

## Research Article

# Course of Fascination: Special Interests in Asperger Autism

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**\*Corresponding author:** Mandy Roy, Department of Psychiatry, Social Psychiatry and Psychotherapy, Hannover, Germany**Received:** December 12, 2015; **Accepted:** December 20, 2015; **Published:** December 22, 2015**Abstract**

**Objective:** Special interests are one of the core symptoms in autistic disorders. Nevertheless, these interests are a rarely investigated topic and little is known about their course and their presence in adulthood.

**Methods:** 39 adult individuals with an Asperger autism (19 female, 20 male patients; age range 21-53 years) described their interests in child- and adulthood via questionnaire with regard to the topic, age of onset and duration of the interest as well as to the time they spent with it and the sensed intensity. Data were compared between child- and adulthood and between both genders.

**Results:** There were no significant differences between child- and adulthood and not between female and male individuals. In average our participants had 4 interests in both life phases and spent on about 5 days between 2 and 3 hours respectively with them. Their mean intensity of interest was "strong".

**Conclusion:** Special interests seem to be of great importance for individuals with autism not only in childhood, but also in adulthood. Adults spend time with them in a similar manner and feel same intensity of interests as in childhood. Therefore, special interests appear to be a stable symptom in autistic disorders and could be used as a pleasant resource by the persons concerned.

**Keywords:** Asperger syndrome; Autism; Adulthood; Special interests

**Abbreviations**

ASD: Autism Spectrum Disorders; AS: Asperger Syndrome; SD: Standard Deviation

**Introduction**

The presence of special interests, which are unusual regarding to their content or extent, is one of the core symptoms of Autism Spectrum Disorders (ASD) [1]. Nevertheless, special interests are a rarely investigated topic and little is known about their course in adulthood.

Probably more than 90% of individuals with asperger autism do have a special interest [2]. Kinds of topics are broad. They can be about nature, such as about dinosaurs or desert reptiles. Also technical topics, like data about cars or stages of a railway network, can become a special interest [3]. Even extraordinary objects could be focus of attention, such as toilet brushes [4]. In childhood, technical topics are the most frequent ones [5]. Thereby topics seem to be similar in different cultures [6]. In some cases special interests are rather about facts and data than about the subject itself, like an interest for match scores or details of players of soccer in children with an autism who do not play football by themselves [6].

Compared to interests of non-autistic individuals, special interests of persons with an autism are more often referring to systemizing domains, additionally they are more specific and comprise a greater number of interests overall [7], only about 30% of non-autistic children develop more intense interests [8].

Investigations of children and adolescents with an Asperger

autism between 7 and 21 years showed that they are inextricably entwined with their special interests and when they are involved in them, they feel more positive about themselves as well as more enthusiastic, proud and calmed. Additionally they wish to be appreciated for their topic by peers [4,9].

There is also evidence for gender differences. Girls with an autistic disorder often show "typical" interests, like for dolls or horses or social themes [2,4,6].

The importance of special interests for children with autism is further underlined by a greater attention towards the special interest compared to social targets, such as faces in arrangements with visual stimuli [10]. Bodfish hypothesized that special interests are activating the neuronal reward system in individuals with an autism [11], similar to its activation activated by social stimuli in non-autistic persons [12].

The broad expertise in the individual special interest can lead to success in an according profession in adulthood [2].

Reported data emphasize the meaning of special interests for children and adolescents with an autism. But there are few data about special interests in adulthood, if and in which manner they are still existing, how much time adults spend with them - in comparison to childhood and with a special view on the gender. That was why we conducted this study.

**Materials and Methods****Subjects**

The study was conducted in Germany. We explored 39 adult

**Figure 1:** Questionnaire for exploring special interests (translation, original in German language). There was no limitation for listing interests.

Description of interest	Age of onset of interest	Age of end of interest	Days of engagement per week	Hours of engagement per day	Intensity of interest: (tick the most appropriate)				
					none	little	moderate	strong	very strong
					1	2	3	4	5

individuals with an Asperger autism (19 female, 20 male patients; age range 21-53 years; mean age 36.77 years), who sought evaluation in our outpatient clinic to establish a diagnosis of Asperger Syndrome (AS). All included patients had at least a certificate for secondary education and a sufficient linguistic and cognitive level for the study.

Written informed consent was obtained from all participants according to procedures approved by the Institutional Ethics Committees of the Hannover Medical School.

**Diagnostic procedure**

AS in adulthood was diagnosed using a self-developed, semi-structured interview (Diagnostic interview: Asperger syndrome in adulthood) that thoroughly assesses the patients according to DSM-IV criteria [13,14]. After a general section focusing on medical anamnesis (somatic, psychiatric, and social histories, including childhood development), the interview continues with a special section involving AS that includes the following items with regard to childhood and adulthood: social interaction and communication (e.g. friendships with/relationship to/interest in peers, and being a loner and suffering from loneliness); special interests (e.g. spending leisure time, and interest in specific objects/topics); stereotypic behavior (e.g. rituals, and reaction towards disturbances of rituals); and other characteristics (e.g. clumsiness, and sensitivity towards noises/smells/tactile stimuli). Eye contact, mimicking expressions, speech melody, “mirroring” of affections, and clumsiness were observed during the interview, too. The interview was conducted by the same experienced investigator. Because in some cases individuals with AS have poor insight or may not report events accurately or fully, the diagnosis of AS, if available, was complemented by information from personal/telephone interviews, or in written form from observers during childhood and/or adulthood, such as partners, friends, parents, or siblings. In some cases, school reports were consulted. The diagnosis of AS was only confirmed if DSM-IV criteria were clearly fulfilled based on clinical judgment and available information during the interview without a delay of cognitive or linguistic development in childhood.

A standardized interview or test for diagnosing AS in adults according to DSM-IV criteria that is based on information obtained from sources other than parents is not available. Even if the parents are available, adults often do not wish them to be consulted.

**Assessment of special interests**

Every participant received a questionnaire to assess special interests. Kinds of interests, age of onset and end of interest, engaged hours per day and spent days per week as well as intensity of engagement were explored (Figure 1). Participants were instructed to remember and list all special interests across their lifespan.

**Data analysis**

All analyses were performed using the software SPSS (Version 23.0 for Windows; IBM SPSS).

Subgroup differences (childhood versus adulthood; female versus male) were analyzed with the Mann-Whitney-U-Test for continuous variables as they were not normally distributed. Statistical significance was defined by a p-value of .05.

**Results**

**Childhood/ adolescence**

Concerning childhood and adolescence female individuals described on average 4.2 interests (SD = 2.2) with a mean age of onset of 8.6 years (standard deviation SD = 4.5) and an average duration of 16.7 years (SD = 13.7). They spent averagely 5.4 days per week (SD = 1.9) and 2.7 hours per day (SD = 2.3) with their interests. Mean intensity of interests were described with ‘strong’ (4.2, SD = 0.81). One female person denied the presence of any kind of special interest in child- and adulthood.

Male adults reported to have had 3.5 interests (SD = 1.7) in childhood/adolescence. Mean age of onset of those interests was 8.9 years (SD = 4.0), mean duration was 18.5 years (SD = 12.6). In childhood/adolescence they passed 4.7 days per week (SD = 2.2) and 2.4 hours the day (SD = 1.9) in average with their interests. Mean intensity was reported as ‘strong’ (4.0, SD = 0.8).

There were no significant differences between described parameters of interests between female and male persons with regard to childhood and adolescence.

An overview of quantitative key data of special interests is given in (Table 1); topics are listed in (Table 2).

**Adulthood**

Average number of interests in adult females was 4.3 (SD = 1.9). 62.5% of childhood interests were continued in adulthood. Female adults averagely dealt with the interests 5 days in the week (SD = 2.2) and 3.2 hours the day (SD = 3.6). Mean intensity was ‘strong’ (4.1, SD = 1).

In adulthood male individuals with AS had in average 4 interests (SD = 1.9), 77.1% of childhood interests persisted into adulthood. Adult males spent averagely 4.9 days per week (SD = 2.2) and 2.2 hours the day (SD = 3.6). Mean intensity was ‘strong’ (4.1, SD = 1).

**Table 1:** Key data about special interests in our males and females with asperger syndrome.

	Childhood	Adulthood
<b>female</b>	number: 4.2	number: 4.3
	days: 5.4	days: 5
	hours: 2.7	hours: 3.2
	intensity: 4.2	intensity: 4.1
<b>male</b>	number: 3.5	number: 4
	days: 4.7	days: 4.9
	hours: 2.4	hours: 2.2
	intensity: 4.1	intensity: 4.1

**Table 2:** Choice of described interests of individuals with an asperger syndrome in child- and adulthood.

	Childhood	
female		male
dogs		cars
stamps		stamps
horses		numbers
guitars		geology
philosophy		vehicles
animals		comics
leaves		programming
piano		Islam
painting		fishes
electronic		insects
plants		electronic
astronomy		chemistry
stones		maps
computer		astronomy
programming		science fiction
medicine		Lego
cooking		lexicon
rabbits		modeling
paragons		computer
films		weapons
musicals		atlases
star trek		dinosaurs
marbles		economy
maps		Roman history
lego		Marx-brothers
photography		surfs
psychology		football
		ships
	Adulthood	
female		male
psychology		painting portraits
autism		electro-techniques
chicken		genealogy
astronomy		Islam
education		cars
dogs		helicopters
arts		radio stations
drums		informatics
dolls		comics
fossils		telephones
dogs		photography
postcards		evolution
photography		beer mats
saxophones		foreign languages
philosophy		psychology
social justice		programming
animals		chemistry
horses		maps
piano		science fiction
painting		astronomy
medicine		modeling
cooking		atlases
computer		
electronic		

hours per day (SD = 1.7) with their interests. Mean intensity was described with 'strong' (4.1, SD = 0.76).

There were no significant differences between described parameters of interests between female and male persons concerning adulthood.

No significant differences between child- and adulthood both in female and male individuals were found, either.

(Table 1) summarizes quantitative key data of the special interests; (Table 2) gives an overview of kind of interests.

### Discussion

Special interests are one of the core symptoms of ASD. Nevertheless, there is only little data about their course and their meaning in adulthood.

Results demonstrate that individuals with an AS show similar patterns of exercising their interests in child- and adulthood concerning number, invested time and sensed intensity. This is underlining the important role that special interests seem to play also in later years; the meaning of special interests doesn't seem to decrease with getting older. Accordingly the sensed mean intensity of interests "strong" is reflecting their importance, too. Thus, special interests appear to be a stable diagnostic criterion over the course of time. Thereby more than the half of the interests of childhood persisted into adulthood, demonstrating a kind of stability also within the individual affinities.

Bodfish and Kohls suggested an activation of the reward system by special interests in autistic children and adolescents, comparable to its activation by social targets in non-autistic children and adolescents [11,12]. According to the similarities to childhood it could be hypothesized that special interests are also an activator of the reward system in adulthood in the same manner.

Despite a little tendency of female persons spending more time with their interests, there were no significant differences between sexes concerning quantitative parameters. This is an important finding as gender differences are an increasingly recognized topic in ASD [15-17]. Previous studies provided evidence for a higher frequency of restrictive interests in males [15,17,18]. However, these studies focused stronger on a more deficit-oriented perspective under the view of "stereotyped and repetitive behavior", whereas our investigation of "special interests" is more resource-orientated. Thus, special interests seem to be as essential for females as they are for males both in child- and adulthood.

Concerning topics of interests our results are in line with the described findings of gender differences [2,4,6]. Females show more interests for animals, like horses or dogs and nature as well as for social topics such as psychology, autism or education. Male individuals described more often interests for scientific topics like chemistry, geology or technical themes such as cars or helicopters. These tendencies were observable both in child- and adulthood.

Due to the importance of special interests in adulthood they may also improve the self-confidence and calm adult individuals as they do in childhood [4,9]. Therefore they could serve as a resource for persons with an autism and could be used as a kind of individual

therapeutic element, as adults with an AS often suffer from further psychiatric co morbidities and show lower levels of mental health [13,17]. As described by Attwood [2], in few cases of our participants a special interest even became a profession. One female and three male participants with an interest for programming became programmer, one male person studied history due to his fascination for Roman history.

## Limitations of the Study

The results of our study are limited by the small number of participants. Additionally we didn't investigate a non-autistic control group because our focus was set on the course of special interests within a group of individuals with AS, to find out if there are differences between child- and adulthood concerning the exercise of interests with an additional view on the gender. Nevertheless, there exists no concrete definition of a "special interest" in autism with regard to frequency and intensity of practicing it, the given definition with unusualness in content or spending time with it is quite vague. That is why we didn't exclude any described interest of participants and didn't define criteria of frequency or intensity on our own. We rather included all described interest to have an objective result concerning the course of spending time with interests from child- to adulthood in our individuals with AS.

Another limitation of this cross-sectional study may be the retrospective data collection with regard to the childhood. Memories of participants could be inexact.

Finally, a general problem is the lack of a gold standard in the diagnosis of AS in adulthood. Various interviews are available, but there exist disadvantages as the interviews are not consistent with DSM-IV of the individuals. Often parents are not available or adults do not wish to involve them. Therefore, the development of a standard for diagnosing autism in adulthood is an important issue for the future. In agreement with Joshi et al. [19], we gave priority to consideration of the DSM-IV criteria via interview and clinical observation. Thus, we can clearly state that all of the adults included in the current study fulfilled the DSM-IV criteria for AS

## Conclusion

According to our findings, special interests seem to be a stable symptom in individuals with Asperger autism. Time invests and sensed intensity in adulthood is similar to those in the childhood. Therefore, special interests may be considered as an important part of life of individuals with an AS across their lifespan and should be appreciated and even be used as a kind of motivating resource, despite as being considered under a deficit-orientated view. In few cases a special interest can even become a profession.

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