocks] and sticking the dining-room table...the chairs onto the table, I was able to raise the table, the chairs, and the sofa. Um, I didn't worry about the piano because it's rubbish anyway and it's not mine, and the person who owns it doesn't give a monkey's if it falls apart, frankly. And I don't have a lot. You know, the TV was easily moved upstairs. It's only a two...you know it's only a little terraced house so, um, you know, the bookcase, bookcases are easily moved upstairs um...
Kathy It was the computers that caused us the most nightmares actually, because they're mostly on the floor.
Interviewer Ah...
Christopher Must remember: [Kathy's address] – lots of computers... [spoken in dryly humorous tone]
Kathy [Laughs] yes.
Craig Um, our house has nothing of value in it, I have to say [laughter]. Yes we put all our computers – such as they are! – are upstairs and we have thought about that; and the office is upstairs; and the computers are up there rather than being on the ground floor.

⁷⁰ Kirkpatrick (1987)

⁷¹ "I'm a man, you know, a man with like a family, so of course I'm going to be, you know, protective of my family."

Two of the three participants (Christopher and Craig) represent themselves as having few possessions of value (“I don’t have a lot”; “it’s only a little terraced house”; “the piano... it’s not mine”; “our house has little of value in it”) and as putting little store by what they do have (“it’s rubbish”; “sticking the [chairs onto the] dining-room table”⁷²; “our computers – such as they are!”). This could be a form of modesty. When the third participant (Kathy) reveals that she owns more than one computer (“It was the computers that caused *us* the most nightmares...”) Christopher interprets this as an example of immodesty. His humorous response can be read as a light-hearted rebuke. The nature of his joke (that he is making a note of her address so that he can burgle her and steal her many computers) draws attention to the fact that Kathy has highlighted her superior material condition.

Like the excerpt from Luke’s interview, this interchange reveals some awkwardness around the use of the Materialism Discourse. Both examples suggest the existence of a social code that prescribes how it is permissible to refer to one’s relative material wealth and what information about it one is allowed to communicate to others. Just as, in the UK, it is not generally acceptable to talk about salary levels, so too there appear to be rules about what it is acceptable to reveal about the extent of one’s possessions when speaking with people with whom one is not intimately acquainted.

One might conclude then, that as well as being limited in their use of the Materialism Discourse by the absence of an appropriate linguistic resource, people are also limited by normative forces. The example of rhetorical self-repair witnessed in the passages above indicates that there is a cultural taboo on comments that suggest either that one values one’s possessions very much, or that one might have more possessions than the people one is talking with. Hence, when respondents assert that their possessions are “only property” or “only things” and that it would not trouble them much if they were damaged by a flood, these statements have a perlocutionary function rather than an epistemic one. They are not trying to say that possessions have no value to them; rather, they are setting

⁷² The colloquial term “sticking” is of an informal register, suggesting a lack of concern for the goods being described.

out to convince their audience that they conform to the norms appertaining to the social context.

With respect to this proposition, it is interesting to reflect on the case of the only respondent to make direct, unprompted, mention of the material damage caused by flooding – Vikki. Vikki does not attempt at rhetorical self-repair and is not corrected by her fellow group members, so her behaviour cannot be considered to be an infraction of a taboo. This may be because Vikki is talking about losses that she has actually incurred, rather than about hypothetical losses. Whereas Kathy's revelation (above) that she has more than one computer that might be damaged by a flood could be interpreted as material snobbishness or insensitivity to other people's feelings of inferiority, when Vikki talks about her actual material losses she categorises herself as a 'victim'⁷³. This appeal for sympathy is quite the reverse of snobbishness and does not, therefore, break any taboos.

The argument that it is culturally permissible to talk about actual material losses but not about potential material losses would help to explain why some householders are not inclined to employ the Materialism Discourse and why they are reluctant to use the rhetoric of flood risk mitigation.

Interpretation 2 – insurance

There is, however, a second and perhaps more obvious explanation for the rejection of the Materialist Discourse: flood insurance. There are clear intuitive reasons for arguing that insurance would reduce the relevance of the Materialist Discourse to the question of flood risk response. It would be reasonable to expect householders to disregard the material impact of flooding if they considered that impact to be fully covered by insurance – especially if they fore-grounded the financial effects and not the disruption or inconvenience. Although few respondents made any direct mention of insurance, there is some evidence to support this supposition. In the following passage, for example, Florence and Marcello talk explicitly about the impact of having flood insurance:

⁷³ "I had to rip absolutely everything out [...] I think it's about £40,000 of damage [...] I'm feeling very trapped, and I can't sell [...] at the moment I am insured, but it won't take long before I'm not."

- Florence ... I'm fairly reassured, because we've got an insurance and I've never sort of...
Marcello Somehow covers almost everything.
Florence [Inaudible]
Marcello It's quite expensive, but...
Florence I mean if I compare myself, you know, to... to my neighbour [i.e. Nicola], she has no insurance and she would have to pay everything.
Marcello And she's probably much more worried.

In this excerpt, the two respondents compare their own situation favourably with that of their neighbour, Nicola, who has physical flood-protection but is not insured against floods. The decision to take out insurance rather than flood-protection is depicted as giving less cause for worry, as providing better protection against financial loss and – later in the text – as being less of a “gamble” (Marcello). Insurance, this argument suggests, is not only superior to physical protection, but actually makes it unnecessary. Little wonder then, that Florence claims she would be happy to see her television “float down the river” and that she would “just get a new one”; for the assumption seems to be that insurance will neutralise the effects of material damage.

Shereen gives a similar justification for her comment that flooding is “down the list” of her concerns in life, when she argues that insurance payments would enable her to replace anything that was damaged. She implies in the following passage that the promise of financial recompense for any damage leads her to be concerned for the safety only of those items that are irreplaceable:

- Interviewer Why is the insurance more worthwhile than...?
Shereen Because you can just... Because the things I'd want to replace... Because the things that I wouldn't want to lose are the things that I couldn't replace with money anyway. So if I'm looking after everything else, I don't even have to worry about those. All I have to look at is the things I would want to save should anything happen.
Interviewer So if I've understood you right, if you get flooded, you're insured anyway?
Shereen Hmm.
Interviewer So the material loss doesn't matter. If you weren't insured, maybe that would make a difference?
Shereen Yeah.

In the interviews with Shereen, Florence and Marcello, insurance is represented as a comprehensive solution to the material threat posed by flooding. It is not clear whether this also holds true for other respondents. For those who claim *not* to be covered against flooding, insurance is self-evidently *not* an explanation for the lack of a Materialist Discourse, and the pertinent question is why they nevertheless fail to emphasise the

Materialist Discourse. For those who are insured but make no reference to the impact of their insurance on their behaviour, this absence of a discursive role suggests either that insurance has no central place in their representation of flood risk or that it is simply a taken-for-granted and familiar part of those representations.

If flood insurance were part of the explanation for the absence of the Material Discourse then one would expect to see negative correlations between mitigation measures and people's beliefs about their insurance cover – i.e. if people with insurance make less use of the Material Discourse, they should also be less likely to protect their material possessions.

The hypothesis was tested using responses to two questions in the RPA dataset by respondents with experience of flooding: a question regarding their possession of insurance cover for flood damage (“Were you insured against flooding for the following... Building/structure... Contents – ‘New for Old’... Content – Other... Don’t know / landlord’s responsibility”)⁷⁴ and a question that aimed to ascertain whether they had taken measures to protect material property (i.e. obtaining sand and sandbags; installing pumps, or reducing the value of downstairs furnishings). In a first attempt to test the relationship between insurance and mitigation measures, a logistic regression was constructed using the following predictor variables:

1. whether the home had more than one floor
2. household composition
3. educational attainment of the respondent
4. whether the respondent was worried about being flooded again
5. number of years lived in the property
6. whether the respondent had been flooded more than once
7. whether s/he had incurred any net financial costs as a result of the worst flood
8. whether any member of the household had been obliged to leave the home because of the flood

⁷⁴ It is worth noting that this question records respondents' beliefs regarding their cover against flood damage and not the actual cover. Similarly, it does not seek to distinguish between flood-insurance that comes as part of general home insurance and cover that is tailor-made for flood damage and that is purchased separately.

9. whether any adult or child had suffered mental health consequences, and
10. whether they believed the floodwater had contained sewage or other pollutants.

This analysis, however, did not pass the test for multicollinearity⁷⁵; so two cross-tabulations were performed instead. Neither of these, however, reveals the anticipated negative correlation between insurance and flood risk mitigation.

The first (Table 9), fails to find an association between *buildings* insurance and damage mitigation.

Table 9 Cross-tabulation of buildings / structure insurance with implementation of mitigation measures

		Household has implemented a mitigation measure?		
		No	Yes	Total
Respondent believes the structure of the home to be insured against flooding?	No	43	9	52
	Yes	668	143	811
	Total	354	509	863
<i>N</i> = 863, $\chi^2 = .00$, <i>df</i> = 1, <i>p</i> < 1.0				

This analysis only included householders with experience of flooding, because those without such experience were not asked about insurance.

Tenants were excluded from this analysis because structural insurance is normally the responsibility of landlords

The second (Table 10) reveals a positive correlation between *contents* insurance and mitigation measures. This somewhat counterintuitive finding – which is, however, confirmed by the work of Palm and Carroll (1998) and Thielen *et al* (2006) – suggests that householders who believe the content of their homes to be insured are more likely to take measures to protect their property. This directly contradicts the evidence of the qualitative data and suggests that the possession of insurance cover against flood damage does not, after all, lead to a reduced take-up of other mitigation measures.

Table 10 Cross-tabulation of contents insurance with implementation of mitigation measures

		Household has implemented a mitigation measure?		
		No	Yes	Total
Respondent believes the household's contents are insured against flooding?	No	48	3	51
	Yes	701	159	860
	Total	375	162	911

$N = 911, \chi^2 = 4.41, df = 1, p < 0.05, \phi_{adj} = .15$

This analysis only included householders with experience of flooding, as those without such experience were not asked about insurance.

An explanation for this finding is found in a survey of flooded Polish householders by Zaleskiewicz *et al* (2000), who show that flood insurance is more closely associated with emotional concerns than with material concerns. This would suggest that the positive statistical association between insurance and flood risk mitigation might, in fact, be a spurious one (see Figure 13) and that rather than insurance and mitigation being correlated with each other, they are both correlated with a common third variable of worry.

This explanation finds support in a logistic regression analysis of data from the RPA survey. This reveals that owner-occupiers who claim to be worried about future flooding (“How worried are you about the possibility of your property being flooded during the next 12 months?”) are twice as likely to believe that their buildings insurance covers flood-damage⁷⁶. Worried householders are also 1.37 times as likely to mention “household insurance against flooding” when asked about flood-mitigation measures they have taken⁷⁷.

An alternative explanation for this contradictory evidence may be that householders who have insurance against flooding are more likely to own items that they consider irreplaceable and that they wish to protect from the floods in a more direct manner. On balance, however, the strength of the qualitative evidence suggests that, for some

⁷⁵ Three VIF values were significantly higher than 1.0 (i.e. those for the variables in 8. and 9. above) and the maximum condition index was 17.29.

⁷⁶ $N = 713, df = 1, p < 0.05, EXP(B) = 2.31$

⁷⁷ $N = 977, df = 1, p < 0.05$

householders, the influence of the Materialist Discourse is weakened by the existence of flood insurance and the reassurance that it brings.

Interpretation 3 – emphasis on disruption rather than on loss

A final explanation for the relative obscurity of the Materialist Discourse is the argument that the issue of material damage is overshadowed by the representation of flooding as disruptive. This argument has been made elsewhere in the flood risk literature (e.g. Parker *et al* 1983; Green 1988).

Amongst the sample for this study, this representation is associated almost entirely with householders who have some personal experience of flooding. To a greater degree than those with no experience, these householders emphasised the aggravation brought by flooding, the disruption to daily life and the difficulty of “getting back to normal” after a flood; and they put far less stress on the purely material consequences.

This is illustrated in the following excerpt. The basement floor of Malcolm and Clarissa’s semi-detached home was flooded three years previously.

- Malcolm But to go back to the question; for us the consequences weren’t as severe as [for] many of our neighbours. Certainly people down in [road-name] were more badly affected than we were. But it took us well over a year to fix [the flood-damage], didn’t it?
- Clarissa Yeah with the insurance and the new floor. [*Aside:*] We had a new floor in the kitchen.
- Malcolm And a new washing machine.
- Clarissa And that, yes. The washing machine conked out. What else did we have? That was it wasn’t it?
- Malcolm That was it, but I mean it was a long, drawn-out saga – which is irritating because you realise that you’re actually in your kitchen with this sort of floor that by the time it had dried out it was great humps rather than being flat; and everybody agreeing that it should be replaced but then nobody agreeing on the price or how it could be done; and endless arguments going on with the insurers.
- Interviewer It’s been replaced now?
- Malcolm Oh yes. It’s been fixed. But it consumes a lot of energy and time.

Although Clarissa and her husband talk about the physical damage caused by the flooding, the discussion is framed by the issue of the associated disruption rather than by any concept of ‘loss’. The loss of material possessions is not presented as the issue. Rather, the real cost of the event is represented as the “endless arguments”, the “energy and time” and the year-long duration of the disruption.

James too (married; physician; home-owner; flooding experience; flood insurance), presents disruption as the main issue, as shown in the two quotes from him, below. In the first, he identifies “aggravation” as the main factor in his thinking about whether or not to protect his home against flooding. In the second quote, there again is no mention of the financial aspects of floods. He distinguishes between “lesser” and greater floods based on the amount of “disruption” they cause rather than the amount of damage *per se*. In spite of the first flood having had an evident material impact (“it ruined cabinets and things”), he nevertheless describes it as “easy”. Why? Because “life went on” – there was little disruption:

Interviewer Can I just ask James: you were saying that there would be a point at which it would be worth doing something to defend your house, and a point...

James Yes, but I don't know what that point is. I think one has to experience sufficient aggravation.

Yes, we've only ever had two floods, one, the big one of 2002, and the lesser one a couple of years earlier. But because we don't live in the basement, the lesser one was a nuisance actually – it ruined cabinets and things, but that was that; but your life went on and that was easy. The other one was a bit more of a disruption, but had we have been living in the basement flats then it would have been similarly disruptive.

Two more examples are presented here of respondents who demonstrate the subjugation of the Materialist Discourse by the Disruption Discourse. The first is interesting because of the emphasis that is put on disruption in spite of the great extent of the material damage that was experienced. The second is interesting because it is the one case where a disruption framing is used by a householder who has no experience of flooding.

To properly understand the first of these passages – from the interview with Vikki (single; professional; home-owner; flat with basement) – it is important to be aware of its location in the text. This is shown below in a transcription of Vikki's first contribution to her focus group:

Vikki Hi, I'm Vikki [surname] and I live in [name of road] just up the road from you [speaking to a fellow participant] – on the same side, actually – and I've got a ground floor and basement flat. It's a two-bedroomed flat with garden, and in the basement is my one and only bathroom and my utility room, which, I've now been flooded twice badly. Last time I had to go and live in a hotel for two months and because I had to rip absolutely everything out, including all the plasterwork and everything else, because it was 5 feet of sewage. It came up through the loo and the bath, and this time I think it's about £40,000 of damage, and prior to that, the last time I was flooded before that, it was about – only £10,000 worth of damage. My worry is that I'm not going to get insured for much longer, it won't take long before, and I've been living in my flat for 20 years, and I've tried to sell it, to get out.

- and I've lost the sale, so I'm feeling very trapped, and I can't sell, and at the moment I am insured, but it won't take long before I'm not. My neighbour [name], [speaking to James] I don't know whether you know [name] next door to me, she owns the whole house. I'm 33 so she's 31 – sorry, 35. Her basement – it's an identical house to yours – and her insurance company put a huge great excess on her, and she just uses hers for storage. so I don't know what's going to happen to me, because for me it was a whole brand new bathroom, and actually thousands of pounds to keep me in a hotel in [nearby district] for two months, which sounds very glamorous but it wasn't
- Interviewer I'm sure it wasn't. Presumably you couldn't stay in your flat because the only bathroom was...
- Vikki Well, I had nowhere to wash with, go to the loo, I mean they had to rip everything out, rip the loo out, the bath out, the sink, everything, and all my damp-proof course had to be re-done, and then they also did my cellar as well, so yes, it's been very difficult.

This very rich text will only be looked at here with regard to the presence (or absence) and role (or lack of role) of the discourses of Materialism and Disruption. It is notable that in spite of the obvious and high profile presence of enumerated flood-costs, this passage is dominated by the discourse of Disruption and has an essentially non-materialistic framing.

The first evidence for this assertion is the order in which Vikki presents the elements of her tale. If she had mentioned the cost of the damage before any of the other impacts, this would have suggested that cost was the most important feature of what had happened and would have indicated a materialist framing. Instead, the first item in her list of consequences is the compulsory two-month stay in a local hotel. This suggests a disruption framing. Secondly, when Vikki does eventually mention the subject of money, there is some ambiguity about why she does so. Although the performative function of the statements about costs may be to introduce a Materialist Discourse, the syntactic construction of the phrases “£10,000 worth of damage” and “£40,000 of damage” both put the emphasis on the damage, suggesting that the aim is to relate the size of the damage and that cost is merely being used as a proxy for ‘amount-of-damage’. Thirdly, at the end of this excerpt Vikki chooses to describe this not as ‘costly’, or ‘wasteful’, but as “difficult”. Here again, the emphasis is on the aggravation rather than on the material loss.

The presentation of a similar analysis for all the interviews with flooded householders would reveal a similar conclusion for a number of other flooded respondents, including Susan (senior salesperson; social tenant; single mother of three children; one near-miss event), Tom (university lecturer; married with adult children; owner-occupier: flood experience), Martha (professional; married; owner-occupier; flood experience) and Freddy (market trader; single; social tenant; flood experience). In the texts of all these

respondents, the Materialist Discourse plays a subservient role to the Disruption Discourse. In fact, Vikki is the only one of these respondents to allude directly and spontaneously to the financial costs of flooding, in spite of the fact that some of them are in circumstances that suggest possible financial hardship.

Only one of the respondents who emphasise the Disruption Discourse has not himself experienced flooding – Michael, an information technology professional who rents his home from a private-sector landlord:

- Michael [...] Okay I could buy some sandbags, but you know, I'm... I guess, you know, if you're talking to older people with a family and stuff like that, yeah, they might consider that. But I think it's also a case that the age of the people you're talking to erm, you know, what they're doing as well. Because obviously you know that younger people don't think that much of stuff like that, I think. I don't know...
- Interviewer 'Cos you've got no kids running about in the kitchen; 'cos you've not got your... I don't know, your antique LP collection.
- Michael Yeah, I mean basically if it floods: okay my sofa gets ruined and stuff; I've got no insurance – which is maybe worth, you know; I should do – but then again...
- Interviewer See I'm not trying...
- Michael I don't consider it enough of a threat, really, that would destabilise my life that much to try and take preventative measures.

Michael does not have insurance. Furthermore, unlike Luke, Martha and Shereen, he conveys the impression that he would not be too disturbed by the loss of some of his possessions to a flood. Michael himself associates this stance with the face of his youth and freedom from responsibility, implying that the attitude is shared by all people who are young and have no children⁷⁸. In other words, if we are to believe Michael's rhetoric, then his response to flood risk is a result of his social identity. For those who share this notional identity – as also for Vikki, Clarissa, Malcolm and others – it is more important to avoid disruption to one's way of life than it is to avoid material loss. However, unlike these other respondents, Michael asserts that flooding would not significantly disrupt his life.

Whereas for the others the Materialism Discourse is eclipsed by the Disruption Discourse, Michael acknowledges the importance of the Disruption Discourse for his reasoning about flooding, but differs from the others because he asserts that flooding would not, in fact, be

very disruptive (“I don’t consider it enough of a threat, really, that would destabilise my life that much”).

As described in Chapter 2, there is clear evidence in the literature that flooding damages mental health as well as causing physical and material harm. There is also evidence that the disruption to the routine of normal life is one of the major causes of that damage. The emphasis by some respondents on the Disruption Discourse rather than the Materialism Discourse suggests some awareness of this and lends support for the proposed revision of Maslow’s hierarchy of needs (see Figure 6), in which – for long-term risks where mitigation strategies are perceived as unreliable – the protection of ontological security is shown as a higher human priority than the protection of material security.

8.2 The Materialism Discourse legitimised

The chapter so far has assumed that the presence of the Materialist Discourse would encourage preventive action against flood risk. This section considers how the reverse can also be the case – how material considerations can de-legitimise the idea of pre-emptive action, either because of the expense of mitigation measures or as a result of their anticipated impact on property prices.

Perceived value for money of mitigation measures

The first of these material deterrents is the cost of the measures themselves.

As we saw in Chapter 2, some of the measures that were discussed in the interviews involve financial costs⁷⁹. For example, BSI ‘Kite mark’ approved floodgates cost about £2,000 per household (National Flood Forum 2003); anti-backflow valves cost £500 to purchase and install (*ibid*); air-brick covers cost at least £7 (Flood Sentry Ltd 2006) and empty sandbags cost about £1 each (Surplus and Adventure Ltd 2006). In addition, decoration and furnishing tends to be more expensive if it is flood-resilient.

⁷⁸ In the analysis of the RPA and FHRC datasets, no statistical evidence was found to support the hypothesis that the presence of children in a home influences the likelihood of the household to implement flood mitigation measures.

Respondents rarely argued against mitigation measures on the basis of affordability however. More commonly, they argued that they were uncertain about the effectiveness of the measures and about the likelihood of their ever being used, and suggested that they therefore felt that they did not offer good value for money; or they emphasised the issue of justice, arguing (as we saw in the previous chapter) that the flood risk was the fault of others and that flood mitigation costs should therefore be paid by those others.

An example of the value-for-money argument is made by Marcello and Florence (university lecturers; home-owners; riverside house; near-miss experience). They compare the “gamble” of installing a flood-gate with what they present as the much more reliable option of insurance:

- Florence I mean if I compare myself, you know, to... to my neighbour; she has no insurance and she would have to pay everything. [...] And therefore this is why [...] she's probably ready to spend £700 or £800 to have a flood-door – because she has no insurance. I pay, erm, more than £700 a year probably on content and building [insurance] I think, but I feel that I've protected myself like that. So far the insurance – whenever we've put in a claim for minor things – have always been fairly responsible [...] I feel protected now by the insurance company, rightly or wrongly. [*Clearing throat*] Whereas [my neighbour] can more... I would if I was...
- Marcello Somehow she takes more of a gamble because she doesn't pay the insurance.
- Florence She has reasons, so ...
- Marcello And then she hopes that these technological devices that she's using are effective. Now, we don't know how effective they'd be and how effectively that will save her house from a flood somehow.

Value for money, in this instance, is associated with reliability. The respondents' insurance is more expensive than their neighbour's floodgate; and it only protects them against the financial aspects of flooding, whereas an effective floodgate might also protect them from some of the distress and disruption. In spite of this, because floodgates are represented as “more of a gamble”, insurance is represented as better value for money and as the preferred option. Affordability appears not to be the main factor dissuading them from implementing flood-protection measures. Marcello and Florence present themselves as willing to spend money on protecting themselves from flooding, but only if they can feel reasonably sure about the reliability of that protection – and floodgates are not represented as reliable.

⁷⁹ For example, the relocation of precious items (photo albums etc.) to put them out of reach of floods.

The above excerpt reveals a second aspect of the two respondents' positions on flood mitigation: the apparent prioritisation of financial considerations over the prevention of disruption and distress. The text is dominated by the issue of money, and – like the remainder of the interview – lacks any non-materialist discourse. If – as therefore seems likely – financial protection is the main or only consideration, then it would be rational to prefer the option that gives most financial protection and there would be little reason for having floodgates in addition to insurance.

This emphasis on material impacts is most widespread amongst those respondents who have not experienced flooding. As was argued earlier, it is perhaps more difficult to imagine the emotional impact of an experience than it is to imagine its material effects. This may explain why the effects of flooding seem sometimes to be reduced to the financial dimension by those who have no direct experience of the emotional impacts.

We see this in one of the focus groups with owner-occupiers. In the following excerpt, the interviewer probes the group regarding their attitudes to resilience measures:

- Interviewer But why not – just to play devil's advocate – why not spend a few grand; get a kitchen that wouldn't be damaged by the flood (Craig: Huh-huh), put in rugs that you could... or carpet that you could take up if it flooded (Craig: Yeah), and so organise your house – your houses – in such a way that the flood damage would be minimal or at least reduced?
- Christopher The reason I won't at the moment is because I've got carpets that are 10 years old; and to be honest they were only put in in order to carpet the place to sell it, because the house was renovated before I moved in. So it's the sort of carpet that at some stage I ought to replace anyway. So if that gets ruined; frankly it doesn't matter – it's going to go in the not too distant future anyway. The kitchen units again have been there 10 years, so there's no... they're fine; there's no point in ripping them out now. If we get flooded I'll change them. (Interviewer: Okay.) But if I rip them out now it's not like they've got some sales value; they'll get ripped out and dumped. So, to me, being flooded would be the ideal opportunity to (Joan: *Laughs*) do all those things that I've sort of said well at some point I'll do when I have to. So rather than the carpet actually wearing through, it will be, oh, it's waterlogged so now I'm going to change it. And that's a good point. At that stage I guess I should look at, you know, sanding the floors, putting rugs down, doing all those things that can be easily sorted out if there's a flood. It's a very good point yes.
- Joan I mean I only have one carpet anyway and it's only the living room that's got carpet in it, you know, which is a plain carpet with a rug on top so that will move, but the rest's either wood or vinyl flooring or tiles so.
- Craig We're in the middle of renovating ours because it was in a very poor state when we got it, so downstairs we have no carpet, it's just floorboards and then vinyl in the kitchen and then concrete for the bathroom.
- Joan Our kitchen's quite big, so to put solid wood in the kitchen, in our kitchen would probably cost about 15 grand.
- Interviewer Okay. But how's the idea sound? I mean the practicalities and actually how much it costs may be different but kind of having a house basically that is going to be less affected.
- Christopher [*Unclear*] sensible; yes; sounds very, very sensible.

As in the interview with Florence and Marcello, what is most notable here is the lack of any discourse beside that of materialism. Although the Materialist Discourse is introduced by the interviewer – who asks specifically about flood-damage and makes no mention in his question of the distress and disruption of flooding – it is nevertheless remarkable that none of the participants makes any rhetorical use of the non-materialistic advantages of resilience. In fact, Christopher actually de-legitimises the idea of resilience, saying that “it doesn’t matter” if things “get ruined” because the items that are at risk are all of little value, are of poor quality and are soon going to be “dumped” anyway. Flooding is even presented as a helpful catalyst for home improvement, and no mention is made of the potential inconvenience of having to do this work at a time dictated by external circumstances.

Whilst Florence, Marcello, Christopher, Craig and Joan (and indeed others) apparently dismiss flood-protection and flood-resilience measures on the basis of their perceived lack of material benefits, others put more emphasis on their initial cost. As Kahneman and Tversky (1979 p263) demonstrate, “people underweight outcomes that are probable in comparison with outcomes that are obtained with certainty”⁸⁰. Hence, the influence of the certain financial cost of flood risk mitigation is exaggerated and the uncertain financial benefit of mitigation is undervalued – mitigation measures are represented as incurring a net cost rather than a net gain. This is illustrated by the following series of passages from the focus group of Reading housing association tenants, who had experienced one near-miss event:

- Interviewer [...] but why not get sand and get bags; so that when the council let you down next time, [*clicks fingers*] you’re there ahead of time?
- Nick For me, I wouldn’t want to shell out say, 50 quid for something like that. I’d rather put that to paying council tax at the moment, and other bills.
- Rob Mm.
- Interviewer Because...?
- Nick Because bills are more important
-
- Jackie Why go and waste money on something that you don’t need right now?
- Rob Might not ever need.
- Jackie And there’s other things that...
- Nick You might never need.
- [*Unclear due to over-talking*]
- Jackie And there’s other things that you do need [*laughs*].

⁸⁰ This is known as the *certainty effect*.

- Nick [...] you say 300 quid [for each flood-gate]: that's 300 quid for the front door; 300 quid for the back door. I ain't got 600 quid floating around to get that done just in case.
- Stuart You start thinking about what you could do with that money instead.

Like Florence and Marcello, these respondents make no claim to being unable to afford flood risk mitigation measures. Unlike them, however, they seem to be arguing that *any* expenditure on hypothetical, future events would be a “waste” of money. If you do not need something “right now”, they argue, and if “there's other things that you do need [now]”, then these “other things” should take priority. Flood protection is not seen as providing value for money simply because it does not provide any immediate return. The thought of spending money on such hypothetical, postponed benefits prompts Stuart to think of all the other (presumably more immediately gratifying) ways he might spend the money. Furthermore, not only is value for money conceived only in terms of benefits in the here-and-now, it is also calculated purely in terms of material benefits – no mention is made of anxiety or the value of anxiety reduction.

Impacts on property values

For property owners, an additional and non-immediate material argument against flood-protection concerns its potential impact on the value of their properties. In the FHRC survey of flooded households, 15% of owner-occupiers showed signs of sharing in this concern, by agreeing with the statement, “When it comes to selling my home in the future, I wouldn't want potential buyers to know that my home sometimes floods” ($N = 253$)⁸¹.

As illustrated in the following passage from the focus group of Reading homeowners, this relates particularly to visible measures. These, it is argued, might deter potential purchasers and depress the prices they could get for their homes:

- Interviewer But if [potential buyers] ask [about flood risk] anyway, are you not better off saying ‘yes, but it's okay because you can just slot in these floodgates and...’?
- Christopher I think the chances are they might not ask the question; but if they do, and you say ‘yes, well I've got all this’ I just think in people's minds it makes them think ‘oh my God, it really is a genuinely big risk!’
- Joan ‘Well he's expecting it to flood, then’; yes.
- Christopher And my perception is that their perception will be ‘oh my God, I'm not touching that! That's a big risk!’ Alright, you could say ‘yes but I've got this protection in place’; but they're going to be thinking, ‘yeah, but I just don't want that hassle. Why buy that house

⁸¹ Eighteen per cent said they “neither agree or disagree” with the statement. Sixty seven per cent disagreed with it.

- when I could just buy another one somewhere else where it's just not going to be an issue?' Because if it floods high enough you've actually got the problem of your car's going to get flooded, and for some people that might be 10 grand's worth; 20 grand's worth. Alright it might be insured, but even so, you know, it's...
- Craig Breeze blocks [*laughter*]
- Christopher Well you still put people off, even by being prepared.
- Joan That's [*unclear*]
- Christopher You will put people off and you will highlight the problem to them. Essentially that's how I feel. Um...
- Interviewer Um, Joan?
- Joan Yeah, I guess at the moment I feel I can say quite truthfully, 'no, the house didn't flood'. It didn't even flood in 1947; um, as far as we know it has never flooded, because it would have been there in 1894 anyway. Um, whereas if I'd got all the stuff, it's going to kind of undermine that, what I'm saying. They'll say, 'well, it might have never flooded but you're obviously expecting it because you've got all this'.
- Craig Exactly the same was true when we looked at [buying] this house with the basement with the pump in. They said 'we've never had to use it' and we said 'well why do you have it there?'

The respondents argue that visible flood mitigation measures will “highlight” the flood risk to potential buyers and, in addition, that they will lead them to conclude that the risk is “genuinely big”. According to this logic, in other words, such measures would increase the phenomenological severity of the risk. This, it is later asserted by Craig, would reduce the market value of the affected property.

Two implicit assumptions about house-buyers underpin this argument. First, there is the assumption of a realist ontology of risk. This is implied by the language ascribed to buyers (e.g. “it **really** is a **genuinely** big risk”) but also by the assumption that a risk considered by the vendors as “big” enough to justify a measure would also be “big” for the potential buyers. The second, related, assumption is that buyers will believe the vendors’ response to have been based on an accurate knowledge of the risk and to have been proportionate to it – a belief that is essential for the inference that the risk must be “big” if the vendor has taken action against it. These assumptions are consistent with the central hypothesis of the *risk society* thesis (see Chapter 3). They indicate a representation of risk as something that can be calculated and managed; that should be calculated and managed; and that all normal modern householders will calculate and manage.

However, at the same time as they assert this rational, realist model of risk response, respondents also give the lie to it. Not only does the language that they ascribe to putative buyers belie their supposed rationality (as in, for example, Christopher’s emotive exclamation “Oh my God; I’m not touching that!” – see above); so too does their desire to

construct a more positive reality for buyers, which is a *de facto* admission of the superior importance of phenomenological reality over ‘real’ reality. This aspect of the discourse is further illuminated elsewhere in the discussion:

- Christopher And do you really want all these things [i.e. floodgate fittings] stuck over your...
Joan Yeah...
Christopher front, back door
Joan Yeah
Christopher Anyone sees that on your house; they ain’t buying!
Joan Yeah! [*Laughing*]
Christopher Unless they said ‘right, okay everyone on the floodplain in Reading: we’re going to sweep through’...
Joan That’s it yes
Craig ‘We’re going to do this. You don’t have to have it – your choice; your house. But be aware that if you don’t have it, you know, you could have substantial problems.’ That way it won’t de-value our properties nearly as much because everyone will have them and it will be standard [...]

Craig now seems to be implying that the impact on house prices would be less if visible flood risk mitigation measures were “standard” for all at-risk properties. What for an individual home is said to be an unacceptably “big” risk is not represented as unacceptable for a collection of homes; i.e. the representation of the size of a risk is contingent and not absolute; phenomenological risk is more important to the Materialist Discourse than is the concept of ‘real’ risk.

8.3 Summary

The materialism discourse played only a minor part in discussions about flood risk response. People who had not been flooded but who believed they were covered against flooding by their insurance had less incentive to prioritise concerns about physical damage because they represented insurance not just as financial protection but as a protection against all the effects of flooding. At the same time, for those with experience of flooding can cause, the potential for material damage paled in importance when compared with the disruption and emotional distress.

Cultural norms and taboos also seem to have an important influence on the use of materialism discourses. When respondents did talk about potential material losses, they couched their sentences carefully, as if avoiding cultural rules against about drawing attention to wealth differentials or seeming to care too much about material things. At the

same time, there seemed to be less of a taboo around suggesting that the costs of mitigation measures might be prohibitive.

In a culture where wealth was a more important and more acceptable marker of social status – for example, in the USA – it might be more acceptable to suggest that one could not afford to protect one's home and less acceptable to suggest that one had a great deal to lose if one left it unprotected. For the respondents of this survey, however, the opposite seemed to be the case – indicating, perhaps, that British prudishness about wealth might impact on the way people talk about flood risk mitigation.

Interestingly, there seemed to be no taboo around one aspect of materialism – the potential for property-values to fall as a result of flood risk mitigation measures. This may reflect the contemporary obsession with house prices in the UK.

9. Flood risk mitigation: The Technical Discourse

The previous chapter outlined how different discourses can de-legitimise the idea of taking pre-emptive action against flooding. This chapter seeks to explain why some respondents *had* taken pre-emptive action and *did* employ the pre-emptive action discourse. In doing so, it introduces one final discourse – the Technical Discourse. Within this discourse, it will be suggested, flood risk response is represented as demanding from householders a sufficient level of technical knowledge and ability. As a result, where this discourse is used, the Pre-Emptive Action Discourse is legitimised for householders who believe in their own technical competence and is de-legitimised for those do not.

There does seem to be a statistical association between the Technical Discourse and the implementation of mitigation measures. Data from the FHRC survey of flooded residents was analysed using logistic regression. The predictor variables used were 1/ household type 2/ number of times flooded, 3/ whether financial costs had been incurred as a result of the flooding and 4/ whether the respondent agreed with the statement, “I don’t know what I could do to protect my home from flooding.”

Of the original 278 cases, 241 were included in the analysis. Respondents who rented their homes were excluded, because tenants’ options for mitigation measures are far more limited than those of owner-occupiers and the 23 tenants in the sample were too few to be analysed separately. A further 12 cases were excluded because of missing data.

The results show that respondents who disagreed with the statement “I don’t know what I could do to protect my home from flooding” were 2.36 times as likely to have taken mitigation measures as those who agreed with the statement ($p < 0.05$). No other variable in the analysis was found to be significant (see Table 11).

Table 11 Results of a logistic regression of at-risk owner-occupiers who have never been flooded

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
								Lower	Upper
Household type	Single adult			4.296	5	.508			
	2+ adults and kids	-.318	.660	.231	1	.631	.728	.200	2.655
	Over 65s only	.093	.667	.020	1	.889	1.098	.297	4.059
	Over 75s only	-.095	.735	.017	1	.897	.909	.215	3.841
	Adults and over 65s	.390	.624	.391	1	.532	1.477	.435	5.022
	Single parent	6.904	12.585	.301	1	.583	995.945	.000	5.1E+13
Financial costs not covered by insurance		-.098	.284	.119	1	.730	.907	.520	1.582
Times flooded since Moved in	Not at all ⁸²			1.398	4	.845			
	Once	.340	.564	.364	1	.546	1.406	.465	4.246
	Twice	.353	.682	.268	1	.605	1.424	.374	5.423
	3 to 5 times	-.137	.683	.040	1	.841	.872	.229	3.327
	> 5 times	.146	.701	.044	1	.835	1.158	.293	4.570
I don't know what I could do to protect my home from flooding	Agree			8.937	2	.011			
	Neither agree nor disagree	.000	.522	.000	1	1.000	1.000	.360	2.780
	Disagree	.861	.309	7.733	1	.005	2.364	1.289	4.337
Constant		-1.179	.821	2.060	1	.151	.308		

Multicollinearity test The regression was first run with an additional predictor variable, 'age left full-time education'. However, collinearity with 'household type' led to an unacceptably high maximum condition index of 12.45. As 'age left full-time education' was not shown by this initial regression to be significant, it was removed from the analysis, reducing collinearity to a more acceptable level (maximum condition index = 9.96; average *VIF* = 1.03; no tolerance levels < .20)

The interpretation of this finding depends on how one assumes respondents will have interpreted the statement, "I don't know what I could do to protect my home from flooding". Although the phrase was probably intended to elicit information on awareness of mitigation measures, the construction "I could do" in the phrase "what I could do to protect" points at the capacity of the respondent to implement measures rather than at his or her knowledge of such measures. As such, this question can be taken as providing a measure of respondents' confidence in their own competence – as a measure, in other words, of their confidence in using the Technical Discourse. Table 11, therefore, can be seen as evidence of an association between use of this discourse and implementation of mitigation measures.

⁸² Although the homes of all the respondents had been flooded in the previous few years, some had only moved in after the flood.

9.1 Respondents who talk with confidence about responding to flood risk

It is important to be clear that we are talking here about perceived knowledge and ability and not actual knowledge and ability. As is always the case with perception, various distorting factors intervene between the perception and the perceived. In the case of flood risk response – as will be argued more fully in Chapter 10 – the demands of self-presentation are likely to have a major influence on what discourses respondents are willing to use. People who wish to present themselves as responsible householders, for example, are unlikely to construct a narrative that makes them appear irresponsible; and because ignorance is more compatible with a responsible attitude than other narrative explanations (such as lassitude or a lack of concern), it is likely to be a preferred explanation.

Hence, although some respondents claim that they were not aware of any of the measures for household level flood risk mitigation, and others (e.g. Elizabeth, Shereen, Martha) say they were unaware that such measures might even exist, we cannot be sure whether these were genuine factors behind their behaviour. Even when respondents themselves justify their behaviour with a claimed ignorance (as, for example, do Luke and Susan) this might be no more than a case of *post hoc rationalisation*⁸³.

For example, Luke (Reading; housing association; father of two young children; no flood experience) claims to have been unaware of the existence of flood-response measures and makes an impassioned claim for the role of information and education to improve flood risk responses (“It’s information; it’s education; it’s letting folk know! It’s obvious innit!”). However, when we look elsewhere in his interview we see that his espousal of the importance of information could be an attempt to exonerate him from blame and to preserve his self-presentation as a responsible ‘family man’. This is not to say that a lack of information or awareness played no role in Luke’s behaviour. It is simply to argue that his statements need to be considered within the overall dynamic of the interview and in the context of his attempts to manage his self-presentation.

⁸³ I.e. the creation of an explanatory narrative that constructs the past as more rational than it really was.

Luke's case demonstrates the difficulty of interpreting respondents' claims about knowledge and its role in flood risk response and illustrates why the analysis in this thesis focuses on the nature of their talk (their discourses and the confidence with which they deploy them) and not only at what they say.

The remainder of this section takes a detailed look at the talk of those respondents who show the greatest confidence in talking about flood risk response. Four respondents in particular use the Technical Discourse with confidence, displaying an understanding of the causes of flooding and representing household-level measures as credible, effective and within their grasp⁸⁴. These are Luke (unemployed carpenter; social housing; married with two young children; no flood experience), Nicola (retired surveyor; single; owner of river-side terraced house; experience of garden flooding), Paul (electrical engineer; single; social housing; regular flooding of basement storage area) and George (married; retired farm-worker; private rented cottage; twice experienced ground-water flooding). All four project themselves as capable of understanding what could be done to reduce flood risk, as capable of taking these measures and as willing to take them.

In spite of having very little formal education, George, for example, shows great confidence in his understanding of the physical processes behind flooding. In the following excerpt, he conveys knowledge of the relationship between ground-water levels and types of soil:

It finds its own level so quick [...] depending on what [kind of ground] you're on. But I mean, a lot of it in clay areas, like hold water above it, but they don't penetrate up so much, can it? Clay is quite good at holding water back, isn't it? (Interviewer: Yeah.) But this is all ballast underneath. (Interviewer: Yeah. That's right.) So if you get level from the river now, that same level would be below the concrete of this floor, which probably wouldn't be maybe two foot.

George also speaks easily and convincingly about the different response measures that he and his wife have considered, demonstrating that he understands the measures, has the terminology necessary to articulate this understanding and is able to visualise what would be involved in implementing them:

The only answer I was told would be to what they call ‘tank’ it. [...] Yeah, which you knock it back. I think, knock [the walls] back to the brickwork. Then it would be rendered right down below floor level. [...] So in the end and all... I don’t know if you have to replace, replace all the floors with a membrane [pause] or with concrete and extend it up the walls, so like in a way you create like a trough all round to what... perhaps go up two foot up the walls. [...] That would stop water penetrating inwards.

As we see from this text, George projects himself as intellectually equipped to deal with issues of flooding and flood-response. Listening to the recording of the interview, one receives the added impression that he is at ease with the subject. There is no strain in his voice and no suggestion of defensiveness.

1. Professional background

A characteristic held in common by the respondents who show this kind of confidence is the type of occupational background. All the respondents who use the Technical Discourse have professions that have involved them in finding practical, physical solutions to practical, physical problems – professions such as architecture, farming, tree surgery and technical occupations. Their confidence in speaking about the physical aspects of flooding distinguishes them from managers and academics, who – even if they show a good understanding of how floods operate – seem less sure-footed when talking about possible property level solutions. It also distinguishes them from people in unskilled manual jobs, who seem to lack confidence in both understanding and responding to flood risk.

The clearest links between professional background and the Technical Discourse are made by George and Nicola, who each compare the exigencies of their erstwhile professions with the challenges of reducing flood risk:

Same on a farm really: you’d have to improvise quite a lot of things, you know; if something goes wrong... tend to improvise. (George)

No, no I feel quite happy about making my own decisions based on the... You know, I was an architect, so when the firms sent the brochures [for flood-protection products], I can look at them and think, ‘well that’s not appropriate, that wouldn’t work here’ and so on. (Nicola)

In the cases of Paul and Luke, evidence on the link between profession and discourse is subtler. With Luke, it is shown in his use of carpentry terms when discussing his ideas for

⁸⁴ It is unsurprising that this number is so small a proportion of the overall sample. Only 6% of those without experience of flooding have taken any action to prepare for floods and this figure only rises to 39%

home flood-proofing and by his direct application of knowledge acquired in his work. Illustrations of this are shown in bold in the following excerpts:

You know, it's like the **frame**, **doorframe** or like **hooks** which can be **screwed** in by hand, with like four **loops**, right. And then you've got an **inlet valve**, right, a simple valve, a plastic **valve**. It's simple to make; cheap as well.

You've got part of the system, like there's, er, **coupling joints**, yes. And they approached... are **trued** out.

I've installed [airbricks] and the fact that they go up. [...] And like it's a **louvre** right, so it's on an angle, so like the water's coming at ninety degrees and the fact that, that, like, the foam's being held on a incline, it should hold it back itself.

Paul's case is harder to demonstrate, because of the lack of such a direct connection between his professional expertise (electronics) and flood-proofing. However, a link between the nature of his work and his confidence with the Technical Discourse is hinted at in the following quotes:

[...] there should be return valves, non-return valves at various stages in the pipe-work, so maybe what we need is a non-return valve which is four foot in diameter which acts half-way down – er – that comes down underneath [...] maybe half-way down [name of nearby street]

In the above quote, we see Paul applying a systems approach to the flooding problem. One of the main sources of floodwater in Paul's area is the combined sewage and drainage system. Water management systems have strong conceptual similarities with other systems of transmission, including electronic systems. Familiarity with analysing electronic systems will therefore have equipped Paul to conceptualise the flooding problem in the way he does. We also see Paul using terminology that is shared between electronics and hydrological engineering (“valves” and “diameter”) – another indication that his knowledge of one field is transferable to the other.

A second occasion finds Paul responding to a question about where group members would go for advice on non-return valves:

You would have to notice that there was a correlation... there was a consensus forming i.e. if you go into Colorado they are all using the same equipment, because there's the Rocky Mountains, and you'd find [that] the same names would keep cropping up, um....

Only Paul claims to have the confidence and ability to make his own search for information – the other three participants say that they would seek information and guidance from some kind of expert⁸⁵. Paul’s use of terms such as “consensus forming” and “the same names would keep cropping up” suggest that the process of equipment-sourcing is familiar to him – probably from his work in the electronics industry, where he might need to identify and source components for the “new energy devices, gadgets and generators” that he says he develops.

2. Non-use of the Blame Discourse

Use of the Technical Discourse alone, however, does not ensure that householders talk positively about taking flood risk mitigation measures. As we saw in Chapter 6, where the discourse of Blame is used to fend off anxiety about risk, or to protect social identity, this counters the discourse of Protective Action.

A second characteristic that is shared by respondents who talk with confidence about flood risk response, therefore, is the absence of the Blame Discourse and the adoption of the discursive position that the solution to the flooding is the responsibility of the householder. In three of the four cases, this position is not directly stated and can only be inferred from the lack of any attribution of blame to public authorities and the employment of the pre-emptive-action discourse. Of course, this does not mean that the respondents do not believe the flooding to be the fault of one of these bodies. (Blame attribution as a rhetorical strategy need not be based on belief). However, if we assume a correlation between rhetorical strategies and rhetorical aims, then it is reasonable to conclude that they believe that their rhetorical aims will be met by not blaming the authorities.

The rhetorical aims of using the Technical Discourse

What effect does the use of the Technical Discourse have on behaviour? To address this question, it is worth reflecting on Luke, Nicola, Paul and George’s rhetorical aims in the interviews and focus groups, and the role played by the discourse in achieving these aims.

⁸⁵ Vikki mentions Thames Water, and James and Tom say they would ask a builder.

The rhetorical use of the Technical Discourse – Luke

The interview with Luke is dominated by his attempts to create a positive self-presentation. This is evidenced by his preparation of notes for the interview and his expression of anxiety about not having had time to read them on the day (“I was caught on the hop”). It is also evident throughout the interview in his overt attempts to present himself in a positive normative light.

- Luke [...] I haven't worked for about eight months or so, like, you know, staying at home to like help the missus like, do you know what I mean?
- Interviewer What kind of stuff do you do normally?
- Luke Oh I do food; I help with the housework, the kids. Just – we do it all on a fair basis...
- Interviewer With two kids, that's fantastic.
- Luke We've got a great relationship! [*High-pitched voice*]
- Interviewer Yeah, I'm sure you have.
- Luke Great, great, great relationship!

Although this passage has no direct connection with flooding, it illustrates the overall patterning of the interview as a self-presentational exercise. Firstly, there is the fact that Luke seems to feel it necessary to justify being unemployed; that he implies that he has actively chosen unemployment in order to be able to help his wife at home, and that he is concerned to know that the interviewer agrees with this behaviour (as shown by the tag question, “do you know what I mean?”). Second, there is the claim to moral standing (“we do it all on a fair basis”) and marital excellence (as indicated by the repetition of “great relationship” and the high voice pitch). Luke seems to be at pains to present himself as a virtuous man – a husband who shares the housework fairly with his wife and has a relationship with her that would win general admiration.

Competitiveness too, seems to be an element of this self-projected masculinity. The interview is treated like a contest: Luke has made notes in preparation for the interview, is jubilant when the interviewer exposes a gap in his knowledge (“Crikey Moses, you don't even know the facts!”) and shows signs of unease when he perceives the interviewer to be too much in control (“you know all the answers [...] before I say ‘em!”; “hold up a minute, can I just say something!”)

For the purpose of this thesis, the important point about Luke's presentation of himself as the ideal man is the articulation of this self-presentation with the issue of flood risk response. This is illustrated in another part of the interview, shortly after Luke has intimated that he would take more care to protect his home if he owned it rather than rented it:

Interviewer it was interesting that you said, um...

Luke Go on.

Interviewer ...if it was your own house you'd do stuff,

Luke Yeah, but yeah – go on.

Interviewer but you probably wouldn't because it's not...

Luke Yes.

Interviewer But if the water's kind of... if the water got in, then would it not have an effect on you anyway?

Luke Well, it's bound to innit, like, you know, it... it... because of fear, and like you know harm. You know, I'm a man, you know, a man with like a family, so of course I'm going to be, you know, protective of my family. You know, I'm gonna want to make sure they stay out of harm's way. You've got a tea there.

Luke's response to the interviewer's question reveals that it threatens part of the positive self-image that he is projecting – his constructed identity as the protector of his family. Hence, the vigorous assertion of his masculinity (“I'm a man [...] of course I'm going to be, you know, protective of my family”) and the evidence of discomfort (the heavy use of the phatic terms “innit”, “you know” and “like”⁸⁶). Hence too, the allusion to tea and biscuits, which diverts the discussion to safer, more neutral topics⁸⁷.

The Technical Discourse, it seems, is closely articulated with a discourse of masculinity. In this discourse, “a man” is someone who protects his family, understands the threats it faces and is able to respond effectively to flooding and flood risk. Hence, Luke describes himself as “having the brains to cope with [flood risk]”; as being “adaptable” enough to respond to a flood, and as skilled in a number of pertinent areas (“I can read science all day long”; “I can, like, read the land quite well”). Hence too, the legitimation of these

⁸⁶ Phatic terms are used in speech to convey general sociability. In this context, they can also be seen as communicating discomfort and a need for reassurance.

⁸⁷ The referral to the interviewer's cup of tea, although purely descriptive in its semantics, can also be seen as intended to divert the interviewer from his line of questioning. This is an example of what is known as a *perlocutionary* utterance.

claims is achieved by the use of an expert register (e.g. “the weave of the sack”; “the outer layer”; “airtight”; “a very solid medium”).

Seen within the broader context of the interview and the effort to construct a positive image of the self, Luke’s use of the Technical Discourse appears more performative than descriptive. Rather than expressing his evaluation of his abilities at dealing with flood risk, Luke, one might conclude, is trying to bolster his self-presentation.

Furthermore, it is because of this self-projection that Luke does not blame the flooding on the authorities. An important aspect of his self-presentation is the possession of agency – a result, perhaps, of a general lack of agency in his life due to his unemployment. Luke presents himself as the only competent agent. He is portrayed as active and dynamic; he adapts, he copes, he reads the land. Others – including other householders, but also the interviewer – are depicted as incapable of agency. To blame the state would be to give away agency to a third party and would undermine Luke’s presentation of himself as the only competent agent. A state-responsibility discourse, in other words, would delegitimise the particular version of the Technical Discourse that Luke has adopted.

The rhetorical use of the Technical Discourse – Nicola

The second of the four respondents who adopt the Technical Discourse is Nicola, the retired architect. Nicola talks about flood-protection in a mundane register that is devoid of expert language and unremarkable in style and prosody. For example:

So I’ve got to, erm, have some sort of flood protection put on the back door. But erm, again, a very wise person who had that house before me, erm, raised up the kitchen to the same level. You know, [in] a lot of terraced houses, the kitchen is a step down from the main house – where[as] we’ve brought the kitchen and [shower] right to the same level. Erm, so they are above what has flooded up to now.

There is no evidence here of the defensiveness seen with Luke. Nicola’s presentation of her flood risk related skills is understated and muted; there is no modality, legitimation or elision of agency. Why does she employ such a simple, epistemic style? The answer lies, perhaps, in Nicola’s presentation of herself as – before all else – calm and self-assured. Other people, Nicola claims, will flee from the risk by choosing to go on holiday when the chance of flooding is highest. Nicola says that she considers this behaviour foolish and

that she herself ensures that she is always at home at times of high risk. “They” are “scared” of the flooding; she, by implication, is not. She refers to herself as having been worried in the past; but never as being worried in the present.

One is struck by the choice of the term “wise”. People are rarely described as ‘wise’ in modern speech; this use of the term is archaic and distinctive and therefore worthy of the analyst’s attention. In uttering these sentences, Nicola is not only calling the previous owner “wise” for his prescience in having taken flood protection measures, but also – by implication – herself – for she too has taken such a measure. This is confirmed by the switch of agent from the “very wise person”, in the first sentence, to “we” in the second sentence, which associates Nicola with both the wisdom and the wise action of the previous owner.

This self-presentation implies a different application of the Technical Discourse to that which we saw in Luke’s case. Not for Nicola the aggressive, high-energy discourse used by Luke. Because she is presenting herself as calm, self-assured and wise, her speech is measured and less obviously rhetorical. She still presents herself as agential with regard to flood risk, but she paints a much gentler picture of how this agency operates. Knowing about the risk before she bought the house, she says that she actively chose to “take that chance” so that she could enjoy the benefits of living by a river⁸⁸; and she describes herself as “happy” about making [her] own decisions about flood protection.

The rhetorical use of the Technical Discourse – Paul

Of all the respondents, the third one to adopt the Technical Discourse (Paul, the electronic engineer) is the most consistent advocate of the Pre-Emptive Action Discourse. The following passage is a typical example:

Interviewer I’d like to try and exhaust this one point. I’m really interested in whether you feel it’s worth yourselves as householders – in all your different situations – doing anything for yourselves; or whether any action there is has to be coming collectively from the council and Thames Water? Do you feel it’s worth your while as householders doing anything?

Vikki No.

⁸⁸ The river has “mattered a lot to [her]” since her childhood, and she has “always” wanted to live on its banks.

- Paul I mean, I don't totally agree. I think that we can all do something with our own property that is water-resisting. Supposing somebody said to you, 'in one week's time you will get a flood'; then presumably you could have some sort of sluice gate and proper fittings and put your sort of wall in proper position...
- Tom And sandbags...
- Vikki Over the loo?
- Paul Well, the loo's a separate issue but if we're taking the matter of the water coming in, there ought to be sort of sluice boards that can be with drop-down slots with rubber...
- Tom But the water doesn't come in; it comes up through the floor.
- Vikki Through the loo.
- Paul That should be sorted with a proper non-return valve of adequate strength.

Paul's insistence that all householders can do something to protect their own properties ignores the hints in the interviewer's leading question (which encourages him to say the opposite)⁸⁹: it contradicts Vikki's firm "no" and it deflects the objection made by Tom. His adherence to the discourse is remarkable for this resistance to the normative pressures from the other participants. It is characteristic of Paul's self-presentation, in which he stubbornly constructs himself as an assertive group outsider. We first see this in the following interchange early in the discussion:

- Tom [...] there probably is a whole other community, you know, that sits on the pavement and that knows each other, which we don't know. And they're probably not here because they are not property owners. I think there's quite a lot of rented accommodation still.
- Paul And there are unfortunately these sort of four-by-four owners who are only here because they can't afford to live in South Kensington.
- James I don't own a 4-by-4, [laughter] but I can't afford to live in South Kensington!
- [Interviewer's note: strong visual look given by James to Paul at this point. Before the start of the discussion, James had explained to the interviewer that his job was in South Kensington but that he had moved to his current house because the area was more affordable. James seems, therefore, to have taken Paul's comment about "four-by-four owners" to refer to himself.]
- Interviewer It's quite a mixed community, is it?
- Paul Yes, there's just that there are some fairly sort of snooty people who seem to think highly of themselves and there has been an influx of them.

This passage is central to the understanding of the group dynamic and – hence – to an understanding of the context within which Paul employs the Technical Discourse, because it reveals a representation of social identity in which use of the Technical Discourse determines membership of the in-group.

⁸⁹ The interviewer asks, "Do you feel it's worth your while as householders doing anything?" In common speech, the term "worth your while" is normally used in a negative sense (e.g. 'it's not worth your while') The only positive use of the phrase that is in popular usage is the construction, "he'll make it worth your

The passage begins with a statement by Tom (university lecturer; married; owner-occupier; flooded once) that raises the question of home ownership to a determining position in the area of social identity. Not only does Tom make a propositional assumption that all the group members own their own homes – thereby, by implication, excluding Paul from the group. He also describes non-homeowners as a “community”, and thereby ascribes them group cohesion and constructs tenure as a prime determinant of social loyalty. Furthermore, the term “sits on the pavement” could be interpreted as implying indolence. By thus denigrating those who are ‘other’, Tom constructs a picture of society that consists of in-groups and out-groups, and in which Paul – by dint of not being a homeowner – belongs to the out-group.

Paul’s response takes the form of a retort. By associating new, wealthier arrivals in the area with four-wheel drive cars, he taps into the social representation that stereotypes certain types of rich professional as brash and wasteful. By then implying that such people have no natural place in the locality (“[they are] only here because they can’t afford to live in South Kensington”), he asserts his own social group as the in-group and the others – although a majority in the room – as the outsiders. In other words, Paul responds as social identity would predict: having been excluded by Tom from Tom’s in-group, he denigrates that group and elevates his own in-group.

This construction of identity relationships within the group is of relevance because of Paul’s articulation of social identity with the Technical Discourse, which he associates with himself and his in-group but not with the other members of the group. When, towards the beginning of the interview, the interviewer asks Paul to categorise his profession (“You are a scientist...? A technical person?”), his reply (“Yeah, a technical person. It sounds a bit pretentious to call myself a scientist, but that’s what I’m doing”) suggests that he feels the connotations of the term “scientist” to be inconsistent with his preferred self-presentation. To call himself a “scientist” would be “pretentious”, so Paul uses the term “technician” instead. This suggests that he prefers to see himself as a

while”, which is more register-specific and more rarely used. The question therefore leads respondents to reply that they do not think it is worth their while.

practical person rather than as someone who deals in theory; an interpretation confirmed by his disassociation from the new, *nouveau riche*, residents in the area and his alliance of himself – in response to Tom’ comment – with other householders who rent their homes. Paul, one can argue, chooses the possession of practical skills as the most salient characteristic of his in-group. The use of the Technical Discourse, then, can be seen as a rhetorical strategy for establishing his membership of that group rather than, necessarily, as a direct response to the existing flood risk. Nevertheless, the salience given to the discourse leads Paul to speak positively about flood risk mitigation.

The rhetorical use of the Technical Discourse – George

If we were to try to categorise the four respondents according to the manner in which they talk about at-risk responses, then George – the last of the four proponents of the Technical Discourse – would belong to the same category as Nicola. Like Nicola – but unlike Paul and Luke – his talk is more epistemic than rhetorical:

Interviewer Your wife said there’s some kind of pump or something.

George Well, I’ve dug a hole in the ground in there and I had a pump. Although if I could just keep enough water pumped out, it would... well, at times before it still looks as though it was on the brink of flooding in or not, so I... But that’s lower that end.

Interviewer Yeah.

George So I just dug a sump in the ground and had a pump.

As this quote shows, the vocabulary is consistently northern-European in etymology, indicating an everyday register and a lack of ostentation (see Crystal 1995 p48, 124); the breaks and unfinished sentences suggest a musing, meditative delivery and a lack of effort to impress the listener; and the colloquial employment of the adverb “just” plays down the importance of the action that is being described. Combined with the fact that George does not talk about his flood risk responses without being prompted, this suggests that he is not concerned to impress the listener with his practical skills. For him, his responses to threats to his home are neither something to be proud of, nor – where they have not been successful – anything to be ashamed of.

George’s capacity to protect his home, indeed, seems less important to his and his wife’s self-presentation than their endurance and resilience. Pride is expressed in the longevity of the respondents (who are both seventy years of age); of their marriage (fifty years); of

their residence in the same house (also fifty years); in the endurance of the house itself (which is 300 years old)⁹⁰, and in the couple’s survival of many personal traumas:

- Margery But during our fifty years we’ve been through a lot, haven’t we, sort of really – like burglaries, flooding...
- George Well, not, yeah...
- Margery We lost our son at a young age; I’ve been quite ill with different things; my son’s just had an accident. It’s part of life really. [*Pause*] We do accept things quite well, don’t we?

That this concept is important for George’s self-presentation is clear from the following two quotes.

- Interviewer Was [being flooded] upsetting for you though?
- Margery No.
- George Well, [*pause*] no, not really, you know. [*Laughs*] If it’s going to happen, it’s going to happen, isn’t it? We’re pretty philos... What’s the word? ‘Philosophical’.
- Interviewer Are you this relaxed about other things [than flooding]?
- Margery Such as?
- George Generally speaking I suppose, yeah.
- Interviewer Like risk of burglary.
- [*Respondents talk at once – not transcribed*]
- George What’s the word...? ‘Stoical’. That’s the word I’ve heard of late. ‘Stoical’, is it?
- Margery [Yes:] ‘Stoical’.

The two words with which George describes his and his wife’s feelings about the trials of life contrast strongly with the language he uses elsewhere in the interview. Both “philosophical” and “stoical” have a Greek etymology and “stoical”, in particular, is rarely used in everyday speech. In an interview that is generally distinguished by its simplicity of language, this seems significant. It suggests that these terms have been carefully selected, that they are heavily connoted, and that endurance is an important part of the couple’s self-presentation.

On the other hand, there are signs in the interview that ‘endurance’ is more important to Margery’s self-presentation than it is to that of George. George, it should be noted, uses the personal pronoun in the collective and not in the singular when he applies the label “philosophical”; and he qualifies the comment by starting the sentence with the modal

⁹⁰ which they describe as having “no foundation at all” and walls that are “just flint and chalk blocks”

term “well” and with a pause (suggesting hesitation). Margery, in contrast, responds with an immediate and firm “no” to the suggestion that she might have been upset by the flood. This pattern is repeated on other occasions. When asked elsewhere if they are upset by the flooding, Margery is unambiguous (“we’re not; no”), whereas George uses two modalising terms (“not **too** bothered **really**”). Similarly, it is Margery and not George who replies in the affirmative when the interviewer asks if they are “quite relaxed” about the flooding; it is George and not Margery who voices the preference not to be flooded; it is George who complains of the disadvantages of flood-resilience measures; and it is Margery who says “we do accept things quite well”, while George replies with the modal phrase, “well, to a point, I suppose”. In reality, then, there is more stoicism in Margery’s self-presentation than there is in that of George.

What does this difference between the husband and wife signify? Possibly, if he were being interviewed alone, George would employ the Pre-emptive Action Discourse. After all, judging from his claimed competence in home maintenance, it is likely to be George who replaced the carpets with tiling and fitted the flood-resilient kitchen; and we know that he installed the pump. What we seem to be witnessing here is George moderating his self-presentation in order to retain a common social identity with his wife – one in which the concept of endurance is more prominent than that of protective action. This mutes the use of the Technical Discourse. It may also – though we can only speculate on this question – reduce George’s propensity to take practical steps to mitigate the flood risk.

For George, therefore, as for the other residents described in this section, although the ability to use the Technical Discourse might be explained by their professional backgrounds, the motivation for using it appears to be related to questions of identity – family identity in George’s case; class identity in Paul’s case; individual identity in Nicola’s case, and gender identity in Luke’s case. In other words, adequate understanding and competence are not sufficient to guarantee a proactive response to flood risk. Even when people have the necessary knowledge and skill, their discursive response to flood risk – and perhaps also their behavioural response – is mediated by the social context that frames it.

9.2 Respondents who display little confidence in responding to flood risk

However, although this knowledge and skill does not fully determine flood risk response, it is undoubtedly important, for respondents who have no professional experience in fields conceptually related to flooding display less confidence when they talk about flood risk and mitigation. The following paragraphs discuss how such respondents construct their understanding of the origins of floods and how they approach the question of flood risk responses.

Passages from two of the focus groups in the study are used to illustrate this discussion. Interviews with individuals could also have been employed for this purpose, but group settings – because of their greater interactivity – are more revealing of the social nature of the representations, and therefore help highlight the contrast with the more technical representations used by Paul, Nicola, George and Luke (see previous section).

How representations of flooding are created

The first excerpt is from a group of four Camden residents from the higher occupational grades (A, B and C1⁹¹), who lived in the area at the time of the 2002 flooding:

- Tom [...] where there's a huge downpour; where you're collecting water from miles away and bringing it all down to the bottom of [road] – you can't win that one.
- James Yes, it's that huge accumulation of surface water.
- Tom Right. Because it wasn't sewage was it?
- James I think there must have been some, but in fact, when it settled there was a lot of fine sand.
- Tom Yes, yes.
- James Where that came from, I don't know. Certainly our garden was under some sort of water. I wasn't there, but you know [...] our rabbit was in an enclosure with the top on it [...] but the poor thing had its head wedged between the water and the top. [...] So that tells me that there was quite a lot of water in the garden.
- Vikki Apparently there's been trouble also because a lot of people are tarmacking over their driveways, aren't they, so there's less...
- Tom Yes, there's lots more run-off.
- Paul So it's not soaking all through...
- Tom But how did it get into your garden?
- Tom Because it wasn't just coming out of the sky.
- Vikki Well it was!
- James Well, it must have... well I wasn't there.

⁹¹ see Market Research Society (2002) for definitions of these grades

- Tom Not as much to drown a rabbit
Paul Not two foot
Vikki No that's true but...
James In a wet winter the garden – it's often quite soggy, you know. We've only got a postage stamp garden, but it's often really quite boggy even when it hasn't rained that much, so I suspect it's pretty moist, though I don't know where the water table is. It's presumably enough to tip the balance
Vikki There used to be cress fields. There's a history of cress fields in this area.
Paul Oh yeah, right.
Tom Rice paddies!
Vikki Watercress.
Tom Yes; growing watercress.

Tom initiates discussion of the causes of the flood by alluding to the funnelling of rainwater from a large catchment area into the street where the respondents live. This is asserted in language that is free of modalisation and without debate, suggesting that this aspect of the flooding forms a core, agreed, part of the group's social representation. This assertion is followed by some discussion of the content of the water, but no explanation is found for why the water might contain both sewage and sand, so this line of enquiry is abandoned. James then gives a new direction to the discussion by mentioning that back gardens get flooded even though the only flowing water is at the front of the houses. After a general discussion of this question and a brief diversion into the topic of rainfall run-off, the search for an explanation is satisfied when James remembers that his garden is often quite boggy and suggests that the water table is likely to be quite high in the area.

What happens next is particularly interesting. Vikki creates an association between the idea of the high water table and a very visual (and therefore vivid) image: that of the watercress farms that she claims used to exist in the area. Furthermore, James creates a second vivid association when he jokingly mentions "rice paddies" and Vikki and James consolidate the watercress image by their repetition of the word "watercress". The concept of the high water table as a cause of the flooding thereby becomes anchored in group members' social representations of flooding. The questions of run-off and of the content of the floodwaters, on the other hand, have neither been taken up by other group members nor associated with the kind of vivid images that we saw in the case of the water table. As a result, they are unlikely to have had any effect on the social representations.

What stands out most from this excerpt is the manner in which some pieces of information become more securely lodged in the social representation than others. Although increased run-off from built-up areas is discussed by Vikki, Paul and Tom, it becomes associated neither with any visible characteristic of the flood nor with any memorable symbol. James's information about water-table levels, on the other hand, has two vivid images associated with it – the flooding in the back gardens (emphasised by the image of the trapped rabbit, which is both highly visual and emotional) and the “cress fields” / “rice paddies”. The idea of a water table is equally abstract and technical to that of run-off, but having been firmly anchored in four interconnected and vivid images, it is more likely to form a lasting part of the group's shared understanding of local flooding.

The process I have just described contrasts sharply with the acquisition of knowledge in professional domains such as those inhabited by George, Luke, Nicola and Paul. Whereas expert representations are handed down methodically in the course of professional training and are augmented by the trial-and-error of real-life application, these lay representations appear to be based on anecdotal evidence and constructed in an *ad hoc* fashion.

A second illustration of this phenomenon is found in the Reading focus group of social tenants who had witnessed street flooding in their area two years previously. Once again, the topic is the cause of local flooding:

- Stuart [...] I remember one guy tried to explain it but he didn't make himself clear. He said it's coming from the source of Thames, where it had all drained off from the – I don't know if it was up in the Cotswolds or whatever – and then all the pressure comes down and they just couldn't handle it; all the drains couldn't take the pressure of the...
- Rob That makes sense of the cut-through then, if they have a cut-through, that makes sense to me then.
- Stuart Yes. So basically if they hadn't of done the cut-through, it wouldn't have come through.
- Jackie Aye.
- Nick It would have just carried on and bypassed...
- Jackie Aye, it would have bypassed, aye.

Using his dominant position in the group, Rob cuts across the expert explanation of the cause of the flooding with an entirely different suggestion of his own. Although he claims the expert explanation as authority for his own (“that makes sense of the cut-through

then”), neither the logic nor the verity of this assertion are tested in the way one would expect them to be in a professional setting. Instead, the other members of the group seem to accept Rob’s explanation uncritically.

It is likely that social identity plays a role here⁹². Not only does Rob seem to have adopted the role of group *prototype*, thus giving his argument particular sway, but Stuart’s explanation originates from a representative of one of the local authorities, which have elsewhere been represented as an out-group. The unanimous adherence to Rob’s proposal should be seen, therefore, as the result of a desire for in-group cohesion rather than as the result of a search for a ‘true’ explanation.

Once again, we can see how social representations of the causes of flooding are constructed in a manner entirely different to that seen in the professional sphere. For reasons of social identity, a lay representation is chosen over the more technical one provided (we are told) by an expert.

Representations of competence

Having considered how the majority of respondents understand flooding, we now go on to look at how they represent their competence to decide between the options for pre-emptive action. Even if they accept the notion of proactive measures, householders who have no professional experience of related issues seem uncertain about what measures would be effective.

Interviewer [...] why are you not going out there and finding things for yourselves and paying a bit more for them – but kind of, off your own initiative? Buying and sticking things on, or fixing things?

Christopher Yes

Joan Well I suppose because you don’t know necessarily what works. I mean there’s not, I don’t think, a great deal of information that ‘this brand does that, that brand does that’. I don’t even know what services make them. I mean I could probably find out, but...

Christopher That’s a fair point I think.

Craig Its hard enough buying double glazing (Joan: Yeah), where you all know how it happens, without having to go off and be ripped-off by someone who sells you plastic sandbags, or something which is – for all we know – a snake oil not going to do any good. Whereas if somebody came with a sort of recommendation or seal of approval to everything – ‘we

⁹² See the previous chapter for a presentation of the evidence for the importance of social identity in this group.

have tested these products, we know they've worked in other areas with similar problems' – then that would, you know... I would be more confident about shelling out however much it was.

The prospect of choosing an appropriate response is represented as a daunting one (“it’s hard enough buying double glazing”) and there is anxiety about making mistakes. How, members of the group ask, can they avoid taking measures that would not work and avoid being “ripped off” by unscrupulous vendors of ineffective products?

The issue for these respondents appears to be a lack of relevant skills and experience rather than any lack of latent ability or intellect. For example, as a medical radiologist, James would have a comparable level of technical expertise to Paul (the technician) and should be equally able to deal conceptually with technical aspects of flooding. However, he refrains from applying his own expert discourse to the problem of the flooding, legitimising this posture with the argument that he would lack the understanding necessary to apply any information that he could learn. Taking his own area of expertise as an example, he explains that:

I have people come to me who've been doing Internet searches and they are very up-to-date with a lot of stuff I've not even heard of or had time to read, but they are completely lacking in perspective. They don't actually have a clue in terms of background. And I would suspect if I did a Google search on [anti back-flow valves] I would be in [the same] kind of position.

James's argument might explain why so few of the more highly trained respondents in the sample adopt the Technical Discourse. Electronics and architecture are conceptually similar enough to flood-management to make associated skills transferable, whereas the professions of the other respondents – such as computer science, language teaching and research, record production and law – may be conceptually too different.

This can be described as an example of the operation of Bourdieu's (1977; 1990) theory of habitus, according to which people adjust their efforts according to the lessons of their own experience (see Lindbladh and Lyttkens 2002). Having more experience of the successful implementation of solutions to technically oriented, practical problems similar to those posed by flood risk, householders from professions such as farming and architecture will have a greater belief in their own potentialities to take action that mitigates that risk. On the other hand, perceiving that they lack the necessary skills

properly to assess the measures they know of, householders whose habitus does not give them confidence in this area look for local, external sources of expertise to compensate for their own perceived lack. For example, Vikki (TV producer; single; owner-occupier; flat with basement) tells that she followed the recommendation of her plumber; Tom (lecturer with school age children; house with basement) says that he took the advice of his builder, and Florence (house; near-miss experience; retired professional; living with extended family) says that she heeded the advice of her most “practical” neighbours.

One could conclude from this that householders who lack the direct and relevant experience of similar technical issues will only be able to make decisions about flood risk response if they are provided with expert advice. Such advice would reassure them that they had taken the best possible mitigation measure and – perhaps equally as important – that they themselves would not be to blame if that measure went wrong.

This explains the lack of statistical evidence for any association between education attainment levels and flood risk response, or social grade and flood risk response (see p25). Such broad demographic categories, this argument suggests, would inevitably fail to reflect the dimension of ability that is of most relevance to flood risk mitigation. For what is of most importance in this particular context seems not so much the level of educational achievement or the social status of a person’s occupation. Rather, it is the relevance of a person’s occupational skills to the *particular* challenge of finding a practical means of reducing flood risk. Education, this argument suggests, is not decisive in the question of whether or not people adopt mitigation measures.

9.3 A statistical test of the influence of education on mitigation adoption

This assertion finds further support in the statistical analysis conducted for this thesis. Logistic regression analyses performed on the RPA showed evidence of associations between education and simple, non-technical resilience measures⁹³ but not between

⁹³ Respondents were asked whether they had avoided buying expensive downstairs furniture or keeping irreplaceable or sentimentally valuable items on the ground floor of their homes. An evaluation of the effectiveness of these measures at reducing flood risk requires no technical expertise.

education and flood protection measures, whose evaluation requires abilities that are more technical⁹⁴.

Data from 325 at-risk homeowners and 863 flooded homeowners was available for the tests, which were conducted separately for at-risk owner-occupiers, at-risk tenants, owner-occupiers who had been flooded and tenants who had been flooded. The predictor variables used were 1/ whether the home had more than one floor 2/ the composition of the household 3/ the educational attainment of the respondent 4/ whether the respondent was worried about being flooded again and 5/ the number of years lived in the property. For those who had experienced a flood, the following predictor variables were also used: 6/ whether they had been flooded more than once 7/ whether they had incurred any net financial costs as a result of the worst flood 8/ whether any member of the household had been obliged to leave the home because of the flood 9/ whether any adult or child had suffered mental health consequences and 10/ whether they thought there had been sewage or other pollutants in the floodwater.

For at-risk homeowners (Table 12), the ‘postgraduate’ level of ‘qualifications’ was a significant predictor for the uptake of resilience measures, with postgraduates being five times as likely as those with no qualifications to live in households that had taken such measures.

⁹⁴ The installation of pumps or barriers, or improvements to property drainage.

Table 12 Results of logistic regression of un-flooded owner-occupiers onto ‘resilience measures taken’

		B	S.E.	Wald	df	Sig.	Exp(B)
Single floor home		-.970	.791	1.502	1	.220	.379
Household type	Single adult			4.896	5	.429	
	2+ adults and kids	.090	.492	.033	1	.855	1.094
	Over 65s only	-.229	.784	.085	1	.771	.796
	Over 75s only	-7.082	15.860	.199	1	.655	.001
	Single parent	-.267	.500	.284	1	.594	.766
	Other	1.045	.697	2.244	1	.134	2.842
Worried about future flooding		.012	.310	.001	1	.969	1.012
Highest formal qualification of respondent	None			7.943	4	.094	
	NVQ 1 / 2	.273	.494	.305	1	.581	1.314
	NVQ 3	.688	.497	1.918	1	.166	1.990
	NVQ 4	.508	.490	1.072	1	.300	1.661
	Postgraduate	1.660	.635	6.823	1	.009	5.257
Length of Residence	< one year			1.576	3	.665	
	1 to 2 years	-.009	.466	.000	1	.984	.991
	2 to 10 yrs	.666	.547	1.481	1	.224	1.947
	> 10 yrs	.498	45.579	.000	1	.991	1.645
Constant		-1.630	.572	8.112	1	.004	.196

Multicollinearity test For both analyses it was necessary to reduce multicollinearity to an acceptable level and in both cases two variables were removed from the analysis: the speed at which water-levels rose during the worst flood and whether the respondents believed the floodwater to have contained sewage or other pollutants. Neither of these variables was shown as significant when the analyses were run before they were excluded. After their exclusion, levels of multicollinearity were at acceptable levels. In the analysis of at-risk owner-occupiers, the maximum *condition index* was 9.91; the average *VIF* value was 1.11, and none of the *tolerance levels* was less than .20. In the analysis of flooded owner-occupiers, the maximum *condition index* was 11.15; the average *VIF* value was 1.10, and none of the *tolerance levels* was less than .20.

For owner-occupiers who have experience of flooding, the predictor variables that are significantly correlated with the adoption of resilience measures include two of the qualification levels (Table 13). Compared to those with no qualifications, flooded owner-occupiers with postgraduate degrees and those qualified to NVQ level 4 were approximately twice as likely to live in households that had taken resilience measures.

The importance of education is shown to be greater than that of any other significant factors, including the number of floods experienced and the impact of the worst of these floods on members of the household.

Table 13 Results of a logistic regression of flooded owner-occupiers onto ‘resilience measures taken’

		B	S.E.	Wald	df	Sig.	Exp(B)
Single floor home		-.534	.359	2.219	1	.136	.586
Household type	Single adult			9.857	5	.079	
	2+ adults and kids	-.078	.325	.057	1	.811	.925
	Over 65s only	.020	.347	.003	1	.953	1.021
	Over 75s only	.293	.364	.645	1	.422	1.340
	Single parent	.571	.278	4.220	1	.040	1.770
	Other	.495	.659	.563	1	.453	1.640
Worried about future flooding		.236	.189	1.552	1	.213	1.266
Highest formal qualification of respondent	None			7.089	4	.131	
	NVQ 1 / 2	.337	.239	1.986	1	.159	1.401
	NVQ 3	.303	.277	1.198	1	.274	1.354
	NVQ 4	.632	.270	5.469	1	.019	1.881
	Postgraduate	.710	.379	3.520	1	.061	2.034
Household member had to leave the home in worst flood		.324	.191	2.888	1	.089	1.383
Adult suffered mental health problems after worst flood		.534	.193	7.629	1	.006	.534
Child suffered mental health problems after worst flood		.937	.390	5.760	1	.016	.937
Net cost after insurance		.428	.183	5.480	1	.019	1.535
Experience of more than one flood		.906	.247	13.462	1	.000	2.475
Constant		-.921	.349	6.975	1	.008	.398

Multicollinearity test (See Table 12)

Although the analyses suggest a positive relationship between educational attainment and the probability of households taking resilience measures, it should be noted that only two resilience measures were recorded in the RPA survey – the avoidance of buying expensive downstairs furniture and the avoidance of keeping irreplaceable items in areas vulnerable to flooding – and that none of the more technical resilience measures were prompted for⁹⁵. This leaves open the possibility that implementation of more technical mitigation measures relies on expertise particular to that kind of measure rather than on educational levels more generally. Householders who have less confidence in their understanding of these matters and who are unable to use the Technical Discourse, it seems, are also less

⁹⁵ For example, the raising of electricity sockets or the use of flood resistant plaster (see Chapter 2).

likely to take any of the more technical mitigation measures, but may – especially if they are more highly educated – implement some of the more intuitive resilience measures.

9.4 Summary

The Technical Discourse appears to be employed only by those with a life experience that has equipped them with the modes of conceptual thinking, the terminology and the hands-on experience in related areas that enable them to speak about flood-protection and water-management with confidence.

Depending on their chosen forms of social identity and hence of self-presentation, such people can then use the discourse in various ways. Luke and Paul both use it to project particular images of themselves. Luke chooses to present himself as a super-typical male who copes better than other people do with challenges such as flood risk. Paul presents himself as a practical, solution-oriented member of the poorer, more established local community and contrasts this with a more “pretentious” and ostentatious professional class. George and Nicola make only a muted use of the Technical Discourse. Why? Perhaps, because they have less rhetorical use for it: George, because of his choice to share the social identity of ‘stoic’ with his wife; and Nicola, because too assertive a use of the discourse would be inconsistent with the image she projects of herself as calm, collected and wise.⁹⁶

Householders who do not come from a relevant occupational background, however, are likely to depend on representations of flooding and flood risk response constructed outside of the scientific paradigm. These constructions are dependent on the dynamics of social interaction rather than on expert discourses. For this reason, perhaps, they are less trusted than the more technical representations of people like George and Nicola and are therefore less likely to lead to mitigation.

⁹⁶ Both George and Nicola, it should be pointed out, also present themselves as more accepting of the dangers posed by flooding – George because of the discourse of endurance that he shares with his wife; Nicola because of the rewards that she says she gains in exchange (“this is a little piece of heaven [...] so you put up with anything”).

9.5 Summary of Chapters 7 to 9

In her seminal work on the cultural aspects of risk perception, Mary Douglas (1966; Douglas and Wildavsky 1982) claims that social organisations choose which dangers to emphasise, and that these choices are informed by a desire to reinforce their own identity and perpetuate their own survival. Chapters 7 and 8 have made a similar claim. Householders who share a group identity that is salient to flood risk situations, it has been argued, choose flood risk discourses that reinforce that identity and ensure their continued inclusion in the group. This has a number of consequences for flood risk response.

Firstly – as we saw in the previous chapter – because social identity tends to be resistant to change, members of groups that have not assimilated flood risk into their social identity will be reluctant to admit that their localities are permanently at risk. Secondly, if the discourse of pre-emptive action is seen to originate from an out-group, it is likely to be treated as a threat and will be countered. Thirdly, even if the discourse of pre-emptive action is not seen to originate from an out-group, it will nevertheless be rejected if it is perceived to be incompatible with the identity of the in-group. In all three cases, the desire to protect social identity causes the idea of pre-emptive action to be subjected to the strategies of de-legitimation and ridicule.

As well as constituting people's social identity, some of the discourses that de-legitimise pre-emptive action also have their own inherent rationality. Although the potential for flood-damage is universally recognised amongst the respondent group, floods can also be seen as opportunities for self-realisation, entertainment and escape from the mundane, over-socialised existence that characterises everyday life.

Finally, cutting across two of the discourses discussed here is the theme of perceived control. Within the Reactive Action Discourse, the flood situation itself is assumed to be controllable; as Lyng (1990) makes clear in his theory of edgework, risks are only taken for enjoyment if it is believed that the dangers involved can always be negotiated with safety. In the Technical Discourse, on the other hand, control is implied by the precision of the language and the extent of the understanding of flooding and flood protection; flood

risk mitigation is represented as something that is understood and that can therefore be controlled.

10. Flood risk and the search for ontological security

‘What *is* the matter?’ Alice said, as soon as there was a chance of making herself heard. ‘Have you pricked your finger?’

‘I haven’t pricked it *yet*,’ the Queen said, ‘but I soon shall – oh, oh, oh!’

(From *Alice through the looking glass*, by Lewis Carroll⁹⁷)

The previous five chapters of this thesis interrogated the interview and survey data regarding the discourses and social representations used by householders when they talk about flooding and flood risk response. Throughout these chapters, it was argued that the householders’ purpose in using these discourses and representations was to preserve their feeling of ontological security by denying the extent of the flood risk.

This assertion is looked at more carefully in this, the final analysis chapter. The chapter concludes the analysis section of this thesis by creating a typology of householders and the strategies they employ for protecting their ontological security against flooding, and by estimating the proportion of householders in flood risk areas who belong to each of the types.

10.1 Introduction

Why is it that some people employ particular representations of ‘nature’ and of ‘home’ and that some de-legitimise the idea of self-protection by using the Blame Discourse, the Luck Discourse and the Reaction Discourse? The answer offered in the previous chapters is that they do so in order to avoid anxiety; that unlike the White Queen in Lewis Carroll’s *Alice Through the Looking Glass*, they do not want to ‘live life backwards’ by anticipating the pain of events before they happen. Rather than acknowledging the physical dangers that threats such as flood risk pose, these householders seem to prefer to defend

⁹⁷ Taken from Gardner (1970) p249

themselves against the anxiety that they believe awareness of the risks would bring. The representations and discourses identified in the previous chapters are a form of defence against ontologically insecurity.

Not that this is true of all at-risk householders. Some respondents were so traumatised by floods they had experienced that they could no longer sustain the illusion of safety, while others had learnt from experience that they are able to feel ontologically secure in spite of the occasional flood. The majority, however, continued to represent ‘society’ and ‘nature’ in such a way as to make life appear inherently safe from floods, or else to represent themselves as capable of preventing floods from being destructive.

10.2 Reasons for prioritising ontological security over physical security

It can be argued that it is, in fact, instrumentally rational for householders to prioritise anxiety management over risk management. Long-term anxiety is clearly something to be avoided. It is not floods themselves that destroy ontological security and undermine mental health, but anxiety about repeated flooding and the feeling that the uninterrupted continuity of life can no longer be taken for granted. Not only does research suggest that anxiety reduces the capacity to deal with the challenges of life (see Chapter 3). It is also known to damage mental health and impair the function of the immune system (Martin 2003).

Empirical evidence for the relevance of this argument to flood risk is found in the RPA dataset. The RPA survey included a measure of how much people worried about potential future flooding. It also contained a number of questions from the much-used GHQ-12 questionnaire⁹⁸ about people’s emotional capacity to respond to the risk (Goldberg and Harrys 1988).

Tables 14, 15 and 16 show cross-tabulation analyses of the answers to these questions. These reveal strong, significant associations ($G > |.35|$) between expressed worry and self-evaluations of three capacities that are essential for the implementation of effective flood

risk mitigation: decision-making, self-confidence and confidence in the ability to overcome difficulties. This suggests that the more people worry about future flooding, the less capable they are of facing the problem and of taking preparatory action against it.

Table 14 Cross-tabulation of worry about flooding with confidence in overcoming difficulties

		How worried are you about the possibility of your property being flooded during the next 12 months?		
		Not worried / indifferent		Total
		Not worried / indifferent	Worried	
Recently, have you... felt you couldn't overcome your difficulties?	Not at all	194	162	356
	No more than usual	276	392	668
	Rather more than usual	55	154	209
	Much more than usual	8	39	47
	Total	533	747	1280

$\chi^2 = 63.19, df = 3, p < .0005, G = .40$

Table 15 Cross-tabulation of worry about flooding with 'capable of making decisions'

		How worried are you about the possibility of your property being flooded during the next 12 months?		
		Not worried / indifferent		Total
		Not worried / indifferent	Worried	
Recently, have you... felt capable of making decisions about things?	More so than usual	6	18	24
	Same as usual	24	84	108
	Less than usual	466	604	1070
	Much less than usual	39	33	72
	Total	535	739	1274

$\chi^2 = 25.62, df = 3, p < .0005, G = -.37$

⁹⁸ The series of questions known as GHQ-12 is a self-administered test designed to detect psychiatric disorders among respondents in non-psychiatric community settings. It has been widely used in the UK and for many years formed part of the Health Survey for England.

Table 16 Cross-tabulation of worry about flooding with ‘losing confidence in yourself’

		How worried are you about the possibility of your property being flooded during the next 12 months?		Total
		Not worried / indifferent	Worried	
Recently, have you... been losing confidence in yourself	Not at all	266	234	500
	No more than usual	227	377	604
	Rather more than usual	35	103	138
	Much more than usual	6	34	40
	Total	534	748	1282

$\chi^2 = 58.31, df = 3, p < .0005, G = .36$

Self-reports of the negative impacts of anxiety about flooding

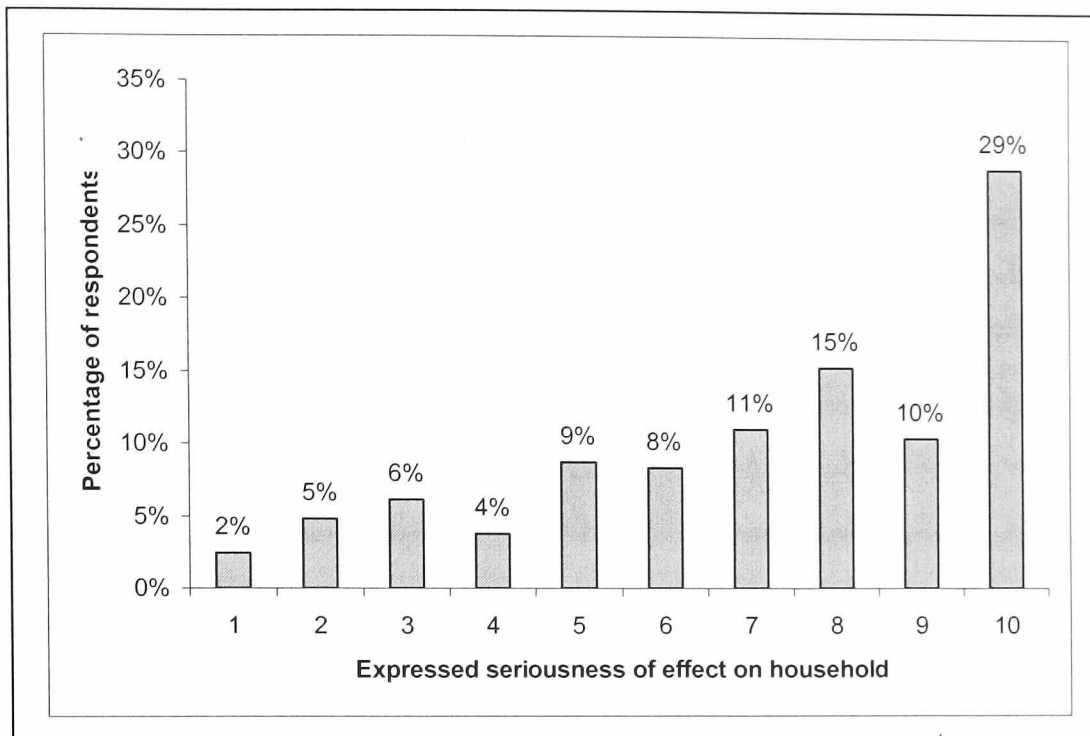
The RPA survey also asked respondents to rate the seriousness of the effects of “worrying about flooding in the future”:

This card shows a scale in which 1 indicates “no effect”, 10 indicates “extremely serious effect” and 11 indicates “does not apply” [...]. Using this scale, please rate the effects I am going to read to you of the flood upon your household’s life.
(RPA *et al* 2004: Annex 3, p16)

A simple analysis of the resulting data (Figure 14) shows that only 2% of respondents in the survey reported that “worrying about flooding” had no negative effect on the life of their household, while 29% claimed the effect had been “extremely serious” and almost three-quarters scored the effect in the top half of the rating scale (between 6 and 10).

This evidence shows that householders with experience of flooding believe that floods have a deleterious effect on mental health, on physical health, on the social equilibrium of the household and on the capacity of individuals to respond to life’s challenges. Anxiety-avoidance and the protection of ontological security can therefore be seen, from the perspective of flood victims, as appropriately adaptive in the face of long-term and enduring risks; and we can begin to understand the functionality of the prioritisation of emotional needs over physical needs.

Figure 13 Flood victims' estimations of the adverse effects of worrying about future flooding



10.3 Strategies for protecting ontological security against flood risk

It is not surprising, therefore, that people employ closely interwoven combinations of discourses and representations in order to take steps to protect their ontological security from the effects of anxiety about flooding. Furthermore, the rhetorical role played by these combinations of tactics in the interviews and focus groups suggests that, though not necessarily employed with conscious knowledge, they are intentional and purposeful and can be described as ‘strategies’.

Three such strategies can be identified from the analyses in the previous chapters and are described below. These, of course, are ideal-types. In reality, they do not exist in isolation but are interwoven with other representations and discourses. The first and second strategies (see below), for example, are sometimes used contemporaneously.

Nevertheless, it can be argued that three such notional strategies do seem to exist. People who represent their homes as safe-havens also tend to rely on representations of ‘nature’ as benign, on representations of ‘society’ as protective and on the corresponding discourses of Luck and Blame. This is the first strategy. In contrast, those who for whatever reason feel less secure in their homes tend to use the second strategy. Rather

than representing their homes as innately safe, they tend to represent *themselves* as the protectors of their homes and also, therefore, as the protectors of their own security. This strategy seemed to be associated more with what Goffman (1959) calls ‘front of stage’ behaviour than it is with the implementation of any pre-emptive measures and may have self-actualisation as its main rhetorical goal. Neither of these two strategies, therefore, are associated with the implementation of flood risk mitigation measures.

Only the third strategy seemed to be connected, in the interviews and groups, with action to prepare for flooding. This is the strategy of ‘stoicism’, which involves people accepting that floods might occur and that their homes are exposed to flood risk, and accepting that there is nothing they can do to entirely eliminate that risk. This strategy is often, though not always, associated with the Technical Discourse – the confident use of the technical terminology of flood risk and flood risk mitigation measures. Where none of these strategies are employed but householders are nonetheless aware that they are at risk, then, it has been suggested, the result is heightened anxiety and a loss of ontological security.

1. The strategy of representing ‘self’ as a competent protector

Three of the discourses identified in Chapter 6 to 9 indicate the use of competency self-images to protect ontological security. One of these is the Technical Discourse – the display of a technical understanding of flooding in order to represent the ‘self’ as competent at taking pre-emptive measures to protect his or her home – focuses on understanding what *causes* floods.

Two other discourses build competency self-images around *responding* to floods. In the Reactive Action Discourse, householders picture themselves as heroically combating floods when they occur and as effectively minimising the damage they cause. The Social Acceptability Discourse, meanwhile, achieves the same end by representing identity groups as capable of combating floods and then creating a close identification between the individual and the group.

An example of the Reactive Action Discourse is provided by Susan and Kate, who represented themselves as capable of carrying all their downstairs furniture to safety in the event of a flood. An illustration of the Social Acceptability Discourse is found in the focus

group with the island residents, in which the respondents attribute to their community – and therefore, by implication, to themselves – the qualities of stoicism, tenacity and pragmatism. None of these respondents represented their homes as innately safe; they seemed to rely instead on images of self-competency that pictured them neutralising the power of floods and thereby making their homes safe.

Consequences of the representation of ‘self’ as a competent protector

None of the three discourses used to represent the ‘self’ as a competent protector are associated with practical mitigation behaviour. This is because people who are trying to protect their self-competency images favour behaviours that will externalize failure and internalize success, and they eschew behaviours that will do the opposite. This phenomenon – which is known as *self-handicapping* (Jones and Berglas 1978; Higgins 1990) – leads more often to inaction than it does to action. People are harsher judges of action than they are of inaction (Fazio *et al* 1982), so where the effort involved is large and the anticipated likelihood of social feedback is high, inaction is seen as the option least likely to threaten perceived competence (Loomes and Sugden 1982; Zeelenberg *et al* 2002; Tykocinski and Pittman 1998; van Dijk *et al* 1999). Protective actions will therefore be eschewed if they involve the expenditure of a great deal of effort and are perceived as unreliable (see Baumeister 1997). Furthermore, because competency self-images are defined socially (Rhodewalt and Vohs 2005), action is also avoided if the failure of that action is thought particularly likely to attract social criticism

As with most defensive strategies, self-handicapping operates at the level of what Giddens (1991) calls *practical consciousness* and is unlikely to be spoken of directly by respondents. However, one particularly reflective respondent, Marcello (university lecturer; married with baby son; lives with wife and wife’s parents) reflects openly on the self-handicapping strategies he uses:

- Interviewer You were just talking about preparing for holidays – potentially getting everything safe when you go away...
- Marcello Mm, yes.
- Interviewer Is that something you’d actually want to do? You seem to think, ‘maybe not’...
- Marcello No, because then either you do it in a very systematic way... Because then you will always have the day, where you say, ‘well, this time I will not do anything’. Then flood will come! [Laughs] Then, you know, at that point, there is no point, you know, because either you are 100% behind that; every time you do it in a very organised way, or you...
- Interviewer You mean every time you go away?
- Marcello Yes, something like that, you know.

- Florence During the winter.
Marcello During the winter, you know, because then there's no point if you do that nine times and then the tenth, you say, 'well, this winter I don't bother, I'm late and missing the plane'. So you don't do it and then just at that time it happens; so at that point you think, 'well I have done all that for nothing!'
Interviewer So that would be worse than not doing it at all?
Marcello Yeah I think so.
Interviewer Why?
Florence Did you...?
Marcello Well, because at that point you have to make so much effort on that, and then you failed and, [laughs] what's the point? [Laughs] It's much better to forget about it, you know. Prepare and spend your time and energy on something else or something useful.

It is rare for respondents to be this explicit about their self-handicapping. Unlike most of the respondents, Marcello does not attempt to project himself as someone who engages in utility maximisation. Instead, he gives emotional justifications for his behaviour. Installing a measure but then not being protected by it would be worse emotionally, he says, than not having the mitigation measure available at all. Even if the chance of it failing were smaller than the chance of it succeeding, he maintains, the consequences of failure are a sufficient deterrent to action and it is “much better” not to install it.

In spite of Marcello's apparent openness, it is not immediately clear whether this passage points to an aversion to waste or to an avoidance of regret and self-handicapping. When he says, “at that point you think, ‘well I have done all that for nothing!’”, this could be interpreted either way. For two reasons, however, the latter explanation is more likely than the former. Firstly, Marcello's mother-in-law, Florence, elsewhere stresses technical competence and not technical achievement as a determinant of value (“I respect very much my neighbour next door, because erm, he's technically... I mean, he doesn't look after his house or his garden but as a person, he's sound, he's technical”). Secondly, there is the fact that Florence calls into question the competency of another neighbour because of that neighbour's supposed failure to maintain her floodgate (“It might probably be brittling away”). Marcello concurs with these opinions and joins in with Florence's mockery of their neighbour. It seems likely, therefore, that he expects to be judged by Florence on the same terms. An important self-concept is therefore at stake here for Marcello, and this – according to Self (1990) – is one indication of self-handicapping.

As well as being evident in the rhetoric of respondents such as Marcello, self-handicapping is implied whenever the Reactive Discourse is used. Action only threatens

images of self-competence if the alternative – inaction – is considered normal and less likely to attract censure (Zeelenberg *et al* 2002⁹⁹). Therefore, if flood risk mitigation were considered normal, it would be less prone to self-handicapping behaviour. This means that images of self-competence will be put at greater risk by the implementation of flood risk mitigation measures, which are a-normal, than by reactive responses to flooding, which are socially obligatory. The Reactive Discourse can therefore be seen as a form of self-handicapping and as a means of protecting competency self-images and the representation of life as essentially safe.

About a third of flooded householders show evidence of wanting to protect their competency self-images. In the FHRC dataset, 37% of respondents expressed agreement with the statement, “I don’t know what I could do to protect my home from flooding” ($N = 276$). Agreement with this statement can be interpreted in two ways. The first, naïve, interpretation is that these respondents are communicating a lack of the knowledge, information or understanding that would provide them with options on how to protect their home. The validity of this interpretation, however, is doubtful. The association of flood protection with sandbags is almost ubiquitous, so most householders know of at least one means of protecting their home. An alternative interpretation of this statistic would be to see agreement with the statement as rhetorical rather than literal. By blaming their lack of action on their own ignorance, it can be argued, respondents are avoiding suggestions of ineptness or irresponsibility in order to preserve their self-competency images.

2. The strategy of representing ‘home’ as safe

Not all householders, however, are willing or able to represent themselves as competent protectors of their homes. For those who are not, an alternative is to represent ‘home’ as not in need of any protection – in other words, as inherently safe.

One such respondent is Martha, a 35-year old married accountant originally from East Asia. According to Martha, representing ‘self’ as a competent protector is not always a

⁹⁹ Zeelenberg’s subject is in fact ‘regret’ and not ‘competence’. These, however, are closely linked, for feelings of regret will impact of perceptions on self-competence.

practical strategy for protecting ontological security. Under such circumstances, she suggests, to recognise the existence of the risk would be to invite anxiety:

I just think that uh, if it is something that you can't control and you can't do much about, then I wouldn't want to actually be... allow myself to be anxious about it, because it's something that you can't do.

This can also be seen in the interview with Kate (single mother; one young child; no flood experience) and Susan (lives with partner and young children; experience of street flooding):

- Susan I think also, the fact that on a day-to-day basis, erm, through various different components you have in your property, erm, overloading the power socket, cooking with gas, erm, leaving a chip pan on... The risk of having a fire in your property is far greater than having a flood.
- Interviewer You've almost had a flood. Have you almost had a fire?
- Susan No.
- Kate It depends what...
- Interviewer So the risks may be... maybe that's not actually...
- Kate No it's not, but it is... it's the way you see it, isn't it?
- Susan If I put a cigarette out and then put it in the bin...
- Kate There's lots of warnings. There's more stuff going on that you can see
- Susan It's on the telly.
- Kate ...that makes you think, 'right, ah, put that fag out; that can cause a fire! Oh God, look at that plug socket; that could cause a fire!' Not, 'look at that puddle; that could cause a flood.' It's not gonna happen!

Susan and Kate state that fire is a greater risk than flooding. However, although they themselves ascribe the difference in perception to the visibility of the risk factors (“There's lots of warnings. There's more stuff going on that you can see.”), their talk also points to the importance of *controllability* (“overloading the power socket”; “leaving the chip pan on”; “put that fag out”). In effect, they seem to be saying that the represented seriousness of a risk is positively associated with its controllability. In other words, they only acknowledge the existence of a risk to the extent that they feel they have control over it.

In order to represent ‘home’ as safe from flooding, not only do respondents either represent ‘nature’ as benign or ‘society’ as a competent protector (see Chapter 5), they also use the Blame Discourse (see Chapter 6). Implicit in the act of blaming others for an occurrence is the representation of that occurrence as preventable. If householders were to attribute flooding to their own behaviour this would either imply a failure of their own abilities, competencies or motivations (which would damage their self-image) or it would

imply that the situation was beyond control – both of which outcomes would undermine ontological security. Blaming it on someone else, on the other hand, leaves convenient, pre-existing representations of the situation unchallenged and makes it easier to preserve ontological security. In other words, the need to preserve ontological security creates what Niemeyer *et al* (2004: p4) describe as “an imperative to trust”¹⁰⁰ in the capacity of others to prevent floods from occurring.

The prevalence of this second strategy for dealing with flood risk is measured by two questions in the FHRC survey (N = 272). The survey questionnaire asks respondents to rate their agreement or disagreement with the statements, “I prefer not to think about scary things like floods” and “The Environment Agency should protect my home from future flooding”. Agreement with either of these statements can be taken to indicate an effort to represent ‘home’ as safe: in the former case, because it implies a preference for the representation of life overall as safe, and in the latter case, because it can be taken as evidence of the Blame Discourse. In the survey, 75% of respondents expressed agreement with one or both of these statements, indicating that about three quarters of flooded respondents react to the presence of a flood risk by attempting to represent their home as safe.

3. The strategy of stoicism - representing ‘self’ as resilient

The two strategies for dealing with flood risk that have so far been described represent floods either as very unlikely to occur or as controllable. The third strategy, *stoicism*, focuses instead on the endurance of the person facing the risk.

Stoics do not need to feel free from flood risk in order to feel secure, because they have a lower estimation of the emotional disturbance that flooding would cause them. Within this form of strategy, flooding and flood risk are normalised; they are integrated into the representation of every-day life and become redefined as threats to material security rather than as existential threats. As a result, householders using this response do not need to

¹⁰⁰ The argument is used by Niemeyer *et al* (2004) to explain people’s continued faith in the future kindness of the climate, in spite of the scientific evidence of the negative effects of climate change. Stehr (1997) makes a similar point.

employ the protective social representations employed in the other two strategies, nor the discourses of Blame, Luck or Reactive Action that support these representations.

In the qualitative sample, Nicola (Reading, retired architect, near-miss experiences), Margery (Reading, retired cleaner, several experiences of groundwater flooding), George (Margery's husband; retired farm-worker), Craig (Reading; 34 year-old software engineer; lives with partner; one near-miss experience) and Andy and Ivan (residents of the island on the Thames) employ this representation. In contrast to the other respondents, when they speak of flood risk they do not try to represent the threat as controllable or to represent themselves as able to neutralise the destructive effects of floods. Nor do they represent life as innately safe, blame flooding on others or attribute it to 'bad luck'. Rather, they assert that they "accept... quite well" that flooding and flood risk are a "part of life" (Margery); that they are "philosophical" about flooding and do not get upset about it (George); that they are not "scared" of flooding like other people are (Nicola), and that they are "tenacious" in the face of the risk (Andy).

For the stoics, flooding is integrated into a representation that depicts it as normal for life to include losses as well as gains. For Margery it is "part of life" and for Andy it is "a normal occurrence", whereas Jill, who still represents life as safe, feels the need to insist that it is "not normal, because it's only happened four or five times in the last 20 years".

Stoics are, therefore, able to describe the causes of flooding using the Technical Discourse and in an unemotional manner. The risk is not denied, but neither does it provoke anxiety; the use of the Technical Discourse strips the risk of its emotional aspects and reduces it to a quasi-scientific phenomenon. This, as the following excerpt from the focus group with Reading professionals illustrates, allows everyday life to go on.

- Craig [...] Um, I suppose you might say I'm old enough and long enough in the tooth to realise that a bit of wet carpet and a little bit of re-decorating, actually in the overall scheme of life, isn't that important. Um, and there are other things that are much more important. And therefore if it costs a couple of grand – even out of my own pocket – to replace a fridge, a freezer, some carpet and a bit of kitchen, which I might want to change anyway, the skirting board, you know, the electrics, it kind of, you know...
- Christopher You're hoping it will flood, really, aren't you! [*Laugh*]
- Craig You know, how incredibly important is that? You do weigh that up against the hassle of moving, the cost of moving, the fact that you like where you live and so on.

- Interviewer But yet there *is* worry. You *are* worried about water coming in. Even though, yes, on the one hand you're saying it's only possessions and it would only be, like, a bit of re-decorating; but on the other hand it is a cause of concern, isn't it?
- Craig Yes, but it doesn't fill my every waking moment.
- Joan No [*Laugh*].
- Craig And that's it; at the end of the day, it is a concern.

Craig, it is clear, does not want to present himself as worried about the flood risk. Although, as he says earlier, he has “witnessed the fear” of floodwaters about to enter his home, when the interviewer offers him the terms ‘concern’ and ‘worry’ to describe his feelings, the rhythm of the final sentence emphasises that he wants his current state to be seen as one of concern and not of worry (“And that’s it; at the end of the day, it is a concern”). Furthermore there is no sense in Craig’s talk that flooding threatens anything other than his material possessions; for he says of his home, “it’s not like it’s my pride and joy” and that it has “no particular sentimental value”. All of this implies a rational appraisal of the risk and not an emotional one – an interpretation that is supported by his use of the language of rationality (“weigh[ing] up”; “costs”; “hassles” and “facts”). In keeping with the other stoics in the sample, flood risk does not seem to undermine Craig’s ontological security. The “fear” that he experienced when the floodwaters seemed about to enter his home has not overflowed into his everyday life, so there is no long-term anxiety about possible future flooding.

To analyse the consequences of this strategy and to search for the predictors for its use, a derived variable, ‘stoicism’, was created in the FHRC dataset. .

This variable was derived from the answers given by respondents when they were asked to say how strongly they agreed or disagreed with the statements “I prefer not to think about scary things like floods” and “Flooding is unlikely to threaten my home again in the near future”. Agreement or neutrality on either of these statements was taken to rule out stoicism – in the case of the first statement, because stoics are defined (above) as people who do not represent life as innately safe, and who are therefore able to accept the existence of flood risk; in the second case, because stoics are defined as people who can accept that floods are not just a matter of ‘luck’ and that their residence in a floodplain makes it more likely that they will be flooded.

Logistic regression was then used to identify the predictors of ‘stoicism’. Data on speed of onset and degree of disruption were not included in this survey, but two other descriptors of the flood experience were available for the analysis: the number of floods experienced and whether the household had incurred any net expense (after insurance payments) as a result of the most recent flood. Two socio-demographic measures were also included. So too was data on whether any mitigation measures had been taken, because the analysis of the qualitative data predicts that these will be associated with stoicism. Data from 265 cases was available for this analysis, after the exclusion of 13 for which data was missing. Table 17 shows the results of this analysis.

Two predictor variables are shown as significant ($p < 0.1$): the experience of more than five floods and the implementation of one or more flood-protection measures. The predictive strength of the former is particularly notable, suggesting that the experience of numerous floods is an important predictor of stoicism.

Table 17 Results of logistic regression onto the dependent variable ‘stoicism’

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
								Lower	Upper
Household type	Single adult			5.840	5	.322			
	2+ adults and kids	.246	.631	.152	1	.697	1.279	.371	4.408
	Over 65s only	-.215	.649	.110	1	.740	.806	.226	2.879
	Over 75s only	-.992	.734	1.830	1	.176	.371	.088	1.561
	Single parent	-.020	.613	.001	1	.974	.980	.295	3.256
	Other	-.421	1.180	.127	1	.721	.656	.065	6.637
Excess costs incurred by most recent flood?	Yes	.405	.274	2.181	1	.140	1.499	.876	2.567
Number of times Flooded inside, under floor or in cellar or basement	0			17.806	4	.001			
	1	-.753	.527	2.040	1	.153	.471	.167	1.324
	2	.247	.639	.149	1	.700	1.280	.366	4.479
	3-5	-.501	.638	.616	1	.433	.606	.174	2.117
	More than 5	1.453	.758	3.675	1	.055	4.276	.968	18.886
Working class?	Yes	-.132	.283	.219	1	.640	.876	.503	1.526
Has taken some protection measure?	Yes	.558	.285	3.826	1	.050	1.747	.999	3.054
Has taken some resilience measure?	Yes	-.091	.481	.036	1	.850	.913	.356	2.344
Constant		-.166	.768	.047	1	.829	.847		

Multicollinearity test An ‘age’ variable was initially included, but had a deleterious effect on collinearity and so was removed¹⁰¹. The resulting average *VIF* value of 1.09 indicated some multi-collinearity, but the

¹⁰¹ $p > .1$, $B = .46$, $Exp(B) = 1.58$

maximum *condition index* (8.92) was at an acceptable level, suggesting that the raised *VIF* value could be overlooked. None of the *tolerance levels* was less than the minimum level of .20.

Only one predictor variable in the analysis reflects the degree of flood damage and flood-related disruption that respondents have experienced: the variable that records whether they incurred any net cost as a result of their most recent flood. When the *forced entry* regression method is used – as it was for the results in Table 17 – this variable is shown as not statistically significant. However, an alternative technique, *backward stepwise* regression, suggests that it might have some significance after all. Backward stepwise regression repeats the regression process until only statistically significant predictor variables are left in the model, removing the least significant variable at each iteration. This has the advantage of reducing the ‘background noise’ that can obscure the significance of some variables. When the backward stepwise method was used, the ‘net cost’ variable became significant as soon as the variable ‘household type’ was removed from the analysis¹⁰². Those who had incurred a cost were shown as being more likely to be stoical. This suggests that the influence of cost on stoicism is confounded by household type – i.e. that cost incurred and stoicism are associated for some types of household but not for others.

Stoicism, then, appears to be more common amongst people who have been flooded more than five times and who have implemented one or more flood protection measures; and, amongst certain household types, where a net cost has been incurred from previous floods.

Of these predictors, the one most supported by the evidence is experience of flooding. Not only was the experience of multiple floods a predictor in the statistical analysis, but all those respondents identified as stoics in the qualitative analysis had lived through numerous floods or (in the case of Craig) regularly witnessed the flooding of nearby areas. Experience, it seems, liberates people from the need to protect their ontological security behind particular social representations of ‘society’, ‘nature’ and ‘home’. Once it has become familiar through direct experience, flooding, this would suggest, holds less fear and flood risk response can become more rational and less emotional.

¹⁰² A chi-square test indicated confirmed that it household type was probably not correlated with stoicism ($\chi^2 = .1, df = 2, p > .9$) and would have played no significant part in the regression analysis.

4. When all the strategies fail - losing the sense of ontological security

Experience of flooding only seems to reduce anxiety, however, if this experience is not overly traumatic.

Rather than moving to the strategy of stoicism, respondents who are very traumatised by their experiences of flooding seem to lose their ontological security and enter an emotional crisis. Being unable, as a result of their experiences, to sustain the representations of ‘nature’, ‘society’, ‘home’ and ‘self’ that protected their ontological security, they fall into a state of insecurity characterised by anxiety.

Estimating the prevalence of the loss of ontological security

Unfortunately, the FHRC survey contains no indicator of ontological insecurity and so can give no indication of the proportion of flooded householders who use this strategy.

In the RPA survey, however, a series of questions designed to measure Post Traumatic Stress Disorder (PTSD) can be used as a proxy for the loss of ontological security. PTSD is indicated by the re-living of the traumatic event, a persistent numbing of general responsiveness and persistent symptoms of general arousal (e.g. irritability, difficulty sleeping and lack of concentration) (American Psychiatric Association 1994; cited in Joseph *et al* 1997).

At first inspection, the official definition of PTSD seems to exclude most of the floods experienced by respondents in this survey; for although flooding is included in the list of potential causes of PTSD (Green 1993), most UK floods – including most of those that might affect the respondents in the qualitative research for this study – do not threaten the “death or serious injury” that the definition demands (American Psychiatric Association 1994: p13). However, in his analysis of evidence from flood victims in St Louis, O’Brien (1998) argues that the severity of a flood might be a less important predictor of PTSD than the ‘upset’ caused by secondary events such as evacuation and illness. This suggests that the symptoms of PTSD can justifiably be taken as a proxy for the loss of ontological security.

PTSD was measured in the survey using a version of the Post Traumatic Stress Scale (Scott and Dua 1999) that had been adapted to relate specifically to issues connected with experience of household flooding (See Appendix K). Respondents were asked to report the frequency of seventeen trauma symptoms and “the degree to which” each of them “distresses, upsets or bothers” them¹⁰³. A PTSD score was then calculated by multiplying the reported frequency by the reported distress for each item and totalling the values across all seventeen items in the scale. This gave a score of between 0 and 272, with values of 148-209 indicating “high” levels of PTSD and values of 210-272 indicating “extreme” levels (Dua and Scott 2001). Two per cent of flooded individuals had ‘high’ or ‘extreme’ PTSD scores, indicating that one in fifty had lost their sense of ontological insecurity.

Evidence of loss of ontological security amongst the qualitative sample

In the qualitative sample, it was clear that the two householders who had experienced the most disruption from flooding had lost their sense of ontological security.

One of these respondents is Freddy, a single, 38 year old market trader who lives in a split-level council flat with the bedroom in the basement level. Freddy represents his flat as key to his ontological security. He describes it as the “first stable home” he has ever had during a life of much moving around; and after the focus group he takes the moderator aside and comments that he would “go crazy” if it were flooded again. This suggests not only a heavy dependency on ‘home’ as a place of safety and stability, but also a vulnerability to that representation.

Furthermore, Freddy appears not to be able to rely on any of the social representations that protect the safe image of ‘home’ for others. He conveys the impression that he has no faith in his own ability to mitigate the risk of a repeat occurrence of the flood; and although he blames the local authorities for the flooding, he does not seem to believe that they are morally capable of improving their behaviour (“the council wouldn’t even put down a bit of grit on the road if it snowed, never mind spend money on, er, er, er...”) and claims to rely on more remote arms of the state to put things right (“Sooner or later, one of

¹⁰³ The options offered respondents were “never”, “rarely”, “sometimes”, “often” and “always”.

the systems is going to realise what's going on. Some judge somewhere is going to notice this and is going to make them sort it out.”).

The second such respondent is Vikki, the 37 year old single professional who, like Freddy, has also been flooded and evacuated twice. Vikki seems even less capable than Freddy of representing ‘nature’ or ‘society’ in a way that protects her ontological security. As we saw in Chapter 5, she represents ‘nature’ as callous and destructive. In addition, after the failure of a collective local action against the local authority, she also despairs of receiving any help from the state. Unlike Freddy, having seen her ‘home’ stripped of all its homeliness (“what is a home [...] suddenly just becomes bricks and a ladder with not even a staircase”), she seems to have abandoned entirely the representation of her flat as a safe centre for her life and identity. Furthermore, she appears to have no faith in household-level mitigation measures and in her own ability to protect her home (“there’s nothing you can do”; “all the nuts and bolts and sandbags are not really... are not going to solve this”). The result is revealed in the following excerpt, in which Vikki represents herself as emotionally insecure:

- Interviewer How does it feel? This is a difficult question. How does it feel during the summer when you are aware that there could be flooding around? Some people have told me that there’s a kind of anxiety involved, a kind of...
- Vikki I get hysterical, absolutely hysterical. This last time when we didn’t get flooded I found I was getting really in a state about things. I was getting panicky and I was on the internet every single night looking at the weather forecast, and going into all the details, and then this flood warning thing you can look up as well; and it was ridiculous, I found myself doing it every single day and I was a nervous wreck, particularly when I was on holiday. My friends phoned up and we weren’t flooded, but it really affected me really badly. I mean, I get hysterical when it happens, I start shaking and I can’t speak, it’s almost like I’m in shock.

Both Freddy and Vikki have failed to adjust to the breakdown of the first two strategies for coping with flood risk. Unlike the ‘stoic’ respondents, their ontological security appears not to have recovered from the loss of the representations of ‘society’, ‘nature’ and ‘home’ that protected it. Having been forced, by their experiences, to accept that floods can happen at any time, they find themselves unable to rebuild an image of their life that includes continuity of identity and existence.

What is it that distinguishes those who fall into a state of ontological insecurity from those who manage to sustain a position of ontological security? Patterns in the qualitative data suggest that the severity of the flood experience might be one important influence –

particularly the speed at which floodwaters rise, perceived pollutant levels and the extent of the actual or potential damage and disruption. This hypothesis finds some support in an analysis of the RPA data by Tunstall *et al* (2006). They found that high PTSD scores amongst flooded householders correlated with the experience of evacuation, the depth of the flooding in the main rooms of the home, the time it took to get ‘back to normal’ and the perceived contamination of the floodwaters. Other significant factors identified by Tunstall *et al* were prior ill health and the extent of any difficulty with insurers or loss adjusters after the flood. Stress levels were also found to be higher amongst women, people living in single-storey homes and those aged less than 65. These factors can also be taken, therefore, as predictive of a loss of ontological insecurity.

In other words, although the experience of repeated flooding can lead to householders becoming more stoical, if that flooding is severe then it may also lead to post traumatic stress and the loss of ontological security.

10.4 The prevalence of the strategies

In earlier chapters, survey evidence was used to provide rough estimates the prevalence of the three strategies that householders employ to protect ontological security against flood risk. These approximations are shown in the Venn diagram in Figure 16¹⁰⁴.

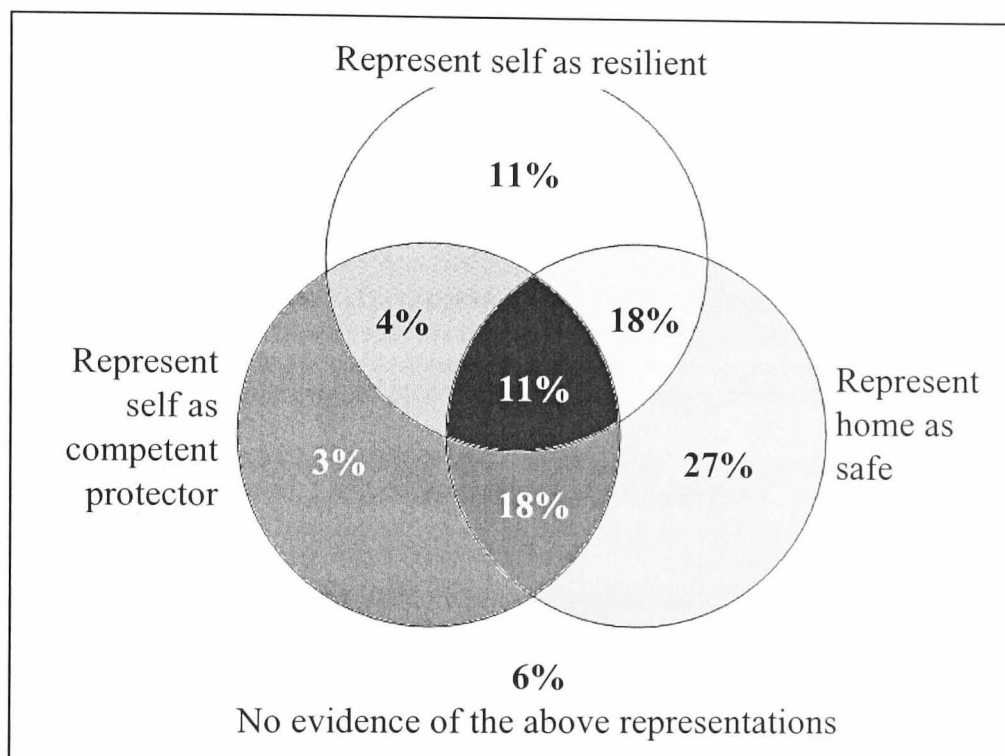
Each of the circles represents one of the strategies defences described in this chapter, and the figures represent the percentage of respondents in the FHRC survey ($N = 272$) who showed signs of using these response modes. The strategies are not mutually exclusive; respondents who indicate the use of more than one of them are shown in the overlapping areas. For example, 44% showed signs of stoicism, but some of these (4% of the total sample) also gave answers that indicate the strategy of representation of ‘self’ as a competent protector, others (18% of the total) indicated the ‘home is safe’ strategy defence and a further group (11% of the total) indicated all three strategies.

The designation of the 6% who indicated none of the three strategies is uncertain. Although it is possible that the absence of evidence for any of the three indicates the loss



¹⁰⁴ Because of the nature of the questionnaire design, these estimates apply only to households that have been flooded.

of ontological security, a weakness in the questionnaire design¹⁰⁵ rules out a test of this hypothesis. Given the earlier finding – from the RPA dataset – that only 2% of flooded householders show signs of Post Traumatic Stress Disorder, the figure of 6% appears rather high. It seems likely, therefore, either that some of these respondents use a fourth, unidentified, strategy or that a measurement error has occurred and some of them should rightfully be allocated to one of the existing three strategies.

Figure 14 Prevalence of the different strategies for protecting ontological security



10.5 Consequences of the strategies for mitigation behaviour

In earlier chapters it was shown how the representation of ‘home’ as safe or of ‘self’ as a competent protector (the first two strategies described in 10.3, above) can de-legitimise the discourse of Pre-Emptive Action. This being so, one would expect to see a difference in the take-up of mitigation measures between people responding in the various ways shown above. The data in Figure 15, which is taken from the FHRC dataset, addresses this question. It shows how, when compared to the average for the sample, the use of the responses may be associated with an increase  or decrease  in the percentage of respondents who implement resilience or protection measures.

¹⁰⁵ The question on levels of worry might have been an appropriate proxy for ontological insecurity had the middle response option in the Lickert scale not been ambiguously labelled.

Figure 15 indicates that people who represent themselves as resilient are most likely to take steps to mitigate flood risk, but only if they are not concerned to represent themselves as competent protectors of their homes – i.e. if they are willing to put at risk their self-images and do not engage in self-handicapping. Statistical analysis of the FHRC data confirms this conclusion by demonstrating that stoics are almost twice as likely as others to have implemented mitigation measures (Table 18) and that this increases to almost three times as likely for stoics who have less need to project themselves as competent (Table 19).

Figure 15 Consequences of the responses for flood risk mitigation

Difference (compared to the average) in the percentage of respondents implementing a resilience or protection measure

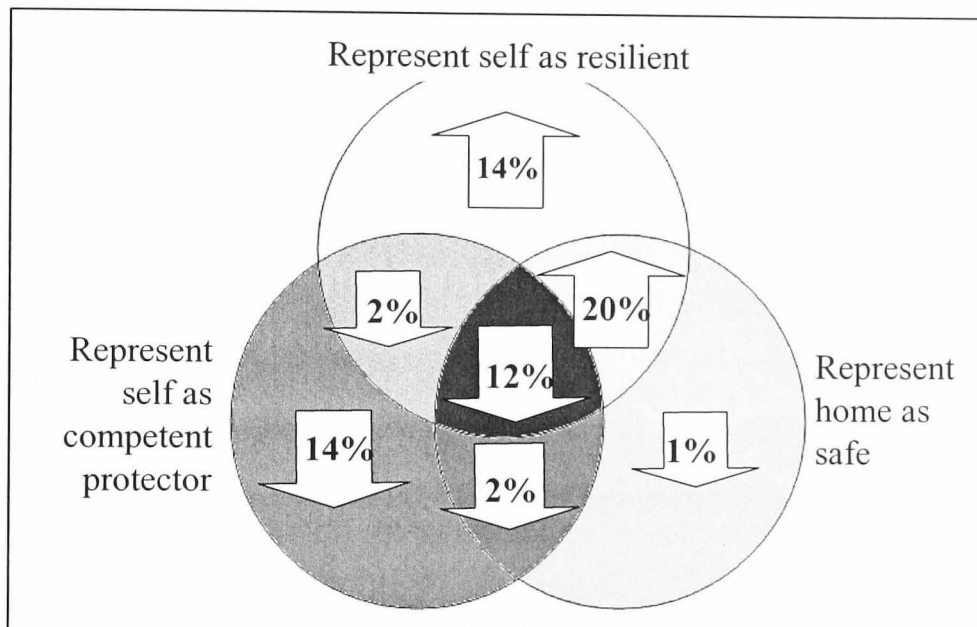


Table 18 Cross-tabulation of ‘stoicism’ with implementation of mitigation measures

		Mitigation measures implemented?		
		No	Yes	Total
Stoical?	No	90	61	151
	Yes	55	70	125
	Total	145	131	276

$\chi^2 = 6.07, df = 1, p = 0.014, \phi_{adj} = .22, OR = 1.88^{106}$
 (Data from the FHRC survey)

¹⁰⁶ This is the *odds ratio*, which is calculated by dividing the ratio of responses in one row of the table by the ratio of responses in the other. E.g. for table 23, *OR* of stoics compared to non-stoics is $(70 \div 55) / (61 \div 90)$, which gives the result of 1.88.

Table 19 Cross-tabulation of ‘self-effacing stoicism’ with implementation of mitigation measures

		Mitigation measures implemented?		
		No	Yes	Total
Stoical but not representing self as competent protector?	No	116	77	193
	Yes	28	54	82
	Total	144	131	275

$\chi^2 = 14.52, df = 1, p < 0.000, \phi_{adj} = .35, OR = 2.91$
(Data from the FHRC survey)

Loss of ontological security – implications for flood risk response

The one response type that is missing, so far, from the analysis in this section is the last of the four – the loss of ontological security. As indicated earlier, the loss of ontological security could only be identified in the RPA dataset and not in the FHRC dataset. As it was possible to calculate the other three response types from the FHRC dataset, this makes comparisons impossible between the fourth response type and the other three.

As mentioned earlier, its measurement is, however, possible in the RPA dataset by using the Post Traumatic Stress Disorder score as a proxy variable. This allows a test of whether people who lose their sense of ontological security are more or less likely to act against flood risk.

The theory developed in this thesis so far fails to predict the outcome of such a test, for it is ambivalent about the effect of PTSD on flood risk mitigation. On the one hand, people with high scores should be *more* likely to take mitigating action because high scores suggest the loss of the representations that de-legitimise the Pre-Emptive Action Discourse. On the other hand, they should also be *less* likely to do so because of the disabling effects of that anxiety on their capacity to implement measures.

The results of the statistical test (Table 20) reflect this ambivalence. They do not reveal any statistically significant association between PTSD and the implementation of mitigation measures ($\chi^2 = 1.28, df = 1, p = .43$).

Table 20 Cross-tabulation of PTSD scores with implementation of mitigation measures¹⁰⁷

		Resilience or protection measures implemented?		
		No	Yes	Total
Post Traumatic Stress Disorder scores	High/extreme (140+)	15 (94%)	1 (6%)	16
	Medium (10-140)	288 (82%)	61 (18%)	349
	Low (1-9)	221 (80%)	56 (20%)	277
	Zero (0)	103 (86%)	17 (14%)	120
	Total	627	135	762

Data from the RPA survey – respondents with flood experience only

People who feel particularly anxious about flooding, this analysis suggests, are neither more nor less likely than others are to implement flood risk mitigation measures. Anxiety may shatter people’s illusions about the safety of their homes, but if it simultaneously undermines their ability to face the challenge of deciding which measure to implement, then it is unlikely to increase the level of mitigation.

10.6 Summary

The failure to find any association between high PTSD scores and flood risk mitigation supports one of the central hypotheses outlined at the start of this chapter – that worry only leads to risk mitigation when the threat is imminent and the latent energy in the worry can immediately be harnessed to practical action; and that anxiety about flooding does not generate risk mitigation behaviour. In situations of day-to-day flood risk where the threat is long-term and there is uncertainty about what can be done to reduce it, raised anxiety undermines psychological health and reduces capacity for self-protection.

In situations of long-term flood risk, therefore, the protection of ontological security is instrumentally rational – even when it results in a reduced propensity to take physical mitigation measures. Blaming others for flood risk, representing nature as benign and protecting images of self-competence can all diminish the likelihood of taking flood

¹⁰⁷ In this survey, only three measures were included that fall under this heading: “keep sandbags in the property”, “purchase water pumps” and “avoid buying expensive downstairs furnishings”.

protection and resilience measures, but they are nevertheless rationally appropriate strategies because they protect people's sense of their own continuity and identity.

It appears that long-term, proactive mitigation measures are mainly taken by people who represent themselves as stoical. Such people, it seems, are less easily deterred by the risk of being blamed if measures are judged as having failed or as being superfluous; and they seem more capable of acknowledging the flood risk without undermining their sense of ontological security.

Stoicism is harder to sustain if the threat itself is more keenly felt – i.e. where the depth of flooding is greater, floods occur more quickly, or householders perceive water to be more polluted. Survey evidence suggests that less than a third of flooded householders might fall into this category.

The acceptance of flood risk as the 'normal' state of affairs involves the rejection of the more comforting representations of the world in which nature and society provide protective layers around the individual and his or her household. Such 'core' representations, as the proponents of social representations theory argue, are themselves protected by a whole myriad of outer representations that absorb the buffeting of most every-day events and contradictory messages. Little wonder then that the only factor found to correlate with stoicism was the experience of repeated flooding. It seems to take not only one shock, but several, to weaken these representations.

11. Conclusions and policy implications

As the summer 2007 floods have once again shown, most UK households in at-risk areas are not prepared for floods. This thesis offers a new explanation for this phenomenon: anxiety avoidance. Most householders, it argues, only take action to protect themselves and their homes if they feel confident that such action will not increase their anxiety. If this thesis is correct, then for household level mitigation to increase, easier, more reliable and less stigmatising ways need to be found by which people can increase the resilience and protection of their homes.

11.1 Critical reflections on the methodology used

Before reviewing the conclusions of this thesis, however, it is worth reflecting on the research methodology and considering how the design of the investigation might have influenced the findings. It is also worth asking what lessons have been learned from the process of the research, and how future investigations into the same questions might be improved.

The style of interview facilitation

A key issue for consideration is that of the appropriateness of the main data collection method employed in the study: the semi-structured interview. Although a widely used and respected technique in the social sciences, the semi-structured interview has disadvantages as well as advantages when compared with the unstructured interview. Its main disadvantage is that it increases the risk that respondents' comments will be influenced by the interviewer's own agenda for the interview and by his own views on what do and do not constitute normal attitudes and forms of behaviour. Even if the interviewer tries to remain objective, he will inevitably reveal something of his own beliefs in the way he frames questions and in his choice of what elements of the conversation to follow up. Although these influences can, to some extent, be accounted for within a careful discourse analysis, this is itself a difficult and time-consuming affair. It can, therefore, be argued that the influence of the interviewer on the interview ought always to be minimised.

Might a less structured interview format have yielded more valid results? It can be argued that it might, for in this style of interview the interviewer's own oral contributions are kept to a minimum and so too, therefore, is reactivity. On the other hand, talk is always socially located, and it can also be argued that this approach merely conceals the influence of the interviewer and thereby reduces the accountability of the research without improving its objectivity or validity. Whereas interview transcripts of semi-structured interviews record the interviewer's words, they contain no record of non-verbal influences on the respondent, such as the interviewer's posture and facial expressions. In other words, although in non-structured interviews the interviewer seems not to have such a great influence on the respondent, this impression can be deceptive. Whereas in the semi-structured interview the interviewer's words will give some indication of what bias he is introducing into the situation, the absence of any record of his influence on the unstructured interview makes it harder to take that influence into account during analysis.

A second problem with the unstructured approach is that, being less directive, it is also less able to focus the interview on the themes of interest to the researcher. In this investigation this would have been a particularly severe problem. The topic of this research was property level measures to reduce flood risk. Respondents, however, were not naturally inclined to linger on this topic. Those who had experienced floods tended to want to talk about the floods and their aftermath rather than about mitigation measures, and those who had not experienced flooding were reluctant to talk about the topic at all. Although this is itself an important phenomenon and forms part of the explanation of flood risk response amongst householders, only by guiding respondents toward the topic of flood risk mitigation measures could access be provided to some of the key representations that underlie this phenomenon and that are the deeper drivers of flood risk response.

Although it is imperfect, therefore, the semi-structured approach was perhaps the best approach for the type of research questions being posed.

The presentation of the analysis of the qualitative data

The qualitative data and its analysis have been presented in this thesis under thematic headings, with evidence from individual respondents being marshalled under the banner

of each particular point being made. Such a presentation format can seem to suggest that it is valid, in a qualitative analysis, to disaggregate the individual parts of respondents' conversations and treat them as separate and self-contained pieces of data. No such suggestion is intended here. Although the thematic structure that was chosen for the thesis necessitated breaking up evidence from individual respondents for the purpose of presentational clarity, it is important to note that in the analysis itself each utterance was analysed in the context of the full interview text.

More emphasis could have been placed, in the text of the thesis, on the patternings of the various representations and discourses – on the question, for example, of whether the representation of 'home' as a place of safety tended to be coincident with the representation of 'nature' as benign. This, however, would have been to misconstrue the nature of analysis performed in this thesis. The distribution of certain combinations of representations or discourses is less important, in this kind of analysis, than the rhetorical aims that these representations and discourses are being used to achieve.

The production and use of the quantitative data

A third key part of the methodology of this thesis that is open to criticism is the use of survey data and, in particular, of survey data that was not generated specifically for the purpose of this research.

Just as the interpretation of language introduces an element of subjectivity into the analysis of data from unstructured or semi-structured interactions with respondents, so too does the interpretation of the meaning of survey questions. This caused difficulties in the analyses presented in this thesis and sometimes calls into question the validity of the interpretations that have been made. For example, the question "I don't know what I could do to protect my home from flooding" is interpreted in this thesis as a comment on the person's perceived capacity to implement measures (an assumed emphasis on "could do") rather than as a comment on the person's knowledge of what measures were theoretically possible (an emphasis on "know") (see the beginning of Chapter 9). Both of these interpretations are valid, however, and it is possible that some respondents will have understood the statement in one way and some in the other. Careful cognitive testing of the question followed by an adjustment of the wording might have eliminated some of this

interpretative difficulty. However, the fundamental problem lies with the method and not with the phrasing of individual prompts, for the survey format provides neither the respondent nor the analyst with the discursive context that, in normal conversation, plays the greatest part in reducing the ambiguity of speech.

A further problem with secondary analysis of survey data, as mentioned in Chapter 4, is the fact that the survey questions will not have been designed for the questions that the analyst is trying to answer and are less likely to be able to address these questions as well as purpose made questions would do. This caused particular difficulties whenever the analysis attempted to identify which survey respondents used the different discourses that were identified in the qualitative analysis. It is difficult for a survey to supply such identifications with any great accuracy. For example, the association of the Blame Discourse with agreement with the statement, “The Environment Agency should protect my home from future flooding” (p119) is perhaps a little questionable. Had the survey been designed specifically for use in this thesis then a more valid statement could have been used to identify the presence of the discourse – for example, “It is the Government’s fault if this area floods”.

Although the lack, in this study, of any such specially designed survey is open to criticism, the aims of this research would not have justified the time and resources that a new, tailor-made survey would have required. In order to achieve not only question validity but also statistical reliability, any such survey would have had to include a sample of several hundred respondents. Not only would the costs of such a survey have been prohibitive but, more importantly, its organisation would have distracted the researcher from the qualitative element of the research, which, it has been argued (see Chapter 4), is the most appropriate method of addressing the core research questions. After all, the main aim of the survey analysis was to suggest alternative explanations and additional routes of enquiry, and not to prove or quantify the findings from the qualitative part of the study.

Although the quantitative component of this thesis is imperfect, therefore, it is appropriate for the task for which it is employed: namely to triangulate the findings of the qualitative research, to improve the reflexivity of the analytical process and to suggest further avenues of future investigation. The conduct of an entirely new survey would either have

consumed all of the resources allocated to this thesis or, had the survey been more modest in size and scope, would have failed to achieve the number of cases necessary to produce statistically reliable findings.

11.2 Understanding householder responses to flood risk

People use various strategies to deal with risky situations. This research suggests that one of these ways is to try to represent the risk in such a way as to reduce its impact on their feelings of security. This conclusion has been drawn from analyses of the ways in which residents of flood risk areas talk about the risk with each other and with an interviewer.

Of course, just as people's talk does not necessarily give insights into their 'true' thoughts (see the discussion on p56, Chapter 4), neither can it be assumed that it explains past behaviour (see, for example, the footnote on p175). The argument in this thesis, however, relies on the assumption that there is some kind of connection between talk and thoughts and talk and action. The way we actively (in our talk) represent flood risk and the rhetorical tactics that we employ will, it assumes, influence and be influenced by the way we think about that risk and the way we respond to it.

This lack of immediate transparency in people's talk is particularly relevant with regard to topics such as flood risk, which can provoke feelings of insecurity. If, as Freud and others have suggested, people prefer to suppress such feelings, then they are more likely to be revealed in the structure and pragmatic content of talk than they are by its immediate semantic meaning.

In this research, the structural and pragmatic content of the interviews was investigated using a technique of linguistically oriented discourse analysis in combination with two analytical tools from social psychology (social identity theory and social representations theory). Together with a sampling strategy that included both at-risk and flooded householders, this research design led the thesis into territory that had previously been little explored.

Therefore, although the assumption of an association between the way people talk and the way they act qualifies the policy relevance of the findings of this thesis, it does not challenge the appropriateness of the method for the given aim of the research, which was to find new ways of understanding a phenomenon that continues to puzzle both academics and policy makers. Furthermore, as was argued in Chapter 4, and earlier in this chapter, although the method employed is imperfect, it nonetheless offers insights that other approaches cannot.

11.3 Anxiety and the desire for ontological security

For most householders, the thesis concluded, the response to flood risk is governed more by a desire to manage anxiety than it is by thoughts of material security.

This is far from an irrational response. Although anxiety about short-term threats improves coping capacities, flood risk is a long-term threat to which some householders see no solution. In such a situation, anxiety undermines ontological security, threatens mental health and actually reduces the capacity to deal with the existence of the risk.

Unfortunately, however, some of the strategies that householders employ to reduce that anxiety also de-legitimise the notion of household-level flood risk mitigation. As a result, although people who employ these strategies may feel less anxious, they are also less likely to take practical steps to mitigate the risk to which they are exposed.

11.4 Three householder strategies for protecting ontological security

Three such strategies for managing anxiety about flood risk were identified in this research (Figure 16).

Figure 16 Strategies, representations and discourses that serve to protect ontological security

Strategies for protecting sense of ontological security (Chapter 9)	Representations underpinning these strategies (Chapter 5)	Discourses that protect these representations (Chapters 6 to 9)
1. Represent floods as unlikely to happen	‘Nature is benign’	Luck
	‘Society will protect me’ – by preventing floods from happening	Blame
2. Represent the impact of flooding as controllable	‘Society will protect me’ – by limiting flood-damage and providing compensation	Blame
	‘I can prevent the destruction when there is a flood’	Reactive Action Technical
3. Represent yourself as able to survive floods, even if they cannot be controlled	‘I can survive the destruction that floods bring’	Stoicism Technical

The first of these strategies is to represent floods as highly unlikely to occur (or reoccur). Within this strategy, either ‘nature’ is represented as benign or ‘society’ is depicted as duty bound to stop floods from occurring – and as capable of doing so. This strategy, therefore, is dominated by either the Luck Discourse or the Blame Discourse. Householders who use this strategy are less anxious about flooding because they believe that if it does occur, it will be due to either bad luck or the incompetence of the state. It will be represented neither as the householder’s ‘fault’ nor as likely to happen again; because ‘bad luck’ is unlikely to be repeated and society, if it is at fault, is likely to learn from its mistakes.

The second strategy is to admit that floods can happen, but to represent their effects as controllable. In this strategy, either society is represented as acting to minimise the loss and disruption or individuals represent themselves as capable of doing so and as gaining in self-esteem when they do. The latter aspect of this strategy is one of the more surprising

findings of this research; for although, in the literature, the thrill of experiencing a flood has been taken to explain voluntary risk *during* floods (Wilson 2006), the implications for flood risk response of the *anticipated* thrill of a flood have not previously been identified.

Finally, there is the strategy of *stoicism*. Stoics represent themselves as survivors. Rather than depending for their security on the improbability of floods or the possibility of reactive damage reduction, they rely on their own ability to survive whatever the floods may bring. This strategy tends to be adopted by people who are able to understand flooding and flood risk mitigation from the technical perspective. Its use also seems to be restricted to people who have been flooded several times, but without being unduly traumatised by the experience.

11.5 A typology of the at-risk population

Recognition of these response types and of the importance of anxiety management allowed the construction of a typology of householders and how they respond to flood risk.

The first and largest of the categories in this typology consists of householders who preserve their sense of ontological security by representing their homes as safe. This includes both of the first two strategies shown in Figure 16. Between 48% and 83% of flooded householders probably fall into this category (see Figure 16).

Anxiety management is less of an issue for householders in the second category, who represent themselves as able to survive floods and flood damage. It therefore presents less of a barrier to their adopting mitigation measures. These householders, the *stoics*, probably represent between 11% and 44% of the total number of those with flood experience (see Figure 16). Typically, stoics are likely to have been flooded several times. They are also likely to come from professional backgrounds that have familiarised them with the kind of challenges posed by flood risk mitigation – for example, architecture, farming and engineering. Stoics are most able to benefit from information about likely flood characteristics and the options for mitigation, because they are most able to process and apply such information and to not feel anxious about doing so.

The third group consists of those householders who have been so traumatised by flooding that they have lost their sense of ontological security. According to Tunstall *et al* (2006), people are more likely to fall into this category if they have been evacuated from their home during a flood; if the flooding in their home was deep; if they were worried about contamination in the floodwater, or if it took a long time for them to ‘get back to normal’ after the floodwater retreated. People in this category are more likely than those in the other categories to be women; to be in ill-health; to be living in single storey homes, and to be aged less than 65 (*ibid*). Approximately 2% of flooded householders appear to be of this type¹⁰⁸. These householders are unlikely to be content with amelioration of the flood risk situation. They tend, therefore, to be particularly resistant to suggestions of household level mitigation measures and to be the most fervent supporters of structural flood defence measures that, they hope, would stop flooding from occurring at all.

Estimates of the distribution of the at-risk population across the three categories in the typology could only be made for householders who had been flooded and not for those without any flood experience. However, as all of the respondents in the qualitative sample who had *not* been flooded employed the first and second strategies outlined in Chapter 10 (see 10.3), it is likely that this is reflective of the majority of at-risk householders in the population as a whole.

11.6 Risk communication should not be about communicating risk

It is important for policy makers to be aware of the different strategies that householders employ for dealing with flood risk. Not only, as Petts *et al* (2001 p96) assert, must they learn to understand the lay public’s rationalities; they must also learn to distinguish between the superficial rationality of people’s talk and the deeper pragmatic purposes served by that talk. Only then can they attain that essential facet of successful risk communication – what Faulkner *et al* (2007) call “a realistic theory of the receptor” (2007 p3).

¹⁰⁸ See part 4 of Section 10.4. above.

The identification of the anxiety management strategies by this research has clear implications, therefore, for risk communication. It suggests that if risk communication is to promote risk mitigation, then for the majority of householders it should be less about creating an accurate perception of the risk and more about enabling people to feel that they can take measures to protect their homes without exacerbating their anxieties about flooding.

Risk communication needs to ‘scratch where people itch’ – it should be based on what people “want to know” and not on what the communicators feel they want to tell them (Petts *et al* 2001 p96). The nature of householders’ wants and needs can be hidden from householders themselves, so it is important that researchers and policy makers do not accept at face value what householders tell them. In spite of forming the dominant discourses amongst at-risk householders, the questions of blame, probability and understanding do not describe the true field of their needs. Rather, it appears that what they need to know is how to reduce their anxiety about flooding so that they can feel more secure. Only when they have had this need met will householders begin to tackle the question of risk mitigation.

The temptation, when faced with the social representations employed by householders, is to try to persuade them that they are erroneous and that they should be abandoned – that flooding is not just a matter of luck, but also of probability; that society is not necessarily at fault when there is a flood, and that nature can, indeed, be immensely destructive. The analysis in this thesis, however, suggests that many householders do not hear these messages – because they do not want to hear them. This is because the representations in question are what social representations theory describes as *core* representations and are defended vigorously by culturally embedded discourses such as the Blame Discourse, the Luck Discourse and the Reactive Action Discourse. As a result, external messages that contradict and threaten these representations will normally be repelled.

For householders to accept changes to their representations of nature, society and self would be to resign their sense of ontological security, to risk marginalisation from the in-group where these representations are the norm and to jeopardise their mental health. Any attempt to make them do so, therefore, is likely to meet resistance and to result in the

entrenchment of these representations and discourses and in the reinforcement of in-group / out-group distinctions. Policy-makers therefore need to avoid direct confrontation of these representations and their associated discourses.

11.7 Anxiety management is a barrier to public involvement in flood risk management

Householders' use of these strategies also has implications for the process of public consultation and involvement in flood risk management. Until policy makers learn to understand the importance of anxiety management for householder responses to flood risk, the contemporary aim of making risk communication a process of 'partnership' (Fischhoff 1998) or 'constructive dialogue' (Löfstedt and Frewer 1998) is likely to remain beyond reach, and calls for public participation in flood risk management (e.g. Tapsell *et al* 2006; European Union 2003) will lead to little more than symbolic success.

The anxiety management strategies employed by householders often work in a contradictory direction to the flood risk management strategies of experts and officials. Neither 'constructive dialogue' nor 'partnership' can easily be achieved where the strategies employed by one side seem less than rational to the other side and where any direct challenge to these strategies is likely to be seen as a challenge to social identity.

11.8 Barriers to household-level flood risk mitigation

Most householders in flood risk areas, this research suggests, are more concerned to manage their anxiety than they are to manage the material risk to themselves and their homes. Communication with the public, therefore, needs first to reassure before it begins to inform.

People will only begin to accept and engage with flood risk either when their anxiety-minimising representations of 'nature', 'society' and 'self' are broken down by experiences of repeated flooding or when they have been able to resolve the emotional aspects of the risk. In other words, if experience of flooding is not to be the only catalyst of change, householders need to become convinced that the anxiety involved in taking mitigation measures is less than that associated with inaction.

This research shows that there are a number of reasons why flood risk mitigation measures can exacerbate anxiety rather than reduce it:

1. First, the variety of ways in which flooding occurs makes the mitigation of flood risk more complex and more anxiety provoking for householders. A home can be flooded through its airbricks, through the gaps around doorframes, through its floors and through its drains, through doors and windows or by water soaking through the brickwork (see Figure 2, Chapter 2). As a result, no single type of flood mitigation measure offers either phenomenological or actual protection against flooding.

Flood risk, therefore, poses a very different challenge to that posed by many other risk situations. For example, smoke alarms and seatbelts – phenomenologically, if not necessarily in reality – seem to provide an appropriate defence against *all* household fires and against *all* types of car accident. The lack of such a phenomenologically ‘total’ solution to flood risk makes mitigation behaviour especially difficult.

2. A second reason why flood risk mitigation measures sometimes increase anxiety is the representation of water as ‘unstoppable’. Unlike seatbelts, which ‘stop’ you from being thrown from your car, and unlike smoke alarms, which, by alerting you to the presence of a fire, give you the opportunity to ‘stop’ – i.e. extinguish – it, flood risk measures only mitigate the damage and cannot ‘stop’ it from occurring. Most barrier measures can only slow the ingress of water and resilience measures can only limit the scope of the damage and hasten recovery. Such partial benefits – as Kahneman and Tversky (1979) have shown – are valued far less than absolute benefits, such as those that seem to be offered by seatbelts or smoke alarms. As one respondent¹⁰⁹ puts it, “you panic more [...] You feel safe but then when suddenly it’s not working properly [...] it] makes you more anxious about [it] and more worried as well.”

¹⁰⁹ Marcello (university lecturer; married with baby son; lives with wife and wife’s parents)

3. A third contributory factor is householders' sense that they would not know which of the available mitigation measures would be the most effective for their circumstances; that they might make the wrong choice and look ridiculous, or that they might be "ripped off" by unscrupulous vendors of flood risk protection.

These factors shroud flood risk mitigation in so much uncertainty, and in so much anxiety over loss of self image, that any tendency toward self-handicapping is magnified and people tend to defend their competency self-images by attributing responsibility for flood risk mitigation to external bodies rather than accepting it themselves. Hence, such people are unlikely to take any flood risk mitigation measures and will continue to use the Blame Discourse or the Luck Discourse, blaming others for flooding or labelling it as 'misfortune'. Inaction, consequently, becomes the normal response to flood risk and reactive damage mitigation is favoured over proactive mitigation.

Anxiety was the main barrier to proactive flood risk mitigation that was identified in this research. Material considerations did play a part, but only – apparently – a relatively minor one. Cultural taboos seem to deter householders from emphasising wealth and the protection of wealth in situations where life and health are also at risk, and affordability does not seem to be a major factor – many householders reject even the cheapest and the entirely cost-free mitigation measures. However, the protection of property prices seems to rate highly in the considerations of some homeowners, who are deterred from taking mitigation measures by the fear that they will betray the presence of the risk to potential future buyers and thereby reduce the value of their properties.

11.9 Reducing the barriers to household level flood risk mitigation

A number of steps might help householders overcome these barriers so that they make less use of self-handicapping techniques and take more mitigation measures.

1. Provide tailored, independent advice

To overcome their doubts about the integrity of products and the trustworthiness of advice about which measure to take, householders need tailored, expert, independent guidance on

how to protect their homes. Such guidance would reduce anxiety about making the wrong decision and being held to blame for it, for it would allow householders to displace that blame onto the expert adviser. The availability of such a guidance service might also cause a change in householders' representation of 'society' – from one in which individual citizens are seen as responsive and dependent, to one in which the state is an advisory partner in a joint effort to manage flood risk.

Schemes for providing such guidance already exist for fire safety and burglary prevention (see HM Government 2007; ACPO *et al* 2006). In the area of flood risk, however, although the Government has recognised the importance of high quality advice and has admitted to the existence of "concerns" about the advice that is currently available (Defra 2005), no firm plans for such a scheme have been forthcoming.

2. Normalise particular mitigation measures

A potential substitute for the provision of tailored advice is the normalisation of one or two mitigation measures. This would make the choice of mitigation measure less fraught with uncertainty. It would also expose householders to less fear of stigmatisation.

At present, the nearest thing to such a norm is the sandbag. However, although in the interviews and focus groups, sandbags were represented as the normal response to imminent or present flooding, their purchase as a pre-emptive measure at times of normal risk seemed not to have achieved the same status.

Furthermore, no one product type – including the sandbag – is officially sanctioned as the best response to flood risk, so no form of mitigation has the official sanction that householders seem to require. The official literature on household protection and resilience gives long lists of actions that householders 'can' take, without actually recommending any of them. Given the fact that what is the 'best' measure varies according to local circumstances, this is a very reasonable approach. However, by leaving householders to make the choice themselves and presenting them with the anxiety-provoking possibility that they might make a decision that they will regret later, this failure to establish a 'normal' response can paralyse householders into a state of inaction.

This assurance could take the form of official advice. Alternatively, the offer of a government subsidy would also be seen as an official stamp of approval, especially if this offer was made to the whole of an affected neighbourhood and was therefore not seen as stigmatising individual properties.

3. Normalise the notion of flood risk mitigation

An alternative to the normalisation of particular flood risk mitigation measures would be to normalise the notion of proactive flood risk response itself and thereby create a social obligation to take flood protection and flood resilience measures. Self-handicapping, and the inaction associated with it, are less likely where there is perceived to be a social obligation to act. Such obligations already seem to exist in other risk areas. In road safety, for example, seatbelt usage increased not because of greater knowledge of its safety benefits but because of the threat of moral and legal sanction; and in household fire safety, it could be argued that there is a social obligation to have functional smoke alarms – especially in homes with young children.

Flood risk poses a more difficult challenge than either road safety or home fire safety because, in the UK, ‘home’ is still generally seen as a place of safety from environmental risks such as flooding; because the label ‘at risk’ is therefore still stigmatising, and because making a visible response to that risk is therefore seen as threatening to social identity and as potentially undermining the value of the property.

It is possible that this situation will change without the need for any government intervention. If the discourse of global warming retains its current prominence in the UK and international media, then it is possible that environmental hazards such as flood risk will become more familiar and that the idea of preparing for them will become normalised. The floods experienced in the UK during July 2007 may help with this – especially if those affected become represented by the wider public as normal members of an in-group rather than as members of some kind of stigmatised out-group.

11.10 Further research

As is inevitable in any effort to try to understand rather than just describe human behaviour, this research has involved making subjective interpretations of the interview and focus group texts. Although findings that were based on these interpretations were tested, wherever possible, against data from large-scale surveys, further confirmatory research is needed.

The size of the qualitative sample for this thesis was as large as is practicable for the necessary depth of analysis, but more qualitative research would show how the discourses and representations identified are used in different social contexts and in different flood risk scenarios. Do flood risk discourses and representations of risk response vary between pluvial (rainfall), fluvial (riverine) and tidal flood risk areas? Is the structure of householders' talk about flooding really so different when they live in what has been termed normalised geographies of flooding?

In addition, a review of the literature on other natural hazards in the UK (e.g. radon, subsidence or coastal erosion) might provide a useful comparison; as would primary research into the social representations of these hazards and the discourses people use when talking about them. What difference does it make if the source of the threat is a part of the landscape (the rocks, the soil or the cliff) rather than a passing meteorological phenomenon such as a rainstorm?

The impact of climate change also needs to be considered. When this research began, and during the fieldwork, the International Panel on Climate Change had not yet published its 'fourth assessment report' and public awareness of climate change was far lower than it is today. How has this affected the representations that people use to defend themselves from anxiety about flood risk? How, in particular, has it changed representations of 'nature'? Is this influencing the way that people talk about floods and their ability to ascribe floods in their own homes to 'bad luck'? This is a particularly important question for policy makers, whose list of policy options must, in England and Wales, always include a "do nothing" option and whose evaluation of that option for household-level

flood-risk mitigation will depend in part on the expected impact of global warming on householder behaviour.

Further survey research would also be helpful. Surveys that were designed specifically to investigate the theories developed in this research would allow a better analysis of the relationship between education, occupation and flood risk response that was explored in this thesis. It would also be able to provide a more reliable answer to the questions of the prevalence of the different strategies with which householders have been shown to respond to flood risk.

Longitudinal research too would be useful. It was not possible, in this research, to look at how discourses and representations change over the longer term in response to experience of floods or exposure to different flood risk response discourses. Such research would be an invaluable test of the validity of the policy recommendations listed above and might help government in its quest to change discourses and representations so that more householders do, begin to defend themselves not only against the anxieties of flood risk, but also against the material threat of floods themselves.

11.11 Summary

Meanwhile, the conclusions in this thesis challenge some of the prevailing orthodoxies in the literature on environmental hazards and in the practice of flood risk management.

Perhaps of greatest significance is the emphasis on the relationship between anxiety management and risk response process. This provides a perspective currently lacking in the literature on risk, where the importance of emotions to risk *perception* is beginning to emerge but its impact on risk *response* has as yet received little attention. The same is also true of the field of flood risk, where there has been research into the emotional consequences of floods, but not into the behavioural consequences of emotions.

Communication that is designed to increase proactive flood risk response amongst householders needs to provide them with reassurance before it provides them with information. They need to know exactly what they should do to mitigate the flood risk in

their home; they need to feel that they will not be blamed if those mitigation measures do not successfully protect them; and they need to feel that the risk and the risk response, rather than being focussed purely on them and their home, are part of a more normal situation, in which the danger of environmental disaster is ever-present and in which ordinary householders are protected by measures that they themselves have implemented.

Although more research is certainly needed on this topic, the many innovative features of this thesis have led to important and significant results that have profound implications for both policy and practice – not only in the field of flood risk management, but also in the area of environmental risk more generally.

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Appendices

Profile of the achieved sample in the qualitative research

Table A1 Distribution of risk characteristics amongst the sample¹¹⁰

Characteristic of the risk		Number of respondents
Anticipated / likely depth of water in the home in any future flood	More than 1 metre	4
	½ to 1 metre	4
	Less than ½ metre:	3
	Less than ¼ metre	26
Likely warning time before a future flood	Less than 1 hour	13
	More than 3 hours	25
Content of flood waters	Sewage	13
	No sewage	25
Rooms most vulnerable to flooding	Entire living space	1
	Bathroom & bedroom	1
	Bedroom	1
	Living room & kitchen	10
	Living room & kitchen (less deep flooding)	12
	Living room, kitchen, 2nd bathroom & guest-room	1
	Kitchen & utility room	1
	Living & utility room	1
	Storage space	2
	Unused living space	1
	Not known	6

¹¹⁰ Based on information provided by respondents

Table A2 Social grades of respondents¹¹¹

Social grade ¹¹²	A	B	C1	C2	D	E
	Higher and intermediate managerial, administrative, professional		Supervisory, clerical, junior managerial, administrative, professional	Skilled manual workers	Semi-skilled and unskilled manual workers	On state benefit, unemployed, lowest grade workers
No. of respondents	9	4	2	2	5	5
	Medical consultant Senior lecturer (x3) TV producer Marketing manager Management consultant Accountant Personnel manager Product manager Junior lecturer	Electronic engineer Web development specialist Software engineer Student	Administrator (x2) Sales person (x2)	Carpenter Tree surgeon	Painter-decorator (x2) Carpet layer Scaffolder Farm-worker	Market trader / informal economy Unemployed labourer Shop worker Cleaner Housewife (widow of labourer)

¹¹¹ The occupations of the respondents from the group of island residents are not known and are therefore excluded from this table.

¹¹² See Market Research Society (2002)

Table A3 Occupational classifications of respondents¹¹³

Classification	1	2	3	4	5	6	7	8	9
Description	Legislators, senior officials and managers	Professionals	Technicians and associate professionals	Clerks	Service workers	Skilled agricultural and fisheries workers	Crafts and related trades	Plant and machine operators and assemblers	Elementary occupations
No. of respondents	0	8	5	0	3	1	5	0	3
Occupations		Medical consultant University lecturer (x4) TV producer Marketing manager Management consultant Accountant Personnel manager Product manager	Electronic technician Web development specialist Software engineer Art student Administrator (x2)		Sales person (x2) Shop assistant	Farm worker	Carpenter Tree surgeon Painter-decorator (x2) Carpet layer Scaffolder		Unemployed labourer Cleaner Housewife (widow of labourer)

¹¹³ see International Labour Office (2007)

Appendix A – Profile of qualitative sample

Table A4 Distribution of flood experience amongst the respondents

Type of flood experience	Number of respondents
Direct personal experience of a flood	9
Present at the time of a near-miss event	22
On holiday when their home was flooded	2
Moved to the area after the latest flood / near-miss	4

Table A5 Distribution of tenure characteristics amongst the sample

Housing tenure	Number of households	Number of respondents
Social housing	10	11
Private rented housing	2	3
Owner occupiers	18	23

Table A6 Gender balance amongst respondents in the qualitative fieldwork

Type of interaction	Number
One-to-one interviews with men	1
One-to-one interviews with women	6
Interviews with heterosexual couples	1
Interviews with couples and adult sons	1
Interviews with female friends	1
Predominantly male focus groups	1
Mixed gender focus groups	4

Table A7 Composition of households represented in the qualitative sample

Home circumstances	Living alone	Living with friends / relatives	Living with partner	Living with partner & children	Single parent
Number of respondents	9	1	13	12	3

Table A8 Age distribution of the qualitative sample

Age band	18-34	35-54	55-64	65-74
Number of respondents	7	24	1	5

Appendix A – Profile of qualitative sample

Table A9 Length of residence in current abode – characteristics of the qualitative sample

Length of residence	Less than 1 year	1-3 years	3-5 years	5-10 years	10-20	20+
Number of respondents	2	5	12	5	3	4

Table A10 Distribution of flood risk responses amongst households in the qualitative sample

Responses to the risk	Protective measures in place	Resilience measures taken	No measures in place
Number of respondents	11	6	20

Topic Guide for interviews

Objectives

- reveal flood risk response discourses
- reveal representations of risk, flood risk and flood risk responses
- explore
 - Direct and indirect experiences of flood
 - Responses to flood risk – reasons, representations, sources
 - Comparisons with fire/burglary
 - Attitudes to responsibility, determinism, fatalism, God as protector, etc.

1. Introduction

- self and project
- no “right answers” ... confidentiality
- sponsors... independence
- duration
- tape-recording

2. Background

Tell me a bit about yourself...

- Home and household (who resident, since when, tenure, who maintains it)
- Education, age, ethnicity, religion
- job (and past jobs)
- household income
- religion / ideology

3. Responses to flood risk

Now some people would say that it's up to people themselves to be prepared for floods and to protect their own homes. **What do you think about that?**

Allow narrative response, but then probe:

- Action taken to protect home / plan for flood
- Full story of each time some measure was taken or considered
 - information sought
 - discussions...with whom
 - reasons for decisions
- What else could be done
- Their level of confidence about what would be effective
- Their level of confidence about putting measures in place
- DIY – who does it / whether they enjoy it / whether they're confident about it / when they get experts in

4. Representations of specific flood risk measures

Prompt for respondents' views on the following for any measures that have been mentioned:

- Effectiveness
- Looks / aesthetics
- Appropriateness
- Stress provoking

5. Comparison of flood risk with other household risks

- Comparison with fire
 - likelihood
 - severity of impact
 - preventability
 - responsibility
- Measures taken against fire... prompt for reasons.
- Compare with burglary (as for fire, above)
- Measures taken against burglars... prompt for reasons.

6. Specific comparison points

- Human intent / natural event
- Whether water can be stopped (Force/inevitability)
- Whether measures need to be 100% effective
- Kind of measures most favoured (e.g. barrier/resilience, door/gate)
- Acceptability of household-level measures

7. Concepts of “home”

Use an open-ended question to search for respondents' main associations with the term “home”. If necessary, prompt for:

- cleanliness / comfort / entertainment / safety / looks & aesthetics

8. Social influences

- Who they speak to about flood, fire and burglary
- Nature of these interactions
- Outcomes

9. Conclusion

- How people could be motivated to do more for themselves
- What flood risk measures they would implement in their home if money were no object

10. Closure

- Thank
- Pay incentive & offer fact-sheet

Topic Guide for focus groups

Objectives

- to reproduce social discourse with regard to risk and flood risk
- to reveal process behind the production and reproduction of representations of risk, flood risk and flood risk responses
- to explore the nature of these representations

1. Introduction

- introduce self and project
- explain that although the Environment Agency and ESRC are sponsors, the study is independent
- explain who the group members are and how the evening will run
- reassure that there are no “right answers”
- explain confidentiality
- inform re the duration of the discussion
- ask permission to record the discussion

2. Round-table introductions

Please just spend two minutes telling me a little bit about yourself...

- Name
- Occupation
- Where live and with whom

I'd like to spend some time talking about things people might do to try to keep their home safe from three different threats. Starting with fire.

3. Measures against fire

Has anyone here done anything about the risk of fire in their home?

- Measures taken (smoke-alarm, fire blanket, first aid training, no smoking in bed etc.)
- Why such measures are necessary / not necessary
- What persuaded them to take them
- Why others in the group haven't taken them
- And what would persuade them to

Appendix C – Topic guide for focus groups

4. Measures against Burglary

Has anyone here done anything about the risk of burglary?

- Measures taken (police advice, window locks, Neighbourhood Watch)
- Why they are necessary / not necessary
- What persuaded them to take them
- Why others in the group haven't taken them
- And what would persuade them to

5. Measures against Flooding

Open discussion of reactions / comments; then prompt on:

- Measures taken
- Why / why not
- What persuaded them to take them
- Why others in the group haven't taken them ...
- And what would persuade them to

6. Comparison of the three risks

- How they would compare fire and flood
 - likelihood
 - severity of impact
 - preventability
 - responsibility
- How they would compare burglary with flood (inc who's responsibility for measures)
 - (as for fire)

7. Conclusion

- Their views on what the Government should do regarding flood risk to householders
- Their views on what would motivate people to do more for themselves
- If someone offered to pay for any flood-protection work they wanted, what would they have done?

8. Closure

- Thank
- Offer fact-sheet on how to get more information
- Pay respondent incentive
- Offer to send copy of summary report

Research: risks to the home and how people respond to them

Sponsored by the Environment Agency and the Economic & Social Research Council

Dear Sir / Madam

As a member of the Flood Hazard Research Centre, I am currently doing some research on behalf of the Environment Agency into how people respond to risks to their homes (particularly flood risk). The purpose of this letter is to inform you that I may be knocking on your door in the near future to ask if you would like to take part in a small discussion group with other people from your area.

The group is at 7.30pm on Tuesday 25th January – at West Hampstead Library. It will consist of informal discussions amongst about 8 local people and will last for at most an hour and a half. Each participant will receive a small “thank you” gift of £20 in appreciation of their time.

What is the research about?

The aim is to understand how people respond to the threats such as flood.

Why am I doing this research?

Flooding is becoming more common and about two million homes in the UK are now said to be at risk. It is important to know how ordinary people can be helped to prepare for floods, so that the resulting stress and damage can be kept to a minimum.

Why you?

I've chosen your street because there has been some flooding there in the past. It is important that I hear from people with all kinds of views and experiences – it doesn't matter whether you have particular views on the subject or not or whether your home has ever been flooded or not.

It is entirely up to you whether or not you take part, but most people enjoy getting involved in research such as this and the results – hopefully – will make a positive difference. Feel free to bring a neighbour or member of your family. Everything that is said will be kept confidential.

I will of course be carrying identification when I visit your street. In the meantime, if you would like to make sure that I am a bone-fide researcher you can do so by phoning the university on the above number or by visiting the web address given below.

I look forward to hopefully meeting you soon.

Tim Harries, Research Student

t.harries@mdx.ac.uk

020 8200 7882

www.fhrc.mdx.ac.uk/training_studying/phd_students.html

How people respond to risks at home

Dear *Mr/Mrs XXXX*

Thank you for agreeing to take part in the research project, “How people respond to risks at home”.

I look forward to seeing you at *location and address at time and date*. There will be a small gift of £20 in appreciation of your time.

The aim of the research is to understand how people react when they become aware that there is a risk of flood – why they do or don’t take measures to try to protect themselves.

This research is sponsored by the Environment Agency, which wants to know how it can better support people who live in flood risk areas.

Do get in touch if you have any questions.

Yours sincerely

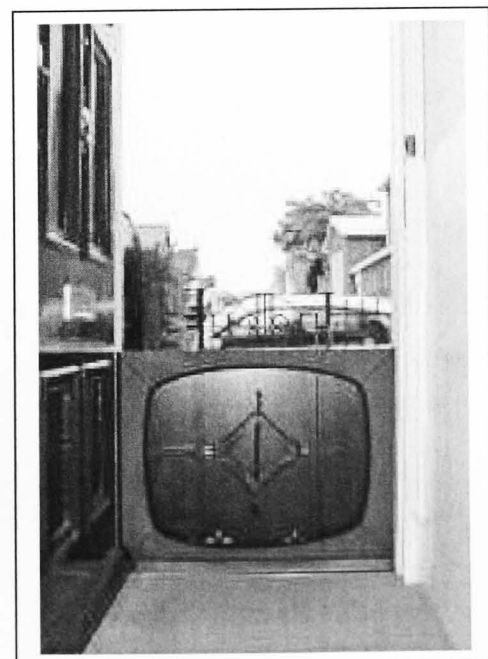
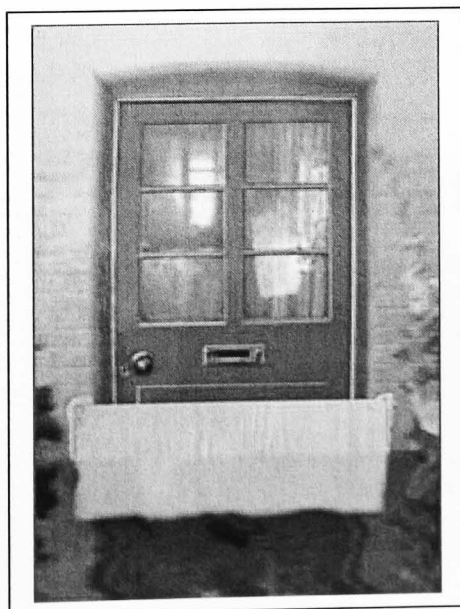
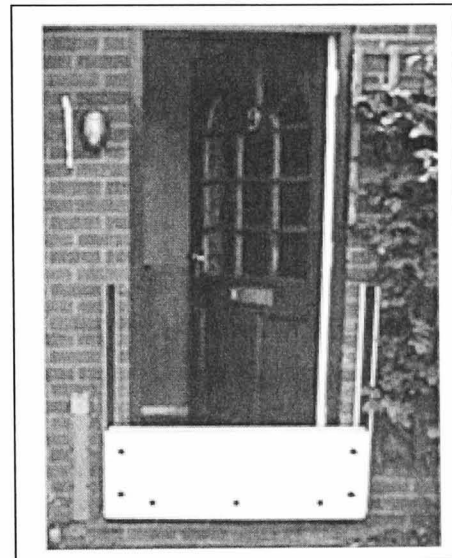
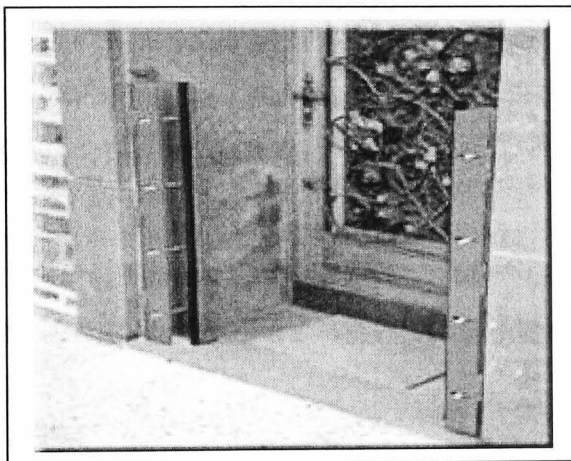
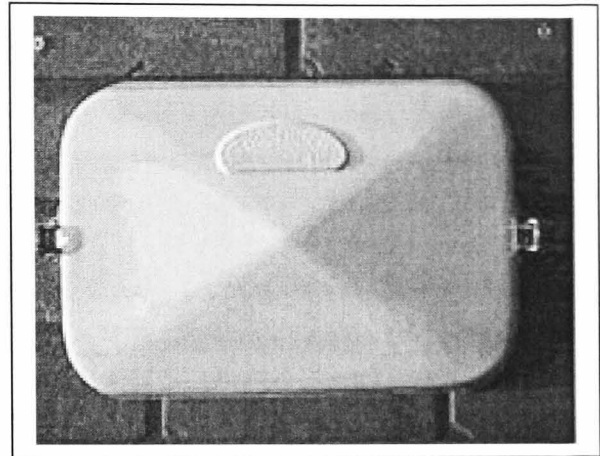
Tim Harries

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www.fhrc.mdx.ac.uk/training_studying/phd_students.html

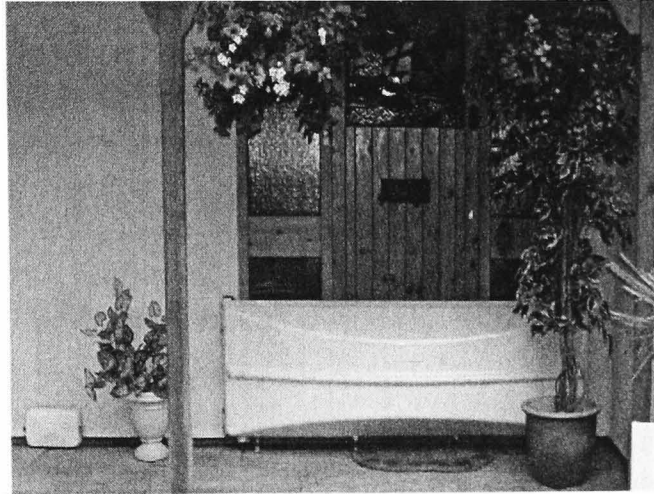
Flood protection images used in the qualitative fieldwork

The images shown were used in the interviews and focus groups to illustrate the kind of protective measures that are available to householders in flood risk areas.





Back frame in place for flood guard and air brick.

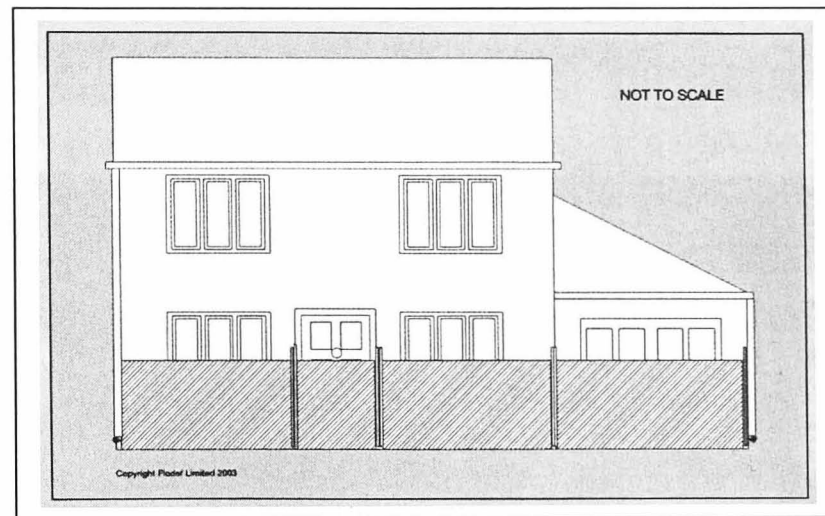


Flood guard and single air brick cover fitted.

Electronic Alarm



Appendix F – Images of protective measures used in fieldwork



Thank you ...for contributing to the research on flooding and other risks to the home

About your participation

You have just taken part either in a “focus group” or an interview. These are both ways of researching what people think about a subject and how they talk about it. No two groups or interviews are ever the same, but we will probably have covered:

- What you knew about the local risk of flood
- What you thought about the different ways in which you can prepare for flood and other risks
- Whether (and why) you had/had not taken measures to prepare for flooding.

Subsequent thoughts?

If you would like to add anything to what you said in the discussion (or if you have any questions) then please do feel free to phone, email, or write to me.

Remember:

- Whatever you said will certainly have helped me to better understand how people react to risks. This, in turn, will make it easier to help people like you to minimise risks to their own homes and health.
- I will not be revealing to anyone the names of who took part in the discussion.

If you want to find out more

If you want to find out more about flooding, here are a few sources of information.

- The National Flood Forum - <http://www.floodforum.org.uk>
- The Environment Agency’s “Floodline” information service – 0845 988 1188
<http://www.environment-agency.gov.uk/subjects/flood>
- The Association of British Insurers – www.abi.org.uk .

The ethics of social research

As a member of the Social Research Association, I aim to abide by their Ethical Guidelines. You can find these on www.the-sra.org.uk .

Tim Harries, Flood Hazard Research Centre

t.harries@mdx.ac.uk 020 8200 7882

www.fhrc.mdx.ac.uk/training_studying/phd_students.html

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Notation used in the transcripts

Table H1 Notation conventions used in the excerpts from transcripts

Notation	Interpretation	Example
[...]	A section of the text has been omitted	
...	A sentence has been left unfinished by the speaker	“The sky always... when it happens it looks yellow.”
[text]	Description of a non-verbal act	[Laughs]; [coughs]
[text]	Clarification added by the author	“I understood the physics in it enough to keep us safe,” becomes, “I understood the physics in [flooding] enough to keep us safe”.
(name: text)	A brief interjection by a second participant	“Its hard enough buying double glazing (Joan: Yeah), where you all know how it happens”
Text	A section of the text of particular relevance to the discussion in the thesis	

LINGUISTIC TERMS AND CONCEPTS

Dialogicality	A term coined by Bakhtin (1981) to denote the extent to which a text incorporates and responds to conflicting discourses and views.
Discourse	An ensemble of ideas, concepts and categories through which meaning is given to physical and social realities and that is realised through the linguistic features of spoken and written texts. (See Hajer 1995, 2002; Fairclough 2003)
Elision	Omission that results in obfuscation. For example, the use of passive verbs elides the question of agency (Fairclough 2003) – to say that ‘floods happen every ten years’ would be to emphasise frequency and to obscure the question of what causes the floods.
Interrogative	Having the structure of a question. For example, when one respondent (Susan) says, “Is it then our responsibility to make sure the pumping stations are working?”
Legitimation	The rhetorical act of establishing the authority of a particular discourse; or <i>de-legitimation</i> – the act of undermining the authority of an opposing discourse. According to Fairclough (2003), this can be achieved by reference to an external authority (tradition, custom, law etc), to the notion of utility or to systems of moral values, or via the implied authority of narrative. The use of one discourse will sometimes, by implication, de-legitimise another. For example, one respondent (Sid) de-legitimises the discourse of flood risk response by introducing his own discourse of flooding as romantic.
Linguistic repertoire	A set of terms associated with a particular discourse. For example, the linguistic repertoire of the science discourse would include terms such as ‘experiment’, ‘empirical’, ‘hypothesis’ and ‘test’.
Metaphor	A “device for seeing something in terms of something else” (Burke 1945 p503), which creates what Lakoff (1993 p203) calls a “cross-domain mapping in the conceptual system”. Conceptual Metaphor Theory (Lakoff and Johnson 1980; Kövecses

	<p>2002) holds that thought has primacy over language and that linguistic metaphors reflect cognitive structures. More recently, it has been argued that metaphor use is intrinsically connected to specific contexts (Cameron and Deignan 2006) and that it is dangerous to make generalised inferences about cognitive behaviour (Deignan 2005).</p>
Modality	<p>The level of commitment toward an assertion. A modalised assertion can be seen as taking an intermediate stance between categorical assertion and denial (Fairclough 2003). For example, the modal adverb ‘possibly’ shows less commitment than ‘probably’, which in turn shows less commitment than the least modalising adverb, ‘certainly’. Tag questions are also said to be modalising, as is the use of reported speech and of terms such as ‘kind of’ (<i>ibid</i>).</p>
Performative function	<p>According to Austin’s (1962) <i>speech act theory</i>, some utterances not only describe a state of affairs, but also actively <i>do</i> things. Such utterances are described as having a <i>performative function</i>. For example, ‘I bet you five pounds it’ll rain tomorrow’ has a stronger performative function than the more descriptive, ‘I am betting you five pounds it’ll rain tomorrow’ (Levinson 1983).</p> <p>Statements are described as <i>illocutionary</i> if they have an overt performative function (e.g. “shut that window”) and as <i>perlocutionary</i> if their performative function is implied (e.g. “it’s cold in here with the window open”). The perlocutionary power of an utterance is sometimes the result of its location within the overall text. For example, when one of the respondents says to the interviewer, “you’ve got a tea there,” (Luke) this can be considered a perlocutionary act aimed at bringing about a change in the topic of conversation.</p>

Rhetoric	The linguistic strategies used by speakers to establish the authority of their own accounts, representations and discourses (see Billig 1987). For example, when one of the respondents (Shereen) says that “300 Quid is a lot of money”, this can be seen as a rhetorical tactic to justify her failure to purchase flood protection and protect her self-presentation as a responsible householder.
Tag question	A phrase added to the end of a declarative sentence to make it interrogative. Tag questions often indicate a lack of commitment to an assertion. An example from the data is provided by a respondent (George), who says, “It’s a normal... natural phenomenon, I think – flooding. It’s from rain and flood, isn’t it?” The tag question “isn’t it” transforms the second sentence into a question and effectively modalises both sentences.
Self-repair	The act of neutralising the negative impact of a perceived wrong choice of word, inappropriate level of politeness or inappropriate register (Langford 1994). For example, Elizabeth’s comment, “sounds a bit ‘Daily Mail’” is an attempt to repair any damage to her self-projection caused by her use of the terms “on another planet” and “drug-crazed”. Self-repair can be described as a rhetorical act.
Truth claim	A strong assertion of a truth; a declarative utterance with little or no dialogicality. Rob’s comment that “people just don’t think that way” is an example. The absence of modalisation implies an absolute commitment to the verity of the statement.
Utterance	“The issuance of a sentence, a sentence-analogue, or sentence-fragment, in an actual context” (Levinson 1983 p18). In discourse analysis, the term <i>utterance</i> is preferred to the “abstract, theoretical entity” of the <i>sentence</i> , which is grammatically defined and therefore excludes much spoken language (<i>ibid</i> ; Coulthard 1977).

Demographic profiles of the survey samples

Table I1 Comparison of the demographic profile of the survey samples with data from the 2001 Census

%	England & Wales (Census 2001)	The RPA dataset	The FHRC dataset
Gender			
Females (adults)	52	60	52
Males (adults)	48	40	48
Age			
18-34	29	24	7
35-54	36	26	35
55+	34	44	58
65+	21	25	36
65-74	11	12	21
75+	10	13	15
Type of housing			
House		86	92
Detached		13	37
Semi-detached		24	25
Terraced		49	30
Bungalow		5	3
Flat/maisonette		4	1
Tenure			
Owner-occupiers	69	81	91
Social landlord	19	10	
Private landlord	12	8	
Qualifications			
None		29	
GCSE/equiv.		15	
NVQ 1 or 2		9	
NVQ 3		13	
NVQ 4 (first degree)		17	
Postgraduate		5	
Degree level+ (% of over 17s)	18	22	
Long-term illness			
population	13		
respondents		16	
any in household		24	17
Household composition			
One-person households	30	26	
Lone parent	6.5	5	
Cohabiting/married couple	45		
2+ adults with children		25	
2+ adults, no children		44	

Appendix J

Social grade (ages 16-64) ¹¹⁴			
AB	25	21	34
C1	30	27	27
C2	18	24	21
DE	27	28	17
ABC1	55	48	61
C2DE	45	52	38

¹¹⁴ The figures shown under the Census column for social grade were calculated by Meier and Moy (2004) by applying to the Census figures an algorithm developed by the Market Research Society. This algorithm was found to be reliable only for adults aged under 65 – hence the exclusion of older adults in this data. See http://www.mrs.org.uk/networking/cgg/downloads/social_%20grade_approximation.pdf.

Appendix K: Questionnaire for the RPA dataset

MORI/18171.jfm

Questionnaire No

RESPONDENT ID – COPY OVER FROM CONTACT SHEET. USE LEADING ZEROS.

Intangible Impacts Of Flooding

Name/Initial/Title: Mr/Mrs/Ms/Miss

Address:

Full Postcode

Sample Point Number:

Sample point name:

Telephone in home:

Yes	1
No	2
Refused/Ex-directory	3
Full tel.no (inc STD code):	4

Age (RECORD EXACT AGE AND CIRCLE AGE/GENDER GROUP)



	MALE	FEMALE
18-39 years	1	5
40-64 years	2	6
65-74 years	3	7
75 and over	4	8

Occupation of Chief Income Earner

Position/rank/grade

Industry/type of company

Quals/degree/apprenticeship

Number of staff responsible for

Class

AB	1
C1	2
C2	3
DE	4

REMEMBER TO PROBE FULLY FOR PENSION AND CODE FROM ABOVE

Record weather at time of interview

Windy	1
Cold	2
Sunny	3
Rainy	4
Cloudy/dry	5
Snow/sleet	6

Record Street Name Again:

Property Type:

Detached house	1
Semi-detached house	2
Terraced house	3
Ground floor maisonette	4
Bungalow	5
Ground floor flat	6
Basement flat	7
Mobile home	8
Other (PLEASE SPECIFY)	9

Interview Declaration

I confirm that I have carried out this Interview face-to-face with the above named person and that I asked all the relevant questions fully and recorded the answers in conformance with the survey specification and within the MRS Code of Conduct.

Signature:

Interviewer Name (CAPS):

Interviewer Number:

/

Day of Interview 1 2 3 4 5 6 7
 (Mon) (Thur) (Sun)

Date of Interview: / /02

Length of Interview: (minutes)

Appendix K: Questionnaire for the RPA dataset

INTERVIEWER RECORD START TIME

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hours		Mins	

INTERVIEWER RECORD END TIME AFTER DEMOGRAPHICS

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hours		Mins	

Q Interviewer please indicate which showcard version you are using

Normal	1
Reversed	2

()

SECTION A - QUESTIONS ABOUT THE FLOOD EVENTS

QA1. Can I ask you how long you have lived in this property? WRITE IN. USE LEADING ZEROS.

<input type="text"/>	<input type="text"/>	years	<input type="text"/>	<input type="text"/>	months
----------------------	----------------------	-------	----------------------	----------------------	--------

QA2. Including yourself, how many people in your household are...?
INTERVIEWER READ OUT A – E. SINGLE CODE ONLY.

- A) Children aged 9 and under
- B) Children aged 10 to 17
- C) Adults aged 18 to 64
- D) Adults aged 65 to 74
- E) Adults aged 75 and over

	A 0 - 9	B 10 - 17	C 18 - 64	D 65 - 74	E 75+
None	1	1	1	1	1
One	2	2	2	2	2
Two	3	3	3	3	3
Three	4	4	4	4	4
Four	5	5	5	5	5
Five or more	6	6	6	6	6

For at-risk respondents only

QA3. Are you aware that this area is defined as a flood risk area? SINGLE CODE ONLY

Yes	1
No	2

Questions 3b to 25 only asked of flooded respondents

QA3b. Were you aware of the flood risk in this area before you were first flooded? SINGLE CODE ONLY

Yes	1
No	2

Appendix K: Questionnaire for the RPA dataset

QA4. How many times have you experienced flooding above floor level in your home since you have lived at this address, including basements and cellars but excluding outhouses and garages? SINGLE CODE ONLY

One	1
Two	2
Three	3
Four	4
Five	5
Six	6
Seven	7
Eight	8
Nine	9
Ten or more (PLEASE SPECIFY)	10

QA5. How many times have you experienced flooding above floor level in your home since January 1998, including basements and cellars but excluding outhouses and garages? SINGLE CODE ONLY

One	1	GO TO QA7.
Two	2	
Three	3	
Four	4	
Five	5	
Six	6	ASK QA6.
Seven	7	
Eight	8	
Nine	9	
Ten or more (PLEASE SPECIFY)	10	

ASK ALL WHO HAVE BEEN FLOODED MORE THAN ONCE SINCE JANUARY 1998 (CODES 2 – 10 AT QA5). OTHERS GO TO QA7

QA6. When was the worst flood you have experienced since January 1998? RECORD BOTH MONTH AND YEAR. SINGLE CODE ONLY FOR EACH.

Month		Year	
January	1	2002	1
February	2	2001	2
March	3	2000	3
April	4	1999	4
May	5	1998	5
June	6		
July	7		
August	8		
September	9		
October	10		
November	11		
December	12		

Appendix K: Questionnaire for the RPA dataset

ASK ALL

QA7. When was the last time you were flooded here? RECORD BOTH MONTH AND YEAR. SINGLE CODE ONLY FOR EACH.

Month		Year	
January	1	2002	1
February	2	2001	2
March	3	2000	3
April	4	1999	4
May	5	1998	5
June	6		
July	7		
August	8		
September	9		
October	10		
November	11		
December	12		

INTERVIEWER READ OUT: From now on I would like you to think only about your experiences relating to your worst flooding since January 1998

QA8. SHOWCARD (R) How quickly did the floodwaters rise? SINGLE CODE ONLY

A	So quickly that you could see them rising	1
B	Slowly over many hours	2
C	Somewhere in between the above	3
	Don't know	4

QA9. Did the flood water contain sewage or other pollution? SINGLE CODE ONLY

	Yes	1
	No	2
	Don't know	3

Appendix K: Questionnaire for the RPA dataset

QA10. In your property, how many rooms in total do you have for use only by your household? READ OUT: Do not count bathrooms, toilets, halls or landings or rooms that can only be used for storage such as cupboards. Do count all other rooms e.g. kitchen, living rooms, bedrooms, utility room and study. Do not count communal rooms you share with other households. SINGLE CODE ONLY

One	1
Two	2
Three	3
Four	4
Five	5
Six	6
Seven	7
Eight	8
Nine	9
Ten	10
Eleven	11
Twelve	12
Thirteen	13
Fourteen	14
Fifteen	15
Sixteen or more (PLEASE SPECIFY)	16



READ OUT: Remember, I would like you to think only about your experiences relating to your worst flooding since January 1998

Appendix K: Questionnaire for the RPA dataset

QA11.A SHOWCARD (R) **Which of these rooms or areas were flooded?**
CODE IN COLUMN A. MULTICODE OK.

QA11.B ASK FOR EACH TYPE OF ROOM MENTIONED

How many rooms of that type were flooded? IF 'ALL ROOMS' ASK **How many rooms is that?** WRITE IN COLUMN B.

QA11.C THEN FOR EACH ROOM MENTIONED ASK

To what depth was it flooded?

RECORD ANSWERS GIVEN IN METRES AND CENTIMETRES IN COLUMN Bi.

OR RECORD ANSWERS GIVEN IN FEET AND INCHES IN COLUMN Bii.

USE LEADING ZEROS IN EACH CASE.

		A	B No. of rooms	Ci Metres/Centimetres	Cii Feet/Inches
QA11.A- QA11.C	Living rooms	1	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>
	Bedrooms	2	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>
	Kitchen	3	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>
	Bathrooms	4	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>
	Basement/Cellar	5	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>
	Hallway/Landing	6	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>
	Garage	7	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>
QA11.D	Maximum depth of flooding	8	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/>

QA12. **For how many hours was your home flooded?** WRITE IN

hours

QA 13. **Did you receive a flood warning from any source before the flood?** SINGLE CODE ONLY

Yes	1	ASK QA14
No	2	GO TO QA16
Don't know	3	

ASK ALL WHO RECEIVED A WARNING (CODE 1 AT QA13). OTHERS GO TO QA16.

Appendix K: Questionnaire for the RPA dataset

QA14. How many minutes before the flood waters entered your home did you receive the warning? WRITE IN. USE LEADING ZEROS.

hours minutes

QA15. SHOWCARD (R) From whom did you receive a warning? MULTICODE OK

A	Environment Agency automatic telephone message (AVM)	1
B	Environment Agency Floodline	2
C	Environment Agency personnel	3
D	Emergency services (Fire/Police/Ambulance etc.)	4
E	Local authority	5
F	Neighbour	6
G	Family/friend	7
H	Media (TV/Radio etc.)	8
	Other (WRITE IN)	9

ASK ALL

QA16. Did your home or contents suffer from flood damage? SINGLE CODE ONLY

Yes	1
No	2

QA17. Were you insured against flooding for the following...? READ OUT A – C. MULTICODE OK

A	Building/structure	1	
B	Contents - 'New for Old'	2	ASK QA18
C	Contents – Other	3	
	Don't know / landlord's responsibility	4	GO TO QA19

ASK ALL WHO WERE INSURED IN SOME WAY (CODES 1 – 3 AT QA17). OTHERS GO TO QA19.

QA18. Please estimate the total amount paid out by the insurance company(s) for...READ OUT A-C.

INTERVIEWER: IF RESPONDENT CAN SEPARATE AMOUNTS, RECORD IN ROWS 1 & 2 AND LEAVE THE THIRD ROW BLANK. OTHERWISE RECORD DK FOR ROWS 1 & 2 AND OVERALL PAYMENT IN THIRD ROW. ROUND ANSWERS UP TO THE NEAREST POUND. USE LEADING ZEROS.

Don't know

A	...building/structure damage	£ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>	99
B	...contents damage	£ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>	99
C	...both building/structure and content damage	£ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>	99

ASK ALL

Appendix K: Questionnaire for the RPA dataset

QA19. Did you or your family bear any financial costs as a direct result of the flooding that were not covered by insurance (excluding loss of earnings, if any)?

Yes	1	ASK QA20
No	2	GO TO QA21
Don't know	3	

ASK ALL WHO BEARED FINANCIAL COSTS (CODE 1 AT QA19). OTHERS GO TO QA21.

QA20. Please estimate the total cost of your expenditure (in pounds) not covered by insurance for...READ OUT A - C

INTERVIEWER: IF RESPONDENT CAN SEPARATE AMOUNTS, RECORD IN ROWS 1 & 2 AND LEAVE THE THIRD ROW BLANK. OTHERWISE RECORD DK FOR ROWS 1 & 2 AND OVERALL PAYMENT IN THIRD ROW.

ROUND ANSWERS UP TO THE NEAREST POUND. USE LEADING ZEROS.

Don't know

A	...building/structure damage	£ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>	99
B	...contents damage	£ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>	99
C	...both building/structure and content damage	£ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>	99

ASK ALL

QA21. Did you lose any irreplaceable items of sentimental value such as old family photos, diaries, heirlooms, jewellery etc.? WRITE IN. RECORD ANSWERS IN FULL.

Yes (WRITE IN)	1	ASK QA20
No	2	GO TO QA21

QA22. After your worst flooding, how long did it take to get your home back to normal? WRITE IN. ROUND UP TO NEAREST NUMBER OF WEEKS. USE LEADING ZEROS.

<input type="text"/> <input type="text"/> weeks	1
Still not back to normal	2

QA23. Did you or anyone in your household have to leave your home during or after the flood? IF NECESSARY PROMPT Who? MULTICODE OK

Myself	1	ASK QA24
Other household member(s)	2	
No one had to leave	3	GO TO QA25

Appendix K: Questionnaire for the RPA dataset

ASK ALL WHO ANSWERED CODES 1 OR 2 AT QA23. OTHERS GO TO QA25.

QA24. **How long was it before the whole household could live in the property again?**
WRITE IN. ROUND UP TO NEAREST NUMBER OF WEEKS. USE LEADING ZEROS.

<div style="display: inline-block; border: 1px solid black; width: 30px; height: 30px; margin-right: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 30px; height: 30px; margin-right: 5px;"></div> weeks	1
Less than a week	2
Still not all home	3

ASK ALL

QA25.A **This card contains a list of institutions and people that might provide help or support during and/or after a flood episode.**

SHOWCARD (R) **From which, if any, of these did you receive help?**
MULTICODE OK.

QA25.B ASK FOR EACH GROUP FROM WHICH HELP WAS RECEIVED:

SHOWCARD (R) **Please rank the level of help by stating a score from 1 to 5, where 1 means 'received very little help' and 5 equals 'received all the help I needed'.**
READ OUT ALL MENTIONED AT PART A. SINGLE CODE ONLY.

		QA25A	QA25B				
		Help received	1 Received very little help	2	3	4	5 Received all the help I need
A	Neighbours / friends	1	1	2	3	4	5
B	Community groups	2	1	2	3	4	5
C	Local authority	3	1	2	3	4	5
D	Charities	4	1	2	3	4	5
E	Environment Agency	5	1	2	3	4	5
F	Church	6	1	2	3	4	5
G	Local businesses/ shops	7	1	2	3	4	5
H	Police	8	1	2	3	4	5
I	Fire brigade	9	1	2	3	4	5
J	Family members outside the household	10	1	2	3	4	5

Questions 26 to 28 asked of all respondents

QA26. SHOWCARD (R) **Have you undertaken any of these flood prevention measures?**
MULTICODE OK

A	Take out household insurance against flooding	1
B	Keep sand and bags in the property	2
C	Keep ditches and drains around the property clean	3
D	Built walls around the property	4
E	Purchased water pumps	5
F	Keep alert for flood warnings during high-risk months	6
G	Avoid buying expensive downstairs furnishings	7
H	Avoid keeping irreplaceable items or goods of sentimental value on ground floor of my home at all or certain times	8
	Other (PLEASE SPECIFY)	9
	Did not take preventative actions/None of these	10

ASK ALL WHO ANSWERED CODES 4 OR 5 AT QA26. OTHERS GO TO QA28

QA27. **Please estimate the total cost of your expenditure (in pounds) on these flood prevention measures.** WRITE IN. ROUND UP TO NEAREST POUND. USE LEADING ZEROS.

£ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>	1
Don't know	99

QA28 SHOWCARD (R) **Have you ever done any of the things listed on this card?**
MULTICODE OK

A	Been a member of a local community group related to flooding	1
B	Written letters to relevant authorities about the flood damage	2
C	Attended meetings related to flooding	3
	None of these	4

SECTION B - QUESTIONS ABOUT THE HEALTH EFFECTS OF FLOODING

The questions in this section were only asked of flooded respondents

ASK ALL

QB1. SHOWCARD (R) How was your state of health in general before the flooding? SINGLE CODE ONLY

A	Poor	1
B	Fair	2
C	Good	2
D	Very good	2
E	Excellent	3

QB2. Before the flooding, did you have any long-term illness, health problems or disability which limited your daily activities or the work you could do (including problems which are due to old age)? SINGLE CODE ONLY

Yes	1
No	2

QB3A. Did anyone else in your household have any long-term illness, health problems or disability before the flooding?

Yes	1	ASK QB3B
No	2	GO TO QB4

ASK ALL WHO ANSWERED YES (CODE 1) AT QB3A. OTHERS GO TO QB4

QB3B SHOWCARD Please indicate number of people with a long term illness, health problems or disability in each age group.

INTERVIEWER READ OUT A – E. SINGLE CODE ONLY FOR EACH CATEGORY.

- A Children aged 9 and under
- B Children aged 10 to 17
- C Adults aged 18 to 64
- D Adults aged 65 to 74
- E Adults aged 75 and over

	A 0 - 9	B 10 - 17	C 18 - 64	D 65 - 74	E 75+
None	1	1	1	1	1
One	2	2	2	2	2
Two	3	3	3	3	3
Three	4	4	4	4	4
Four	5	5	5	5	5
Five or more	6	6	6	6	6

Appendix K: Questionnaire for the RPA dataset

QB4. Did you need to take any days off work after the flooding (including days taken as annual leave)? SINGLE CODE ONLY. IF 'YES', ASK How many? AND WRITE IN. USE LEADING ZEROS.

Yes (PLEASE SPECIFY)	1
<input type="text"/> <input type="text"/> days	
No	2
Not employed	3

QB5 SHOWCARD (R) On this card are a number of physical health effects which you or members of your household may have experienced as a result of the flooding. Thinking back to the time during or immediately after the flooding, which of these, if any, were suffered by...READ OUT A - C BELOW

- I You personally
- II Other adult members of your household
- III Any children aged under 16

MULTICODE OK

	I - Self	II - Other adult members of household	III - Children aged 16 and under
A Injuries, e.g. cuts and bruises, due to being knocked over by floodwaters, being thrown against hard objects, or being struck by moving objects	1	1	1
B Injuries from over-exertion during the flood e.g. sprains/strains, heart problems	2	2	2
C Hypothermia	3	3	3
D Electric Shocks			
E Cold, coughs, flu, sore throats or throat infections	4	4	4
F Headaches	5	5	5
G Skin irritations e.g. rashes	6	6	6
H Exposure to chemicals or contaminants in floodwaters	7	7	7
I Shock	8	8	8
Other (WRITE IN)	9	9	9
None of these	10	10	10

Appendix K: Questionnaire for the RPA dataset

QB6 SHOWCARD (R) On this card are a number of physical health effects which you or members of your household may have experienced as a result of the flooding. Thinking back to the weeks and months following the flooding, which of these, if any, were suffered by...READ OUT A - C BELOW

- I You personally
- II Other adult members of your household
- III Any children aged under 16

MULTICODE OK

		I - Self	II - Other adult members of household	III - Children aged 16 and under
A	Gastrointestinal illnesses/upset stomachs	1	1	1
B	Heart problems	2	2	2
C	Respiratory/chest illnesses e.g. asthma, pleurisy	3	3	3
D	Cuts and bruises	4	4	4
E	Sprains and strains	5	5	5
F	Skin irritations e.g. rashes, dermatitis etc.	6	6	6
G	High blood pressure	7	7	7
H	Kidney or other infections	8	8	8
I	Stiffness in joints	9	9	9
J	Muscle cramps	10	10	10
K	Insect or animal bites	11	11	11
L	Erratic blood sugar levels (diabetics)	12	12	12
	Other (WRITE IN)	13	13	13
	None	14	14	14

Appendix K: Questionnaire for the RPA dataset

QB7 SHOWCARD (R) On this card are a number of psychological health effects which you or members of your household may have experienced since the flooding. Which of these, if any, were suffered by...READ OUT A - C BELOW

- I You personally
- II Other adult members of your household
- III Any children aged under 16

MULTICODE OK

		I - Self	II - Other adult members of household	III - Children aged 16 and under
A	Anxiety e.g. when rains, when river rises	1	1	1
B	Panic attacks	2	2	2
C	Increased stress levels	3	3	3
D	Mild depression	4	4	4
E	Moderate depression	5	5	5
F	Severe depression	6	6	6
G	Lethargy/lack of energy	7	7	7
H	Sleeping problems	8	8	8
I	Nightmares	9	9	9
J	Flashbacks to flood	10	10	10
K	Increased use of alcohol or prescription (or other) drugs	11	11	11
L	Anger/tantrums	12	12	12
M	Mood swings/bad moods	13	13	13
N	Increased tensions in relationships e.g. more arguing	14	14	14
O	Difficulty concentrating on everyday tasks	15	15	15
P	Thoughts of suicide	16	16	16
	Other (WRITE IN)	17	17	17
	None	18	18	18

CHECK ANSWERS AT QB.5, QB.6 AND QB.7. IF RESPONDENT OR OTHER MEMBERS OF HOUSEHOLD HAS EXPERIENCED ANY HEALTH PROBLEMS AT ALL ASK QB.8.

ONLY IF RESPONDENT OR OTHER MEMBERS OF HOUSEHOLD HAVE EXPERIENCED NO HEALTH PROBLEMS AT ALL (CODE 'NONE' FOR A, B AND C AT QB.5, QB.6 AND QB.7), GO TO QB.10

ASK ALL WHO HAVE HAD HEALTH PROBLEMS AT QB.5, QB.6 OR QB.7. OTHERS GO TO QB.10.

QB8. **If you or any other members of your household experienced health problems after the flooding, was a doctor consulted about these? INTERVIEWER CLARIFY Was that yourself or another member of your household?**

	Self	Other member(s) of household	
Yes doctor consulted	1	1	ASK QB9
No doctor not consulted	2	2	GO TO QB10

Appendix K: Questionnaire for the RPA dataset

ASK ALL WHO VISITED A DOCTOR THEMSELVES OR HAD ANOTHER MEMBER OF THEIR HOUSEHOLD VISIT A DOCTOR (CODE 1 AT QB8)

QB9 Did you or the other members of your household receive treatment from the doctor regarding the health problem? INTEVIEWER CLARIFY Was that yourself or another member of your household?

	Self	Other member(s) of household
Yes - treatment received	1	1
No - treatment received	2	2

ASK ALL

QB10 SHOWCARD (R) At what stage during or after the flooding were the health impacts the most severe or worst for you personally? Please think about health in the broadest sense to include physical, mental and social well-being. SINGLE CODE ONLY

A	During flood event itself	1
B	In the first week or two after the flood	2
C	In the first month after the flood	3
D	Between one to three months after flood	4
E	Between three to six months after flood	5
F	More than six months after flood	6
	Other (PLEASE SPECIFY)	7

QB11. Thinking about your answer to the last question, why do you think the health impacts were most severe at that time? What specific factors do you think were affecting your health then? WRITE IN. PROBE FULLY. DO NOT PROMPT. ANY ANSWER (WRITE IN AND CODE '1)

1

None/no answer X

Don't know Y

(-)

QB12 For how long did this 'worst' period last in total? Or was there more than one of these periods? IF CODE 1, WRITE IN AND USE LEADING ZEROS. SINGLE CODE ONLY.

<div style="display: inline-block; border: 1px solid black; width: 30px; height: 30px; margin-right: 5px;"></div> <div style="display: inline-block; border: 1px solid black; width: 30px; height: 30px; margin-right: 5px;"></div> Weeks	1
Less than a week	2
More than one period	3

Appendix K: Questionnaire for the RPA dataset

QB13 SHOWCARD (R) This card shows a scale in which 0 indicates "no effect", 10 indicates "extremely serious effect" and 11 indicates "does not apply" (for example if you did not have to leave home then this effect would not be relevant). Using this scale, please rate the effects I am going to read to you of the flood upon your household's life.

READ OUT A – M. ROTATE ORDER. CODE RESPONSES IN THE TABLE BELOW.

TICK START

- A Effect upon your health
- B Having to leave home
- C Damage to replaceable furniture and contents
- D Worry about flooding in the future
- E Loss of irreplaceable objects (photos etc.)
- F All the problems and discomfort whilst trying to get the house back to normal
- G Damage to the house itself
- H Stress of the flood event itself
- I Problems dealing with insurers/loss adjusters
- J Problems dealing with builders
- K Loss of or distress to pets
- L Loss of house value
- M Anything else? (WRITE IN)

CODE RESPONSES HERE:

Scale	1	2	3	4	5	6	7	8	9	10	11
	No effect										Does not apply
	Extremely serious										
A	1	2	3	4	5	6	7	8	9	10	11
B	1	2	3	4	5	6	7	8	9	10	11
C	1	2	3	4	5	6	7	8	9	10	11
D	1	2	3	4	5	6	7	8	9	10	11
E	1	2	3	4	5	6	7	8	9	10	11
F	1	2	3	4	5	6	7	8	9	10	11
G	1	2	3	4	5	6	7	8	9	10	11
H	1	2	3	4	5	6	7	8	9	10	11
I	1	2	3	4	5	6	7	8	9	10	11
J	1	2	3	4	5	6	7	8	9	10	11
K	1	2	3	4	5	6	7	8	9	10	11
L	1	2	3	4	5	6	7	8	9	10	11
M	1	2	3	4	5	6	7	8	9	10	11

QB14 SHOWCARD AGAIN (R) Using the same scale, overall, how serious were the effects of the flood upon your household? SINGLE CODE ONLY

Scale	1	2	3	4	5	6	7	8	9	10	11
	No effect										Not applicable
	Extremely serious										
QB14	1	2	3	4	5	6	7	8	9	10	11

QB15. SHOWCARD O (R) This card contains various characteristics of a house flooding. When thinking about your own home, which one worries you most? SINGLE CODE ONLY

	Duration of flood	1
A	Depth of water	2
B	Dirtiness of water	3
C	Speed of water rising / flowing	4
D	Time of day / night when it occurs	5
E	Season of the year when it occurs	6
F	Warning time	7
	Other (WRITE IN)	8
	Not worried about any specific flood characteristic	9

QB16. SHOWCARD (R) How worried are you about the possibility of your property being flooded during the next 12 months? SINGLE CODE ONLY

A	Not worried at all	1
B	Not very worried	2
C	Indifferent	3
D	Somewhat worried	4
E	Very worried	5

READ OUT: We would now like you to complete three sets of self-completion questions commonly used in health surveys that are designed to give us more a more detailed picture of your health.

INTERVIEWER, PLEASE FOLLOW THESE STEPS:

1) ADMINISTER SECTION C1 HEALTH QUESTIONNAIRE - GENERAL HEALTH OVER THE LAST FEW WEEKS. THIS IS A SEPARATE SELF-COMPLETION QUESTIONNAIRE. CHECK WHEN COMPLETED.

2) ADMINISTER SECTION C2 HEALTH QUESTIONNAIRE - GENERAL HEALTH WHEN THE HEALTH EFFECTS FROM THE FLOODING WERE AT THEIR MOST SEVERE (FROM QB.10). AGAIN, THIS IS A SEPARATE SELF-COMPLETION QUESTIONNAIRE. CHECK WHEN COMPLETED.

3) THEN ADMINISTER PTSS QUESTIONNAIRE. AGAIN, THIS IS A SEPARATE SELF-COMPLETION QUESTIONNAIRE. EMPHASISE THAT THIS AGAIN REFERS TO CURRENT HEALTH.

4) THEN GO TO SECTION D – VALUATION SCENARIO 1

SECTION E - STANDARD DEMOGRAPHIC QUESTIONS

The questions in this section were asked of all respondents

QE1. SHOWCARD (R) Using this card, please tell me which, if any, is the highest educational or professional qualification you have obtained. Just read out the letter or letters which apply. (IF STILL STUDYING, CHECK FOR HIGHEST ACHIEVED SO FAR)

A	GCSE/O-Level/CSE	1
B	Vocational qualifications (=NVQ1+2)	2
C	A-Level or equivalent (=NVQ3)	3
D	Bachelor Degree or equivalent (=NVQ4)	4
E	Masters/PhD or equivalent	5
F	Other	6
G	No formal qualifications	7
H	Still studying	8
	Don't know	9

QE2. SHOWCARD (R) What is your current employment situation?

A	Working full time (30hrs/wk+)	1
B	Working part time (8-29 hrs/wk)	2
C	Not working (ie under 8hrs/week)- housewife	3
D	Not working (ie under 8hrs/week)- retired	4
E	Not working (ie under 8 hrs/week)- unemployed (registered)	5
F	Not working (ie under 8 hrs/week)- unemployed (not registered but looking for work)	6
G	Not working (ie under 8hrs/week)- student	7
H	Not working (ie under 8hrs/week)- other (incl disabled)	8
	Refused/don't know	9

QE3. SHOWCARD (R) Which of these ethnic groups, if any, most accurately describes your own? Just read out the letter that applies.

A	White	1
B	Mixed (e.g. white/black, white/Asian)	2
C	Asian / Asian British	3
D	Black / Black British	4
E	Chinese or other ethnic group	5

Appendix K: Questionnaire for the RPA dataset

QE4. SHOWCARD (R) What is your marital status?

A	Married	1
B	Living together	2
C	Single	3
D	Widowed	4
E	Divorced	5
F	Separated	6
	Refused/don't know	7

QE5. How many cars or light vans are owned or available for use by one or more members of your household? Include company cars or vans if they are available for your private use. SINGLE CODE ONLY.

1 car or light van	1
2 cars/light vans	2
3+ cars/light vans	3
None	4
Refused/don't know	5

QE6. SHOWCARD (R) Which of these, if any, most accurately describes your housing situation? Just read out the letter that applies.

A	Being bought on mortgage	1
B	Owned outright by household	2
C	Rented from Local Authority	3
D	Rented from Housing Association/Trust	4
E	Rented from private landlord	5
F	Other	6
	Refused /don't know	7

QE7. SHOWCARD Can you please indicate which one of the following letters represents your gross household income per week, month, or year? Just read out the letter that applies.

	Gross income per week	Gross income per month	Gross income per year	
A	Under £100	Under £400	Under £5,000	1
B	£100-£199	£400-£799	£5,000-£9,999	2
C	£200-£399	£800-£1,599	£10,000-£19,999	3
D	£400-£599	£1,600-£2,399	£20,000-£29,999	4
E	£600-£799	£2,400-£3,199	£31,150-£41,550	5
F	£800-£999	£3,200-£3,999	£41,550-£51,999	6
G	£1,000 or more	£4,000 or more	£52,000 or more	7
	Don't know/Refused			8

Appendix K: Questionnaire for the RPA dataset

QE8. SHOWCARD (R) **Here is a list of daily newspapers. Which of these do you read or look at regularly? By regularly I mean on average at least three out of four issues.** MULTICODE OK

A	Daily Express	1
B	Daily Mail	2
C	The Mirror	3
D	Daily Record	4
E	Daily Telegraph	5
F	Financial Times	6
G	The Guardian	7
H	The Herald (Glasgow)	8
I	The Independent	9
J	Metro	10
K	The Scotsman	11
L	Daily Star	12
M	The Sun	13
N	The Times	14
O	Evening Standard	15
	Other	16
	None of these	17

QE9. SHOWCARD (R) **Last of all, what did you think of this questionnaire?**

Interesting	1
Too long	2
Difficult to understand (WRITE IN WHICH SECTION/QUESTION)	3
Educational	4
Unrealistic/ not credible	5
Other (PLEASE SPECIFY)	6

GO TO DEMOGRAPHICS ON THE FRONT PAGE

Post-Traumatic Stress Scale (PTSS)

The questions in this section were only asked of flooded respondents

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The following questions relate to some of the effects that you may have experienced as a result of flooding. Any answers you give will be treated as completely confidential. There are no right or wrong answers to any of the questions.

Please answer questions by ticking the box next to the answer which you think most applies to you.

When you have answered a question, please check to the right of the box you have ticked for any instructions telling you how to proceed. If there is no instruction, please just go on to the next question.

PART A

QA-1 **As a result of you experiencing the flood, did you personally experience intense fear, helplessness or horror?**

Yes	<input type="checkbox"/> (1)
No	<input type="checkbox"/> (2)

PART B

B-1-1 **I have recurring memories of the flood in the way of thoughts, images and perceptions and I can't seem to push them out of my mind.**

Never	<input type="checkbox"/> (1)	SKIP TO B-2-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

B-1-2 Indicate the degree to which such recurring memories distress, upset or bother you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

B-2-1 I have recurring dreams of the flood.

Never	<input type="checkbox"/> (1)	SKIP TO B-3-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

B-2-2 Indicate the degree to which such recurring dreams distress, upset or bother you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

B-3-1 I have acted or felt that the flood was happening again. For example, I have felt I have either relived the event, experienced hallucinations, illusions and/or flashbacks to the flood.

Never	<input type="checkbox"/> (1)	SKIP TO B-4-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

B-3-2 Indicate the degree to which such recurrences distress, upset or bother you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

B-4-1 I am reminded of the flood by triggers which resemble or symbolise an aspect of the flood (for example, TV programmes, weather forecasts, etc).

Never	<input type="checkbox"/> (1)	SKIP TO B-5-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

B-4-2 Indicate the degree to which such reminders of the flood distress, upset or bother you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

B-5-1 When reminded of the flood by triggers which resemble or symbolise an aspect of the flood, I feel nervous, have palpitations or feel tense.

Never	<input type="checkbox"/> (1)	SKIP TO C-1-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

B-4-2 Indicate the degree to which these reactions to the flood distress, upset or bother you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

PART C

C-1-1 I deliberately avoid thoughts, feelings or conversations about the flood.

Never	<input type="checkbox"/> (1)	SKIP TO C-2-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

C-1-2 Indicate the degree to which your efforts to avoid thoughts, feelings or conversations about the flood distress, upset or bother you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

C-2-1 I deliberately avoid activities, places, or people that arouse recollections of the flood.

Never	<input type="checkbox"/> (1)	SKIP TO C-3-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

C-2-2 Indicate the degree to which your efforts to avoid activities, places, or people that arouse recollections of the flood distress, upset or bother you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

C-3-1 When I try to recall the flood I am unable to remember certain parts or important things that happened.

Never	<input type="checkbox"/> (1)	SKIP TO C-4-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

C-3-2 Indicate the degree to which your inability to recall important aspects of the flood distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

C-4-1 I find I am not interested in people, things and activities which were important to me prior to the occurrence of the flood (for example, family, friends and hobbies).

Never	<input type="checkbox"/> (1)	SKIP TO C-5-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

C-4-2 Indicate the degree to which this lack of interest distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

C-5-1 I feel I have become more emotionally estranged, separated or cut off from others.

Never	<input type="checkbox"/> (1)	SKIP TO C-6-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

Appendix K: Questionnaire for the RPA dataset

C-5-2 Indicate the degree to which this emotional estrangement, separateness or feeling of being cut off from others distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

C-6-1 I feel I have a markedly reduced ability to feel emotions and share feelings, especially those associated with intimacy, tenderness and sexuality.

Never	<input type="checkbox"/> (1)	SKIP TO C-7-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

C-6-2 Indicate the degree to which the reduced ability to feel emotions and share feelings distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

C-7-1 I feel I do not have a future. (For example, not having a career, having a shortened life span or having marriage problems.)

Never	<input type="checkbox"/> (1)	SKIP TO D-1-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

C-7-2 Indicate the degree to which feeling you don't have a future distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

PART D

D-1-1 **I have difficulty falling or staying asleep.**

Never	<input type="checkbox"/> (1)	SKIP TO D-2-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

D-1-2 **Indicate the degree to which having difficulty falling asleep distresses, upsets or bothers you.**

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

D-2-1 **I experience irritability or outbursts of anger.**

Never	<input type="checkbox"/> (1)	SKIP TO D-3-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

Appendix K: Questionnaire for the RPA dataset

D-2-2 Indicate the degree to which being irritable or experiencing outbursts of anger distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

D-3-1 I have difficulty concentrating on tasks or completing tasks.

Never	<input type="checkbox"/> (1)	SKIP TO D-4-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

D-3-2 Indicate the degree to which having difficulty concentrating tasks or completing tasks distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

D-4-1 Since the flood there have been times when I have been overtly alert or watchful when there is no need to feel that way.

Never	<input type="checkbox"/> (1)	SKIP TO D-5-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

D-4-2 Indicate the degree to which being overtly alert or watchful when there is no need to feel this way distresses, upsets or bothers you.

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

D-5-1 I have strong startled reactions. (For example, when someone comes behind me unexpectedly or when a car backfires I show strong signs of startle.)

Never	<input type="checkbox"/> (1)	SKIP TO D-6-1
Rarely	<input type="checkbox"/> (2)	CONTINUE
Sometimes	<input type="checkbox"/> (3)	CONTINUE
Often	<input type="checkbox"/> (4)	CONTINUE
Always	<input type="checkbox"/> (5)	CONTINUE

Appendix K: Questionnaire for the RPA dataset

D-5-2 **Indicate the degree to which having strong, startled reactions distresses, upsets or bothers you.**

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

D-6-1 **Have you ever attended counselling with a health professional such as a psychologist or other qualified professional?**

Yes	<input type="checkbox"/> (1)
No	<input type="checkbox"/> (2)
Don't know	<input type="checkbox"/> (99)

D-6-2 **Have you ever been diagnosed by a psychiatrist/psychologist as having Post-traumatic Stress Disorder?**

Yes	<input type="checkbox"/> (1)
No	<input type="checkbox"/> (2)
Don't know	<input type="checkbox"/> (99)

PART E

In response to each of the following questions, please record your answer in the space available.

E-1-1 **How old (in years) were you at the time you experienced the flood?**

Years

E-1-2 **How old (in years) are you now?**

Years

PART F

Indicate how often the disturbances caused by the flood have significantly impaired or negatively influenced your personal and family relationships, your work and your general well-being.

Example of disturbances are: reliving the flood; intrusive memories of the flood; avoidance of people, places and situations connected to the flood; trouble sharing your feelings with others; difficulty in concentrating on tasks; difficulties related to sleep; and feeling irritated. If questions are not applicable, please indicate by writing 'N/A'.

F-1 **Mixing socially with others outside my family.**

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

F-2 **Family relationships.**

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

F-3 **Maintaining a normal health relationship with your partner.**

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

F-4 **Coping with everyday situations.**

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

F-5 **Coping with work.**

Not at all	<input type="checkbox"/> (1)
A little	<input type="checkbox"/> (2)
Somewhat	<input type="checkbox"/> (3)
Quite a lot	<input type="checkbox"/> (4)
Very much	<input type="checkbox"/> (5)

Post Event Survey: Final Version (20/01/05)
Households flooded September 2000 onwards SECOND PHASE January 2005

Appendix L: Questionnaire for the FHRC dataset

QA Could you tell me what type of property this is? Is it a... READ OUT. SINGLE CODE.

Detached house	1	
Semi-detached house	2	
Terraced house	3	
Bungalow	4	
Maisonette/split level flat with a basement or ground level floor	5	
Ground floor/basement flat	6	
Mobile home	7	
Other (PLEASE WRITE IN & CODE '8')	8	(33)

QB And could you tell me approximately when this property was built? Which decade? READ OUT. SINGLE CODE.

Before 1919	1	
1919-1944	2	
1945-1959	3	
During the 1960s	4	
During the 1970s	5	
During the 1980s	6	
During the 1990s	7	
Since 2000	8	
Don't know	9	(34)

QC Before the flooding did you or anyone in your household have any long-term illness, health problems or disability which limited your/their daily activities or the work you/they could do (including problems which are due to old age)? SINGLE CODE ONLY

Yes	1	ASK QD
No	2	GO TO QF
Don't know	3	(35)

IF 'YES' AT QC (CODE '1') ASK QD. OTHERS GO TO QF.

QD And does this come into any of the following categories? MULTICODE OK

Hearing difficulties	1	
Visual difficulties	2	
Physical difficulties	3	
Learning difficulties	4	
Other disabilities or difficulties	5	(36)

QE Did the presence in the household of someone with a long term illness or disability affect your household's ability to take action to protect your property in the recent/most serious flood in any way?

Yes a lot	1	
Yes a little	2	
No no effect	3	(37)

ASK ALL

QF Is English your first language?

Yes	1	
No	2	
Don't know	3	(38)

QG At what age did you complete full-time education? WRITE IN

Age
(39) (40)

QH SHOWCARD O Can you please indicate which one of the following letters represents your gross household income (before tax) per week, month, or year? SINGLE CODE ONLY

Gross Income				
	per week	per month	per year	(41)
D	Under £100	Under £400	Under £5,000	1
K	£100-£199	£400-£799	£5,000-£9,999	2
S	£200-£399	£800-£1,599	£10,000-£19,999	3
P	£400-£599	£1,600-£2,399	£20,000-£29,999	4
M	£600-£799	£2,400-£3,199	£30,000-£41,549	5
B	£800-£999	£3,200-£3,999	£41,550-£51,999	6
U	£1,000 or more	£4,000 or more	£52,000 or more	7
Refused				8

Appendix L: Questionnaire for the FHRC dataset

INTERVIEWER RECORD END TIME AFTER DEMOGRAPHICS
Hours Mins

INTERVIEWER RECORD START TIME
Hours Mins

INTRODUCTION/CONFIDENTIALITY

Good morning, afternoon, evening. My name is from MORI, the research organisation, and we are carrying out a survey for Middlesex University's Flood Hazard Research Centre. The interview will take about 35 minutes.

I would like to assure you that all the information we collect will be kept in the strictest confidence, and used for research purposes only. It will not be possible to identify any particular individual or address in the results.

Q27. Is this address a residential or business premises? SINGLE CODE ONLY

Residential	1	ASK Q2
Business	2	THANK AND CLOSE
Both	3	ASK Q2

(42)

ASK IF RESIDENTIAL AT Q1 (CODES 1 AND 3). OTHERS THANK AND CLOSE

Q28. Can I just check, has this property been flooded since September 2000? By 'flooding', I mean water overflowing from rivers or streams, or rainwater/melting snow running off gardens and pavements, and overflowing from drains (not burst pipes or leaking appliances inside the home). SINGLE CODE ONLY

Yes	1	ASK Q3
No	2	THANK AND CLOSE
Don't know	3	

(43)

ASK IF PROPERTY FLOODED SINCE SEPTEMBER 2000 (CODE 1). OTHERS THANK AND CLOSE

Q2.b And were you present at the time, or were you away overnight or living somewhere else at the time? SINGLE CODE ONLY

Yes, living here	1	ASK Q3
Away overnight	2	THANK AND CLOSE
Living somewhere else	3	

(44)

ASK IF WERE LIVING AT ADDRESS (CODE 1) AT Q2.b. OTHERS THANK AND CLOSE

I would like to ask you about the flooding that has occurred in recent years...

Q29. SHOWCARD A (R) Which, if any, of these parts of your residential property have been flooded since September 2000? Just read out the letter or letters. MULTICODE OK

A	Inside your home, under floor or in the basement or cellar of the property	1	
B	In the garage or outbuildings	2	ASK Q4
C	In the garden or driveway	3	
	None of these	4	SEE FILTER BELOW
	Don't know	5	

(45)

IF QUOTA FOR PROPERTIES WHERE ONLY GARAGE OR OUTBUILDINGS (CODE '2' AT Q3) HAVE BEEN FLOODED HAS BEEN FILLED, THEN THANK AND CLOSE

Appendix L: Questionnaire for the FHRC dataset

IF ONLY GARDENS AND DRIVEWAY HAVE BEEN FLOODED (CODE '3' AT Q3), THEN THANK AND CLOSE

IF PROPERTY IS BOTH BUSINESS AND RESIDENTIAL (AT Q1, CODE 3) AND ONLY OUTHOUSES OR GARAGE HAVE BEEN FLOODED, THEN THANK AND CLOSE

ALL OTHERS GO TO Q4

Q30. How long have you lived at this address? SINGLE CODE ONLY

	(46)		
Less than 1 year	1		
1 year or more (CODE '2' & WRITE IN NUMBER OF YEARS USING LEADING ZEROS)	2	<input type="checkbox"/>	<input type="checkbox"/>
		(47)	(48)
Don't know	3		(46-48)

Q31. Including yourself, how many people in your household are...? WRITE IN NUMBER OF PEOPLE IN EACH APPLICABLE BOX. IF NONE, LEAVE BLANK.

Children under 5	<input type="checkbox"/>	(49)
Children 5-9	<input type="checkbox"/>	(50)
Young people 10-17	<input type="checkbox"/>	(51)
Adults aged 18-64	<input type="checkbox"/>	(52)
Adults aged 65-74	<input type="checkbox"/>	(53)
Adults aged 75 and over	<input type="checkbox"/>	(54)

Q32. Before the recent flooding, were you aware that your address is in an area at risk from flooding? SINGLE CODE ONLY

Yes	1	
No	2	
Don't know	3	(55)

Appendix L: Questionnaire for the FHRC dataset

Q33. Since you have been living here, how many times altogether has this address been flooded... READ OUT a-c. WRITE IN FOR EACH USING LEADING ZEROS. IF NEVER, LEAVE BLANK

a	...Inside, under floor or in the basement or cellar of the property?	<input type="checkbox"/>	<input type="checkbox"/>	Don't know 1
		(56)	(57)	(58)
b	...In the garage or outbuildings?	<input type="checkbox"/>	<input type="checkbox"/>	1
		(59)	(60)	(61)
c	...In garden or driveway?	<input type="checkbox"/>	<input type="checkbox"/>	1
		(62)	(63)	(64)

(56-64)

IF ANSWER AT Q7A OR Q7B IS TWO OR MORE, ASK Q8. OTHERS GO TO Q9.A

Q34. How many times altogether since September 2000 has this address been flooded inside, under floor or in the basement or cellar, or in the garage or outbuildings? WRITE IN USING LEADING ZEROS. SINGLE CODE ONLY

Number of floods since September 2000	<input type="checkbox"/>	<input type="checkbox"/>	Don't know 1
	(65)	(66)	(67)

(65-67)

ASK ALL

Q35. Thinking about... READ OUT AS APPROPRIATE

a

IF FLOODED ONCE SINCE SEPTEMBER 2000 ...your recent flood...

IF FLOODED MORE THAN ONCE SINCE SEPTEMBER 2000 ...your most serious flood since September 2000...

... what was the approximate date of that flood event? WRITE IN USING LEADING ZEROS

<input type="checkbox"/>	<input type="checkbox"/>	month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	yea
(68)	(69)		(70)	(71)	(72)		
				(73)			

Don't know | 2

(74)

Q9.b Did the flooding start during the night or in the day time? SINGLE CODE ONLY

Day time	1
Night time	2
Don't know	3

(75)

Q36. SHOWCARD B (R) Thinking now just about that flood, where did your property flood? MULTICODE OK

A	Above floor level of property	1	ASK Q11 AND Q12
B	Below floor level of property	2	GO TO Q13
C	Basement or cellar	3	

Appendix L: Questionnaire for the FHRC dataset

D	Garage or outbuildings	4
E	Garden	5
F	Drive	6
	Don't know	7

(76)

ASK IF FLOODING REACHED ABOVE FLOOR LEVEL (CODE '1' AT Q10). OTHERS GO TO Q13
 Q37. **Approximately, how high above floor level did the water reach? WRITE IN USING LEADING ZEROS**

feet inches
 (77) (78) (79) (80)

Don't know | 2

(81)

Q38. **Approximately, how long did the floodwaters stay in your property? WRITE IN USING LEADING ZEROS**

days hours
 (82) (83) (84) (85) (86)

Don't know | 2

(87)

ASK ALL

Q39. **So, before or during that flooding, did your household receive any kind of warning, whether official or unofficial, that your property might flood? SINGLE CODE ONLY**

Yes – had warning <u>before</u> flood	1	ASK Q14A
Yes – had warning <u>during</u> flood	2	ASK Q14A
No – no warning	3	GO TO Q14B

Don't know | 4

(88)

ASK Q14A IF RECEIVED A WARNING EITHER BEFORE OR DURING FLOOD (CODES '1' OR '2' AT Q13). OTHERS GO TO Q14.B

Q40.a **How did you receive this warning? MULTICODE OK. DO NOT PROMPT. PROBE FULLY USING What else?**

(89)

Recorded telephone message from the Environment Agency	1
Personal telephone call from the Environment Agency	2
You telephoned Floodline	3
From a neighbour / friend / relative	4
From a flood warden	5
From the police	6
From the fire brigade	7
From your local authority	8
From a radio announcement / broadcast	9
From a television announcement / broadcast	0

Appendix L: Questionnaire for the FHRC dataset

From a warning siren or loudspeaker	X
From BBC Ceefax	Y
	(90)
From ITV Teletext	1
Personal observation/saw water level rising	2
Warning via a fax from Environment Agency	3
Other (PLEASE WRITE IN & CODE '4')	4

Don't know | 5

(89-90)

ALL THOSE WHO HAD WARNING NOW GO TO FILTER AT Q15

**[PAGES 7 TO 18 OF THE QUESTIONNAIRE DEALT WITH FLOOD WARNINGS.
DATA FROM THESE QUESTIONS WAS NOT USED IN THIS THESIS, SO THEY ARE
NOT REPRODUCED HERE]**

Appendix L: Questionnaire for the FHRC dataset

Q42. Approximately what was the total value of the damage caused by the flood to your household contents including cars? Please exclude any damage to the house itself. SINGLE CODE ONLY

Q43. Approximately what was the total value of the contents including cars that you were able to save by moving them? SINGLE CODE ONLY

	(29)	(30)
Nothing	1	1
Under £100	2	2
£100, less than £500	3	3
£500, less than £1,000	4	4
£1,000, less than £5,000	5	5
£5,000, less than £10,000	6	6
£10,000, less than £15,000	7	7
£15,000, less than £20,000	8	8
£20,000 or more	9	9

(29-30)

Q44. What, if anything, would have enabled you to save more property? MULTICODE OK. DO NOT PROMPT.

Longer warning time	1
More specific, more informative warning	2
More people to help move things	3
More space to move things to	4
More equipment to raise items	5
Being stronger/more physically able/fit	6
Other (PLEASE WRITE IN & CODE '7')	7
Nothing	8
Don't know	9

(31)

Q45. At the time of the... READ OUT AS APPROPRIATE

IF FLOODED ONCE SINCE SEPTEMBER 2000 ...your recent flood...

IF FLOODED MORE THAN ONCE SINCE SEPTEMBER 2000 ...your most serious flood...

...did you have insurance cover against the following for flooding? MULTI CODE

Building and structure	1
Contents – new for old	2
Contents – other	3
No - None	4

(32)

Q46. Did you bear any financial costs as a direct result of the flooding that were not covered by insurance? SINGLE CODE ONLY

Yes	1
No	2
Don't know	3

(33)

Q47. AVM is the automated voice message service that warns you if a flood is likely to occur. Can I just check are you on AVM now, or not? SINGLE CODE ONLY

Appendix L: Questionnaire for the FHRC dataset

Yes	1
No	2
Don't know	3

(34)

Q48 **Was your household on the AVM system at the time of the... READ OUT AS APPROPRIATE ...recent/most serious flood, or not? SINGLE CODE ONLY**

Yes	1	GO TO Q51
No	2	ASK Q49
Don't know	3	

(35)

ASK Q49 IF HOUSEHOLD WAS NOT ON THE AVM SYSTEM AT THE TIME (CODE '2' OR '3' AT Q48). OTHERS GO TO Q51.

Q49 **Have you received an offer to be put on the AVM?**

Yes	1	GO TO FILTER AT Q50
No	2	GO TO Q51
Don't know	3	

(36)

ASK Q50 OF ALL THOSE WHO HAVE RECEIVED AN OFFER TO BE PUT ON AVM (CODE 1 AT Q49) BUT ARE NOT ARE NOT CURRENTLY ON THE AVM (CODES '2' AND '3' AT Q47). OTHERS GO TO Q51.

Q50. SHOWCARD M (R) **Why have you not taken up the offer to be put on the AVM? Just read out the letter or letters that apply. MULTICODE OK**

A	Think it is a waste of time	1
B	Think there is little risk	2
C	Don't trust the Agency to send message	3
D	Didn't want to receive lots of messages or false alarms'	4
E	No telephone	5
	Other (PLEASE WRITE IN & CODE '6')	6
	Don't know	7

(37)

ASK ALL

Q51. **Does your household own or rent this accommodation? SINGLE CODE ONLY**

Own/ with mortgage	1
Rent from council	2
Rent from housing association	3
Rent from private landlord	4
Accommodation tied to job	5
Don't know	6
Other (PLEASE WRITE IN & CODE '7')	7

(38)

Appendix L: Questionnaire for the FHRC dataset

Q52. While living in your current home, have you done any of the following? READ OUT a-g. IF YES, ASK Was this before or after the... READ OUT AS APPROPRIATE

IF FLOODED ONCE SINCE SEPTEMBER 2000 ...your recent flood?

IF FLOODED MORE THAN ONCE SINCE SEPTEMBER 2000 ...your most serious flood?

SINGLE CODE FOR EACH

		No	Yes before	Yes after	
a	...Obtained sand-bags and sand in case it floods in the future?	1	2	3	(39)
b	...Kept ditches and drains especially clean in readiness for flooding?	1	2	3	(40)
c	...Installed water pump(s)?	1	2	3	(41)
d	...Bought flood-gates	1	2	3	(42)
e	...Bought air-brick covers?	1	2	3	(43)
f	...Built new walls or drains to protect your home against flooding?	1	2	3	(44)
g	...Taken out insurance-cover against flooding?	1	2	3	(45)

Q53. Have you acted to reduce the damage that water would cause if it got into your home, for example by... READ OUT a-j. IF YES, ASK Was this was before or after the... READ OUT AS APPROPRIATE ...recent/most serious flood? SINGLE CODE FOR EACH

		No	Yes before	Yes after	
a	...Buying cheaper or more flood resistant ground floor furniture?	1	2	3	(46)
b	...Laying tiles on the floor or replacing fitted carpets with roll-up carpets or rugs?	1	2	3	(47)
c	...Replacing old kitchen units with more flood resistant ones?	1	2	3	(48)
d	...Permanently raising furniture, washing machines etc off the floor?	1	2	3	(49)
e	...Using water-resistant plaster on the walls?	1	2	3	(50)
f	...Making a written plan of what to do in case of a flood?	1	2	3	(51)
g	...Moving electricity sockets higher up the walls?	1	2	3	(52)
h	...Moving valuable items off the ground or upstairs?	1	2	3	(53)
i	...Moving sentimentally important items off the ground or upstairs?	1	2	3	(54)
j	...Something else to limit flood damage (PLEASE WRITE IN)	1	2	3	(55)

Appendix L: Questionnaire for the FHRC dataset

Q54. SHOWCARD N (R) How strongly do you agree or disagree with the following statements? READ OUT a-n. ROTATE ORDER. TICK START. SINGLE CODE FOR EACH

		Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	No opinion	
		A	B	C	D	E		
<input type="checkbox"/>	a ...I don't know what I could do to protect my home from flooding	1	2	3	4	5	6	(56)
	b ...I don't have the money to spend on protecting my home from flooding	1	2	3	4	5	6	(57)
	c ...There aren't enough good tradesmen and builders around to adapt my home	1	2	3	4	5	6	(58)
<input type="checkbox"/>	d ...No-one in my household has the DIY skills to adapt my home	1	2	3	4	5	6	(59)
	e ...I prefer not to think about scary things like floods	1	2	3	4	5	6	(60)
	f ...Flooding is unlikely to threaten my home again in the near future	1	2	3	4	5	6	(61)
<input type="checkbox"/>	g ...Even if my home were flooded again, it wouldn't be very bad	1	2	3	4	5	6	(62)
	H ...I've got more important things to worry about than being flooded	1	2	3	4	5	6	(63)
	I ...I'm a person that doesn't worry much about things	1	2	3	4	5	6	(64)
	J We don't expect to be living here very much longer	1	2	3	4	5	6	(65)
	k ...The Environment Agency <u>has</u> protected my home from flooding	1	2	3	4	5	6	(66)
	l ...The Environment Agency <u>should</u> protect my home from future flooding	1	2	3	4	5	6	(67)

ASK M OF HOME-OWNERS ONLY (CODING '1' AT Q51)

<input type="checkbox"/>	M ...When it comes to selling my home in the future, I wouldn't want potential buyers to know that my home sometimes floods	1	2	3	4	5	6	(68)
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ASK N OF THOSE RENTING ONLY (CODING '2', '3' OR '4' AT Q51)

N	...It's not up to me to protect my home from floods – that's my landlord's business	1	2	3	4	5	6	(69)
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Appendix L: Questionnaire for the FHRC dataset

Q55. Would you be willing to be contacted again by researchers about the flooding?

Yes	1	PLEASE REMEMBER TO OBTAIN SIGNATURE ON BACK PAGE	(70)
No	2		

GO TO DEMOGRAPHICS