The Swinburne National Technology and Society Monitor

Psychological Sciences & Statistics
Faculty of Life & Social Sciences
Swinburne University of Technology

2012 Monitor

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Executive Summary

The Swinburne National Technology and Society Monitor provides an annual ‘snapshot’ of public perceptions of technological change. The Monitor is based on a national survey of 1000 Australian adults aged 18 to 94. The main findings of the 2012 Monitor are:

1. In general, Australians are comfortable with the rate of technological change in the world today.

2. Most Australians are very comfortable with having wind farms in Australia but are not comfortable with having nuclear power plants in Australia.

3. Australians are somewhat comfortable with ‘clean coal’ (carbon capturing), but not comfortable with coal seam gas or non-renewable coal.

4. The degree of comfort with genetically modified (GM) plants and animals for food remains relatively low.

5. Australians trust scientific institutions and the non-commercial media for information about new technologies. They have less trust in major companies and the churches, with the least trust in the commercial media.

6. Australians report higher levels of trust in medical doctors (particularly medical specialists) than in mental health professionals.

7. When asked what social issues were the most important for Australia today, issues related to quality of life were the most cited social concerns, followed by public health and community issues.

8. Australians are significantly more comfortable with genetic testing conducted by their GP compared to private online companies.
Introduction

Background

Information and life science technologies have profound social, political, psychological and ethical implications. Public perceptions of such technologies are potentially volatile.

The Swinburne National Technology and Society Monitor was developed in 2003 at Swinburne University of Technology. It involves a representative nationwide survey of Australians, and provides an annual ‘snapshot’ of public perceptions regarding new technologies in Australia.

The 2012 Monitor is the tenth edition of the Swinburne National Technology and Society Monitor. It provides a general account of public perceptions about new technologies in Australia, including trust in institutions that provide information about new technologies. In addition, it involves an assessment of current social concerns, and a profile on public perceptions about genetic testing.

The Survey

The 2012 survey included 1000 respondents. Participants in the national survey were asked:

♦ How comfortable they were with the current rate of technological change.
♦ How comfortable they were in relation to various technologies.
♦ The extent to which they agreed or disagreed with statements about the value of science and technology, and their beliefs as to the amount of control science should have over nature.
♦ How much they trusted various institutions, organisations and groups for information about new technologies.
♦ What they thought were important social issues for Australia at present.
♦ How comfortable they were in relation to genetic testing in different contexts.
Measures

Perceptions of New Technologies

Comfort with technologies was measured on an eleven point Likert scale where 0=not at all comfortable and 10=very comfortable.

Statements about science and technology were measured on an eleven point agreement scale where 0=strongly disagree and 10=strongly agree.

Trust was measured on a six point Likert scale where 0=don’t trust at all and 5=trust a very great deal.

Perceptions of Social Concerns

Perceptions of important social issues were gained through an open-ended question inviting respondents to nominate what they thought were the three most important issues or problems for Australia at present.

Perceptions of Genetic Testing

The genetic testing questions used an experimental design, with 500 of the respondents randomly assigned to questions relating to standard medical care (genetic testing conducted by a GP), and half the respondents having the same questions about genetic testing in a private context (conducted by a private online company).

The likelihood of ordering genetic testing in standard care and private contexts was measured on an eleven point Likert scale where 0=not at all likely and 10=extremely likely.

Comfort with personalised genetic reports provided through private and standard care contexts was measured on an eleven point Likert scale where 0=not at all comfortable and 10=very comfortable.
Comfort with the Rate of Technological Change

In general, Australians are comfortable with the rate of technological change in the world today (average rating = 6.5).

Sixty six percent of the sample gave ratings above the mid-point of 5 on the 0 - 10 rating scale, while eighteen percent gave a rating below the mid-point of 5.

Sixteen percent of the sample reported they were neither comfortable nor uncomfortable (rating at mid-point of 5), and less than one percent reported being unsure of their comfort level with the rate of technological change.

Men were significantly more comfortable with the rate of technological change than women, and younger people were significantly more comfortable than older people.
Comfort with Different Technologies

Australians are very comfortable with vaccines. However they are significantly more comfortable with vaccines generally than with Gardasil, which is typically marketed as the cervical cancer vaccine. Australians are also comfortable with the internet, wind farms, mobile phones, genetic testing and clean coal.

Australians are not comfortable with the government’s pollution reduction scheme, non-renewable coal, coal seam gas, nuclear power plants or genetically modified (GM) foods. They are less comfortable with genetically modified animals for food than with genetically modified plants for food.

There were gender differences in reported levels of comfort for the Internet, GM foods, nuclear power plants and Gardasil, with men reporting significantly higher levels of comfort than women in each case.
Comfort with Wind Farms and Nuclear Power Plants in Australia

The pattern of findings regarding comfort with wind farms and nuclear power plants in Australia has remained consistent with results from previous years. Our 2012 data suggests continued discomfort with nuclear power in Australia, but high levels of comfort with wind farms.

On average, the level of comfort with wind farms in Australia was quite high (average rating = 7.4) while the level of comfort with nuclear power plants was fairly low (average rating = 3.7). Seventy-six percent of respondents reported some level of comfort with wind farms, with 26% reporting they were very comfortable. By contrast, 28% of Australians reported some degree of comfort with nuclear power plants with only 5% reporting they were very comfortable.

Fifty-five percent of the sample reported some degree of discomfort with nuclear power plants, with 24% giving comfort ratings of 0, indicating they were not at all comfortable. By comparison only 13% of the sample reported any discomfort with wind farms. A further 11% were unsure about wind farms and 17% were unsure about nuclear power plants in Australia.

On average, men were significantly more comfortable with nuclear power than women were. Men and women did not differ in their comfort with wind farms.
Comfort with Different Energy Sources

In addition to the standard questions relating to comfort with nuclear power plants and wind farms in Australia, in 2012 we asked respondents how comfortable they were with other energy sources. We also asked respondents how comfortable they were with the Federal Government’s carbon emissions trading scheme.

As noted, respondents were most comfortable with energy sourced through use of wind farms and least comfortable with energy sourced from nuclear power plants. Comfort with other energy sources varied based on the type of source.

Respondents were comfortable with ‘clean coal’ (carbon capturing) but uncomfortable with non-renewable coal (burning coal for energy), and even less comfortable with coal seam gas (gas that arises from coal which can be used instead of coal to generate electricity). All differences in reported levels of comfort were significant at $p < .001$, with the exception of the difference between comfort with coal seam gas and non-renewable coal ($p < .05$).

Respondents reported the same level of discomfort with the carbon emissions trading scheme as with the use of non-renewable coal.
Comfort with GM Plants and Animals for Food

On average, Australians were more comfortable with genetically modified plants for food (average rating = 4.2) than with genetically modified animals for food (average rating = 2.9), but the degree of comfort for both is relatively low.

Thirty-two percent of the sample reported some comfort with genetically modified plants for food (rating above the midpoint of 5 on the scale), while 17% reported some level of comfort with genetically modified animals for food.

Fifty percent of respondents were not comfortable (rating below the midpoint of 5 on the scale) with genetically modified plants for food, while the majority of respondents (68%) were not comfortable with genetically modified animals for food. Respondents who reported discomfort most often reported they were not at all comfortable with GM food (plants = 18%; animals = 29%).

A further 18% of respondents reported being unsure of their degree of comfort with genetically modified plants for food (either rating the mid-point 5, or nominating ‘unsure’), while 15% reported being unsure about genetically modified animals for food.

Men were significantly more comfortable with GM plants and animals for food than women were.
**Attitudes Towards Science and Technology**

Australians generally agree that science and technology are improving our quality of life, and think it is important for governments to regulate new technologies.

There is somewhat less agreement about the level of control scientists have over nature, the degree to which science and technology can solve problems faced by human beings and the level of control that governments have over science and technology.

![Beliefs About Science](image-url)
Trust in Organisations

The overall pattern of results for Australians’ trust in people and organisations, in relation to information about science and technology, is very similar to the pattern of results found in previous years.

Australians continue to have the most trust in doctors and scientific institutions (such as CSIRO, universities and hospitals). Australians have a degree of trust in mental health professionals, the environmental movement, the public service and major Australian companies, but they do not trust the churches, major international companies, governments or trade unions.

While trust for governments was generally low, trust in State governments was significantly higher than trust in the Federal government. In 2011 trust in the Federal government was at the lowest level it had been since the Monitor started in 2003. The 2012 results indicate a marginal improvement in trust in the Federal government.

In 2008 respondents were asked to rate their degree of trust in major international companies for the first time. Results in 2012 indicate that trust in major international companies remains significantly lower than trust in major Australian companies.

Consistent with previous results, the level of trust in non-commercial media is similar to levels of trust in scientific organisations, while trust in the commercial media is the lowest of all the organisations.
Medical Trust

In 2012 we asked respondents to consider medical specialists (e.g. surgeons; dermatologists etc.) separately from general practitioners (GPs), where previously respondents had been asked about their level of trust in medical doctors in general. In keeping with prior years, respondents were asked about trust in hospitals, psychologists and psychiatrists. Each medical trust target was rated on a 0 to 5 scale (0 = no trust at all, 5 = a great deal of trust).

Overall, Australian adults reported relatively high levels of trust in medical doctors and hospitals but lower trust in mental health professionals. Trust in medical specialists was significantly higher than trust in GPs. Comparing respondents’ trust scores across the five medical targets showed significantly higher public trust in doctors (both specialists and GPs) than in hospitals or mental health professionals, with trust in psychologists rated higher than trust in psychiatrists (all differences were significant at p<.001).

This sample reported similar levels of trust in doctors (specialists = 4.01; GPs = 3.83) as they reported for trust in universities (3.73) and the CSIRO (3.79). Trust ratings for mental health professionals were lower (psychologists = 2.93; psychiatrists = 2.84) and more in line with trust in the non-commercial media (3.26) and major Australian companies (2.69).

Men reported significantly greater trust in hospitals than did women. There were no gender differences in reported levels of trust for the other medical targets.
As in 2011, respondents were asked an open-ended question inviting them to nominate up to three issues that they felt were the most important issues or problems for Australia at present. If respondents nominated a very broad area (e.g. education), they were asked if there was some specific aspect of that issue that was of particular concern. Responses were firstly divided into broad categories and then into subcategories of the broader social concern.

The pattern of responses in 2012 was somewhat different from the pattern of responses in 2011, with quality of life issues being cited more often than public health issues this year. The most frequently cited quality of life issues related to employment (22%), Indigenous issues (16%), the economic divide between the rich and the poor (15%), and social networking (15%). Within the social networking subcategory, the most often cited concern was cyber bullying.

Within the public health category, people most often cited problems related to drugs and alcohol (41%), general health services and funding (21%), and mental health (12%). Of the people who were concerned about drugs and alcohol, one quarter specified this in relation to ‘youth’, ‘young people’ or ‘children’.

Community issues were cited almost as often as public health issues. Within this category the most often cited concerns related to crime and violence (28%), followed by rural issues (15%) and the aging population and aged care (13%). Of the people who were concerned about crime and violence, 22% specified this in relation to drugs and alcohol. However, since the primary concern was about crime and violence (and in order to avoid ‘double dipping’), these responses were not added in to the public health category.

It should also be noted that a number of people mentioned the high cost of fuel, electricity and gas. Since this was often specified with ‘cost of living’ (economy), all responses related to the cost of fuel, gas and electricity were included in the ‘cost of living’ subcategory. This may partly account for the relatively low focus on energy and resources.
Subcategories of Social Concerns

The information below details the most frequently cited subcategories within the broad social concerns nominated by respondents (less frequently cited issues are not included). The subcategories are listed in descending order of frequency of response.

<table>
<thead>
<tr>
<th>Quality of Life</th>
<th>Health</th>
<th>Community</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment issues</td>
<td>Drugs and alcohol</td>
<td>Law &amp; order/crime &amp; violence</td>
<td>Racism</td>
</tr>
<tr>
<td>Indigenous issues</td>
<td>Health services / funding</td>
<td>Rural issues</td>
<td>Refugees or asylum seekers</td>
</tr>
<tr>
<td>Inequality (rich poor divide)</td>
<td>Mental health</td>
<td>Aging population &amp; aged care</td>
<td>Immigration (generally)</td>
</tr>
<tr>
<td>Social networking</td>
<td>Hospital beds / waiting lists</td>
<td>Roads/public transport</td>
<td>Integration or assimilation</td>
</tr>
<tr>
<td>Homelessness</td>
<td></td>
<td>Housing</td>
<td></td>
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</tbody>
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<thead>
<tr>
<th>Government</th>
<th>Economy</th>
<th>Education</th>
<th>Youth Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government (general)</td>
<td>Inflation / cost of living</td>
<td>Curriculum content</td>
<td>Discipline / behaviour problems</td>
</tr>
<tr>
<td>Policies/direction</td>
<td>Economy (general)</td>
<td>Funding</td>
<td>Attitudes / lack of respect</td>
</tr>
<tr>
<td>Honesty and integrity</td>
<td>Foreign ownership</td>
<td>Education (general)</td>
<td>Employment opportunities</td>
</tr>
<tr>
<td>Leadership</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Environment</th>
<th>Morals &amp; Values</th>
<th>Family &amp; Child Issues</th>
<th>Energy &amp; Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate change</td>
<td>Moral decline</td>
<td>Same sex marriage</td>
<td>Mining</td>
</tr>
<tr>
<td>Carbon tax</td>
<td>Social isolation</td>
<td>Child protection / welfare</td>
<td>Farming &amp; agriculture</td>
</tr>
<tr>
<td>Environment (general)</td>
<td>Greed / selfishness</td>
<td>Family breakdown / divorce</td>
<td>Energy (general)</td>
</tr>
<tr>
<td>Conservation</td>
<td></td>
<td>Parenting</td>
<td></td>
</tr>
</tbody>
</table>

There were a few issues that could not easily be grouped under the main concerns listed above. These were grouped into an ‘other’ category. As in 2011, the most frequently cited issue in this group related to the use and misuse of the media in influencing public opinion.
Genetic Testing in Public and Private Contexts

In 2012 we asked respondents about genetic testing in private and standard care contexts. An experimental design was used so that half the respondents were randomly assigned to the standard care condition and half the respondents were randomly assigned to the private condition.

In the standard care condition, respondents were asked to consider how likely they would be to have a genetic test where they provide a sample of saliva to their GP and have a personalised genetic susceptibility report provided by the GP. Respondents were also asked their level of comfort with GPs producing personalised reports.

Respondents in the private condition were asked the same questions, but they were told the genetic testing would be done by a private company and the personalised report could be received via the internet or mail.

There were no gender differences in the likelihood of ordering a genetic test, or in the comfort with the personalised reports. However, respondents were significantly less likely to order a genetic test through a private company than from their GP. Similarly, respondents were significantly less comfortable with reports provided by a private company than with reports provided by their GP.
The National Survey Sample

1000 respondents took part in the 2012 national survey. The target population was the Australian general public aged 18 years and over. The survey was conducted between 22nd March and 31st March 2012 using Computer Assisted Telephone Interviewing (CATI) technology.

The following charts provide a graphical representation of the percentage of respondents in each demographic category.

All states and territories were represented in the sample. Sixty-two percent of the sample was female. The average age of the sample was 56 years, and half of the sample (50%) was currently employed.
The majority of the sample (59%) had completed tertiary education, and only 9% were currently students.

The majority of the sample (72%) was currently in a relationship, with most people being married.

Fifty-one percent of the sample never attended church. Of those that did attend church, 15% did so at least once per week.
Psychological Sciences and Statistics

The Monitor is produced by the department of Psychological Sciences and Statistics (PSS) at Swinburne University. Any questions can be directed towards the authors of the Monitor:

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Swinburne University CATI Facility

The Swinburne University Computer Assisted Telephone Interviewing (CATI) Facility is part of PSS, within the Faculty of Life & Social Sciences.

The CATI Facility specialises in designing and conducting high quality telephone surveys for academic, government and private organisations. Our aim is to simplify data collection for our clients while maintaining rigorous research standards.

The CATI Facility Executive Committee is comprised of:

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