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Handwritten notes on a yellow sticky note, including the number 2009.

Ni ho  
Marta



***Regardless** of the moral or ethical implications of the relationships between humans and robots, socially interactive robots **will be entering** our everyday lives **as soon as** their abilities are **technically feasible** for the application in real world contexts*

De Graaf, 2016





lol Bernadó

*Is it appropriate to design a robot that is so engaging that people become emotionally attached to it [...]?*

*And what kind of reactions **would we like to prevent?***



lol Bernadó

*[...] should attempts to create an illusion of robot sentience  
[...] would be viewed as both deceptive and unethical?*

Sharkey & Sharkey, 2011



*Es lícit dissenyar dispositius / programes perquè creïn addició i dependència?*

Carme Torras, 2018



*Are pervasive interactions with a wide array of “robotic others” [...] a **good thing** for human beings?*

Melson et al, 2005



*Is it ethically acceptable to create a robot that leads children to believe that it has mental states and emotional understanding?*

Ferreira & Sequeira, n.d.







lol Bernadó





*There is much to gain from using robots, but **what do we stand to lose?***

*Might robots lead to an impoverished learning experience where **what is technologically possible is prior-what do we stand to lose?***

Belpaeme et al, 2018








# AI & ROBOTICS

AI & robotics will have a significant impact on society, values & human rights

## EFFECT ON VALUES & PEOPLE

## TYPES OF IMPACTS

	
<h3>VALUES AFFECTED</h3>	<h3>PEOPLE HIGHLY AFFECTED</h3>
<ul style="list-style-type: none"> <li>• Accountability</li> <li>• Autonomy</li> <li>• Equality</li> <li>• Fairness</li> <li>• Human dignity</li> <li>• Justice</li> <li>• Integrity of the person</li> <li>• Privacy</li> <li>• Security</li> <li>• Solidarity</li> </ul>	<ul style="list-style-type: none"> <li>• Consumers</li> <li>• Disfavoured or 'excluded' people</li> <li>• First responders</li> <li>• Healthcare providers</li> <li>• Inhabitants of poor countries</li> <li>• Patients</li> <li>• Recipients of insurance &amp; social benefits</li> <li>• Regulators &amp; policy-makers</li> <li>• Tenants (e.g. minority ethnic groups)</li> <li>• The elderly</li> <li>• Workers</li> </ul>

		
<h3>POSITIVE</h3>	<h3>DUAL</h3>	<h3>NEGATIVE</h3>
<ul style="list-style-type: none"> <li>• Improve medical diagnostics</li> <li>• Advance cybersecurity</li> <li>• Improve decision-making via data analysis</li> <li>• Enhance healthcare</li> <li>• Improve elder care</li> <li>• Advance language translation</li> <li>• Improve voting security</li> <li>• Introduce new forms of co-operation &amp; inclusion</li> <li>• Reduce repetitive tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Alter human relations</li> <li>• Alter legal frameworks</li> <li>• Alter moral conceptions</li> <li>• Change understandings of personhood</li> <li>• Create unintended consequences</li> <li>• Intensify big data analytics</li> <li>• Escalate surveillance</li> <li>• Increase profiling</li> <li>• Increase leisure</li> </ul>	<ul style="list-style-type: none"> <li>• Harm/threat of harm from autonomous weapons</li> <li>• Loss of control over privacy &amp; personal data</li> <li>• Bias &amp; discrimination</li> <li>• Cyberwarfare</li> <li>• Increase class/wealth domination</li> <li>• Diminish media pluralism</li> <li>• Greater energy consumption</li> </ul>



**sienna.**  
Technology, ethics and human rights

We will help address some of these issues by:

- Reviewing the legal, ethical, social & economic impacts of AI & robotics
- Connecting with citizens to understand concerns via surveys in 11 countries & panels in 5 countries
- Consulting experts and discussing ethical & human rights issues
- Developing ethical codes & protocols



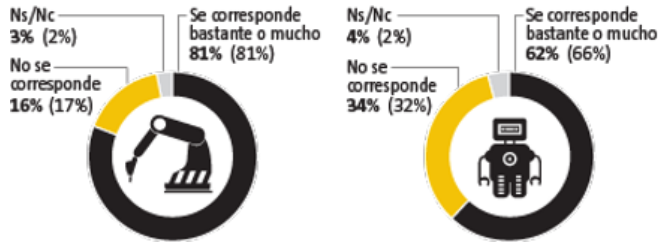
This infographic presents information extracted from the SIENNA report on the state of the art in AI and Robotics (2018). Infographic layout: Tilted Research; Infographic design: Uppsala University. This infographic and its contents reflect only SIENNA's view. The Commission is not responsible for any use that may be made of the information it contains. The SIENNA project - Stakeholder informed ethics for new technologies with high socio-economic and human rights impact - has received funding under the European Union's Horizon research and innovation programme under grant agreement No 741736.

[www.sienna-project.eu](http://www.sienna-project.eu)

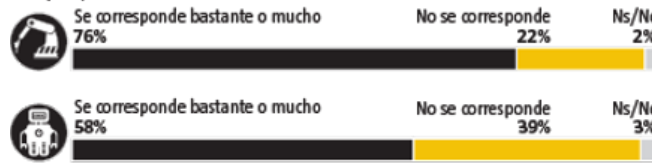


## ¿Qué imagen se corresponde más a la idea que tiene de un robot?

En la UE. Datos del 2017  
Entre paréntesis, datos del 2012

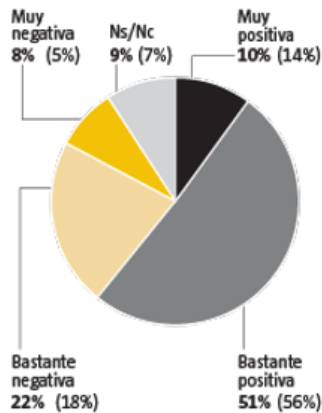


En España, en el 2017

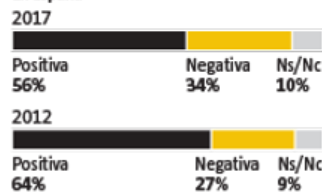


## ¿En general, que visión tiene sobre los robots e inteligencia artificial?

En la UE. Datos del 2017  
Entre paréntesis, datos del 2012

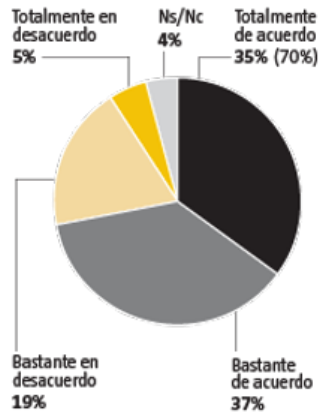


En España

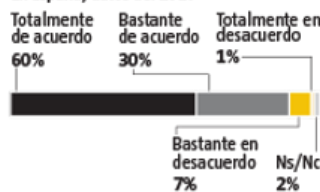


## ¿Cree usted que los robots roban trabajo a las personas?

En la UE. Datos del 2017  
Entre paréntesis, datos del 2012



En España, datos del 2017

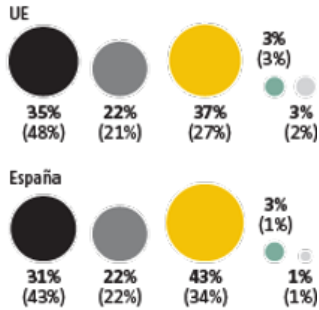


## Grado de aceptación

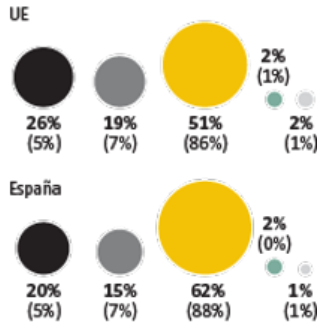
Datos del 2017  
Entre paréntesis, datos del 2012



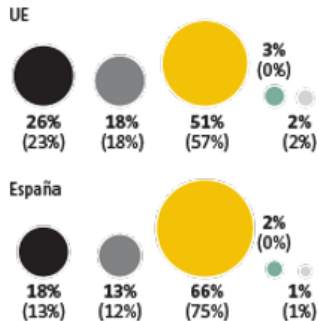
### ROBOT ASISTENTE EN EL TRABAJO



### COMPañía PARA ENFERMOS Y ANCIANOS



### ASISTENCIA EN CIRUGÍA

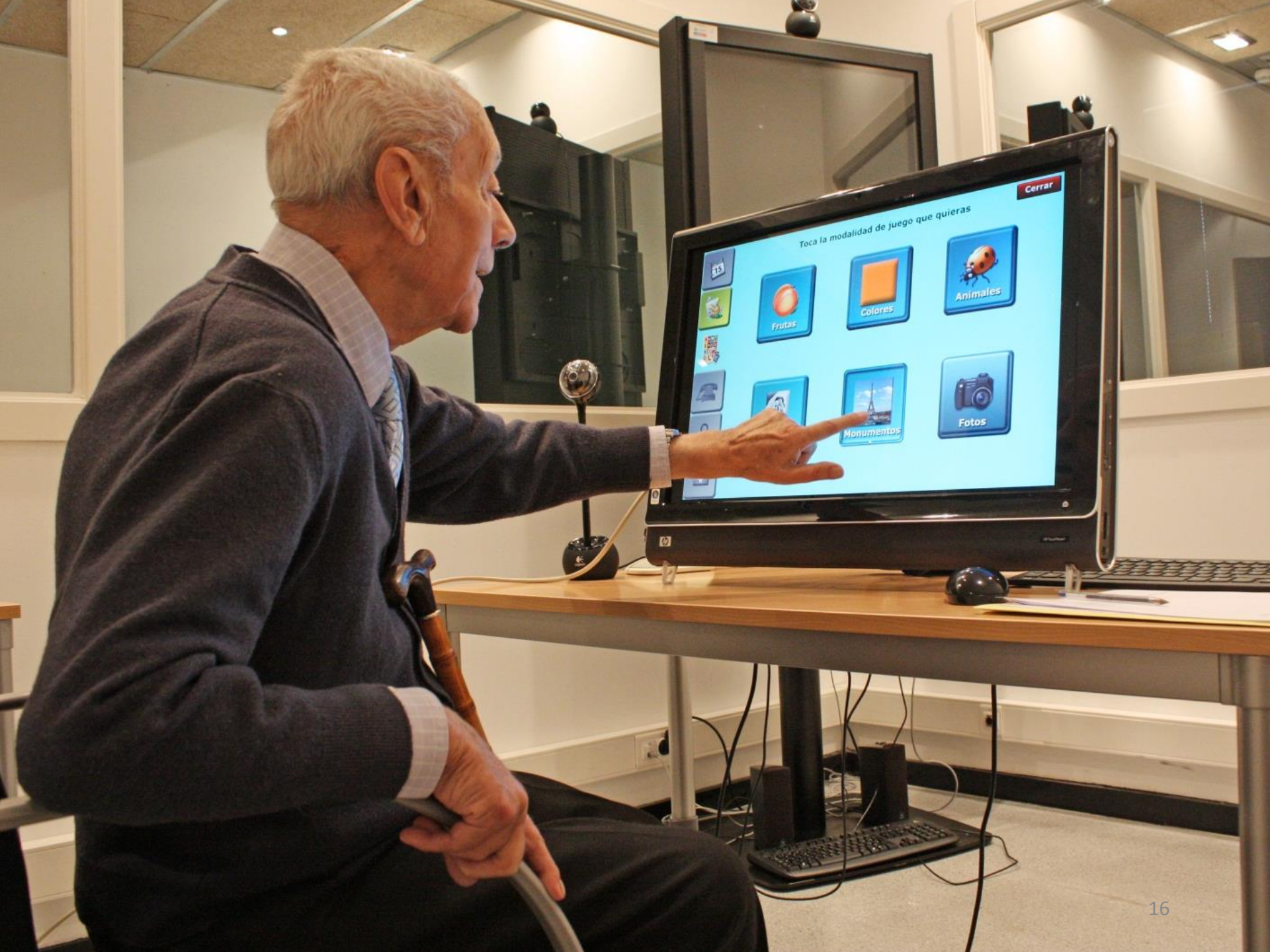














*Awareness*

Preocupació

Compromís