



WHAT ARE THE POSITIVE ATTRIBUTES—the strengths or abilities—that come along with the more obvious negative aspects of having ADHD?

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As a parent of two college-aged children with ADHD and learning disabilities, and as an assessment psychologist working with the families of such students, I am eager to believe in silver linings. When I meet with children who have ADHD, I look for and invariably find many strengths in their cognitive and personal profiles. I am convinced it is these strengths that will lead them to their interests and enable them to become successful in their chosen fields. Often, however, the typical assessment searches only as far as it takes to uncover the disability and stops before discovering the student's strengths. Parents, children, and teachers are left with the picture of a student who has a problem—a disability or deficit. How wonderful it would be if we could assure parents, teachers, and especially the children them

deficit—their brain is just wired differently, not defectively—and that along with the disadvantages there are advantages to being different. Along with the disability, come special abilities. That's the silver lining I'm searching for.

But is there any evidence for this? Books and articles have been written describing ADHD as a gift, attributing strengths in creativity, attunement to nature, interpersonal intuition, energetic

enthusiasm, and emotional sensitivity to the condition. Many books about ADHD relay anecdotal stories about highly successful individuals either diagnosed with ADHD or, less believably, retroactively "diagnosed" through review of history texts (such as Winston Churchill or Leonardo da Vinci). Some of these successes are attributed to ADHD rather than described as happening "despite" it. In *The Edison Gene: ADHD and the Gift of the Hunter Child*, Thom Hartmann theorizes that ADHD comes with a skill set enabling

people to excel as innovators, explorers, inventors, and entrepreneurs. Along with an ADHD diagnosis I often hand parents a sheet of paper titled *Positive Attributes of ADHD*, which lists curiosity, verbal humor, 360-degree awareness, holistic thinking, fresh perspectives, risk-taking abilities, enthusiasm, high energy level, innovativeness, spontaneity, zest for life, ability to do many things at once, and quick thought connections, among other attributes.

Searching the literature

I feel it's important, when writing about strengths associated with a disability, whether it be the visual-spatial thinking strengths attributed to people with dyslexia or the ability to focus intensively on interests attributed

to people with Asperger syndrome, to ascertain where the strengths come from. Are they learned habits or skills developed over time to help compensate for the disability? If so, we can't say these necessarily "come with" the disability; they aren't a "gift," per se, but we should certainly encourage their development. Or are they the oftignored strengths which were always there but never noticed because everyone was focused

because everyone was focused on the weaknesses? If so, we need to assess children early for their strengths as well as their weaknesses, and emphasize the development of their capabilities along with remediation and compensation for the disability. Or—and this I find particularly intriguing as a cognitive psychologist—are the strengths actually a cognitive consequence of the different wiring? Are there truly abilities that come with the disability? The flip side of the coin?

that come with the disability? The flip side of the coin?

I started with a search of the scientific literature. A large number of studies have been conducted focusing

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on diagnosis, treatment, and the negative consequences of ADHD for academic achievement, social relations, and family interactions. Very little research has been conducted examining the potential strengths associated with ADHD. Searching internationally for "abilities," "strengths," "advantages," "creativity," and other possible descriptors, I found only fifteen articles published in peer-reviewed journals (the gold standard of scientific research). Most of the studies focused on potential strengths in creativity and creative problem-solving.

Why, theoretically, would we expect ADHD to be associated with enhanced creativity? Part of what defines ADHD is poor inhibitory control and fluctuations in attention. Weak inhibition and lapses in attention may, however, facilitate divergent thinking and the generation of more random thoughts and ideas which are, due to the ADHD, less likely to be inhibited in working memory. In addition, a wider, less-focused attentional span may allow more elements to be combined, generating novel combinations and original ideas. ADHD also tends to be associated with novelty-seeking and risk-taking, qualities necessary to creativity. Finally, the genetic nature of ADHD suggests that it may have some evolutionary adaptive value, or else natural selection may have selected against it.

Turning to the research, studies led by Holly White at the University of Memphis show that college students with ADHD display higher levels of creative thinking on a verbal, divergent thinking task than students who don't have ADHD. Divergent thinking involves the generation of ideas (whereas convergent thinking—which may be a weaker

area tor individuals with ADHD—requires that competing ideas be ignored to focus attention within constraints).

Studies out of Germany led by Anna Abraham found that adolescents with ADHD demonstrated more enhanced abilities relative to non-ADHD peers in overcoming the constraining influence of given examples to come up with unique responses. At Harvard, undergraduates who had a harder time ignoring irrelevant incoming stimuli (like the sound of the air conditioner), scored higher in creative achievement. Another study found that young adults with ADHD generated more ideas rated as original, creative, or innovative than adults without it. The young adults without ADHD generated more practical ideas.

In another study led by White, college students with ADHD reported higher levels of real-world creative achievement in the arts, creative writing, scientific discovery, and architecture than students without ADHD. This finding may need to be tempered because individuals with ADHD often provide elevated ratings of their functioning. However, researchers in New Zealand reported that, among a large pool of students identified as having high levels of nonverbal creativity, forty percent of these children displayed clinically-elevated levels of ADHD symptoms. A similar study in the United States found that twenty-six percent of creative adolescents self-reported clinically-elevated symptoms of ADHD. These incidence levels are far higher than the expected ADHD population rate of seven to ten percent.

While some studies focusing on nonverbal measures of creativity found an association with ADHD, others failed to. For example,

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research out of China compared scores on a nonverbal creative ability test and teacherratings of creativity of students with ADHD and students without, finding no differences between the groups. A large study out of Sweden (of over one million people) searched for incidences of ADHD among people in the creative professions (defined as including artistic and scientific fields), and found that people in creative professions were no more likely to have ADHD. Studies focusing on verbal fluency rather than originality of response failed to find a relationship with ADHD. It is possible that the ADHD-advantage in creativity may be limited to higher levels of originality on verbal but not nonverbal tasks, but it is too early to tell.

There is also some evidence that the novelty-seeking and exploratory behaviors associated with ADHD may have provided evolutionary and may still provide societal advantages. Kenyan nomads carrying the long-allele gene associated with ADHD are better nourished than those without. However the opposite is true of their more settled relations—those with the gene are worsenourished. Jonathan Williams out of London argues that the ADHD advantage does not always fall to the individual—that society as a whole benefits from having a percentage of individuals (for example, the seven to ten percent associated with ADHD) engage in exploratory and risk-taking behaviors.

Nurture strengths into passions

If ADHD does bring an advantage in creativity, one question in many of our minds may be whether medication impedes the expression of the creative process. I have had students tell me that when they write poetry, they prefer to do it without taking their medication (although they tend to edit with the benefit of medication). The three studies I found addressing this topic directly reported that stimulant use appears to improve rather than hinder flexibility, divergent thinking, and creativity. This is a very small number of studies, however, we should not read too much into the findings.

There is encouraging evidence of a silver lining for ADHD, particularly in the area of creativity, but the jury is still out as we don't have enough corroborating evidence. We don't know what kinds of creativity (verbal, nonverbal, fluency, originality) are stronger, and if it varies by individual. It's clearly time for more academic research emphasizing the abilities and not just

the disabilities associated with ADHD. And it's clearly time for psychologists, teachers, and parents to focus more attention on developing the strengths of children with ADHD, and not just on remediating and accommodating the weaknesses. I believe it is essential to every child's emotional well-being, self-esteem, and future

that as much emphasis is placed on the child's strengths and interests as on their weaknesses. After all, it is our strengths that can be nurtured into passions to fuel future career interests and can provide a lifetime of enjoyable opportunities. I'm convinced the silver lining is there, if we just would look for it. \mathbf{Q}

