

2010/11

MIXED ATTITUDES TO RESEARCH

VA Barometer 2010/11 – VA Report 2010:6

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- Confidence in researchers is on the decline.
- An increasing number of Swedes believe that astrology is a science.
- At the same time, confidence in the ability of research to slow climate change and increase economic growth in Sweden is strengthening.

These are a few of the results from VA's annual barometer which is compiled using information from 1,000 telephone interviews with a representative sample of the Swedish population (aged 16 and over). The interviews were conducted by market research company Novus between 28th September and 4th October 2010. This is the ninth barometer survey since VA (Public & Science) was formed in 2002. The VA barometer was produced with support from the Swedish Research Council.

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LAST YEAR THROUGH SWEDISH EYES

A professor at the Swedish National Defence College is found guilty of **plagiarism** but is permitted to continue with his research

Mass vaccination against the "Swine Flu" virus H1N1 in Sweden

The Swedish Minister for the Environment is criticised for citing scientific reasons for **licensed wolf hunting**

Successful **high-energy collisions** take place at the LHC (Large Hadron Collider), CERN

The State Prosecutor opens a preliminary investigation into a **gross bribery** case in the City of Gothenburg

The **University Chancellor** resigns after disagreements between him and the Swedish Minister for Research

Record high temperatures in Russia resulting in major forest fires

A professor in Gothenburg is accused of serious **scientific fraud**

The nationalist party **Sweden Democrats** get 5.7 per cent of the votes in the **parliamentary elections**

The European Commission aims serious criticism at France for **Roma deportation**

Oct

Nov

Dec

2010

Jan

Feb

March

April

May

June

July

Aug

Sept

Oct

Barack Obama is awarded the **Nobel Peace Prize**

White Christmas and a **cold and snowy winter** along with sky-high electricity prices

AstraZeneca announces it will close its **research facility in Lund**

Volcanic ash from Iceland cripples air traffic

Major **floods** in Pakistan

"A **fundamental reform of the IPCC management structure is needed**" according to a review report

UN Climate Change Conference in Copenhagen, COP15, fails to seal binding agreement

Major **earthquake** in Haiti

An oil rig explodes in the Mexican Gulf with enormous volumes of **spilt oil**

Wikileaks publishes thousands of documents on the war in Afghanistan. One of the company's servers is located in Sweden

An American federal court bans the use of federal funds for **embryonic stem cell** research

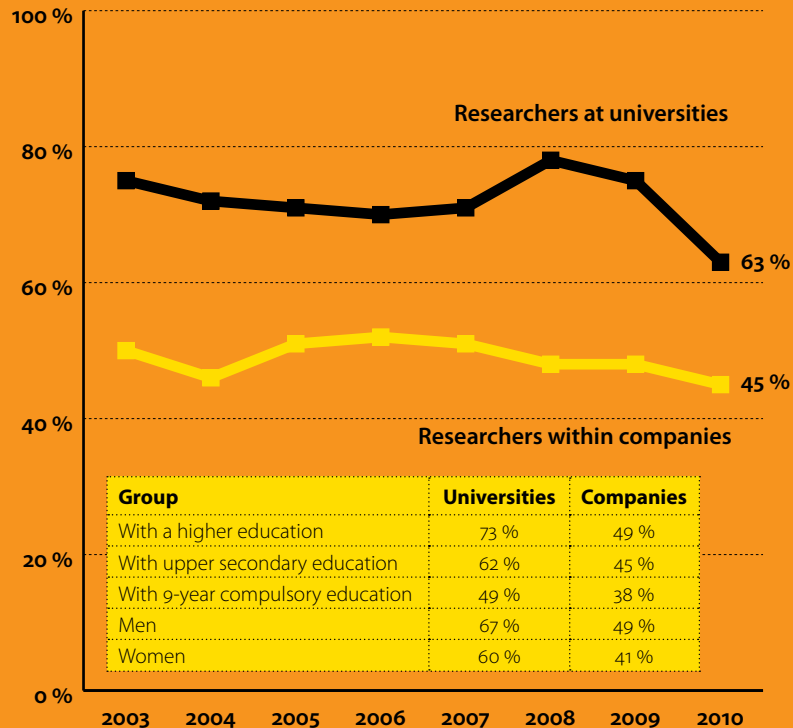
LOSS OF CONFIDENCE IN RESEARCHERS

Confidence in researchers remained fairly stable up until 2009 with an apparent increase in 2008. But the down-shift in attitudes detected in last year's barometer is now clearly reinforced by a loss of over ten percentage points in the number of respondents who have a high or very high level of confidence in researchers. The level now stands at 63 per cent. Confidence in researchers within companies stands at 45 per cent, its lowest level to date.

However the percentage of people who have very little or no confidence at all has increased only marginally. Instead the shift has been in the number of middle range or "don't know" responses.

Level of education is an important factor in confidence (see insert).

*The graph shows the percentage of respondents who answered that they have a **high** or **very high** level of confidence in researchers (on a scale from 1 to 5, where 5=very high level of confidence and 1=none at all).*



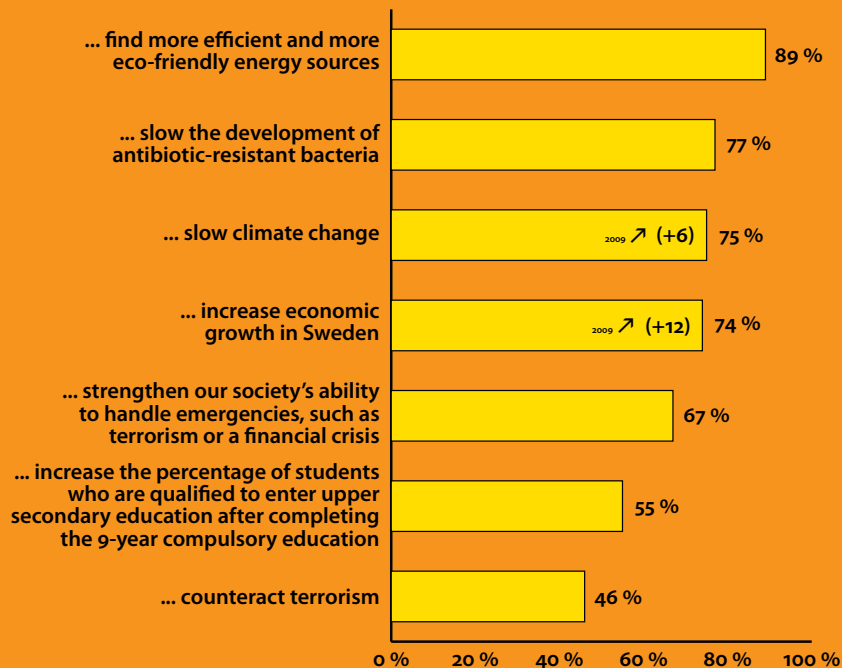
CONFIDENCE IN SCIENCE STILL STRONG

Confidence in the potential of science is still strong in many areas, notably environmental, energy, medical and climate research. In other areas such as terrorism and education, expectations are lower.

People who are more highly educated often have more confidence in the potential of science and research, but this does not apply to all fields. People with only the nine-year compulsory education are slightly more optimistic than others about issues concerning handling emergency situations and improving schools.

More men (81 %) than women (68 %) believe that research can lead to increased economic growth in Sweden. Men are less optimistic than women about the possibility of slowing climate change (23 % answered no to this question compared to 18 % of women).

The graph shows the percentage of respondents who believe that there is a good chance that research will help to... (response options: yes/no)



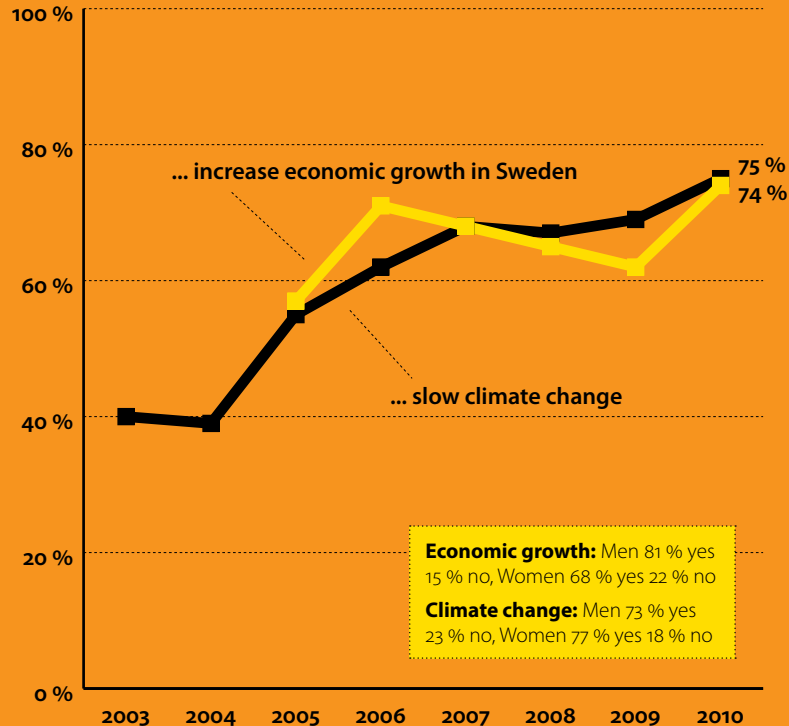
OPTIMISM ABOUT CLIMATE & ECONOMY

Confidence in the potential of science and research to help the climate increased significantly in 2005 and the level continued to rise to a new high in 2010.

Three out of four respondents believe that research can help slow climate change. Disappointment following the COP15 climate conference and criticism aimed at the UN's climate panel, IPCC, does not seem to have reduced this level of confidence.

More and more people feel that science can help increase economic growth in Sweden, compared with the dip in confidence with respect to this area during the recession and financial crisis. Reports about economic recovery may have contributed to a generally more positive view of economic growth.

Percentage of respondents who believe that, over the next decade, there is a good chance that research will help to... (response alternatives: yes/no).



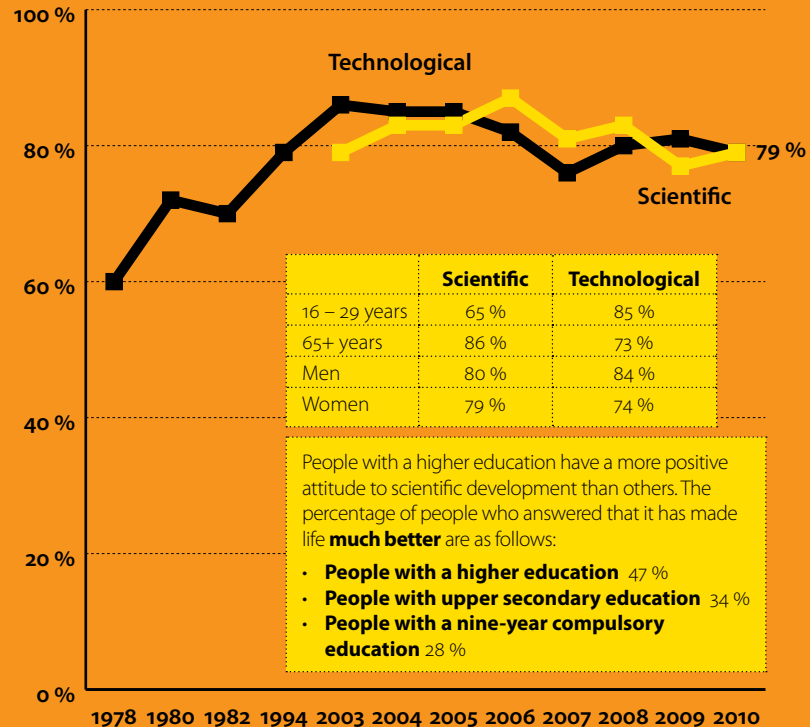
STABLE ATTITUDES TO S&T DEVELOPMENTS

Eight out of ten respondents believe that scientific developments over the past two decades have made life better. The same high number also has a positive view of technological development. These levels have remained fairly stable since the start of the VA barometer in 2003, but before this, attitudes to technology were not as optimistic.*

The view that *scientific* developments have made life better gets stronger as the age of the respondents rises. Conversely, young people have a more positive attitude towards *technological* developments than older people do, perhaps because young people are the main users of new technologies.

Differences are small with regards to level of education.

The graph shows the percentage of respondents who believe that scientific and technological developments over the past two decades have made life better or much better (five-point scale from much better to much worse).



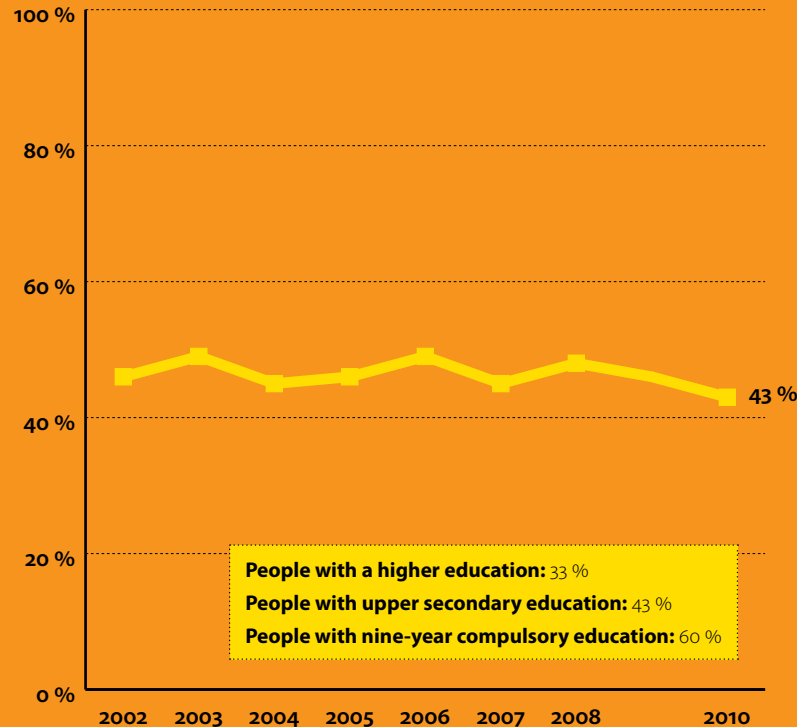
* Surveys results from 1978 to 1994 are presented and discussed in **Public perceptions of science, biotechnology and a new university**, Björn Fjæstad, Mitthögskolan Report 1996:10, ISSN 1104-294X.

4 OF 10: RESULTS MUST BE USEFUL

Research that is perceived as “useful” and relevant to people’s everyday lives is given a higher priority than other research in VA’s surveys. Just over four in ten respondents agree that “*Researchers should only conduct research that it is believed can yield useful results.*” This is a slightly lower figure than last year, but viewed over time since 2003, the level has remained stable.

However, over 60 per cent of people agreed in another statement “*It is important to conduct research that does not have useful results as its primary objective*” when this question was last asked in 2008. Many people agreed with both statements.

*The graph shows the percentage of respondents who **agree completely or largely** that “Researchers should only conduct research that it is believed can yield useful results.”*



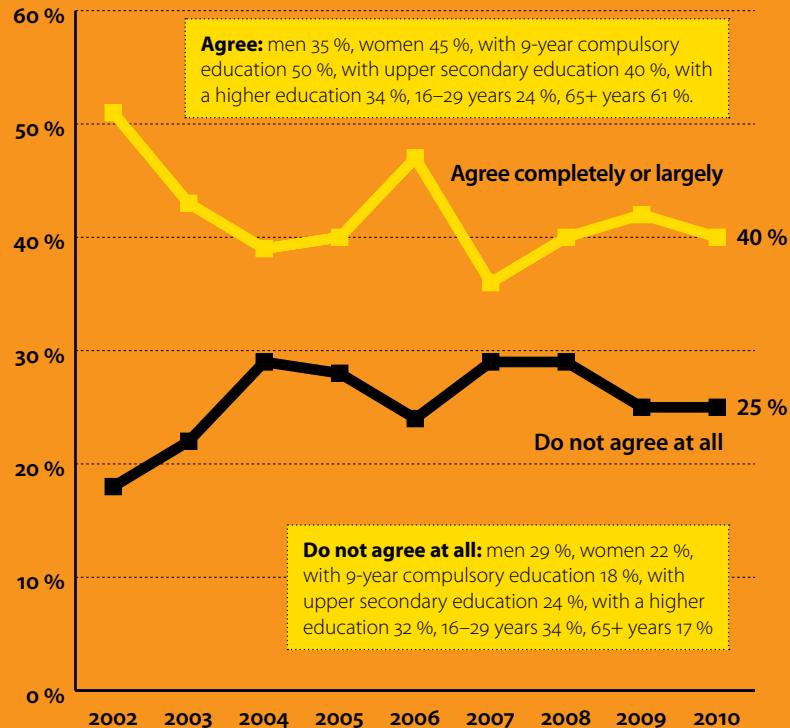
SCIENCE & TECHNOLOGY, TOO DIFFICULT?

Four out of ten respondents believe that science and technology are too difficult for most people to understand. The level seems to have stabilised following a drop from a distinctly higher level when first measured in 2002. 25 percent of people totally disagree with this statement.

Women are more likely to agree than men. Young people and those with a higher education agree the least with the statement that science and technology are too difficult to understand.

The question was posed to half of the survey participants. The other half was given a related alternative question (see next page).

*The graph shows the percentage of respondents who **agree completely or largely** or **do not agree at all** with the statement “Science and technology are too difficult for most people to understand.”*



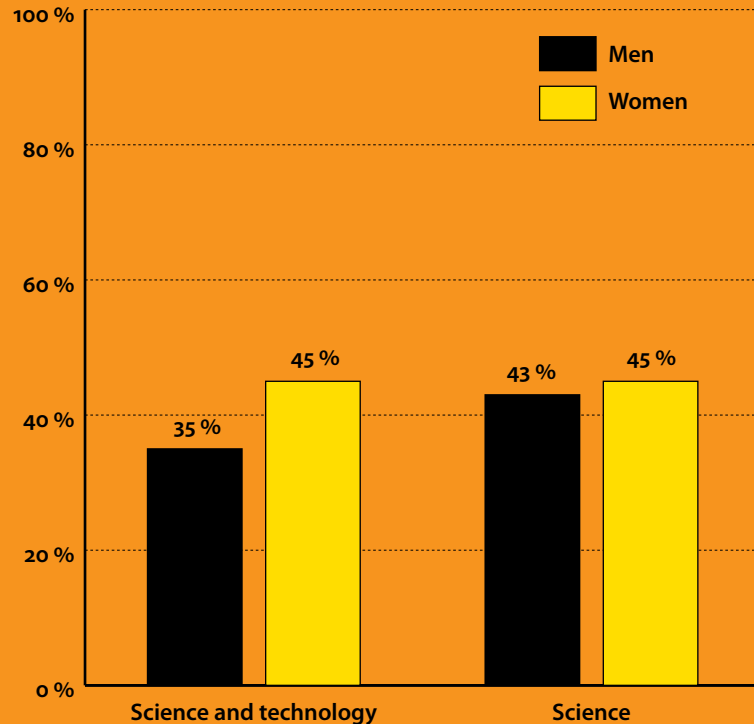
ARE MEN INTIMIDATED BY SCIENCE?

Half of the participants in the survey were asked to respond to the alternative statement “Science is too difficult for most people to understand.” Overall the same proportion of people, 44 percent, agreed with this statement as with the statement on “science and technology”.

There were however differences. The percentage of women who agree is the same for both questions, but men agree to a greater extent when the question asks about science. For men, it seems that the term *science and technology* sounds less difficult than *science*.

Young people and those with a higher education are less likely to believe that science is too difficult to understand, compared to older people and people with a low level of education. The patterns with respect to age and education are similar for both questions.

Percentage who agree completely or largely that “Science and technology are / science is too difficult for most people to understand.”



MOST SCIENTIFIC? MEDICINE!

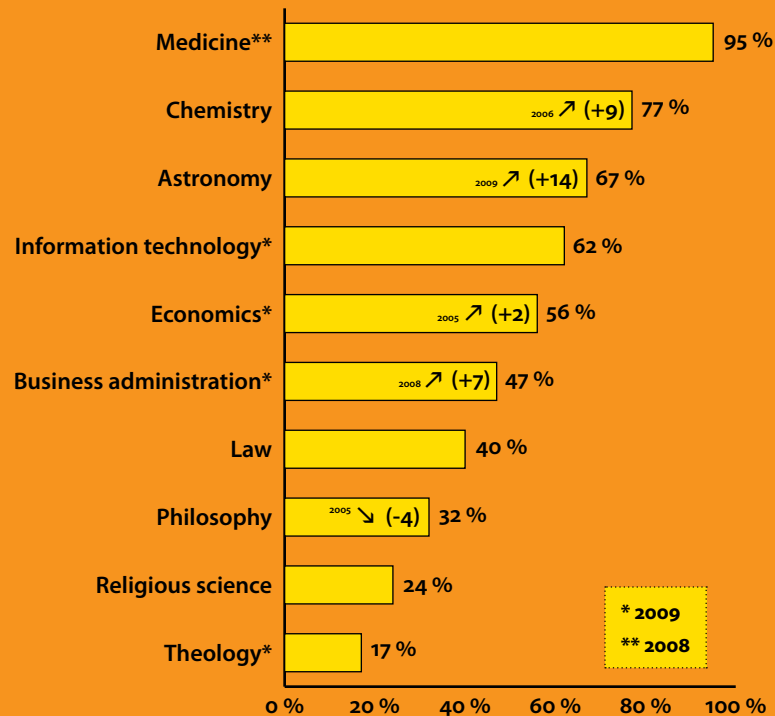
Surveys looking at the public's attitudes to science often include questions about how scientific different subjects are. The VA barometer has shown year on year that medicine and natural sciences are considered more scientific than social sciences or humanities.

Astronomy is considered scientific by 67 per cent in 2010 – up from 53 per cent in 2009. Chemistry is also considered more scientific than before.

In general, people with a higher level of education consider all subjects to be more scientific than people with a lower level of education do.

An explanation of all subjects was provided at the interview in order to avoid misunderstandings.

The chart shows the percentage of respondents who consider different subjects to be scientific (4 or 5 on a scale from 1 to 5, where 5=to the highest degree and 1=not at all scientific).



The figures in brackets refer to the change since the last measurement. The subjects are rotated between the years and different subjects are measured with varying frequency.

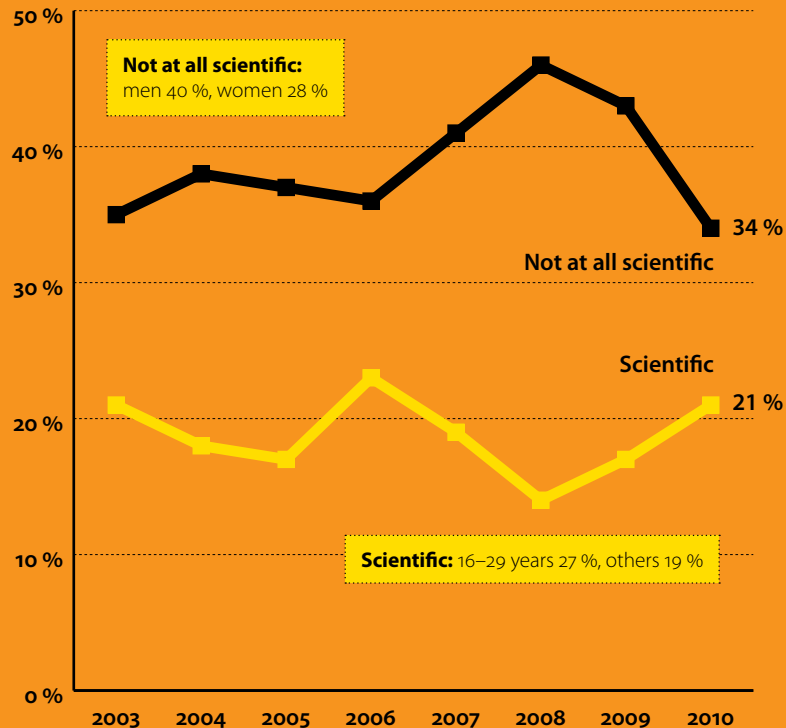
BELIEF IN ASTROLOGY RISING

One out of five believe that astrology is a science – an increase of seven percentage points since the lowest level recorded in 2008. The percentage of people who believe that astrology is *not at all scientific* has dropped from 46 per cent in 2008 to 34 per cent in 2010.

Young people are more likely to believe that astrology is scientific than older people. Young women in particular regard astrology as scientific. Only one in three women between the ages of 16 and 29 responded 4 or 5 on the scale. When the question is asked, astrology is described as “the study of the impact of the signs of the zodiac on our lives.”

Questions about astrology are commonly used in opinion surveys to gauge the level of scientific knowledge. The percentage of Swedes who believe astrology to be scientific is low when compared internationally.

The graph shows the percentage of respondents who believe that astrology is scientific (4 or 5 on a scale from 1 to 5), or not at all scientific (1).



DIFFERENCES BETWEEN GROUPS

The most important differences in attitudes:

- Level of education is the most important and the most differentiating factor. People with a higher level of education have in general a more positive attitude towards research and researchers than those with a lower level of education.
- Young people have “less respect” for science and technology than older people, and often have more confidence in the ability of science to solve problems. Young people are slightly more likely to believe that astrology is a science.
- Gender is in some cases a differentiating factor, for example in attitudes to technical development, confidence in the potential of research to help increase economic growth, and with regard to whether astrology is a science.

VA REPORTS 02–10

Reports marked with an asterisk (*) are available in English.

2002:1	What do people in other countries think?	2006:5	Politics and science*
2002:2	The public's view of science	2006:6	How the public views science, 2006
2002:3	Researchers' views on dialogue with the public	2006:7	Stockholm politicians' view of science
2002:4	How young people view science	2006:8	Politics and science – a literature survey
		2006:9	The public on Carl Linnaeus, 2006
2003:1	Science in society	2007:1	Journalists on research
2003:2	VA studies under the microscope: Perspectives on science 2002	2007:2	Science in society
2003:3	How the public views science 2003	2007:3	How the public views science, 2007
2003:4	How researchers view Public & Science*	2007:4	Young people's views on science
2003:5	Researchers' views on dialogue with the public	2007:5	Young people on knowledge
		2007:6	Crazy, confused and evil?
2004:1	Science in society	2007:7	Projects with no effect?
2004:2	Teachers' attitudes towards science and research-based knowledge	2007:8	Knowledge rocks! Summary of a youth study by VA*
2004:3	How the public views science 2004	2008:1	After the Linnaeus anniversary
2004:4	How teachers view science*	2008:2	Science in society
2004:5	Researchers' views on dialogue with the public	2008:3	Myself as a researcher*
2004:6	What do people in other countries think, 2004?	2008:4	The value of knowledge in the business world
		2008:5	Knowledge in transition*
2005:1	Science in society	2008:6	VA barometer 2008*
2005:2	Teachers on entrepreneurship	2009:1	Science in society
2005:3	Eurobarometers on science, 2005	2009:2	VA barometer 2009/10*
2005:4	How the public views science, 2005	2009:3	Knowledge you can believe in?
2005:5	Science in the press	2009:4	ODE – Public Engagement and Dialogue
2005:6	How journalists view science*		
2006:1	Science in society	2010:1	Science in society
2006:2	How politicians view science	2010:2	Knowledge in a class by itself?
2006:3	Science in the political press	2010:3	A feel for knowledge
2006:4	Eighteen voices on the relationship between researchers and politicians	2010:4	Science & Values – a summary*
		2010:5	Research in the Swedish general election 2010
		2010:6	VA barometer 2010/11*

VA (**Public & Science**) is a Swedish association which aims to promote dialogue and openness between the general public – especially the young – and researchers. The association endeavours to stimulate new forms of dialogue in unconventional arenas on issues that concern people, and to connect these issues to science. VA is a non-for-profit membership organisation, with diverse members from across Swedish society including organisations, public authorities, companies, universities and individuals.



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