Global Catastrophic Risks Survey

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At the Global Catastrophic Risk Conference in Oxford (17-20 July, 2008) an informal survey was circulated among participants, asking them to make their best guess at the chance that there will be disasters of different types before 2100. This report summarizes the main results.

The median extinction risk estimates were:

Risk	At least 1 million dead	At least 1 billion dead	Human extinction
Number killed by molecular nanotech weapons.	25%	10%	5%
Total killed by superintelligent AI.	10%	5%	5%
Total killed in all wars (including civil wars).	98%	30%	4%
Number killed in the single biggest engineered pandemic.	30%	10%	2%
Total killed in all nuclear wars.	30%	10%	1%
Number killed in the single biggest nanotech accident.	5%	1%	0.5%
Number killed in the single biggest natural pandemic.	60%	5%	0.05%
Total killed in all acts of nuclear terrorism.	15%	1%	0.03%
Overall risk of extinction prior to 2100	n/a	n/a	19%

These results should be taken with a grain of salt. Non-responses have been omitted, although some might represent a statement of zero probability rather than no opinion.

There are likely to be many cognitive biases that affect the result, such as unpacking bias and the availability heuristic–-well as old-fashioned optimism and pessimism.

In appendix A the results are plotted with individual response distributions visible.

Other Risks

The list of risks was not intended to be inclusive of all the biggest risks. Respondents were invited to contribute their own global catastrophic risks, showing risks they considered significant. Several suggested totalitarian world government, climate-induced disasters, ecological/resource crunches and "other risks"–-specified or unknowable threats. Other suggestions were asteroid/comet impacts, bad crisis management, high-tech asymmetric war attacking brittle IT-based societies, back-contamination from space probes, electromagnetic pulses, genocide/democides, risks from physics research and degradation of quality assurance.

Suggestions

Respondents were also asked to suggest what they would recommend to policymakers. Several argued for nuclear disarmament, or at least lowering the number of weapons under the threshold for existential catastrophe, as well as reducing stocks of highly enriched uranium and making nuclear arsenals harder to accidentally launch.

One option discussed was formation of global biotech-related governance, legislation and enforcement, or even a global body like the IPCC or UNFCCC to study and act on catastrophic risk. At the very least there was much interest in developing defenses against misuses of biotechnology, and a recognition for the need of unbiased early detection systems for a variety of risks, be they near Earth objects or actors with WMD capabilities.

Views on emerging technologies such as nanotech, AI, and cognition enhancement were mixed: some proposed avoiding funding them; others deliberate crash programs to ensure they would be in the right hands, the risks understood, and the technologies able to be used against other catastrophic risks.

Other suggestions included raising awareness of the problem, more research on cyber security issues, the need to build societal resiliency in depth, prepare for categories of disasters rather than individual types, building refuges and change energy consumption patterns.
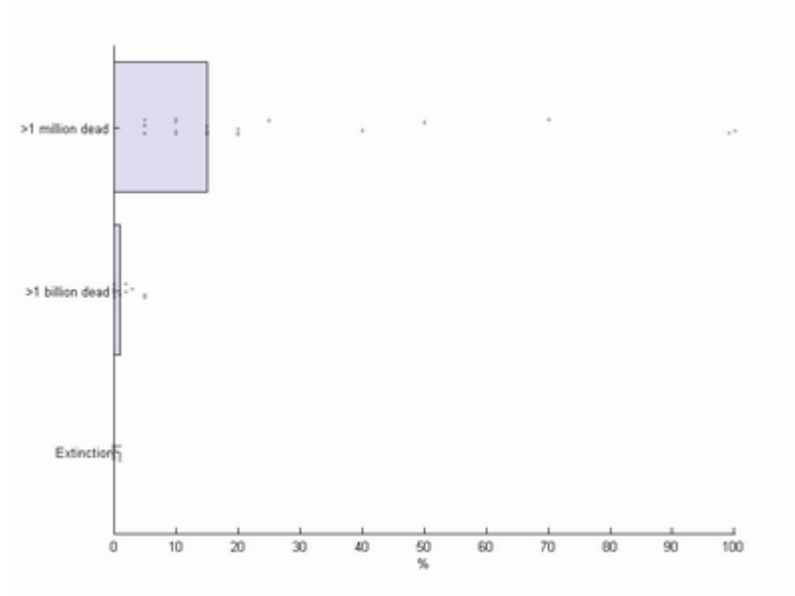
Appendix A

Below are the individual results, shown as grey dots (jittered for distinguishability) and with the median as a bar.

Total killed in
all acts of
nuclear
terrorism.

>1 million
dead: median
15%

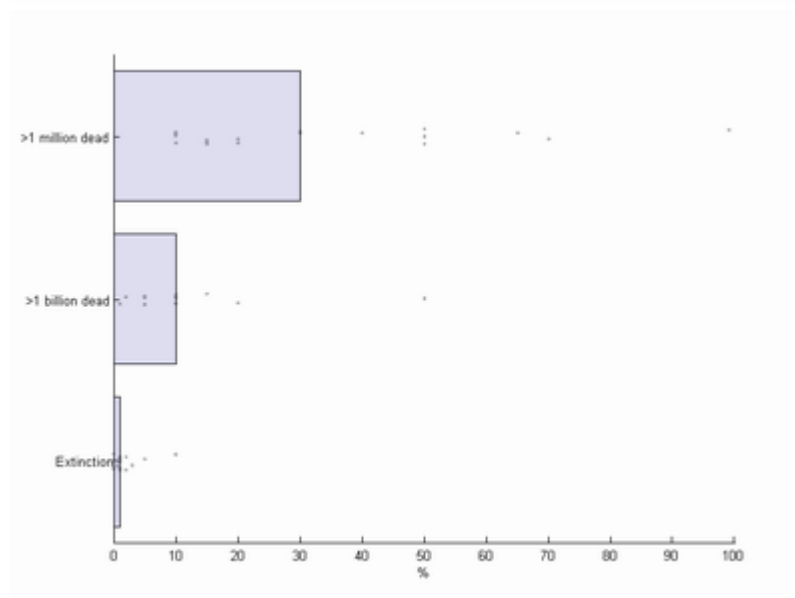>1 billion dead:
median 1%

Extinction:
median 0.03%

Total killed in
all nuclear
wars.

>1 million
dead: median
30%

>1 billion dead:
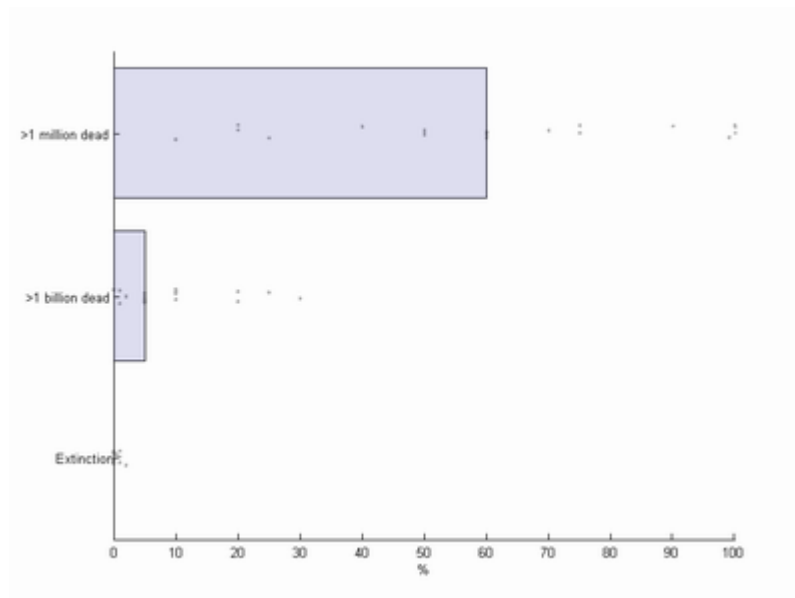median 10%

Extinction:
median 1%

Number killed
in the single
biggest natural
pandemic.

>1 million
dead: median
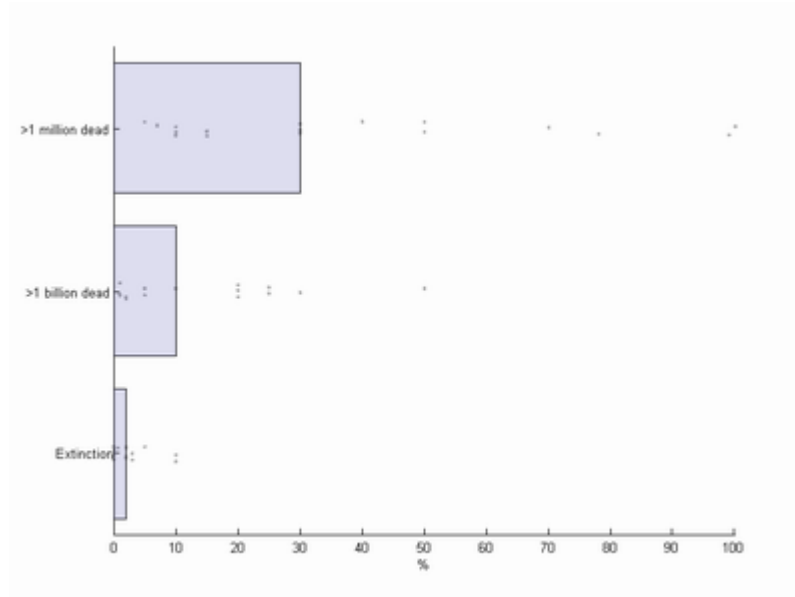60%

>1 billion dead:
median 5%

Extinction:
median 0.05%

Number killed
in the single
biggest
engineered
pandemic.

>1 million
dead: median
30%

>1 billion dead:
median 10%

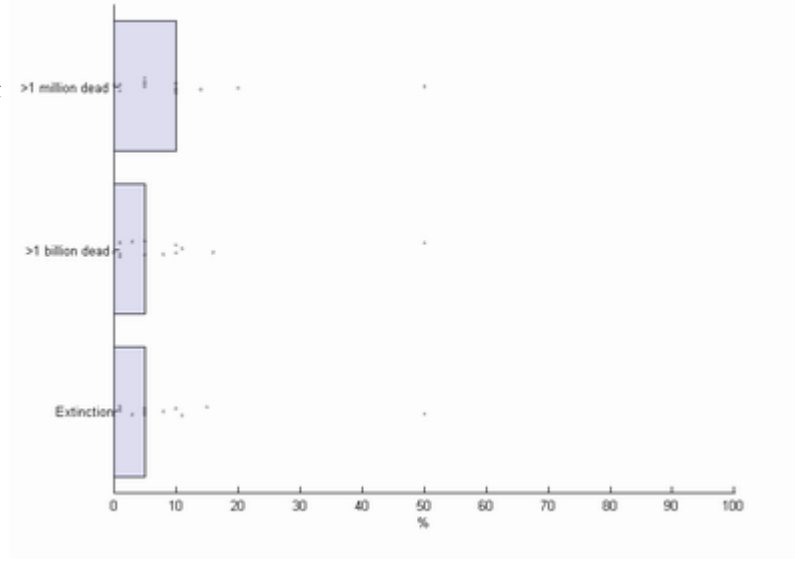Extinction:
median 2%

Total killed by
superintelligent
AI.

>1 million
dead: median
10%
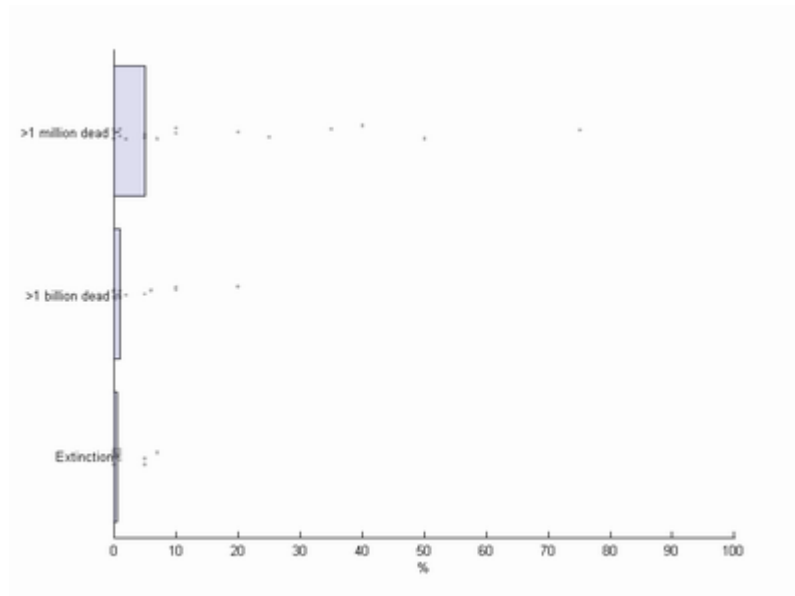
>1 billion dead:
median 5%

Extinction:
median 5%

Number killed
in the single
biggest
nanotech
accident.

>1 million
dead: median
5%

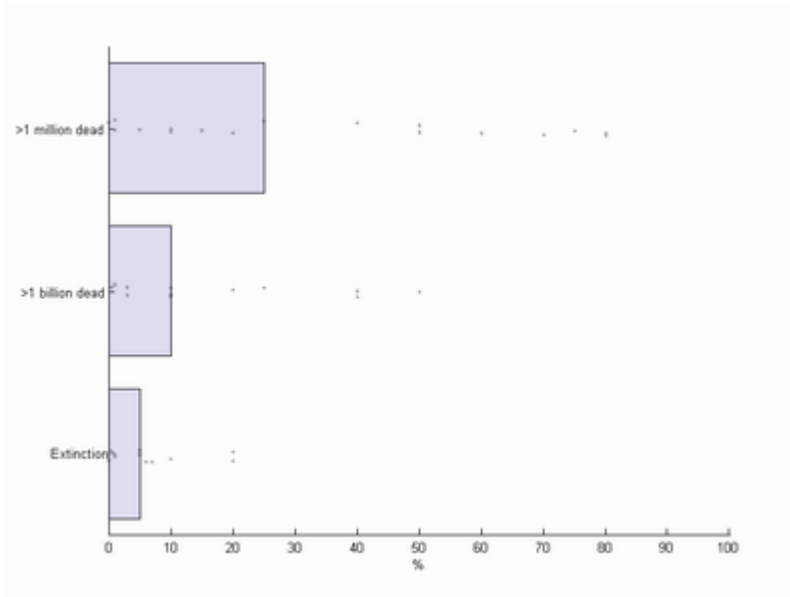>1 billion dead:
median 1%

Extinction:
median 0.5%

Number killed
by molecular
nanotech
weapons.

>1 million
dead: median
25%

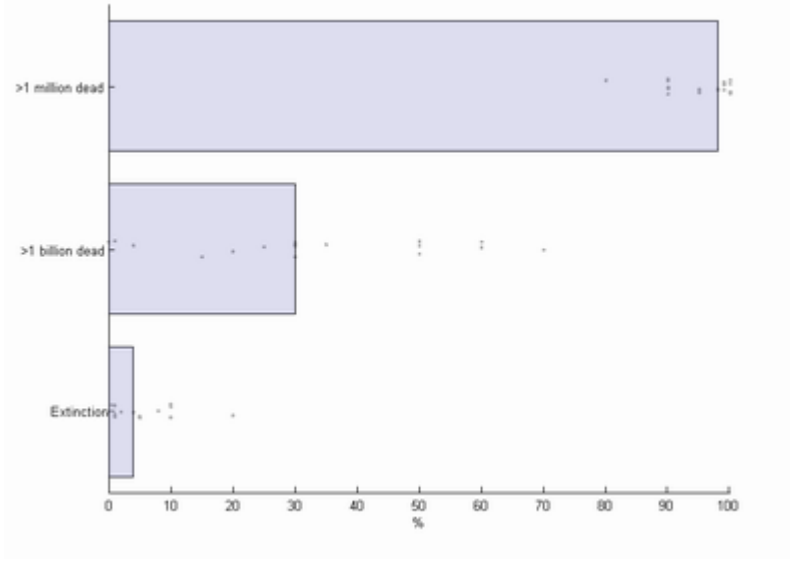>1 billion dead:
median 10%

Extinction:
median 5%

Total killed in
all wars
(including civil
wars).

>1 million
dead: median
98%

>1 billion dead:
median 30%

Extinction:
median 4%

Total risk of
extinction:
median 19%