

# **Behavioural Economics and ‘Vulnerable Consumers’: A Summary of Evidence**

Written by Dr. Pete Lunn and Dr. Sean Lyons  
Economic and Social Research Institute (ESRI)

for the Communications Consumer Panel  
9<sup>th</sup> December 2010

### **About the authors**

Dr. Pete Lunn is a behavioural economist, author and a Research Officer at the Economic and Social Research Institute (ESRI) in Dublin, Ireland. Dr. Sean Lyons is an economist specialising in competition and regulation and is a Senior Research Officer at the ESRI. The ESRI does not take institutional policy positions and the authors are solely responsible for the content and the views expressed therein.

### **Thanks and acknowledgements**

The authors would like to thank Professor Catherine Waddams Price, Emily Keaney, the members of the Communications Consumer Panel and a number of anonymous reviewers for helpful comments and suggestions relating to earlier drafts of this report. Any errors or omissions are the responsibility of the authors.

# Behavioural Economics and ‘Vulnerable Consumers’: A Summary of Evidence

Dr.Pete Lunn and Dr.Sean Lyons  
Economic and Social Research Institute (ESRI)

## 1. Introduction

Recent work in behavioural economics and related disciplines is changing our understanding of economic decision-making. We now know more about how and why people choose the goods and services they do. This research has implications for our understanding of how markets work, the effectiveness of competition and the role played by regulation. It also provides insight into whether some people gain greater benefit from the operation of competitive markets than others.

Within this broad context, the present paper summarises evidence from behavioural economics relating to whether there are ‘vulnerable consumers’ in electronic communications markets. It considers whether specific groups of consumers, including those in lower socio-economic groups, older people and disabled people, are more prone to certain “behavioural biases” and hence likely to benefit less from the electronic communications market. The main behaviours considered are defined in Box 2. After summarising the empirical evidence, the paper addresses potential policy and regulatory responses.

### Box 1: Key findings

- The relevant behavioural biases (see Box 2) exist across all groups of consumers, but there is variation in their relative strength across groups.
- Evidence from experiments and surveys, which is indicative rather than conclusive, suggests that some groups of consumers are more prone than others to decision-making that deviates systematically from traditional economic assumptions of rational behaviour.
- The strongest evidence concerns people in lower socio-economic groups, who are more inclined towards some biases and tend to score lower on tests of general decision-making competence.
- There is some evidence that older people may also be more prone to certain biases.
- There is too little evidence regarding disabled consumers to draw any conclusions.
- In the market, these differences between groups may be amplified. Consumers who have the *same* tendency towards a given bias may produce *different* decisions because the bias interacts with their situation. For instance, older people and people in lower socio-economic groups may receive less marketing information and be more isolated from helpful social networks, making them more likely to fall back on biased rules of thumb.
- The overall impact on consumer welfare may well be detrimental
- More evidence is needed, but especially research examining the influence of behavioural biases that is specific to the communications sector.

## 2. Weighing the evidence

The body of evidence relating to individual differences in economic behaviour is slight. The conclusions set out in this paper are therefore provisional and may change in light of future research.

Ideally, evidence would consist of an established body of peer-reviewed studies within which important findings had been replicated and were known to be robust to a range of manipulations. The evidence surveyed here had instead to be drawn from a rapidly moving research frontier, including mainstream published work, working papers and more peripheral studies. In addition, because variation in the strength of biases across subsections of the population is a secondary research question in behavioural economics, the samples usually employed are too small and unrepresentative for making conclusive comparisons across social groups.

### Box 2: Decision-making biases and consumer behaviour

Here we define a non-exhaustive range of established biases in decision-making, selected for their relevance to electronic communications markets, together with hypotheses regarding how they might affect consumer behaviour.

There is presently little or no empirical evidence relating these phenomena to actual behaviour observed in the relevant markets.

- **Status quo bias:** People are biased towards the existing or default option. This may dampen activity in the market, i.e. reduce adoption and switching between suppliers.
- **Loss aversion and the endowment effect:** People value something more when it is given up than when it is gained. This may reduce switching. It might also make consumers more likely to respond to price increases than price decreases.
- **Time discounting:** People are biased towards rewards in the present at the expense of rewards in the future. This may make the immediate effort of signing up to a new deal loom larger than the future benefits, leading to procrastination and inertia. It may also make consumers susceptible to offers that stress immediate benefit, not long-term value.
- **Bandwagon effect:** People are biased in the direction of social norms and decisions taken by others. Consumers may be more inclined to choose suppliers with large or growing market share since these appear to have been endorsed by others.
- **Ambiguity aversion:** People dislike taking risks that they cannot accurately quantify. This may mean that complexity of available contracts and tariffs will dampen consumer activity.
- **Heuristics:** People use rules of thumb in place of exhaustive calculation. Even active, engaged consumers may fail to select the best contracts, especially if the choice is complicated.
- **Framing:** People choose different options when the decision before them is described in different ways. This may primarily influence responses to marketing messages.

- **Overconfidence:** People overestimate both the accuracy of their own judgements and their ability to control future behaviour. This may lead consumers to predict usage levels poorly.
- **Projection bias:** People project recent trends into the future, despite predictable changes that are likely to alter them. This may lead people to fail to anticipate changes in usage.

Evidence suggests most of these effects are likely to be stronger when it is more difficult to assess the value of options.

These limitations of the available evidence have implications for the weight that should be attached to any inferences drawn. Indications are provided in the paper as to which findings are most solid and which are more speculative.

### **3. Commonality of main behavioural findings**

While some studies have recorded significant individual differences relating to most of the behaviours listed in Box 2, the standard experimental methods reveal these biases regardless of the background characteristics of the experimental subjects.<sup>1</sup> For instance, economic experiments involving the exchange of consumer items and choices between lotteries show that the large majority of individuals over very many studies and different subject pools behave as if they are loss averse and display a bias towards the status quo.<sup>2</sup> This bias seems to be overcome only by extensive training or considerable expertise.<sup>3</sup> Nevertheless, while the existence of these biases may not vary by background characteristics, the relative strength of some biases does seem to display some variation by socio-demographic group.

### **4. Individual differences in specific biases**

A few experiments and surveys examine whether certain biases are stronger or more prevalent among consumers traditionally seen as vulnerable, such as older people and those of lower socio-economic status (measured by educational attainment or income). There is a lack of research concerning other potentially vulnerable groups, such as disabled people. These studies have found:

- Some evidence that loss aversion may be somewhat greater among those with low educational attainment, those with high income/wealth and older people.
- More persuasive evidence that people with low educational attainment and/or income discount time more steeply, placing greater weight on immediate benefits at the expense of future rewards.
- Evidence that people discount time less steeply with age, although following retirement immediate benefits may become a stronger influence again.

- Some evidence that older people are more sensitive to framing.

#### **4.1 Loss aversion**

Loss aversion implies that people care more about incurring losses than making equivalent gains. At least two studies have found that loss aversion is stronger among those with lower educational attainment<sup>4</sup>. One might therefore expect less educated consumers to be less likely to switch suppliers.

However, there is also evidence that people with higher levels of income and wealth may be *more* loss averse.<sup>5</sup> Thus, given that income and educational attainment are highly correlated, it cannot be concluded that loss aversion is greater among people of lower socio-economic status - the pattern is more complicated.

Some studies have found loss aversion to be greater among older people, but others have failed to find a significant effect of age.<sup>6</sup>

#### **4.2 Time discounting**

Time discounting refers to the way people weigh up immediate benefits against future rewards. A larger number of studies have measured variation in time discounting, leading to a clearer empirical pattern.<sup>7</sup>

The evidence suggests that people with lower educational attainment and/or income discount time more steeply: they are more likely to place greater weight on immediate benefits at the expense of future rewards.

In contrast, it appears that people discount time less steeply as they get older; patience generally increases with maturity. However, there is some evidence that in old age or following retirement, time discounting steepens again.<sup>8</sup> This age profile may mean that young people and perhaps older people are more likely to respond to marketing messages that stress immediate rewards, such as teaser rates or give-away promotions.

#### **4.3 Other biases**

There is a lack of studies that aim to relate the other behaviours listed in Box 2 to socio-demographic characteristics. Some evidence indicates that older people are more sensitive to framing, such that their decisions may be more influenced by the way options are presented.<sup>9</sup> There is also a suggestion that ambiguity aversion, the disinclination to take unquantifiable risks, may be stronger among people on low incomes.<sup>10</sup>

### **5. Decision-making competence**

There is a more established body of empirical evidence relating to individual differences in general decision-making competence. This evidence suggests that less well-off consumers are probably more vulnerable in a market that presents challenging decisions, requiring them to evaluate perhaps many options against their own future behaviour. Older people may also be similarly affected.

A series of experimental and survey studies has established that the presence of biases is correlated across individuals: people prone to a number of biases generally considered detrimental are more likely to display other biases.<sup>11</sup>

For instance, individuals most likely to be sensitive to framing are more likely to be overconfident in their judgement. These behaviours are also correlated with the likelihood of taking an inconsistent approach to risk, making statistical reasoning errors, using unhelpful heuristics and failing to recognise social norms. These correlations suggest that decision-making may be considered a competence or skill that varies systematically across individuals.

The likelihood of displaying these biases in decision-making is correlated with other personal characteristics, which include performance in tests of cognitive function, numeracy and literacy.<sup>12</sup> These are important findings, because such cognitive competencies vary systematically by social group. People in lower socio-economic groups score lower on tests of cognitive function,<sup>13</sup> which also declines with age throughout adulthood.<sup>14</sup> Less well-off and older consumers are therefore likely to be more vulnerable in a market that presents challenging decisions.

Nevertheless, it is not entirely clear that older people are more prone to biases in decision-making. While on the one hand they are more likely to be sensitive to framing and less consistent in their decisions, on the other they are less likely to stick with a poor decision and better at recognising social norms,<sup>15</sup> which may or may not aid decision-making in the market (see Box 3). Thus, while cognitive ability declines with age, its impact on decision-making appears to be compensated for by experience, with the final balance unknown.

## **6. Behavioural findings and the marketplace**

Although the experimental and survey evidence is far from conclusive, it nevertheless indicates that people in lower socio-economic groups, and perhaps also older people, are more inclined towards decision-making that deviates systematically from the traditional economic assumptions of rational behaviour.

However, the controlled conditions of experiments and the hypothetical decisions explored in surveys do not reflect real market conditions. While there is growing evidence that many of the biases listed in Box 2 are echoed in real markets,<sup>16</sup> this is not guaranteed. More importantly, the implications of the biases for market outcomes are unclear.

Two points are crucial here:

- It is often assumed that these biases are irrational and consumers would benefit from efforts to reduce or eliminate them. This deduction amounts to an empirical hypothesis and does not necessarily hold (see Box 3). Research specific to the market is required to test it.

- The behavioural economic evidence described may greatly underestimate the vulnerability of certain consumers in the market, because it fails to address differences in the decision-making environment they face.

### **Box 3: Are behavioural “biases” irrational?**

Behavioural deviations from traditional (neo-classical) economic assumptions are usually described as “biases” and frequently labelled “irrational”. However, these biases are not necessarily irrational, nor even detrimental. The bandwagon effect provides a simple example, because copying the behaviour of others may, on average, be more likely to lead to a better contract, thereby improving consumer welfare. For unsure consumers, following the herd may be a sensible approach.

The ultimate impact of the status quo bias and loss aversion may be more subtle. Both effects are known to be stronger when the value of available options is harder to assess. This suggests a rationale: people take account of the possibility that they will evaluate options incorrectly. Direct evidence from the UK electricity market shows that this factor is important (see main text). Those consumers who expend time and effort switching suppliers in order to make savings often make themselves worse off and usually fail to find the best contract. Thus, a status quo bias may be a sensible response for an individual who finds the market complicated. While those consumers least willing to switch suppliers might appear to be “irrational” because they fail to switch to a cheaper package, they may also be those most likely to choose a poorer deal. It is therefore possible that for some consumers the bias makes them better off, and policies to encourage active consumers could hence backfire.

The key point is that the ultimate effects of a behaviour in the marketplace depend on the nature of the market. To determine whether a “bias” damages or enhances consumer welfare we require research specific to the market in question.

In the controlled experiments and surveys used by behavioural economists, each subject faces an identical decision-making environment. In the marketplace, different consumers face different environments. For instance, a middle-class professional may find it easy to obtain advice from educated colleagues who have taken similar decisions and can recommend suppliers or deals, reducing the cognitive effort required to be an active consumer and improving assessments of value. Evidence shows that higher cognitive effort and uncertainty about value exaggerates the extent of most behavioural biases listed in Box 2. Thus, consumers who have the *same* tendency towards a given bias may produce *different* decisions because the bias interacts with their situation. If so, the extent of bias revealed by standard methods will be a poor guide to the influence of the bias on different consumers in the market.

This may well be the dominant factor with respect to who benefits most from the competitive market. Those in lower socio-economic groups are likely to face decisions involving greater uncertainty and requiring greater cognitive effort. They are less frequently the target of marketing information, less likely to have the skills to assess complicated contracts

and less likely to have helpful social networks. Consequently, behavioural biases may feature more strongly in their decisions.<sup>17</sup> Clearly, similar situational factors may also be relevant for older people.

## 7. Potential effects on consumer welfare

Possible effects on consumers can be segmented into three phases of consumption choice:

- **Adoption:** the initial decision about whether to use a service
- **Activity:** the consumer's subsequent level of activity in searching and switching among available service options
- **Errors:** the quality of purchasing decisions from among available service choices and tariffs

It is straightforward to see how biases may affect consumer welfare in each phase. If behavioural biases reduce adoption of a service, this may result in lost consumer surplus. Where activity is low, consumers might miss out on new packages more appropriate to their preferences. If some of those who actively participate make poor purchasing decisions, they may pay a higher price or receive less value.

The effects of biases on these phases may be linked too. For instance, those who feel they face a high risk of errors in service choices may choose a lower level of search activity. For others, over confidence or a positive projection bias concerning future use of a service could lead to higher than optimal adoption and search activity, but also lead to errors in the service choices they make.

There is a wide range of factors that may lead consumers to different levels of adoption, activity and errors. Some are rational and to some extent predictable: consumers may have different underlying preferences for services and for incurring costs associated with search and switching. Others are unpredictable, such as changes in preferences that occur after purchase due to unanticipated changes in a consumer's circumstances. Still others arise from biases that the consumer does not perceive. It is therefore difficult to isolate the effects of biases from other factors that cause variations in consumer choices.

Conventional utilities regulation already takes some such factors into account. For example, regulators recognise that consumers have differing appetites for incurring search costs, and consumer protection regulation aims to prevent imposition of unfair contract terms. Yet little empirical work decomposes group differences into those caused by different preferences or circumstances and those due to behavioural biases. For now, we can do little more than note the scale of group differences. This may help to put an upper bound on how significant problems may be, since not all differences between groups are likely to be down to differing levels of biases. However, more research will be needed to work out how important individual biases are as a contributor to the observed differences between groups.

## 8. Evidence from electronic communications markets

Evidence from electronic communications markets is consistent with a widespread influence of behavioural biases, but it is difficult to isolate or measure their impact.

Adoption of some electronic communications services, notably broadband access, is well known to be lower among some groups of potentially vulnerable users. For example, fewer than 40% of UK adults over 65 years of age had broadband internet connections at home in 2009, compared to over 80% in the 35-54 age group.<sup>18</sup> Consumers with lower levels of income, education and in lower socio-economic groups are also less likely to have broadband at home. However, we did not identify any research that links service adoption by these groups to biases *per se*.

There is mixed evidence on differences between potentially vulnerable consumers and the wider population in levels of activity (i.e. search and switching). Some surveys have found significant group variations, such as low activity in the fixed line and mobile markets among over-65s<sup>19</sup> and low switching of fixed line services by disabled persons under 65.<sup>20</sup> Other research categorises consumers as inactive, passive, interested or engaged and concludes that differences in activity are driven by “attitudes and behaviours” not demographics.<sup>21</sup>

Evidence on the quality of purchasing decisions made by active telecoms consumers is limited, and no research on the quality of decisions by the potentially vulnerable was identified.

Research published by the price comparison firm, BillMonitor, emphasises that the vast majority of UK mobile telephony consumers are on the “wrong” tariff.<sup>22</sup> This is a plausible finding, but by itself does not tell us much about the accuracy of purchasing decisions made by active consumers. The research sample was drawn from a self-selected group who used the website, which may have resulted in the problem being overstated. Most participants might have been previously inactive rather than victims of poor choices.

## 9. Evidence from other markets

Other UK utilities markets also support the argument that biases influence consumer behaviour; although the evidence on whether these biases are detrimental is more mixed.

The National Audit Office, when looking at the effects of price deregulation, has indicated that vulnerable consumers may be disadvantaged when participating in competitive markets.<sup>23</sup> It cites evidence from the electricity market, where consumers in social group E; aged 65+; in rented accommodation; or on pre-payment meters are less prone to switch than the wider population.

There is also more compelling evidence that behavioural biases play a role. Across a range of markets, when faced with decisions that involve too many options or too much information on each option, consumers become less inclined to be active and more likely to make errors.<sup>24</sup> These two findings

are doubtless related: faced with a more complex decision, a consumer may assume, correctly, that they are more likely to make a mistake and hence may be less inclined to be active.

The Centre for Competition Policy has made extensive use of survey data from the UK electricity market.<sup>25</sup> It has found that consumers' decisions about whether to engage in search and switching were more influenced by how confident they felt about estimating the impact of these activities than about the level of gains they expected to make.<sup>26</sup> Most strikingly, the findings reveal that 20-32% of consumers who switched supplier in order to obtain cheaper electricity actually ended up paying more, while less than 20% switched to the firm offering the highest saving.<sup>27</sup> Taken together, these findings suggest that complexity of offerings and uncertainty surrounding value are important drivers of behaviour in the market, as the experimental work on biases implies.

The results underline the point that biases such as status quo bias, loss aversion, inertia and procrastination, which are likely to limit consumer activity, may not be detrimental to consumer welfare given the high rate of error in consumer decisions.

It would be useful to conduct a similar analysis in electronic communications markets, to see how many customer switching decisions lead to suboptimal outcomes and how the choice of search strategy affects outcomes (e.g. the use of operator websites versus comparison websites or other strategies).

## **10. A role for regulatory intervention?**

On balance, given the currently available behavioural evidence and patterns of adoption, activity and errors, it seems likely that behavioural biases play a significant role in market outcomes and that they differentially affect different groups of consumers.

Given this, how might regulation improve consumer welfare? To address this question, we must ask:

- whether the market can address the issues unaided
- what regulatory interventions are already underway
- where additional regulatory action might improve societal welfare.

### ***10.1 Whether the market can address the issues unaided***

Ofcom's regulatory principles include a bias against regulatory intervention. Regulatory measures are applied only where markets are demonstrably failing. As with many informational problems, markets may themselves devise partial solutions. Complexity in offerings and pricing can give rise to intermediaries such as comparison websites and publications. Suppliers themselves may see a market opportunity to provide simplified offerings, guarantees of rebates or carry-over to consumers on tariffs inappropriate for their actual usage.

However, markets do not seem to have addressed the relevant issues fully, either in general or for vulnerable consumers specifically. For example, there is little evidence of a trend towards simplicity in tariff design or presentation.<sup>28</sup> BillMonitor estimated that there were over 7 million distinct mobile telephony “deals” on offer on 29 September 2010.<sup>29</sup>

Complexity in offerings may arise naturally as a consequence of varied consumer preferences. However, suppliers may also face incentives to add complexity or otherwise make it more difficult for consumers to gain access to useful information, assess offers and act on market information.<sup>30</sup> Incentives to do these things may even strengthen as competition intensifies.<sup>31</sup> Comparison websites and publications have emerged, but such intermediaries face their own incentives that may not always be aligned with the interests of consumers. Such mismatches could lead to a lack of credibility and to ineffectiveness, in the absence of regulation.

One study suggests that behavioural biases might be viewed as a “fourth market failure” alongside market power, imperfect information and externalities.<sup>32</sup>

## ***10.2 Regulatory interventions already underway***

Ofcom’s current consumer protection policies acknowledge the potential importance of behavioural biases and address some difficulties faced by vulnerable consumers, although these policies are not explicitly linked.<sup>33</sup> Existing surveys track consumers’ adoption and activity levels by socio-demographic group, but there is less focus on whether active consumers make good decisions. Ofcom has also done significant work on improving the quality of information available from intermediaries, including kitemarking price comparison websites. This should help to address some problems, to the extent that vulnerable consumers employ such intermediaries.

Recently, Ofcom published experimental evidence on how call prices might be more effectively communicated to customers.<sup>34</sup> This is a promising avenue for directly addressing the environment in which biases operate, especially with respect to complexity and framing. Experiments allow the researcher to identify and assess differences in the ways consumers perceive and react to the information provided to them.

## ***10.3 Where additional regulatory action might improve societal welfare***

One possibility is to adopt consumer protection measures that pose little risk of detriment to “rational” consumers, but may significantly assist those adversely affected by biases.<sup>35</sup> A suggested approach to this uses the following classification of interventions:<sup>36</sup>

- **Reset defaults:** specifying default terms and conditions that protect vulnerable or disengaged consumers, or requiring contract renewals to offer “opting out” as a default option.
- **Reframing:** setting standards for clear disclosure of prices or requiring cooling-off periods following particular forms of selling.

- **General de-biasing:** educating customers about the real cost of trade-offs between short-term and long-term elements of deals.

Some specific suggestions for additional regulation in electronic communications markets include limiting contracts to one year, requiring that customers give written permission for contract extensions, limiting the use of contract termination penalties, restricting the practice of charging for equipment upon contract cancellation and requiring suppliers to offer risk-free trial periods.<sup>37</sup> Such interventions require careful consideration and piloting, however, because it is not always straightforward to predict the behavioural response. For instance, while a risk-free trial period may encourage consumer activity and potentially insure consumers against poor decisions, it could also exacerbate the effect of biases, if for example consumers decide on the basis that they will reassess at the end of the trial period yet fail to do so.

Unfortunately, it seems unlikely that policymakers will find many measures that can be adopted without disadvantaging someone. In practice, almost every regulatory measure will impose costs on some consumers while protecting others. Examples of these costs might include delays in receiving a preferred service, extra time spent on more frequent contract renewals or requirements for additional paperwork. There is also the danger that too much protection may undermine the incentives for consumers to learn to protect themselves in an evolving market. The costs and benefits to different groups of consumers should thus be estimated before applying new forms of intervention.<sup>38</sup>

For instance, it is sometimes suggested that regulation should aim to simplify price structures. But a cautionary approach involving experimentation and piloting of new regulations and associated price structures is advisable, because the consequences of such regulations are not clear from the available evidence. It is true that more complex decisions make consumers more inclined to act on the basis of suboptimal rules of thumb. Yet it is difficult to see how the pricing of communications services could be made as simple as the present pricing of electricity services, and evidence from the UK electricity market described above shows that many consumers still take poor decisions and switch to more expensive suppliers. Thus, although there is reason to believe that such regulations might help to address some of the problems described in this report, the benefits will not necessarily outweigh the additional costs imposed.

A more promising avenue is hence to improve the effectiveness of existing regulation by incorporating evidence on how consumers actually interact with the specific market concerned. Further use of experiments to tailor regulatory measures should be encouraged. A useful discussion of experiments and other methods that may be used to “road test” consumer remedies was published recently by the Competition Commission and Office of Fair Trading.<sup>39</sup>

## 11. Where next?

Although the evidence supplied by behavioural economics has changed and continues to change our understanding of consumer behaviour, there

remains much that we do not understand. On the balance of evidence, it is likely that decision-making biases operate in electronic communications markets and that they have an impact on consumer welfare, especially for those in lower socio-economic groups and perhaps for older people. Broader effects on consumer welfare are also likely to the extent that biases limit the effectiveness of competition more generally.

Combining the findings from the UK electricity market with the fact that services bundles and price structures tend to be more complex in electronic communications markets, the scope for consumer detriment may be great. There is therefore a strong argument for employing similar survey research to examine consumer perceptions and behaviour specific to the relevant markets.

However, there is also evidence that some biases may actually have a protective effect for some groups of consumers. This needs to be explored in more depth.

The present report concentrates on the demand side - how consumers make choices. Further work is required on the extent to which suppliers are aware of and respond to consumer biases. For instance, given increasing knowledge of consumer behaviour, marketing strategies may be devised specifically to exploit particular biases or groups.

In general, it is important that policy design reflects actual consumer search and choice behaviour, rather than assuming rationality or perfect access to information. Intervention to correct what appears to be a bias should not be made unless we are confident in our understanding of how and to what extent a given bias causes harm. That said, trying to reduce the level of complexity faced by consumers appears promising, especially where interventions are experimentally trialled.

---

<sup>1</sup> See, for example, surveys in Kagel & Roth (1995, *Handbook of Experimental Economics*, Princeton University Press)

<sup>2</sup> Horowitz & McConnell (2002, *J of Env Ec & Man* 44); Serdar & Onculer (2005, *J of Ec Psy* 26)

<sup>3</sup> List (2003, *QJE*, 118); Plott & Zeiler (2005, *Am Ec Rev* 95)

<sup>4</sup> Gächter *et al.* (2007, IZA Discussion Paper 2961); Booij *et al.* (2009, IZA Discussion Paper 4117)

<sup>5</sup> Gächter *et al. op. cit.*

<sup>6</sup> de Bruin *et al.* (2007, *J Pers & Soc Psy* 92); Gächter *et al. op. cit.*; Booij *et al. op. cit.*

<sup>7</sup> Green *et al.* (1994, *Psy Sci* 5); Harrison *et al.* (2002, *Am Ec Rev* 92)

<sup>8</sup> Read & Read (2004, *Org Beh & Hum Dec Proc* 94)

<sup>9</sup> de Bruin *et al. op. cit.*

<sup>10</sup> See Akay *et al.* (2009, IZA Discussion paper 4225)

<sup>11</sup> De Bruin *et al. op. cit.*; review in Stanovich & West (2000, *Beh & Brain Sci* 23)

<sup>12</sup> De Bruin *et al. op. cit.*; Stanovich & West *op. cit.*; Frederick (2005, *J Ec Persp* 19); Peters *et al.* (2006, *Psy Sci* 17)

<sup>13</sup> See for example Turrell *et al.* (2002, *J of Gerontology B* 57); Gottfredson (2002, *J Pers & Soc Psy* 86) and many others.

<sup>14</sup> Craik and Salthouse (2000, *The Handbook of Aging and Cognition*, Lawrence Erlbaum)

<sup>15</sup> De Bruin *et al. op. cit.*

<sup>16</sup> See for example Camerer (2000, in *Choices, Values and Frames*, Kahneman and Tversky eds., CUP)

- 
- <sup>17</sup> See Bertrand *et al.* (2010, forthcoming in J Pub Pol & Mar)
- <sup>18</sup> Ofcom (2009, Communications Market Report, August, p.250)
- <sup>19</sup> Ofcom (2009, The Consumer Experience: Research Report, 9 December, p.98)
- <sup>20</sup> Consumer Panel (2007, Consumers and the communications market, p.48)
- <sup>21</sup> Ofcom (2006, Consumer Experience Research Annex 4, Consumer Decision-Making in the Telecoms Market, Report on research findings, 16 November). A survey of the evidence from international markets is included in Xavier & Ypsilanti (2008, info 10)
- <sup>22</sup> BillMonitor (2010, Consumer Factsheet, downloaded 16 March, <http://www.billmonitor.com/consumer-factsheet.html#fn1>)
- <sup>23</sup> National Audit Office (2008, Protecting consumers? Removing retail price controls, report by the Comptroller and Auditor General, HC 342 Session 2007-2008)
- <sup>24</sup> E.g. Wilson & Waddams Price (2010, forthcoming in Ox Econ Papers); Frank & Lamiraud (2008, J Ec Beh & Org 71)
- <sup>25</sup> See the range of papers and policy briefs at <http://www.uea.ac.uk/ccp>.
- <sup>26</sup> Chang & Waddams Price (2008, ESRC Centre for Competition Policy Working Paper 08-15)
- <sup>27</sup> Wilson & Waddams Price, *op. cit.*
- <sup>28</sup> However, there are specific examples of simplified tariffs such as BT Basic, offered to consumers on benefits.
- <sup>29</sup> BillMonitor (2010, About the Maths, downloaded 29 September, <http://www.billmonitor.com/about-the-maths.html> )
- <sup>30</sup> Bennett *et al.* (2010, Competition Policy International 6)
- <sup>31</sup> See, for example, Carlin (forthcoming, J Fin Ec) on retail financial markets
- <sup>32</sup> Bennett *et al. op. cit.*
- <sup>33</sup> Ofcom (2006, Consumer Policy Statement, 8 December, Sections 3 and 5)
- <sup>34</sup> Ofcom (2010, Using experiments in consumer research, 1 March)
- <sup>35</sup> Camerer *et al.* (2003, 151 U. Pa. L. Rev.) and Jolls *et al.* (1998, Stanford Law Review 50); but for an opposing view, Mitchell (2002, 91 GEO. L.J. 67)
- <sup>36</sup> Xavier (2008, OECD Ministerial Background Report, DSTI/CP(2007)6/FINAL)
- <sup>37</sup> Xavier & Ypsilanti, *op. cit.*
- <sup>38</sup> Armstrong (2008, Comp Pol Int 4)
- <sup>39</sup> Competition Commission and Office of Fair Trading (2009, Economic Discussion Paper OFT1099)