

Causal theories of autism spectrum disorder: an evaluation

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Autism Spectrum Disorder (ASD) is a group of neurodevelopmental disorders that shows early onset of persistent deficiency in social communication and interaction as well as limited range of behaviour, interests and activities (Niculae and Paval, 2016). Autistic individuals choose to get involved in routine behaviours which are followed by resistance to change (Baron-Cohen, 2009). This essay will raise better understanding of two theories namely: Extreme Male Brain (EMB) Theory by Simon Baron-Cohen and Weak Central Coherence (WCC) Theory by Uta Frith. . In terms of WCC theory, tests which are the fundamentals of WCC theory will be discussed along with a positive aspect of autism. It will also analyse correlation between language abilities and central coherence. It will examine relationship between testosterone and ASD, methodology of EMB theory, in particular on Autism Quotient questionnaire as well as female diagnosis of the disorder. In addition, it will show the strength of EMB theory.

Weak Central Coherence (WCC) Theory by Uta Firth (1989) hypothesizes that non-social traits of autism, both assets and deficits (Happe, 1996) may be the result of tendency of superior local processing over global information (Happe and Frith , 2006). Autistic individuals have restricted cognitive abilities to differentiate meaningful from meaningless data and understand information from bigger perspective. It is the first theory which explains why persons with autism can be very talented.

Frith concluded her theory upon many experiments. One of them was Embedded Figures Test (EFT) where the participant needed to locate target shape in the drawing of a larger complex shape with many lines on it. For example, find a triangle on the drawing of a pram. The results of the <https://assignbuster.com/causal-theories-of-autism-spectrum-disorder-an-evaluation/>

experiment show that autistic individuals irrespective of age scored above the average (Frith, 1989). Plaisted, (2001) explain those findings that autistic individuals have 'acute ability to process fine detail'. This may be a positive trait for some people with ASD as it can be the factor of someone's talent. Such a person is called Idiot Savant which characterise an autistic person who has a low intelligence in most of areas, but have excellent knowledge or skill in one particular area. For example, 12 year old Stephen diagnosed with ASD whose drawings are 100% accurate to the real object he paints (Frith, 1989). By contrast, sentence completion test shows failure to process information in context. The participants had to finish sentences during the test. If the person answered in relation to just one word it means that the person has weak central coherence and when it was in relation to the context of the sentence that means the person has a strong central coherence. For instance, 'you can go hunting with a knife and...' when responded 'a fork' that characterize a person with the weak central coherence and if answered 'catch a bear' that means strong coherence (Happe, Briskman and Frith, 2001). This test strengthens the reliability of WCC theory. Although, it has not only good features but also its flaws, which will be further discussed.

According to the study Frith and Snowling (1983) conducted, the theory claims that autistic children regardless of language abilities are unable to understand the meaning from the context, although Norbury, 2005 proved that it does not apply to all autistic children. He conducted the experiment which aimed to check whether, autistic children with and without language impairments could identify multiple meanings of ambiguous words. The

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experiment implied that only children who have core linguistic difficulties struggled with this task (Rajendran and Mitchell, 2007). This suggests that the WCC theory was not well specified in this context.

This theory analyse many non-social features of autism although, it does not relate to social traits of ASD. In order to better understand the Autism Spectrum Disorder, Baron-Cohen builds his theory on social characteristics which will be further discussed.

Extreme Male Brain Theory (EMBT) by Baron-Cohen (2002) is based on deficits in social cognition, where autistic individuals have extreme male brain. This may be caused by too high exposure to testosterone between 8 and 24 weeks of pregnancy (Knickmeyer, Christine, Baron-Cohen, 2006). In order to better understand the theory we need to take into account the claim, that females are more empathetic and males are better at systemizing. Systemizing is the drive to develop the rules and principles in order to better understand complex systems. For instance, ability to fix the engine of a car or conduct scientific experiments. On the other hand, empathizing is defined as ability to react and understand one's and someone's feelings and emotions, as well as being capable of interact with others. For example, when seeing someone crying, feeling need to support that person in distress (Baron-Cohen, 2002). A person with the extreme male brain is a hyper-systemiser and hypo-empathiser.

To support this hypothesis (Knickmeyer et al, 2006) conducted the study to check if autistic traits increased in congenital adrenal hyperplasia (CAH) females, who are exposed to abnormally high levels of testosterone, due to

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their medical condition. The results confirmed the hypothesis. Kung et al, (2016) argues that because the experiment was conducted on mostly adults, it does not show accurate results. Alternatively, they conducted 2 studies, the first one measured if prenatal exposure to testosterone may have an influence on autistic features. The experiment compared children with and without CAH. It reported no correlation. Second study was focused on well-developing children whose mothers were subjected to amniocentesis which can provide information on testosterone level. The result of the study showed that heightened amniotic testosterone exposure prenatally is not significantly correlated with risk of ASD. "Baron-Cohen causal theory" is refuted by these findings.

Furthermore, the EMB theory is based on the results of many tests and questionnaires. One of them is the Autism Spectrum Quotient (AQ) which measures non-clinical autistic symptoms (Baron Cohen et al., 2001) The aim of this questionnaire is to identify cognitive style of each participant. For instance, as person who is interested in systemizing and has little interest in social interactions will achieve high AQ score. It means that his or her cognitive style will be characterized as an extreme male. Scores on the AQ questionnaires are self-opinion based and do not check the truthfulness of the answers through test of ability. That question whether outcome of the questionnaire is accurate or not. For instance, the participant may think he/she is punctual and answer yes for the question: do you find yourself punctual? This does not prove for certain that the person has this personality trait. A person may come from eastern country where being punctual is not common. That can create the bias that person's definition of being on time is

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different than European's perspective on this matter. In addition, diversity in gender-based social expectations may cause bias in self-assessment. For example, female may think that she needs to answer in a compassionate way to meet social standards (Rosalind Ridley, 2018).

Moreover, Krahn and Fenton (2012) argue that EMB Theory may cause decreased female diagnosis of ASD and as a result of that severe identity issues. Baron-Cohen (2002) labelled types of brain with gender, type S as the male brain and type E as the female brain. This categorization may have created sex stereotyping. It has been identified that women in USA have found it difficult to get diagnosed and may often receive the treatment later than men. This happens due to physicians being unaware of possibility that females can have ASD (Krahn and Fenton , 2012) The EMB Theory does not only have flaws but also positive aspects which will be analysed below.

Baron-Cohen explains why autistic individuals display weak central coherence. He believed that they start their cognitive analysis by giving the most importance to local details, then they question whether the information they processed can be systemized. This can provoke narrow, obsessive preoccupation. For example, spinning wheels of the toy car. In addition, the EMB theory gives a good analysis of how the autistic brain analyses the information in a social setting. Autistic individuals systemise information and act accordingly in situations which require empathising. For instance, when a friend loses a close family member, the autistic person would most likely talk about how death is inevitable instead of comforting a grieving friend.

To conclude, Weak Central Coherence theory (Frith, 1989) and Extreme Male Brain theory (Baron-Cohen, 2002) try to explain traits of Autism Spectrum Disorder. Each of them gives a priority to different type of features, non-social and social respectively. Baron-Cohen succeeds in explaining how autistic individuals process the information and react in social situations. Whereas Frith was successful in describing correlation between weak central coherence found in autistic children and talent. By contrast, the WCC theory claim, that inability to understand contextual information applies to every autistic individual, has been refuted. Baron-Cohen methodology and probable testosterone as a cause of ASD have been criticised along with sexual bias which the EMB theory created.

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