Can Robots Be **Sold**?
The Effects of Robot Designs on the Consumers’ Acceptance of Robots

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INTRODUCTION

• Personal and service robots are extraordinarily advanced compared to the ones developed a decade ago.

• However, the size of the personal and service robot market has not grown much, betraying the industry experts’ predictions that the market would rapidly expand within a decade.

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<td>US$ 17.1 Billion</td>
<td>US$ 3.6 Billion</td>
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• This arouses a research question why today’s personal and service robots are **not sold** despite of all the technological advancements and anticipations.
INTRODUCTION

• People tend to categorize a new product based on its appearance (Bloch, 1995).

• People produce expectations regarding the functions and performance of the product based on its category (Moreau, et al., 2001).

• The match between the expected and the actual performance of the product affects the consumers’ satisfaction of the product (Oliver, 1980).

Prediction: The match between the expected functions, which are drawn from robot appearance and the actual functions of the products leads to the positive feedback from consumers.

Objectives: To investigate the effect of these robot design approaches on the consumers’ acceptance of robots.
RELATED WORKS

Human– versus Product–Oriented Robot

Human–Oriented Robot

Product–Oriented Robot
Human-Oriented Robot

A screenshot of the video when the robot introduces itself
A screenshot of the video when the user operates the block

Product-Oriented Robot

A screenshot of the video when the robot introduces itself
A screenshot of the video when the user operates the robot
STUDY DESIGN

Measures

Categorization of Robots

Customers’ Acceptance of Robots

- Product Evaluation (4 items, Cronbach’s $\alpha = .97$)
- Purchase Intention (2 items, Cronbach’s $\alpha = .97$)
- Willingness to Pay (1 item)
RESULTS

Categorization of Robots

Human-Oriented Robot

Babies & Kids Product: 0/26
Robot: 26/26

Product-Oriented Robot

Babies & Kids Product: 22/26
Robot: 4/26

$\chi^2 = 38.13, \ p < .001$
Customers’ Acceptance of Robots

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<tr>
<th></th>
<th>Human-Oriented Robot</th>
<th>Product-Oriented Robot</th>
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<tr>
<td><strong>Product Evaluation</strong></td>
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<td><strong>Purchase Intention</strong></td>
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<td><strong>Willingness to Pay</strong></td>
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- **Product Evaluation**
  - Mean Rating: 6.0
  - Mean Rating (USD): 410
  - *t* = 15.52, df = 50, *p* < .001

- **Purchase Intention**
  - Mean Rating: 6.0
  - Mean Rating (USD): 350
  - *t* = 13.61, df = 50, *p* < .001

- **Willingness to Pay**
  - Mean Rating: 3.0
  - Mean Rating (USD): 280
  - *t* = 4.34, df = 50, *p* < .001
Human–Oriented Robot

Product–Oriented Robot