

ROBOTICS : AIBO and AUTISM



APE – ITIS PININFARINA



AUTISM

- Autism is a disorder of neural development characterized by impaired social interaction and communication, and by restricted and repetitive behavior. These signs all begin before a child is three years old. Autism affects information processing in the brain by altering how nerve cells and their synapses connect and organize; how this occurs is not well understood.
- People with autism have social impairments and often lack the intuition about others that many people take for granted.
- Children with high-functioning autism suffer from more intense and frequent loneliness compared to non-autistic peers, despite the common belief that children with autism prefer to be alone.
- About a third to a half of individuals with autism do not develop enough natural speech to meet their daily communication needs

A I B O

AIBO (**A**rtificial **I**ntelligence ro**B**Ot, homonymous with "pal" or "partner" in Japanese: *aibō* (相棒) was one of several types of robotic pets designed and manufactured by Sony. There have been several different models since their introduction on May 11, 1999 although AIBO was discontinued in 2006.

AIBO is able to walk, "see" its environment via camera and recognize spoken commands in Spanish and English. AIBO robotic pets are considered to be autonomous robots since they are able to learn and mature based on external stimuli from their owner, their environment and from other AIBOs



A study investigated whether a robotic dog might aid in the social development of children with autism.

Eleven children diagnosed with autism (ages 5-8) interacted with the robotic dog AIBO and, during a different period within the same experimental session, with a simple mechanical toy dog (Kasha), which had no ability to detect or respond to its physical or social environment.

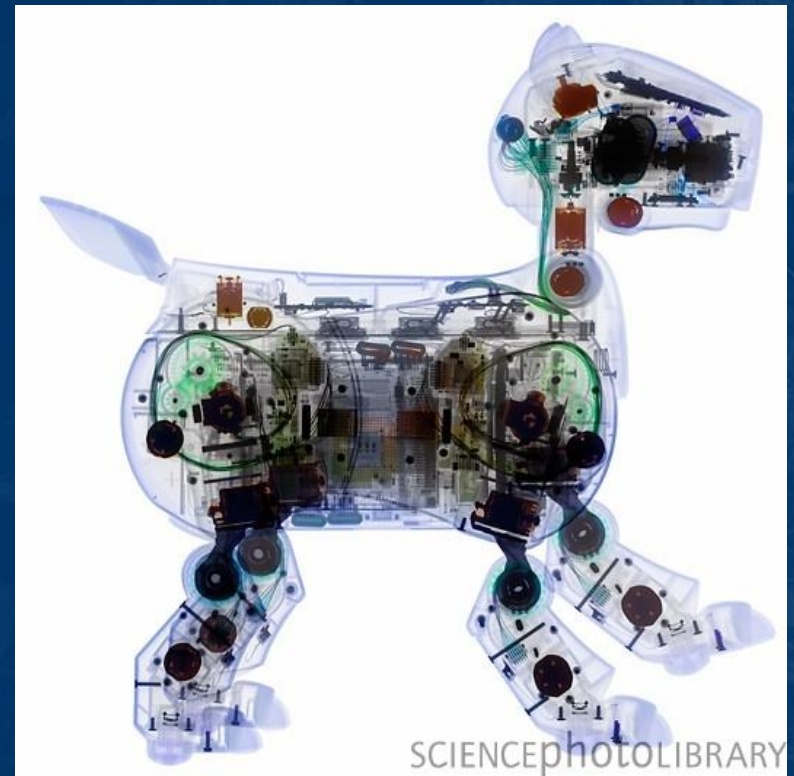
Results showed that, in comparison to Kasha, the children spoke more words to AIBO, and more often engaged in three types of behavior with AIBO typical of children without autism: verbal engagement, reciprocal interaction, and authentic interaction.



Another study investigated the interactions of 72 children (ages 7 to 15) with Sony's robotic dog AIBO in comparison to a live Australian Shepherd dog. Results showed that more children conceptualized the live dog, as compared to AIBO, as having physical essences, mental states, sociality, and moral standing. Based on behavioral analyses, children also spent more time touching and within arms distance of the live dog, as compared to AIBO. That said, a surprising majority of children conceptualized and interacted with AIBO in ways that were like a live dog.

Children with autism spectrum disorder typically feel more comfortable with robots than with other people initially, because robot interactions are simpler and more predictable and the children are in control of the social interaction.

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