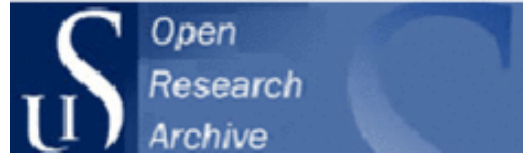




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Terrorism risks, civil liberties, and privacy concerns

Kjell Hausken

Abstract: Transportation of people plays a major role in our critical infrastructures. The article seeks to determine our willingness to protect our infrastructures balanced against sacrificing civil liberties. Respecting civil liberties is operationalised as screening all airport passengers equally. The cost incurred is operationalised as additional waiting time for airport passengers when civil liberties are respected. 93% of airport passengers are willing to wait ten minutes to uphold civil liberties through screening all passengers rather than targeted screening. The percentage drops to 61%, 27%, 10% for waiting 30, 60, 100 minutes. In a comparative study, waiting less than half an hour is considerably more acceptable for the Norwegian respondents than for the US respondents. More than half the respondents prefer no privacy intrusion into mail, e-mail, telephones to prevent terrorism. The average respondent supports the government's investment to combat terrorism, with the asymmetry that 20% respond too low and 15% respond far too high investment. The similarities between Norway and the USA are more salient than the differences. One policy implication is that there are substantial gains to be made in people's willingness to uphold civil liberties if they are made to wait less than 40 minutes, and lower gains for larger waiting times.

Keywords: risk; death; terrorism; civil liberties; costs; tradeoffs; privacy; Norway; USA.

1 Introduction

The terrorist attack on the USA September 11, 2001, and the more modest attack on Spain March 11, 2004 impacted our critical infrastructures. Aside from minor skirmishes such as in London July 7 and 21, 2005, the world has been spared from major attacks exceeding, e.g., the 3000 death toll 9/11. Given the increased focus on preventing terrorist attacks, there is a need to understand how the world digests such events and experiences, and how our critical infrastructures can be designed while upholding civil liberties. This article focuses on how respondents evaluate the importance of civil liberties compared with personal costs associated with upholding civil liberties. Although our infrastructures are critical, limits can exist for how we sacrifice civil liberties and our democratic ideals to protect them.

Civil liberties are rights which most of us prefer not to compromise. Respecting civil liberties is sometimes costly, and tradeoffs have to be made, whether we like it or not. This article presents six hypotheses for the relationship between willingness to uphold civil liberties, combined with costs incurred. Two hypotheses are presented for privacy concerns and assessments of global terrorism risks. The hypotheses are tested empirically.

We all carry out numerous tradeoffs on an hourly basis. Some of these require our explicit attention and extensive deliberation. Others have gradually worked their way into our habitual behaviour. Some have become so deeply entrenched that we rarely think of them as tradeoffs, and some we carry out unconsciously. This article focuses on those tradeoffs that not only require our explicit attention, but deep soul-searching for how we reconcile incompatible extreme concerns. We weigh concerns against infringement on civil liberties and privacy intrusion, be it by the government or others for venerable reasons, or by monitors we choose ourselves. Some may perceive such tradeoffs as choices between the plague and cholera. Some prefer to avoid making the tradeoffs, and some prefer to let others make the tradeoffs for them.

Society has set up procedures to make some tradeoff choices easier for us, or to give the appearance that we do not have to make the tradeoffs. Many tradeoffs are driven by cultural tradition, political choices, and profit motives where market forces play a role. Tradeoffs are sometimes not explicitly pronounced, but are determined implicitly. Whether each individual makes the tradeoff alone, or delegates the tradeoff to someone else, or follows tradeoffs institutionalised by society or entrenched through cultural tradition, inevitably someone has to make the tradeoff. In cases where it is hard to pin down who makes the tradeoff, one may say that societal development as such proceeds in a manner so that tradeoffs are implicitly made.

We compare with research on this phenomenon by Viscusi and Zeckhauser (2003). Curtailing terrorism risks for airport passengers without violating civil liberties can be done by imposing additional waiting time for screening all passengers, which is time consuming and thus costly, in contrast to targeted screening according to age, race, gender, national origin, appearance, and baggage, which is less time consuming and thus less costly. We quantify acceptable waiting times for passengers.

We thereafter consider government privacy infringement through reading mail, e-mail, or tapping telephones without a person's knowledge when it is related to preventing terrorism. This article quantifies how acceptable the population finds such infringement for the population at large, and for the person in particular.

2 Methods

The empirics are compiled for Norway, which is quite an interesting country to compare with the USA for this phenomenon. If a country in the western world is to be chosen for comparison with the USA, Norway may very well be the prime candidate. In today's world with instantaneous world reporting of world events, one may perhaps expect uniform influence on respondents, though there are prominent differences causing attitudes to be potentially different in different countries. Norway and the USA have in common that both countries belong to the western world, have high standards of living, and have a positive political relationship, despite some tension between Europe and the USA in recent world affairs. Aside from that, the differences are more prominent than the similarities. To mention the most salient differences, Norway has not been targeted the way the US has in the recent past, is not at war with significant portions of the Islamic world, does not play the role of world policeman, and is much less ethnically heterogeneous than the US. Further, the two nations have different civil liberties histories and present practices, and are exposed to different influences through the different European and US media. Norway is particularly socially democratic, outside the EU, mostly Lutheran Christian, Caucasian, and its 4.6 million population is relatively homogenous. In a poll prior to the 2004 US presidential election, 90% of the Norwegians voted for the democratic candidate John Kerry, in contrast to a majority for George Bush in the US election. Norway is located in a part of the world which has been quiet since

WWII. Areas of tension such as the Middle East, Tchetchenia, Northern Ireland, etc., are geographically distant. Given these differences between Norway and the USA, we would perhaps also observe differences regarding civil liberties and privacy concerns. Thus, one's a priori view might possibly be that the two countries would have substantially different estimates or risk attitudes towards civil liberties, costs of upholding civil liberties, and attitudes regarding privacy concerns. This article tests whether there are such differences.

With respect to terrorism, Norway is distinguished in two respects. First, as the world's seventh largest producer of oil and gas, and ranked number 1 on the UN Human Development Index for a number of years since 2001, its affluence as such may be targeted. Second, to the extent a neutral position proves difficult to maintain in Norway's engagement in world peace negotiations, deployment of peace-keeping troops to Iraq and Afghanistan, and awards of the Nobel Peace Prize, Norway may be targeted. If a terrorist decides to hit a quiet and civilised part of the world, Norway seems a very good candidate.

Ninety respondents at the Universities of Stavanger and Bergen, Norway, were surveyed with six questions March 18 to May 29, 2004.¹ The questions and response are listed in the Appendix.

Viscusi and Zeckhauser (2003) investigate the tradeoff between civil liberties and terrorism risks. Civil liberties c is a desirable attribute which we conceive of as the inverse of price p , that is $c = 1 / p$. Sacrificing civil liberties is costly so that c decreases and p increases. Terrorism risk is an undesirable attribute which is hard to curtail without sacrificing civil liberties. An alternative undesirable attribute for airport passengers is additional waiting time w for screening all passengers versus targeted screening based on profiling which violates civil liberties expressed as a percentage not preferring profiling.

There are numerous alternative hypotheses about our principal question, namely the relationship between civil liberties c and waiting time w . We'll proceed, in Popper's (1963) sense, to set up six hypotheses for this relationship. Our first and main hypothesis is that the relationship is the same for Norway and for the USA, where the empirics for the US has been established by Viscusi and Zeckhauser (2003). We thereafter set up five alternative hypotheses, mainly designed to span the archetypical possibilities conceptually, and to visualise these possibilities. We will thereafter test the hypotheses empirically, and discuss which ones have empirical support for Norway. We also present two hypotheses about privacy concerns and assessments of global terrorism risks. In the hypotheses ' means first derivative and " means second derivative of c with respect to w .

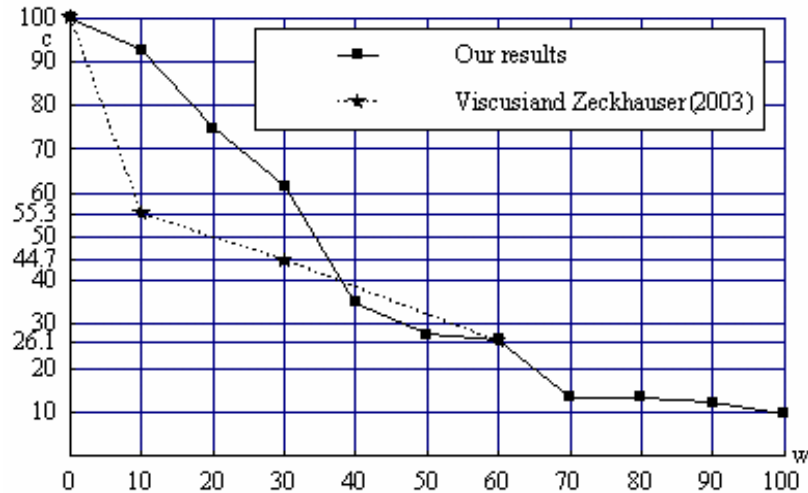
Hypothesis 1 The relationship between civil liberties and waiting time is the same for Norway and for the USA.

The results for the USA are shown in Figure 1, and those for Norway are tested in this article.

Hypothesis 2 Civil liberties are independent of waiting time, that is $c' = 0$ for all w .

This hypothesis suggests that civil liberties are guaranteed absolute rights which cannot be compromised, so that the derivative of c with respect to waiting time is zero. This constitutes an absolute benchmark which a certain proportion of the population may consider as an absolute standard that cannot be deviated from.

Figure 1 Waiting time w versus civil liberties c (see online version for colours)



Hypothesis 3 As waiting time increases, civil liberties are sacrificed, and are sacrificed increasingly for larger waiting times, that is $c' < 0$ and $c'' < 0$ for all w .

This hypothesis suggests that civil liberties are sacrificed slightly for small waiting times, but are sacrificed increasingly and thus concavely (that is, thrusting or curving inward, which gives a depressed or hollowed surface) as waiting time increases. Civil liberties are attempted upheld for small w , but respondents increasingly 'give up' upholding civil liberties for large w . If Hypothesis 2 is to be relaxed, Hypothesis 3 seems the most natural first step. That is, if civil liberties are to be relaxed, trying to uphold these as best one can seems most natural, and may also be possible for small waiting times. As costs grow larger in terms of longer waiting times, upholding civil liberties likely grows more difficult.

Hypothesis 4 For small waiting times, Hypothesis 3 applies. For large waiting times, civil liberties are sacrificed, and are sacrificed decreasingly as waiting time increases, that is $c' < 0$ and $c'' < 0$ for $w < w_i$, and $c' < 0$ and $c'' > 0$ for $w > w_i$.

This hypothesis equals Hypothesis 3 for $w < w_i$. The second derivative equals zero for $w = w_i$ causing a turning point. The sharp drop in c is no longer acceptable when $w > w_i$. Too substantial sacrifices in civil liberties are not acceptable and the curve proceeds toward a horizontal asymptote when c is zero or c is positive. In a w versus c diagram this curve has an S form, that is a logistic form, with concavity for $w < w_i$ and convexity (that is, curving or bulging outward) for $w > w_i$. The hypothesis ambitiously assumes that civil liberties can be upheld to a considerable extent for small waiting times. As waiting time increases, a slippery slope kicks in associated with a realisation that increased waiting time is unacceptable and that civil liberties inevitably need to be compromised. This causes a substantial decrease in c for only marginal increase in w . In one version of the hypothesis, the convexity is so weak that $c = 0$ is crossed for a sufficiently large w . In another version of the hypothesis, there are limits in the sense that civil liberties cannot be eliminated altogether. That is, the convexity is stronger, c reaches a horizontal asymptote, and civil liberties are attempted upheld to some extent despite long waiting times.

Hypothesis 5 Civil liberties are sacrificed increasingly and linearly as waiting time increases, that is $c' < 0$ and $c'' = 0$ for all w .

This hypothesis suggests that regardless of whether one has waited a short or a long time, additional waiting time has the same impact on additional sacrifices in civil liberties. Agents who are uncomfortable with the S form in Hypothesis 4 with combined concavity and convexity, may prefer linearity throughout. This gives linearly decreasing sacrifices in civil liberties as waiting time increases. For Hypothesis 5 a linearly decreasing curve eventually and inevitably crosses $c = 0$ for a sufficiently large w , sacrificing all civil liberties, in contrast to the strong convexity version of Hypothesis 4 which causes a horizontal curve c for large w .

Hypothesis 6 As waiting time increases, civil liberties are sacrificed, and are sacrificed decreasingly for larger waiting times, $c' < 0$ and $c'' > 0$ for all w .

This hypothesis assumes convexity throughout. Civil liberties are sacrificed considerably for small waiting times, but decreasingly and thus convexly so as waiting time increases. Agents quickly realise for small waiting times that civil liberties as absolute rights cannot be upheld. Some agents value their time so highly that civil liberties are compromised right away for small w . However, as w increases, civil liberties are compromised in a decreasing manner. The convexity can be weak or strong as discussed above under Hypothesis 4 for $w > w_i$.

Hypothesis 7 A substantial portion of the population will express a preference for making it easier than it is today for the Norwegian legal authorities to read mail, e-mail, or tap telephones without a person's knowledge when it is related to preventing terrorism.

One possible justification for this hypothesis is that there have been relatively few changes in Norway in the civil liberties arena, despite a substantial increase in terror risk. Another possibility is that the government is following a median voter model, which implies that there may be people who consider the civil liberties regulations to be too lax.

Hypothesis 8 Respondents exhibit higher certainty in assessments of global risks of terrorist attacks as time elapses since the previous major terrorist attack.

One possible justification for this hypothesis is that people's conceptions may become entrenched, rigid, and fixed in stable environments free from terrorist attack. The news media influence people's attitudes, and controversial debates may grind to a halt in the absence of new terrorist attacks.

3 Results

In the tables following questions 1 to 5 in the Appendix, E means expected value, Std means standard deviation, and N is the number of respondents.

Question 1 tests tradeoffs passengers at airports make between additional waiting time for screening all passengers versus targeted screening based on profiling which violates civil liberties expressed as a percentage not preferring profiling. In the table following question 1 waiting time is given in the first row, and the percentages of respondents preferring the waiting time, are given in the second and fourth rows. The percentages sum to 100%. The largest percentage is 26.5% who accept waiting half an hour to honour civil liberties. Half an hour emerges as a benchmark for one quarter of the respondents. The second largest percentage is 18.1% who accept waiting only ten minutes, which can be said to represent some limited measure of respect for civil liberties. The third largest percentage is 13.3%, which are those who accept waiting one hour, which can also be said to be a benchmark, and those who settle for 20 minutes. Very few, only 7.2%, refuse to wait, and 13.3%, accept waiting more than one hour. It is difficult to speculate about the characteristics of the latter two extreme groups, which together comprise some 20%. However, let us raise the possibilities that those that refuse to wait either have very low or no regard for civil liberties, or they consider themselves so important that waiting is not an option, or they think that civil liberties is fine in theory but not for them personally in praxis at a busy airport. Similarly, let us raise the possibilities that those that accept waiting excessively either have very high regard for civil liberties, possibly driven by high sensitivity to morality, or driven by idealism, or they do not consider their time important, or they are able to engage themselves in other activities while waiting.

The average waiting time accepted is $E = 36.6$ minutes, slightly above half an hour. The standard deviation is 28.8 minutes, which suggests some degree of variation across respondents. As waiting time w increases, passengers assign lower weight to civil liberties c , violating Hypothesis 2. Figure 1 supports the concavity in Hypotheses 2 and 3 for $0 \leq w \leq 40$, but reveal interchangeably concave and convex results for $w > 40$. Applying the least square fit technique to a linear curve according to Hypothesis 5 through $(0, 100)$ gives $c = -1.10 w + 100$, crossing $(w, c) = (91, 0)$. Ten minutes increase

in waiting time implies 11% less importance for civil liberties. Surveying Harvard Law School students in April 2002, Viscusi and Zeckhauser (2003, p.105) get the results $(w, c) = (10, 55.3), (30, 44.7), (60, 26.1)$ shown in Figure 1 which supports the convexity in Hypothesis 6 for $0 \leq w \leq 30$, with slight concavity for $10 \leq w \leq 60$. To determine the average waiting time accepted, $E = 22.3$ minutes, and standard deviation $Std = 24.9$, we assume the fourth point $(0, 100)$.² Applying the least square fit technique to a linear curve through the latter results gives $c = -1.4217 w + 100$, crossing $(70, 0)$. Ten minutes increase in waiting time implies 14.2% less importance for civil liberties.³

The sharp drop and convex development in concern for civil liberties for small waiting times for the US is a challenge to explain. Viscusi and Zeckhauser (2003) do not attempt to explain this convexity. Let us attempt to explain the convexity in the following manner. Obviously, zero waiting time causes 100% respect for civil liberties. This has to do with getting something for nothing. When one gets something for free, there is no reason to refuse what one gets, unless one has perverse preferences.⁴ The US population, characterised by Ross Perot as a melting pot, is more heterogeneous than most of the other world populations. Although the respondents in Viscusi and Zeckhauser's (2003) study are not completely representative of the US population, they nevertheless have obvious diverse characteristics. When respondents are heterogeneous, the variance in their response can be expected to be larger. This means that larger percentages of the respondents can be expected to answer in extreme manners which deviate from the average answer to each question. Contrast this with a homogenous population, where the variance in response can be expected to be much smaller. That is, few respondents in a homogenous population can be expected to answer in extreme manners. This reasoning suggests that as waiting time increases from zero, there will more respondents in a heterogeneous population, than in a homogenous population, who are extreme in the obvious sense that they do not respect civil liberties 100%, or extreme in the sense that they are more impatient than the average respondent, or less willing to line up. Respecting civil liberties is costly, and the variance in the respondents' acceptance of this cost can be expected to be larger in a heterogeneous population, than in a homogenous population. If this reasoning is correct, a few extreme respondents get to work in Viscusi and Zeckhauser's (2003) study, and there is a sharp drop and convex development in concern for civil liberties for small waiting times for the US. In contrast, for a more homogenous Norwegian population, there are fewer such extreme respondents. Respondents are more similar, and answer more similarly closer to the average of the population. This may explain the much slower drop and concave development in concern for civil liberties for small waiting times for Norway. For 60 minutes waiting time, the results for Norway and the USA are virtually equivalent. Unfortunately, Viscusi and Zeckhauser's (2003) study does not test 100 minutes waiting time. If the reasoning above applies, that a heterogeneous population generates more respondents with extreme characteristics, then it is possible that more than 10% of the US population are willing to wait more than 100 minutes to uphold civil liberties. However, other mechanisms may be at play for large waiting times, such as impatience or biological needs, which may very well give similar results for large waiting times.

There are considerable preference differences across passengers. A large percentage prefers time efficiency rather than civil liberties, refusing to wait more than a few minutes.⁵ The main difference in the new results is the concave development in concern for civil liberties for small waiting times. A large percentage is actually willing to wait a few minutes respecting civil liberties, though there is a sharp drop beyond half an hour where patience runs out. The curves converge slightly below 40 minutes, and at 60 minutes the results are virtually equivalent at 26.5 versus 26.1 minutes. That more than 1/4 passengers are willing to wait one hour to uphold civil liberties is impressive. The first results show that as few as 9.6% accept waiting more than 100 minutes. Very few hold absolute principles with respect to civil liberties in this sense. On the one hand this is surprising since civil liberties have historically been viewed by many as a concern that should not be compromised. On the other hand, respondents may reason that airports should rig screening systems so as to prevent excessive waiting time.

The percentages in question 2 are 34.1, 37.8, 37.4 answering yes to whether it should be easier than it is today for the Norwegian legal authorities to read mail, e-mail, or tap telephones without a person's knowledge when it is related to preventing terrorism.⁶

This supports Hypothesis 7. These results for almost exclusively white respondents (footnotes 1 and 2) are similar to 36.2% found by Viscusi and Zeckhauser (2003, p.107), which divides into 40.8% for white respondents and 18.2% for non-white respondents. Privacy concerns for a homogenous Norwegian society are thus similar to privacy concerns for a multiethnic US society. Privacy concerns are slightly higher for mail than for e-mail and telephones. Almost 2/3 of the respondents prefer not to make it easier for legal authorities with regard to this question.⁷

In contrast to testing privacy concerns for the population at large, question 3 asks whether you accept that the Norwegian legal authorities read your mail, your e-mail, or tap your telephones without your knowledge when it is related to preventing terrorism. The privacy concerns for mail are slightly lower (37.8%), and for e-mail lower (46.4%), possibly because the respondent thinks that he/she has nothing to hide. Interestingly, the privacy concerns for tapping telephones are higher (32.5%), possibly because these may contain information of more personal nature. Some respondents accept that legal authorities can more easily tap telephones, but do not accept that their particular telephone is tapped.

Roughly equal fractions respond in question 4 that the Norwegian Government's investment to combat terrorism is too high or far too high (24.4) versus too low or far too low (23.2), while more than half (52.5) respond adequate. Government policy is thus well supported. Interestingly, four times as many respond far too high compared with far too low. This form for asymmetric extremism can possibly be explained by the preference by some to prefer the status quo rather than exaggerated investment which can be used for other purposes.

Respondents to question 5 state that the global risks of terrorist attacks today compared to before September 11, 2001 are higher (52.5), the same (39.0), lower (8.5). Viscusi and Zeckhauser (2003, p.114) present the corresponding percentages 42.6, 17.0, 40.4, applicable for 'attack on an airplane'.⁸ The results measured seven months after 9/11 reflect respondent uncertainty. Roughly equal fractions respond higher and lower, and few respond the same. In contrast, the results reflect higher respondent certainty. This supports Hypothesis 8. Six times as many respond higher compared with lower, and twice as many as in the earlier results respond the same. The continued global focus on terrorism after 9/11 reasonably influences perceptions in this manner.^{9,10}

The average respondent to question 6 expects that 5.8 people will be killed on Norwegian soil in the next 12 months because of terrorism. For the best-case outcome (5% probability) and the worst-case outcome (5% probability), the corresponding numbers are 0.9 and 8993. Scaling these numbers up to the US population (300 million, which is 65 times as large as the Norwegian population of 4.6 million) gives 377, 60, 586,530, respectively, which we compare and contrast with Viscusi and Zeckhauser's (2003, p.110) numbers 403.6, 33.5, 35,199.6. For the realistic outcome, the US respondents are 7% more fearful of terrorism, which are remarkably similar results.¹¹ For the best-case outcome, the Norwegian respondents are almost twice as fearful due to a few sceptics. As many as 65.8% and 91.3% expect zero deaths as the realistic and best-case outcomes.

4 Conclusions

Summing up, the article presents six hypotheses for the relationship between willingness to uphold civil liberties, combined with costs incurred, and two hypotheses for privacy concerns and assessments of global terrorism risks. The hypotheses are tested empirically. Respecting civil liberties is operationalised as screening all airport passengers equally. Violating civil liberties may be done by screening according to age, race, gender, national origin, appearance, and baggage. The cost incurred is operationalised as additional waiting time for airport passengers when civil liberties are respected. The first two hypotheses compare Norway and the USA, and consider whether civil liberties can be compromised. The subsequent four hypotheses assume regions of concavity, linearity, and convexity in the manner agents make tradeoffs between civil liberties and additional waiting time. 93% of airport passengers are willing to wait ten minutes to uphold civil liberties through screening all passengers rather than targeted screening. The percentage drops to 61%, 27%, 10% for waiting 30, 60, 100 minutes.

In contrast, Viscusi and Zeckhauser (2003) find the percentages 55%, 45%, 26% for 10, 30, 60 minutes. Waiting less than half an hour is considerably more acceptable for the Norwegian respondents than for the US respondents, while waiting more than half an hour is similarly unacceptable. The article intends to explain this difference by the homogeneous Norwegian population contrasted with the heterogeneous US population. Very few hold absolute principles with respect to civil liberties. The last two hypotheses consider privacy concerns and global terrorism risks. More than half the respondents prefer no privacy intrusion into mail, e-mail, telephones to prevent terrorism, and prefer not to make such intrusion easier for legal authorities. The average respondent supports the government's investment to combat terrorism, with the asymmetry that 20% respond too low and 15% respond far too high. Our measurement finds that six times as many believe that global terrorism risks are higher in contrast to lower than before September 11, 2001. 39% believe that terrorism risks are the same. Respondents expect that six people out of 4.6 million Norwegians will be killed in the next 12 months because of terrorism.

We formulate two scientific and practical contributions of this paper. First, when designing facilities and more generally critical infrastructures for screening passengers, capacity has to be scaled to prevent waiting times above 20 to 30 minutes, adhering to opportunities, insights, and risks pertaining to how preferences change during excess waiting times. This may require additional measures such as larger processing facilities, more efficient technology, and more personnel with good training and competence. Second, laws and regulations should adhere to a majority of respondents preferring no privacy intrusion into mail, e-mail, and telephones to prevent terrorism, thus upholding civil liberties and our democratic ideals. This may require alternative measures such as enabling privacy intrusion when reasonable suspicion is present or various other criteria are satisfied, or preventing terrorism through other means than privacy intrusion, such as forming and shaping public opinion, education, encouraging citizens to report apparent terrorist planning and tendencies, or designing an infrastructure which can sustain terrorist attacks.

One policy implication follows from the levelling out of the curve in Figure 1 for the Norwegian empirics after 40 minutes. There are substantial gains to be made in people's willingness to uphold civil liberties if they are made to wait less than 40 minutes, and more gains to be made the less they have to wait. For waiting times above 40 minutes, gains level out and are smaller.

Despite the many differences between Norway and the USA pointed out in the beginning of the paper, this article has demonstrated empirically in a comparative study that the differences between the two countries regarding attitudes toward civil liberties, costs of upholding civil liberties, and attitudes regarding privacy concerns are not substantial, and perhaps less than what one would expect. This may in one sense strike as surprising. Possibly, powerful globalisation trends, aided by the media revolution, may be one explanatory factor inducing such similar attitudes. Generalising the results to other countries than Norway and the USA is challenging. Results for Sweden, Finland, Denmark can be expected to be similar to those of Norway, which may also be the case for Northern Europe more generally. It may also be hypothesised that Canada may be similar to the USA. The similarities between Norway and the USA may possibly suggest that results apply more generally for the western world.

Future research may test, and may likely find differences for countries outside Europe and the USA. But, to establish more certain insight on a global scale, future research should compile empirics from other parts of the world, especially other European countries, Africa, the Middle East, Asia Pacific, and Latin America. Future research should also analyse willingness to protect other parts of our infrastructures, such as telecommunication and information services, energy services, water supply, transportation of people and goods, banking and financial services, government services and emergency services, balanced against civil liberties and democratic ideals.

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Appendix

- 1 One way of reducing terrorism risks to plane flights is better screening of passengers. The FBI has developed a profile of the chances that a passenger is a terrorist, taking into account the person's age, race, gender, national origin, appearance, and baggage. Airlines could either screen all passengers, leading to additional delays in line, or they could screen passengers based on the profiling. There is a tradeoff between screening all passengers, which treats all passengers equally, and profiling based on race or ethnicity, which raises concerns about civil liberties and may systematically impose differential costs on particular groups within the population. People who are singled out based on the racial profiles will have to undergo an additional ten minutes of searches. You would not be singled out for racial profiling. What is the maximum extra number of minutes (choose the number closest to your preference) you accept waiting in line so that all passengers can be screened? Answering 0 minutes means that your time is so valuable that you accept racial profiling.

0	10	20	30	40	50	60	70	80	90	≥ 100	E	Std	N
7.2	18.1	13.3	26.5	7.2	1.2	13.3	-	1.2	2.4	9.6	36.6	28.8	83

- 2 Do you think it should be easier than it is today for the Norwegian legal authorities to read mail, e-mail, or tap telephones without a person's knowledge when it is related to preventing terrorism?

	Yes	No	N
Read mail	34.1	65.9	82
Read e-mail	37.8	62.2	82
Tap telephones	37.4	62.6	83

- 3 Do you accept that the Norwegian legal authorities read your mail, your e-mail, or tap your telephones without your knowledge when it is related to preventing terrorism?

	<i>Yes</i>	<i>No</i>	<i>N</i>
Read mail	37.8	62.2	82
Read e-mail	46.4	53.6	82
Tap telephones	32.5	67.5	83

4 How would you describe the Norwegian government's investment to combat terrorism?

<i>Far too high</i>	<i>Too high</i>	<i>Adequate</i>	<i>Too low</i>	<i>Far too low</i>	<i>N</i>
14.6	9.8	52.5	19.5	3.7	82

5 The September 11, 2001 terrorist attack on the USA and subsequent events have changed the world's perception of terrorism. How would you describe the global risks of terrorist attacks today compared to before September 11, 2001?

<i>Significantly higher</i>	<i>Moderately higher</i>	<i>The same</i>	<i>Moderately lower</i>	<i>Significantly lower</i>	<i>N</i>
18.3	34.2	39.0	4.9	3.7	82

6 Norway has largely been spared from terrorist attacks, which may or may not continue into the future. The perception in the population of the likelihood of terrorist attacks is uncertain. In an attempt to assess this perception, how many people do you expect will be killed on Norwegian soil in the next 12 months because of terrorism? For the best-case outcome, assume that there is only one chance in 20 that the number of terrorism deaths could be at this low level or below. For the realistic outcome, provide the estimate you expect. For the worst-case outcome, assume one chance in 20 that the number of terrorism deaths could be this high. Choose the number of deaths closest to your preference.¹²

Deaths	0	1	10	20	30	40	70	100	200
Best	91.3	3.7	2.5	1.3	1.3	-	-	-	-
Realistic	65.8	12.2	10.9	3.7	2.4	2.5	1.2	1.2	-
Worst	10.9	8.4	12.0	8.4	4.8	3.6	1.2	15.6	10.9
Deaths	500	10 ³	5,000	10 ⁴	≥10 ⁵	<i>E</i>	<i>Std</i>	<i>N</i>	
Best	-	-	-	-	-	0.9	4.3	81	
Realistic	-	-	-	-	-	5.8	15.5	82	
Worst	7.2	3.6	1.2	3.6	8.5	8,993.5	27,721.8	83	

Notes

1 Of these, 16, 9, 3, respectively, answered March 9, 10, 11, respectively, and the remaining answered after the March 11, 2004 attack on Spain. Fifty-one subjects were asked nine additional personal characteristics questions.

a 97.9% are white, 2.1% are not white

b 93.7% are Norwegian, 6.3% are not Norwegian

c 88% are students more than 50% of the time, 12% are students less than 50% of the time

d 80% are 20 to 29 years, 12% are 30 to 39 years, 8% are 40 to 49 years

e 84% are males, 16% are females

f their financial situation compared with all students at the university are much better than average 18%, better than average 40%, average 32%, worse than average 10%, much worse than average 0%

g with respect to psychological behaviour (e.g., gambling or stock market investment), 4% are very risk seeking, 30% are moderately risk seeking, 30% are risk neutral, 34% are moderately risk averse, 2% are very risk averse

h with respect to physical behaviour (e.g., ice climbing, white water kayaking, paragliding, martial arts (e.g., karate and boxing), the corresponding percentages are 6, 26, 38, 18, 12

i their preference for the 11 Norwegian political parties are Arbeiderpartiet 6%, Fremskrittspartiet 16%, Fridemokratene 0%, Høyre 28%, Miljøpartiet De Grønne 2%,

Kristelig Folkeparti 6%, Norges Kommunistiske Parti 0%, Rød Valgallianse 4%, Senterpartiet 4%, Sosialistisk Venstreparti 12%, Venstre 2%, and no preference 20%.

- 2 The calculation is $E = ((100 - 55.3) 0 + (55.3 - 44.7) 10 + (44.7 - 26.1) 30 + 26.1 60) / 100 = 22.300$.
- 3 A linear curve between the two empirical points (10, 55.3) and (60, 26.1) gives the corresponding percentage 5.84%. Viscusi and Zeckhauser (2003, p.106) interpret that "each additional 10 min. of waiting time increases the probability that the respondent supports targeting by 0.038". Cobb-Douglas preferences $u_{CD}(w, c) = w^\alpha c^{(1-\alpha)}$ through the first and third of the points (10, 55.3), (30, 44.7), (60, 26.1) gives $\alpha = 0.2953$. CES preferences $u_{CES}(w, c) = (aw^\beta + (1-a)c^\beta)^{1/\beta}$ through the three points gives $a = 0.6355$, $\beta = 0$, which means incompatibility with empirics. CES preferences through (0, 100), (10, 55.3), (60, 26.1) gives $a = 0.3278$, $\beta = 0.3818$, crossing (656, 0).
- 4 It is also possible that some people consider civil liberties as undesirable, though we ignore such uncommon political views.
- 5 Non-white students accept $E = 30$ minutes.
- 6 In preventing terrorism, observe Keohane and Zeckhauser's (2003, p.201, p.224) argument that "the optimal control of terror stocks will rely on both ongoing abatement and periodic cleanup" of "a terrorist's 'stock of terror capacity'". "The government's optimal policy portfolio also includes averting actions (reducing the probability of successful attacks) and amelioration (reducing the harm from an attack)". Note also Lee and Sandler's (1989, p.141) argument that "nations have the option of actually selling or reducing the public good of retaliation, provided through the efforts of others, by offering safe havens to terrorists in return for the terrorists' pledge to attack elsewhere".
- 7 See Olivero and Lunt (2004) regarding privacy versus willingness to disclose in e-commerce exchanges.
- 8 Huddy et al. (2002) claim that the events of 11 September 2001 have led to a higher perceived risk of terrorism in the USA. They find that "there was a clear distinction between perceived personal and national threat, although the two are related. Perceived personal threat did not influence the perceived economic consequences of terrorism, although it had a narrow effect on personal behaviors designed to minimize risk. Overall, the findings imply that the effects of personal threat are circumscribed, consistent with past research on the limited personal basis of political judgments".
- 9 Enders (1999, p.145) "uncovers evidence that the end of the Cold War has provided a dividend in terms of reduced transnational terrorism". Sunstein (2003) points out that "when strong emotions are involved, people tend to focus on the badness of the outcome, rather than on the probability that the outcome will occur", referred to as 'probability neglect'. Comparison of the actual occurrence of terrorism, and the public perception of the occurrence, is a fruitful field for future research. See Fischhoff et al. (1981) and Viscusi (1998, p.5) for "perceived versus actual mortality risks" due to a variety of different causes.
- 10 Zeckhauser's (1996) analysis of how catastrophes are produced, consumed, and prevented, and how "we disseminate information about them", is to a considerable extent applicable also for terrorism, the difference being that "catastrophes are produced through a combination of actions by nature and humans", while terrorism is produced by humans.
- 11 Viscusi and Zeckhauser (2003, p.110) "exclude... four respondents who assessed terrorism risks greater than one million", while we keep 8.45% out of 83 respondents who assessed terrorism risks greater than 105.
- 12 One respondent replied 1,000, 70, and 10,000 to the three outcomes in question 6. The first number 1,000 is perceived as a misprint and has been removed from the sample to avoid distortion.