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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 92. The main findings of the 2013 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. The degree of comfort with genetically modified (GM) plants and animals for food remains relatively low.

4. 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.

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

6. 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 population, public health and environmental issues.

7. Most Australians believe that climate change is happening.
   a. Reasons for rising temperatures are generally believed to be equally attributable to the things people do and natural causes.
   b. Most Australians believe they have a moderate degree of knowledge about climate change
   c. Most Australians believe climate change is important for them personally, and that climate change will become a very serious problem if not dealt with.
   d. Australians generally trust what scientists tell them about climate change, but also believe there is disagreement among scientists regarding climate change issues.
   e. If there is a conflict between economic growth and protecting the environment, most Australians are in favour of protecting the environment.
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 2013 Monitor is the eleventh 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 climate change.

The Survey

The 2013 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.
✦ What their perceptions were about climate change.
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 was the most important issue or problem for Australia at present.

Perceptions of Climate Change

Respondents were asked whether they believed climate change was happening. They were also asked about possible reasons for rising temperatures; their degree of knowledge about climate change; the importance of climate change to them personally; and how serious they thought climate change would be in the future.

In addition, respondents were asked their views on the degree of agreement amongst scientists about climate change; their level of trust in what scientists said about climate change; and the relative importance of protecting the environment compared with maintaining economic growth.
Comfort with the Rate of Technological Change

In general, Australians are comfortable with the rate of technological change in the world today (average rating = 6.7).

Seventy percent of the sample gave ratings above the mid-point of 5 on the 0 - 10 rating scale, while fourteen 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.
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 mobile phones, the internet, wind farms, and genetic testing.

Australians are not comfortable with nuclear power plants or genetically modified (GM) foods. They are significantly 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 GM foods (plants and animals) and nuclear power plants, 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 2013 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 = 3.9). Seventy-four percent of respondents reported some level of comfort with wind farms, with 26% reporting they were very comfortable. By contrast, 33% of Australians reported some degree of comfort with nuclear power plants with only 4% reporting they were very comfortable.

Fifty-two percent of the sample reported some degree of discomfort with nuclear power plants, with 23% giving comfort ratings of 0, indicating they were not at all comfortable. By comparison only 12% of the sample reported any discomfort with wind farms. A further 13% were unsure about wind farms and 15% 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 GM Plants and Animals for Food

On average, Australians were more comfortable with genetically modified plants for food (average rating = 4.3) than with genetically modified animals for food (average rating = 3.1), but the degree of comfort for both is relatively low.

Thirty-four percent of the sample reported some comfort with genetically modified plants for food (rating above the midpoint of 5 on the scale), while 21% reported some level of comfort with genetically modified animals for food.

Forty-eight 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 (65%) 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 = 28%).

A further 15% 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 12% 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)

- Scientists have too much control over nature: 3.94
- Science and technology can solve most problems faced by human beings: 5.76
- Science and technology are continuously improving our quality of life: 7.14
- It is important for governments to regulate new technologies: 6.83
- Science and technology are out of control and beyond the control of governments: 4.24
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.

The relative trust in State and Federal governments has varied over the years, depending on the political climate at the time the Monitor is conducted each year. As in prior years, trust for governments was generally low, with trust in State governments being significantly lower than trust in the Federal government this year.

In 2008 respondents were asked to rate their degree of trust in major international companies for the first time. Results in 2013 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.
Trust in Organisations

- Medical Specialists: 3.9
- CSIRO: 3.76
- Universities: 3.72
- General Practitioners (GPs): 3.63
- Hospitals: 3.63
- Scientists: 3.47
- Non-commercial media: 3.3
- Psychologists: 2.93
- Environmental movement: 2.9
- Public service: 2.86
- Psychiatrists: 2.84
- Major Australian Companies: 2.56
- Federal Government: 2.22
- Trade unions: 2.2
- Churches: 2.16
- State Government: 2.11
- Major International Companies: 2.01
- Commercial media: 1.78
Medical Trust

In 2012 we asked respondents for the first time 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 or hospitals, which were rated with equal degree of trust. Comparing respondents’ trust scores across the five medical targets showed significantly higher public trust in doctors (both specialists and GPs) and hospitals than in 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 = 3.90; GPs = 3.63) as they reported for trust in universities (3.72) and the CSIRO (3.76). Trust ratings for mental health professionals were lower (psychologists = 2.93; psychiatrists = 2.84) and more in line with trust in the environmental movement (2.90) and the public service (2.86).

Women reported significantly greater trust in psychologists than did men. There were no gender differences in reported levels of trust for the other medical targets.
Concern About Social Issues

As in previous years, respondents were asked an open-ended question regarding what they felt were the most important issues or problems for Australia at present. In 2013 we requested somewhat more detailed responses than in previous years, so focussed on respondents’ primary concerns, rather than multiple issues. 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. Since the 2012 data included multiple responses from some respondents, in order to make a comparison between 2012 and 2013 data, the chart below indicates the first social issue nominated by respondents in 2012.

As in 2012, issues related to quality of life were the most frequently cited concerns, followed by issues related to population and public health. In 2013, issues related to environment were cited much more frequently than they were in 2012. The most frequently cited quality of life issues related to employment (34%), social media (including cyber bullying; 19%), and the economic divide between the rich and the poor (15%).

Within the population category, the majority of responses related to refugees / asylum seekers (53%), with a broad range of responses on this issue. Within the public health category, people most often cited problems related to drugs and alcohol (64%), often elaborating concerns in relation to ‘youth’, ‘young people’ or ‘children’, and also making a connection with crime and violence.

The 2012 data indicated community issues as the next most often cited social concern, with environmental issues ranking 10th among the 12 primary social concerns. However, the 2013 data indicated a shift with environment being more prominent this year. The majority of respondents cited climate change issues (67%), with a further 15% of respondents specifically commenting on what they thought about government policy related to climate change.
### 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>Population</th>
<th>Health</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment issues</td>
<td>Refugees / asylum seekers</td>
<td>Drugs / alcohol</td>
<td>Climate change</td>
</tr>
<tr>
<td>Social networking</td>
<td>Integration or assimilation</td>
<td>Health services / funding</td>
<td>Government action</td>
</tr>
<tr>
<td>Inequality (rich poor divide)</td>
<td>Racism</td>
<td>Mental health</td>
<td>Conservation</td>
</tr>
<tr>
<td>Homelessness</td>
<td>Immigration (general)</td>
<td>Disability support</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Community</th>
<th>Education</th>
<th>Economy (generally)</th>
<th>Family &amp; Child Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law &amp; order / crime &amp; violence</td>
<td>Funding</td>
<td>Economy (generally)</td>
<td>Same sex marriage / equality</td>
</tr>
<tr>
<td>Social welfare</td>
<td>Standards</td>
<td>Inflation / cost of living</td>
<td>Parenting</td>
</tr>
<tr>
<td>Aging population &amp; aging</td>
<td>Education (general)</td>
<td>Manufacturing</td>
<td>Family breakdown / divorce</td>
</tr>
<tr>
<td>Housing</td>
<td>Curriculum content</td>
<td>Economic debt</td>
<td>Child protection / welfare</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Government</th>
<th>Youth Issues</th>
<th>Morals &amp; Values</th>
<th>Energy &amp; Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies / direction</td>
<td>Attitudes / lack of respect</td>
<td>Moral decline</td>
<td>Energy (general)</td>
</tr>
<tr>
<td>Leadership</td>
<td>Employment opportunities</td>
<td>Lack of respect</td>
<td></td>
</tr>
<tr>
<td>Government (general)</td>
<td>Youth issues (general)</td>
<td>Social isolation</td>
<td></td>
</tr>
<tr>
<td>Honesty &amp; integrity</td>
<td>Discipline / behaviour problems</td>
<td>Human rights</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 previous years, the most frequently cited issue in this group related to the use and misuse of the media in influencing public opinion.
Climate Change

Belief in Climate Change

In 2013 we asked respondents about climate change / global warming.

Initially respondents were asked whether they believed climate change is happening or not, and how sure of this they were.

The vast majority of respondents (80%) believed climate change is happening; while 15% did not believe climate change is happening and 5% were unsure.

Respondents who believed in climate change seemed more confident of their beliefs than respondents who do not believe in climate change. As shown in the chart below, 38% of the people who believed in climate change were extremely sure of their belief, while only 18% were extremely sure climate change is not happening. In a similar vein, of the people who believed in climate change only 3% had some doubts, while 13% of the people who do not believe in climate change had some doubts about this being the case.
Reasons for Temperature Rise
Respondents were next asked what they thought were the main reasons for rises in global temperatures.

Whether people believed in climate change or not, they were more likely to nominate rising temperatures as being equally attributable to things people do and natural cause. People who believed in climate change were least likely to attribute rising temperatures to natural causes alone (8%), while people who did not believe in climate change were least likely to attribute rising temperatures solely to the things people do (19%).

Knowledge about Climate Change
When asked how much they knew about climate change, a relatively small proportion of respondents reported they knew a lot (14%), with the majority of respondents reporting they knew a moderate amount (61%). Very few respondents reported knowing nothing about climate change (2%).
Importance and Seriousness of Climate Change

Respondents were asked how important the issue of climate change was to them personally. The majority of respondents (85%) reported some degree of personal importance, with approximately a quarter of these people reporting climate change was extremely important to them. Only 6% of respondents reported that climate change had no importance for them at all.

Respondents were also asked if nothing was done to reduce climate change in the future, how serious of a problem they thought it would be. The majority of respondents (81%) thought the problem would be serious, with most people (58%) believing it would be very serious. Only 5% of respondents reported that they thought climate change would not be serious at all.
Opinions about Scientists

Respondents were asked how much they trusted the things scientists say about the environment. They were also asked to what degree scientists agree about climate change.

The majority of respondents (83%) trusted what scientists said about the environment, with most people (44%) reporting a moderate degree of trust.

However, the majority of people (60%) also believed that there was a lot of disagreement among scientist about whether climate change was happening.

Economic Growth vs. Protecting the Environment

Finally respondents were asked, if there was a conflict between protecting the environment and maintaining economic growth, which they thought would be more important. The majority of respondents (72%) thought it was important to protect the environment, even if it reduced economic growth.
The National Survey Sample

1000 respondents took part in the 2013 national survey. The target population was the Australian general public aged 18 years and over. The survey was conducted between 3rd December and 12th December 2013 using Computer Assisted Telephone Interviewing (CATI) technology.

Calls were made to mobile phones as well as landlines. In all cases, telephone numbers were randomly computer generated. Of the 1,000 respondents, 75% were contacted on landlines and 25% were contacted on mobile phones.

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. Fifty-four percent of the sample was female. The average age of the sample was 53 years.
The majority of the sample had completed tertiary education (64%) and were currently employed (51%).

Fifty percent of the sample never attended church. Of those that did attend church, 14% did so at least once per week. When asked about the importance of spiritual beliefs, fifty-two percent of the sample ascribed some degree of importance.
Swinburne University CATI Facility

The Monitor is produced by the Swinburne University Computer Assisted Telephone Interviewing (CATI) Facility, which is part of the department of Psychological Sciences and Statistics, within the Faculty of Life & Social Sciences.

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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.

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