Privacy attitudes and ID Cards: An experimental comparison of alternative approaches

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Background

In May 2005, the UK Government introduced its Identity Card Bill. This Bill has raised concerns amongst civil liberty, privacy and data-protection groups (see NO2ID, 2005). The present research was conducted while the Bill was undergoing its first reading in the UK Parliament – the study closed to participants on the same day as the Bill was passed on its first reading (June 20th, 2005).

At the time of the research, the main issue raised in public discussions of Identity (ID) cards was the likely cost – the Government estimate of £93 per card has been challenged by a report by 14 academics at the London School of Economics (LSE), who propose a likely cost of between £170 and £300 (The Times, June 16th, 2005).

The present research was designed to examine other aspects of the ID Cards Bill quite apart from cost. Specifically, the LSE group (March, 2005) have also

proposed an alternative approach to the implementation of ID cards for public consultation that, amongst other aspects, a) is not as 'compulsory' as the Government approach as outlined in the Bill, and b) does not require a centralised database. The present research compared people's attitudes to the different possible implementations in light of their privacy-related attitudes.

Participants and methodology

Participants were 1143 members of a research panel of Open University students (called 'PRESTO'). In total 1935 members of the panel were invited by e-mail to complete the web-based survey (response rate: 59%).The PRESTO panel is representative of the entire OU population of students, although it is slightly older than the average student, and slightly more females joined the panel than would be expected based on the gender balance in the target population. Panel members study a range of subjects at the OU.

Data was cleaned by the removal of responses with more than half the data missing (n=17), or where the participant identifier carried via an encrypted URL (n=6) did not transfer successfully. This led to a final number of responses of 1122. Of these, 40% (442) were male, 60% (672) were female (demographic data unavailable for 8 participants). The mean age of the sample was 42.3 years, (range: 17 – 84 years, SD = 11.1).

Westin Privacy segmentation

Participants responded to three questions used to identify their general privacy attitudes and to enable segmentation of the sample (see Table 1, below for the questions and scale). This methodology has been used extensively by the Harris

Polling organisation (see The Harris Poll, 2003), and was developed by privacy expert Alan Westin (Westin, 1991).

In line with the terminology and method used by Westin-Harris, participants giving privacy-oriented responses to all three questions were categorized as 'Privacy Fundamentalists'. Participants giving privacy-oriented responses to some, but not all, of the questions were categorized as 'Privacy Pragmatists', and participants giving non-privacy oriented responses to all the questions, were categorized as 'Privacy Unconcerned'.

Any participants (n = 9) who did not answer all three Westin segmentation questions were excluded from the segmentation process. The percentage of participants responding to each question is shown in Table 1.

Table 1: Responses to the Westin questions

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
Consumers have lost all control over how personal information is collected and used by companies	12.1%	39.9%	44.6%	2.4%
Most businesses handle the personal information they collect about consumers in a proper and confidential way	5.1%	54.8%	32.6%	7.0%
Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today	2.4%	44.6%	39.9%	12.1%

Using the segmentation process outlined above, 11.6% of the sample were categorized as 'Privacy Unconcerned', 55.9% as 'Privacy Pragmatists' and 32.5% as 'Privacy Fundamentalists'. These figures differ substantially from recent Harris polls

(e.g. Taylor, 2003) – the respective percentages from the US in the 2003 poll are 10% 'unconcerned', 64% 'pragmatist' and 26% 'fundamentalist'. However, Westin (2003) has produced figures comparable to our UK sample: 37% classified as 'fundamentalist', 52% 'pragmatist' and 11% 'unconcerned' (although it is unclear the survey this is based on).

Treated as a scale, the three Westin segmentation items did not exhibit high internal consistency (alpha = 69.9), although it can be viewed as acceptable.

Identity Cards in the UK

Participants were asked to respond to the question, "The United Kingdom Government is planning to introduce Identity Cards and a National Identity Register. What is your attitude to this proposal?" using a 7-point scale anchored at 'Strongly against ID cards" and "Strongly in favour of ID cards". They were also asked "How certain are you about your attitude towards ID cards in the UK?" as a measure of attitude strength (7-point scale, anchored at 'Very certain' and 'Very uncertain'). Participants who are not UK citizens, or who do not live in the UK, were excluded from any analyses of ID card attitudes (n = 91, 8.1% of the sample).

Implementation of Identity Cards

One aim of the present study was to examine various systems for implementing Identity Cards. Participants were told:

> *There are various ways in which an identification card system can be operationalised. Please read the outline below carefully, and imagine what your attitude towards a UK-wide identity card would be if the system*

were like this. Please assume that Identity cards would be compulsory, not voluntary.

This was then followed by an implementation scenario. The scenario proposed varied across two dimensions, based on differing options proposed by the UK Government and the LSE (LSE, 2005). Each scenario was tested for ease of understanding, and matched for word-count. The component parts of the scenarios were:

High compulsion: A Government agency would tell you to report with existing documents (e.g. birth certificate, passport, national insurance number) to a named processing centre at a specified time. You would need to allow yourself to be fingerprinted, have your iris scanned and your photograph taken. If you did not attend, or if you did not allow your biometric data to be recorded, you would be fined up to £2500.

Low compulsion: To get an identity card, you would visit a post office and enter a kiosk at the time of your choosing. You would choose the biometric identifier you wished to use (e.g. fingerprint, digital photograph or iris scan). The kiosk would automatically generate a form, which you would get validated by two people in a position of trust. You then send this form to receive your card.

Centralised database: The biometric identification, along with information like your name, date and place of birth, current and all previous addresses and driving licence number and expiry date (along with other relevant information) would be stored in a centralised government database. This database would be held securely by the Government, and could be queried by all other government departments, the

police, public service providers (e.g. NHS) and approved private sector organisations (e.g. banks, employers).

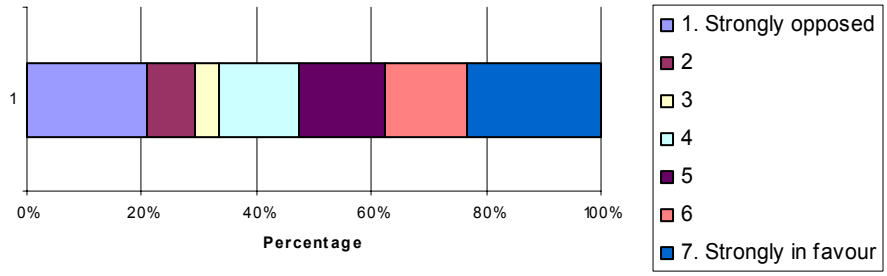
No centralised database: The biometric identification, along with information like your name, date and place of birth, current and all previous addresses and driving licence number and expiry date (along with other relevant information) would be held on your card and backed up locally in a secure database maintained by a trusted third party (e.g. a bank, police stations or solicitors). A centralised government database would hold only your name and an identifier.

The scenarios were combined, such that all possible combinations of level of compulsion and type of database were presented. The order of the scenarios was also counter-balanced, so that in half of the scenarios the compulsion information was presented first, then the database, and in half the pattern was reversed. This led to eight possible combinations of compulsion type, database and order (2x2x2). The panel was randomly divided into eight sub-groups, and each group directed to a different scenario. Thus, each participant only responded to a single scenario. Following the scenario, participants were asked "If this were the way in which ID cards were to be introduced, what would your attitude towards identity cards in the UK be?" and "How certain are you about your attitude towards ID cards if this scenario were the one introduced?" using the same scales for the pre-scenario measures. A measure of attitude shift was calculated by subtracting the scenario attitude score from the pre-scenario attitude, such that a negative score meant a shift against ID cards, and a positive score, a shift in favour of ID cards.

Results

The mean score on the attitude scale was 4.30 (SD = 2.24), indicating that participants tended to be in favour of ID cards. These attitudes tended to be held with a degree of certainty (Mean = 5.58, SD = 1.67). The distribution of attitudes was unusual – participants tended to score across the range of pro-ID card responses, but were clustered on 'strongly against' if anti-ID cards (see Figure 1).

Figure 1: ID Card Attitudes: Distribution.



So, 63% of those opposed to ID Cards scored in the 'Strongly opposed' category, while only 44% of those in favour of ID cards scored in the 'Strongly in favour' category. The level of certainty with which pro- and anti-ID card attitudes were held were effectively the same (Means = 5.85 and 5.88 respectively), with only people responding in the centre of the scale exhibiting any uncertainty (Mean = 3.82).

Within the category of 'Privacy Fundamentalist', there was a fairly even split between those in favour and against Identity Cards (see Table 2), with a slight majority in favour of ID cards. Amongst the 'Privacy Unconcerned' and 'Privacy Pragmatists', the majority were in favour of identity cards in the UK.

Table 2: Westin segmentation and ID cards

	Attitude to Identity Cards in the UK: % and (N)		
Westin Categorization	Anti-ID cards	Undecided	Pro-ID cards
Privacy Unconcerned	32.5% (37)	9.6% (11)	57.9% (66)
Privacy Pragmatists	30.8% (173)	13.2% (74)	56.0% (315)
Privacy Fundamentalists	38.5% (125)	16.6% (54)	44.9% (146)
Means (N)	*33.5% (335)*	*13.9% (139)*	*52.6% (527)*

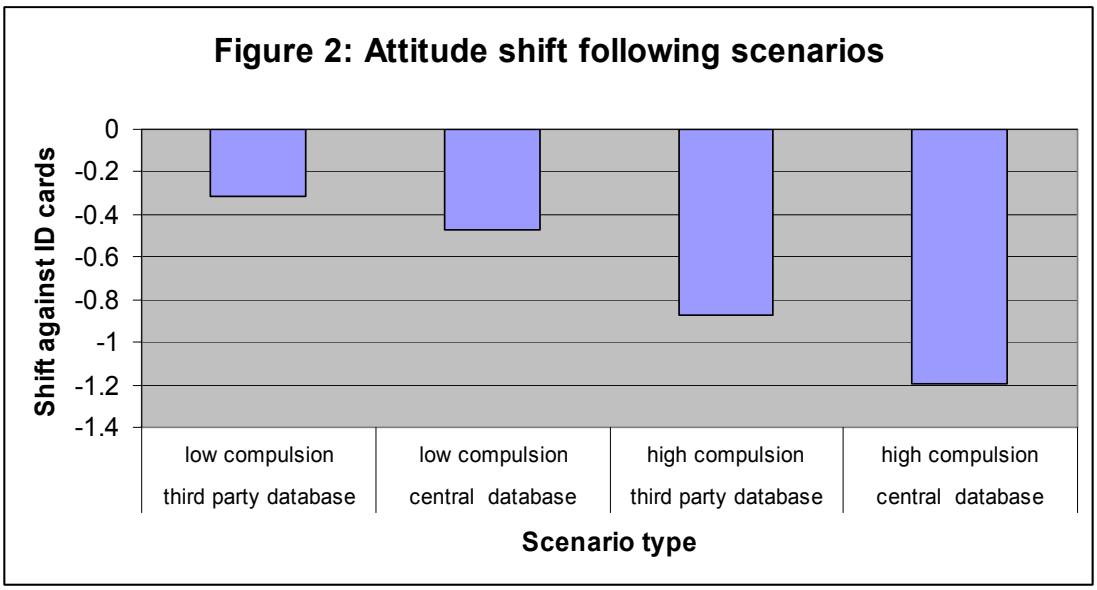
A chi-square test of association confirmed the uneven distribution of attitudes towards ID cards and Westin categorization (X^2 = 12.61 (df = 4), p < .01). A one-way ANOVA was calculated to examine scores on original attitudes towards ID cards by level of privacy concern. This analysis confirmed (F (2, 997) = 4.21, p=0.015) that attitudes were significantly more negative for those classified as 'Privacy Fundamentalists' (Mean = 4.00, *SD* = 2.32) than for the 'Privacy Unconcerned' (Mean = 4.49, *SD* = 2.22) and 'Privacy Pragmatists' (Mean = 4.43, *SD* = 2.17).

Attitude change and implementation scenarios

Regardless of the type of implementation scenario, attitudes towards ID cards moved towards the 'against' end of the scale following the scenarios. This is perhaps unsurprising since none of the proposed benefits of ID cards were presented in the scenarios.

The largest shift against ID cards was when the level of compulsion was high (e.g. no choice when to go for the biometric scanning, possible fines) combined with a centralised government database. This scenario approximates the current UK government view of how ID cards could be implemented. The average move against ID cards in this scenario was 1.2 points on the 7-point scale (see Figure 2).

The smallest shift in attitudes against ID cards was when the level of compulsion was low (e.g. going into a booth in a post office, sending the form yourself), combined with no centralised database. This scenario approximates an alternative view of how ID cards could be implemented as proposed by the LSE. The average move against ID cards in this scenario was 0.35 points on the scale (see Figure 2).



Privacy and Reaction to different scenarios

Of particular interest was whether or not the impact of the different scenarios differed according to people's general privacy attitudes. A linear regression was conducted to predict post-scenario attitudes to ID cards based on the type of scenario, pre-scenario attitudes and Westin Privacy score (scale rather than segment). This

regression confirmed that all four variables exerted a significant effect on post-scenario ID card attitudes (see Table X, R2 = .69), and that the impact of the scenario was independent of people's pre-existing privacy concerns or pre-scenario attitudes.

Table 3: Regression results (outcome variable: post-scenario attitude)

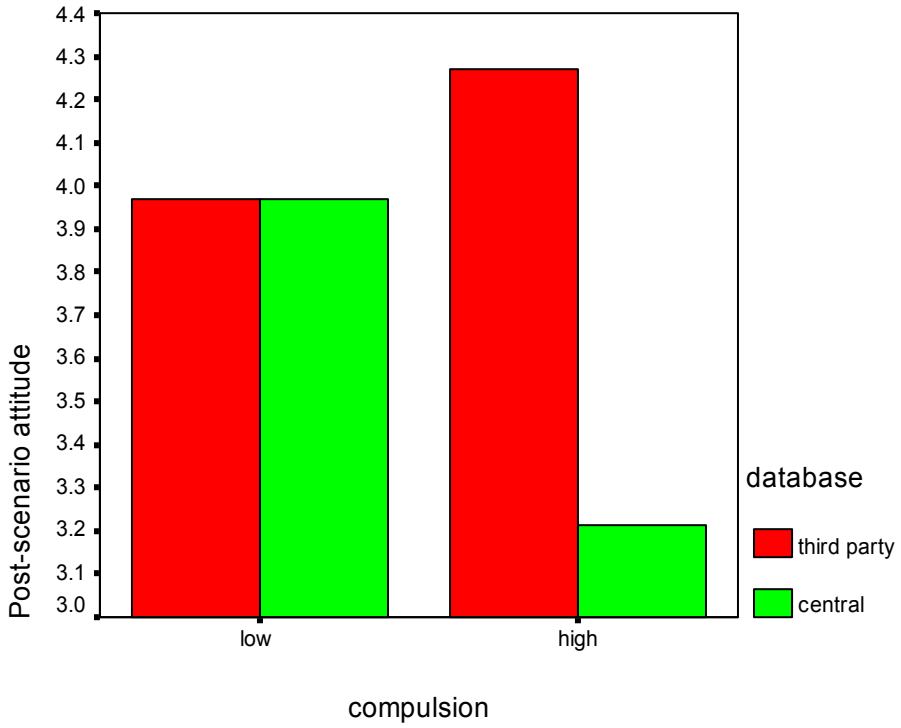
Variable	Beta	p	
Pre-scenario attitude	.808	.000	Positive pre-scenario attitude related to more (relatively) more positive post-scenario attitude
Compulsion	-.122	.000	High compulsion leads to more negative attitudes
Database	-.055	.002	Centralised database leads to more negative attitudes
Westin score	-.034	.055	Higher score leads to more negative attitudes
Certainty (pre-scenario attitude)	.107	.000	Higher certainty leads to more positive attitudes

More detailed analysis using a three-way ANOVA (compulsion X database type X Westin segmentation, n = 1001) showed significant main effects of level of compulsion (F (1, 988) = 3.43, p = .065, η^2 = 0.03, high compulsion led to more negative attitudes), database type (F (1, 988) = 6.04, p = 0.02, η^2 = 0.06, centralised database led to more negative attitudes) and privacy attitudes (F (2, 998) = 3.81, p = 0.3, η^2 = 0.08, 'Privacy Fundamentalist' more opposed than other groups) on post-scenario attitudes.

There were no interactions between the factors and post-scenario attitudes (all *ps*>.18), but there did seem to be a cumulative effect, such that the combination of high compulsion and centralised database led to the highest anti-ID card movement

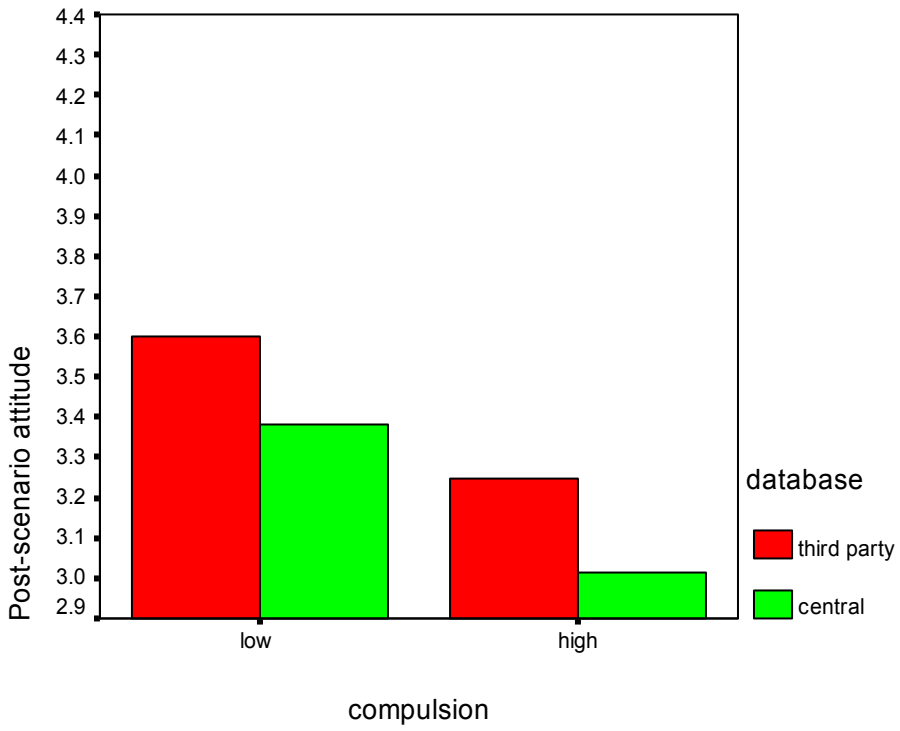
for all privacy segments. A combination of low compulsion and third party database led to the most pro-ID card attitudes for all privacy segments except 'privacy unconcerned' (see Figures 3 and 4 below). For this group, in the low compulsion scenario, the location of the database was irrelevant to attitudes. Only in the high compulsion scenario did attitudes polarize according to the database type.

Figure 3: Scenario type and post-scenario attitudes of 'Privacy unconcerned'



For privacy fundamentalists (see Figure 4) and privacy pragmatists, post-scenario attitudes illustrated a cumulative effect of compulsion type and database.

Figure 4: Scenario type and post-scenario attitudes of 'Privacy Fundamentalists



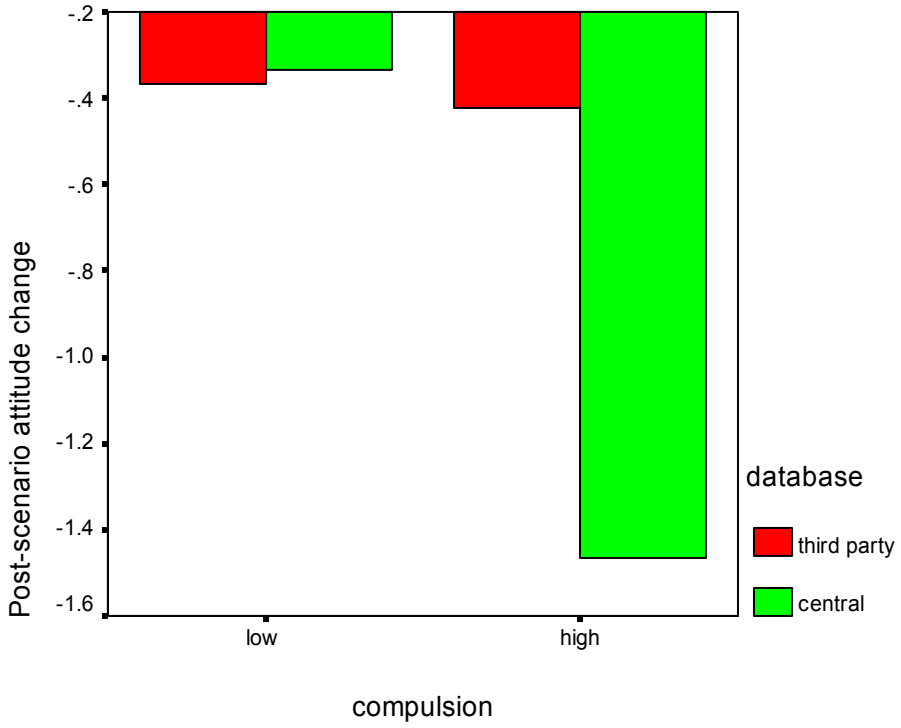
Attitude change and privacy

A further three-way ANOVA (compulsion X database type X Westin segmentation, n = 1001) was calculated to examine attitude change following the scenarios. This analysis showed significant main effects of level of compulsion (F (1, 988) = 33.74, p<.001, η^2 = 0.033, high compulsion led to more negative attitude change), database type (F (1, 988) = 9.02, p<0.01, η^2 = 0.009, centralised database led to more negative attitude change) but not for privacy attitudes (F (2, 998) = .12, p = .9). There was a marginally significant interaction between compulsion and database type (F (1, 998) = 3.18, p = .07, η^2 = 0.003) such that the largest attitude change was when high compulsion was combined with centralised database.

While the interaction between the scenario factors and Westin segmentation was not significant (F (2, 998) = 1.9, p = 0.15), there was a suggestion that the interaction between compulsion and database type outline above was primarily due to the

responses of the 'Privacy Unconcerned' – examination of the means for this group strongly suggested that the database type had no impact on attitude change when compulsion was low.

Figure 5: Scenario type and post-scenario attitude change (Privacy unconcerned)



When compulsion was high, the centralised database had the highest level of attitude change (against ID cards). For 'Privacy Pragmatists' and 'Fundamentalists', there was little evidence of an interaction – both compulsion and database type had independent effects on attitude change.

Conclusions

Regardless of the scenario proposed in the present study, attitudes towards ID cards became more negative. The strongest impact on attitudes was when the scenario

incorporated high levels of compulsion along with a centralised database. The scenario proposed in the LSE consultation document led to the least negative attitudes towards ID Cards. There was some indicative evidence that the 'Privacy 'Unconcerned' responded differently to the scenarios than other privacy-related segments – when compulsion was low, the 'unconcerned' were not particularly influenced by the database type. Once compulsion was high, a centralised database led to more negative attitude change and more negative attitudes overall.

The 'Privacy Pragmatists' and 'Privacy Fundamentalists' showed no evidence of an interaction between compulsion and database type, suggesting a quantitative reaction to the scenarios, rather than the more qualitative response seen in the 'Privacy unconcerned'. This supports Westin's view of 'privacy pragmatists' as weighing up privacy threats on a case-by-case, cost-benefit basis (Privacy Knowledge Base, 2005), although those classified as 'Privacy fundamentalists' responded in a similar manner, albeit with more negative attitudes.

The results of the present study suggest that people's pre-existing privacy attitudes influence their reaction to possible implementation scenarios – with the 'privacy unconcerned' reaching a 'trigger point' of high compulsion combined with a centralised database, and privacy 'pragmatists' and 'fundamentalists' applying a quantitative, summative approach to the evaluation of the scenarios.

This suggests that, across all segments, the combination of high compulsion and a centralised database causes considerable concern: in the case of privacy 'pragmatists' and 'fundamentalists', because of the cumulative effect, and in case of the 'unconcerned' because of a qualitative shift in their attitudes towards ID Cards. This suggests that people with differing pre-existing privacy concerns apply different strategies to interpreting possible threats to their privacy. Those with a degree of

concern tend to adopt a summative, quantitative approach, treating elements of a proposal as individual units, while the 'unconcerned' reach a tipping point where, in this case, high compulsion combined with a centralised database, causes a qualitative shift in attitudes.

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