Appendix 4   The Clingendael Expert Survey: design, analysis and use

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It is important to systematically identify sudden events. Such 'shocks' can disrupt trends and throw predictions off course. At the same time it is hard to make reliable estimates about the nature of the shocks, the probability that they will occur and the impact they could have. The Clingendael Expert Survey was designed to identify potential shocks and to find a reliable way of indicating the risk of a shock.[1] The survey is a wisdom-of-the-crowd technique to augment the experts' assessments and ensure a more informed analysis.

The Clingendael Expert Survey was sent to thousands of scientists and members of think tanks around the world. The questionnaire was distributed online and completed by 249 experts. The following briefly outlines the design of the survey (with a description of some of the ways in which an attempt was made to limit expert bias), the analytical method and the use of the results.

Survey design

The Clingendael Expert Survey was designed using the Qualtrics Insight Platform, an online tool for designing, distributing, and completing questionnaires.[2] In total, ten theme-specific questionnaires were used (see Table 1). For these ten themes, a number of specific shocks were presented in order to distinguish between events that were more important for certain specific issues. However, a number of shocks were also used that were scored by several groups, because many themes coincided in certain areas (for example a disintegrating EU may affect the threat assessment as regards both

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1   The potential shocks are based on existing reports: World Economic Forum, *The Global Risks Report 2016;* the Economist Intelligence Unit; and the Future Policy Surveys of the Dutch Ministry of Defence and earlier versions of the Clingendael Strategic Monitor. Use has also been made of a Clingendael Research Expert Brainstorm.
2   See: www.qualtrics.com.

terrorism and crises). In this way, the scores of a larger group for the same shocks could be compared.

The questionnaire pursued three goals: 1) the core of the survey focused on identifying shocks in relation to security threats and the development of the international order to 2021; 2) an attempt was also made to identify new European security interests (the horizon-scanning function); 3) finally, the quadrant chart was rated (see Appendix 1) in support of the authors of the individual studies. For each of the three goals there were standard response categories: 1) when asked about alternative security interests for Europe, respondents had the possibility to indicate three new interests that are not currently designated as such in European strategic documents; 2) in scoring possible shocks, there were two options: with regard to the threat assessment, seven events were presented, all of which had to be scored for both probability and impact.[3] The probability scale ranged from one to seven, with one standing for 'impossible' and seven for 'certain'. The impact scale ranged from 'no impact' (one) to 'catastrophic' (seven). For shocks relating to the international system, five events were presented in the same way; 3) for the scoring of the international system, the different options from the new quadrant chart were presented (see Appendix 1). In all cases, the requested estimate was for the period to 2021.

Table 1   Themes and number of respondents

Themes and fields of expertise	Number
Territorial integrity	25
CBRN weapons	10
Terrorism	15
Transnational organised crime	19
Crises and fragile states	24
Free trade	30
Energy	13
Tensions between EU and its citizens	18
Climate change	21
Cybersecurity	11
Other	63

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3   The questions that were asked were: *'To what extent are these shocks likely in your view?'* and *'What would you consider the implications of these shocks for European security?'*

Participants were selected on the basis of rankings of European think tanks and research universities in the field of politics and international studies.[4] Experts from the leading EU think tanks were then approached. For the selection of academics, a European top 25 ranking of universities was established.[5] Experts from 23 universities were then contacted. As an extra safeguard, a check was made for each participant that the identified themes corresponded to their expertise. In this way, the participants were divided across the different themes. This division meant that each participant only completed the questionnaire for his/her own field of expertise.

Except for one respondent who answered the questionnaire by telephone, all respondents were contacted by email. The administration of the questionnaire took place from July to early September 2016. Around 40-50 emails were sent out every day. Apart from general characteristics the questionnaire was administered completely anonymously (thus limiting socially desirable answers).

Table 2   Sample characteristics

		Number	Percentage
Gender	Female	67	26.90%
	Male	182	73.09%
Age group	<30	29	11.65%
	30–39	100	40.16%
	40–49	48	19.28%
	50–59	34	13.65%
	60–69	27	10.84%
	>70	11	4.42%
Type of work	Academia	128	51.40%
	Research institute	97	38.96%
	Government	6	2.41%
	NGO	6	2.41%
	International organisation	5	2.01%
	Other	7	2.81%

4   For the list of think tanks around the world that was used, see: McGann, J.G. 2016. '2015 Global Go To Think Tank Index Report', *University of Pennsylvania Scholarly Commons.*

5   Use was made of: Times Higher Education, *World University Rankings 2015-2016,* https://www.timeshighereducation.com/world-university-rankings/2016/world-ranking#!/page/0/length/25/subjects/3090/sort_by/score_research/sort_order/desc/cols/scores.

		Number	Percentage
Work experience	<5 years	35	14.06%
	5-10 years	81	32.53%
	11-15 years	49	19.68%
	>16 years	84	33.73%
Place of work	Western Europe	221	88.76%
	Eastern Europe	6	2.41%
	US/Canada/Australia	18	7.23%
	Middle East	4	1.61%

Analysis

Table 2 describes the sample characteristics. A total of around 2,500 people were approached to fill in the questionnaire. The 249 responses represented a response rate of 10%.

The results of the questionnaire were analysed with various statistical and visualisation programs (Excel, SPSS, Tableau). The analysis was organised thematically and broken down into 1) shocks for threat assessment; 2) shocks relating to the international system; 3) new security threats and; 4) the score for the quadrant chart. For the purpose of the analysis, the average scores were used. On the basis of these averages, the shocks were placed in a risk diagram (see the individual contributions). In this diagram, the combination of impact and probability gives the reader an idea of the magnitude of the risk of a given shock. Through the visualisation in the risk diagram, shocks were divided into four categories: high probability-low impact, low probability-low impact, high probability-high impact, and low probability-high impact. For scenario forecasting purposes, this last category of shocks is particularly interesting, since if they take place, they could bring about the most upheaval and displacement in the system.

The participants varied in terms of gender, age, type of work, years of work experience and place of work. Outcomes were therefore checked for significant differences in response between groups. Checks were conducted for gender, years of work experience, place of work (country) and type of work. Group differences were tested using the Mann-Whitney U test (for two groups, gender) and the Kruskal-Wallis H test (multiple groups, years of work experience).

Among other things, a difference was found on the subject of territorial integrity, where men gave a significantly lower average score for the impact of the shocks on the threat assessment. Respondents working for the government were also found to make a significantly higher estimate of the impact of CBRN weapons on the international system than respondents in other types of work. Also interesting is the finding that respondents

working at research institutes made lower estimates of the effects of a shock to the international system relating to cybersecurity than other respondents. Finally, participants with more than 16 years of work experience gave a higher average estimate of both the probability and the impact of shocks on the terrorism threat assessment than respondents with less work experience. These statistical tests gave the authors of the Clingendael Strategic Monitor more insight into how the shocks could be used, considering the possible reasons and biases that the participants may have had while completing the questionnaire.

Results and use

All results were used by the authors, and have sometimes been integrated into the contributions. One of the results concerned a horizon-scan of new security interests, which are shown below. A total of 187 extra security interests were suggested by the respondents. Most related to topics that had already been analysed and could be placed within the existing categorisation: 27 concerned climate change, 26 the theme of crises and 24 the theme of horizontal tensions / tensions between the EU and citizens (see Figure 1).

There were also 31 new suggestions, however. Particularly striking is the emphasis on concerns about global governance (20%). Other prominent suggestions concerned maritime safety, hybrid threats and (surprisingly, perhaps) tax issues. Other suggestions covered a wide range of threats, and ranged from technology to the defence industry.

Figure 1   Distribution of new security interests

Security interest
- CBRN weapons, Economy and 5 others
- Climate change
- Crises
- Cybersecurity
- Horizontal tensions
- New
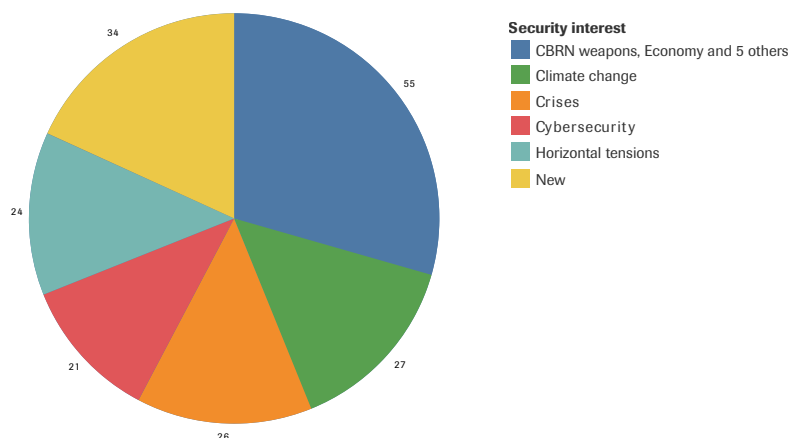
The results of the Clingendael Expert Survey are integrated by the authors in the assessment analyses in four different ways.

Shocks were taken into account after trend analyses had been performed. The authors made an estimate of the impact that identified and scored shocks would have on the forecast for 2021. A range of certainty was indicated in this way: if the consequences were minimal, there was certainty in the forecast for 2021; if the consequences were significant, there was obviously still a lot of uncertainty for 2021. The shocks thus served as a test: unexpected events that the author him/herself might not have considered were brought to his/her attention in this way. This procedure applied to both the threat assessment and the system estimation. The shocks which were scored by several groups (the 'general' shocks), can be seen in Figures 2 and 3, where the size of the circle represents the relative number of respondents per shock. These results show that all general shocks are either in or very close to the high impact-low probability quadrant. Table 3 shows the exact number of respondents per rated shock.

The 'new' security interests that were suggested by the respondents could also be used by the authors of the individual studies. The number of suggestions that differed from the already identified European security interests was low, however (see Figure 1 for an overview of new interests). This is hardly surprising: the European Union's Global Strategy, which was used as the basis for identifying security interests in this Monitor, was very recent (June 2016), so it was not to be expected that respondents would find many new, current threats. Finally, the average scores of the respondents in the quadrant chart were again used by authors as a means of checking their own system analyses. If the two differed greatly, this was a possible reason to provide more support for the author's argument. However, if they were very close together, there was obviously more certainty in the forecasts concerning cooperation and relevant actors in 2021.
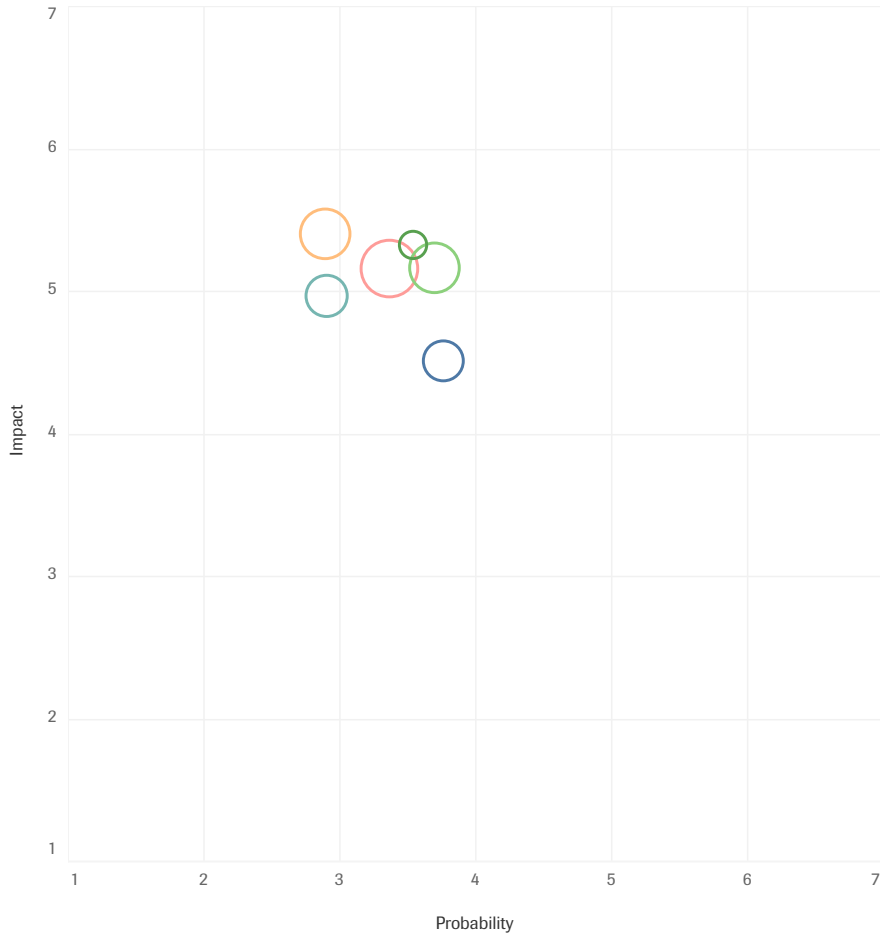
Figure 2   General shocks in the threat assessment
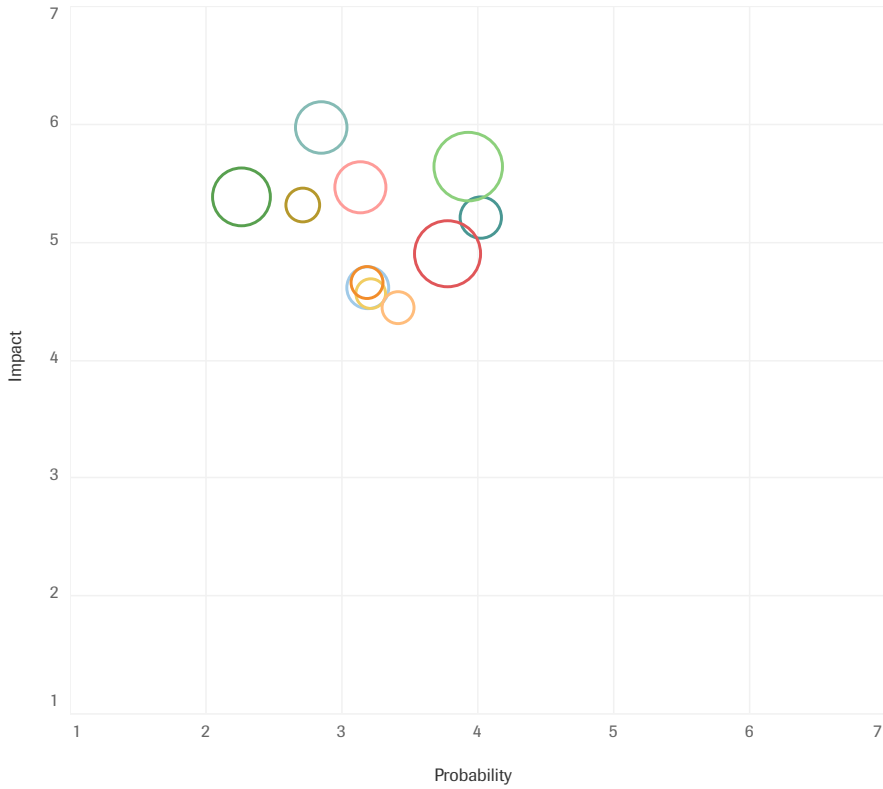
Shocks

- Armed conflict between China and US over Taiwan and/or the East/South China Sea
- Arms race between the EU and its neighbours
- Civil war or large-scale civil unrest in France
- European Union disintegrates
- Frexit and/or Grexit
- Global financial crisis
- Links discovered between European major powers and cross-border organised crime
- Multiple simultaneous terrorist attacks in EU capitals
- Russia attacks one or more Baltic states
- The Chinese economy experiences a hard landing
- The USA pursues a more isolationist foreign policy and no longer prioritises Europe

Figure 3   General shocks relating to the system

Shock
- Armed conflict between China and US over Taiwan and/or the East/South China sea
- European Union disintegrates
- Global financial crisis
- The Chinese experience a hard landing
- The USA pursues a more isolationist foreign policy and no longer prioritises Europe
- UN Security Council loses relevance

Table 3   Total number of respondents for general shocks, threat assessment shocks and system-related shocks

Shocks: threat assessment	Number of respondents
Links discovered between European major powers and cross-border organised crime	37
The Chinese economy experiences a hard landing	43
Armed conflict between China and US over Taiwan and/or the East/South China Sea	43
Frexit and/or Grexit	48
Multiple simultaneous terrorist attacks in EU capitals	72
Arms race between the EU and its neighbours	74
Global financial crisis	110
Civil war or large-scale civil unrest in France	141
Russia attacks one or more Baltic states	141
The USA pursues a more isolationist foreign policy and no longer prioritises Europe	184
European Union disintegrates	198
Shocks: system	
The Chinese economy experiences a hard landing	92
Armed conflict between China and US over Taiwan and/or the East/South China Sea	142
European Union disintegrates	142
Global financial crisis	185
UN Security Council loses relevance	98
The US shifts towards isolationism	43