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A Different Point of View: The Neurodiversity Approach to Autism and Work

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Abstract
With this chapter, we want to open up the debate whether neurodiversity might be the next step of diversity. The term neurodiversity was first established in the online autism community in the 1990s and has since spread both off- and online. It describes the idea that, throughout the human population, different brain developments and structures exist. Neuronal variances such as Autism are therefore not to be seen as disorders but as variations different from the neurotypical brain. Instead of being considered ill and cure-worthy, neurodiverse people should be included and integrated into society. In our current research, we follow the neurodiversity approach and focus on the subject of autism in the work context. We found that certain strengths and abilities are most prominent in autistic people (such as logical reasoning, visual perception) and that autistic people are able to find different effective solutions to overcome the barriers detaining them from entering the job market. Furthermore, while many autistic individuals are employed in regular competitive jobs, more focus on autism-specific job environments is needed. These findings lead us to the conclusion that autistic individuals have potential that is beneficial for society.

Keywords: autism, neurodiversity, employment

1. Introduction: color, gender, brain?

Neurodiversity is a much-discussed topic in today's Autism Spectrum Condition research (e.g., [1]). In this chapter, we will shed some light on the relationship of individuals with Autism with the Autism community, the workplace, and the scientific community.

The term neurodiversity originated from the autism online community in the late 1990s with sociologist Judy Singer commonly referred to as the creator of the word [2]. It is important to
note that even now, about twenty years since its first use, there is still no proper scientific
definition of neurodiversity. In this chapter, we define the neurodiversity concept simply as
the fact that there are differences in brain structures among the population [2, 3] just as there
are different skin colors and genders between people—a diverse neurology.

Of course, there is more to the topic than the fact that peoples’ brains are physically different,
that their amygdalae may or may not differ in size [4]. The neurodiversity movement (NDM)
focuses on a positive, strengths-based approach. It has two major claims [3]: firstly, deviations
from the standard neurotypical brain that result in differing behavioral patterns are natural
variations, not disorders or illnesses. Therefore, autism is seen as a different nuance of human
behavior with its very own set of strengths [5]. Many individuals with autism see their
condition as a crucial part of their individual identity, not as a mere illness they happen to
suffer from [6].

The NDM’s second claim follows logically from this mindset: If neurological differences are
not disorders or illnesses, but merely variations, neurodiverse people are to be treated equally
to neurotypical individuals [3]. This, of course, is related to all kinds of human interaction,
including the workplace. We therefore argue that neurodiversity should be the logical next
step in diversity. There are many conditions that fall into the neurodiverse category—e.g.,
Tourette’s syndrome or ADHD [2]. The debate on which conditions have to be included and
which don’t is still going on [2]. In this chapter, we, however, decided to focus solely on autism.

2. From the inside: the autism community and neurodiversity

As stated above, the NDM is no scientific invention, but stems from the 1990s autism online
community [2]. Since then, the Internet as a whole and online communication specifically has
changed, become more accessible and part of everyday life [7]. To paint a picture of the current
situation, we will introduce some of the bigger networks, how they operate, and their opinion
on the neurodiversity concept.

2.1. Autistic Self Advocacy Network (ASAN)

The probably most popular and best-known autism-related website is the Autistic Self
Advocacy Network (ASAN) with its slogan “nothing about us without us”. ASAN is a
nonprofit organization “by and for autistic people” (autisticadvocacy.org) founded in 2006.
They give advice on public policy advocacy, provide information about Autism to fight the
public misconceptions on the condition, develop cultural activities for autistic people, and
actively take part in advancing autism-related disability rights. They also work for a better
employment situation for autistic people, as well as for a fairer, more equal approach to
accepting autistic people in Academia. ASAN has a very inclusive point of view: Co-Founder
and current president of ASAN, Ari Ne’eman, who himself is on the spectrum, serves on the
National Council on Disability since 2010 and supports the neurodiversity concept.
2.1.1. Autism Asperger’s Digest

Autism Asperger’s Digest (AAD), a division of Future Horizons Inc., is a magazine about all autism-related topics. They reach out to autistic individuals, their parents, and their therapists to spread information and provide a network.

Various other online platforms, such as Art of Autism, also provide insights on Autism for neurodiverse people and everyone who takes an interest in the condition. Considering this broad base of neurodiversity-based autism resources, it is noteworthy that the autism online community does not wholeheartedly agree about the concept and its political implications. A rather controversial topic is the genetic cause of autism. Current research seems to agree that autism is, in fact, highly genetic [3]. Those who consider autism a variation rather than a disorder have voiced their concern about how this information is handled—fearing the rise of a eugenic approach [6] based on cause-oriented research.

Additionally, the mere concept of neurodiversity encounters resistance in the Autism community. Blogger and student Jake Crosby, who writes for Autisminvestigated.com, is an anti-neurodiversity activist. Being reportedly diagnosed with Asperger’s himself, Crosby considers the NDM a movement for people who are not truly impaired (i.e., high functioning autism). He and many of his followers view autism as a disability, an impairment that is in need of a cure. They also reject the political implications of the NDM: After Ari Ne’eman’s nomination into the National Council of Disability, he wrote a blog entry called “Keeping Autism Neurodiversity out of the White House” [8] in which he harshly criticized the concept of neurodiversity, ASAN, and the whole NDM for not being representative of autistic individuals as himself who struggle with their disability in everyday situations.

While the NDM has a great support base and has already made quite some change in how autism is regarded in our society, the autism community remains divided. This is also apparent in the workplace problem: a disabled individual is going to face different barriers compared to an individual that is just considered different—but there will also be less lenience for mistakes or special needs and necessities.

3. From between sides: autism, neurodiversity and the workplace

One of the most relevant and challenging problems in the everyday life of individuals with Autism is finding and keeping work [9]. According to UN General Secretary Ban Ki-moon’s message regarding the World Autism Awareness Day, around 80% of adults with autism are unemployed [10], in spite of existing evidence that the desire to work is just the same as in neurotypicals [11]. Individuals with autism, however, have to face different, and probably more challenges in the process of finding, and later maintaining, employment [12].

The NDM calls for employers to be open minded and more approachable [13]. Still, for individuals with autism who want to work, there are two options: try to gain employment in a nonspecific workplace that might not be accommodating enough, or find work in an autism-specific job environment [11].
For those who take the first route, even entering the job market is still rather difficult. Barriers such as various communication problems or confusing application processes have to be overcome before employment is possible [12]. When those barriers are mastered, numerous others usually follow: Of course, due to the misinformation on the topic of autism as well as to communication issues, workplace discrimination and, in the worst case, workplace bullying are common [14]. Literature targeted at adult employees with autism and their employers usually mention how to counteract bullying in the office [14]. It should also be noted that disclosure of a diagnosis to superiors, and colleagues is often avoided. Autistic individuals fear negative reactions, being stereotyped or held up to old prejudices [15, 16], which is exactly what autism advocates such as ASAN are fighting against.

This problem is amplified by the fact that autistic individuals react differently to leading styles than neurotypical individuals: Parr, Hunter, and Ligon [17] report that while neurotypicals are inspired and motivated by transformational leadership measures, autistic individuals reported increased anxiety and overall distress, thereby worsening both their job experience and their productivity.

Those difficulties in understanding verbal nuances or implicit subtext in team meetings or casual conversations, coupled with a certain rule affinity that many autistic individuals are prone to, make for a less than optimal relationship with colleagues, subordinates, and superiors alike [16].

On top of this, not all challenges that autistic individuals have to face in the workplace are interpersonal: the work environment also plays an important role [16]. The common open plan cubicle offices offer various distractions (noises from other people or electronic devices, flickering lights, air circulation, etc.). Neurotypicals usually are able to block them out, but for autistic individuals they can easily become overwhelming [9]. To cope with the sensory overload, autistic individuals develop strategies like wearing headphones and listening to music while working or avoiding the perceived superabundance of social interaction by taking breaks alone [9]. Of course, those are behaviors that seem weird to many neurotypical people, thus increasing the social difficulties in regular office settings.

Autistic individuals who take the second route, that is choosing to work in an autism-specific, supported work setting, usually report less communication and environmental problems than those who work in regular jobs [16]. Autism-specific job environments usually feature support in form of job coaches, specific training programs, and matching the employee’s skills to the job requirements [18]. The following list provides an overview of companies that currently offer supported job environments.

Danish company Specialisterne (“The Specialists”) does business consulting, for example, programming, software testing, and data entry. The IT firm strongly supports the NDM: Their logo is a Dandelion seed, paired with the slogan “Weed or herb? You decide. The value of what you see depends on who you are”, which reflects the NDM’s idea that society’s point of view has to shift in order to recognize the value of neurodiverse individuals.

Specialisterne claim on their website that a majority of their workers is neurodiverse, diagnosed with autism, ADHD, Tourette’s, or similar conditions. They use the tagline “Passion for
Details” and explain that it stands both for the company’s work values and for the characteristic strengths of individuals with autism.

Founded in 2004, they are now internationally successful with offices all over Europe and, since 2013, even the US; the foundation’s goal is to offer one million jobs for individuals with autism and to ultimately form a society where everyone has equal chances on the job market. In 2009, partnered with Lego Foundation and the Danish Ministry of Education, Specialisterne Foundation opened an education program for young people (aged 16–25) with autism, with a focus on developing social and personal skills. At the moment, there are 29 students attending the program.

Partnered with Specialisterne is software giant SAP. Established in 1975 in Weinheim, Germany, SAP reportedly had around 75,000 employees in 2015, of which 100 are individuals with autism, divided between eight countries. This was made possible through the campaign “Autism at Work” in 2015. The hiring process was conducted by Specialisterne. SAP, who claims to value diversity as highly as quality, even announced their goal to have 1% of employees to be autistic individuals.

Also based in Germany is Auticon, an IT company that employs only autistic individuals as consultants. Their slogan “Auticon—Querdenker mit System” (approximately “systematically thinking outside the box”) highlights how autistic individuals are often able to work more detailed, concentrated, and systematic than neurotypicals and have different ways of looking at problems. To counteract social problems that might occur, Auticon successfully uses job coaches as a link between the consultants and the customers—although only when necessary and specifically needed. Around 2/3 of Auticon’s employees are diagnosed with Autism Spectrum Condition.

In Singapore, the United Overseas Bank Group has, together with the Autism Resource Centre, started an initiative to include autistic individuals. In their department for handling costumer documents (checking, digitalization, and archiving), about a third of the 50 employees are diagnosed with autism.

In a press release from 2015, the head office noted that the sense for detail and the systematical approach that individuals with autism often possess make them very qualified for this particular work. The UOB has also successfully implemented job coaches and reported an overall increase of work productivity since the start of the initiative.

Meticulon is a Canadian IT startup company that, just as Auticon in Germany, employs only autistic individuals as IT consultants. The name is a play on “meticulous”, referencing again the unusual abilities of their employees. They advertise their services with “Not your average anything!” and have been quite successful since their establishment in 2013.

As of lately, the Israeli military has become aware of the strengths of autistic individuals. In their Special Intelligence Unit 9900, young autistic adults use their above-average visual perception skills for various geography-related tasks, for example, mapping or analyzing satellite images for the smallest changes. To ensure their abilities match the military’s requirements (both perception skills and social abilities), young autistic adults who want to join the
Israeli Defense Forces have to participate in the Ro’im Rachok training program (“looking forward”). In three training intervals (3 months each), they are prepared for their job with a mixture of therapy sessions and military courses.

Looking at this surely not exhaustive list, it might seem that there are plenty of options to find supported work as an autistic individual. However, all of those companies together make for only a few hundred jobs, and even that is a rather optimistic estimate. With an estimated prevalence of Autism of 74 in 10,000 children [19], this obviously is insufficient.

It is also striking that nearly all of these supported jobs (excluding the UOB and the Israeli military) are in IT. This certainly matches the prevailing opinion that autistic individuals somehow naturally have an interest in computer sciences [20]. While it is true that autistic individuals have a distinct job strengths profile that is compatible with, but not limited to IT, the job interests of autistic individuals in non-supported jobs are rather broad [15].

Still, IT, finance, and military are currently the only occupational sectors that offer supported jobs for autistic individuals.

4. From the outside: academia and autism

Since its first characterization in 1943 by Leo Kanner, autism has been of great interest for the scientific community [3]. Still, it took fifty more years until the idea of an autism spectrum was developed, varying between lower than average IQ, often times nonverbal individuals, and so-called high functioning individuals with average to above-average IQ and the above stated characteristic abilities [21]. Current research still has a rather rigid view on autism. This is for example mirrored by the fact that, although the autism community and the NDM themselves prefer the use of the term condition [3], the official, scientific name still remains Autism Spectrum Disorder.

Academia seems to have acknowledged that many autistic individuals have a certain talent and interest in IT, math, and science as a whole [22, 23]. There also appears to be general consensus that autistic individuals have difficulties in social situations [1]. On the other hand, there have been debates on the topic of intelligence, since autistic children tend to perform badly on verbal-based intelligence tests like the Wechsler Intelligence Scale for Children (WISC), and since the WISC is one of the most popular intelligence tests for children, many autistic children were diagnosed as “mentally retarded” [24]. Following Temple Grandin’s Thinking in Pictures—theory [25], there have recently been findings that in intelligence tests which do not use verbal communication (e.g., Raven’s Matrices), autistic individuals score significantly higher (with a significantly bigger difference to the verbal-based results than their neurotypical peers; [24]). Those results also show that, while autistic individuals do score low on verbal-based tests as well as on spatial testings, they often show better than average results on rule-based tasks, memory tests, and embedded figure tests. Those results can even be replicated using the WISC, as some of its subtests (figure embedding, block design) test exactly those abilities [26].
Intelligence testing is, of course, an old and important tool for psychological diagnostics: Intelligence is a good predictor for success and job performance [27]. It is, however, important to ensure the instrument of choice actually measures what it intends to measure [28], which is not always the case. When scientists produce results that fit their expectations by using the same instruments or tasks that have produced the same or similar results in the past, they conduct biased, neurotypically centered research. This is apparent in the fact that the WISC is still used to test autistic children, even though its ineptitude is known [29]. It also explains the findings that indicate autistic individuals are less employable than neurotypicals, thereby giving lowest priority to actual, specific work-related skills, and focusing on categories like “independent use of public transportation” or “preferring routine” [30]: if researchers are fully convinced of an alleged fact, their results are likely to confirm this fact [31].

Another problem is addressed in a paper by Stevenson et al. [32]: The authors call out the scientific community on infantilizing autism. This ranges from media and the general public assuming that autism is a condition that mostly concerns children [32], to a neurotypically centered way of promoting neurodiversity: namely the idea of using neurodiversity as a tool to help autistic individuals feel better in group therapy settings, instead of actually believing in the neurodiversity concept, and implementing it in a clinical setting, thereby promoting equality between scientists and patients [23]. While self-advocacies like ASAN are trying to transfer their slogan Nothing About Us Without Us into public awareness, there still is no real dialogue between most researchers and autism communities, even though it is necessary in order to improve toward a productive and inclusive research, instead of researching “on Autism” [33].

5. Future perspectives

With this chapter, we wanted to offer a slightly different, more critical perspective on the current situation regarding autism, employment, and its social relevance. We found that while there are, in fact, employment possibilities for autistic individuals, they are scarce and rather specific in terms of occupational fields—aside from IT and finance, there is not much variety. Conventional, non-supported competitive employment offers more sectors to choose from; however, autistic individuals experience those jobs as stressful and report problems with bullying [9, 14].

This overall situation has consequences: autistic individuals as a whole report considerably lower self-efficacy than their neurotypical peers, both occupational and general [15]. This does not come as a surprise, given the fact that self-efficacy and employment status are correlated [15]. Self-efficacy is also known to be correlated to life satisfaction [34] and to be helpful in overcoming job-related barriers [35]. Curiously, neurotypical individuals do not show differences in general and occupational self-efficacy, while autistic individuals only show an increase in occupational self-efficacy when successfully employed [15]. This suggests a stricter division between work life and social or personal life for autistic individuals than for neurotypicals. Whether this has developmental causes, and whether work-specific self-efficacy
training might be effective in helping autistic individuals overcome job barriers in different job settings obviously needs thorough research.

Considering the currently estimated prevalence for autism (as noted above, 74 in 10,000 children; [19]), the situation concerning autism and work is socially relevant. We, therefore, propose some changes that allow for a more open-minded interaction between employers and autistic individuals. First of all, there needs to be more education on the actual symptoms and distinctive behavioral features of autism for employers’ associations. At the moment, clichés and prejudices still run rampant, coloring autistic individuals as a mixture of pop culture products like Rain Man and Sheldon Cooper. Educational campaigns specifically addressing the work market should help with that. With those prejudices out of the way, the stigma of autism should gradually fade, meaning that autistic individuals might have less fear to disclose their diagnosis to superiors and colleagues. Less social exclusion, as well as a more understanding environment would improve the work experience at nonsupported jobs.

Accompanying this is the currently prevailing deficit policy in the job market. Neurodiversity as a concept promotes a strengths-based approach instead. By focusing on workers’ abilities instead of deficits, employers and employees could both profit.

However, we do not want to praise the neurodiversity concept as a cure-all without fault. We are aware of the criticism against it; the NDM does in fact skew toward economical topics more than necessary. Of the whole Autism Spectrum, the high functioning autistic individuals profit the most from the concept, as they are the most marketable, and probably easier to include in the job world than their so-called low-functioning peers. Those who do not fit the criteria of being high-functional for being nonverbal, more prone to repetitive movements, or similar symptoms, are in danger of being forgotten by the NDM. In order to avoid this, we propose to carefully evaluate economic and social motives while promoting the neurodiversity concept.

We believe that creating a triad of community, work, and research, connected through reciprocal communication, will help enormously to overcome prejudices and to establish realistic expectations for all parties. Adopting a different point of view is the first step toward a neurodiverse society.

Appendix
Resources for further information on autism-supporting employment:

Companies:

- www.specialisterne.com
- www.go.sap.com
- www.auticon.de
- www.uobgroup.com
- www.meticulon.com
Advocacies:

- www.autisticadvocacy.org
- www.autismdigest.com
- www.the-art-of-autism.com

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