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## Patterns Of Play Activities In Autism And Typical Development. A Case Study.

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### Abstract

Objects propose us a variety of action possibilities (affordances). The individual's experiences, motivation and object properties also influence the way of object use. Conventional (proper) and nonconventional (flexible, idiosyncretic) object use is very much part of normal development. However, little detailed attention has been paid so far to object use in typical and atypical development. The aim of my study was to explore the differences of object play between two preschool children. One of them lives with autism spectrum disorder (ASD), while the other boy is a mentally age-matched child with typical development (TD). Object play was recorded in semi-structured situations by child-parent dyads, in their homes. Three sets of objects were introduced and offered for play by the parent. For the analysis of the video records I used the Observer XT 8.0 software. Two independent coders coded actions types. The TD-child generally preferred creative play with the objects offered by the mother. The mother's demonstration and her short instructions were enough to facilitate her son's play activity. In contrast, the autistic boy's attention was narrow and this child needed more explicit information about the tools to interpret their context. It is remarkable that the ASD-child expressed a desire to use pictures during the play activity. The TD-child's spontaneous play reflected more practical and flexible knowledge about the surrounding world (existence of dynamic mental representations), while the autistic child rather requested single pictures (simpler and static information for cognition) by sets. Further researches are needed to investigate how to use pictures exactly to stimulate play movements to develop autistic children's skills and support their socialization and integration into the society.

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## 1. Instructions

There is a growing interest within psychology how to interpret the significance of objects in our life and relate to our material environment. The standard approach attributes three roles to artifacts: something that was designed, made and used by human agents. But how can we learn what to do with things? Because an object is more than the sum of its properties, and their conventional function is defined culturally. Although the decoupling of the organism and its environment influenced for a long time how to think about human perception and behaviour, nowadays it has become clear that these elements cannot be separated from each other. We have to regard the contextual factors to understand others' behaviour and mental states, as well as grasp the phenomena in their complexity. Therefore the importance of the observed activities in the physical world is a good way for us to know more about the hidden mental processes (Szokolszky, 1998; 2006).

Play is a fundamental activity in the child's life and several developmental capacities (emotional-, cognitive-, physical-, social competencies and language development) are being supported by this important experience, which often involves objects into the process. Proficiency in the various kinds of interactions, reinforces not only the attachment but also the capacity for empathy, emotion symbolization and trust that are also significant consequences of the child's participation in play movements. He/she learns tolerance and – through the understanding and interpretation of the sensory experiences – the emerging symbolic thinking gives the child the opportunity to preserve mental images about the surrounding world. As time goes, perception will be separated from the real world/actions and a symbolic world becomes more pronounced in the child's mind, although at the beginning it will be largely defined by emotions. In this way, he/she will be enabled to manipulate with these sensory-based representations in the dynamic context of interpersonal relations and thereby the child's knowledge about himself/herself and the environment will be also increased. While symbolic capacity comes to the fore by children with typical development in a natural way, there are children who have serious difficulties with comprehending and internalizing experiences in the form of symbols. Thus they are unable to interpret the world from others' perspective and see two sides of the coin (Wieder, 2012).

All types of play have their own role in the child's development, but one of them needs increased symbolic capacity and it is also known by various names: pretend/"as if"/imaginative/fantasy/representational/sociodramatic play. But what happens if some kind of impairment of pretend play is present or this form is entirely absent from the child? This kind of play activity gives room for practicing and understanding the operation of the social environment (Rogers, Cook, & Meryl, 2005). On the one hand, by projecting desires and fears during the play movements, as well as transferring the real problems into the fantasy world by using imaginary figures, the child's problems are also somewhat softened. On the other hand, the replayed and reorganized situations manage the child's life skills and support causal understanding through his/her dynamic mental representations. As the child is developing, his/her pretend play becomes more complex, well-organized, refined and rich (Ariel, 2002). Whereas the different types of play build on each other, problems with the early forms will probably imply negative consequences for the child's further development, social behaviour and learning processes (Williams & Kendell-Scott, 2006).

The early characteristics of children living with autism spectrum disorder (ASD) emphasized three areas of impairments: (1) social relationships, (2) communication (3) and restricted, repetitive and stereotyped behaviour patterns (Chawarska & Volkmar, 2005). But there are also sensory-perceptual deficiencies and problems of object use (Kékes Szabó & Szokolszky, 2012; Williams & Kendell-Scott, 2006), which cannot be separated from the other elements. If the child has difficulties with social connections and understanding his/her surroundings, it is manifested in his/her activities with objects (e.g. conventional use of objects or pretend object play), how this phenomenon will also repercussion on his/her relations with others. Namely, object use is really a perceptual grounded and social-culture process, how things are the mediators of socialization, supporting the child's integration into the society and particular culture (Leontiev, 1981). While a child with typical development (TD) does not require any special instructions to learn the proper function of the objects, because the common interest, attention, activity and language are enough him/her to connect to the presented objects (Valsiner, 1987), an ASD-child has several problems with object use (Ungerer & Sigman, 1981; Park, 1983; Frith, 1991; Jordan, 2007). In this way, the development of symbolization is also a natural part of the child's life. In this connection, it is not surprising that one of the early signs of autism is the lack/paucity or at least limited manifestation of spontaneous pretend play.

But how to interpret pretend play? And is there any method to develop the child's abilities in the area of this activity? First of all, it must be pointed that „pretend is a special case of acting as if where the pretender correctly perceives the actual action” (Leslie, 1987, 413). This kind of external symbolic activity is simulative or nonliteral (Fein, 1981) and appears in the child's repertoire by 18 months. Although autistic children seem to have deficit in the area of spontaneous pretend play and some other types of play activities (e.g. spontaneous functional play, which includes play in which the child uses the available objects in a conventional form), they may have the capacity for creative object use (Jarrold, Boucher, & Smith, 1993). More researchers (Ungerer & Sigman, 1981; Riguet, Taylor, Benarogya, & Klein, 1981; Lewis & Boucher, 1988; Stahmer, 1995) found that modelling and prompting are useful methods to teach pretend play for children with ASD. In addition, video modelling involving various verbalizations and play actions among the participants of the videorecords supported not only the number of the manifestation of the scripted verbalizations and play acts but the increased rate of unscripted verbalizations, as well as reciprocal interactions in the ASD-group (MacDonald, Sacramone, Mansfield, Wiltz, & Ahearn, 2009). Finally, Grandin (2006) gave an account of her experience in connection with thinking in pictures, as well as Kunda and Goel (2008) also described this phenomenon in autism, which capacity is often utilized in the methods (e.g. PECS, TEACCH). Although this strength in autism seems to be unexploited or at least a little bit stressed in teaching methods that allude at the development of the child's play activity.

The aim of my study was to explore the differences of object play between an ASD-child and a mentally age-matched TD-boy considering the method which was used by the mothers to canalize the child's attention and object play. In this way, new aspects of the field were also targeted.

Based on the previous researches I hypothesized that (1) impairments in spontaneous pretend play would be found in ASD, (2) the autistic boy's mother applies more demonstrations of play acts in connection with the calling feature of the certain set to support her son's participation in the interaction (3) and use of visual support by pictures may effectively facilitate the ASD-child's pretend activities along his mother's modelling and verbal expression.

## **2. Methods**

### *2.1. Participants*

I compared the characteristics of object play of an autistic individual with a typical developing child's results. Thus the first participant was a 4.5-year-old boy with the diagnosis of ASD. He is able to communicate with the surrounding people through simple sentences and demonstrates some intellectual/perceptual-motor activity that is near to his chronological age. His diagnosis is about IQ-level below average. The young boy enjoys participating in play activities and he usually looks for these occasions. Furthermore, higher level of sensitivity was found by him on SPCR (Sensory Profile Checklist Revise; Bogdashina, 2003) in more modalities: vision, hearing, tactility, proprioception and vestibular, which influences his relation to his environment. He was involved into an intervention training program two years ago and a therapist deals with him twice a week. One of the meetings happens in a peer-group and the other lesson is an individual session. The TD-child was a 4-year-old boy with an average level of intelligence, in addition, his physical and social abilities also correspond to his chronological age. He is interested in various objects and activities: puzzles, construction toys, vehicles, football and other kinds of ball games. On SPCR this boy demonstrated higher sensitivity linking to vision and hearing. Both of the children have an elder brother and the parents' age seemed to be also similar in the middle-classed families that were involved in my investigation.

### *2.2. Materials*

Three sets of objects were introduced and offered for play by the parent: (1) unfamiliar tools, (2) replica of some objects from an everyday event with a wooden family (3) and well-known things in a strange context (see Figure 1). The successive sets required an increasing degree of flexible thinking and the ability to use contextual information during the play activity.



Fig. 1. Objects of the semi-structured sets

In the first set the mother gave the objects to her son one by one and let the child use them in his own way, later she connected to this activity. In the second set all of the objects were collectively offered to the child and the mother took part again in her son's play. In the third set the mother showed the child how to use the available objects: she put one of the finger puppets onto the handle of the wooden spoon and then gave the other spoon and puppet to her child. Thus the child had the opportunity to imitate his mother's movements.

Namely, all of the sets had calling features on some kind of object use: (1) exploration and adequate use of objects, (2) pretend play (3) and imitation. Video captures were made about the three semi-structured dyadic interactions for later data coding and analysis.

### 2.3. Procedure

The participations of the dyads took place facing each other. Whereas the aim of the study was to explore behaviour patterns in such a natural situation as it is possible, the ASD-child was asked to sit at a table with his mother as it could be habitual for him/them in different task situations, while the TD-child was located on the ground with his parent (see Figure 2).



Fig. 2. Dyadic situations

### 2.4. Data analysis

For the analysis of the video records I used the Observes XT 8.0 software. Two independent coders coded actions types, which were: (1) exploration, (2) adequate object use, (3) creative object use (4) and imitation. The interobserver agreement was above 80% in connection with both the creation of the coding system and during the coding process.

## 3. Results

In the first set, the ASD-child and the TD-child's mother demonstrated a higher rate of object use. While a similar frequency of exploration by the children was found, its time duration was longer in the dyad with the TD-child. In addition, the autistic child spent more time with adequate object use. Imitation could not be observed in this set by the participants. The TD-child's mother demonstrated exploration more frequently, while the ASD-child's mother preferred adequate object use, although the time duration of these types of object use formed in a manner opposite to the previous data (see Figure 3).

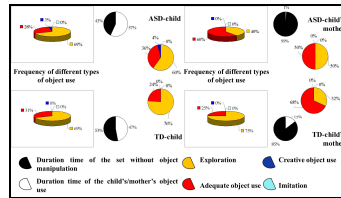


Fig. 3. Frequency and duration of the different types of object use in the first set

In the second set, the TD-child seemed to be more active because he used the available wooden objects for a longer time. Furthermore, both the frequency and time duration of exploration and adequate object use (which latter form of object use meant pretend play in this set) were also preferred by him, while the ASD-child demonstrated a higher rate of creative object use (that meant unusual but creative use of the given objects). The mothers' activity in object use was the same and both of them preferred exploration (see Figure 4).

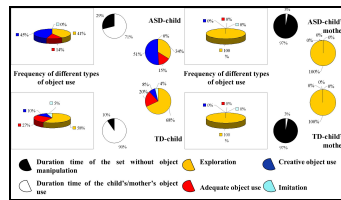


Fig. 4. Frequency and duration of the different types of object use in the second set

In the third set, a higher rate of objects use was also demonstrated by the TD-child, as well as his mother was also more active in this respect than it was found by the ASD-child's parent. While exploration was rather preferred by the boy with ASD and his mother, the adult also demonstrated increased frequency and time duration of adequate object use. Finally, the TD-boy and his mother more often demonstrated creative object use (pretend play and other creative use of objects). It is remarkable that imitation was rather preferred by the ASD-child than it could be observed by the TD-boy (see Figure 5).

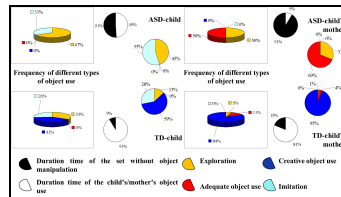


Fig. 5. Frequency and duration of the different types of object use in the third set

Finally, the TD-child expressed his claim to continue object play involving all of the tools that were used in the previous sets and began a diversified, high-level symbolic play (like “wonderplay”). But what is the way that could be suitable to facilitate an ASD-child's play activity? Although it is unquestionable that more learning-teaching strategies use pictures (e.g. TEAACH, PECS) to develop autistic children's abilities, it was rather a surprising turn during the second set when the ASD-child requested his mother to give him pictures in connection with the starting and final-point act of the recognized script. On the basis of this change I retested the ASD-child's object use in the “pretend play set” within a short time by using pictures which depicted 1-5 phase(s) of a well-known script and presented 1/2 figure(s) to illustrate the certain movement. The results were compared with the TD-child's “wonderplay” (see Figure 6).



Fig. 6. The pictures that were used to facilitate the ASD-child’s play activity

It was visible that the ASD-child enjoyed this form of play with pictures and replica toys, and his mother also adopted the tools by steady hand. We can see a higher frequency and extended period of time in connection with exploration in typical development, while adequate object use seems to be rather preferred in autism. The TD-child was prone to demonstrate creative object use, while imitation was overrepresented in ASD. The mothers’ results were usually similar to their children (see Figure 7).

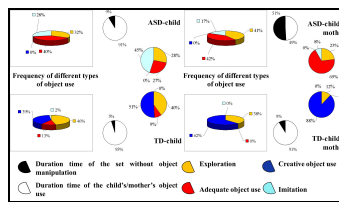


Fig. 7. Frequency and duration of the different types of object use after the three sets

Although the results are about serious development in conventional use of objects, this type of object use was primarily connected to the offered pictures and not to the given objects, and imitation was also limited to the figures and movements that were illustrated in the pictures. In this way, a creative type of object use could be actually observed in typical development. The mothers’ behaviour patterns were similar to their sons’.

**4. Discussion**

*4.1. Developmental Trajectories*

The aim of my study was to explore the differences of object play between two preschool children. One of them lives with autism spectrum disorder (ASD), while the other boy is a mentally age-matched child with typical development (TD). All of the offered sets had some kind of calling feature: exploration, adequate- or creative object use (including pretend play) and imitation. While the autistic child rather requested single pictures (simpler and static information for cognition) by sets, the TD-child demonstrated diversified spontaneous play reflecting more practical and flexible knowledge about the surrounding world (existence of dynamic mental representations). In addition, the autistic boy demonstrated narrow interest and needed more explicit information about the tools to interpret their context. In contrast, the child with TD did not have any difficulties in object use and he was really inspired by new situations and tried to use the available objects in diversified manners. Finally, the mothers were prone to demonstrate that kind of object use which seemed to be problematic for their child and connected to the calling feature of the given set. Thus my first and second hypotheses were confirmed.

*4.2. Picture-supported activities*

Picture-based techniques are well-established methods to develop ASD-children, because the oversimplified situations support the understanding of the context. In addition, although the replica toys are child-sized and it is easy to handle them, they also set a limit for use options because of their individual physical properties. The ASD-

child's attention cannot change so effectively among the characteristics of the given objects, thus I could observe a higher rate of restrictive-, repetitive- and stereotyped behaviour patterns by him. Beyer and Gammeltoft (2007) propose the use of pictures to develop the child's play activity and emphasize the role of joyful participation in the movements, and Grandin (2006), Kunda and Goel (2008) also highlighted the role of „thinking in pictures”. After all this, it is remarkable that the ASD-child expressed a desire to use pictures during his play activity. Although the results that were explored in the second part of my investigation eventually do not confirm my third hypothesis and immediate development in pretend play, the autistic child's motivation and his shown willingness to imitate activities that were illustrated in the pictures using the given wooden figures and furniture in a right way can be a good starting point for planning new intervention methods and find the way how to surmount the gap between picture-based thinking and the real world.

#### 4.3. Limitation and Future Research

However, this study is about only two child-mother dyads' results. In this way, further researches are needed to investigate how to use pictures exactly to stimulate play movements to develop autistic children's skills and support their socialization and integration into the society.

#### References

- Ariel, S. (2002). *Children's imaginative play. A Visit to Wonderland*. Westport, CT : Praeger Publishers
- Beyer, J. & Gammeltoft, L. (2007). *Autism & Play*. London, England: Jessica Kingsley Publishers
- Charawarska, K., & Volkmar, F. R. (2005). Autism in Infancy and Early Childhood. In: Volkmar, F. R., Paul, R., Klin, A., & Cohen, D. (Eds.), *Handbook of Autism and Pervasive Developmental Disorders. Diagnosis, Development, Neurobiology and Behavior. Volume On* (pp. 223-246). Hoboken, New Jersey: Wiley & Sons, Inc.
- Fein, G. G. (1981). Pretend play in childhood: An integrative review. *Child Development*, 52, 1095-1118.
- Frith, U. (1991). *Autizmus. A rejtély nyomában*. Budapest: Kapocs Kiadó
- Grandin, T. (2006). *Thinking in pictures, Expanded Edition: MyLife with Autism*. New York, NY: Random House, Inc.
- Jarrold, C., Boucher, J., & Smith, P. (1993). Symbolic play in autism: A review. *Journal of Autism and Developmental Disorders*, 23(2), 281-307.
- Jordan, R. (2007). *Autizmus társult értelmi sérüléssel*. Budapest: Kapocs Könyvkiadó, 118-141.
- Kékes Szabó, M., & Szokolszky, Á. (2012). Sensory - perceptual deficiencies and possible consequences in autism. *Practice and Theory in Systems of Education*, 7(4), 377-394.
- Kunda, M., & Goel, M. A. (2008). How Thinking in Pictures Can Explain Many Characteristic Behaviors of Autism? Retrieved on 19. september 2013. from [http://home.cc.gatech.edu/dil/uploads/Kunda\\_Goel\\_ICDL2008.pdf](http://home.cc.gatech.edu/dil/uploads/Kunda_Goel_ICDL2008.pdf)
- Leontiev, A. N. (1981). *Problems of the Development of Mind*. Moscow: Progress Publishers
- Leslie, A. M. (1987). Pretense and Representation: The Origin of „Theory of Mind”. *Psychological Review*, 94(4), 412-426.
- Lewis, V., & Boucher, J. (1988). Spontaneous, instructed and elicited play in relatively able autistic children. *British Journal of Developmental Psychology*, 6, 325-339.
- MacDonald, R., Sacramone, S., Mansfield, R., Wiltz, K., & Ahearn, W. H. (2009). Using Video Modeling to Teach Reciprocal Pretend Play to Children With Autism. *Journal of Applied Behavior Analysis*, 42(1), 43-55.
- Park, C. C. (1983). *The Siege: The first years of an autistic child with an epilogue, fifteen years after*. London: Hutchinson
- Riguet, C. B., Taylor, N. D., Benarogya, S., & Klein, L. S. (1981). Symbolic play in autistic, Down's and normal children of equivalent mental age. *Journal of Autism and Developmental Disorders*, 11, 439-448.
- Stahmer, A. C. (1995). Teaching symbolic play skills to children with autism using Pivotal Responding Training. *Journal of Autism and Developmental Disorders*, 25(2), 123-141.
- Szokolszky, Á (1998). A tudomány metamorfózisa és a kognitív tudomány: Posztkarteziánus alternatívák. In: Pléh, Cs. (Ed.) *Megismeréstudomány és mesterséges intelligencia*. Budapest: Akadémiai Kiadó, 273-295.
- Szokolszky, Á. (2006). Object Use in Pretend Play: Symbolic or Functional? In A. Costall & A. Dreier (Eds.). *Doing Things with Things. Design and Use of Ordinary Objects* (pp. 67-86). Farnham, England: Ashgate Publishing Group
- Ungerer, J. A., & Sigman, M. (1981). Symbolic play and language comprehension in autistic children. *Journal of the American Academy of Child Psychiatry*, 20, 318-337.
- Valsiner, J. (1987). *Culture and the Development of Children's Action: A Cultural Historical Theory*. Chichester: Wiley

- Wieder, S. (2012). Foreword. In Gallo-Lopez, L. & Rubin, L. C. (Eds.). *Play-based interventions for children and adolescents with autism spectrum disorders* (pp. xi-xiv). London, England: Routledge. Taylor & Francis Group
- Williams, E., & Kendell-Scott, L. (2006). Autism and Object Use: The Mutuality of the Social and Material in Children's Developing Understanding and Use of Everyday Objects. In A. Costall & A. Dreier (Eds.). *Doing Things with Things. Design and Use of Ordinary Objects* (pp. 51-66). Farnham, England: Ashgate Publishing Group