

I AM MY ROBOT: THE IMPACT OF ROBOT- BUILDING AND ROBOT FORM ON OPERATORS

Groom et al. 2009

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SS 2010

Motivation

- * **autonomous** vs. **tele-operative**/ interacting robot
- * extension of one's sense of self into robots:
 - * control
 - * creation
 - * personalization
- * **creating** artificial life **alters** the way people **feel** towards the robots *they* build
- * robots as **agentic beings** or **tools**?
 - * *encounter* vs. *operate* function

Factors and Design

- * **Assembler: self vs. other**

- * self-extended objects: represent and maintain the sense of self.

- * **Robot form: car vs. humanoid robot**

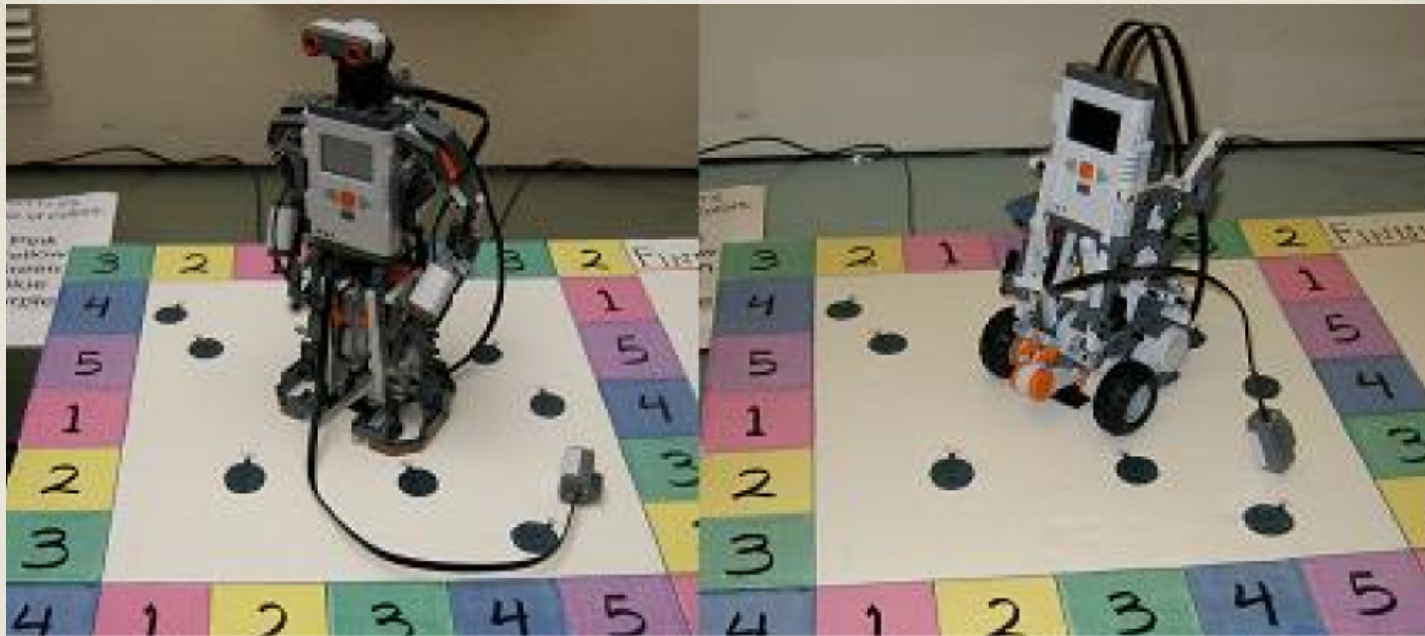
- * more anthropomorphic => perceived as having its own identity rather than self-extension.

- ▶ between subjects: **all** participants assembled a robot

Hypotheses

- * H₁. People will self-extend more into the car robot than the humanoid.
- * H₂. People will prefer the personality of the car robot over the humanoid.
- * H₃. People will self-extend more into a robot they assemble than a robot assembled by another.
- * H₄. People will prefer the personality of a robot they assemble over a robot assembled by another.

Procedure



Robot

Car

- * fill-in pre-questionnaire about their personality (**measures for participant**)

- * build the robot

- * test it

- * play the game

- * answer questionnaire about their experience (**measures for robot**)

Measures

* Self extension:

- * absolute value of the difference between the participants rating of themselves and the robot on each trait
- * participant **attachment**
- * robot **control**
- * sense of **team**

* Robot personality:

- * **friendliness**
- * **integrity**
- * **malice**

Results - Self Extension

- * Generally: Participants could self-extend themselves more for the car robot than for the humanoid robot (HI) and for self-assembled than other-assembled.

	Self-assembled		Other-assembled	
type of robot	car	humanoid	car	humanoid
attachment	+	+	-	-
robot control	-	+	+	+
sense of team	+	+	-	-

+ : more, - : less

Results - robot personality

	Self-assembled		Other-assembled	
type of robot	car	humanoid	car	humanoid
friendliness	+	-	+	+
integrity	+	-	+	-
malicious	-	+	+	+

+ : more, - : less

Significant interaction:

car robot **self**-assembled

vs.

car robot **other**-assembled

Discussion

- * H1: greater self extension for the car than for the humanoid
- * H2: people perceive **humanoid** form as indicator of **unique identity** => car “better personality” than the humanoid, suspicion towards the humanoid, car: “directly controlled object”
- * H3: self-assemblers: greater overlap, attachment, team spirit => experience of building a robot encourages people to self-extend
- * H4: self-assemblers: evaluated the car more positively than the humanoid

Conclusions

- * An operator's **experience** with a robot before operating it and the robot's **form** affect the operator's **attitudes toward the robot**.
- * **Designers** : not focus only on the people that the robot treats (e.g. patients in hospital, disaster victims etc.), but also on the robots' **operators**.



Children Playing at the Seaside by Edward Poynter (American, 1877-1927)



THANKS!



Now let's go to the seashore..!