

Nuisance Calls and Texts Task Force background paper

How do consumers make decisions about privacy?

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Introduction

The literature on information privacy is both extensive and disparate. It has grown enormously in the last thirty years – as has the importance of privacy to consumers and policy-makers due to the growth of the internet and the increasingly connected nature of society – and is spread across many academic fields including law, economics, psychology, management, marketing and information systems.²² As a result, the literature reveals a number of insights about consumer attitudes and behaviour.

The nature of the studies means that very few address the issue of nuisance calls or texts directly. Nevertheless, the findings of this body of research can provide some useful insights for the Task Force, particularly in terms of how consumers view privacy as a concept and in the fact that attitudes and behaviours often do not correlate. This finding – the existence of a ‘privacy paradox’ – reflects much of the specific research into nuisance calls which shows a gap between consumer attitudes and behaviours and could go some way to explaining the different understanding of consumers and marketers regarding granting of consent.

This review, carried out by the Which? Consumer Insight Team at the request of the Task Force, begins with an examination of consumer attitudes to privacy and the concept of the privacy calculus – a cost/benefit analysis that many researchers have claimed that consumers undertake in order to make decisions regarding their personal information.

The review goes on to examine challenges to this interpretation, which arose from the gap between what consumers say they feel about privacy and the way they act in reality. In particular the review looks at what behavioural research has to say about the way consumers make decisions about privacy issues.

The key questions that the review looks at are therefore as follows:

- How do consumers make decisions about privacy?
- What insights can behavioural research add to our understanding of consumer decision-making about privacy?

How do consumers make decisions about privacy?

Many researchers have investigated consumer attitudes to privacy and their willingness to disclose personal information based on the view of privacy as a commodity to do with individual decisions about control. For over twenty-five years (late 1970s-2004) the Westin-Harris privacy indexes measured the privacy concerns of thousands of US consumers. This type of research continues to be widespread, for example, the Direct Marketing Association regularly poll consumers on their attitudes and expectations around providing personal details to companies.

The studies looking at drivers of privacy concern are disparate. Brought together, they paint a picture of privacy concern as a complex concept that has a number of drivers. For example some have found previous negative experiences of privacy abuses as a key driver of concern for privacy in the future.²³ Similarly, trust in a company leads to lower levels of concern about privacy. This is an important finding and is confirmed by a number of studies,²⁴ one of which finds that businesses may find it easier to build trust around the way they use data, rather than reduce consumer concern.²⁵

Demographic differences have also been found to make a difference to people’s attitude to privacy, with women,²⁶ young people, less educated and less wealthy people likely to be more concerned about privacy.²⁷ Personality differences have also been found to be important: introverts are more likely to be concerned than extroverts,²⁸ as are those with higher social awareness.²⁹ Each of these conclusions should be taken with a pinch of salt as they are often US studies conducted on small sample sizes.³⁰ It is questionable how universally the findings can be applied.

22. P Pavlou (2011) ‘State of the Information Privacy Literature: Where are we now and where should we go?’ MIS Quarterly, 35(4): 977-988

23. H Smith, J Milberg & J Burke (1996) ‘Information Privacy: Measuring Individuals’ Concerns about Organizational Practices’ MIS Quarterly, 20(2): 167-196

24. See H Smith, T Dinev & H Xu (2011) ‘Information Privacy Research: An Interdisciplinary Review’ MIS Quarterly, 35(4): 989-1015

25. G Milne & M Boza (1999) ‘Trust and Concern in Consumers’ Perceptions of Marketing Information Management Practices’ Journal of Interactive Marketing, 13(1): 5-24

26. K Sheehan (1999) ‘An Investigation of Gender Differences in On-Line Privacy Concerns and Resultant Behaviors’ Journal of Interactive Marketing, 13(4): 24-38

27. M Culnan (1995) ‘Consumer Awareness of Name Removal Procedures: Implication for Direct Marketing’ Journal of Interactive Marketing, 9(10): 9-19

28. Y Lu, B Tan & K Hui (2004) ‘Inducing Customers to Disclose Personal Information to Internet Businesses with Social Adjustment Benefits’, in R Agarwal, L Kirsch, and J DeGross (eds), Proceedings of 25th International Conference on Information Systems, Washington, DC, December 9-12, pp.272-281

29. T Dinev & P Hart (2006) ‘An Extended Privacy Calculus Model for E-Commerce Transactions’ Information Systems Research 17(1): 61-80

30. P Pavlou (2011) ‘State of the Information Privacy Literature: Where are we now and where should we go?’ MIS Quarterly, 35(4): 977-988

Indeed, some studies have shown that in Italy, for example, consumers have a very different conception of privacy which leads to different types of concerns about information disclosure.³¹

Another key problem with this body of research is that attitudinal data does not look at how privacy concerns relate to decision-making about information disclosure (i.e. what people actually do). Research conducted in the 1990s and early 2000s looked at consumer decisions about disclosure. With the advent of the internet this research stresses that such decisions are made in situations of uncertain risk and are increasingly complex and frequent. This led to the conception of a 'privacy calculus.'

The privacy calculus simply states that generally, consumers undertake a cost (risk)-benefit analysis before making decisions about data disclosure. They analyse the risks of disclosing their data and compare this to the benefits achieved from the disclosure. Research in the last decade based on the privacy calculus has identified the following costs and benefits associated with such decision-making:³²

| Costs/risks | Benefits |
|---|---|
| Perception of the firm's data collection policies | Personalisation |
| Perception of the firm's data protection and storage policies | Loyalty rewards (including convenience) |
| Perception of accuracy of the firm's data policies | Financial rewards |

The privacy paradox

However, numerous studies have found inconsistencies in consumers' approach to privacy decisions. The main inconsistency relates to the fact that despite high levels of concern about privacy risks, consumers often give up their privacy (both in experimental and actual situations) for relatively low-level rewards. In other words, the consumer calculus is biased towards low benefits instead of high risks.³³ This gap between consumer attitudes and consumer behaviour is known as the 'privacy paradox.' In terms of nuisance calls and texts, this paradox is reflected in the fact that consumers and businesses have been found to have different interpretations and understandings of the consent process. This is not to say that consumers are making incorrect decisions, but reflects the fact that consumer decisions are inconsistent and therefore difficult to predict.

Some researchers have argued that the paradox can be at least partly explained by the fact that individuals' stated disclosure intentions do not reflect their actual disclosure behaviours.³⁴ Yet there is consensus in much of the literature that the privacy paradox reflects more fundamental findings about the decisions involved in such situations. In particular there are two key points:

- The factors involved in privacy decisions are extremely complex and specific to each individual.
- Individual decision making is subject to conditions of bounded rationality and a number of behavioural biases.

The privacy calculus itself is based on the rational choice model of consumer behaviour in which consumers have stable preferences and are able to find (and comprehend) all the necessary information needed to make informed decisions. Behavioural economics has challenged these assumptions and has implications for the privacy paradox, in particular in terms of the systematic 'biases' that affect consumer decision-making and the heuristics (rules of thumb) that consumers use to simplify complex decisions. However, before looking at these, it is important to look at how information asymmetries cause extra complexity for consumers when making decisions over information disclosure:

Individual decisions about information disclosure are complex because many subjective perceptions and preferences influence our decisions to protect or share personal information. Perceptions of risks and potential damages, psychological needs, and actual personal economic returns all play a role in the privacy calculus.³⁵

31. T Dinev, M Bellotto, P Hart, V Russo, I Serra & C Colautti (2006a) 'Internet Users' Privacy Concerns and Beliefs About Government Surveillance: An Exploratory Study of Differences between Italy and the United States' *Journal of Global Information Management* 14(4): 57-93; T Dinev, M Bellotto, P Hart, V Russo, I Serra & C Colautti (2006b) 'Privacy Calculus Model in E-Commerce - A Study of Italy and the United States' *European Journal of Information Systems*, 15(4): 389-402

32. see H Smith, T Dinev & H Xu (2011) 'Information Privacy Research: An Interdisciplinary Review' *MIS Quarterly*, 35(4): 989-1015

33. L. Montwalla, X Li & X Liu (2014) 'Privacy Paradox: Does stated privacy concerns translate into the valuation of personal information?' *Pacific Asia Conference on Information Systems*, Paper 281

34. M Keith, S Thompson, J Hale, P Lowry & C Greer (2013) 'Information disclosure on mobile devices: Re-examining privacy calculus with actual user behavior' *International Journal of Human-Computer Studies*, 71(12): 1163-1173.

35. A Acquisti & J Grossklags (2008) 'What Can Behavioural Economics Teach Us about Privacy?', in A Acquisti, S Grizalis, C Lambrinoudakis and S De Capitani di Vimercati (eds.), *Digital Privacy: Theory Technologies and Practices*, Boca Raton, Florida: Auerbach Publications

Privacy choices are made much more complex as they are affected by incomplete and asymmetric information

Compared to the companies that they interact with, consumers have very little information about the way that their data will be used and it is not often clear to the consumer how much control they can exercise over their own data. Information asymmetries, for example, can prevent consumers from knowing when a firm has purchased their data from another. They may also be unaware of the consequences of this second firm gaining access to their data. The difficulties this presents for consumers trying to accurately judge the risks of information disclosure are far reaching and have been amplified by the “highly networked, digitized, and interconnected information societies” we now live in.³⁶

For example, when evaluating the risks of disclosure, consumers have to consider multiple layers of outcomes and possibilities. This “complexity of the privacy decision environment leads individuals to arrive at highly imprecise estimates of the likelihood and consequences of adverse events, and altogether ignore privacy threats and modes of protection.”³⁷

Due to this lack of information, consumers face numerous 'layers of uncertainty'

The complex 'life cycle' of data results in a set of consequences that consumers need to take into account in order to make an accurate decision about risks/benefits. However, due to incomplete information available to consumers, these consequences cannot be viewed as risks because they cannot be ascribed probabilities. As far as consumers are concerned, these outcomes are uncertain and unpredictable. The complexity of the context within which consumers make decisions mean that these uncertainties are layered, making consistent and accurate decision-making ever more difficult for consumers:³⁸

This means that:

- Consumers are only vaguely or limitedly aware of the possible actions they can take to protect themselves.
- Consumers are only vaguely or limitedly aware of the possible/actual actions of marketers.
- Consumers have little or no idea how data will be used, or what certain actions will result in (eg. registering your number on TPS).
- Technological change is shifting the boundaries all the time (eg. technology may soon allow private data retrieval).
- Certain 'common sense' actions may not be available/possible (eg. informing all companies holding your data that you don't want to be contacted by them).
- The more a consumer attempts to understand the issues, the more uncertainty they are exposed to and the greater likelihood that some action will be miscalculated.
- Privacy issues are often 'bundled' with products and therefore any action involves weighing up a trade-off between some 'good' (eg. the convenience of buying online, or access to discounts (eg. ClubCard) and a bundled giving up of certain privacy.

Consumers will often be overwhelmed by these layers of uncertainty and the information asymmetries related to privacy threats and information disclosure. Yet even if consumers had access to complete information, the sheer scale of the interconnected issues and consequences involved means that consumers would still find it difficult to process them and act optimally on the large amounts of data. Behavioural economists have introduced the idea of bounded rationality to explain this: that people often use simplified shortcuts to make decisions about privacy risks.³⁹

While this may lead policy-makers to conclude that simplified and clearly-worded messages are effective ways to help consumers make more consistent privacy decisions, recent evidence has shown that consumers will still act unpredictably.⁴⁰ Research from psychology into the way that people process information has shown that this is because people do not consciously decide what information to pay attention to: “certain items capture attention while others disappear into the background, even if they are exceedingly important, and even if it would be rational to focus on them.”⁴¹

36. A Acquisti & J Grossklags (2008) 'What Can Behavioural Economics Teach Us about Privacy?', in A Acquisti, S Gritzalis, C Lambrinouidakis and S De Capitani di Vimercati (eds.), Digital Privacy: Theory Technologies and Practices, Boca Raton, Florida: Auerbach Publications

37. A Acquisti & J Grossklags (2008) 'What Can Behavioural Economics Teach Us about Privacy?', in A Acquisti, S Gritzalis, C Lambrinouidakis and S De Capitani di Vimercati (eds.), Digital Privacy: Theory Technologies and Practices, Boca Raton, Florida: Auerbach Publications

38. See A Acquisti & J Grossklags (2008) 'What Can Behavioural Economics Teach Us about Privacy?', in A Acquisti, S Gritzalis, C Lambrinouidakis and S De Capitani di Vimercati (eds.) Digital Privacy: Theory Technologies and Practices, Boca Raton, Florida: Auerbach Publications

39. See A Acquisti & J Grossklags (2005) 'Privacy and rationality in decision making' IEEE Security & Privacy, 24-30

40. See S Spiekermann, J Grossklags & B Berendt (2001) 'E-Privacy in 2nd Generation E-Commerce: Privacy preferences versus actual behaviour' ECOI, October 14-17, Tampa, Florida, USA

41. See G Loewenstein, C Sunstein, and R Golman (2013) 'Disclosure: Psychology Changes Everything' Regulatory Policy Program Working Paper RPP-2013-20, Cambridge, MA: Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School, Harvard University

Findings from behavioural economists and psychologists have a great deal to say about the way that consumers make decisions:

Consumers use heuristics to make complex decisions

Operating under bounded rationality, due to limited attention, people use heuristics (or, rules of thumb) to help simplify complex decisions.⁴² These include:

- Simulation heuristic – Events that are difficult to imagine are discounted as improbable. This may have an influence on how consumers conceptions of the risks of identity theft, for example.⁴³
- Representative heuristic – This is where we use shortcuts to see certain things as representative of other, not necessarily clearly associated things. For example, a privacy policy that has a clean or neat design may be associated with trustworthiness, regardless of its actual content.⁴⁴
- Affect heuristic – This effectively means that the mood that the decision-maker is in can have an impact on how consumers process information.⁴⁵ This is known to particularly be the case for issues surrounding judgement of risks.⁴⁶
- Bounded attention – This is where consumers ignore certain pieces of information. This is particularly true for ubiquitous pieces of information such as privacy disclosure policies. Indeed, research suggests that very few people read privacy policies when asked to disclose information and consumers think that the mere presence of a privacy policy implies protection.⁴⁷

Consumer decision-making is subject to systematic biases

Decision-making is also influenced by a number of systematic 'biases' which lead people to behave in different ways to those predicted by simple cost-benefit analyses:

- Hyperbolic discounting – This is the tendency to value the present higher than the future and is a key feature of consumer decision making in the privacy field. It has been cited as one of the key explanations for the privacy paradox in that consumers discount large long-term risks for smaller short-term gains.⁴⁸
- Endowment effect – This is the tendency for people to value something they already own more than they would if they did not own it. Empirical research suggests that this is the case in terms of privacy research: people offered money to give up details (i.e. something they already had) valued their privacy greater than those who were offered the chance to purchase more privacy (i.e. something they did not yet have).⁴⁹ This indicates that the way that privacy is presented can have an impact on how seriously consumers view threats to it.
- Overconfidence – There is a general trend in decision-making for people to be overconfident in their own ability/knowledge in the particular area. This can be seen in privacy through an experiment which found that past disclosure behaviour is a better guide to future behaviour than stated intentions.⁵⁰ Other research on social media sites has found that consumers tend to be more willing to disclose information if they feel in control of it.⁵¹
- Probability judgements – Behavioural research in a number of areas has shown that consumers do not calculate probabilities (especially small probabilities) accurately.⁵² Research has also shown that people do not only make random errors, but are subject to systematic biases in the way that they process probabilities. It is likely that consumers therefore do not calculate the risks of information disclosure in a way that economists would predict. This has implications for the design of privacy policies. An accurate presentation of the risks could therefore – provided consumers do pay attention to it – either scare consumers, or perhaps reassure them more than it should.⁵³

42. See R Thaler & C Sunstein (2008) *Nudge: Improving Decisions about Health, Wealth, and Happiness*, London: Yale University Press

43. D Kahneman & A Tversky (1982) 'The simulation heuristic', in D Kahneman, P Slovic, & A Tversky (eds), *Judgment under uncertainty: Heuristics and biases*, Cambridge: Cambridge University Press, 201-210

44. A Acquisti & J Grossklags (2008) 'What Can Behavioural Economics Teach Us about Privacy?', in A Acquisti, S Gritzalis, C Lambrinouadakis and S De Capitani di Vimercati (eds) *Digital Privacy: Theory Technologies and Practices*, Boca Raton, Florida: Auerbach Publications

45. See F Kehr, P Mayer & D Wentzel (2013) 'Rethinking the Privacy Calculus: On the Role of Dispositional Factors and Affect – research in progress' Thirty Fourth International Conference on Information Systems, Milan

46. See E Nyshadham & G van Loon (2014) 'An Affect Primary Framework for Privacy Decision Making' SAIS 2014 Proceedings, Paper 27

47. G Loewenstein, C Sunstein & R Golman (2013) 'Disclosure: Psychology Changes Everything' Regulatory Policy Program Working Paper, RPP-2013-20. Cambridge, MA: Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School, Harvard University

48. A Acquisti (2004) 'Privacy in electronic commerce and the economics of immediate gratification', *Proceedings of the ACM Conference on Electronic Commerce (EC '04)*, 21-29

49. A Acquisti, L K John & G Loewenstein (2013) 'What is Privacy Worth?' *The Journal of Legal Studies*, 42(2): 249-274 50. D Wilson & J Valacich (2012). *Unpacking the Privacy Paradox: Irrational Decision-Making within the Privacy Calculus* International Conference on Information Systems.

51. A Acquisti & R Gross (2006) *Imagined Communities: Awareness, information sharing, and privacy on the facebook*, Carnegie Mellon University.

52. See R Thaler & C Sunstein (2008) *Nudge*, London: Yale University Press

53. See G Loewenstein, C Sunstein & R Golman (2013) 'Disclosure: Psychology Changes Everything' Regulatory Policy Program Working Paper, RPP-2013-20. Cambridge, MA: Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School, Harvard University

- Status quo bias – It is a well-known finding from behavioural science that people tend to be more comfortable not making a decision when there are elements of complexity involved; hence the popularity of defaults as policy solutions.⁵⁴ In terms of privacy, research has found that on social networks users rarely change the default privacy settings.⁵⁵
- Framing – It is a well-established in behavioural economics that people's decisions are influenced by the way that their choices are framed. This is no less the case in privacy decisions than elsewhere. Experimental evidence confirms this by finding that when privacy choices are framed with ambiguous outcomes, people tend to be more willing to accept giving away their data.⁵⁶
- Reciprocity and fairness – the behavioural evidence shows that people often have an innate desire to act fairly in transactions, but also to retaliate or reward others behaviour when appropriate.⁵⁷

This could have implications for how marketers request and use consumer data.

Conclusions

A review of the literature has found that while much research has been done on explaining and predicting consumer behaviour, there are gaps in terms of a focus on design of implementable tools to help consumers effectively make informed choices about information.⁵⁸ Consumer behaviour is very complex and, as this review has shown, can often vary dramatically from what one would expect. Solutions to the problems identified by the Task Force must take care to keep the real consumer in mind, rather than the hyper-rational consumer of economic textbooks.

Therefore potential remedies to the issues of nuisance calls and texts should work with the grain of consumer behaviour, rather than against it. Information should be designed in a careful way that actually helps consumers navigate this complex area while at the same time not bombarding consumers with information that they are likely to ignore or avoid. Consumer-facing recommendations proposed by the Task Force should be properly tested to ensure that they have the desired effect and avoid unexpected results. Behavioural experiments, using randomised controlled trials, in situations as close to reality as possible are the best way to ensure that solutions achieve their desired effect and do not have unintended consequences.

Nevertheless as the review has revealed, there are limits to the results that can be expected from improving the design and clarity of information provided to consumers. This review has shown that decision-making regarding information privacy is a hugely complex area with layers of uncertainty and numerous heuristics and biases at play. Changing consumer behaviour is therefore a significant challenge and even the most well-designed interventions may only have a limited effect. Other solutions, such as ensuring that businesses treat their customers fairly, and do not exploit the biases inherent in consumer decision-making, should also be central to the Task Force's recommendations.⁵⁹

54. See R Thaler & C Sunstein (2008) *Nudge: Improving Decisions about Health, Wealth, and Happiness*, London: Yale University Press

55. A Acquisti & R Gross (2006) *Imagined Communities: Awareness, information sharing, and privacy on the facebook*, Carnegie Mellon University.

56. A Acquisti & J Grossklags (2005) 'Uncertainty, Ambiguity and Privacy' Workshop on Economics and Information Society (WEIS '05), Boston, MA

57. A Acquisti & J Grossklags (2008) 'What Can Behavioural Economics Teach Us about Privacy?', in A Acquisti, S Gritzalis, C Lambrinouidakis and S De Capitani di Vimercati (eds) *Digital Privacy: Theory Technologies and Practices*, Boca Raton, Florida: Auerbach Publications

58. P Pavlou (2011) 'State of the Information Privacy Literature: Where are we now and where should we go?' *MIS Quarterly*, 35(4): 977-988

59. A final point is that there is a key behavioural point that relates to provider rather than consumer behaviour: the spotlight effect. This shows that firms sometimes overrate consumers' attention to information and therefore improve their behaviour without consumer pressure. This means that efforts to promote better behaviour among providers could succeed even without stimulating any change in consumer behaviour. Examples of this the fact that putting 'scores-on-the-door' hygiene ratings of restaurants in Los Angeles inspired improved hygiene without any evidence of consumer pressure. The placing of energy efficiency ratings on appliances in the EU has been seen to have had a similar effect on provider behaviour. see G Loewenstein, C Sunstein & R Golman (2013) 'Disclosure: Psychology Changes Everything' Regulatory Policy Program Working Paper, RPP-2013-20. Cambridge, MA: Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School, Harvard University.