



Public Attitudes towards robots

and

EU programme on Cognitive Systems and Robotics: Outreach to the public

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IEEE/RSJ IROS International Conference on Intelligent Robots and Systems – November 7, 2013

Workshop, Understanding Robotics and Public Opinion: Best Practices in Public Science Communication and Online Dissemination

Outline

- *Eurobarometer Survey "Public attitudes towards robots"*
- *EU & Communication to the public:*
 - **European Robotics Week**
 - **EU-funded competitions for smarter robots**
 - **Science Museum Exhibition in London**

Outline

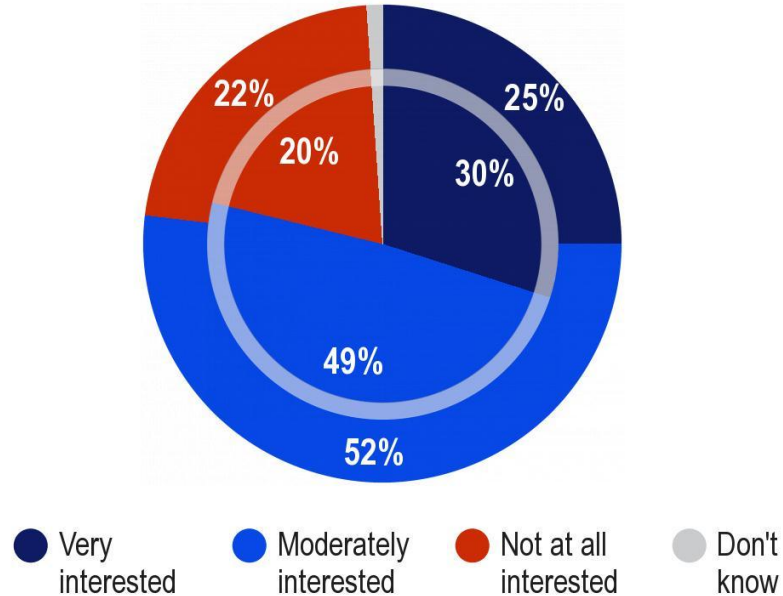
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Overview

- *Background:*
 - Public perceptions of robots are often influenced by misconceptions and fears
 - In order to improve the image of robots and to increase public acceptance, it is necessary to better understand public opinion about this technology
- *In 2012, representative survey in all 27 member states with 26.751 respondents taking part overall*
- *Fieldwork took place between February and March 2012*

Interest in science declining

QA1. Please tell me whether you are very interested, moderately interested or not at all interested in scientific discoveries and technological developments.



Inner pie : EB73.1 Jan.-Feb. 2010

Outer pie : EB77.1 Feb.-Mar. 2012

 EU27

Industrial robots closer match with what people consider a robot

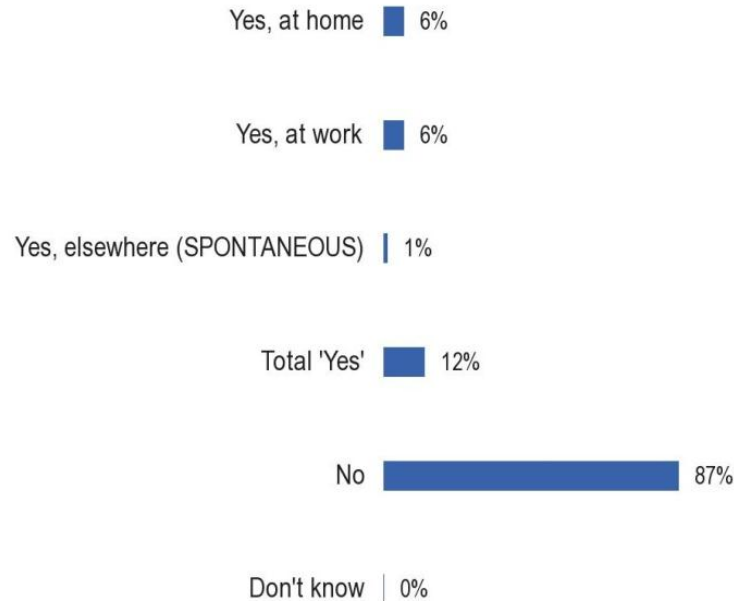
QA2. I'm going to show you two pictures. For each of them, please tell me to what extent it corresponds with the idea you have of robots.



 EU27

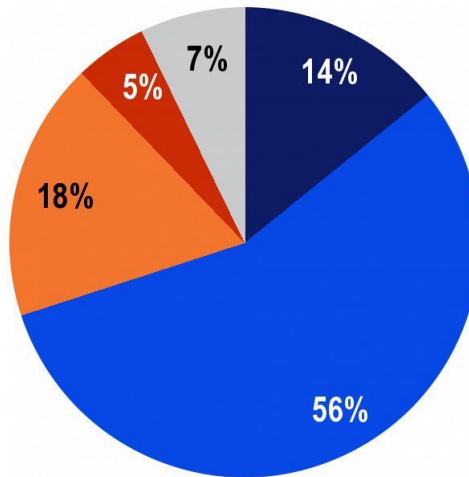
Only a minority of respondents have used a robot

Have you ever used, or are you currently using such robots at home or at work (e.g. a robotic vacuum cleaner at home or an industrial robot at work)?



Majority of respondents have positive view of robots

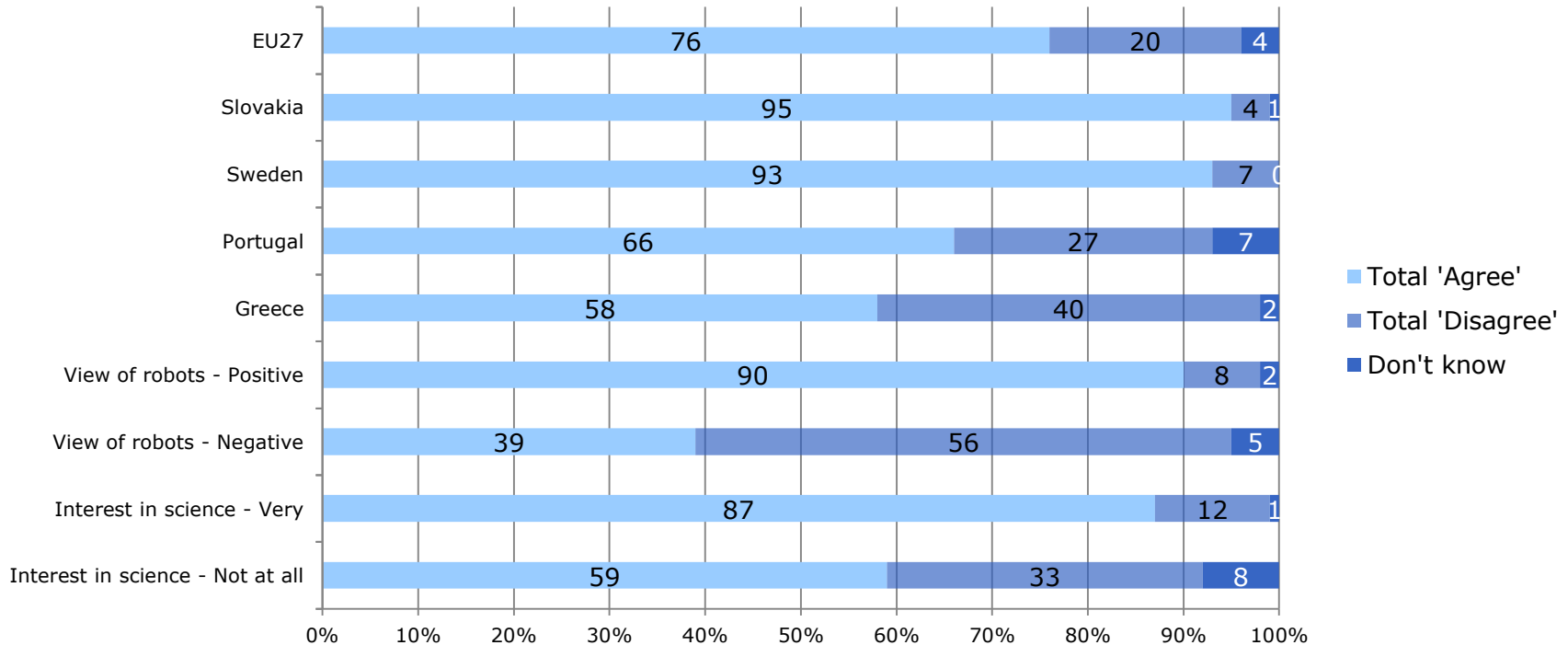
QA4. Generally speaking, do you have a very positive, fairly positive, fairly negative or very negative view of robots?



Very positive Fairly positive Fairly negative Very negative Don't know

Three quarters of respondents think robots are good for society

Robots are a good thing for society, because they help people





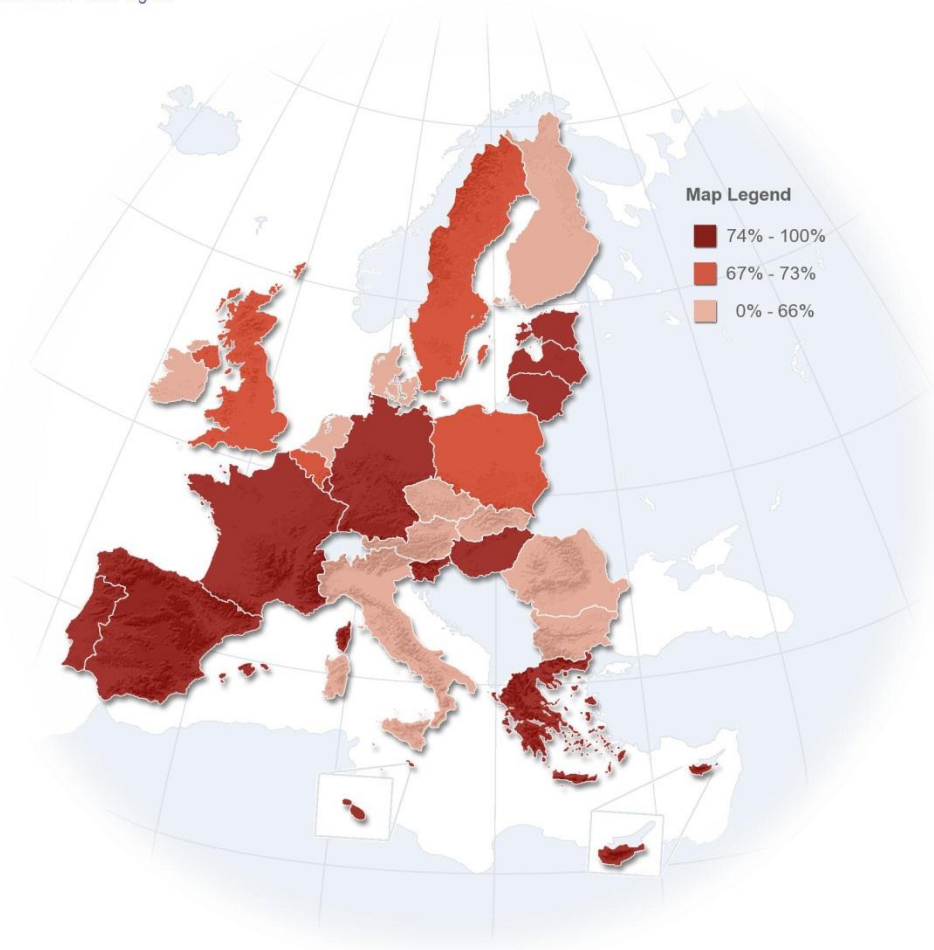
- **70% of respondents think that robots steal people's jobs**
- **Opinion least widespread in Scandinavia and Central/South East Europe**
- **Strongest agreement in South West Europe**

	PT	89%
	ES	84%
	EL	83%
	CY	83%
	MT	82%
	LU	79%
	LV	78%
	HU	78%
	LT	78%
	EE	77%
	SI	76%
	DE	76%
	FR	74%
	BE	72%
	EU	70%
	PL	70%
	SE	67%
	UK	67%
	IT	64%
	RO	63%
	IE	63%
	BG	61%
	CZ	60%
	SK	60%
	DK	59%
	AT	58%
	FI	55%
	NL	51%

Question: QA5.2. Please tell me to what extent you agree or disagree with each of the following statements about robots.

Option: Robots steal peoples' jobs

Answers: Total 'Agree'





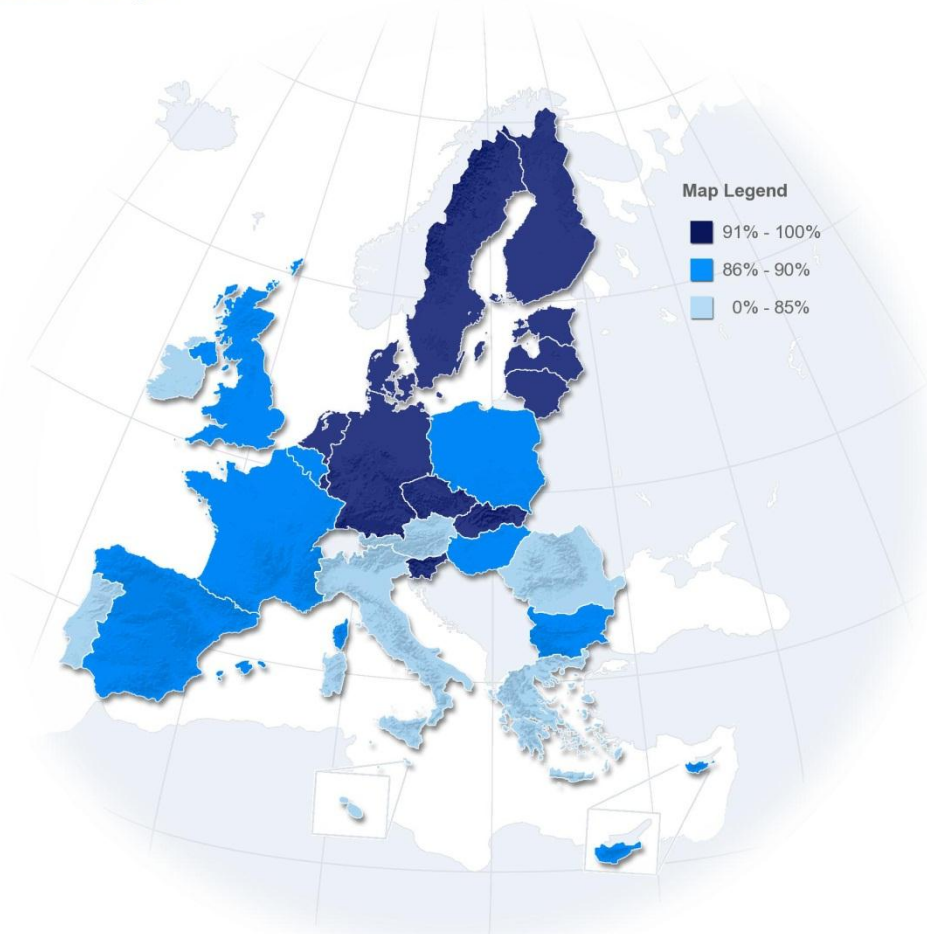
- Almost 9 out of 10 respondents consider robots necessary as they can do jobs that are too hard/dangerous for people
- Highest agreement in Northern and Eastern Europe
- Less agreement in the periphery

	SE	97%
	SK	96%
	SI	96%
	LV	95%
	DK	95%
	NL	94%
	EE	94%
	DE	92%
	CZ	92%
	FI	92%
	LT	92%
	LU	91%
	FR	90%
	BE	89%
	BG	88%
	PL	88%
	EU	88%
	CY	88%
	HU	87%
	UK	87%
	ES	87%
	IE	84%
	AT	83%
	RO	82%
	MT	81%
	IT	80%
	PT	78%
	EL	75%

Question: QA5.3. Please tell me to what extent you agree or disagree with each of the following statements about robots.

Option: Robots are necessary as they can do jobs that are too hard or too dangerous for people

Answers: Total 'Agree'





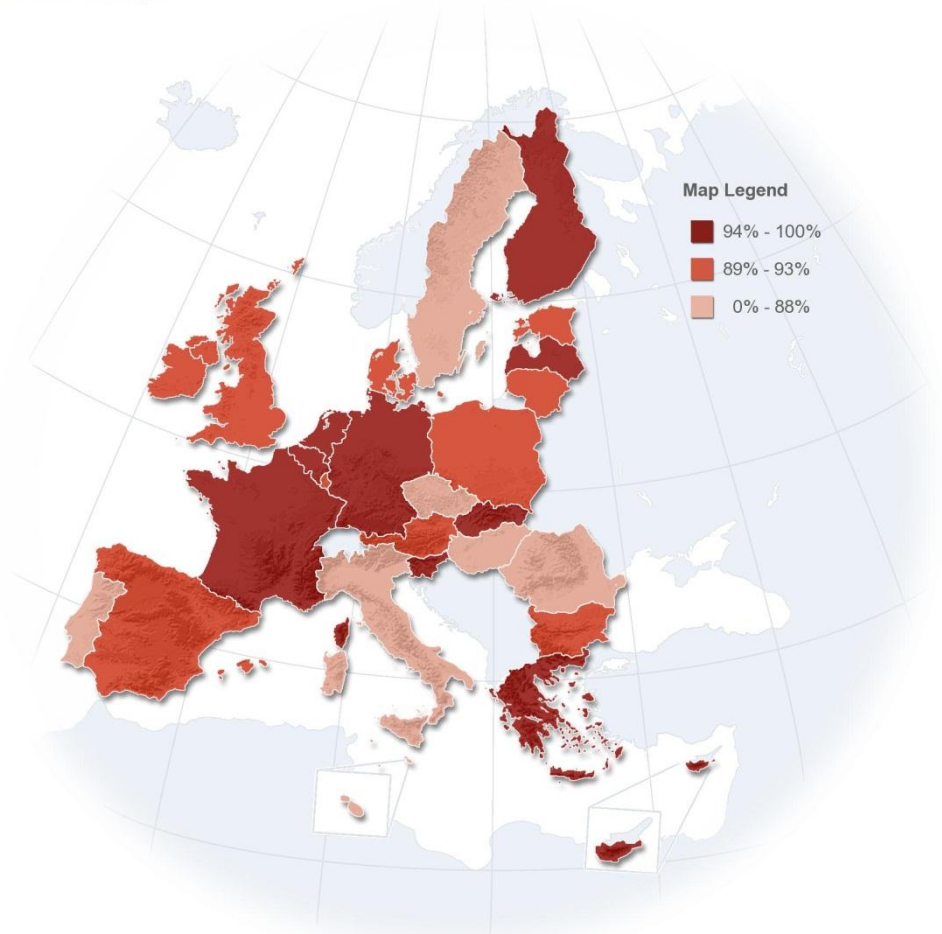
- **Almost 9 out of 10 respondents think robots are a form of technology that requires careful management**
- **High agreement throughout Europe with slightly less agreement in Southern and South-Eastern Europe**

CY	98%
EL	97%
FI	97%
NL	96%
DE	95%
SI	95%
LV	94%
BE	94%
FR	94%
SK	94%
DK	93%
LU	93%
BG	92%
ES	91%
EU	91%
LT	91%
UK	91%
EE	90%
PL	90%
AT	90%
IE	89%
SE	87%
MT	86%
IT	86%
CZ	84%
PT	83%
RO	82%
HU	82%

Question: QA5.4. Please tell me to what extent you agree or disagree with each of the following statements about robots.

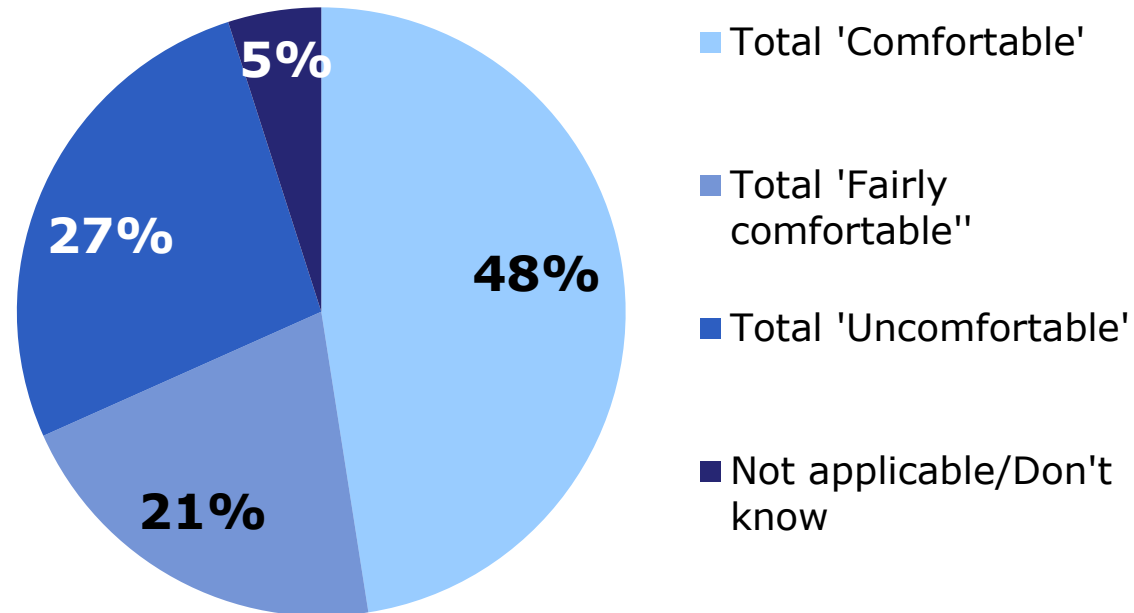
Option: Robots are a form of technology that requires careful management

Answers: Total 'Agree'



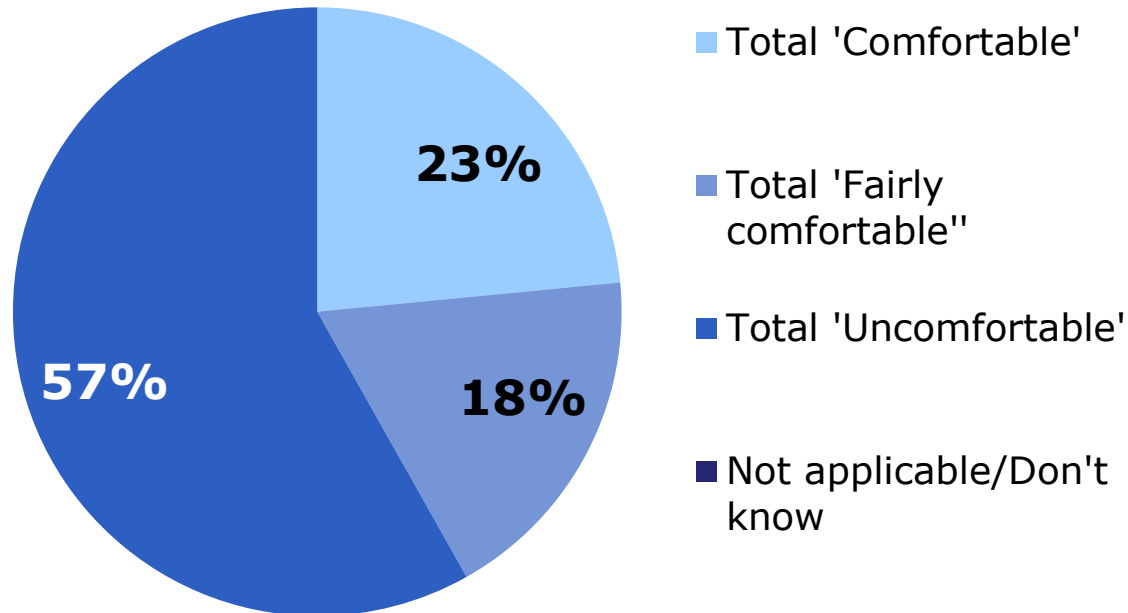
About half of respondents are comfortable with a robot assisting them at work

Having a robot assist you at work



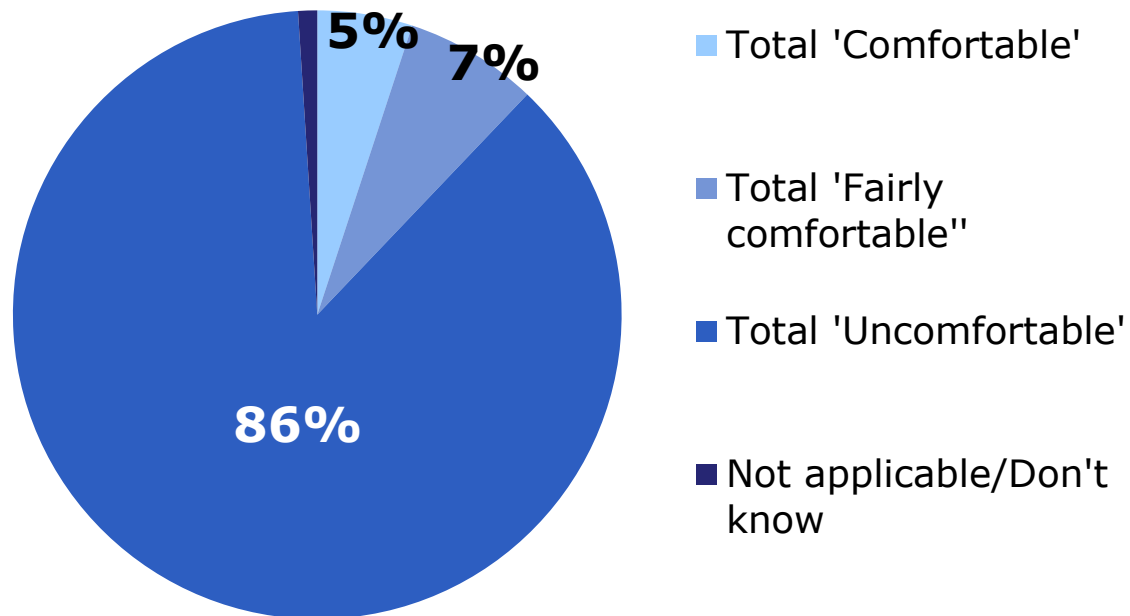
About one quarter of respondents would be happy getting operated by a robot

Having a medical operation performed on you by a robot




Nine out of ten respondents would not want their children/elderly parents minded by a robot

Having your children or elderly parents minded by a robot

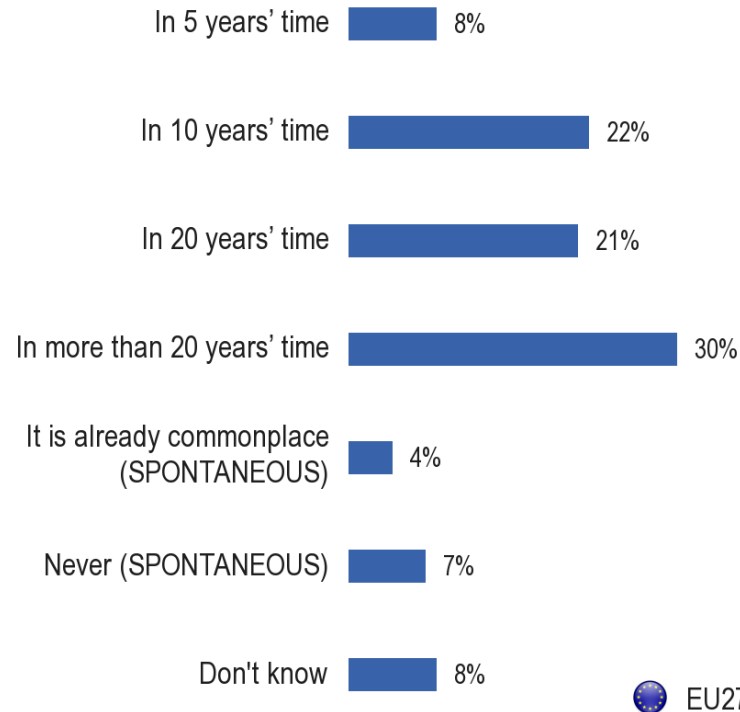


Respondents think robots should be banned in children care, education and healthcare

 EU27	QA6 In which areas do you think that robots should be used as a priority?	QA7 And on the other hand, in which areas do you think that the use of robots should be banned?	Areas of robots usage index (Q6-Q7)
Space exploration	52%	1%	+51
Manufacturing	50%	4%	+46
Search and rescue	41%	3%	+38
Military and security	41%	7%	+34
Domestic use, such as cleaning	13%	8%	+5
Agriculture	11%	6%	+5
Transport\ Logistics	11%	6%	+5
Healthcare	22%	27%	-5
Leisure	3%	20%	-17
Education	3%	34%	-31
Care of children, elderly, and the disabled	4%	60%	-56




Majority of respondents think robots will become mainstream in 20 or more years

QA9. In your opinion, in Europe, when it will become commonplace for robots to do house work?

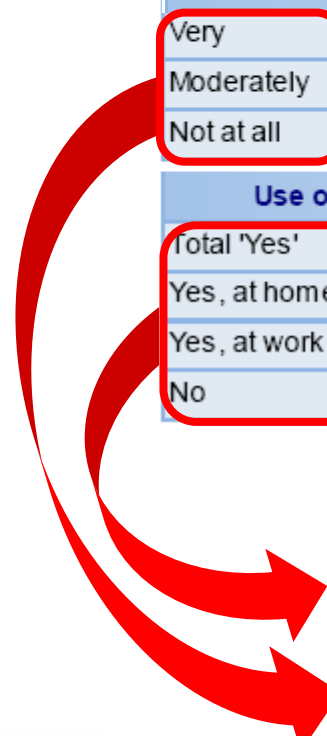




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	Total 'Positive'	Total 'Negative'
EU27	70%	23%
 Sex		
Male	76%	19%
Female	65%	27%
 Age		
15-24	79%	16%
25-39	74%	20%
40-54	72%	22%
55 +	62%	30%
 Education (End of)		
15-	52%	38%
16-19	69%	24%
20+	80%	15%
Still studying	84%	13%

	Total 'Positive'	Total 'Negative'
Self-positioning on the social staircase		
Low (1-4)	64%	28%
Medium (5-6)	68%	25%
High (7-10)	79%	17%
Interested in science and technology		
Very	86%	11%
Moderately	75%	20%
Not at all	42%	44%
Use of robots		
Total 'Yes'	88%	9%
Yes, at home	89%	9%
Yes, at work	90%	7%
No	68%	25%



**BETTER INFORMED ->
MORE POSITIVE ATTITUDE**

Conclusions

- *More open attitudes towards robots in Scandinavia and Eastern Europe, more negative views in Southern Europe*
- *Interest in science has a strong positive impact on how people perceive robots (and interest in science is declining across the EU)*
- *Image of robots as job killers still widespread (especially in big countries like DE, FR and ES)*
- *Once people get in touch with robots, their attitudes change and get more positive*

-> *Report:* http://ec.europa.eu/public_opinion/archives/ebs/ebs_382_sum_en.pdf

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EU-funded Robotics competitions

- *Show to the public, in realistic situations:*
 - **how robots can efficiently support humans in search and rescue, manufacturing and domestic activities**
 - **how science can contribute to well-being and progress in our daily life**
 - **capabilities and limitations:**
 - what robots CAN and CANNOT achieve today**
- *Support the researchers:*
 - **Testing & benchmarking -> smarter robots**
 - **Sharing of experience**

Robotics competitions

euRathlon

Search & Rescue activities

COMPETITIONS

- Land, 23–27 September 2013
- Underwater, 2014
- Land + Underwater + Air, 2015



<http://www.eurathlon.eu/>

RoCKiN

**Testbeds – Innovation –
Links with RoboCup**



RoCKiN@home



RoCKiN@work

COMPETITIONS

- Automatica, May 2014 (tbc)
- European Robotics Week
November 2015 (tbc)

<http://rockinrobotchallenge.eu/>

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European Robotics Week bringing robots to the public

Initiated by the EU-funded euRobotics project

TO INFORM citizens about the reality of robotics:

- No SciFi movies BUT real demonstrators in research labs, universities, companies
- What robots can do and can't do today...
- ... And also tomorrow, to help citizens



**1 WEEK TO
MAKE THE
DIFFERENCE**



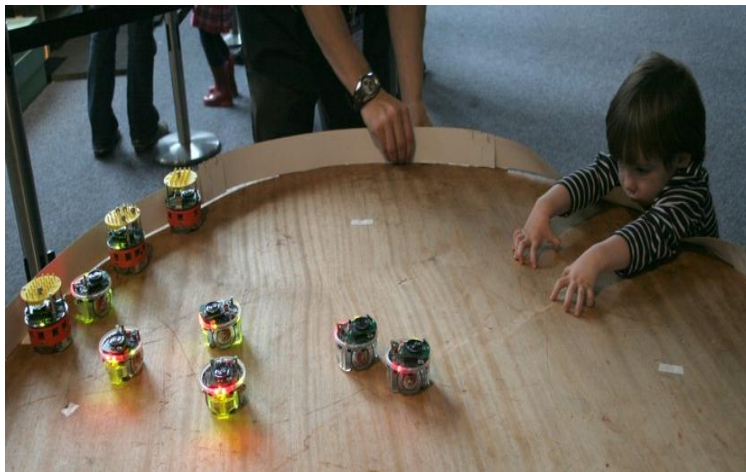
Special address to the youth

- Robots for boosting the motivation for school kids towards STEM subjects
- Growing presence of robots in our life
 - > to build tomorrow, our society needs engineers, scientists.





2011: Over 360 activities
19 European Countries
80.000 participants



European Robotics Week 2011 –
Birmingham, United Kingdom 2011
Credit: Patu Tifinger

2012: 21 European Countries



European Robotics Week 2012 – Czech
Republic
Credit: Ales Nemes / Vive Les Robots!



Some special guests this year:

Tony Dyson

creator of Star Wars's R2-D2

Tomotaka Takahashi

designer of KIROBO, the first speaking humanoid robot in outer space.

Please check all the activities on:

<http://www.eu-robotics.net/eurobotics-week/events-2013/>



European Robotics Week 2013 -
Finland Kick-off event at House of
Estates in Helsinki



European
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eu
Robotics
Week

European Robotics Week 2013 25th November to the 1st of December

Over **170 activities** already registered
(Workshops, Laboratory Tours, Competitions,
Exhibitions, ...)

**YOU.... ROBOTICIST
.....WANT TO BE PART !!!**



PLEASE REGISTER NOW

<http://www.eu-robotics.net/eurobotics-week/events-2013/>



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Robotville - Science museum exhibition in London

- *Showcase the latest and greatest results in European robotic research*
 - **More than 20 projects**
 - **4 days / 9000 visitors** (Dec. 2011)
 - **Co-organised by the European Commission Cognitive Systems and Robotics Programme**
- *Coming Next at the Science Museum: Robot Safari*
http://www.sciencemuseum.org.uk/visitmuseum/Plan_your_visit/events/festivals/robot_safari.aspx

THANK YOU!



For more information, please visit:
<http://cordis.europa.eu/fp7/ict/robotics/>

Or contact us:
cecile.huet@ec.europa.eu