

Genetic differential susceptibility

By Professor Jan Willem de Graaf

Professor of Brain and Technology, Saxion University of Applied Sciences, Deventer, Netherlands

Help! Last night I was watching "Elementary" with my wife and middle daughter, the American version of Sherlock Holmes on Netflix. With regard to a very complicated case, Sherlock notes: "Some problems need flexible intelligence to be resolved". His remark reminded me of Jay Belsky's model of "genetic differential susceptibility" with regard to nurture influences. The idea is that some people genetically have more potential mental flexibility than others, and that this can mean both an advantage and a disadvantage.

Genetically, it is useful for a species if many properties that are necessary for survival are anchored in the 'hardware' (DNA) of the individuals. However, species that offer a lot of space for nurturing and education, such as pre-eminently human beings, a hardware system is required on which many different "software systems" can be developed and played. Belsky's model of genetic differential susceptibility states that some individuals have extra flexibility and, in his own words, this is "for better and for worse".

For susceptible children, appropriate education and the right circumstances are of the utmost importance, even more than with "normal" children. In wrong circumstances things can easily go wrong. But under favourable conditions these people can reach the top. A bit like Formula 1 cars, which still have to be tinkered with at the circuit, while on the track the performance is unprecedented (if you're lucky)!

However, every car, no matter how cheap it is, is better suited for shopping, or city traffic. According to Belsky, individuals who possess this extra flexibility would be emotionally less stable and, for example, susceptible to addiction, extreme shyness, social isolation etc. From their environment, more support is needed in order to develop well (just like the formula 1 cars need technicians even on the track). This brings us back to Sherlock, who describes himself as an ex-addict, a high-functioning sociopath, or a neuro atypical person (Asperger), but with a high degree of intellectual plasticity / flexibility. In order to function, he needs Dr. Watson continuously as "assistant", 24 hours a day. In the American version, the doctor is a female surgeon - Joan - taking a sabbatical. She accompanied Sherlock as a buddy after his withdrawal from an addiction. She structures the life of Sherlock and he never lets her go.

This hypothesis may shed a very different light on high-functioning autistic and other a-typical individuals. A formula 1 car is not a deranged shopping car, but an extremely developed and sensitive high-tech machine that needs attention and support to reach maturity. Designed to reach the top and yet worthless in the wrong place. A radically different way of thinking often underlies major developments for humanity. Formula 1 is at the same time an individual sport and a team sport par excellence. Neuro atypical people are often individualists, but they need others and solidarity. Of the 19% people with autism who don't ever go to work or even don't have any kind of structural day-care, 43% have an IQ above 115 and 21% even over 130. They need help to find the right circuit, and that starts with recognition. Recognition is not the same as denial, there is indeed a problem, but there are also unique opportunities for each individual!

“For susceptible children, appropriate education and the right circumstances are of the utmost importance, even more than with "normal" children. In wrong circumstances things can easily go wrong. But under favourable conditions these people can reach the top. A bit like Formula 1 cars, which still have to be tinkered with at the circuit, while on the track the performance is unprecedented (if you're lucky)!”