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References are in a separate file, AES_2002_References

6. AUSTRALIANS' VIEWS ABOUT THE THEORY OF EVOLUTION

For more than a millennium since Christianity became the dominant religion of the Roman Empire, almost everyone in the Western world believed the account of human origins provided in the book of Genesis in the Bible. Most – cleric, intellectual and layman alike – believed in a world guided by God's hand. Most believed that mankind was the centre of creation, made in God's image.

But late in the last century, these comforting beliefs were directly challenged by Darwin's theory of evolution by natural selection (Darwin 1859). Darwin argued that the fate of species – plants, animals and man alike – depended solely upon how well they suited the climate and food supply in the place they lived, how well they competed with other species, how well they could avoid predators, and how effectively they could reproduce. Individuals better suited to their environment were more likely to survive and more likely to have offspring. But individuals poorly suited to their environment had less of a chance of surviving and having children. Thus over the generations, the species would slowly change, coming to be made up mostly of the descendants of the fittest members better adapted to their environment. Darwin argued that this gradual process of evolution accounted for the wide variety of species found in the modern world, from fish to mankind, and accounted for all their features, even such extraordinarily complex ones as the eye. Darwin's theory implies that it was not God that created species, that it was not divine purpose that guided change, and that there is nothing all that special about mankind. Rather, all was merely the outcome of eons of ruthless competition: the survival of the fittest.

This theory challenged some of the most deeply held beliefs of Darwin's contemporaries and a bitter and intense debate ensued. After some decades, the scientific debate was decided unequivocally in Darwin's favor. The accumulation of

evidence over the years since has further strengthened his position and his theory is, in its broad outlines, now almost universally accepted by scientists.

Evolution posed a great challenge to religion by denying God's role in the creation of life and by reducing mankind to one of many species slowly shaped by the blind force of evolution rather than created divinely in the image of the Creator. In this it was like an earlier great challenge to religion: the emergence of a scientific view of astronomy, dating from Copernicus, in which the earth was not the center of the universe but only a small planet circling one star among countless millions. Religion had eventually come to terms with this earlier challenge and by Darwin's time science and religion co-existed peacefully (Burrow 1968). And so it happened with the scientific view of evolution. Within decades the public struggle between scientific and religious leaders subsided into an uneasy truce, sometimes even a peaceful accommodation, save perhaps with fundamentalist Christians in the American 'Bible Belt'. Or so it seemed (Gieryn, Bevins, and Zehr 1985).

But does this peaceful coexistence between scientific and religious elites reflect the way ordinary people view evolution and religion? Or does the episodic eruption of conflict over the teaching of evolution and religious views of creation reflect a deeper conflict between religious and scientific outlooks among ordinary people, a conflict that persists to this day?¹

To address this issue, the International Social Science Survey/ Australia began with a single question in 1994. The results were illuminating, so in the following years we developed a full set of questions ascertaining the degree of public acceptance of the theory of natural selection. We also developed questions about recent developments in astronomy which, like the Copernican revolution of the past, also cast doubt on the centrality of mankind: the possibility of life elsewhere in the universe. These questions have been asked of more than 8,000 Australians, most recently in 2002; the surveys are described in the Appendix.

Results

The questions on evolution were:

¹ There are implications for the social sciences as well (Kingsland 1988; Quadagno 1979; Runciman 1998).

1. Would you say these are true or false...
Modern animals and plants evolved over millions of years, through survival of the fittest.

Definitely true	25%	[100 points]
Probably true	56%	[75 points]
Mixed feelings, not sure	11%	[50 points]
Probably not true	4%	[25 points]
Definitely not true	4%	[0 points]
	100%	(8467 cases)

(Mean = 74 points)
 (Test-retest reliability = .63)

2. **Modern animals and plants evolved over millions of years, as Darwin's theory of evolution says.**

Definitely true	16%	[100 points]
Probably true	36%	[75 points]
Mixed feelings, not sure	27%	[50 points]
Probably not true	12%	[25 points]
Definitely not true	10%	[0 points]
	100%	(10,581 cases)

(Mean = 59 points)
 (Test-retest reliability = .72)

3. **The earliest humans appeared millions of years ago in Africa.**

Definitely true	10%	[100 points]
Probably true	31%	[75 points]
Mixed feelings, not sure	45%	[50 points]
Probably not true	8%	[25 points]
Definitely not true	6%	[0 points]
	100%	(8,405 cases)

(Mean = 57 points)
 (Test-retest reliability = .55)

4. **Mankind's ancestors were apes.**

Definitely true	11%	[100 points]
Probably true	34%	[75 points]
Mixed feelings, not sure	33%	[50 points]
Probably not true	12%	[25 points]
Definitely not true	11%	[0 points]
	100%	(8,439 cases)

(Mean = 56 points)
 (Test-retest reliability = .70)

The public found these questions easy, with only 3% to 8% failing to answer them.

Some 25 percent said it was definitely true that “modern plants and animals evolved over millions of years, through survival of the fittest” and another 56 percent thought that was probably true. 11 percent took a neutral stance. 4 percent said probably false and 4 percent definitely false. This item attracted more support than others on the topic, probably because it does not specifically refer to people.

A simple and useful summary of these results can be obtained by scoring the answers on a 'points out of 100' basis, with 0 for the lowest score and 100 for the highest, as shown above. Using this scoring, the average answer on this question is 74 points out of 100, well on the pro-Darwin side of things. Put differently, the average Australian says it is "probably true" that modern animals and plants evolved over millions of years through survival of the fittest.

Going on to the next question, specifically about mankind, some 16 percent said that it was definitely true that "mankind evolved by natural selection from lower animals, as Darwin's theory of evolution says" and 36 percent thought this was probably true. 27 percent reported neutral or mixed feelings. 12 percent said probably false and 10 percent said definitely false. The average was 61 points out of 100, slightly on the pro-Darwin side of things.

On whether "The earliest humans appeared millions of years ago in Africa" – the conclusion of a large body of research in recent decades – 10 percent chose definitely true and 31 percent chose probably true. But fully 45 percent were undecided. Only 8 percent chose probably false and 5 percent chose definitely false. This gave an average of 57 points out of 100.

Finally, as to whether "Mankind's ancestors were apes" – one of the more emotional aspects of Darwin's theory² – 11 percent said definitely true, 34 percent probably true, 33 percent took a neutral stance, 12 percent said probably false and 11 percent definitely false. The average was 56 points out of 100, slightly on the pro-Darwin side and very similar to the other questions.

Thus on the whole, Darwin's theory of evolution elicits a mixed reaction from the Australian public.³ The balance of opinion favours Darwin, but not strongly. So a century and a half of clear evidence has not yet settled the issue unequivocally in the public mind.

The Structure of Opinion on Evolution

Answers to these questions about evolution are closely linked (Table 6.1). Inter-item correlations range from .5 through .7. Further, factor analysis suggests that they all reflect a single underlying dimension (Table 6.1, factor 1). They are also similar in that all have much the same correlations with other relevant variables (for

² See (Desmond and Moore 1992 500-518).

³ A very different style of question also gives similar results. In our 1994/95 survey we obtained ratings of "Darwin's theory of evolution" on a standard Michigan "Feeling thermometer" question – a question that uses ratings from 0 for "Very cold or unfavourable", through 50 for "No feeling either way", to 100 for "Very warm or favourable". Answers to this gave an average of 59 points, just below "60 A bit more warm than cold". The standard deviation was high, 31 points, showing that there is a great diversity of opinion on the issue.

example, age, education, religious belief, views on abortion; see Table 6.2 in the technical notes). These results all suggest that the items all reflect a single underlying concept, "acceptance of evolution".⁴

The fact that the several items tap a single underlying concept justifies combining them into a single summary scale. This gives a better measure of opinion than any one item taken alone and we use it in the subsequent analysis.⁵

Stability of Opinion on Evolution

The public's views on evolution are not random and transient but instead are stable and coherent over a period of many years. This is by no means self-evident: beginning with a justly famous analysis of Converse, a well known body of research in political science argues that the general public rarely have coherent or enduring views even on a single issue (Converse 1964; Judd and Milburn 1980; Listhaug 1995). Instead, they argue that the public answers questions almost at random, as if mentally flopping a coin, so there is little consistency from one question to another, much less from one year to another.

However our data, like much recent evidence (Listhaug 1995), is quite to the contrary. We have seen that there great consistency in the answers to different questions on evolution (shown in Table 6.1). Even more strikingly, we have re-interviewed the same people an average of more than four years after first asking their opinion on evolution and find that the answers they gave the second time are very similar to those they gave at first (Table 6.2, last column). For the first question on evolution, the correlation is fully 0.6 and for the second, explicitly about Darwin, 0.7. For the question on humans originating in Africa, the correlation is a little lower, 0.5 and for the question about our ancestors being apes is again 0.7. These results are based on a sample of 1,611 cases. They clearly show that people's views on evolution, far from being random and transient, are in fact quite stable.

Evolution and Christian Belief

Views on evolution, although linked with religious belief, are clearly distinct from it (Table 6.1). Questions measuring Christian belief are correlated around -.4 with

⁴ It may well be that views about modern astronomy are also closely linked to views about evolution, forming a broader "scientific world-view". This is taken up in the Technical Notes and Table 6.2.

⁵ We define *acceptance of evolution* as the mean of the four questions on evolution. For respondents who answered some but not all of the questions, we average the ones they did answer.

views on evolution – some a bit more, some a bit less.⁶ But they are much more highly correlated with each other, around 0.7, and clearly distinct in the factor analysis, loading on a separate factor.⁷

Why Christian belief and views about evolution are correlated is a more difficult question. It could be that accepting evolution undermines religious belief, as Darwin and many others expected. But it could equally believe that those who believe in God are likely, because of that, to reject the evidence for evolution. Most likely the influences go both ways. There is no easy way to tell.⁸

But it is clear that, for whatever reason, among the general public there is sharp conflict between Christian belief and belief in Darwin's theory of evolution. The opposition between Christian belief and acceptance of evolution remains intense in the public mind.

Social Differences in Acceptance of Evolution

As a scientific theory, evolution by natural selection needs to be judged on the evidence, which is clear, not by a public popularity contest. Nonetheless, it is interesting to see who among the general public – given the same body of evidence – accepts or rejects the theory.

Religion and education are the key influences shaping people's views about evolution (Figure 1; details in Table 6.3 in the technical notes):

- The opposition between growing up in a devout home, where church attendance is regular, and accepting evolution is intense, as shown by regression analysis. People from devout homes are much more likely to reject evolution than are those from secular homes, as shown by the large standardized regression coefficient of $\beta = -.20$.⁹

⁶ The second evolution question, which explicitly mentions Darwin, is a bit more closely tied to religious belief, perhaps because of the long-standing public conflict between them (Kingsland 1988).

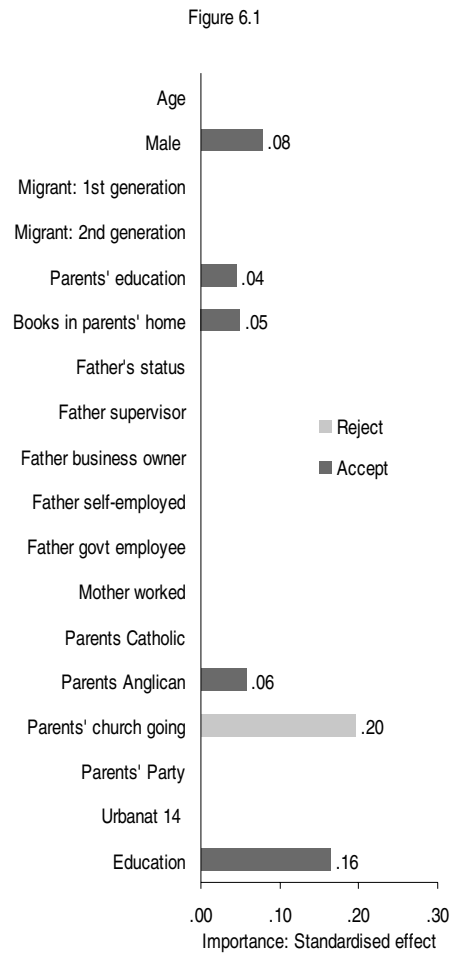
⁷ That the correlations between religious belief and views on evolution are negative rather than positive reflects the real fact that those who accept God tend to reject Darwin (and vice-versa) but also our essentially arbitrary decision about how to score the questions. We could equally well, for example, have given high scores to rejecting Darwin rather than to accepting him, making it a "rejection of evolution" scale, which would be positively correlated with religious belief.

⁸ Reciprocal causation is difficult to deal with, not only because it requires more complex structural equation models (Joreskog and Sorbom 1993) but because the choice of instrumental variable requires strong theoretical assumptions which typically must be accepted on faith rather than clear evidence.

⁹ There is no doubt of the causal order here, as it is respondent's parents who largely decide how often he or she goes to church during their childhood. Religious beliefs are formed early, heavily influenced by parents (see chapter 5 of this volume), while views about scientific issues come subsequently. Later, after the disruptions of teenage and early adult life (Need and de Graaf 1996), the impact of scientific views on religious belief can be expected. At that stage, reciprocal effects between views on evolution and Christian belief can be expected.

- People raised as Anglicans – a denomination generally less fundamentalist than Catholics or members of smaller Protestant denominations – are a little more open to evolutionary ideas. This is shown by the positive, but small, coefficient of $\beta = .06$. Concretely, Anglicans are about 3 points out of 100 more sympathetic to the theory of evolution, other things being equal.

Figure 6.1 Social differences in acceptance of evolution: Regression analysis. Australia, 1994-2002. N = 10,669.



Source: Table 6.3. Data from IcssA-Pool, 1994-2002.

- Educational differences are substantial but not enormous, with the well-educated more likely to accept Darwin's theory than are the less educated ($\beta = .16$). For example, someone with a university education is, other things

being equal, about 5 points out of 100 more sympathetic to the theory of evolution than someone who left school at year 12.¹⁰

- Except for these religious and educational differences, family background does not matter. People from high status, well-educated, business-owning elite families are no different from those raised by low ranking, poorly educated, working class families.
- Men are a little more likely than women to accept evolution, by about 4 points out of 100 ($\beta = .08$).
- There are no significant differences between old and young, or between migrants and natives, or between urban and rural.

Changes over time

Although various anti-scientific social trends are apparent in the society as a whole – low university science enrolments, low financial support for science, and anti-vivisectionist terrorism, for example – they do not seem to have undermined the general public's acceptance of the theory of evolution. But neither is the ongoing progress of science, particularly evident in biology with the genetic revolution, creating markedly greater support for Darwin.

Instead, change – if change there is – is only glacial. Our best estimate is that support may be growing by perhaps 1 or 2 points *per decade* for “survival of the fittest” (Question 1; $t = 3.02$, $p = .002$) and similarly for “evolved over millions of years” (Question 2; $t = 2.68$, $p = .007$) and “ancestors were apes” (Question 4; $t = 2.54$, $p = .011$). But there is no evidence of change in “humans appeared millions of years ago in Africa” (Question 3; $t = -1.00$, $p > .05$).¹¹

Some consequences and non-consequences of belief in evolution

Even Darwin dreaded the social consequences of his theory, fearing that it would knock out the supports on which personal morality and social order rested. But are Darwinians actually very different from others in their social attitudes? To find out, we examined the impact of Darwinian beliefs on a range of social attitudes, using multiple regression analysis (see Figure 6.2; details are in Table 6.4 in the technical

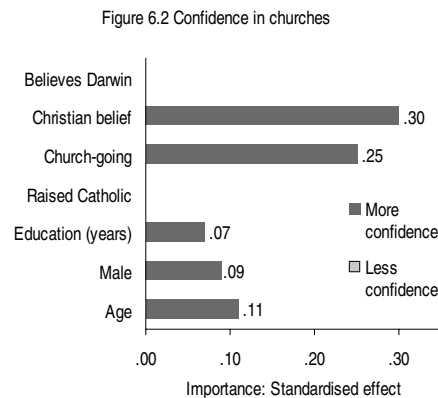
¹⁰ This figure is based on the regression analysis that shows 1.34 point increase in support for evolution for each additional year of education, other things being equal (Table 6.3). A university education typically takes 3 or 4 years, sometimes 5, beyond secondary school. So 4 times 1.34 = 5 points is about right.

¹¹ Nor is there evidence of growing acceptance of modern astronomy. Indeed if anything, there may be a slight decline.

notes). These analyses are based on the 1999 survey, which has the most extensive data.

- First, consider the matter of confidence in churches and religious organisations. Here we find that Darwinians' views are not significantly different from those of other equally irreligious people (panel 1). There are large differences between religious and irreligious people, but endorsement of evolution makes no extra difference.
- Next, what about the role of churches in the political arena? There are moderately large influences of religion on views about whether or not religious leaders ought to try to influence how people vote, but accepting the theory of evolution by natural selection makes no extra difference (panel 2).
- Would Australia be a better place if the influence of religion were reduced? Church goers and other Christian believers see religion as a much more benign influence than do atheists and agnostics (panel 3). But, even aside from that, people who are persuaded of the theory of evolution are a little more inclined to think that Australia would be a better place if the influence of religion were reduced.

Figure 6.2 Confidence in churches: Regression analysis. Australia, 1999. N = 1,646.

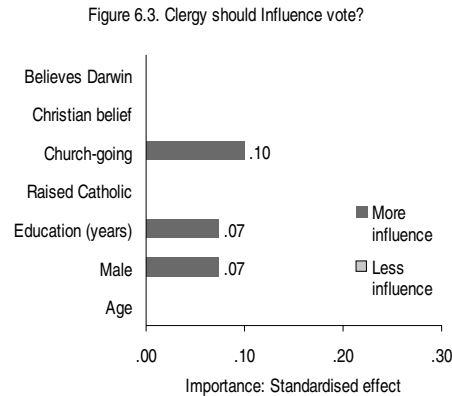


Source: Table 6.4. Data from IcssA 1999. Item wording: "How much confidence do you have in churches and religious organizations?" (Complete confidence... No confidence at all).

One might have expected that Darwinian theory's emphasis on ruthless competition and survival of the fittest would promote a rather grim view of human nature as relentlessly self-centred – as thrusting ahead by any means that come to hand. But when asked about whether other people can be trusted, those who accept Darwinian theory are not especially likely to distrust others (panel 4). Religion seems to pull in several directions. On the one hand, strong believers are a little less trusting than

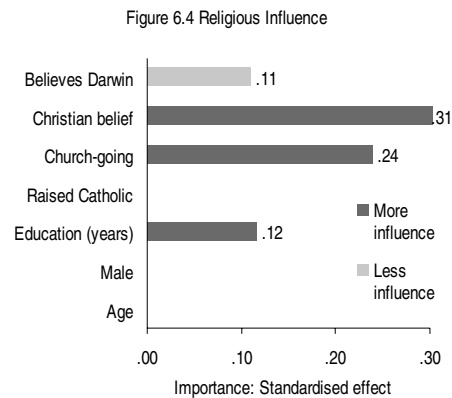
atheists and agnostics, perhaps because of the doctrine of original sin. But, on the other hand, church-goers are a little more trusting than are others, perhaps because of the experience of fellowship.

Figure 6.3 Should clergy try to influence the vote? Regression analysis. Australia, 1999. N = 1,646.



Source: Table 6.4. Data from IsssA 1999. Item wording: "Religious leaders should not try to influence how people vote in elections" (Strongly agree... Strongly disagree).

Figure 6.4 Should the influence of religion be reduced? Regression analysis. Australia, 1999. N = 1,646.



Source: Table 6.4. Data from IsssA 1999. Item wording: "Australia would be a better country if religion had less influence" (Strongly agree... Strongly disagree).

What about personal conduct – does acceptance of Darwin's theory of evolution have any implications for personal moral beliefs?

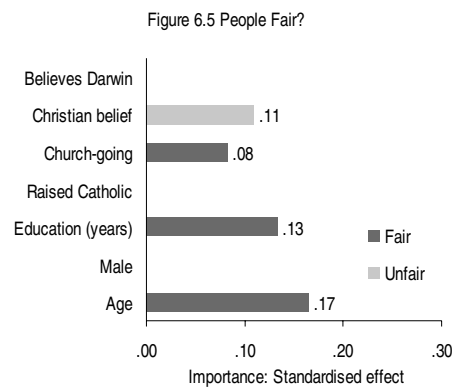
- On pre-marital sex, Darwinians take a substantially more permissive view than do otherwise similar Australians who reject the theory of evolution

(panel 5). Church-goers and other strong believers are less permissive than their less religious peers, but Darwinians are even more permissive than their relatively irreligious beliefs would lead one to expect.

- Abortion is another social issue with strong religious overtones. As all prior research on the topic would lead us to expect, atheists and agnostics are more tolerant of abortion than are strong believers, and, even aside from the strength of their beliefs, church-goers are more opposed to abortion than are the unchurched (panel 6). But, even aside from their religious views, Darwinians are especially tolerant of abortion.

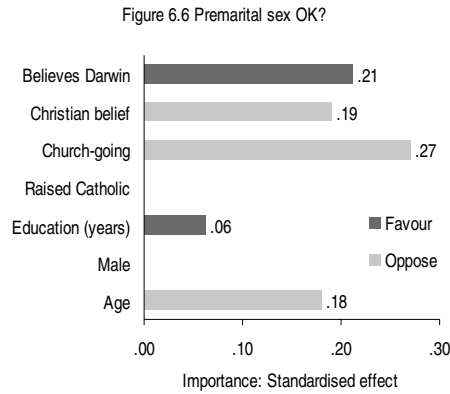
Thus acceptance of a scientific view of man's origins does, as Darwin as well as many of his critics feared, have real implications for moral beliefs.

Figure 6.5 Can people be trusted? Regression analysis. Australia, 1999. N = 1,646.



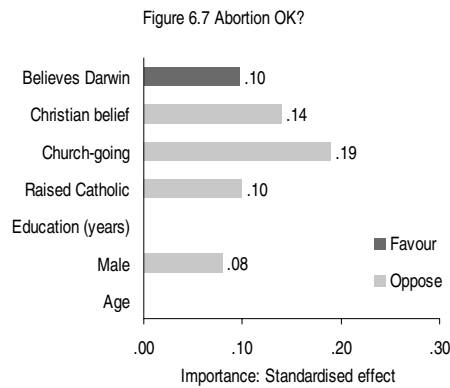
Source: Table 6.4. Data from IJSSA 1999. Item wording: "Generally speaking, would you say that people can be trusted or that you can't be too careful in dealing with people?" (Try to take advantage almost all of the time ... Try to be fair almost all of the time).

Figure 6.6 Views about premarital sex: Regression analysis. Australia, 1999. N = 1,646.



Source: Table 6.4. Data from IsssA 1999. Item wording: "Do you think it is wrong or not wrong if a man and a woman have sexual relations before marriage?" (Always wrong ... Not wrong at all).

Figure 6.7 Should abortion be legal? Regression analysis. Australia, 1999. N = 1,646.



Source: Table 6.4. Data from IsssA 1999. Item wording: "Do you personally think it is wrong or not wrong for a woman to have an abortion if the family has a very low income and cannot afford any more children?" (Always wrong ... Not wrong at all).

Summary

The great 19th century conflict between Darwin's theory of evolution and religious views of creation, a conflict between religious and scientific world-views, continues among ordinary people today. Because of it, a surprisingly large minority of the general public continue to have doubts about evolution, despite more than a

century's worth of evidence in its favour, and its virtually universal acceptance among biologists.

Support for evolution will also increase – perhaps quite sharply – if religious belief declines. But faith has not been declining in recent decades, although church attendance has (see Chapter 2 in this book). Moreover, there have been religious revivals in Christian countries the past, and in Moslem nations in the present, so a future revival in Australia cannot be ruled out. And if that happens, support for evolution may well decline from its current modest level.

Moreover, conflict over the theory of evolution is not just a simple issue of acceptance or rejection of a scientific thesis – as scientists generally view it – but also a dispute with a moral dimension, with implications for sexual morality, abortion, and similar issues. Such moral disputes are not always amenable to reasoned argument, nor are future changes in moral beliefs easy to forecast.

Technical Notes

Data

Data are from the International Social Science Survey/Australia (IsssA) Pooled File, 1993-2002. There are 10,581 cases. Details are in the Appendix.

Measurement

Attitudes to evolution are measured by an additive scale averaging the four items given in the text. This increases reliability of measurement, abstracts away from idiosyncratic features of any one item, and is clearly justified by the factor analysis in Table 6.2 and the other measurement details in Table 6.3. The scale is highly reliable, with an alpha reliability (based on inter-item correlations) of .86 and a panel test-retest reliability, over a 4 year period, of fully .75 (Table 6.3).

Models

The equation for sources of support, estimated by OLS, is:

$$\begin{aligned}
 \text{Evolution} = & a + b_1\text{Age} + b_2\text{Male} + b_3\text{FirstGenerationImmigrant} + b_4\text{SecondGeneration} \\
 & + b_5\text{ParentsEducation} + b_6\text{BooksInParentsHouse} + b_7\text{FathersOccupationalStatus} \\
 & + b_8\text{FatherSupervisor} + b_9\text{FatherOwner} + b_{10}\text{FatherSoloSelfEmployed} \\
 & + b_{11}\text{FatherGovernmentEmployee} + b_{12}\text{MotherWorked} \\
 & + b_{13}\text{ParentsCatholic} + b_{14}\text{ParentsAnglican} + b_{15}\text{lnParentsChurchAttendance} \\
 & + b_{16}\text{ParentsParty} + b_{17}\text{UrbanChildhood} + b_{18}\text{Education} + b_{19}\text{Time} + e_1 \quad (\text{Eq. 1})
 \end{aligned}$$

Analyses of the consequences of accepting Darwin's theory of evolution in Table 6.4 are based on a reduced model including only key background variables. These models also add measures of contemporaneous religious belief and will therefore if anything understate evolution's effects:

$$\begin{aligned}
 \text{Consequence}_k = & a + b_1\text{Age} + b_2\text{Male} + b_3\text{Education} + b_4\text{Time} \\
 & + b_5\text{ChristianBelief} + b_6\text{lnChurchAttendance} + b_7\text{Evolution} + e_k \quad (\text{Eqs. 2-7})
 \end{aligned}$$

The analysis of Eq. 1 is based on the pooled IsssA for 1993/94 (when evolution questions were first asked), 1996, 1999, 2001 and 2002. The analyses of Eqs. 2-7 were estimated for the 1999 survey, which had the most extensive data on potential consequences.

Table 6.2. Scientific world-view: Belief in Darwin's theory of evolution and modern astronomy: Detailed statistics. Australia 1994-2002.[1]

	Evolution subscale				Modern astronomy subscale			Scale [2]
	1	2	3	4	5	6	7	
A. Correlations								
<i>Evolution subscale:</i>								
1. Believe in evolution	1.00							.75
2. Accept Darwin's theory	.63	1.00						.85
3. Humans came from Africa	.55	.61	1.00					.72
4. Our ancestors were apes	.52	.72	.56	1.00				.73
<i>Modern astronomy subscale:</i>								
5. World began with big bang	.44	.51	.46	.42	1.00			.73
6. Are other planets like earth	.35	.30	.30	.25	.36	1.00		.66
7. Life exists on other planets	.41	.34	.30	.30	.33	.67	1.00	.67
<i>Criterion variables:</i>								
Year of survey	.05	.05	.01	.02	.01	-.03	-.02	.08
Age	-.07	-.08	-.02	-.17	-.03	-.05	-.17	-.09
Male	.06	.10	.08	.04	.14	.10	.09	.11
Education	.13	.21	.15	.13	.15	.07	.10	.19
Catholic	-.01	-.10	-.03	-.05	-.07	-.03	-.03	-.08
Church going (ln)	-.34	-.41	-.29	-.39	-.27	-.19	-.25	-.41
Transcendental belief	-.34	-.51	-.32	-.41	-.32	-.14	-.16	-.45
Allow abortion	.32	.37	.27	.34	.26	.19	.22	.36
For treatment w. foetal cells	.31	.33	.25	.32	.21	.19	.23	.33
B. Descriptive statistics								
Mean	73.76	58.76	57.47	55.70	54.17	63.14	65.86	59.96
Standard deviation	23.09	29.26	23.98	28.20	27.69	23.48	22.03	21.67
Number of cases	8,467	10,581	8,405	8,439	8,431	8,439	8,451	10,680
C. Reliability (alpha=.85) [3]								
Panel test-retest reliability[4]	.63	.72	.55	.70	.58	.478	.56	.75
Number of panel cases	1,570	1,594	1,542	1,558	1,556	1,561	1,567	1,598
D. Factor analysis								
Factor loading [5]	.74	.83	.71	.72	.62	.51	.53	--

[1] Source: IcssA-Pool, 1994-2002.

[2] Items are scored from 0 to 100, as shown in the text. The scale shown here is the average of all 7 items.

[3] Alpha reliability for the full scale (items 1 to 7), based on inter-item correlations at a single point in time. For the subscale measuring just attitudes toward evolution (items 1 to 4) alpha=.86; for the subscale measuring acceptance of modern astronomy (items 7, 6 and 7) alpha=.72.

[4] Based on panel surveys over a period of about 4.2 years.

[5] Principal axis factor analysis with communalities estimated iteratively.

Table 6.3 Social influences on acceptance of Darwin's theory of evolution. Metric and standardised OLS regression coefficients. Australia, 1994-2002. N = 10,669.

	b	Std.	t
Age (decades)	-.14	ns	ns
Male (0 or 1)	3.77	.08	7.3
First generation migrant	.61	ns	ns
Second generation migrant	.69	ns	ns
Parents' education (years)	.38	ns	ns
Books in parents' home (ln)	.75	ns	ns
Father's occupational status	-.66	ns	ns
Father supervisor	1.17	ns	ns
Father business owner	.05	ns	ns
Father solo self-employed	.57	ns	ns
Father government employee	.08	ns	ns
Mother worked when R young	1.23	ns	ns
Parents Catholic	2.18	ns	ns
Parents Anglican	2.97	.06	4.8
Parents church going (ln)	-2.62	-.20	-16.8
Parents Liberal/National Party	-.46	ns	ns
Residence at 14 (ln city size)	.03	ns	ns
Education (years)	1.34	.16	13.1
(Constant and R-squared)	39.4	9%	--

ns -- not statistically significant at p<.001, two-tailed.

Source: IcssA-Pool, 1994-2002.

Table 6.4. Influence of belief in evolution on attitudes towards various social and moral issues. Standardised partial regression coefficients. Australia, 1999, N = 1,646. [1]

Causal variables:	Confidence in churches		Clergy not influence vote		Less religious influence		People fair?		Premarital sex ok?		Abortion ok if poor?	
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
Age	.11	4.2	-.01	ns	.01	ns	.17	5.5	-.18	-7.5	.05	ns
Male	.09	3.8	-.07	-2.7	-.02	ns	-.05	ns	-.02	ns	-.08	-2.9
Education (years)	.07	2.6	-.07	-2.5	.12	4.71	.13	4.5	.06	2.7	.05	ns
Raised Catholic	.01	ns	-.01	ns	.02	.66	-.03	ns	.02	ns	-.10	-4.0
Church-going (ln)	.25	8.2	-.10	-2.8	.24	8.04	.08	2.3	-.27	-9.6	-.19	-5.8
Christian belief	.30	9.6	-.07	ns	.31	10.09	-.11	-2.9	-.19	-6.5	-.14	-4.2
Believe Darwin?	.00	ns	.04	ns	-.11	-4.14	-.03	ns	.21	8.1	.10	3.2
R-squared	26%		3%		31%		5%		36%		14%	

Source: 1999 IcssA (International Social Science Survey Australia).

ns -- not significantly different from zero at p<.05, two-tailed

[1] Item wording for the dependent variables is given in Figures 6.2 to 6.7.