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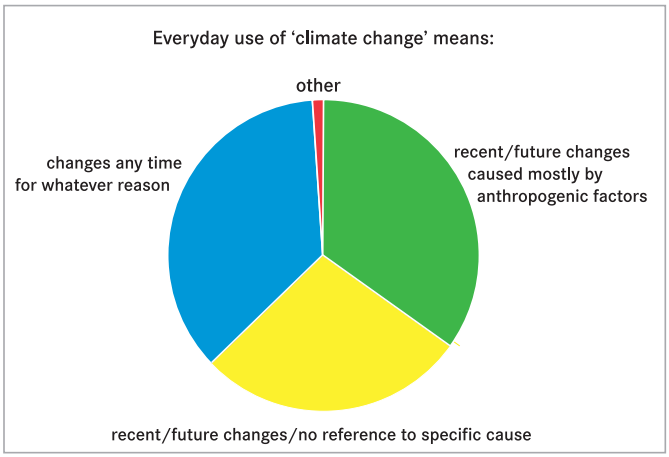
CliSci2008: A Survey of the Perspectives of Climate Scientists Concerning Climate Science and Climate Change



Authors:

D. Bray
H. von Storch

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CliSci2008: A Survey of the Perspectives of Climate Scientists Concerning Climate Science and Climate Change

Authors:

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H. von Storch

(Institute of Coastal Research)

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GKSS 2010/9

CliSci2008: A Survey of the Perspectives of Climate Scientists Concerning Climate Science and Climate Change

Dennis Bray and Hans von Storch

121 pages with 71 figures and 1 table

Abstract

This report presents the findings of a surveys of climate scientists' perceptions of the global warming issue. The survey was conducted in 2008. The surveys investigate the means by which scientific conclusions are reached and the climate scientists interpretations of what these conclusions might mean.

Die Perspektiven von Klimaforschern über Globale Klima-Veränderungen

Zusammenfassung

Dieser Report stellt die Ergebnisse einer Studie vor, in welchen Klimawissenschaftler zu ihrer Sichtweise zum Thema globale Klimaerwärmung befragt worden sind. Die Befragungen hierzu wurden in 2008 durchgeführt. Die Wissenschaftler wurden sowohl zur Methodik ihrer Ergebnisfindung als auch zur Interpretation dieser um Auskunft gebeten.

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CONTENTS

Introduction

The following is a presentation of descriptive statistics resulting from a surveys of an international sample of climate scientists conducted in 2008. This is the third is a series of surveys of climate scientists. Results of the previous two surveys conducted in the years 1996 and 2003 can be found on line as a PDF file at http://coast/staff/bray/GKSS_2007_11.pdf or as hard copy by request from

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GKSS Report 2007/11 'The Perspectives of Climate Scientists on Global Climate Change'.

Figures provide descriptive statistics for all variables contained in the survey. Most survey questions were designed on a seven point rating scale. A set of statements was presented to which the respondent was asked to indicate his or her level of agreement or disagreement, for example, 1 = strongly agree, 7 = strongly disagree. The value of 4 can be considered as an expression of ambivalence or impartiality or, depending on the nature of the question posed, for example, in a question posed as a subjective rating such as "How much do you think climate scientists are aware of the information that policy makers incorporate into their decision making process?", a value of 4 is no longer a measure of ambivalence, but rather a metric.

Sampling

The survey employed a non-probability convenience sample. Convenience sampling provides an inexpensive approximation of truth. Quite simply, the sample is selected because it is convenient. The respondents were 'preselected' in as much as they were included as they met specific criteria, i.e. had authored papers concerning climate change and published them in significant climate science journals, were currently employed in climate research institutes or have previously been used to present publishable results concerning climate change consensus among scientists.

Hamilton[1] (no date given) produced a white paper that analyzed 199 surveys. The total response rate of these surveys, calculated using the total number of surveys sent out in the 199 surveys and the total number of responses for the 199 surveys was 13.35%. He also noted that large invitations lists, >1000, tend to be associated with lower individual response rates.

[1] Hamilton, Michael Braun. 'Online Survey Response Rates and Times. Background and Guidance for Industry (http://www.supersurvey.com/papers/supersurvey_white_paper_response_rates.pdf) accessed 12.02.2010)

Viser et al (1996)[2] showed that surveys with lower response rates (near 20%) tended to produce more accurate results than surveys with higher response rates.

Holbrook et al (2007)[3] concluded that a low response rate does not necessarily equate to a lower level of accuracy but simply indicates a risk of lower accuracy.

Harris Interactive[4], an organization specializing in web-based surveys used a convenience sample of 70,932 California residents in a survey of attitudes towards healthcare. As the survey of scientists (Bray and von Storch 2008) an email was sent to potential respondents with a link to a web survey. As with the bray von Storch surveys, non-respondents received one reminder email. The response rate for the Harris Interactive survey was 2%.

Sampling special groups (scientists) often results in a comparatively difficult sample selection and a comparatively low response rate. The difficulty of selecting such a sample is discussed in Committee on Assessing Fundamental Attitudes of Life Scientists as a Basis for Biosecurity Education, National Research Council's (2009) report 'A Survey of Attitudes and Actions on Dual Use Research in Life Sciences'.[5]
Here the target population was US life scientists. The report notes, as in the case of the Bray - von Storch surveys, no complete list of the population was available or even known. The alternative chosen was to find a sample through the use of professional societies. An email invitation to partake in the survey was eventually sent out to a list of 10,000 life scientists. The response rate for completed surveys was 15.7%.

In 2008 climate scientists survey, we attempted to improve the survey but maintain a large sample size. Three lists were employed in constructing the sample. List one included a list of authors, affiliations and email addresses drawn from climate journals with the 10 highest ISI impact ratings for the last 10 years. These are authors of climate related papers in peer reviewed climate related journals. The second list was the list of authors who contributed to Oreskes' (2004) published conclusions concerning consensus in the climate change issue. A third list was drawn from readily available email lists on institute web sites (i.e. NCAR, MPI, AMS, etc.). Duplicates in the three lists were removed before distribution. The combined invitation list numbered a potential 2677 respondents; defunct email addresses reduced the valid mail out to 2059. Invitations to participate in the survey were distributed by email, providing a link to the on-line survey. Provisions were made so that should someone submit a duplicate form the form identifier resulted in the original being over written.

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[2] Viser, Penny S., Jon A. Krosnick, Jesse Marquette and Michael Curtin (1996) 'Mail Surveys for Election Forecasting? An Evaluation of the Columbian Dispatch Poll.' Public Opinion Quarterly 60: 181-227.

[3] Holbrook, Allyson, Jon Krosnick and Alison Pfent (2007) 'The Causes and Consequences of Response Rates in Surveys by the New Media and Government Contractor Survey Research Firms' in Advances in telephone survey methodology. ed. James M. Lepkowski, N. Clyde Tucker, J. Michale Brick, Edith D. DeLeeuw, Lilli Japec, Paul J. Lavrakas, Michael W. Link, and Roberta L. Sangster. New York: Wiley.

[4] http://www.rand.org/pubs/monograph_reports/MR1480/MR1480.ch7.pdf & Schonlau, Matthias, Ronald D. Fricker and Mark N. Elliot.(2002) Conducting Research Surveys via Email and the Web. Rand pp.64-66

[5] National Research Council's (2009) The difficulty of selecting such a sample is discussed in Committee on Assessing Fundamental Attitudes of Life Scientists as a Basis for Biosecurity Education. 'A Survey of Attitudes and Actions on Dual Use Research in Life Sciences'

Consequently, for each invitation it was only possible to have one completed survey written to the data set. The response rate for ISI authors list was approximately 27%, for Oreskes' list, approximately 10%, and from the Institute list, approximately 19%, for a combined response rate of 18% (375 responses).

Table 1. Samples/response rates

	ISI author	Oreskes	Institutes	Total
Original mail-out list	1042	802	837	2681
Valid sample	546	732	780	2058
Responses	148	76	149	373
Response Rate %	27.2	10.39	19.1	18.2

Presentation of Data

Data is presented as descriptive statistics, histograms with normal density plots, and box plots, where applicable.

Descriptive statistics include number of observations, means and standard deviation.

Histograms are presented as percent of observations.

Boxplots were chosen as a mode of presentations as they illustrate the median, spread and data values, providing a visual assessment of the degree of consensus. Lowest and highest values are indicated by 'whiskers' extending from the boxes. The boxes contain the 50% of total values falling between the 25^{th} and 75^{th} percentile, meaning that 50% of the cases have values within the box, 25% have values larger than the upper boundary and 25% have values less than the lower boundary. The length of the box indicates how much spread there is in the data values within the middle 50 percentile. If, for example, one box is much longer than another then the data values in the longer box have more variability. The length of the box is considered to suggest scientific consensus and the location of the box to represent scientific assessment. The median is in the middle of the box only if the distribution is symmetric. If the median line is closer to the left of the box than to the right of the box the data are skewed in that direction, meaning that there are more cases towards that end of the distribution. If the median is closer to the right of the box then tail of the distribution is towards those values.

All variables are listed in the original order of the survey.

Results

Detailed discussions of results to date can be found in the following published papers:

Bray, D., 2010: Consensus among climate scientists revisited.-- Environmental Science and Policy. Environmental Science and Policy 13 (2010) 340 - 350.

Abstract

This paper first reviews previous work undertaken to assess the level of scientific consensus concerning climate change, concluding that studies of scientific consensus concerning climate change have tended to measure different things. Three dimensions of consensus are determined: manifestation, attribution and legitimation. Consensus concerning these dimensions are explored in detail using a time series of data from surveys of climate scientists. In most cases, little difference is discerned between those who have participated in the IPCC process and those who have not. Consensus, however, in both groups does not amount to unanimity. Results also suggest rather than a single group proclaiming the IPCC does not represent consensus, there are now two groups, one claiming the IPCC makes overestimations (a group previously labeled skeptics, deniers, etc.) and a relatively new formation of a group (many of whom have participated in the IPCC process) proclaiming that IPCC tends to underestimate some climate related phenomena.

Bray, D., and H. von Storch, 2009: 'Prediction' or 'Projection'? The nomenclature of climate science'. Science Communications 30 pp. 534-543, doi:10.1177/1075547009333698

Abstract

A survey among climate scientists is used to examine the terminology concerning two key concepts in climate science, namely "predictions" and "projections", as used among climate scientists. The survey data suggests that the IPCC terminology is not adopted, or only loosely adopted, by a significant minority of scientists. Approximately 29% of the sample associate *probable* developments with projections and approximately 20% of respondents associate *possible* developments with predictions.

Bray, D and H. von Storch., 2010. 'How do scientists assess the skill of climate models?' Climate Science and Policy (an on-line journal).

Full article available at http://www.climatescienceandpolicy.eu/2010/08/how-do-scientists-assess-the-skill-of-climate-models/

Demographics

1. The country in which you conduct most of your work is

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Australia	22	5.9	5.9	5.9
	Austria	3	.8	.8	6.7
	Belgium	1	.3	.3	6.9
	Brazil	4	1.1	1.1	8.0
	Canada	14	3.7	3.7	11.7
	China	3	.8	.8	12.5
	Croatia	2	.5	.5	13.1
	Cyprus	1	.3	.3	13.3
	Czech Republic	3	.8	.8	14.1
	Denmark	1	.3	.3	14.4
	Estonia	1	.3	.3	14.7
	Finland	5	1.3	1.3	16.0
	France	5	1.3	1.3	17.3
	Germany	61	16.3	16.3	33.6
	Global	1	.3	.3	33.9
	Greece	1	.3	.3	34.1
	Hungary	1	.3	.3	34.4
	India	1	.3	.3	34.7
	Israel	2	.5	.5	35.2
	Italy	10	2.7	2.7	37.9
	Japan	6	1.6	1.6	39.5
	Mexico	1	.3	.3	39.7
	Netherlands	7	1.9	1.9	41.6
	New Zealand	1	.3	.3	41.9
	Norway	4	1.1	1.1	42.9
	Poland	1	.3	.3	43.2
	Russia	1	.3	.3	43.5
	Serbia	1	.3	.3	43.7
	South Africa	1	.3	.3	44.0
	Spain	2	.5	.5	44.5
	Sri Lanka	1	.3	.3	44.8
	Sweden	2	.5	.5	45.3
	Switzerland	1	.3	.3	45.6
	UK	57	15.2	15.2	60.8
	USA	147	39.2	39.2	100.0
	Total	375	100.0	100.0	

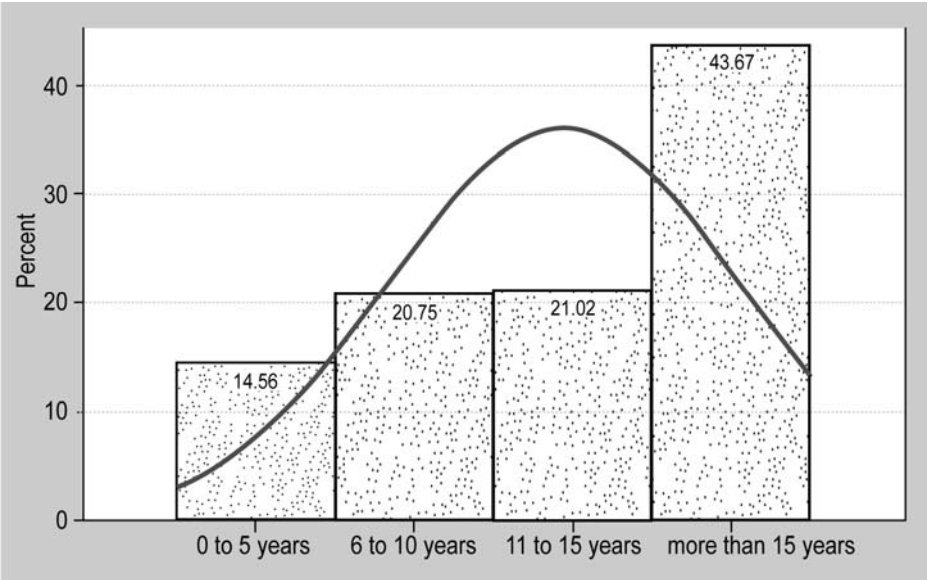
2. Gender

- Male
- Female

v2	80.	Freq.	Percent	Cum.
Male		303	80.80	80.80
Female		70	18.67	99.47
Missing		2	0.53	100.00
Total		375	100.00	

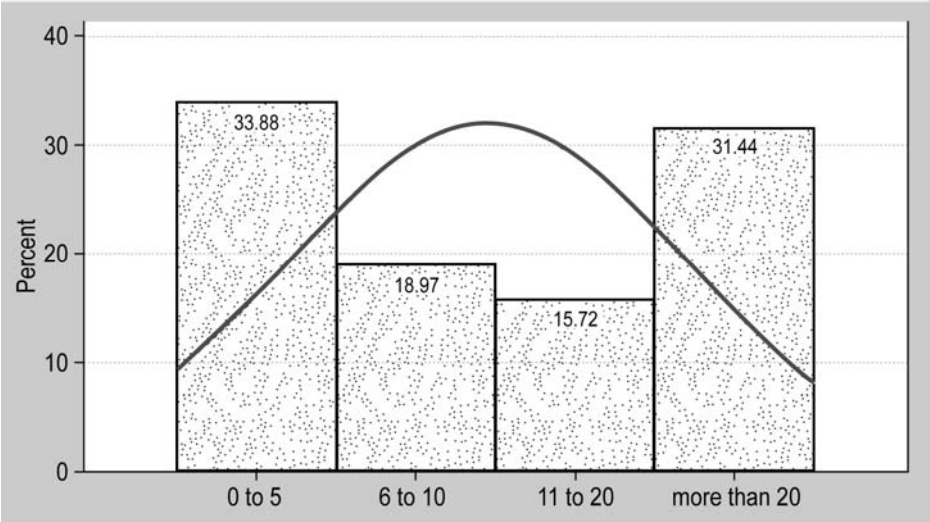
3. The approximate number of years that you have worked in climate science is

- 0 to 5 years
- 6 to 10 years
- 11 to 15 years
- more than 15



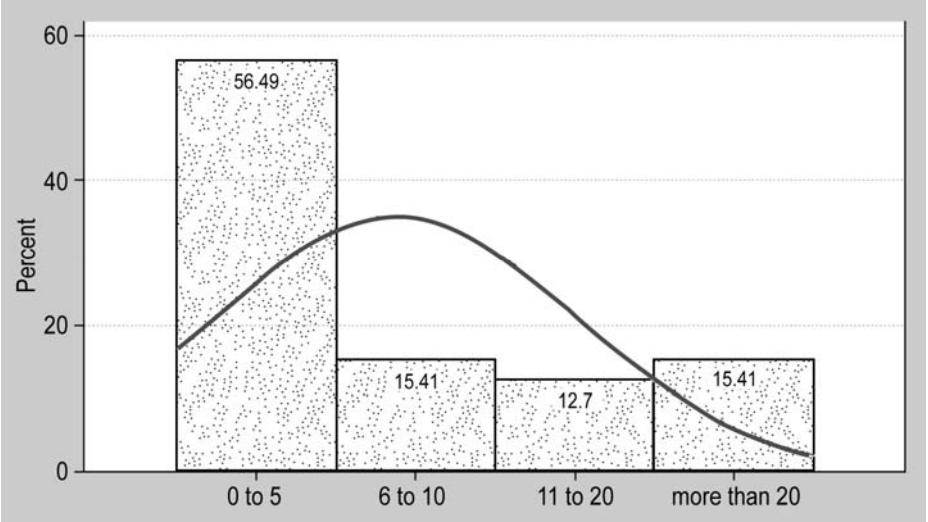
4. In about how many *peer reviewed* scholarly articles on climate change related issues have you been listed as an author?

- 0 to 5
- 6 to 10
- 11 to 20
- more than 20



5. In about how many *non-peer reviewed* reports on climate change related issues have you been listed as an author?

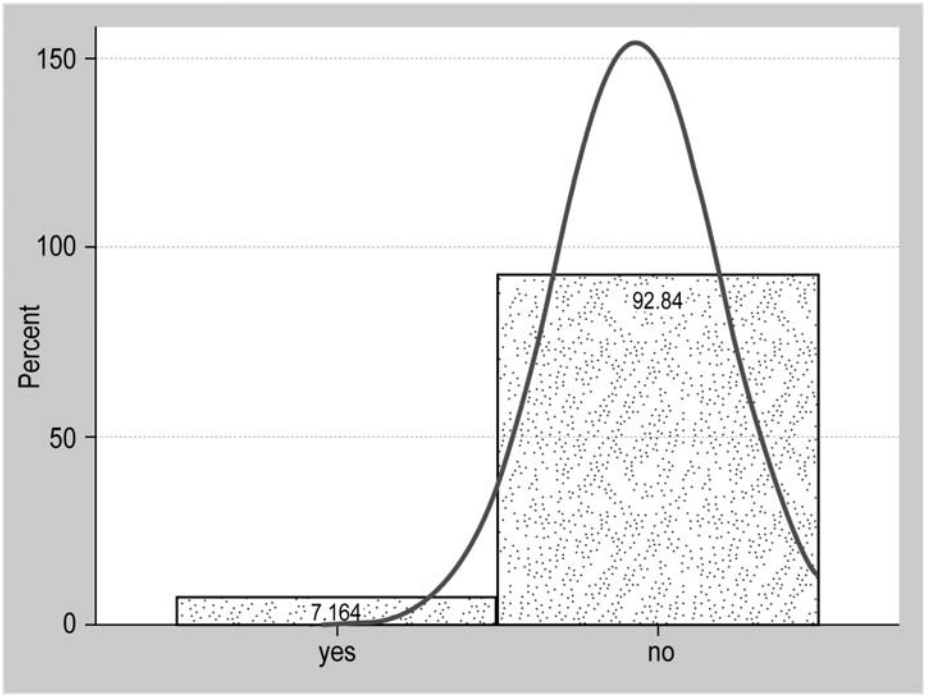
- 0 to 5
- 6 to 10
- 11 to 20
- more than 20



6. Have you ever been an IPCC

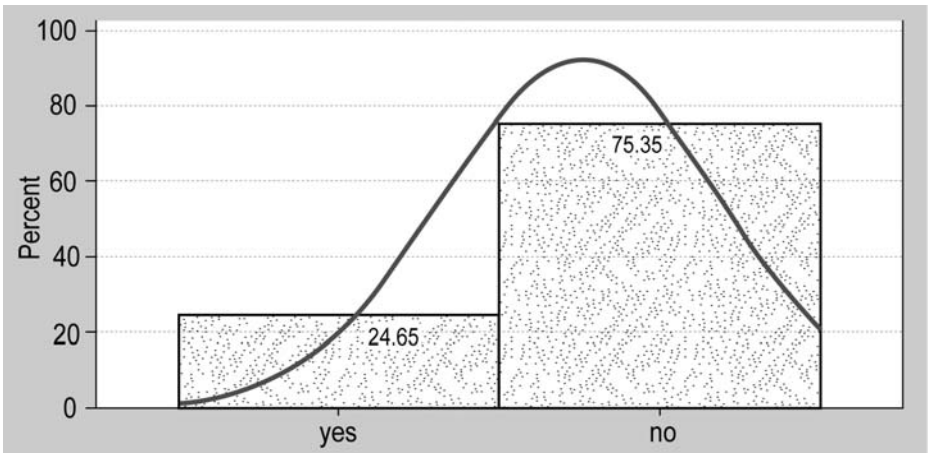
6a lead author

- yes
- no



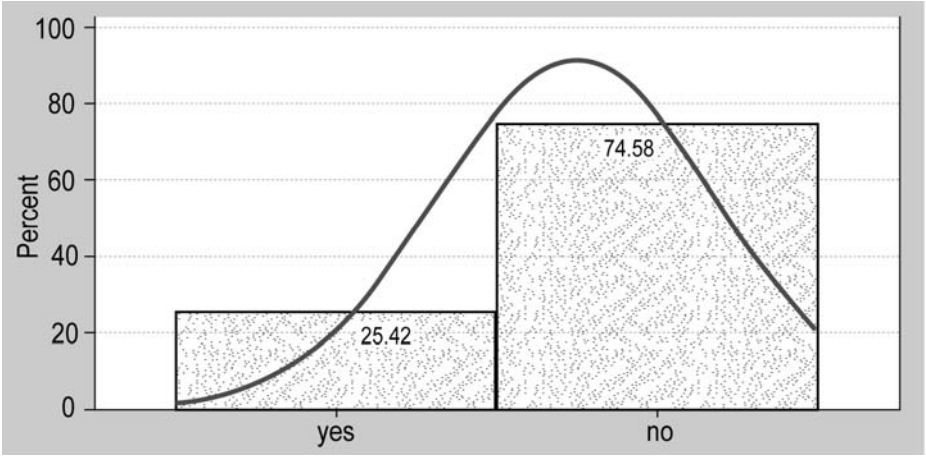
6b contributing author

- yes
- no



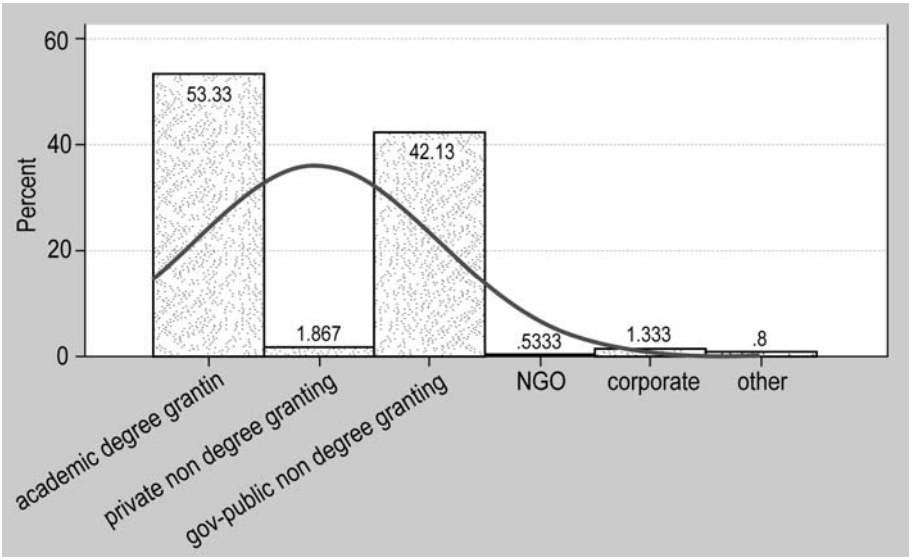
6c reviewer

- yes
- no



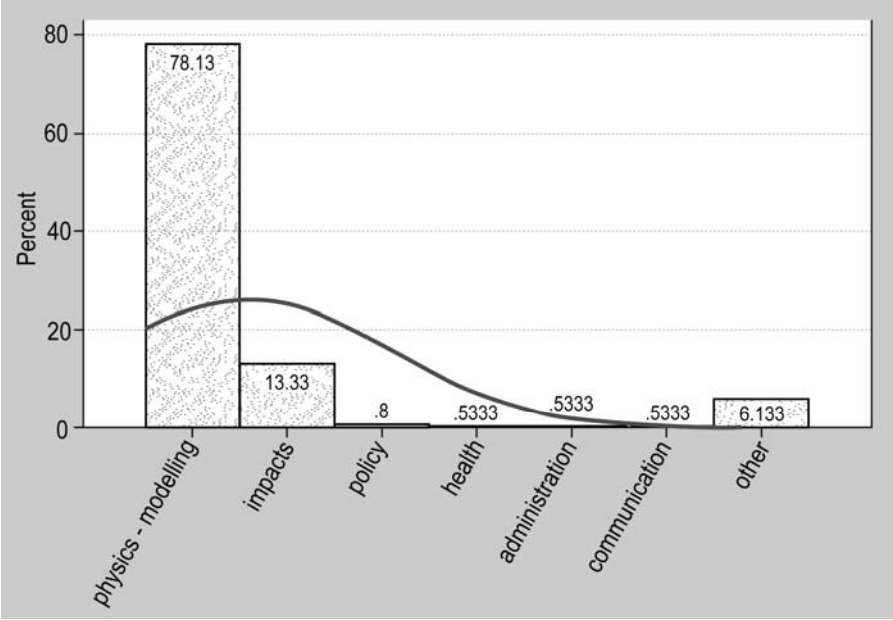
7. The institute in which you work could best be described as

- academic/degree granting
- privately funded research institute/non-degree granting
- government/public funded research institute/non-degree granting
- NGO
- corporate
- other



8. The nature of your work is best described as being concerned with

- physics of the climate system (modelling, model development, data acquisition, theory development, etc.)
- impacts of climate change (ecological, economic, social, etc.)
- climate change policy analysis
- climate change and health
- climate change communication
- science administration
- other



The State of Climate Science

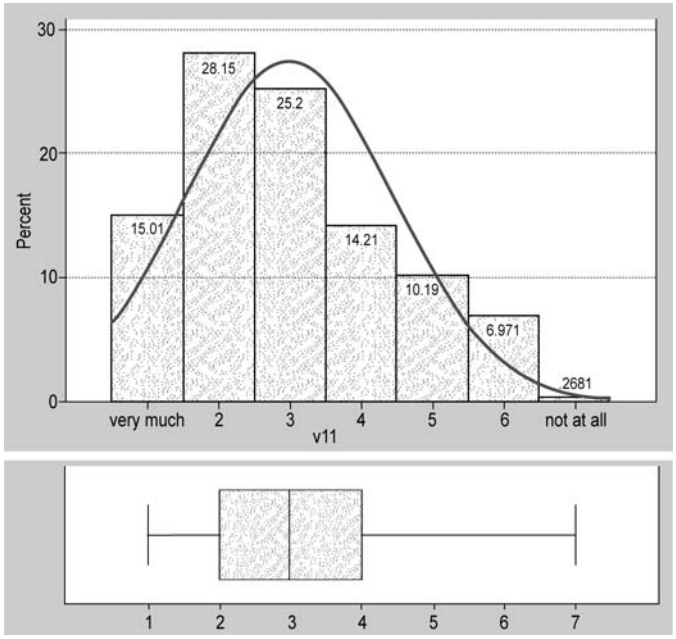
In this section we would like to determine if there are areas in climate science that you perceive to be especially in need of increased research support and/or efforts.

'Climate change', unless otherwise specified, refers to recent, on going and possible future change (1850-2100) of climatic conditions, irrespective of cause.

9. How much do you think the direction of research in the climate change sciences has been influenced by external politics in the last 10 years?

very much 1 2 3 4 5 6 7 not at all

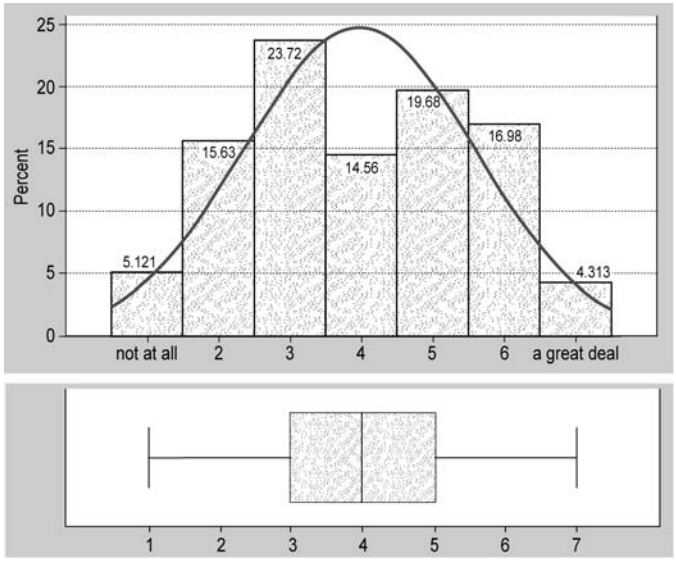
Variable	Obs	Mean	Std. Dev.	Min	Max
Q11	**373**	**2.983914**	**1.451643**	**1**	**7**



10. To what degree do you think climate science has remained a value-neutral science?

Not at all 1 2 3 4 5 6 7 a great deal

Variable	Obs	Mean	Std. Dev.	Min	Max
Q12	**371**	**3.962264**	**1.610331**	**1**	**7**



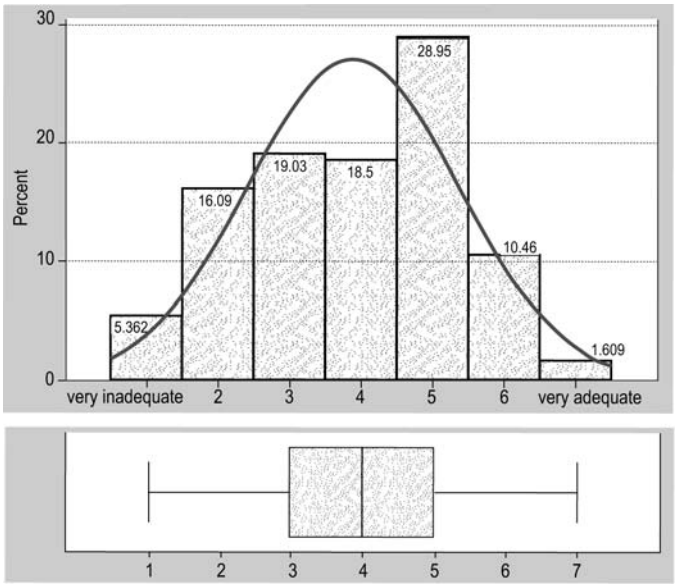
11. Concerning the current state of climate science:

very inadequate 1 2 3 4 5 6 7 very adequate

11a. Data availability for climate change analysis is

very inadequate 1 2 3 4 5 6 7 very adequate

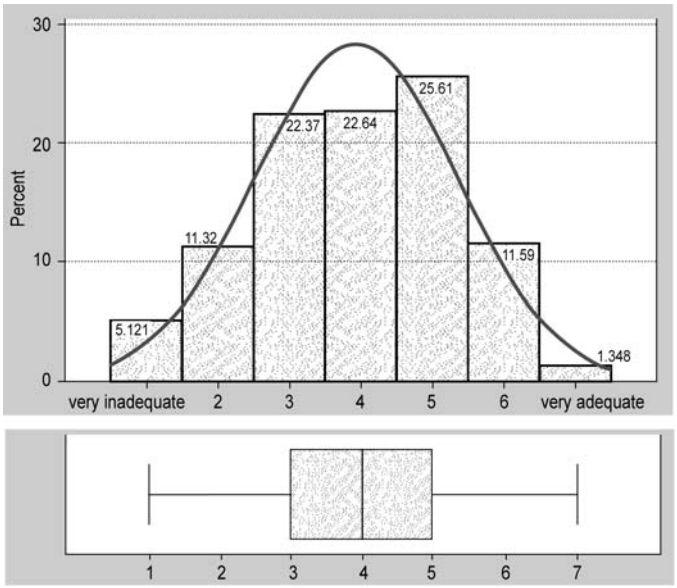
Variable	Obs	Mean	Std. Dev.	Min	Max
Q13	**373**	**3.873995**	**1.469289**	**1**	**7**



11b. Data collection efforts are currently

very inadequate 1 2 3 4 5 6 7 very adequate

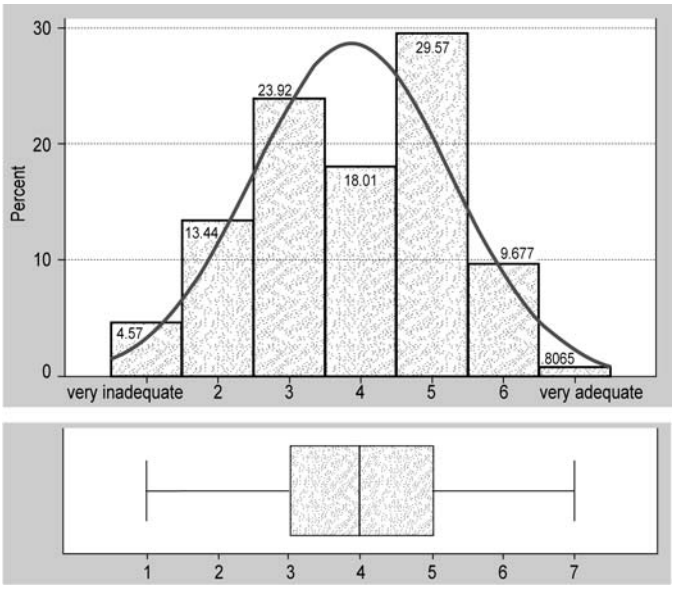
Variable	Obs	Mean	Std. Dev.	Min	Max
Q14	**371**	**3.924528**	**1.40644**	**1**	**7**



11c. The state of theoretical understanding of climate change phenomena is

very inadequate 1 2 3 4 5 6 7 very adequate

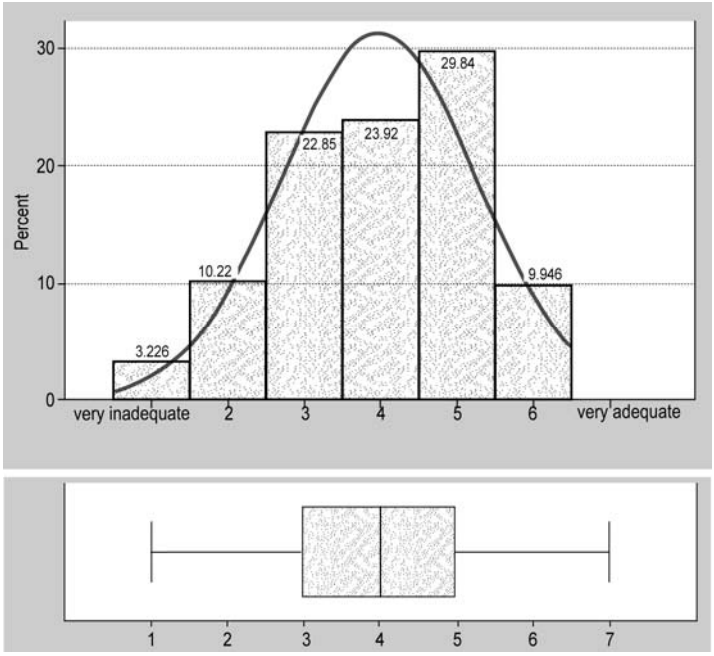
Variable	Obs	Mean	Std. Dev.	Min	Max
Q15	**372**	**3.86828**	**1.389745**	**1**	**7**



11d. Current theory development for climate change is

very inadequate 1 2 3 4 5 6 7 very adequate

Variable	Obs	Mean	Std. Dev.	Min	Max
Q16	**372**	**3.967742**	**1.275535**	**1**	**7**



Assessment of state of science

We would now like to ask you some questions about components of climate science. We realize that not all scientists work in all areas and that we list a number of distinct areas of expertise which might or might not reflect the main focus of your research. Nonetheless, we ask you to make a ***subjective appraisal*** *based on your familiarity of the separate components of the climate science*

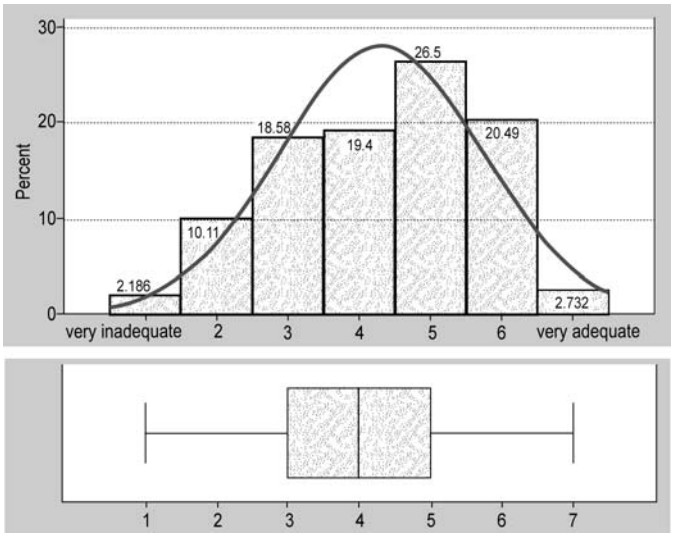
12. How well do you think *atmospheric models* can deal with:

very inadequate 1 2 3 4 5 6 7 very adequate

12a. hydrodynamics

very inadequate 1 2 3 4 5 6 7 very adequate

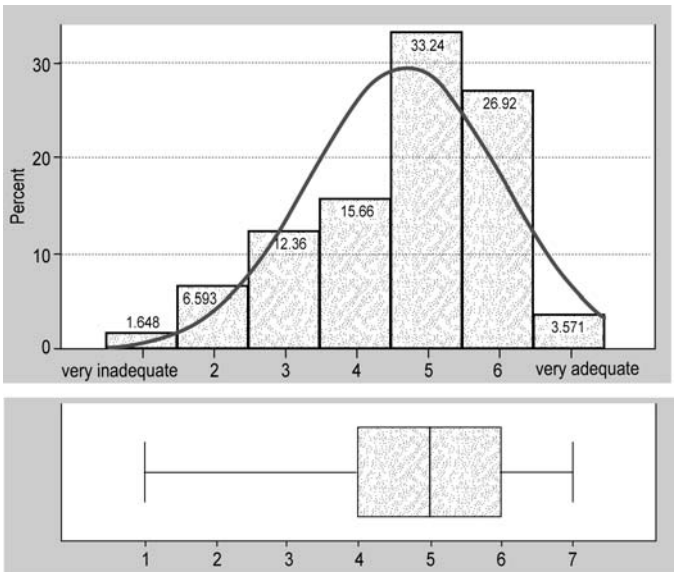
Variable	Obs	Mean	Std. Dev.	Min	Max
Q17	**366**	**4.303279**	**1.425152**	**1**	**7**



12b. radiation

very inadequate 1 2 3 4 5 6 7 very adequate

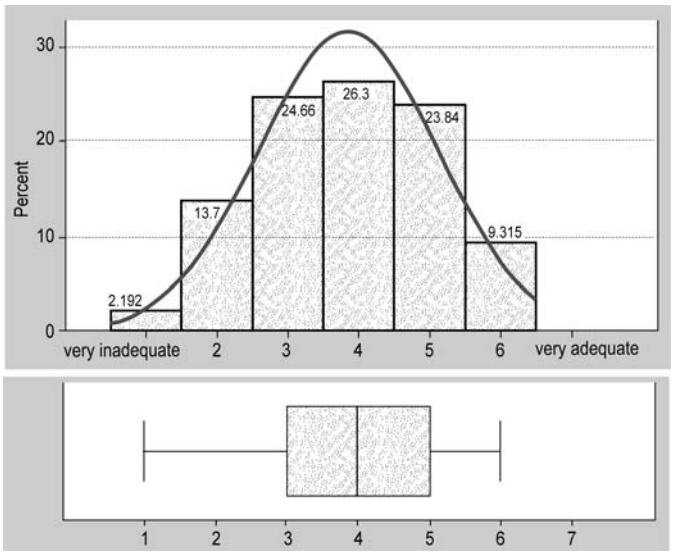
Variable	Obs	Mean	Std. Dev.	Min	Max
Q18	**364**	**4.673077**	**1.348498**	**1**	**7**



12c. vapor in the atmosphere

very inadequate 1 2 3 4 5 6 7 very adequate

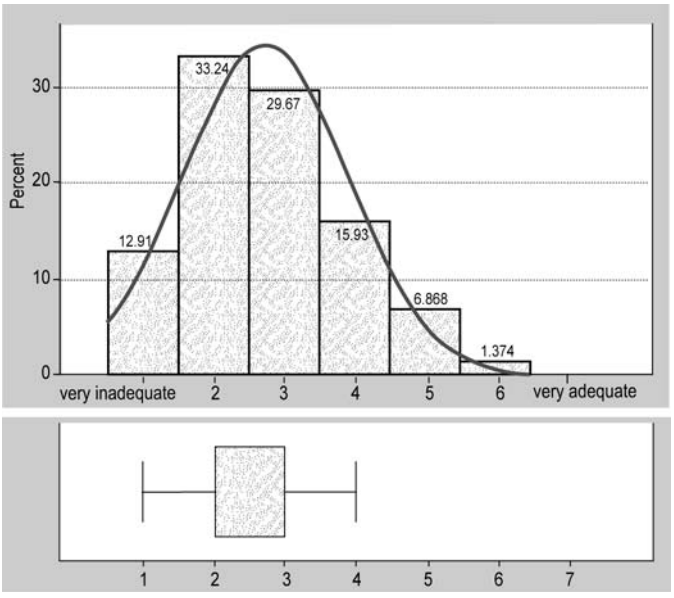
Variable	Obs	Mean	Std. Dev.	Min	Max
Q19	**365**	**3.838356**	**1.257355**	**1**	**6**



12d. the influence of clouds

very inadequate 1 2 3 4 5 6 7 very adequate

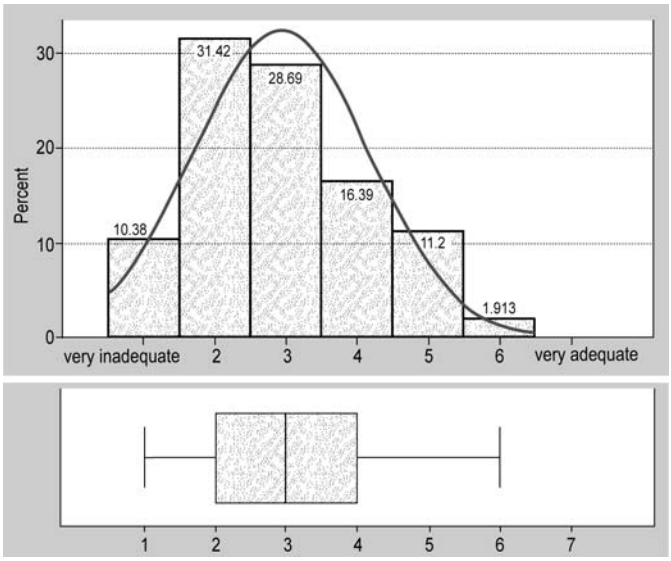
Variable	Obs	Mean	Std. Dev.	Min	Max
Q20	**364**	**2.747253**	**1.16035**	**1**	**6**



12e. precipitation

very inadequate 1 2 3 4 5 6 7 very adequate

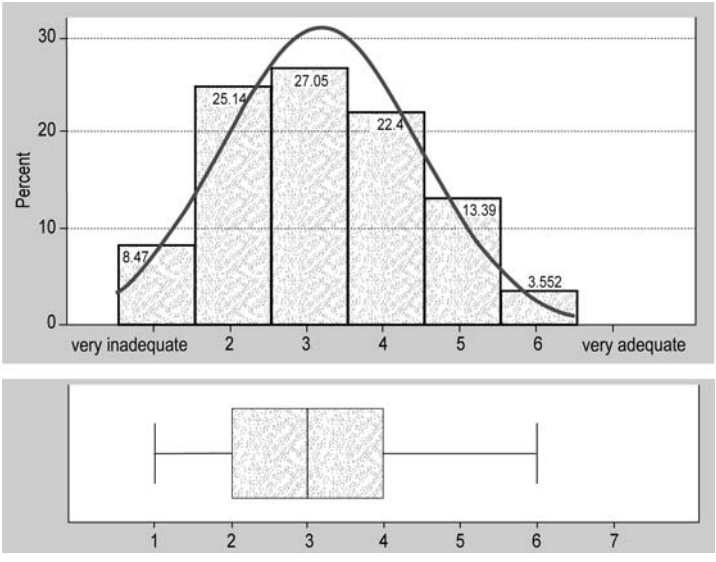
Variable	Obs	Mean	Std. Dev.	Min	Max
Q21	**366**	**2.923497**	**1.229609**	**1**	**6**



12f. atmospheric convection

very inadequate 1 2 3 4 5 6 7 very adequate

Variable	Obs	Mean	Std. Dev.	Min	Max
Q22	**366**	**3.177596**	**1.28154**	**1**	**6**



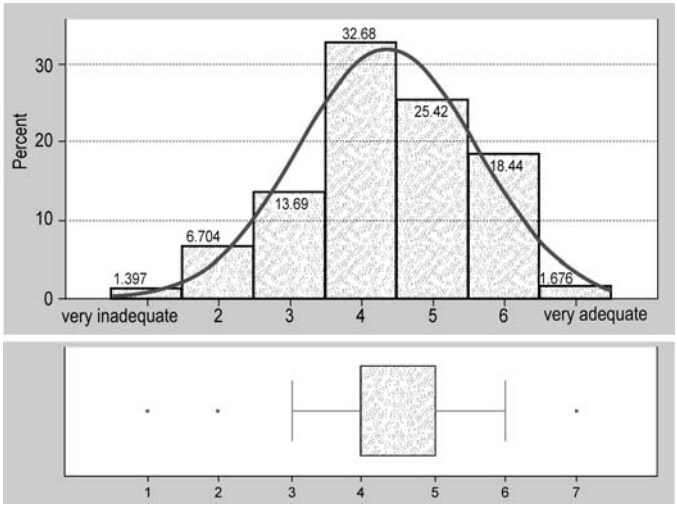
13. How well do you think *ocean models* can deal with:

very inadequate 1 2 3 4 5 6 7 very adequate

13a. hydrodynamics

very inadequate 1 2 3 4 5 6 7 very adequate

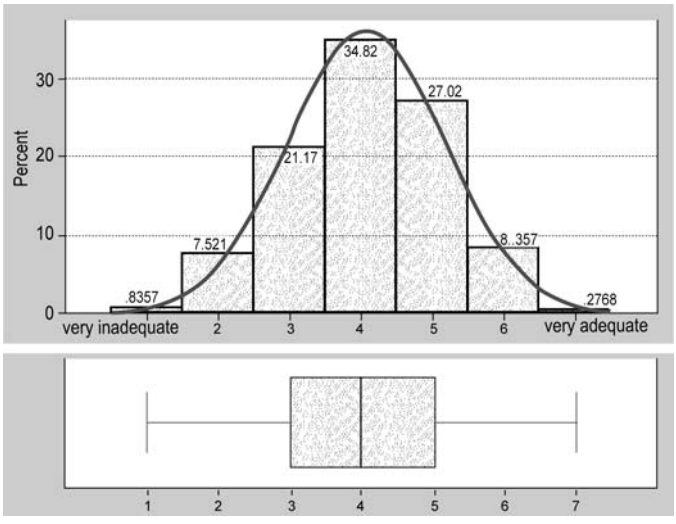
Variable	Obs	Mean	Std. Dev.	Min	Max
Q23	**358**	**4.360335**	**1.244052**	**1**	**7**



13b. heat transport in the ocean

very inadequate 1 2 3 4 5 6 7 very adequate

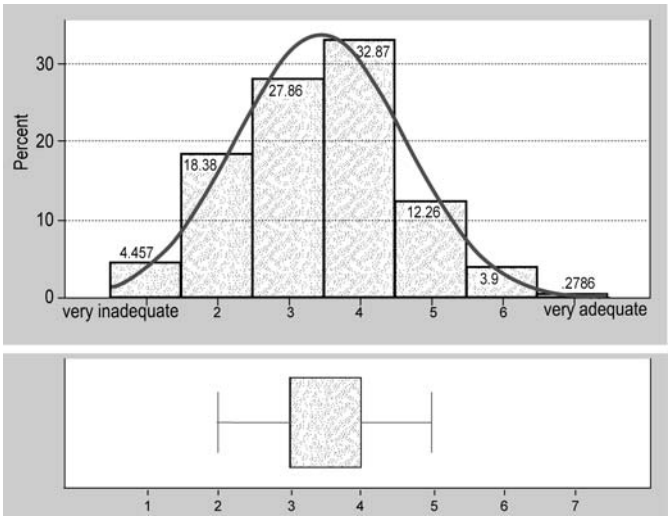
Variable	Obs	Mean	Std. Dev.	Min	Max
Q24	**359**	**4.058496**	**1.103286**	**1**	**7**



13c. oceanic convection

very inadequate 1 2 3 4 5 6 7 very adequate

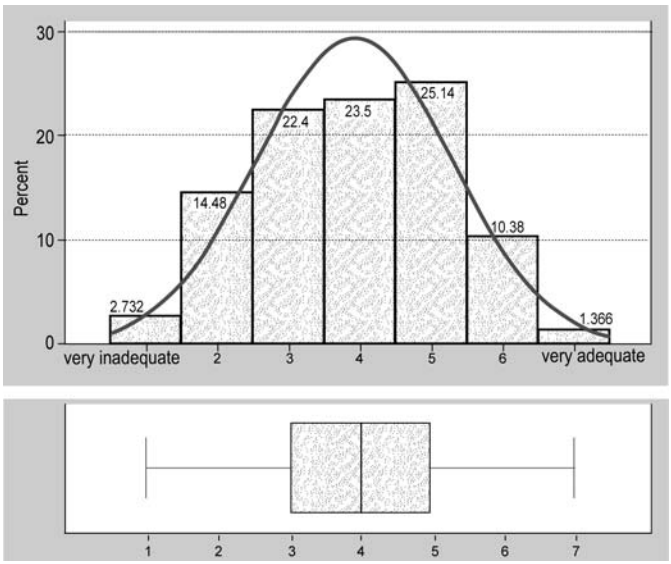
Variable	Obs	Mean	Std. Dev.	Min	Max
Q25	**359**	**3.428969**	**1.181726**	**1**	**7**



14. How adequate is the ability to couple atmospheric and ocean models?

very inadequate 1 2 3 4 5 6 7 very adequate

Variable	Obs	Mean	Std. Dev.	Min	Max
Q26	**366**	**3.904372**	**1.354498**	**1**	**7**



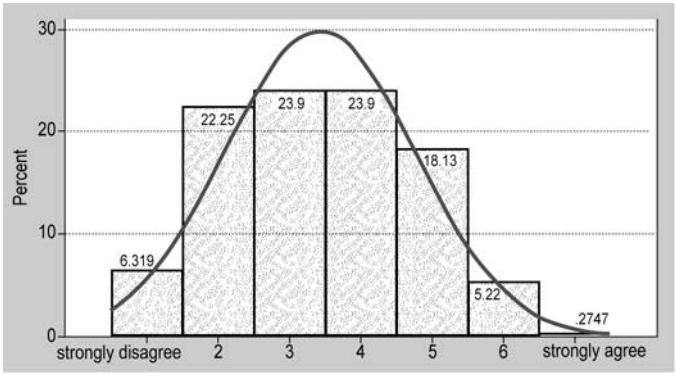
15. The current state of scientific knowledge is developed well enough to allow for a reasonable assessment of the effects of:

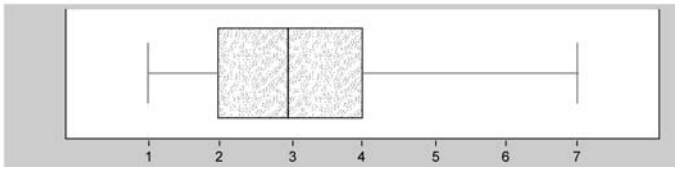
strongly disagree 1 2 3 4 5 6 7 strongly agree

15a. turbulence

strongly disagree 1 2 3 4 5 6 7 strongly agree

Variable	Obs	Mean	Std. Dev.	Min	Max
Q27	**364**	**3.42033**	**1.334734**	**1**	**7**

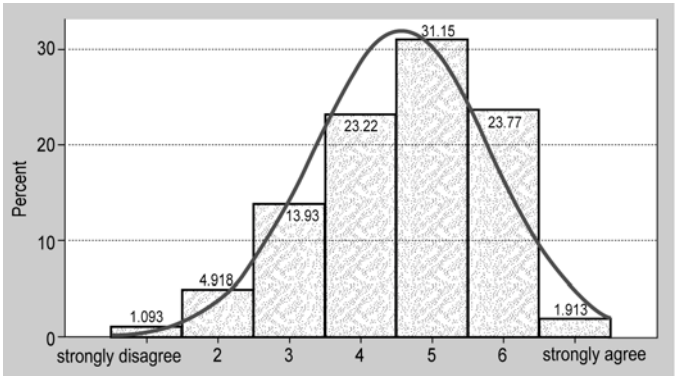


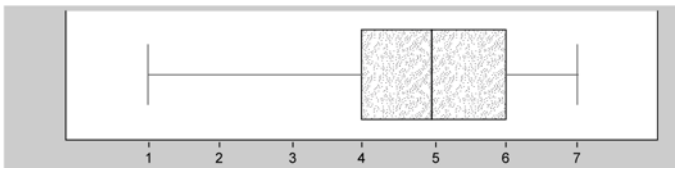


15b. surface albedo

strongly disagree 1 2 3 4 5 6 7 strongly agree

Variable	Obs	Mean	Std. Dev.	Min	Max
Q28	**366**	**4.57377**	**1.242521**	**1**	**7**

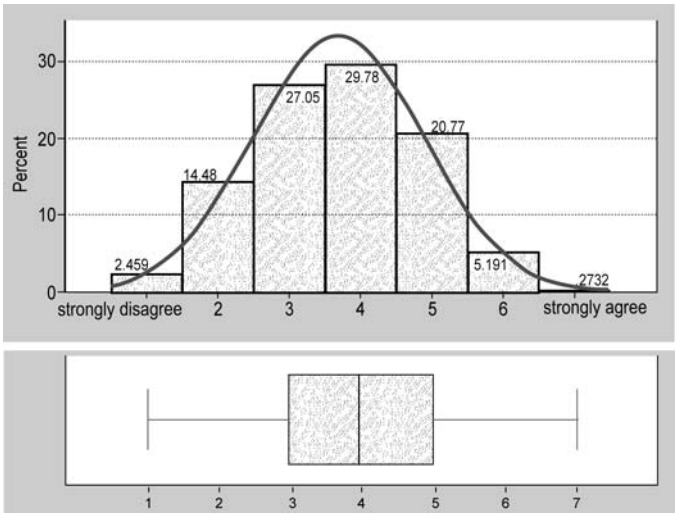




15c. land surface processes

strongly disagree 1 2 3 4 5 6 7 strongly agree

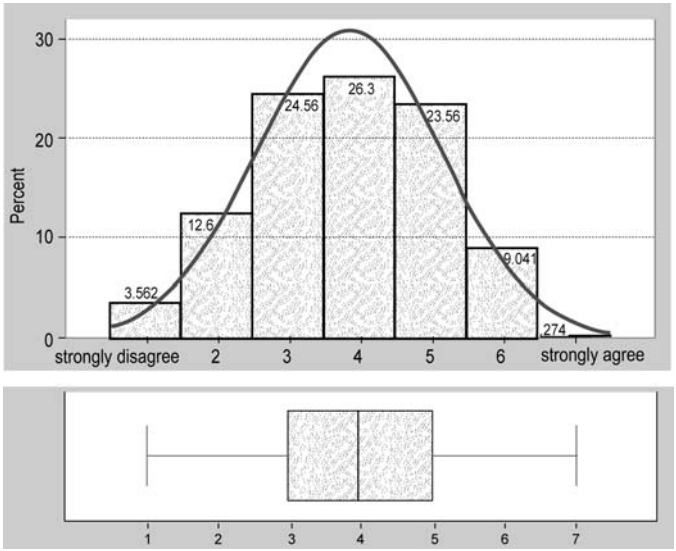
Variable	Obs	Mean	Std. Dev.	Min	Max
Q29	**366**	**3.685792**	**1.189988**	**1**	**7**



15d. sea ice

strongly disagree 1 2 3 4 5 6 7 strongly agree

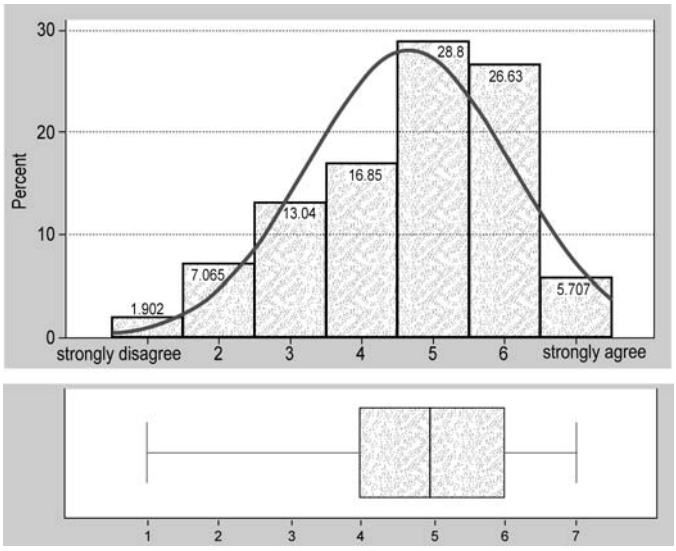
Variable	Obs	Mean	Std. Dev.	Min	Max
Q30	**365**	**3.819178**	**1.290355**	**1**	**7**



15e. green-house gases emitted from anthropogenic sources

strongly disagree 1 2 3 4 5 6 7 strongly agree

Variable	Obs	Mean	Std. Dev.	Min	Max
Q31	**368**	**4.663043**	**1.420191**	**1**	**7**



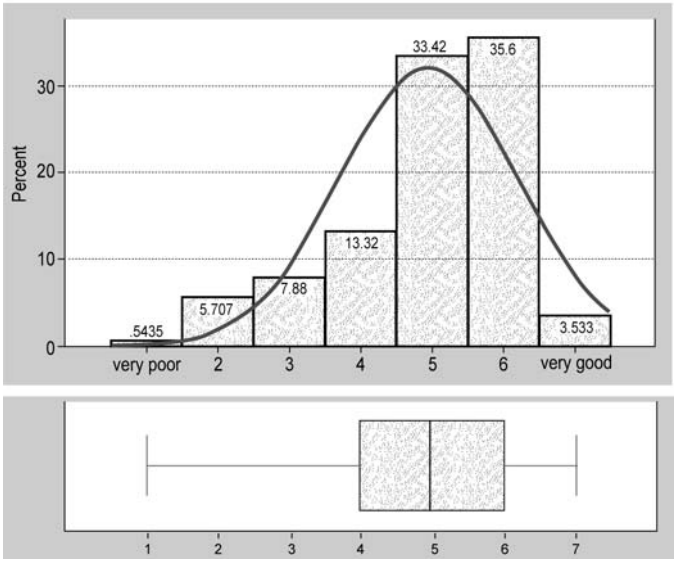
16. How would you rate the ability of *global* climate models to:

very poor 1 2 3 4 5 6 7 very good

16a. reproduce temperature observations

very poor 1 2 3 4 5 6 7 very good

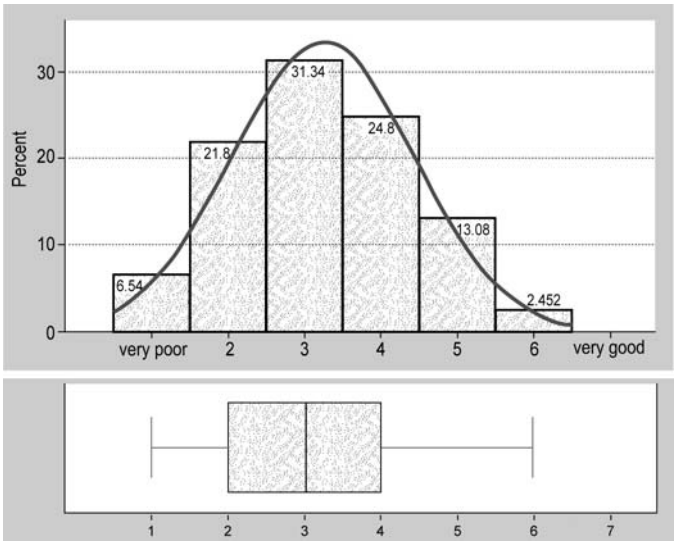
Variable	Obs	Mean	Std. Dev.	Min	Max
Q32	**368**	**4.942935**	**1.243842**	**1**	**7**



16b. reproduce precipitation observations

very poor 1 2 3 4 5 6 7 very good

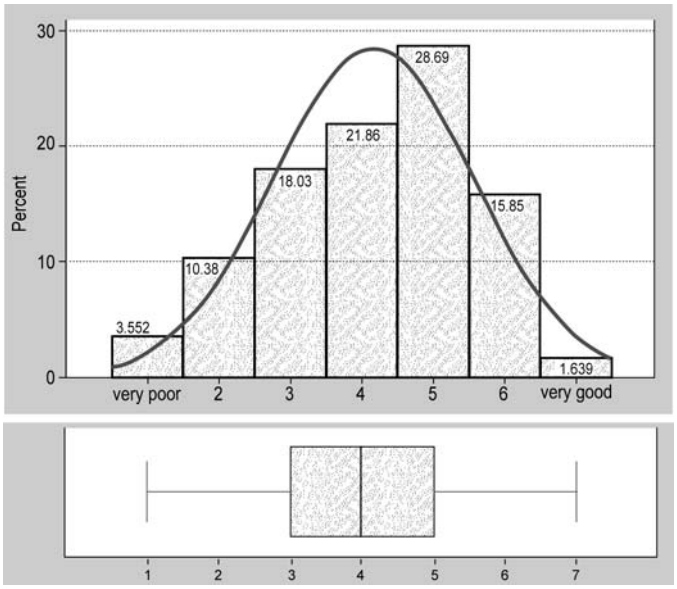
Variable	Obs	Mean	Std. Dev.	Min	Max
Q33	**367**	**3.234332**	**1.191784**	**1**	**6**



16c. model temperature values for the next 10 years

very poor 1 2 3 4 5 6 7 very good

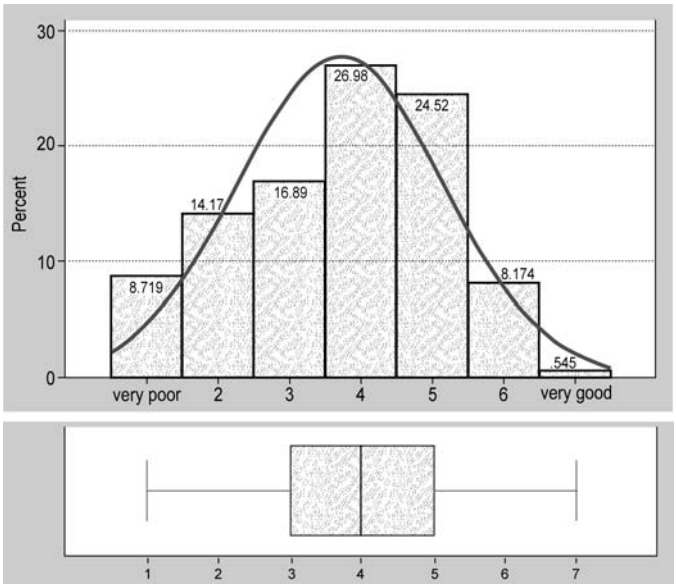
Variable	Obs	Mean	Std. Dev.	Min	Max
Q34	**366**	**4.15847**	**1.401378**	**1**	**7**



16d. model temperature values for the next 50 years

very poor 1 2 3 4 5 6 7 very good

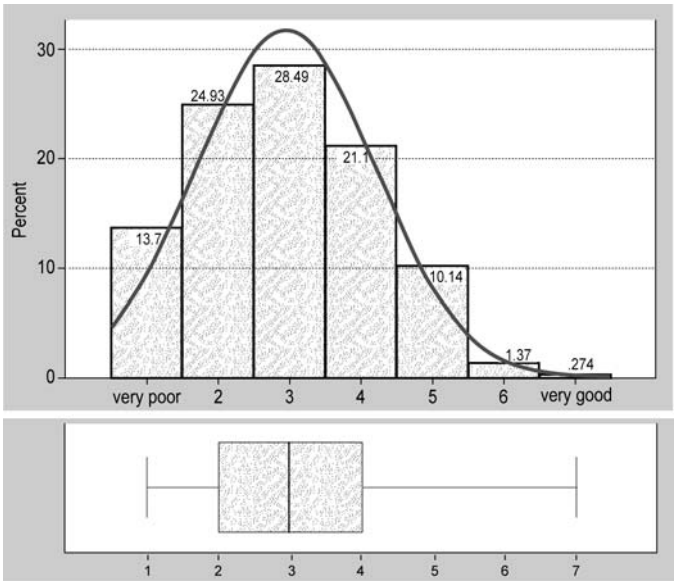
Variable	Obs	Mean	Std. Dev.	Min	Max
Q35	**367**	**3.711172**	**1.436625**	**1**	**7**



16e. model precipitation values for the next 10 years

very poor 1 2 3 4 5 6 7 very good

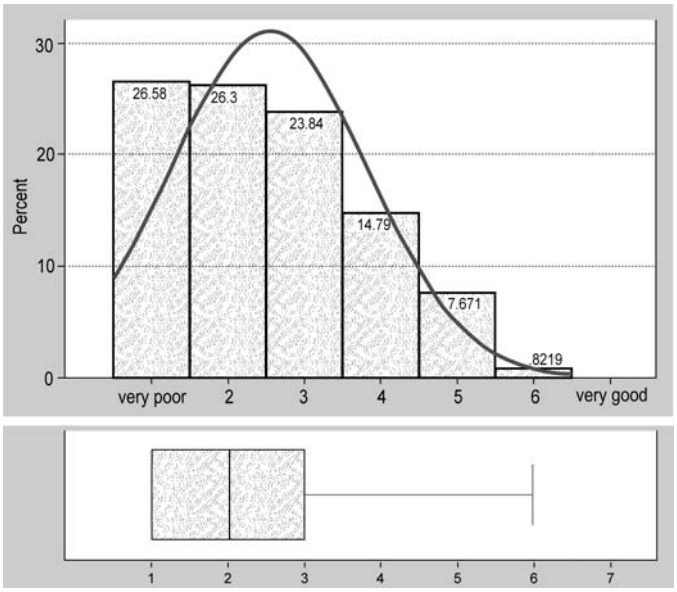
Variable	Obs	Mean	Std. Dev.	Min	Max
Q36	**365**	**2.942466**	**1.257714**	**1**	**7**



16f. model precipitation values for the next 50 years

very poor 1 2 3 4 5 6 7 very good

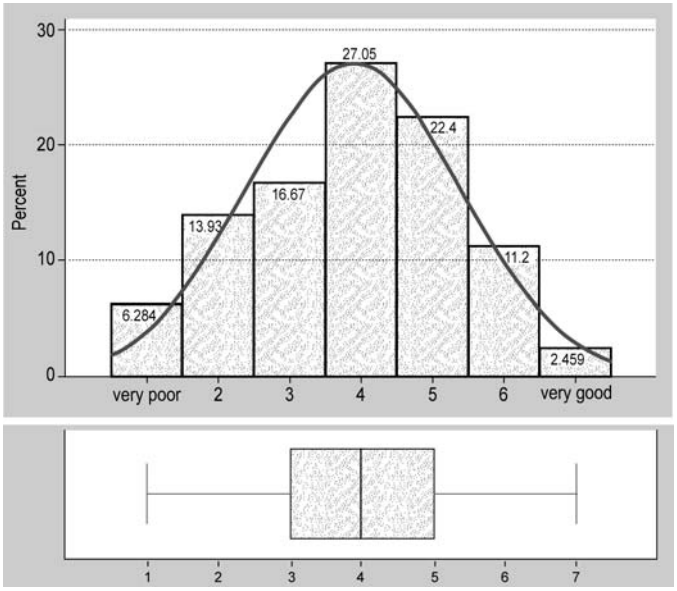
Variable	Obs	Mean	Std. Dev.	Min	Max
Q37	**365**	**2.531507**	**1.280547**	**1**	**6**



16g. model sea level rise for the next 10 years

very poor 1 2 3 4 5 6 7 very good

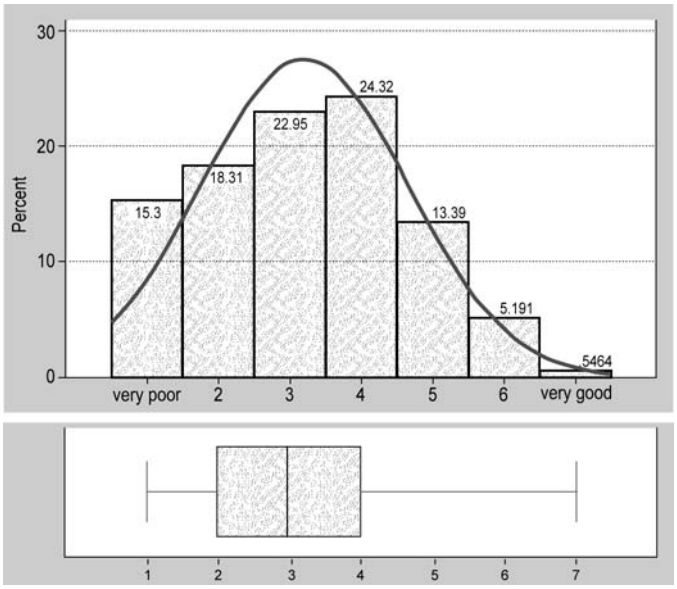
Variable	Obs	Mean	Std. Dev.	Min	Max
Q38	**366**	**3.887978**	**1.475282**	**1**	**7**



16h. model sea level rise for the next 50 years

very poor 1 2 3 4 5 6 7 very good

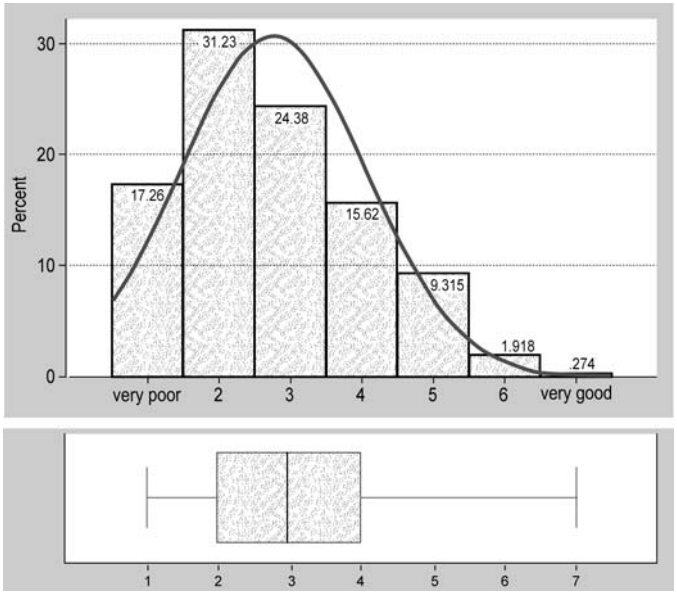
Variable	Obs	Mean	Std. Dev.	Min	Max
Q39	**366**	**3.199454**	**1.447189**	**1**	**7**



16i. model extreme events for the next 10 years

very poor 1 2 3 4 5 6 7 very good

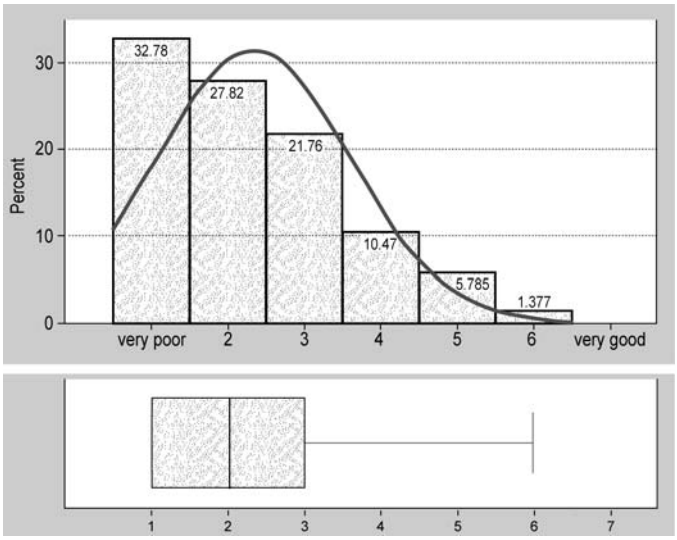
Variable	Obs	Mean	Std. Dev.	Min	Max
Q40	**365**	**2.753425**	**1.300685**	**1**	**7**



16j. model extreme events for the next 50 years

very poor 1 2 3 4 5 6 7 very good

Variable	Obs	Mean	Std. Dev.	Min	Max
Q41	**363**	**2.327824**	**1.265772**	**1**	**6**



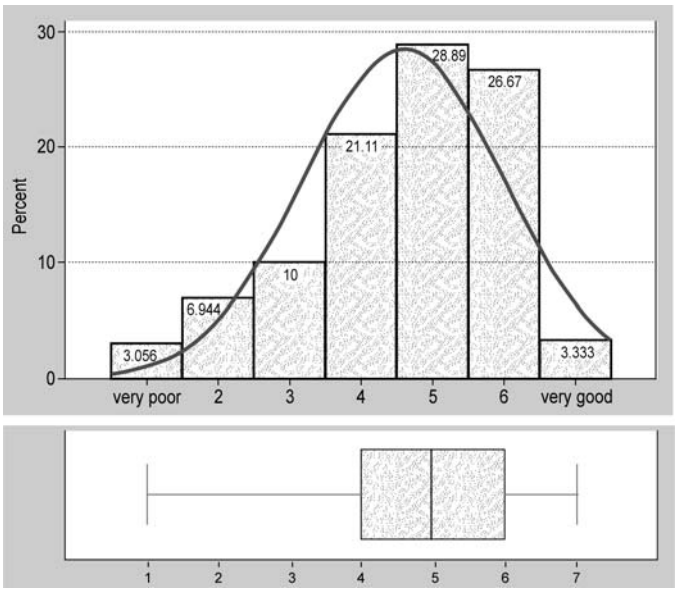
17. How would you rate the ability of *regional* climate models to:

very poor 1 2 3 4 5 6 7 very good

17a. reproduce temperature observations

very poor 1 2 3 4 5 6 7 very good

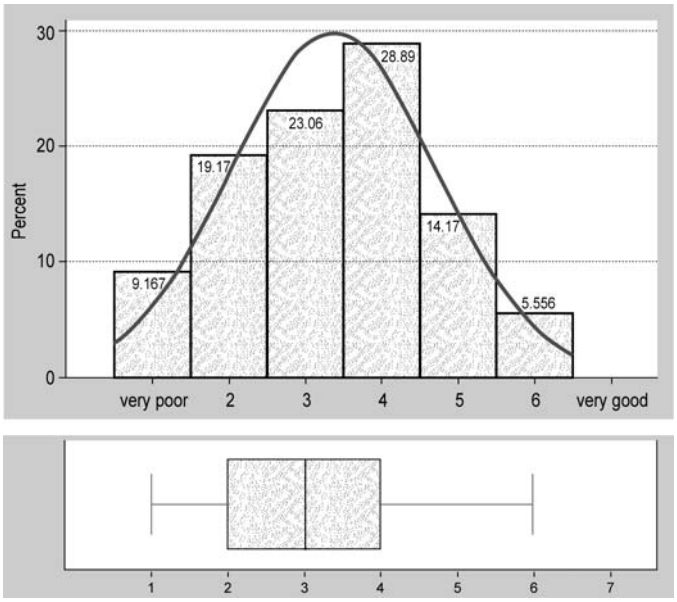
Variable	Obs	Mean	Std. Dev.	Min	Max
Q42	**360**	**4.591667**	**1.401327**	**1**	**7**



17b. reproduce precipitation observations

very poor 1 2 3 4 5 6 7 very good

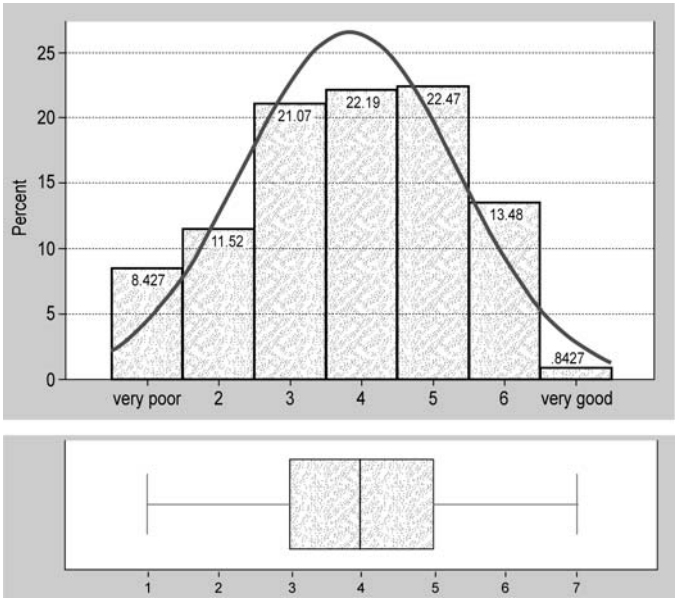
Variable	Obs	Mean	Std. Dev.	Min	Max
Q43	**360**	**3.363889**	**1.336576**	**1**	**6**



17c. model temperature values for the next 10 years

very poor 1 2 3 4 5 6 7 very good

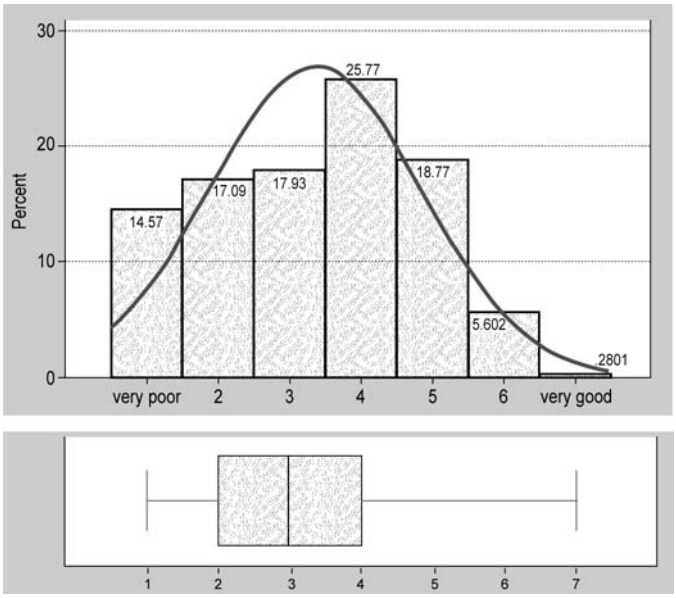
Variable	Obs	Mean	Std. Dev.	Min	Max
Q44	**356**	**3.825843**	**1.498546**	**1**	**7**



17d. model temperature values for the next 50 years

very poor 1 2 3 4 5 6 7 very good

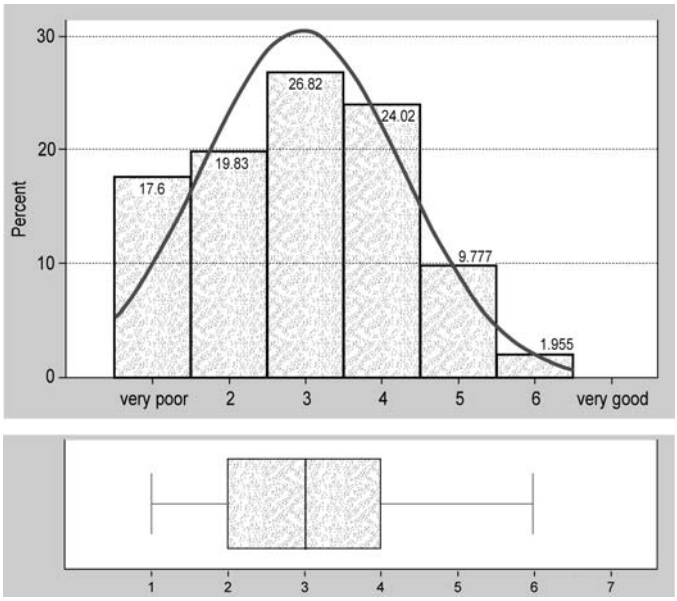
Variable	Obs	Mean	Std. Dev.	Min	Max
Q45	**357**	**3.35014**	**1.481375**	**1**	**7**



17e. model precipitation values for the next 10 years

very poor 1 2 3 4 5 6 7 very good

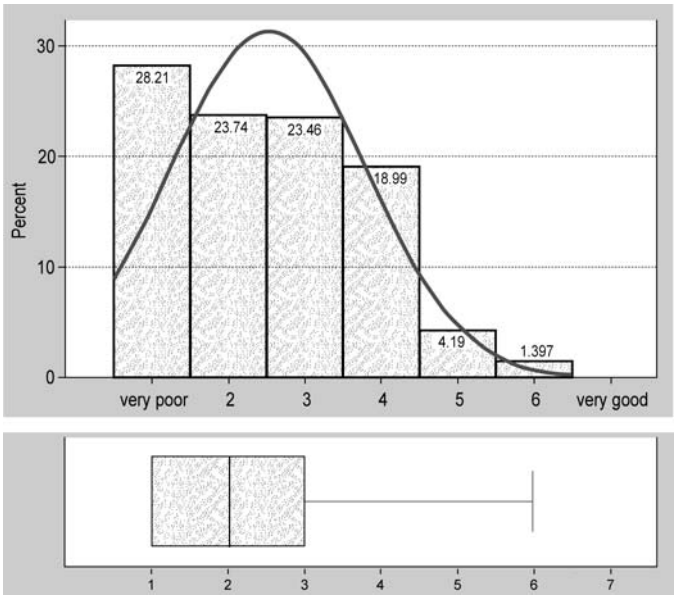
Variable	Obs	Mean	Std. Dev.	Min	Max
Q46	**358**	**2.944134**	**1.308112**	**1**	**6**



17f. model precipitation values for the next 50 years

very poor 1 2 3 4 5 6 7 very good

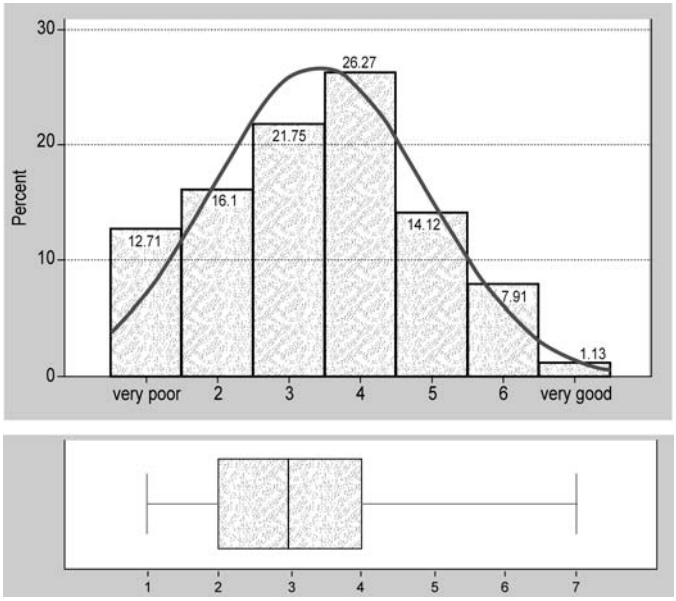
Variable	Obs	Mean	Std. Dev.	Min	Max
Q47	**358**	**2.513966**	**1.271791**	**1**	**6**



17g. model sea level rise for the next 10 years

very poor 1 2 3 4 5 6 7 very good

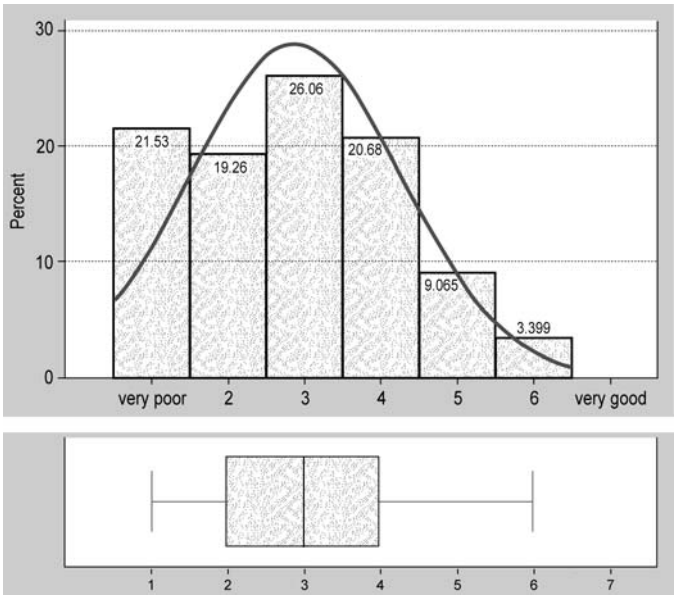
Variable	Obs	Mean	Std. Dev.	Min	Max
Q48	**354**	**3.412429**	**1.491985**	**1**	**7**



17h. model sea level rise for the next 50 years

very poor 1 2 3 4 5 6 7 very good

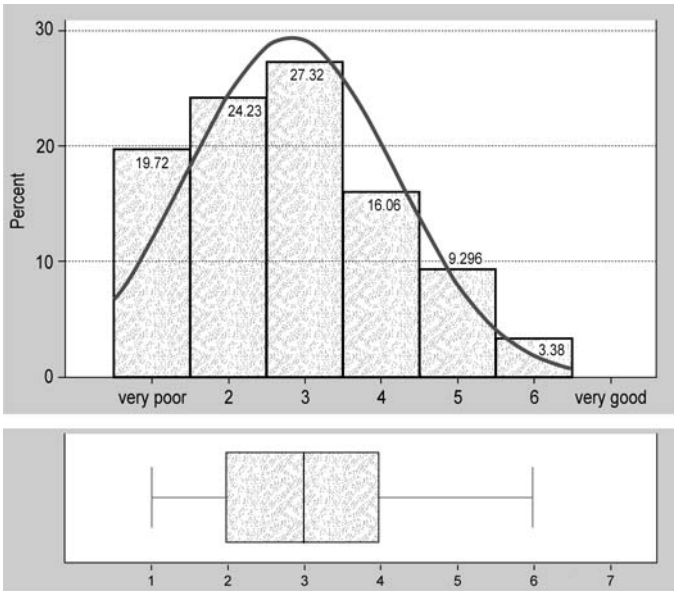
Variable	Obs	Mean	Std. Dev.	Min	Max
Q49	**353**	**2.866856**	**1.384515**	**1**	**6**



17i. model extreme events for the next 10 years

very poor 1 2 3 4 5 6 7 very good

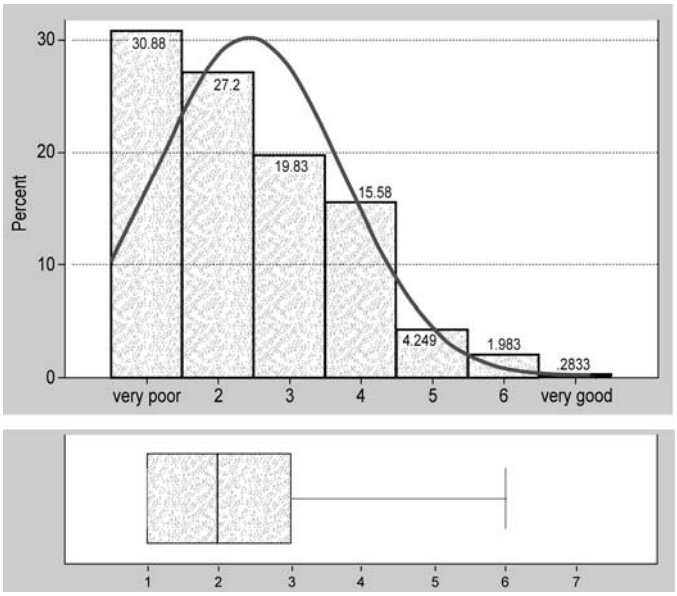
Variable	Obs	Mean	Std. Dev.	Min	Max
Q50	**355**	**2.811268**	**1.355419**	**1**	**6**



17j. model extreme events for the next 50 years

very poor 1 2 3 4 5 6 7 very good

Variable	Obs	Mean	Std. Dev.	Min	Max
Q51	**353**	**2.422096**	**1.314374**	**1**	**7**



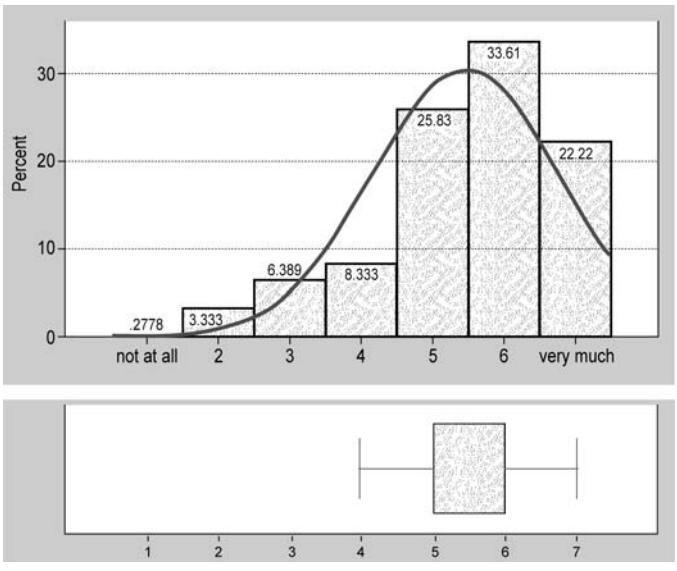
18. How relevant is the study of paleoclimatology to the understanding of:

Not at all 1 2 3 4 5 6 7 very much

18a. climate sensitivity

Not at all 1 2 3 4 5 6 7 very much

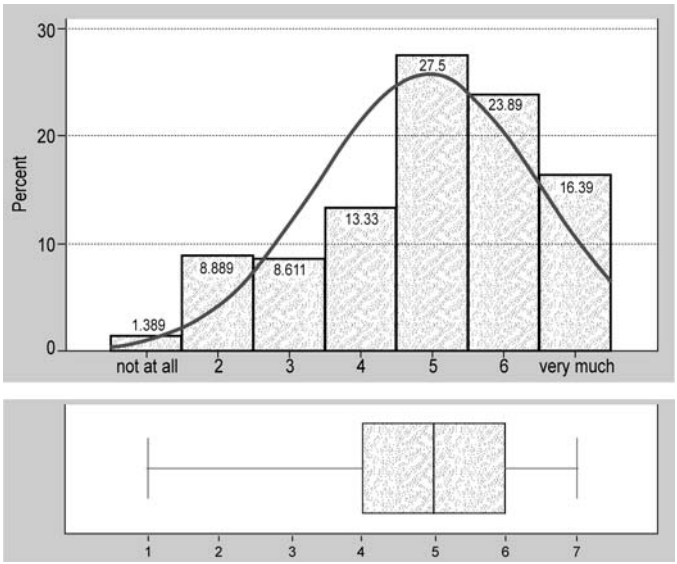
Variable	Obs	Mean	Std. Dev.	Min	Max
Q52	**360**	**5.458333**	**1.304988**	**1**	**7**



18b. anthropogenic induced climate change

Not at all 1 2 3 4 5 6 7 very much

Variable	Obs	Mean	Std. Dev.	Min	Max
Q53	**360**	**4.938889**	**1.548344**	**1**	**7**



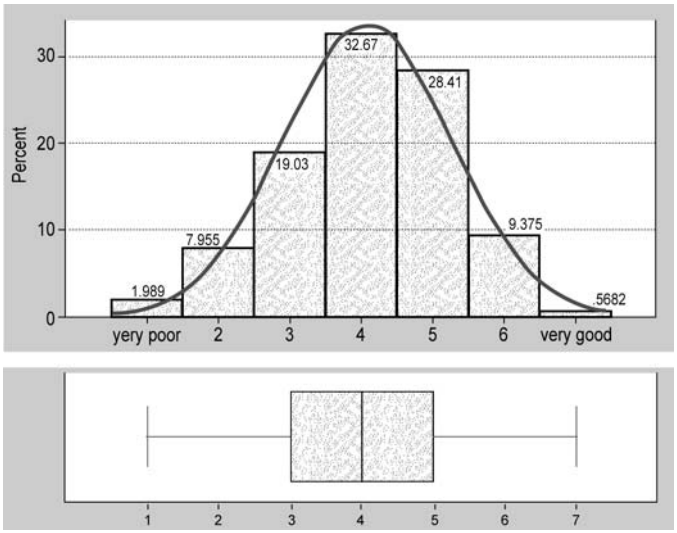
19. How would you rate the ability of paleo models to reproduce:

very poor 1 2 3 4 5 6 7 very good

19a. proxy temperature observations

very poor 1 2 3 4 5 6 7 very good

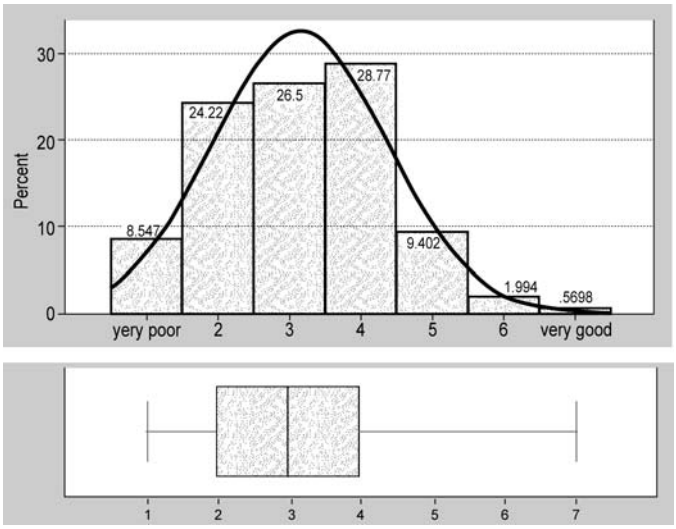
Variable	Obs	Mean	Std. Dev.	Min	Max
Q54	**352**	**4. 079545**	**1. 181255**	**1**	**7**



19b. proxy precipitation observations

very poor 1 2 3 4 5 6 7 very good

Variable	Obs	Mean	Std. Dev.	Min	Max
Q55	**351**	**3.145299**	**1. 225433**	**1**	**7**



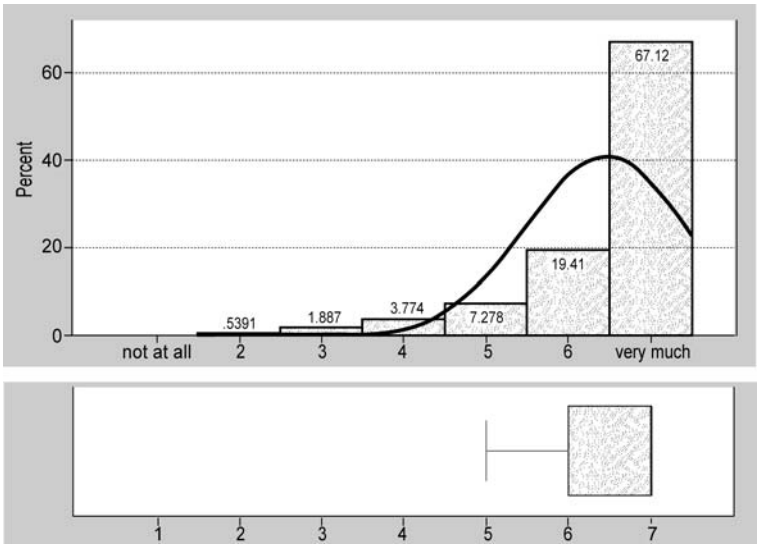
Climate Change Impacts

In this section we would like to ask some questions concerning the impacts of climate change.

20. How convinced are you that climate change, whether natural or anthropogenic, is occurring now?

not at all 1 2 3 4 5 6 7 very much

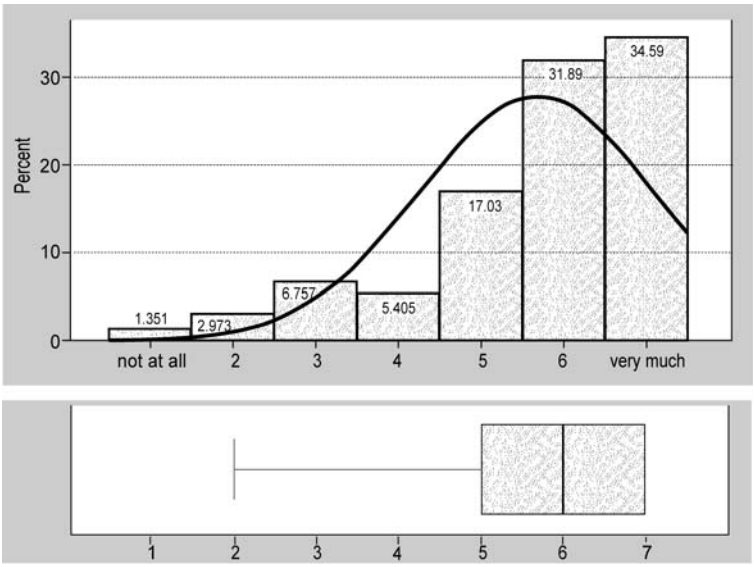
Variable	Obs	Mean	Std. Dev.	Min	Max
Q56	**371**	**6.444744**	**.9776105**	**1**	**7**



21. How convinced are you that most of recent or near future climate change is, or will be, a result of anthropogenic causes?

not at all 1 2 3 4 5 6 7 very much

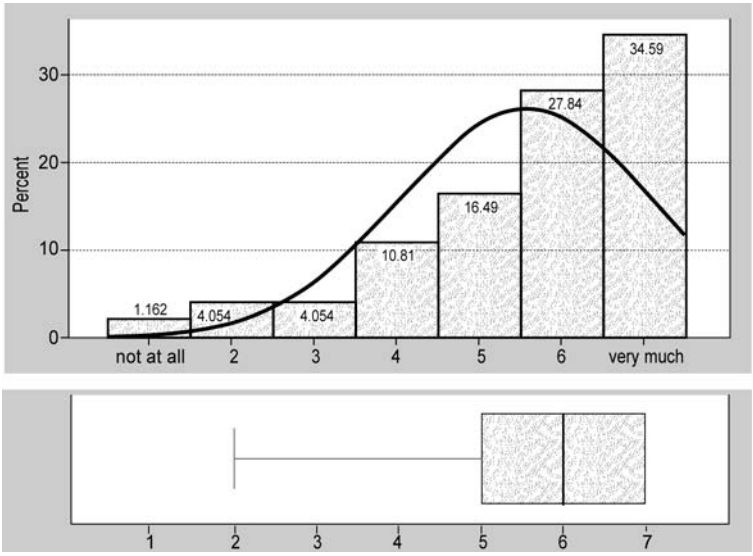
Variable	Obs	Mean	Std. Dev.	Min	Max
Q57	**370**	**5.678378**	**1.433935**	**1**	**7**



22. How convinced are you that climate change poses a very serious and dangerous threat to humanity?

not at all 1 2 3 4 5 6 7 very much

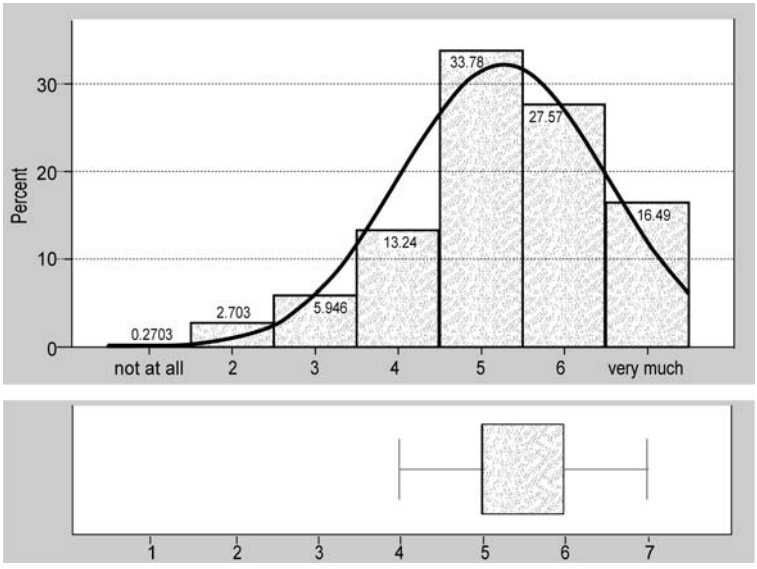
Variable	Obs	Mean	Std. Dev.	Min	Max
Q58	**370**	**5.572973**	**1. 523555**	**1**	**7**



23. How much are we beginning to experience the more gradual impacts of climate change, anthropogenic or otherwise?

not at all 1 2 3 4 5 6 7 very much

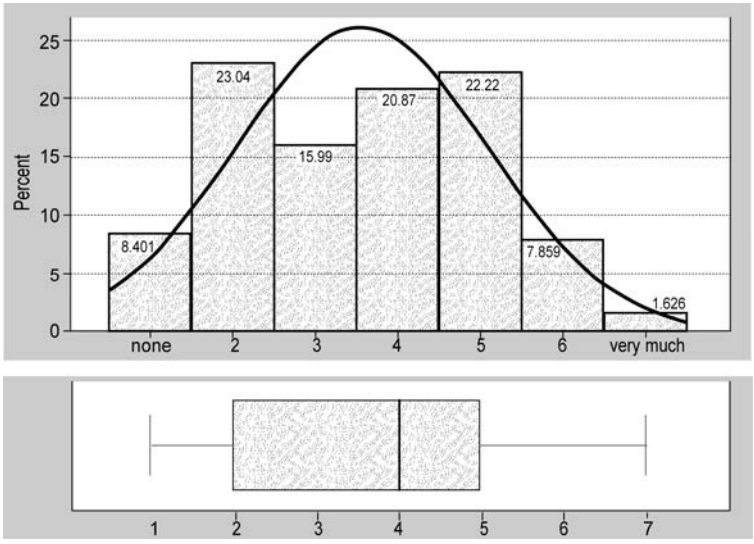
Variable	Obs	Mean	Std. Dev.	Min	Max
Q59	**370**	**5.262161**	**1. 235836**	**1**	**7**



24. With how much certainty can we attribute recent climate related disasters to climate change?

not at all 1 2 3 4 5 6 7 very much

Variable	Obs	Mean	Std. Dev.	Min	Max
Q60	**369**	**3.555556**	**1. 526141**	**1**	**7**



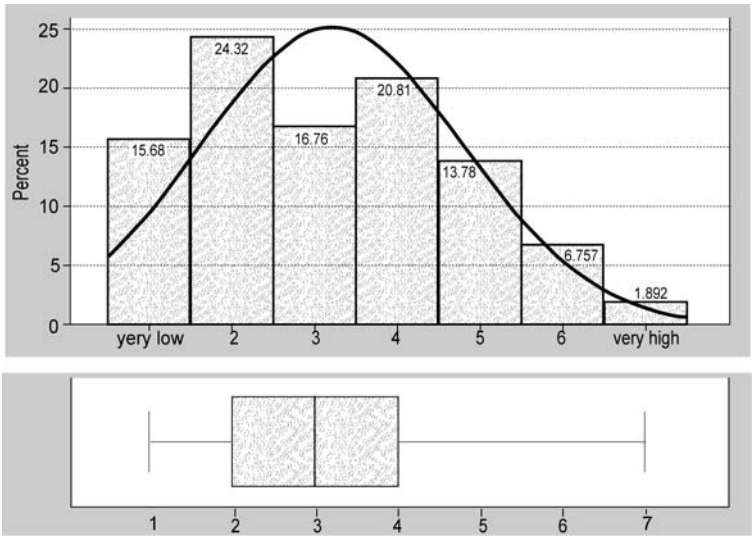
25. If we do not do anything towards adaptation or mitigation, the potential for catastrophe resulting from climate change for *the country in which you live* :

very low 1 2 3 4 5 6 7 very high

25a. in the next 10 years is

very low 1 2 3 4 5 6 7 very high

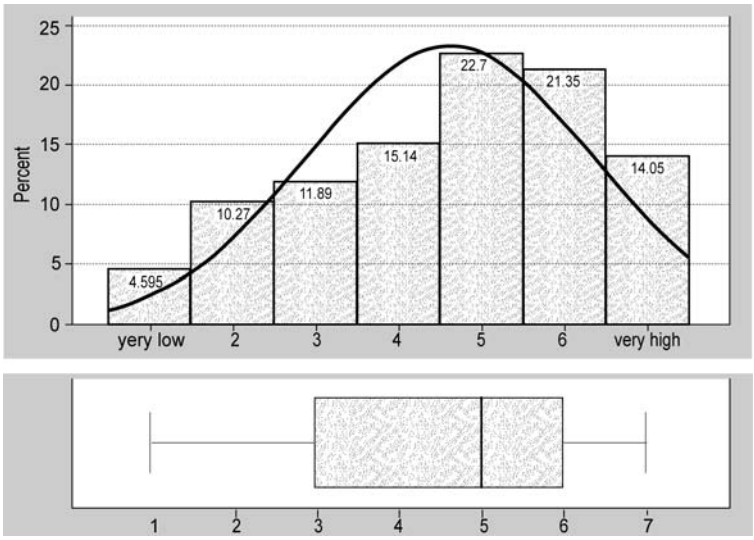
Variable	Obs	Mean	Std. Dev.	Min	Max
Q61	**370**	**3.205405**	**1. 582757**	**1**	**7**



25b. in the next 50 years is

very low 1 2 3 4 5 6 7 very high

Variable	Obs	Mean	Std. Dev.	Min	Max
Q62	**370**	**4.613514**	**1. 709001**	**1**	**7**



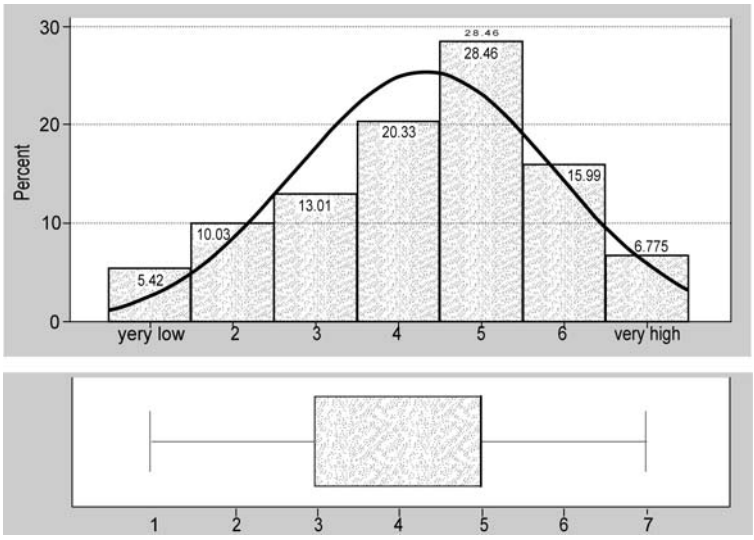
26. If we do not do anything towards adaptation or mitigation, the potential for catastrophe resulting from climate change for *other parts of the world* :

very low 1 2 3 4 5 6 7 very high

26a. in the next 10 years is

very low 1 2 3 4 5 6 7 very high

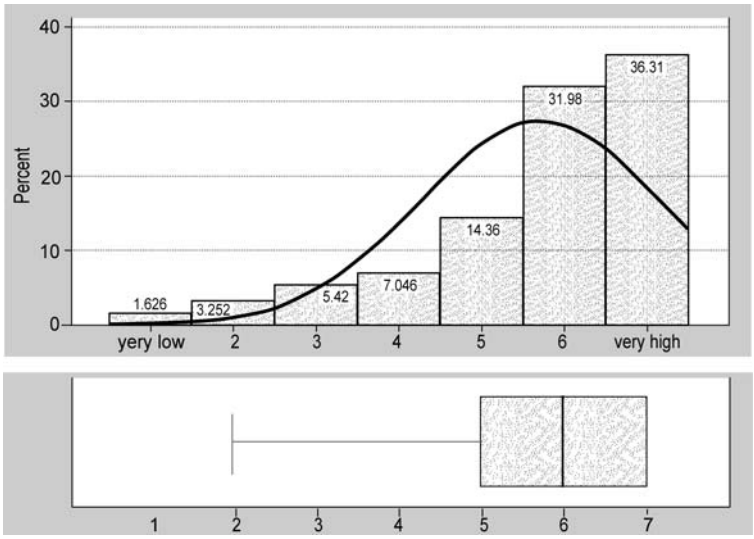
Variable	Obs	Mean	Std. Dev.	Min	Max
Q63	**369**	**4.314363**	**1. 568659**	**1**	**7**



26b. in the next 50 years is

very low 1 2 3 4 5 6 7 very high

Variable	Obs	Mean	Std. Dev.	Min	Max
Q64	**369**	**5.704607**	**1. 456621**	**1**	**7**



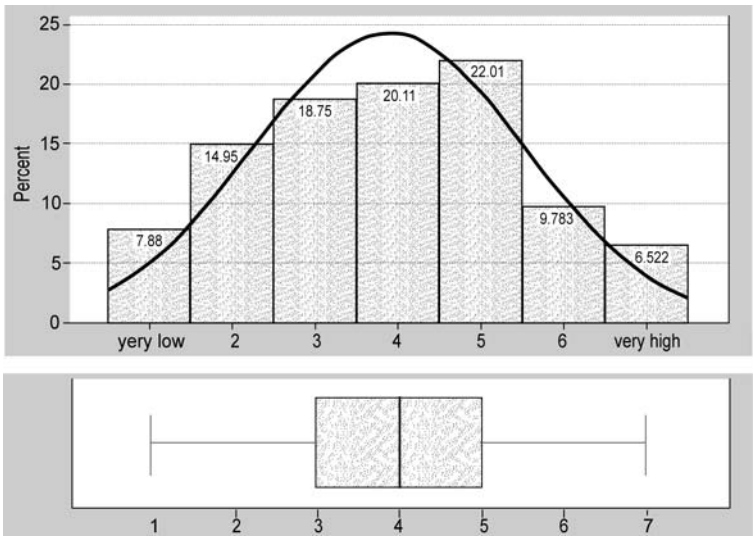
27. The potential that climate change might have some positive effects for

very low 1 2 3 4 5 6 7 very high

27a. the country in which you live is

very low 1 2 3 4 5 6 7 very high

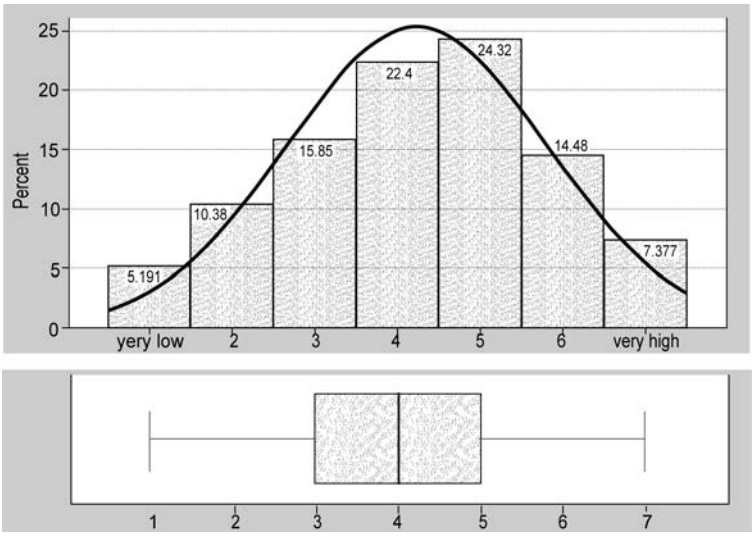
Variable	Obs	Mean	Std. Dev.	Min	Max
Q65	**368**	**3.888587**	**1. 639459**	**1**	**7**



27b. other parts of the world is

very low 1 2 3 4 5 6 7 very high

Variable	Obs	Mean	Std. Dev.	Min	Max
Q66	**366**	**4.23224**	**1. 574853**	**1**	**7**



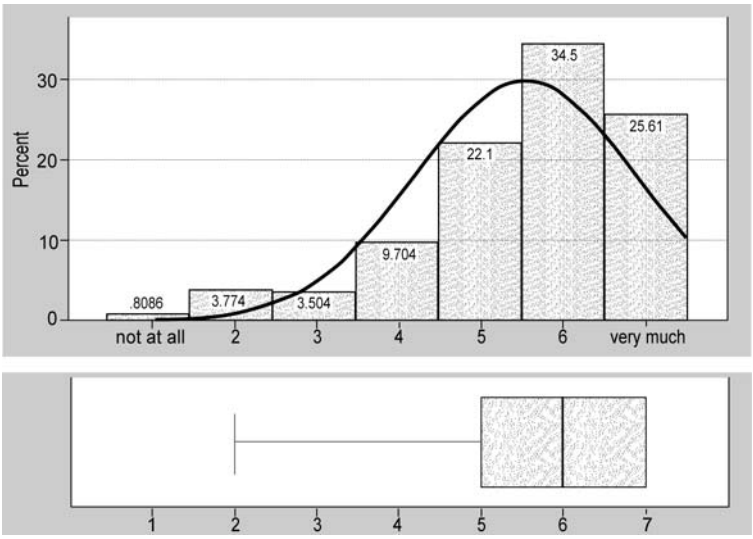
28. How much do you think the potential impact of global climate change is one of the leading problems

not at all1 2 3 4 5 6 7 very much

28a. for eco-systems (i.e. species extinction, land degradation, etc.)

not at all 1 2 3 4 5 6 7 very much

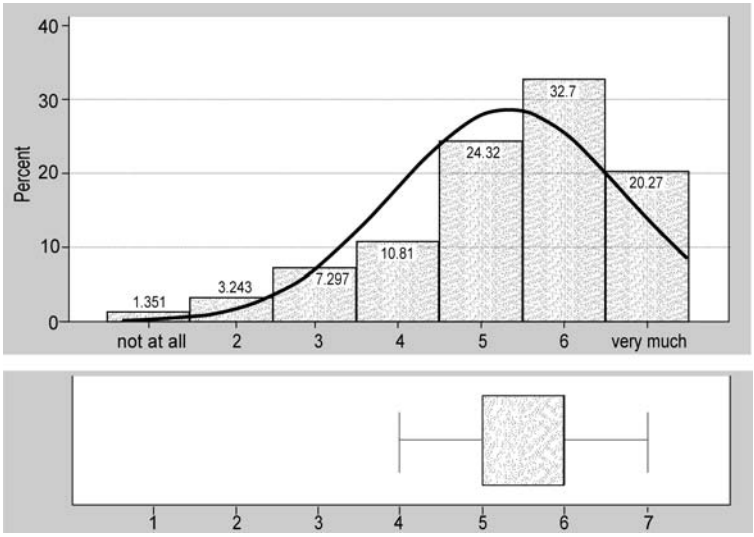
Variable	Obs	Mean	Std. Dev.	Min	Max
Q67	**371**	**5.544474**	**1. 3356**	**1**	**7**



28b. for humanity in terms of social and economic issues

not at all 1 2 3 4 5 6 7 very much

Variable	Obs	Mean	Std. Dev.	Min	Max
Q68	**370**	**5.327027**	**1. 394365**	**1**	**7**



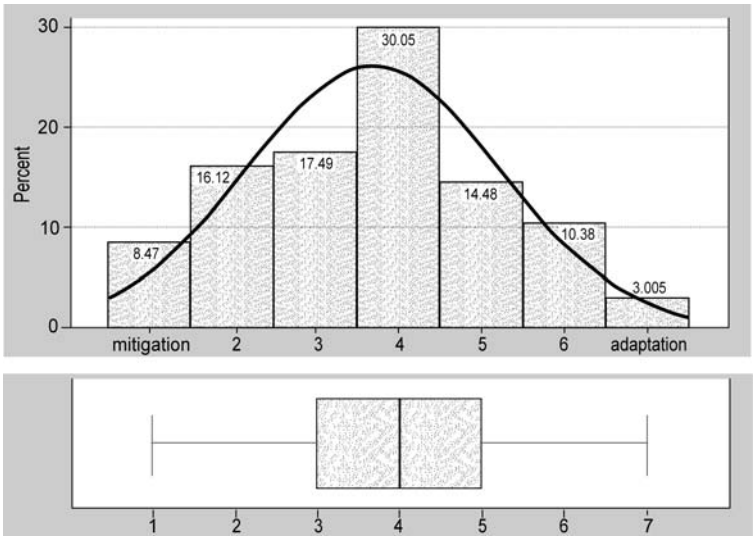
Adaptation and Mitigation

In this section we would like to ask you about your perspective concerning aspects of adaptation and mitigation. The selection of the central value of 4 assigns equal weight to both choices.

29. The best approach to resolving the problems related to climate change is

mitigation 1 2 3 4 5 6 7 adaptation

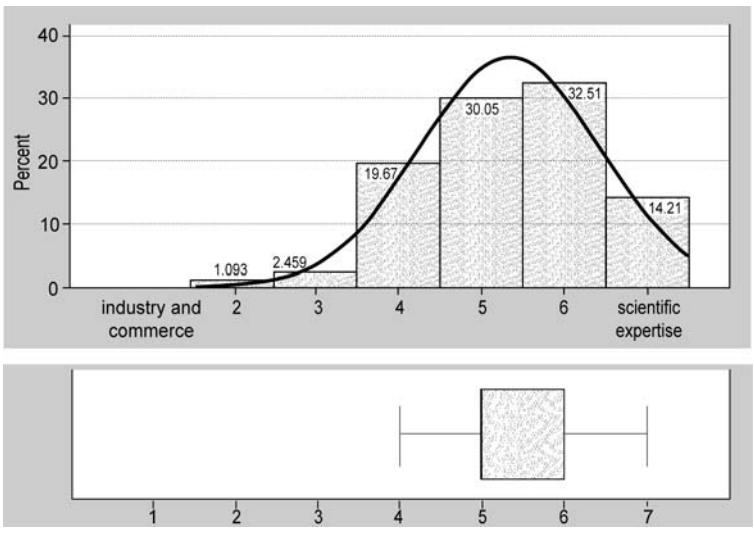
Variable	Obs	Mean	Std. Dev.	Min	Max
Q69	**366**	**3.691257**	**1. 524334**	**1**	**7**



30. In making policy decisions about *adaptation* to climate change, priority should be given to

opinions of industry and commerce 1 2 3 4 5 6 7 scientific expertise

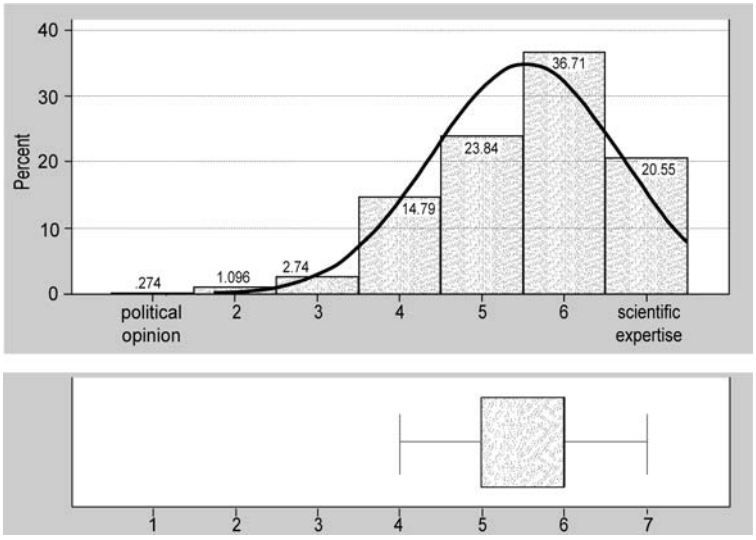
Variable	Obs	Mean	Std. Dev.	Min	Max
Q70	**366**	**5.330601**	**1. 086653**	**2**	**7**



31. In making policy decisions about *adaptation* to climate change, priority should be given to

political opinion 1 2 3 4 5 6 7 scientific expertise

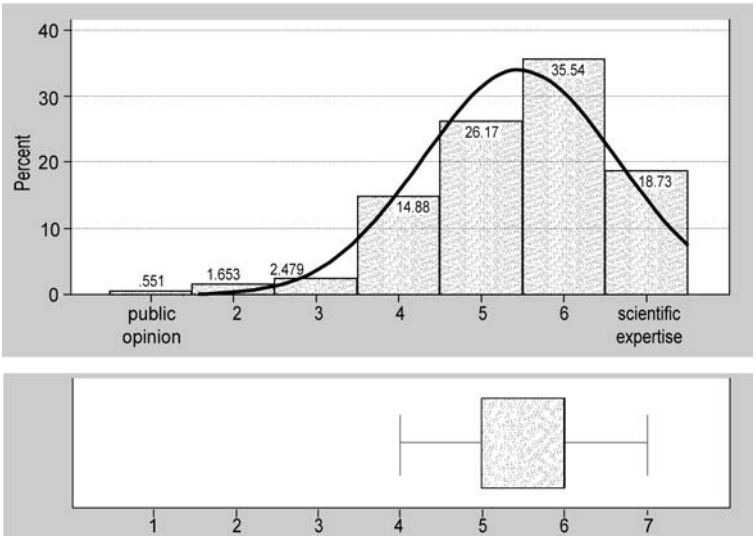
Variable	Obs	Mean	Std. Dev.	Min	Max
Q71	**365**	**5.531507**	**1. 14461**	**1**	**7**



32. In making policy decisions about *adaptation* to climate change, priority should be give to

public opinion 1 2 3 4 5 6 7 scientific expertise

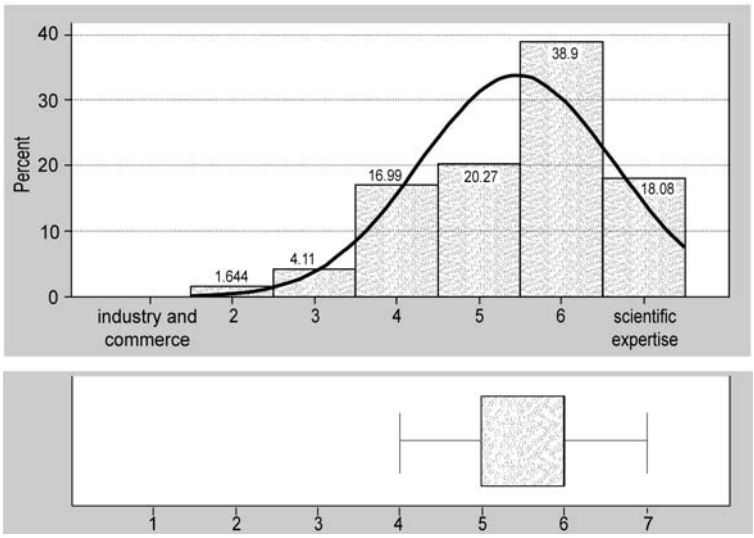
Variable	Obs	Mean	Std. Dev.	Min	Max
Q72	**363**	**5.460055**	**1. 175452**	**1**	**7**



33. In making policy decisions about *mitigation* to climate change, priority should be given to

opinions of industry and commerce 1 2 3 4 5 6 7 scientific expertise

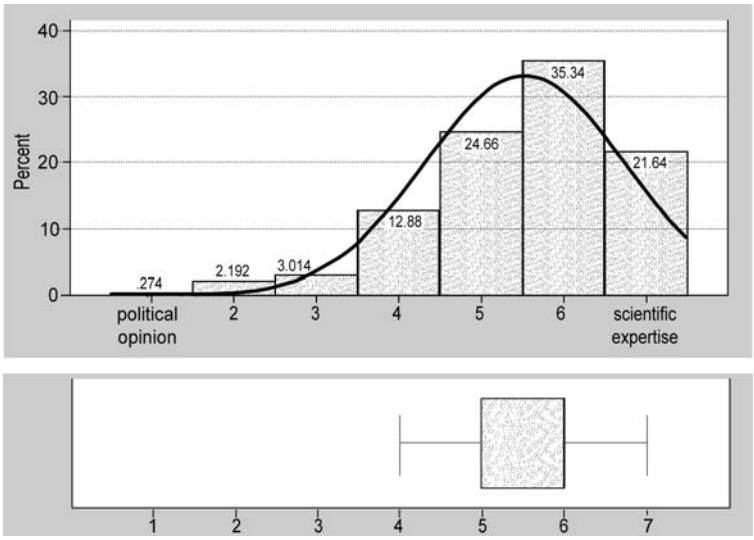
Variable	Obs	Mean	Std. Dev.	Min	Max
Q73	**365**	**5.449315**	**1. 18172**	**2**	**7**



34. In making policy decisions about *mitigation* to climate change, priority should be given

political opinion 1 2 3 4 5 6 7 scientific expertise

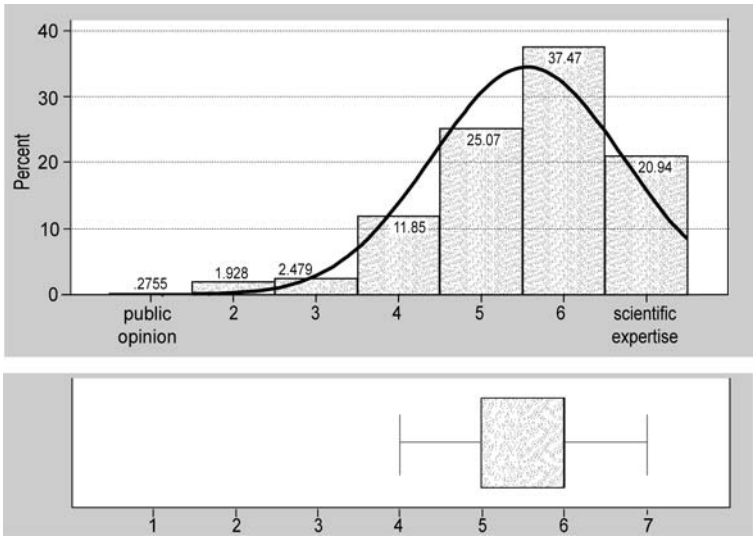
Variable	Obs	Mean	Std. Dev.	Min	Max
Q74	**365**	**5.520548**	**1. 201071**	**1**	**7**



35. In making policy decisions about *mitigation* to climate change, priority should be given to

public opinion 1 2 3 4 5 6 7 scientific expertise

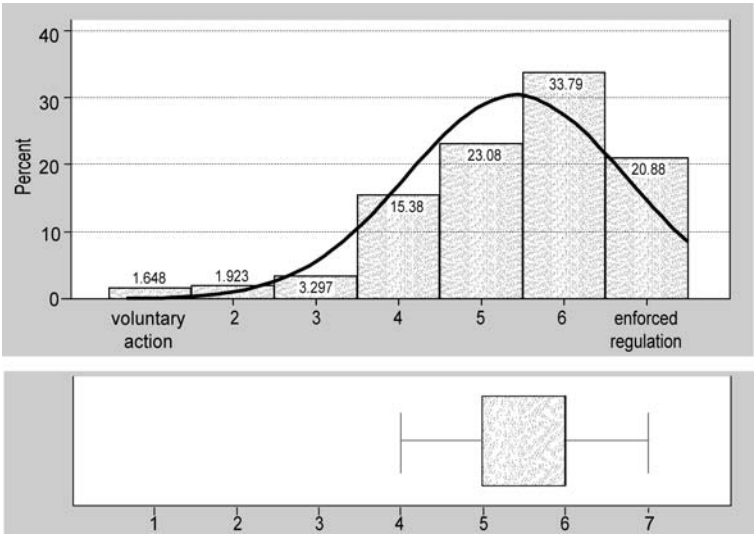
Variable	Obs	Mean	Std. Dev.	Min	Max
Q75	**363**	**5.556474**	**1. 158195**	**1**	**7**



36. The best approach to the mitigation of anthropogenic climate change would be based on

voluntary action 1 2 3 4 5 6 7 enforced regulation

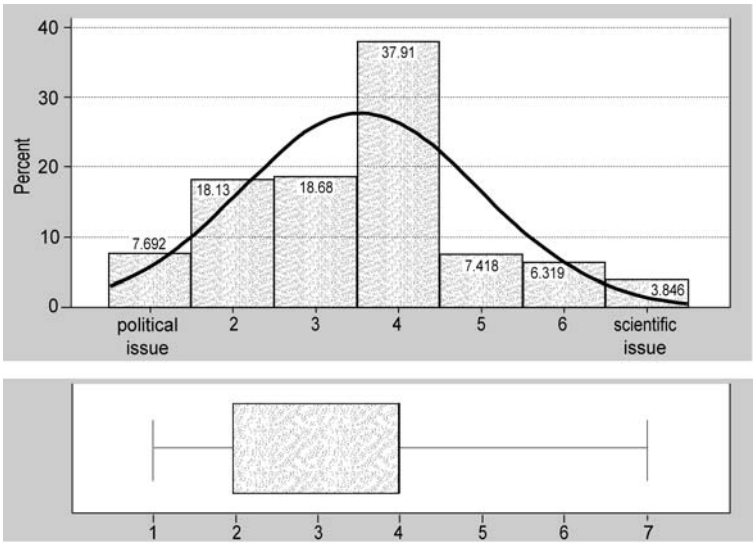
Variable	Obs	Mean	Std. Dev.	Min	Max
Q76	**364**	**5.412088**	**1. 315501**	**1**	**7**



37. Given our current state on knowledge, climate change is now mostly a

political issues 1 2 3 4 5 6 7 scientific issue

Variable	Obs	Mean	Std. Dev.	Min	Max
Q77	**364**	**3.535714**	**1. 437912**	**1**	**7**



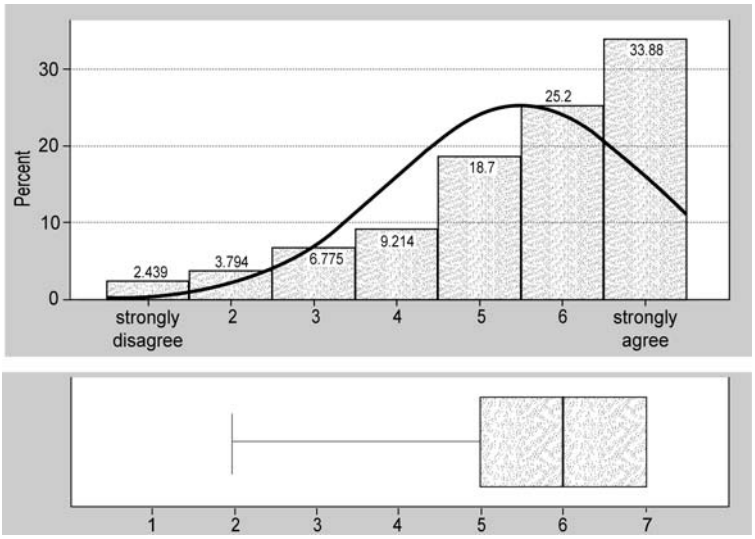
The IPCC

In this section we would like to ask your opinion concerning aspects of the IPCC.

38. The IPCC reports are of great use to the advancement of climate science.

strongly disagree 1 2 3 4 5 6 7 strongly agree

Variable	Obs	Mean	Std. Dev.	Min	Max
Q78	**369**	**5.490515**	**1. 570981**	**1**	**7**



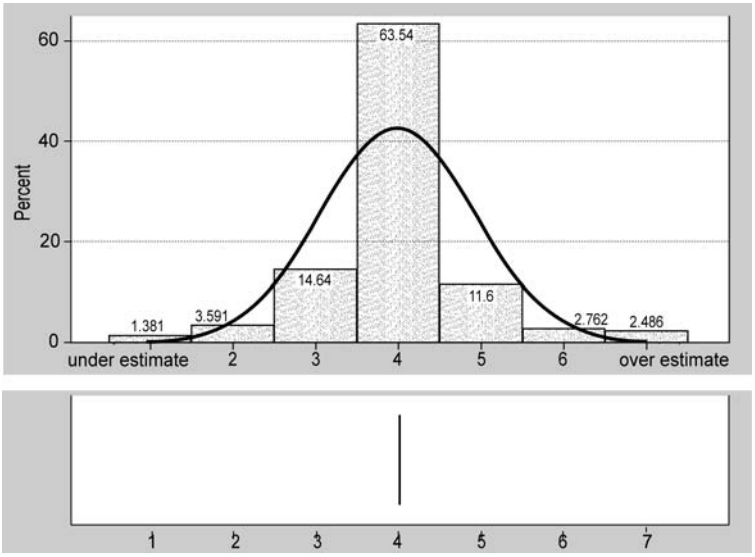
39. The IPCC reports tend to under estimate, accurately reflect (a value of 4) or over estimate the magnitude of the impacts resulting from changes in:

under estimate 1 2 3 4 5 6 7 over estimate

39a. temperature

under estimate 1 2 3 4 5 6 7 over estimate

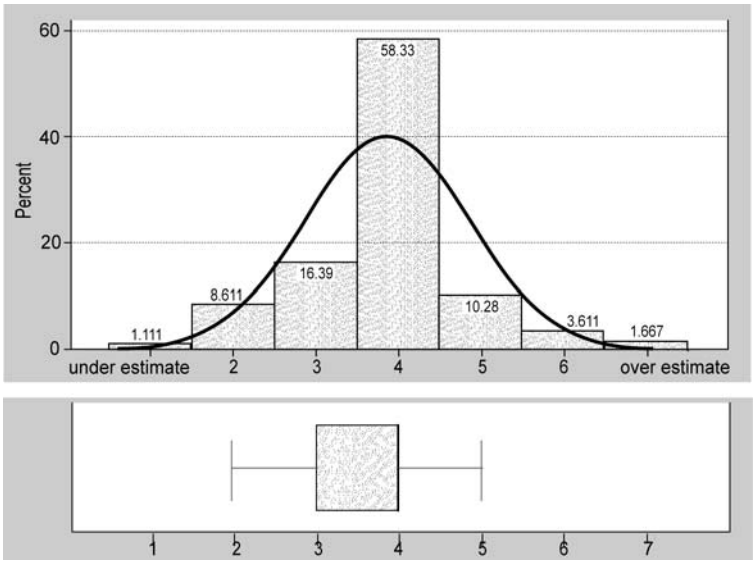
Variable	Obs	Mean	Std. Dev.	Min	Max
Q79	**362**	**3.986188**	**. 931045**	**1**	**7**



39b. precipitation

under estimate 1 2 3 4 5 6 7 over estimate

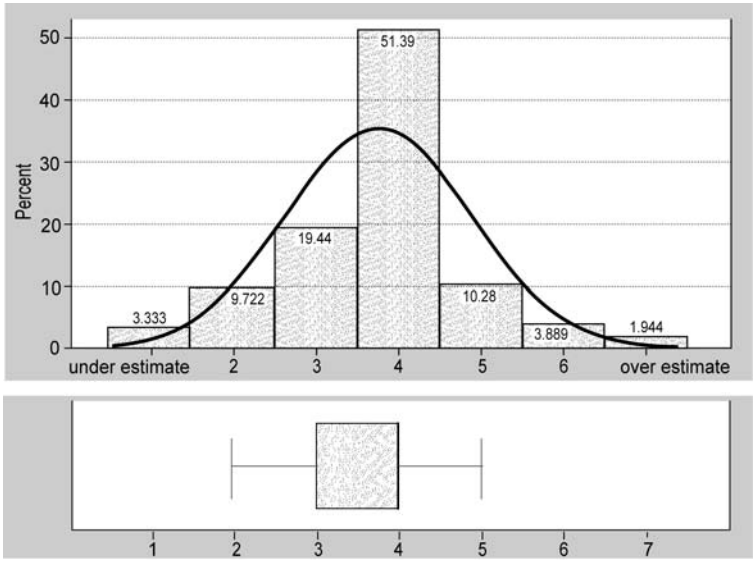
Variable	Obs	Mean	Std. Dev.	Min	Max
Q80	**360**	**3.855556**	**. 9936973**	**1**	**7**



39c. sea level rise

under estimate 1 2 3 4 5 6 7 over estimate

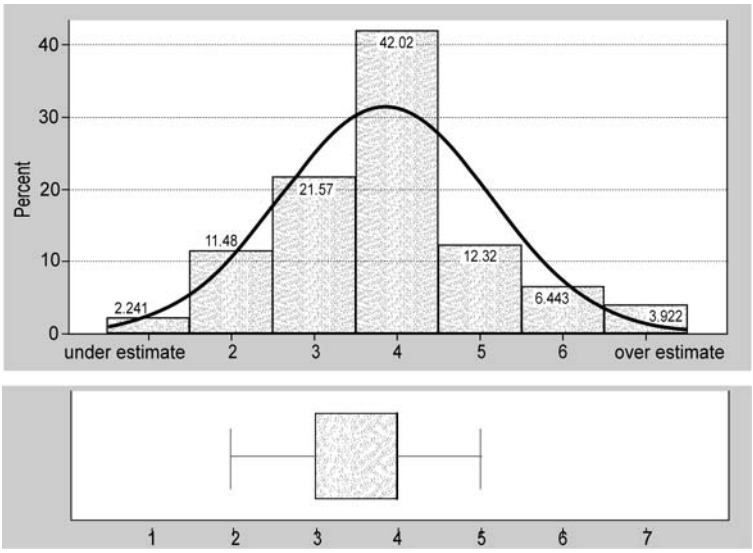
Variable	Obs	Mean	Std. Dev.	Min	Max
Q81	**360**	**3.75**	**1. 121454**	**1**	**7**



39d. extreme events

under estimate 1 2 3 4 5 6 7 over estimate

Variable	Obs	Mean	Std. Dev.	Min	Max
Q82	**357**	**3.857143**	**1. 262816**	**1**	**7**



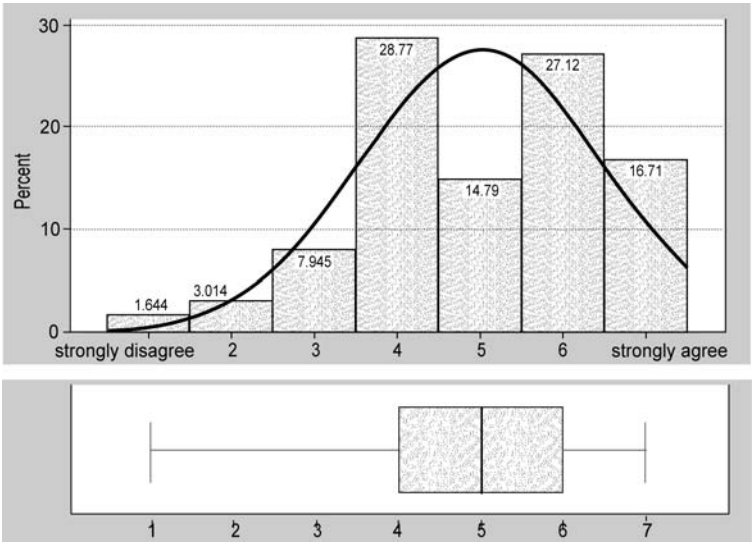
40. The IPCC reports accurately reflect the consensus of scientific thought pertaining to

strongly disagree 1 2 3 4 5 6 7 strongly agree

40a. temperature

strongly disagree 1 2 3 4 5 6 7 strongly agree

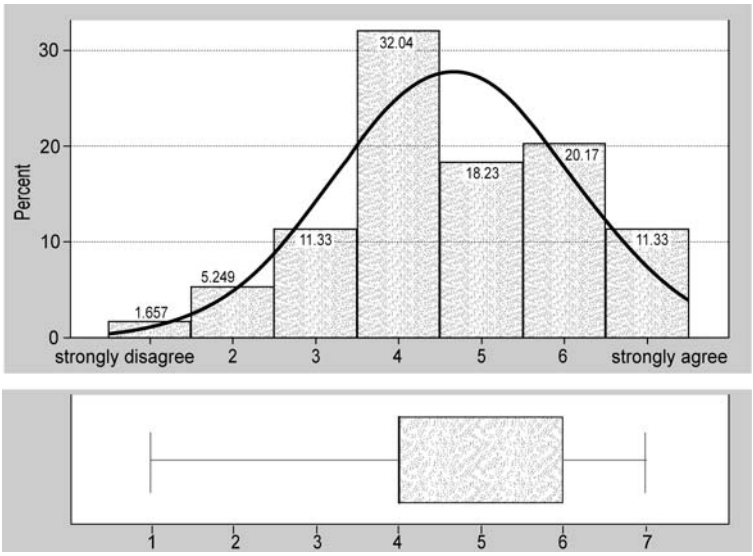
Variable	Obs	Mean	Std. Dev.	Min	Max
Q83	**365**	**5.00274**	**1.444007**	**1**	**7**



40b. precipitation

strongly disagree 1 2 3 4 5 6 7 strongly agree

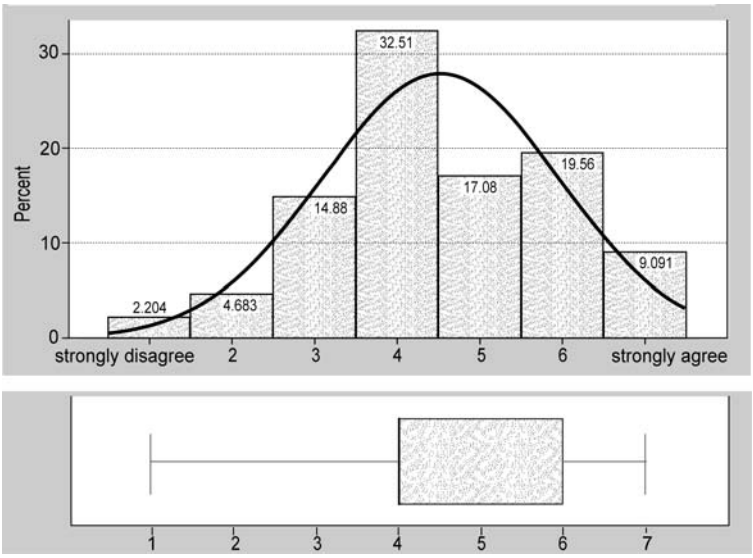
Variable	Obs	Mean	Std. Dev.	Min	Max
Q84	**362**	**4.657459**	**1.433208**	**1**	**7**



40c. sea level rise

strongly disagree 1 2 3 4 5 6 7 strongly agree

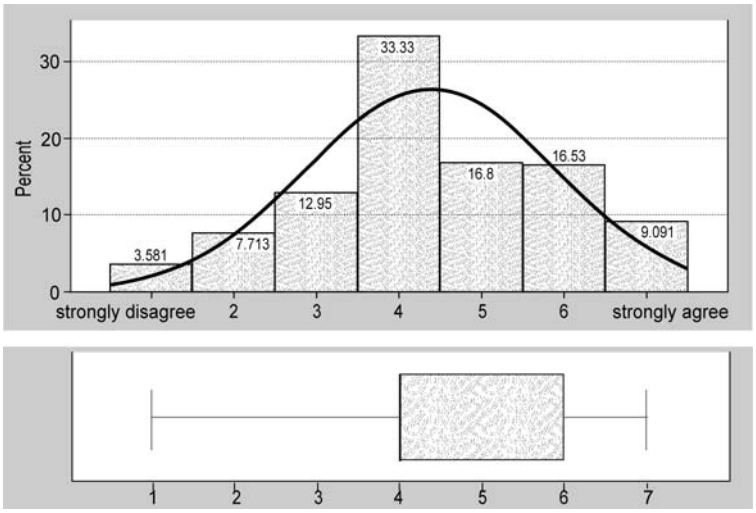
Variable	Obs	Mean	Std. Dev.	Min	Max
Q85	**363**	**4.526171**	**1.426371**	**1**	**7**



40d. extreme events

strongly disagree 1 2 3 4 5 6 7 strongly agree

Variable	Obs	Mean	Std. Dev.	Min	Max
Q86	**363**	**4.380165**	**1.506466**	**1**	**7**



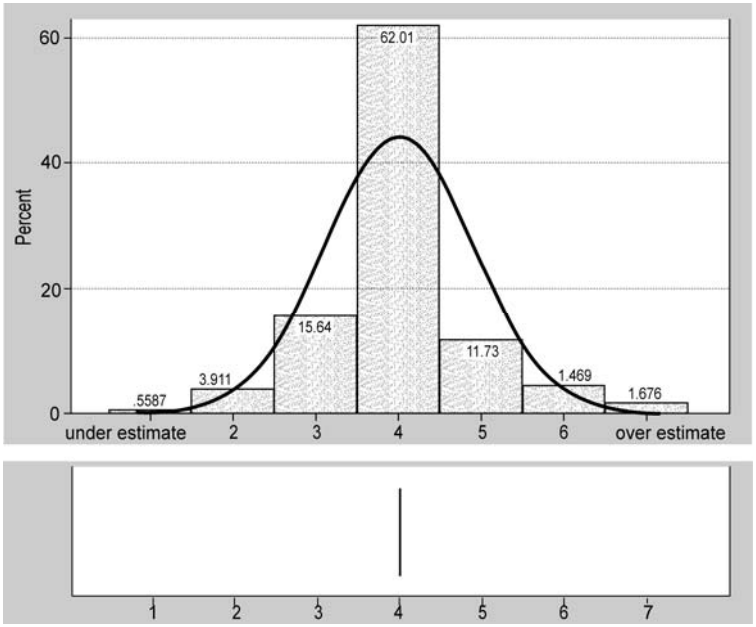
41. The IPCC reports tend to under estimate, accurately reflect (a value of 4) or over estimate the magnitude of future changes to:

under estimate 1 2 3 4 5 6 7 over estimate

41a. temperature

under estimate 1 2 3 4 5 6 7 over estimate

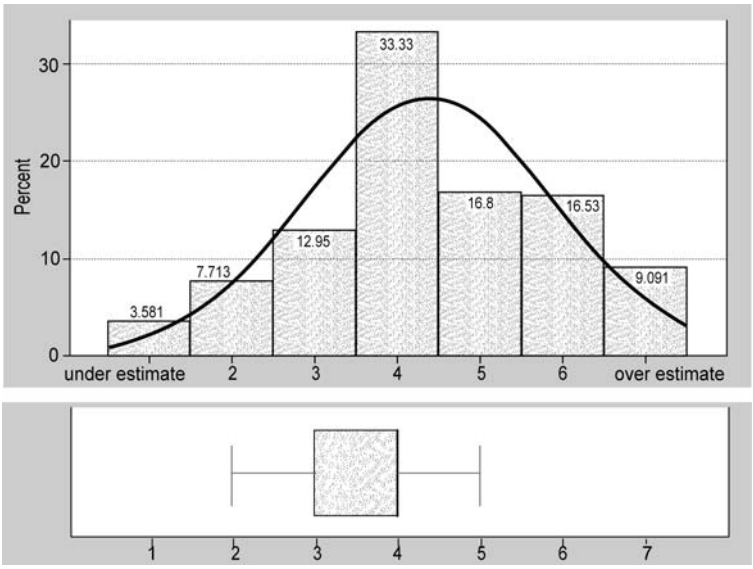
Variable	Obs	Mean	Std. Dev.	Min	Max
Q87	**358**	**4.005587**	**.9012733**	**1**	**7**



41b. precipitation

under estimate 1 2 3 4 5 6 7 over estimate

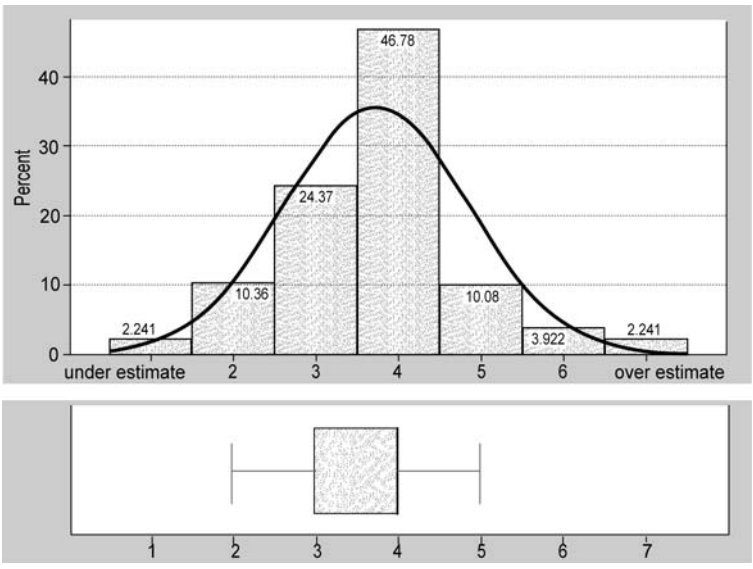
Variable	Obs	Mean	Std. Dev.	Min	Max
Q88	**355**	**3.83662**	**.9778969**	**1**	**7**



41c. sea level rise

under estimate 1 2 3 4 5 6 7 over estimate

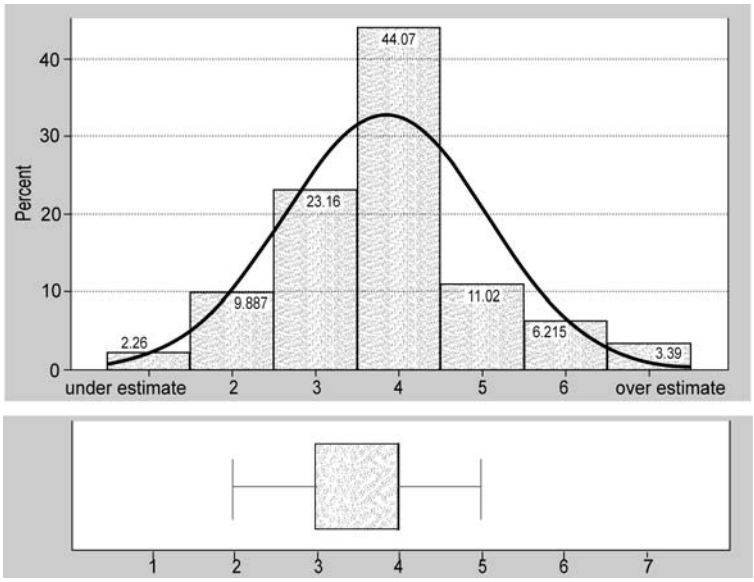
Variable	Obs	Mean	Std. Dev.	Min	Max
Q89	**357**	**3.728291**	**1.117587**	**1**	**7**



41d. extreme events

under estimate 1 2 3 4 5 6 7 over estimate

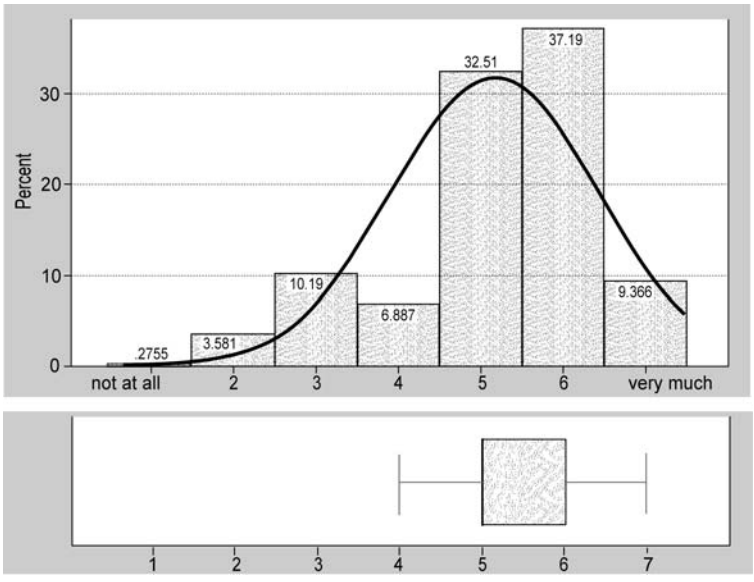
Variable	Obs	Mean	Std. Dev.	Min	Max
Q90	**354**	**3.838983**	**1.213501**	**1**	**7**



42. How much influence do you think the IPCC has over what areas come to be considered as worthy research topics?

not at all 1 2 3 4 5 6 7 very much

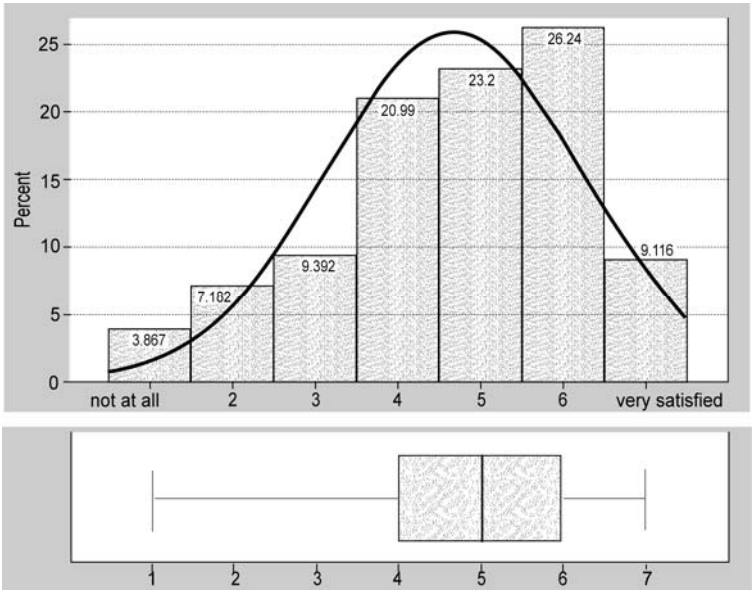
Variable	Obs	Mean	Std. Dev.	Min	Max
Q91	**363**	**5.168044**	**1.251242**	**1**	**7**



43. How satisfied are you with the process by which the IPCC Summary For Policy Makers reports are produced?

not at all 1 2 3 4 5 6 7 very satisfied

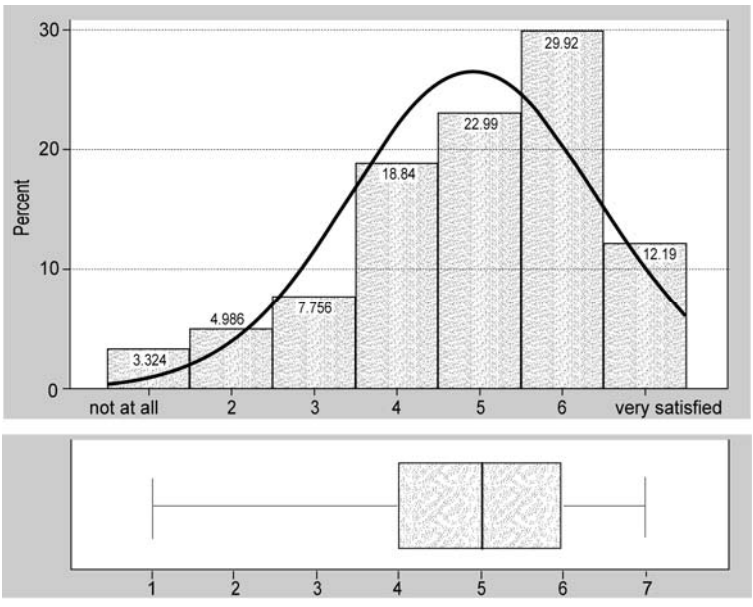
Variable	Obs	Mean	Std. Dev.	Min	Max
Q92	**362**	**4.676796**	**1.542729**	**1**	**7**



44. How satisfied are you with the IPCC review process?

not at all 1 2 3 4 5 6 7 very satisfied

Variable	Obs	Mean	Std. Dev.	Min	Max
Q93	**361**	**4.916898**	**1.50509**	**1**	**7**



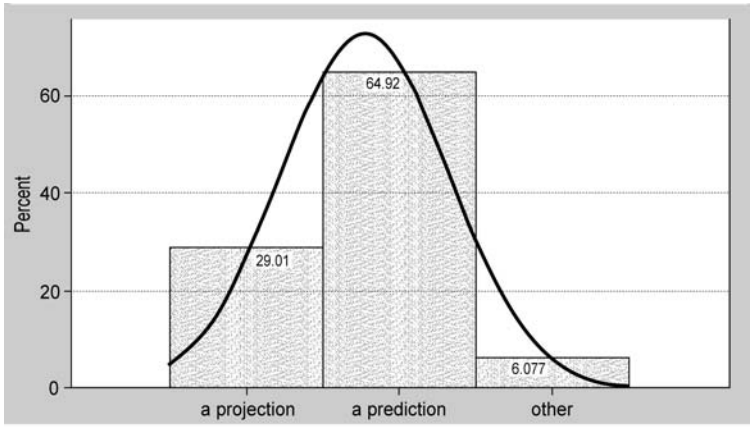
The Communication of Climate Science

In this section we would like to ask you about the communication of the findings of climate science to the audience extending beyond climate scientists.

Often in the interpretation of scientific knowledge by a non-scientific audience there is the potential for the misunderstanding of terms. This has been the case with the use of the terms projection and prediction. For the sake of clarification:

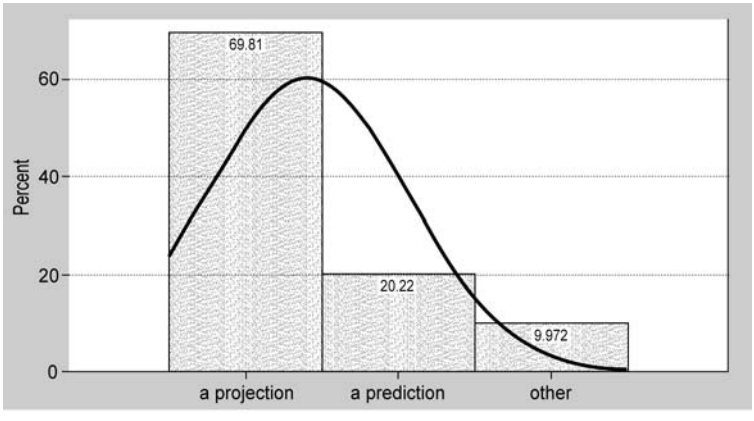
45. A description of the most probable outcome best defines

- a projection
- a prediction
- other



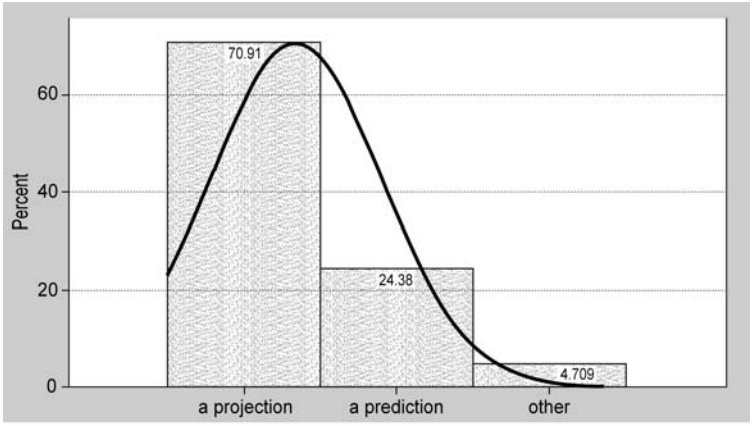
46. A description of a possible outcome best defines a

- a projection
- a prediction
- other



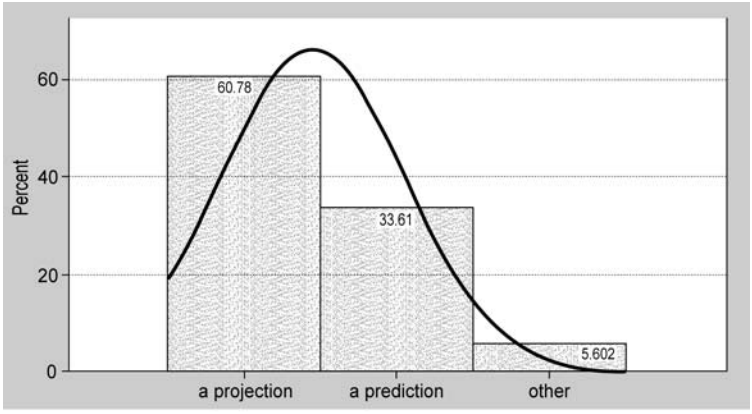
47. From the output of *global* climate models, climate scientists are more inclined to make

- a projection
- a prediction
- other



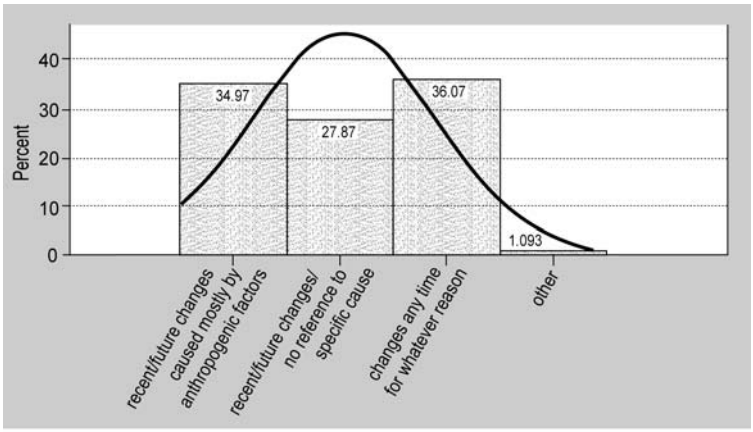
48. From the output of *regional* climate models, climate scientists are more inclined to make

- a projection
- a prediction
- other



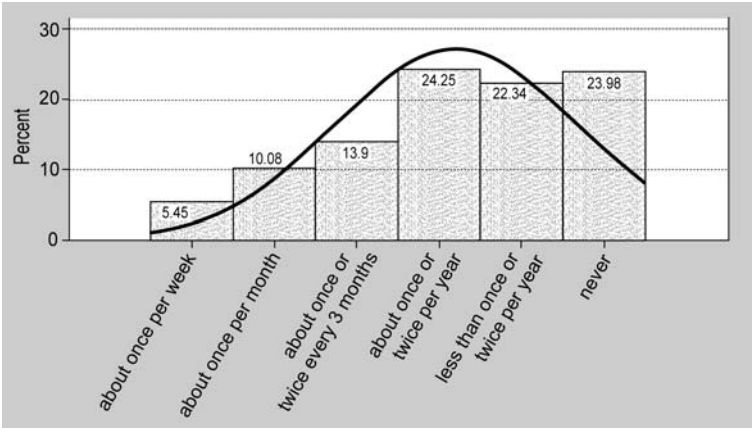
49. For you, in daily use, the term climate change would typically be understood as referring to:

- recent and future changes caused mostly by anthropogenic factors
- recent and future changes without reference to a specific cause
- changes in climate at any time for whatever reason
- other



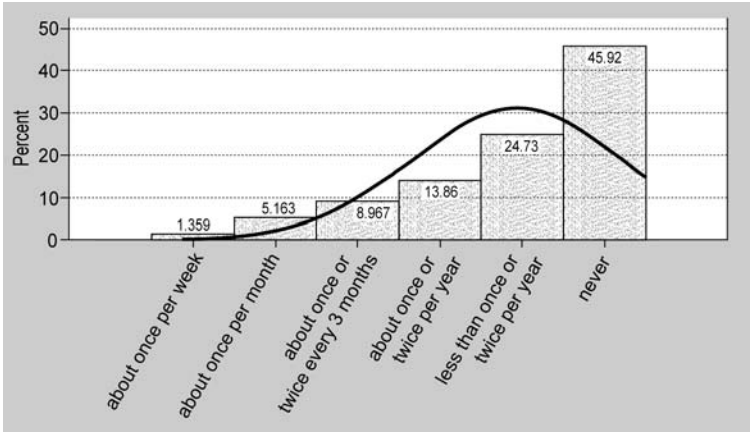
50. Approximately how often are you contacted by the *media* for information pertaining to climate change?

- about once per week
- about once per month
- about once or twice every three months
- about once or twice per year
- never



51. Approximately how often are you contacted by those people who make *policy* decisions for information pertaining to climate change?

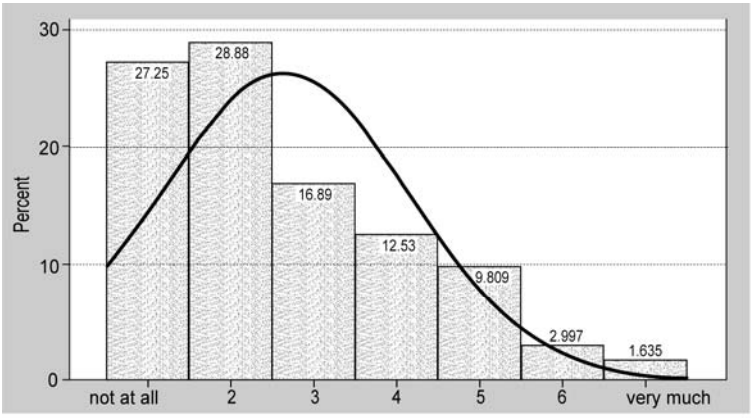
- about once per week
- about once per month
- about once or twice every three months
- about once or twice per year
- never

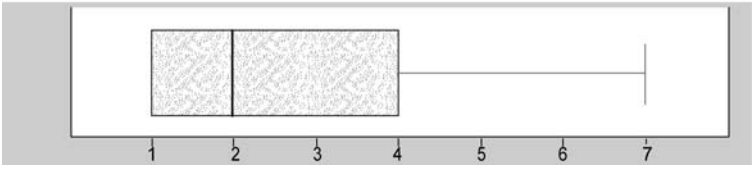


52. Some scientists present extreme accounts of catastrophic impacts related to climate change in a popular format with the claim that it is their task to alert the public. How much do you agree with this practice?

not at all 1 2 3 4 5 6 7 very much

Variable	Obs	Mean	Std. Dev.	Min	Max
Q101	**367**	**2.643052**	**1.50509**	**1**	**7**

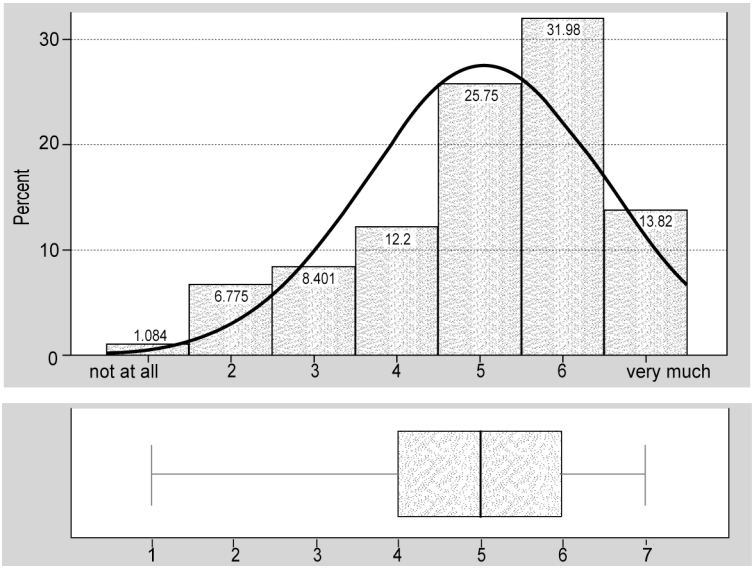




53. How much do you think climate scientists should be directly involved in alerting the general public to the possible *human* consequences arising from changes in the climate?

not at all 1 2 3 4 5 6 7 very much

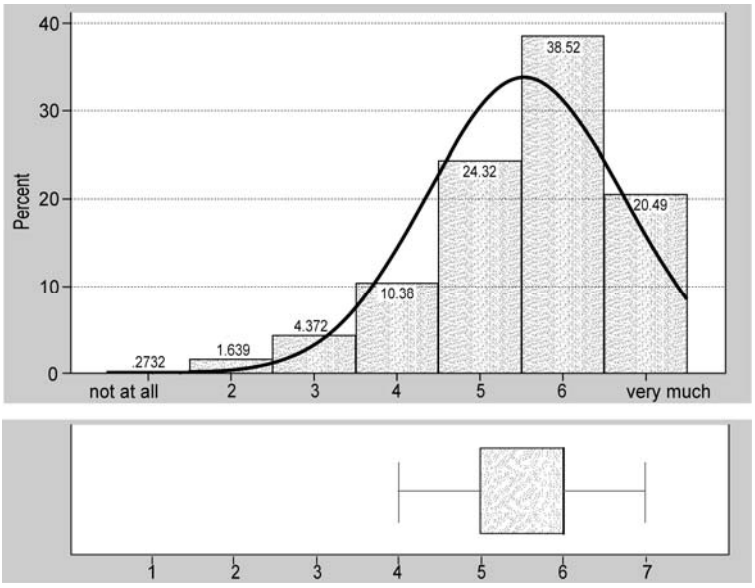
Variable	Obs	Mean	Std. Dev.	Min	Max
Q102	**369**	**5.059621**	**1.454648**	**1**	**7**



54. How much do you think climate scientists should be directly involved in the provision of climate change information about the impacts to the *natural world* by climate change to the public.

not at all 1 2 3 4 5 6 7 very much

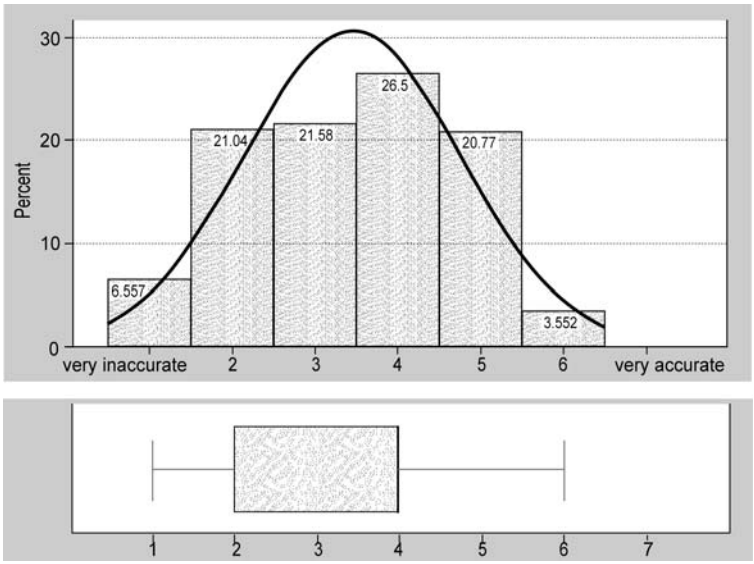
Variable	Obs	Mean	Std. Dev.	Min	Max
Q103	**366**	**5.543716**	**1.454648**	**1**	**7**



55. Comments about climate change made by environmental activist groups are generally

very inaccurate 1 2 3 4 5 6 7 very accurate

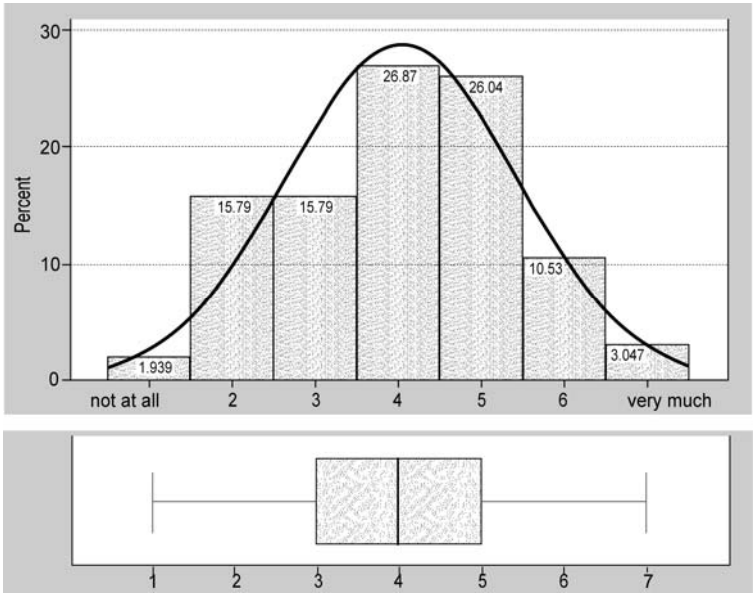
Variable	Obs	Mean	Std. Dev.	Min	Max
Q104	**366**	**3.445355**	**1.30164**	**1**	**6**



56. To what extent are those scientists claiming that climate change is a hoax the people most likely to be listened to by those involved in making *policy* decisions?

not at all 1 2 3 4 5 6 7 very much

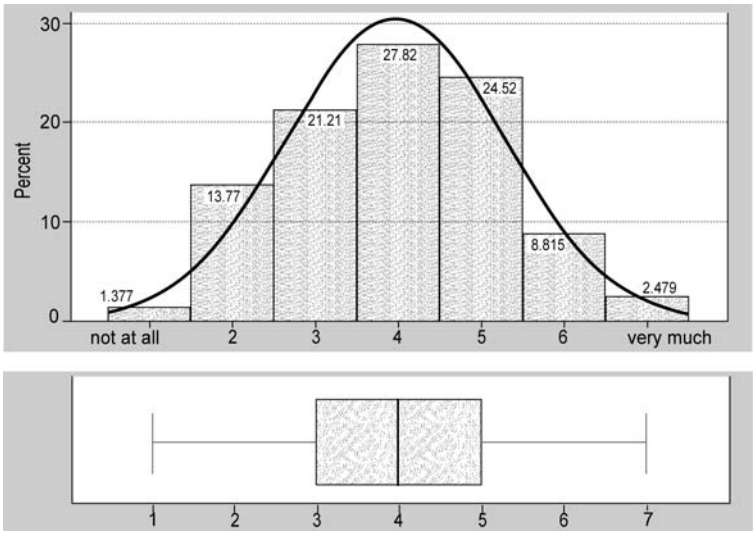
Variable	Obs	Mean	Std. Dev.	Min	Max
Q105	**361**	**4.030471**	**1.387108**	**1**	**7**



57. To what extent are those scientists who present the extreme accounts of catastrophic impacts and worst case scenarios related to climate change the people most likely to be listened to by those people involved in *policy* making?

not at all 1 2 3 4 5 6 7 very much

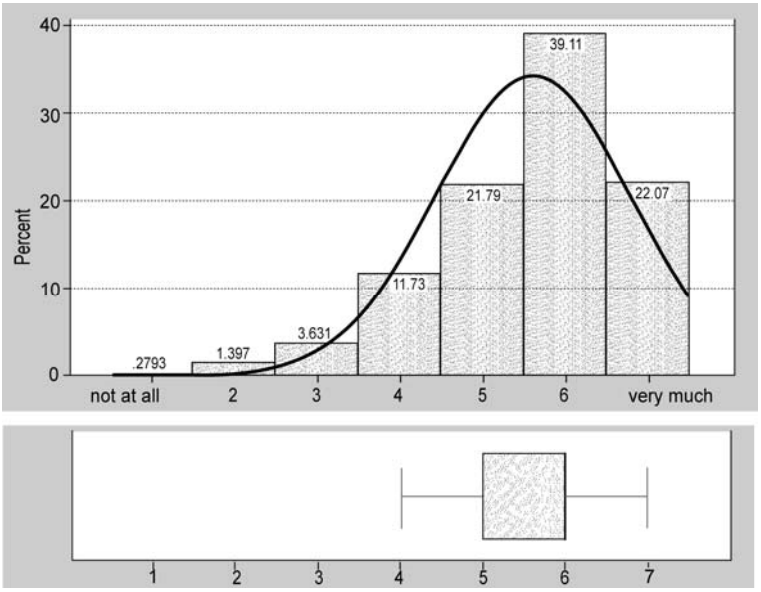
Variable	Obs	Mean	Std. Dev.	Min	Max
Q106	**363**	**3.966942**	**1.308286**	**1**	**7**



58. To what extent are those scientists who present the extreme accounts of catastrophic impacts and worst case scenarios related to climate change the people most likely to be listened to by *journalists*?

not at all 1 2 3 4 5 6 7 very much

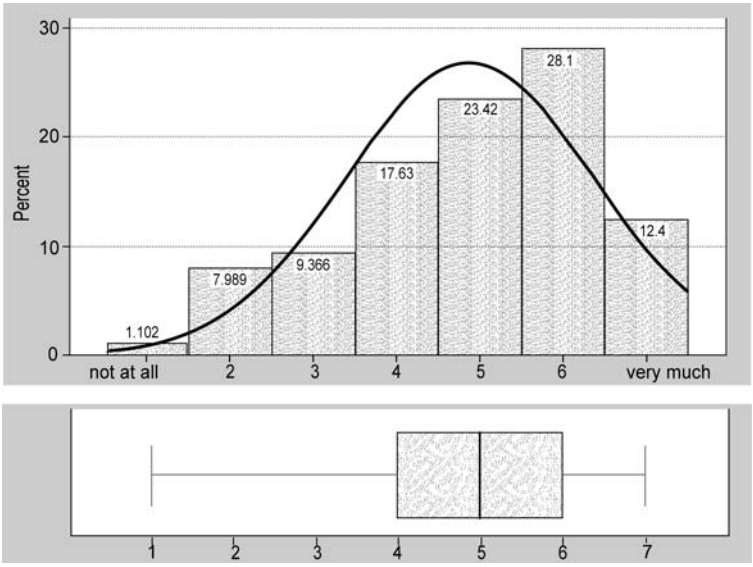
Variable	Obs	Mean	Std. Dev.	Min	Max
Q107	**358**	**5.589385**	**1.167534**	**1**	**7**



59. To what extent are those scientists claiming that climate change is a hoax the people most likely to be sought out by *journalist*?

not at all 1 2 3 4 5 6 7 very much

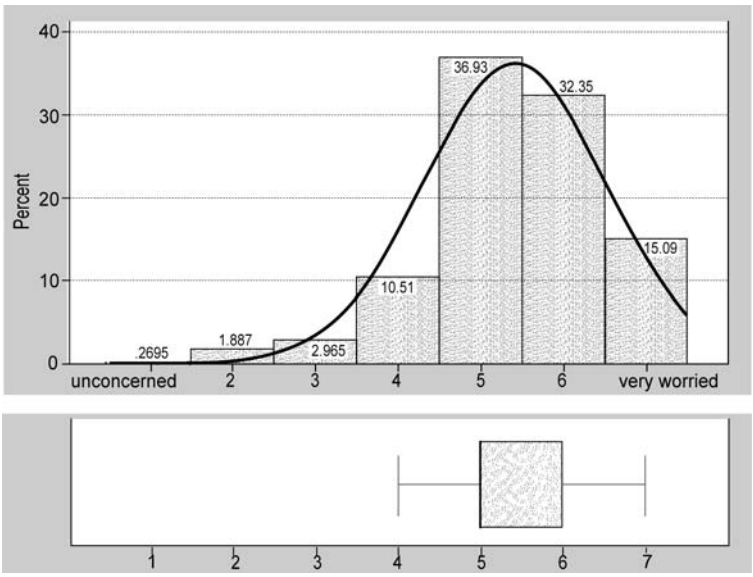
Variable	Obs	Mean	Std. Dev.	Min	Max
Q108	**363**	**4.881543**	**1.488358**	**1**	**7**



60. Over the issue of climate change, the general public should be told to be

unconcerned 1 2 3 4 5 6 7 very worried

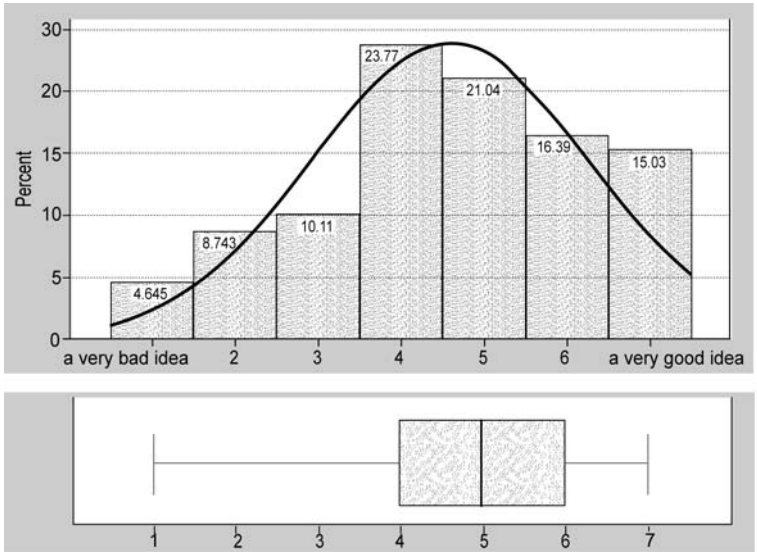
Variable	Obs	Mean	Std. Dev.	Min	Max
Q109	**371**	**5.393531**	**1.101037**	**1**	**7**



61. Making discussions of climate science open to potentially everyone through the use of blogs on the w.w.w is

a very bad idea 1 2 3 4 5 6 7 a very good idea

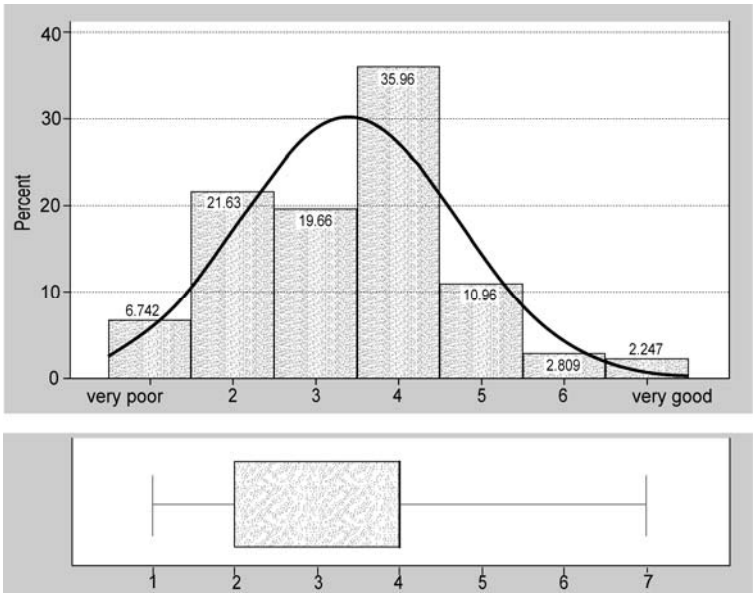
Variable	Obs	Mean	Std. Dev.	Min	Max
Q110	**366**	**4.581967**	**1.667613**	**1**	**7**



62. On blogs on the w.w.w., the quality of the scientific discussion of climate change is

very poor 1 2 3 4 5 6 7 very good

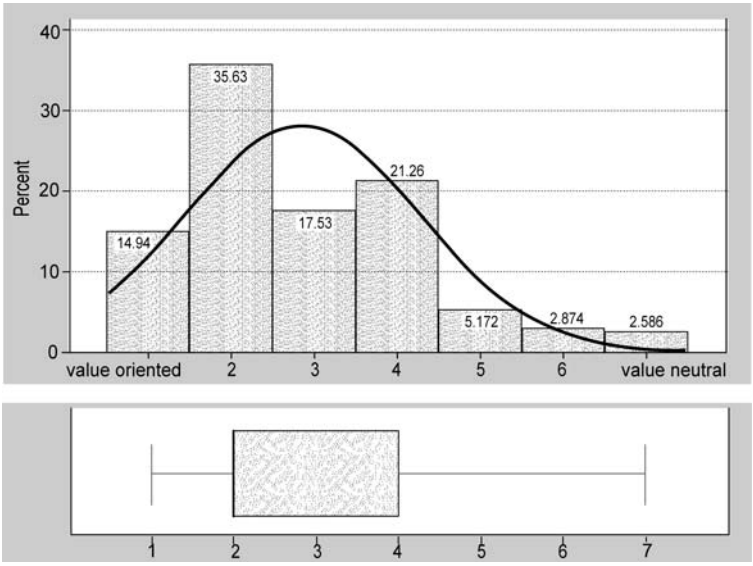
Variable	Obs	Mean	Std. Dev.	Min	Max
Q111	**356**	**3.401685**	**1.31894**	**1**	**7**



63. In general, the quality of the material on blogs, in comparison to peer reviewed articles in journals, could be described as being mostly

value oriented 1 2 3 4 5 6 7 value neutral

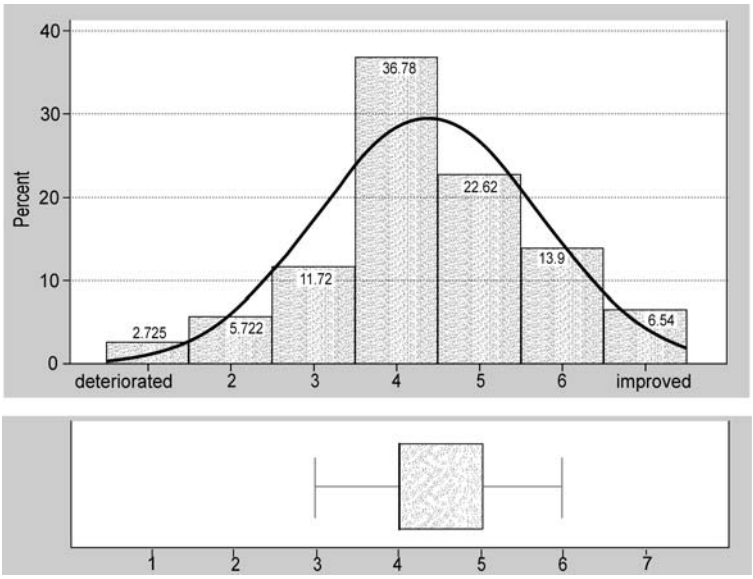
Variable	Obs	Mean	Std. Dev.	Min	Max
Q112	**348**	**2.850575**	**1.424599**	**1**	**7**



64. Over the years, the quality of published peer reviewed papers in climate science has generally

deteriorated 1 2 3 4 5 6 7 improved

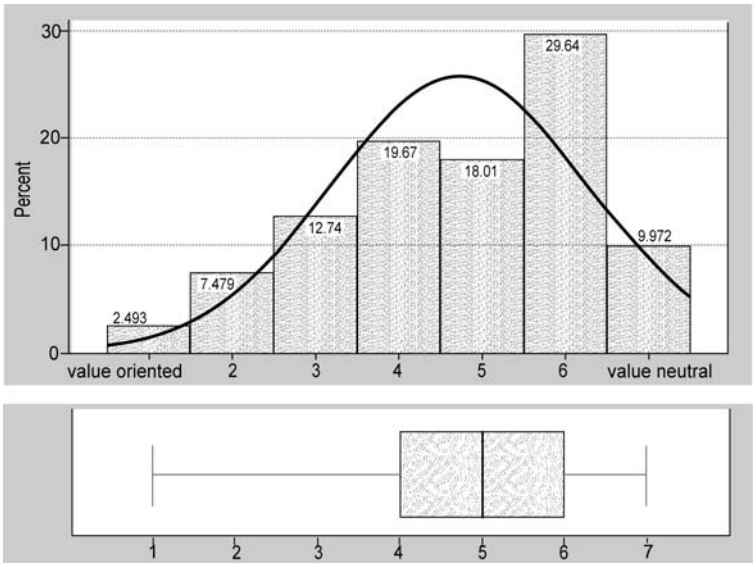
Variable	Obs	Mean	Std. Dev.	Min	Max
Q113	**367**	**4.386921**	**1.347997**	**1**	**7**



65. In general, the current peer review process in climate journals could be described as

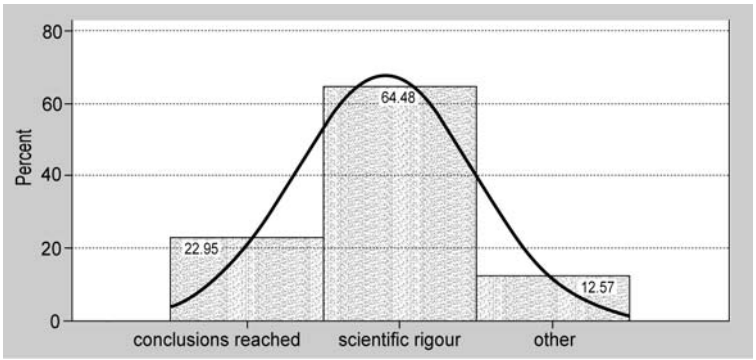
value oriented 1 2 3 4 5 6 7 value neutral

Variable	Obs	Mean	Std. Dev.	Min	Max
Q114	**361**	**4.720222**	**1.549859**	**1**	**7**



66. In your opinion, in determining what currently gets accepted in peer reviewed climate science publications, what plays the most significant role in the selection procedure?

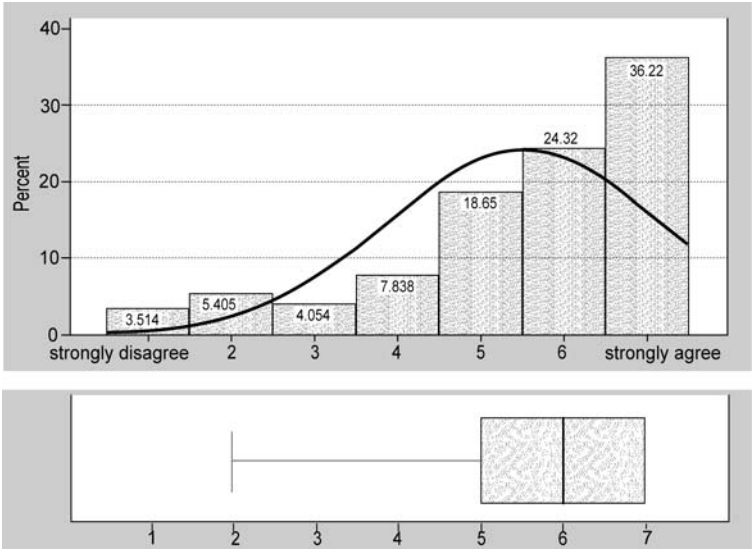
- conclusions reached
- scientific rigour
- other



67. There is a great need for immediate policy decisions for immediate action to mitigate climate change.

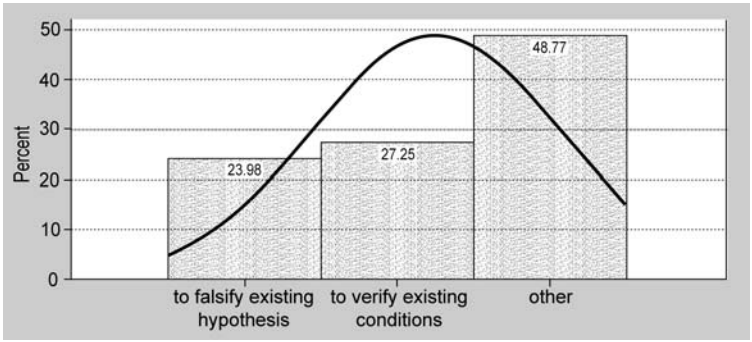
strongly disagree 1 2 3 4 5 6 7 strongly agree

Variable	Obs	Mean	Std. Dev.	Min	Max
Q116	**370**	**5.505405**	**1.653189**	**1**	**7**



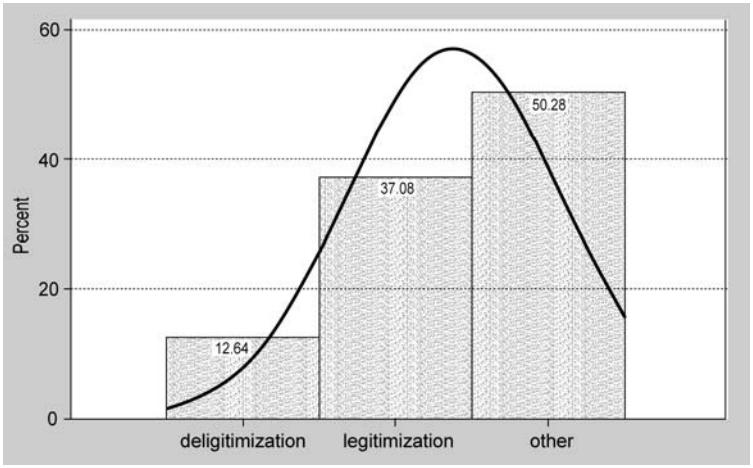
68. Concerning what science is in general, what would you say is its main activity?

- to falsify existing hypothesis
- to verify existing conditions
- other



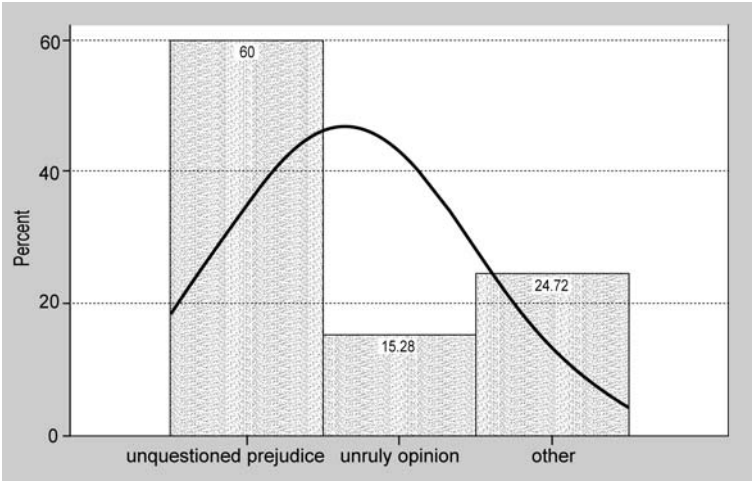
69. Concerning science in general, the role of science tends towards

- deligitimization of existing 'facts'
- legitimization of existing 'facts'
- other



70. The opposite of science is

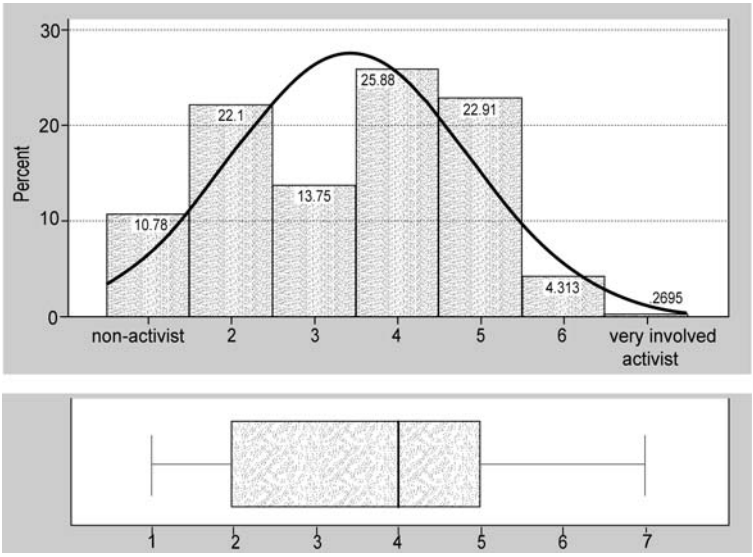
- unquestioned prejudice
- unruly opinion
- other



71. If you were to rate yourself in terms of being an environmental activist, where would you place yourself on the following scale?

non-activist 1 2 3 4 5 6 7 very involved activist

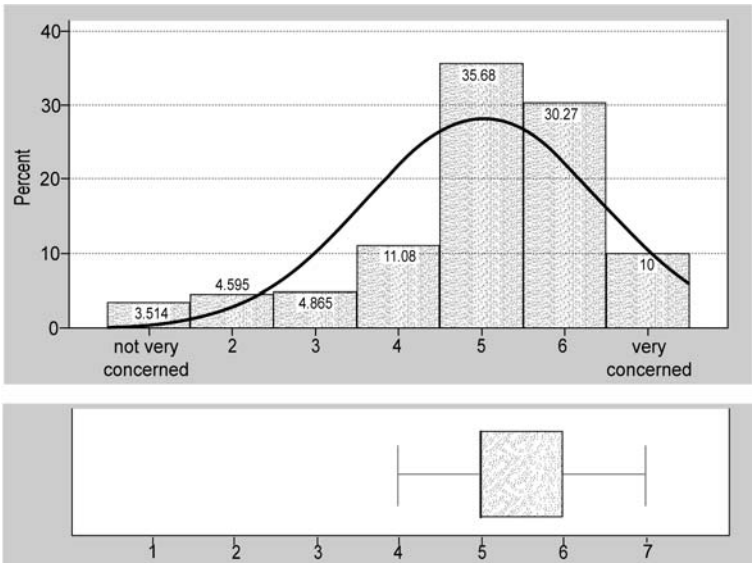
Variable	Obs	Mean	Std. Dev.	Min	Max
Q120	**371**	**3.420485**	**1.444846**	**1**	**7**



72. If you were to rate yourself in terms of being concerned about general environmental conditions, including climate change, *where you live*, where would you place yourself on the following scale?

not very concerned 1 2 3 4 5 6 7 very concerned

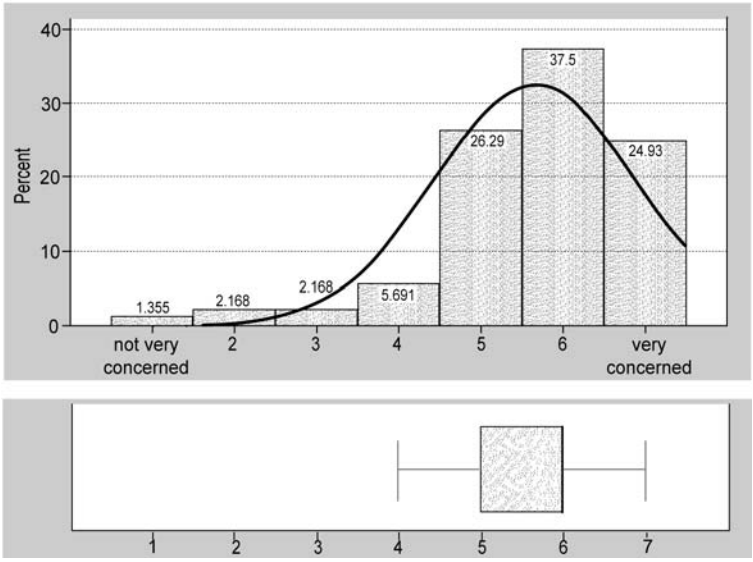
Variable	Obs	Mean	Std. Dev.	Min	Max
Q121	**370**	**5.016216**	**1.410282**	**1**	**7**



73. If you were to rate yourself in terms of being concerned about general *global* environmental conditions, including climate change, where would you place yourself on the following scale

not very concerned 1 2 3 4 5 6 7 very concerned

Variable	Obs	Mean	Std. Dev.	Min	Max
Q122	**369**	**5.653117**	**1.226517**	**1**	**7**



Comments

All comments are unedited and presented verbatim

74. What people perceive to be the most pressing issue of the time is often shaped by current events. We would like to ask you what you think is the most pressing issue facing humanity today.

1. water - food - drought - sea level rise
2. Poverty.
3. Food, population, environment.
4. Access to water
5. War, famine, poverty
6. An economical system that aims at maximising (short term) profit on the one hand (inhibits mitigation), and social injustice and poverty on the other hand (inhibits adaptation).
7. Water resources
8. Hunger and migration due to environmental changes and war.
    a. climate change in developing countries
9. ecosystem loss
10. Poverty and quality of education
11. fighting social injustice
12. Lack of education accompanied by growth of religion.
13. climate change
14. Starvation
15. Degradation of the environment, including that due to climate change.
16. energy sources
17. Access to clean drinking water.
18. Overpopulation
19. Population growth

20. environmental pollution

21. poverty in developing countries

22. Reliance on fossil fuels and other un-renewable sources of energy.

23. global poverty in the face of anthropogenic climate change

24. Overpopulation. Exploitation of the third world by richer countries/corporations. Food scarcity. Climate change. (In that order.)

25. war

26. Degradation of the environment, including climate change

27. Moisture deficits forced by climate change

28. climate change

29. water

30. a more just distribution of living conditions with the limitations the global environmental
31. crisis sets

32. Overpopulation

33. energy

34. Energy availability. Humanity use natural resources, including fossil fuel, because it needs to maintain the human beings life. Many clean and recycling technologies are available but the more resource-independent technology is the more energy

35. Access to resources.

36. The problem of overpopulation.

37. The non-linear behavior of the climate system and its relation to the rapid CO2 increase.

38. Very biased globalization (good for the richest, bad for the poor people), artificially modified food, the US politics, lack of drinkable water.

39. Reduction of greenhouse gas emissions.

40. Food and water (which will be even more of an issue with climate change - whatever the change, because large numbers of humans don't react to change well).

41. population pressure and limited resources
42. Increasing global population.
43. POVERTY
44. demographical trend
45. Energy
46. decline of raw materials
47. social behavior
48. Widespread lack of freedom in regards to personal, political and economic life
49. over-exploitation of environmental resources
50. Global environmental degradation
51. Over-population of the world, especially in the developing countries.
52. population growth, global climate change, excessive consumption, degradation of terrestrial and marine resources, overfishing
53. Overpopulation
54. over-population
55. The over use of natural resources
56. Poverty and unequal distribution of goods
57. north-south economic differences
58. Peace
59. aging societies
60. global food crisis / over-population of regions of the world unable to feed/sustain themselves
61. extreme events, hunger, dryness, floods etc.
62. Famine, booming demography, food production reaching their upper limit, conflict around the control of water and energy resources
63. (problems due to) use of fossil fuels

64. global food shortage

65. Climate change (anthrop.) because of our moral duty to future generations

66. Poverty

67. Bush, Iraq, Terrorism and the whole mess!!

68. The shaping of people's perceptions of reality by information sources, especially mass media.

69. Shaping what people value by repeatedly bombarding them with biased viewpoints and subliminally affecting their perceptions and positions on various reliance on cheap oil

70. Global inequality

71. increasing world population

72. anthropogenic climate change and its consequences

73. reducing the climate change, adapt to unavoidable impacts

74. next cold war

75. water availability

76. Energy, water and food supply in an environment of global climate change under the constraint of geographically distributed resources.

77. population growth, urbanisation, water and food supply

78. water resources

79. unfair distribution of and access to power, wealth (including food, health, water), rights
80. (legal, education, health,...), peace.

81. Protect poor countries were climate change is already a threat.

82. climate change and regional impacts of climate change

83. nuclear and microbiological threats (bad relations between countries, extremist groups)

84. To find consistent renewable Energy resources (this will solve all other problems)

85. Hunger

86. Living in harmony with nature.

87. Human greediness to ravage planet earth

88. Water and Climate Change

89. Global hatred and resulting stupid wars.

90. over-population

91. Population and how it is related to climate change and environmental degradation

92. growth of population

93. Food and water supplies

94. lack of world peace

95. The submission of national political actors to global free economy. This removes their freedom of taking any environmental action for their country.

96. Nuclear proliferation.

97. Water supply (lack and excess)

98. energy consumption

99. This is a leading question that is designed not to get the answers you want. Sigh. But the securing the environment would be my answer.

100. Sustainable population growth - providing food for the global population without destroying the planet

101. Sustainable development: learning to feed, cloth and house humanity in a decent way without exhausting the earth's resources, and while preserving as much of the natural world as possible.

102. Greenland and Antarctic ice sheet melting.

103. Human stupidity

104. overpopulation

105. Living sustainability and peacefully while preserving the essence of nature as we know it.

106. food supply problem due to climate change

107. war, disease, famine, social inequality

108. Poverty

109. Avoiding violence and war

110. Deficiency of natural energy resources

111. Possible wars, that will start for different reasons, mostly on limited natural resources (including water a very important resource), or due to religious reasons (the latter to a lesser extent).

112. climate, water supply

113. peace

114. Lack of democracy and freedom.

115. A compromise needs to be found between economic development and protection of natural resources and natural habitats involving as less laws as possible.

116. Poverty and ignorance.

117. What will the next US administration do domestically to assist in mitigating climate change.

118. population growth and urbanization

119. Sustainability of energy (+food + water) supply.

120. Explain the complicated climate system in such a way that simple criticism has no chance to have an influence on public discussion.

121. Adaptation ability of social and economical condition to the fast technological progress

122. The explosion of human population

123. water and food resources

124. ongoing threat of nuclear war 2. ongoing threat of pandemic 3. current financial crisis 3. global warming

125. population growth

126. energy, food

127. expanding population

128. greed

129. Overpopulation

130. Overpopulation.

131. Global overpopulation causing myriad problems of ecosystem collapse. The biggest challenge is developing equitable, humanitarian, and sustainable alternatives to the 'unlimited growth' paradigm that forms the basis for governmental and corporat

132. Sustainability of food/fiber/energy production in the face of climate change and other socio-economic pressures

133. poverty

134. war

135. My position is that the current human effects on climate - by now well documented but not catastrophal - are just postponing the coming of another ice age cycle - but for how long we don't really know and modeling is not helpful.

136. Militant fundamentalism.

137. Environmental responses to climate changes.

138. natural vs. anthropogenic climate change

139. The price of oil and food production

140. Today - economic turndown. In the longer term - global political stability

141. poverty

142. Psychological, spiritual and physical health

143. To raise the cultural and technical level of developing nations

144. natural resource base depletion

145. rapid change

146. overpopulation

147. Population growth

148. over population /consumption of resources

149. AIDS, poor water quality and availability especially in poor countries, abject poverty and exploitation

150. climate change and population growth

151. changing availability of water resources

152. inequitable distribution of resources

153. Climate Change - but only as this is subject that I know something about

154. non-proliferation of atomic weapons

155. war

156. Failure to control human population growth

157. Tipping points and processes in climate behaviour, climate processes implying time lags of decades and more.

158. Overpopulation and resulting resource depletion.

159. Local pollution on land, in the coastal seas and in the atmosphere. Global atmosphere effect by greenhouse gas

160. Soil degradation and loss

161. maximizing their own profits and not thinking about the future generations

162. Think carefully before saying that any climate extreme occurring now is related to climate change. It could be just part of natural climate variability

163. Global political tensions as related to (economic) protectionism 2. environmental stresses from globally increasing consumption

164. population growth and associated impacts on the earth - e.g. climate change, resource depletion, waste accumulation

165. Global-scale destruction and loss of natural habitats, pollution and poverty.

166. water stress from increasing droughts

167. climate and energy policy

168. Global overpopulation and consumption of non-renewable and slowly-renewable resources; corresponding danger of 'overshoot' in sustainable populations, and likely widespread environmental and societal collapse when cheap energy to sustain current runs out

169. overpopulation, overdevelopment

170. Global changes caused by continued increase in human footprint on the planet

171. Uncontrolled immigration destroying civilization, spread of WMD, spread of new diseases,

172. Meetings demands for energy and materials in countries that are industrializing without causing excessive environmental damage

173. population pressure

174. Understanding the truth about climate change and that it is a big mistake to beleive that one should 'fight' since it has been taking place since dawn of time.

175. Energy and environmental catastrophe

176. Overpopulation and unsustainable use of resources.

177. Insecurity of food and water

178. wars and genocides

179. Coping with change. Elaboration: Not only climate change; changes in communication, technology, population, all have impacts on our civilization that will be affected by decisions

180. we make, and how we go about making them.

181. ecosystem loss

182. the local and aggregate global environmental and strategic implications of increasing

183. population and increasing per capita consumption

184. The energy companies have too much influence on political decisions so that useful mitigation measures are blocked.

185. Over population

186. overpopulation

187. Reliance on fossil fuel for an expanding and increasingly affluent population

188. environmental changes brought on by anthropogenic climate change and population growth

189. Terrorism, war, fossil fuels

190. Global idiotism

191. speed of climate change, water availability

192. Balance of human society and environment.

193. Climate change and related 'clean' energy needs

194. Indiscriminate use and distribution of natural resources.

195. Food and water resources; availabilty and transportation, etc.

196. Overpopulation

197. Droughts - Food

198. Escalation of ethnic, religious, and ideological conflicts in a world with nuclear weapons.

199. Tyranny and corruption

200. Overpopulation together with pollution of air, water, and soil; associated with that is exploitation of unrenewable resources (not just energy producing ones), and the pressure on fauna and flora.

201. Security of food and water supplies

202. intolerance--racial,religious,social,etc.

203. I do not think there is a single issue. It just is not that simple

204. It's the economy, stupid!

205. Energy

206. evil of big powers

207. terrorism, racism, unscrupulousness

208. differencies in economic situation over the world

209. Energy and food production

210. Over use of resources and altering natural systems (includes climate change, land use etc).

211. growth

212. Scarcity of oil; threat by Islamist terrorism and threat of war between Islamist and Non-Islamist states.

213. population explosion of humans

214. worldwide rate of people grows

215. Population pressure on top of climate variablity

216. poverty and vulnerability to natural and human hazards

217. over-population and the associated use of resources

218. the unbraked increase of mankind

219. Oil running out its a fact and we need to solve it - the solution is probably pretty much the same as reducing the anthropogenic term in climate change. Pose the question well you may not believe in climate change but you know oil will run out,

220. (over)use of natural resources

221. population growth, shortage of resources (particularly, clean water), growth in energy demand, global warming

222. over-population

223. Potential collapse of the food chain, especially the oceanic biological web.

224. Sustainable prosperity.

225. extreme heat/cold and drought.

226. Access to potable water and water for irrigation of crops; sufficient food; need for universal access to medical expertise; threats from invasive vegetation, insects and animals; adequate sources of clean energy that is not dependent on politic

227. sustained development, poverty, wars, resources

228. gradual climate change

229. Overpopulation

230. Overpopulation and water shortage

231. Environmental degradation of the atmosphere, ocean and biosphere, related to inefficient use of resources and overpopulation, and public opinion that does not question this.

232. Most definitely *not* climate change!

233. Religious differences that drive social differences and terriorism

234. self-centered, non-cooperative behavior of nation states

235. energy and food

236. Economic inequality between first and third world nations.

237. energy resources

238. overpopulation and hence extreme pressure on ecosystems and thus the likelihood of a poor future livelihood of humans

239. Inter-national and inter-cultural conflicts.

240. Population growth and ensuing resource use and habitat destruction.

241. socio-economic fairness (for individuals but also in terms of developed and developing economies) in balance with a necessary personal and economic libaralism

242. limits to growth

243. Energy and Climate (they are intertwined)

244. Alleviation of suffering of the poor.

245. degradation of the environment due to over population and exploitation

246. terrorism

247. Extremism

248. increase of commodity prices

249. overpopulation

250. The desire to polarize oneself and to make questions of fact matters of morality.

251. Poverty is the most pressing issue facing humanity. The way our political leaders address this problem is a matter of great concern.

252. Global inequality linked to hunger and poverty

253. economic disparity

254. Military conflicts and poverty.

255. Overpopulation

256. mismanagement in Third World countries
257. uneven distribution of wealth

258. Poverty and pollution

259. Unsustainable population growth

260. population growth

261. education

262. Too many people

263. Energy crisis.

264. Increasing population and natural resources

265. Poverty, diseases & international politics, but general environmental issues (including climate change) wouldn`t come much later, as all these problems are inter-related

266. politics and business

267. environment in general (pollution, deforestation etc)

268. Growing population and increasing pressure on resources, especially food and water.

269. overpopulation

270. The combined exponentials of population growth, energy demand, water demand, carbon generation, coupled with the finite capacity of our planet's ability to absorb the demands, will transform the way human beings exist on this planet in the next

271. reducing reliance on carbon based fuels

272. Pollution

273. Environmental pressures - of which the impacts of anthropogenic climate change are and will be a significant factor.

274. Lack of truth, people are flooded with information, most of which consist of delusions, if not to say lies or false (both intentional and unintentional) interpretations.

275. poverty

276. Achieving a balance between the resources demanded by earth's humanity and those the globe is able to provide. Subissues: redefining national success rating away from GNP and more to quality of life; achieving a more global respect for all cul

277. Availability of clean water.

278. anthropogenic global warming

279. Religious intolerance and tribalism.

280. The interconnected issues of population rise, resource scarcity, and environmental degradation.

281. Sustainability

282. Population growth in a world of inequality, diminishing resources and constant change (including climate).

283. Food security

284. Food crisis caused by climate change, increasing population, limitation of resources

285. Relentless consumption that drives the ever-expanding economy. This is directly related to the natural world's carrying capacity, and potential for catastrophic effects.

286. Climate change related shortages of food and water

287. Food supply, epidemic deseases

288. The actual (unquestioned and accepted) 'development model' is not sustainable indefinitely in the future. Some radical changes are needed.

289. Inequality

290. Population growth

291. the increasing crisis in energy, water, and food supply

292. Climate change

293. food security, water supply, overpopulation.

294. Overpopulation.

295. Development / commercialization of alternative energy sources

296. Sustainability

297. The rise of religous fundamentalism; political and religous intolerance, extremes of wealth and poverty, depletion of natural resources, over population, disregard for the environment, lack of sustainability.

298. The potential global food and water crisis

299. Poverty, hunger, infant mortality, education in developing countries

300. overpopulation and its impacts on natural and human systems

301. Anthropogenic damage to ecosystems, (pollution, overuse of resources, climate change ...).

302. drinking water supply; hunger; diseases; war; inequity; destruction; (in my opinion the first one seems to be the most pressing issue)

303. The combination of overpopulation and overconsumption.

304. overpopulation

305. Religious fundamentalism

306. Overpopulation

307. the excesses of global capitalism -- the race to the bottom, and the tragedy of the commons.

75. If you could ask the collective body of climate scientists one particular question, what would it be?

1. We should acknowledge that we will never be able to make a solid prediction/projection (as those are now strongly used for adaptation projects), we should start to communicate the range of climate variability.
2. Extreme event change.
3. What are you doing to convey the message?
4. What is it that we have not understood yet.
5. impact of water vapor
6. were to invest money - adaptation or mitigation?
7. how 'general' is Earth's climate system?
8. How will human life be effected by climate change 50 years from now?
9. Is it really even worth trying to mitigate?
10. Ask yourselves: what do YOU do for climate change? fly less? recycle? turn off the lights? Nothing?
11. How to assess the reliability of models for making projections
12. What are the uncertainties in the currently available temperature record?
13. What is the probability of a paradigm shift in climate science?
14. To what extent is regional climate predictable on a 100-year timenscale?
15. Why are climate scientists obsessed with predicting a numerical value for temperature increase?
16. what is the value (magnitude) of climate sensitivity
17. why aren't more resources directed toward climate model development?
18. Comment rather than question. 'Please devote more resources to determining the uncertainty of your projections.'
19. How can we improve future sea level estimates?
20. Have we passed any tipping points already?

21. none

22. How can we better communicate the limitations of climate models to the public without weakening the urgency of the matter?

23. What is the climate sensitivity (and why is there so little progress in narrowing the uncertainty range, in spite of all efforts spent on climate modellling)?

24. climate

25. What are the error bars on climate projections?

26. What do you do in order to convince the public and the politicians that immediate action is required to mitigate climate change?

27. What are the largest uncertainties in our understanding of decadal variability?

28. To identify a few areas in the world, where relatively poor people live, that will be most affected by climate change.

29. How do we deal with possible unknown processes of the climate system in the estimation of uncertainties in projections?

30. Given we think we understand the global implications of anthropogenic climate change, how long will it be (with current funding) before we have adequate understanding of regional climate change. How much quicker could it be done with (say) doub

31. EXPLAIN HOW DANGEROUS CLIMATE CHANGE IS DEFINED

32. How fast the west Antarctic ice sheet may melt?

33. What is the theoretical base for assuming the RH to be conserved?

34. Why always searching for extreme impacts instead of doing science?

35. Given the uncertainty of model results, how is it possible that producing results/publications with the models as they are is still more important their improvement?

36. Is adequate room being made for contrary opinions?

37. How can low-resolution global climate models with inadequate representations of physical processes be expected to provide accurate predictions of climate variability, and how can regional climate models be much better when forced by incorrect l

38. Please give us a number with confidence levels in parenthesis, not a range which gives comfort to the deniers and not enough ammunition for those seeking change.

39. Why do you reject papers of scientific merit who present arguments against anthropogenic climate change

40. How can we get nuclear power accepted world-wide?

41. how much CO2 do they produce in their private as well as in their professional activities.
42. why isn't the melting of polar sea ice easily predictable?

43. How to take decissions using knowledge with uncertainty? How to cevelop reliable multi-factorial impact studies?

44. Why is there not the same resoluteness to cut down CO2 emissions as we had in the ban of CFCs (wrt ozone) some time ago? - Why do you talk so much about geoingeneering (temperature decrease with technical means) although temperature increase i

45. How do we convey to the policy makers and funding agencies that climate science is not 'solved' and that the only important issues are mitigation and adaptation?

46. How much do you worry about / minimise your carbon footprint and why/why not?

47. How much do you think does the (sensual and social) perception of weather and climate shape your scientific ideas?

48. What can we realistically do to reduce anthropogenic emissions

49. With the preface of my personal experience in comparing real observations with errors in model interpretations of real observations, how can so much confidence can be put into non-observational data, such as ice cores and tree rings?

50. What are the physical links between solar activity variations and climate?

51. No question, just a comment: keep up your good work!

52. How do you improve the models in next future?

53. Do you envisage that you will ever be able to make a climate prediction with a confidence similar to todays NWP models of 500hPa upto 7 -10 days ahead and if so in how many years will you be able to do so for 10 or 50 years ahead ?

54. what is the individual contribution per person on the climate change?

55. What are the major pitfalls in climate modelling? which observation systems should we develop in the next 20-50 years to understand better these weak points?

56. Do you practice what you preach? How

57. Are you doing enough ?

58. Who reviewed my hurricane paper?

59. Which techniques have you used or witnessed that have been successful in conveying the reality and urgency of anthropogenic climate change and its impacts to policymakers, community leaders, organization leaders, and the public in general?

60. What is the level of confidence in your results.

61. what is the priority for the climate science

62. what is the impact of research funding agency priorities on your research.

63. When will we all gather together and start a long walk across our respective countries to voice the scientist's disagreement towards current political inaction.

64. How can we stop trying to be the focus of media attention and avoid being hyped by the media?

65. This a problem were all contribute on it and it is not only an economic, policy or education problem. The question is how we can increase the conscience of mankind? in order to tackle this and other problems.

66. Why doesn't anyone discuss the uncertainties and all we don't know about the climate?

67. How can humanity live happily, while preserving the natural world?

68. How can ensemble modeling (currently involving use of models from different research centers) be modified to more accurately represent a probability forecast based on known uncertainities?

69. Do we understand all important tipping points?

70. What mitigation or geoengineering will be sufficient to avoid substantial long-term melting of major icesheets (especially Greenland and W Antarctica)?

71. How much role of climate scientists played in making policy decisions about adaptation and mitigation to climate change

72. What is the most critical problem whose solution would lead to the greatest leap in our confidence on our ability of projecting the future climate?

73. In my opinion, despite the scientific efforts of decades, the scientific community has failed to a large extent to provide concrete and undisputed evidence to all the policy makers that the climate (in its strict sense and not diluting it with

74. How reliable is current prediction or projection of climate change?

75. Do we need to understand the mechanism of climate change in detail before we start to make decisions?

76. Are we doing research on the most important subjects, concerning climate change, or aren't there fields that are crudly underrepresented, with respect to their importance?

77. how certain are your projections?

78. The scientific questions are asked (see above). How can we assess uncertainties common to all models? And in our own interest: How can we combine the need for further scientific achievements with a reasonable sound knowledge to start actions no

79. What are the reliable projections of climate change in your region?

80. How realistic is the carbon capture and storage to reduce the CO2 concentration back to the pre-industrial level in both scientific and political sense?

81. Do you really think global warming is worse than global cooling?

82. Is the climate change research really internationally fully open issue without restricted outputs?

83. which crop should I grow, where and how ?

84. On what time scale would you expect the first major human-related impact of climate change to occur?

85. What measures that do not very adversely impact society and quality of life can have significant impacts (based on rigorous studies, not value-based assertions)?

86. what is the uncertainty in the climate projections?

87. Who is the very brightest among you?

88. Satellites have revolutionized our ability to visualize and understand the climate system. What will stimulate the next comparable advance in climate science?

89. what exactly do we do, in practical terms, for adaptation and mitigation? (i.e., when, where and how much?)

90. How much year-round ice (ice caps and arctic sea ice) will be left on the earth by the time I die (2050 yrs)?

91. Understanding processes is most important

92. If you had complete control over mitigation, what would you do?

93. How can we get the public to understand better the potential impacts of climate change and how they might affect humanity?

94. demonstrate with more certainty whether the current observed climate change is a result of natural variability or anthropogenic forcing or a combination of both
95. What is the most serious component of climate change for humans in the next 20 years?

96. What are the marginal global benefits of reducing climate change damages?

97. population growth

98. Has your professional and personal life increased or decreased the risks associated with climate change?

99. could politicians be made more aware of issues related to the inertia of the system?

100. accuracy of predictions for future climate change

101. Why do you place so much confidence in computer models that have great difficulty reaching stable solutions/equilibria, and you ignore much empirical evidence?

102. I don't think that there is one particular question

103. Why has the greenhouse effect of the atmosphere been so stable over millions of years or in other words which negative feedback makes the earth a hospitable planet despite drifting continents, volcanic eruptions, changing solar output and chang

104. Do you believe, given the competition for global resources and the inability of humans to accept restraints, that there are any mechanism which can steer human evolution, other than Darwinian (competative) selection?

105. What are the best estimates of climate sensitivity with respect to different types of external forcing of the climate system?

106. I would ask them what is the most important climate science issue they believe can be answered within the next 10 years.

107. How to deal with human density increase and growing release of gaseous , liquid and solid wastes.

108. how fast could big ice sheets disintegrate?

109. Please, get the methods and science clear, and aindicate limitations of models and methodologise used. Climate change is both natural and anthropogenic, and the skeptics attach climate projections because the uncertainties in models and scenario

110. operationalizing sustainability to make it concrete and attractive for implement it in policies and action-related for individuals

111. To what extent the present scientifc understanding of the ocean-atmosphere coupled system hinders the improvement of accuracy of climate model projections?

112. How can one justify climate change projections based on flawed models?

113. Why don't more scientists get away from their ivory towers to interact more with the general public: in K-12 schools, in civic organizations, in the political arena, etc? Particularly in the United States, scientific literacy is shockingly def

114. what are the best strategies for dealing with climate change?

115. Have you adequately considered terrestrial feedbacks (vegetation changes) in your models of future climatic change?

116. Why are historical data adjusted and the algorithms used in adjusting the data kept secret?

117. How do we tackle the problems of climate change in the face of a burgeoning global population that places pressure on finite resources and on economic/monetary systems that are based on economic growth

118. How much do you really understand about climate change.

119. Is it possible to accurately separate between natural and human induced climate change effects for the next 50 years?

120. Why are we focusing most of our effort on the phsyical side of climate science and not on the effects on biotic composnets of systems?

121. Do we completely understand the climate of our planet?

122. Is there such a thing as a valid and meaningful computed numerical probability that, say, global average surface temperature will rise by, say 1.5 degrees C, by, say, 2058? If such probabilities are outside the competency of climate science, ca

123. Beyond the IPCC process, what mechanisms might be created to further develop, encourage, and disseminate reasoned scientific consensus on change-related issues.

124. Why are climate scientists so predictable

125. how many flights do you take and are they all essential?

126. How long will it take before the climate models are really good enough, not just perceived as good.

127. Are you sure that the cause of the observed climate change is anthropogenic with a certainty of at least 95%?

128. Are the current mitigating strategies likely to be at all effective in reducing climate change - I don't believe they are

129. What is your uncertainty bounds?

130. Whay do you not listen to each other?

131. how can we better integrate our understanding of theory with records from the past and the present across different spatial scales and using different time-scales?

132. How can we best educate the public and policy makers to encourage near-term and future attention to climate related issues?

133. Why is our ability to communicate so ineffective?

134. If climate change is an urgent issue for Planet Earth, then how can anyone support a solution that would allow any nations to continue polluting, or for nations to be cutting down forests or otherwise urbanizing the planet.

135. Signal (anthropogenic Forcing) - to - Noise (Natural Variability) Ratio

136. Do you think the complexity of the climate system and climate in human affairs can be reduced to the concentration and behavior of a single molecule?

137. What is the single most important assumption underpinning your conclusions?

138. How much do you know and understand about climate variability, and forcing of the variability?

139. What is the single most important thing mankind should do now to minimize future harmful climate change

140. How will internal variability of the climate system, often underestimated by coupled global climate models, impact the forced response from anthropogenic climate change in the future?

141. I would not ask one question - you learn little from one question since the answers are context driven and you have to ask many questions to understand teh context

142. Do you really believe that researching Global Warming is more useful than researching current climate variability, or is it just easy money?

143. What about a problem of air-conditioning in the context of anthropological climate change?

144. ???

145. Which of the coupled model is best?

146. How do you estimate the climate change and its future consequences really, without thinking at scientific finances and investores, without thinking at your individual scientific carrier, without thinking at favourite issues in the publicity?

147. how can we safely and ethically reduce the number of humans on the planet?

148. ---

149. What will happen in the next season to few decades i..e out to 2040

150. Are we putting efforts enough to ensure the data we have treated are the best we can get?

151. What do you honestly feel is a more important global environmental issue, climate change or over-population?

152. How to stop folks using oil and fossil fuels

153. Will there ever be a trustworthy climate model to predict future climate?

154. How can we benignly test geoengineering strategies that might have potential in mitigating climate change?

155. What would you list as the 5 greatest sources of uncertainty in climate projections and what strategies would you propose to reduce the uncertainties?

156. What can an ordinary citizen do specifically and realistically to slow done the climate change process?

157. Do you conclude that the anthropogenic addition of CO2 is the dominate human climate forcing, or is it just one of a diverse range of human climate forcings such as land use/land cover change and aerosols.

158. What is the regional impact of the global climate change?

159. what's the impact of climate changes in 10 or 50 years? and what's the sensitivity test result by mitigation?

160. Are you sure that your results are correct?

161. How can we rapidly change human behaviour so as to reduce future climate change?

162. What will our planet be like when my children's children are a grown up?

163. What mechanisms have you found effective in teaching others about climate change?

164. How will you downscale global models to obtain regional impacts?

165. What are the error bars on your simulations

166. is there a maximum level of emission bands that block olr that can be filled by atmospheric greenhouse gases (given the likely corresponding temperature), and thus further addition of greenhouse gases will make little difference? Is there also

167. How confident are you in your predictions of future climate?

168. How do you scientifically proove the linkage between global warming and increase of extreme events

169. why are you not starting to live the environmentally friendly life you know you should live from your scientific knowledge (reduce energy consumption, CO2 reduction etc)?

170. What parts of the earth will be habitable for future generations?

171. What is the range (i.e. pdf) of 21st C climate predictions, and what are the controlling factors?

172. When will we have regional information on climate change?

173. Could you accept the possibility that the complexity of the whole Earth across human-life time scales is simply beyond the grasp of the human mind, even if it meant reduced social support for your curiosity and your community's livelihood?

174. How can we improve our predictions/models and show everyone, that climate change is a problem of the whole world?

175. What evidence would convince you that you were wrong?

176. How statistically accurate

177. What can be done to initiate political action now based on the level of knowledge on future climate change as agreed in the last IPCC report, i.e. to transfer trustable knowledge to policy and to enforce mitigation actions?

178. What are the greatest sources of uncertainty in climate change projections?

179. What is your personal contribution to climate change mitigation and to what extent does your profession contribute to green-house gas emission?

180. do you really believe the specific predictions of anthropogenically forced climate change

181. Would it rain on this day in 50 years ?

182. How do you assign risks to different projections of future climate?

183. How likely is it that climate models are over-parameterised and how strongly could this effect climate projections?

184. I do not believe that collective body of climate scientists can provide me with correct answer

185. Are you willing to PERSONALLY cut your carbon usage by 50% if you can?

186. Can we predict rainfall in India in August, 2024?

187. How will we maintain and increase observations of the Earth's climate.

188. I would ask them to quantify the certainty/uncertainty of their conclusions

189. How can the the representation of precipitation be improved within Climate models?

190. If climate models fail to produce the proper annual cycle and inter-annual variability of the 20th century, can the trends for the 21st century be trusted?

191. Who here is best placed to relate our science to policy makers, and what can we al do to help you?

192. Why have you moved on to second and third order problems in your models without solving the first order ones (e.g., dynamic vegetation vs. convection)? It's like going from four to five gear transmission in a car when the engine does not work y

193. What do you want to achieve through your work, in the broadest possible sense, within your lifetime?

194. How should we address the issue of anthropogenic climate change?

195. Why do you think that you can describe the climate system accurate highly parameterized models.

196. How likely are regional abrupt climate changes in a near future? How to reduce the uncertainties in the projections of future climate change?

197. How can you improve the tools (AGCMs) used to predict climate change.

198. What are the most effective adaptation measures / most viable future industries for regions impacted (negatively) by climate change?

199. Objective assessment of climate model behavior (particular regional climate variability).

200. Is it possible to do objective science without interference from your ideology?

201. How can we utilise resources better to understand vital questions on climate sensitivity.

202. What is the most improtant area of uncertainty in our understanding of climate?

203. What from is our science exactly made up? (As you said 'climate scientists')

204. How do you determine the global temperature for the past (> 100 years ago)

205. What is the most serious aspect of climate change?

206. How can your results be combined with 'predictions' of global/regional population growth?

207. If you are so concerned about global warming, why do you fly to conferences/ IPCC meetings so much? What are you doing as a personal example?

76. General comments concerning the survey of climate scientists

1. many questions are poorly posed -- i.e. what does 'adequate' mean -- adequate for what? So the answers to questions 12-14 are meaningless in my opinion. Also, some of the questions are repeated, which is either very sloppy or a silly way of te
2. Great job.
3. Will the survey be taken into account by decisionmakers? Has is been in the past?
4. odd questions...
5. No
6. Really on target, but one part was missing: a set of questions on economic growth vs. mitigation.
7. Question 58 has a typo in it. It needs to be rewritten as: 'To what extent are those scientists who present the extreme accounts of catastrophic impacts and worst case scenarios related to climate change the people most likely to be approached
8. This survey is a good idea.
9. too sharp distinctions among choices
10. deep
11. Many questions poorly formulated with no option not to choose.
12. good
13. In my opinion a very useful tool to clarify the real opinion of involved scientists, which is not adequately considered by media and especially the critics of climate change
14. It would be good to have some questions on where climate models could be improved, i.e. physics, resolution and the benefits this might bring.
15. It's difficult to answer some questions, if you are not an expert in these fields.
16. Concerned, partly somewhat too conservative. Should try to thing more out of the box or innovative.
17. This is a good idea (conducting this survey). One should like to emphasize the part with questions around 11 through 19.
18. No comments.

19. I found this difficult. Many questions are poorly posed: what is hydrodynamics (do you mean dynamics or the water cycle?) what is value neutral (do you mean objective, and if so, from what starting point of knowledge). Why don't you ask question

20. climate change is just one facet of the problem of overpopulation and overuse of resources and maybe not the most pressing one. Thus, I think the questionnaire as well as possible conclusions are one-dimensional

21. A few of the questions are poorly phrased, especially Q27, for which the only plausible response is 7 (it would be very strange if there were not one positive impact of climate change, but I am not sure this is really what is intended by the qu

22. IN CASE IT MATTERS, MY RESEARCH IS CONCERNED WITH CLIMATE PROCESSES AND SEASONAL TO DECADAL CLIMATE VARIABILITY.THE SURVEY IS TOUCHING ON SOME INTERESTING QUESTIONS. ILOOK FORWARD TO SEEING THE RESULTS.

23. its value and conclusions should be assessed wrt distribution of respondees at least in terms of country, professional profile and scientific expertise

24. Too many questions !!!!

25. The possibility to choose 'dont know' is missing. What does value-oriented mean?

26. any survey should always make explicit its goal; why this survey ?

27. Good idea.

28. So far so good!

29. Should add a don't know or unsure for some of the questions. It is hard to select a multiple choice option for complex questions like 68-70.

30. Because of the bias in presentations on climate change due to humans, climate as a science has degenerated to the same level as witchcraft, alchemy, and cold fusion

31. Very much needed to counteract the promotion of a list of 30,000 'scientists' decrying climatic change. (Only 41 climatologists are on this list).

32. some of the questions are not sharp enough to make an answer.

33. 'I don't know' or 'no opinion' is missing in the range of answers.

34. Please, clearer definitions next time: 'climate scientist' includes impacts scientists?

35. None

36. sometimes to generalize

37. some interesting questions!

38. Q56-59 are hard to understand

39. some questions should have had a 'no oppinion' / 'no knowlegde in this area' field. This would have been especially helpful for a novice to climate change research like me.

40. There were some questions that were difficult to understand.

41. interesting

42. Ok

43. The wording of questions 56-58 is very convoluted.

44. I thought some of the questions were sufficiently vague and the adjectives open to interpretation that I don't believe the outcome will be particularly useful.

45. I am not really a climate scientist. Rather, i am a hydrologist who studies the impacts of climate change. I also work on many other problems.

46. Good initiative, good survey.

47. This is a most comprehensive survey. Thank you for your thorough effort in putting it together.

48. I am not familiar with a lot of issues and therefore my opinion it is not well supported with background information and there is no way to express that in the survey.

49. You really need to vet these questions with a) people who design surveys and b) climate scientists outside of your immediate circle. Half of these questions are extremely poorly specified and vague (temperature projections - on what scale? when

50. A few things- I don't know what 'value neutral' and 'value oriented' means. Also, there should be some questions about the uncertainty and ethics associated with climate science. While I believe that there is a scientific consensus that climate

51. Too many phrases like 'some scientists do x' . I'd prefer specific examples in context.

52. This survey assumes I know more than I do.

53. some of the questions and reply scales appear 'leading', but generally a very good set of questions.

54. Ask us what we are personally doing (if anything) to help reduce anthropogenic climate change.

55. Climate change problem need to be further studied due to its uncertainy

56. none

57. Some questions are difficult to understand (like 56-58)

58. Interesting survey. I hope the results are made available to politicians and the public.

59. There are several fuzzy or unclear points. E.g. what is a catastrophe (some hint giving by using disaster before, however ...)? What means value oriented in terms of reviewing? Scientific value? Political value? There are biases in the question

60. Too long, I'm afraid.

61. Very nice, but it took some time:-)

62. Good idea.

63. Some of the questions were difficult to respond to, because my response would not fit any of the available categories. For example, 'science' has no opposite. The role of science is to develop, as well as to test hypotheses. Overall, interes

64. well done and look forward to reading results

65. Interesting, but survey might be improved if expanded to identify additional and to assess the adequacy of understanding of mitigation and adaptation mechanisms. Also, expand question 8 to allow better analyses by differences in background or

66. Unfortunatly this will be used to perpetuate the notion that Science is democratic, i.e. that the view of the majority of scientists in a field somehow has merit.

67. Maybe the survey could ask what is the single most significant discovery or change in climate science since the last survey (2003)? The precipitous decline in Arctic sea ice would have to be right up there.

68. An interesting survey which I support. I am not exactly a climate scientist, though climate change is obviously an important topic for those working as earth scientists with paleosol interpretations and soil change in environmental histor

69. It's difficult to answer many of these questions without more context.

70. We need this survey to counter those who say that there is serious debate about the existence climate change in the science community. On the other hand, we must remember that the laws of physics are not voted upon.

71. A bold initiative, but intrinsically problematic. Climate change is shaped today more by 'non-scientists' than by scientists.

72. I am not quite sure on the value of subjective appraisal on many issues, based our familiarity of the separate components of the climate sciences

73. While there is need for enhanced models, there is greater uncertainty with respect to human activity and responses - more effort and resources needs to be put into these areas. This is even reflected in your survey where there are relatively de

74. Many of these questions were well phrased for the earlier rounds, but are now inappropriate and cannot be answered given the response modes available.

75. Although I have answered I would not rate the outcome close to the real frequency distribution of opinions because the topic climate change is often debated in a too emotionalized manner

76. Interesting survey but I question the emphasis on CLIMATE CHANGE. I see the problem as ENVIRONMENTAL CHANGE which is every where apparent and massive, and leading to direct problems of water and energy supply, food security, and destruction of

77. The three steps of activity of climate scientiets should be: first, improve our scientific knowledge, second inform the public, third advise policy makers.

78. It is a good way to survey the free opinion of the involved technical people.

79. good idea

80. It is a nice review, coring all aspects of science, both basic and applied, and it connects well with the actions from governments and other non science components.

81. questions on priority to opinions or science in policy-making are really humbug. Even (non-existing) science-based decisions 'machines' would somehow have been approved by an opinion-led process. Relevant would be the question, if the perception

82. Will respondents receive any feedback from the survey results?

83. This looks like a useful survey, I will be interested in seeing the results. But what's the deal with posing the exact same questions several times?

84. interesting

85. Generally a good survey, but rather focussed on ocean-atmosphere models with little on the role of terrestrial ecosystems in the earth's climate system

86. I wonder how objective you are or if you are anthrogenic global change alarmists seeking increased funding and support? When fraud such as the 'hokey stick' occur, why doesn't the scientific community take action?

87. Interesting and useful exercise. I look forward to hearing the aggregated results of the survey

88. Very interesting and timely

89. The survey is strongly biased toward the physical science. there is much not known in the ecological (biological) sciences. The questions do not adequately address that need or lack of understanding.

90. Survey of climate scientists obviously provide information about the climate scientists community to the general public.

91. I was not given any way to report whether my responses were based on knowledge or were just guesses. I suggest that fewer questions and allowing the respondent to assess each response with a degree of 'have or don't have a well-based opinion' o

92. I understand the difficulties of creating survey questions, but it was impossible to convey key subtlety in some answers. For example, Questions 68 and 69 -- science aims at *testing* hypotheses, not proving or disproving them. Question 66. In

93. i think this is a very good idea

94. Reasonable

95. I don't consider myself a climate scientist - I use the scenarios to look at agronomic impacts for food and fibre production and provide mitigating strategies for farmers. I have published in the area in collaboration with other climate scient

96. Hard to express my opinion via the 1-7 format. Example: science to me = advancing knowledge which includes proving and disproving hypotheses equally.

97. Some questions are hard to answer because they could be approached from different angels.

98. This is an important and valuable exercise. Perhaps the results will be published in 'Science' or 'Nature', etc?

99. I am working for reform from within.

100. Since climate changes all the time, also without possible human interference, I think many questions are badly formulated - and thus difficult to answer - they are clearly aimed at man-made change but sound as if they are about natural or any c

101. Question about regional modelling is misleading - regional models are as good as their boundary conditions. Questions 12-17 ... depends HUGELY on which models you are talking about - problems with these questions.

102. Brilliant! Very clever and searching questions.

103. Some of the answers here are highly polarizing. I don't think that these questions are very easy to answer or really reflect my opinion about the state of climate science.

104. very interesting and useful survey - mostly very well formulated questions!!!!

105. Inside the scientific community, the presentation and discussion of results should be detached from the idea to overtrump the collegues. We need more objectivity, more critical consideration of own results and less self-profiling.

106. Answers in surveys can often be twisted to fit an agenda. People should be wary of surveys.

107. You seem to mostly ignore climate variability apart from extremes and if extremes are meteorologically defined they may have little related impact. You seem to work on mean changes and genrally ignore spatial and temporal variability. You ignore

108. I'd like to have seen more specific questions on what climate fields should be further pushed ahead

109. it's very difficult to accurately encapsulate complicated issues in a multiple choice format, so I'm not sure I'd be convinced by your conclusions.

110. interesting and necessary

111. These are important, perceptive questions.

112. It seems that you should provide an option to abstain from each question asked such that the respondent can withhold her/his viewpoint on matters on which they have no strong knowledge or belief. Also, note question 58 has a type-o.

113. Some of the questions are too general or vague.

114. I look forward to the results!

115. more scientific, more focusing on research uncertainties' source, more oriented on research directions.

116. Thanks, good survey.

117. #58 is incomplete and currently says: '...the people most likely to be by journalists?' should it say ...'listened to' by journalists? The verb is missing.

118. Can't wait to see the results.

119. Thanks. Would like to see the results when completed.

120. Regional climate modeling depends very much on the lateral boundary conditions. If from reanalysis, simulations can be quite realistic. If from a GCM, then less realistic.

121. Very interesting and necessary! Some questions were difficult to answer mainly due to the apodictic use of terms like 'climate change' which restrict any further differentiation. The worst of all questions were 74 and 75, these tend to strongly

122. Interesting survey; thought provoking.

123. good survey

124. Interesting exercise, thank you. I am hungry for documentation of such elite opinion trends, which seem to me to be steeper and more dramatic than the natural trends being studied, and which have potentially worrisome positive feedbacks of thei

125. The goal of science, if there is such a thing exists independently of areas of knowledge, is to discover truths. It is not to falsify untruths.

126. Climate scientists are funded by governments and are sometimes forced to toe the line of the funding agencies. It is difficult to maintain integrity in such situations but I still commend most scientist who work in the trenches to maintain the

127. One could haggle over the wording of many of the questions and presented answers, due to subtleties of word interpretation. I am curious about differences that might arise in the survey between native English speakers and those for whom Englis

128. a very good idea, congrats.

129. quite good

130. Interesting project, important group to ask.

131. Good initiative. Some questions where a perhaps a bit too general: e.g. representation of precipitation in global/regional models on what scale (space/time)? Q 37: Political in the sense that it is a political conspiracy, or that it is mostly p

132. In general, I do not like surveys about science and think that the 'majority' usually if far beyond reality.

133. I sincerely hope these questions aren't loaded for some reason

134. Handle with care!

135. Thanks

136. Good luck

137. Quite broad, with some questions difficult to understand, but without the option to de-select and leave blank an already answered question

138. Very useful, looking forward to seeing the results.

139. I wonder if some of the questions are 'fishing' for contrarian responses? I suspect that you will get exactly the responses you could have predicted - very strong professional confidence in the IPCC process, and anxiety about the future.

140. I worry that such survey stress too opinion and not the state of scientific science.

141. Good idea. Would have liked a 'don't know' button. Question 39 and 41 are tricky to answer as is, as all I 'know' is that we have no good idea on precipitation, extremes etc. out of current models (global or regional). However, I have no idea w

142. A little longer than it might be; Q.68-70 will probably get a lot of 'other' responses (char. of science doesn't seem representative). I would add a question on 'What do you think is the most critical aspect of climate change issue misunderstoo

143. Would be useful to have a 'don't know' option

144. I suggest to reduce the number of questions asking participants about the opinions of other people.

145. I'm looking forward to seeing the results and to a comparison with past surveys!

146. Some aspects of the questionnaire were unsatisfactory as the answers were not as clear cut as made out to be. In a number of areas the appropriate answer depends on more than one factor and the questionnaire does not allow this

147. It was interesting but some questions were a bit hard to answer because of the subjectiveness of the scale and, for example, for 58 & 59 it is a bit hard to clearly express the view that the tails of the distribution are disproportionately so

148. Glad that it's over now. Well, I think it's a good way to demonstrate how opinions change in time. That may give a hint on how the media, politics and societey affects climate scientists.

149. More clarification of the uncertainties

150. Thank you for doing this.

151. This survey is going to be difficult to interpret because many survey takers will implicitly insert 'anthropogenic' to 'climate change' in the questions. For example, on question 72, i answered 'very concerned' based on all climate change (as

152. Lots of questions are vague as to whether you mean global or local effects. Would like to see boxes for how to improve IPCC, models, etc.