

How Animal Type Robots Contribute to the Treatment of Autism Spectrum Disorders

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Abstract

Animal-type robots (aibo: Created by SONY Corporation) have changed from the conventional form to have individuality and attachment like living organisms due to the introduction of AI. Traditionally, stuffed animals have been considered to have great significance in the socialization process of animals as a transition object in the inter subjective area (the area of psychological relationship between people).

Keywords: Animal; Autism; Autism spectrum disorders

Description

High-functioning autism and Asperger's syndrome, which are currently included in autism spectrum disorders, are disorders with various functional levels. We call them Autism Spectrum Disorder without Mental Retardation (ASD without MR), in this study.

ASD without MR is an extremely diverse disorder. Recently, many common mental disorders have various autism spectrum disorders in our clinical facilities. Therefore, it is important to have the patient acquire communication skills early in development.

On the other hand, animal-type robots (aibo: Created by SONY Corporation) have changed from the conventional form to have individuality and attachment like living organisms due to the introduction of AI. But it is not clear what kind of reciprocal reaction these changes have in children. Autism is known to be buried in the self-world from an infancy due to its communication skills, social challenges, and extreme narrowness of areas of interest, and to spend more time playing by one person. In other words, as a new functional transition object, animal-type robots may contribute to the development of the primitive sociality of building a two-party relationship. To exploring such possibilities, we would like to start the following exploratory research and decided to start a joint research

project in consultation with Sony Corporation. The outline of our research is as follows.

Purpose of research

We compare the inter-interaction between children's ASD without MR and healthy persons, and search for whether the change in the difference is related to growth promotion (social and emotional aspects).

Subject

- Children between the ages of 6 and 12
- FIQ70 or higher in WISC-IV (intelligence test)
- Children diagnosed with autism spectrum disorder according to DSM-5 diagnostic criteria of the American Medical Association
- Children who have obtained document consent from the substitute consentor and consent from the subject to participate in this study

Method

Exposure time 10 minutes Observation frequency once a week 1 cool at 8 weeks (ends with 1 cool)

Evaluation

Video record and evaluate and observe behavior. The childhood autism rating scale is performed before the start of the study and at the 8th week or discontinuation.

Conclusion

At present, there is a difference in the way of playing by the severity of the disorder of the subject's autism. In the normal control group, changes in the ingenuity of how to play are gradually seen, but such changes are few in the autism group. With proper induction, the autism group can also change the way it is played. We are currently conducting research and will report the results in 2021.