

# Physiological psychology essays example

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The current project is devoted to various aspects of physiological psychology, which have been described by various scholars during the last decades. It will also give various opinions on the same questions regarding the main statements of these aspects. First, in order to have clear understanding of what is going to be discussed, the basic explanation of physiological psychology should be given. Certainly, it is a subdivision of biological psychology or the so-called “ behavioral neuroscience”, which studies and researches various neural mechanisms of behavior and perception with the help of various controlled experiments, which include brain studies and manipulations ( Pinel, 2007). This field of psychology is devoted to find the associations of human behavior with his brain activity, as the majority of psychologists are convinced that the mind and everything, which is associated with it, is linked to the nervous system. Therefore, the main goal of this field is to find and describe the most important brain-behavior relationships.

Nevertheless, physiological psychology is a vast field of science and there will be no possibility for the current project to describe every interesting and important correlation of human behavior with his brain; therefore, the paper will be focused on one of the most discussed and controversial theories of physiological psychology nowadays. The next paragraphs will be devoted to an explanation of Extreme Male Brain (EMB) hypothesis of autism, as this theory is currently being one of the most discussed. It offers an explanation of one of the most evident phenomenon in physiological psychology, “ why do the males suffer from autism more often, compared to females?” The theory has been designed to find out sex differences in autism and study whether these differences matter.

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The theory itself has been based on the results of the empathizing-systemizing theory, which states that the patients can be classified according to two main characteristics: empathizing and systemizing (E-S). It also studies the strengths of interests of empathy and systems for each person respectively. By the scores of E and S there have been developed five different types of brains; moreover, it has been proved that it is more common for males to have S quotient (SQ) bigger than E quotient (EQ) and for females – to have the opposite (Baron-Cohen, 2005).

Further works on empathizing – systemizing have led the researchers to an investigation whether the fetal testosterone levels are associated with the probability of having an autism disorder among men (Baron-Cohen, 2012).

This statement has been developed to a separate theory, the “ Extreme Male Brain” theory of autism, which is still being discussed by the psychologists.

Baron-Cohen and his assistants have described the extreme of the traditional E-S male profile as an autistic, as they state that “ the male brain is programmed to systemize and the female brain to empathize Asperger's syndrome represents the extreme male brain” (Baron-Cohen, 2003).

Therefore, it was the first time, when probability to have an autism syndrome has been described as a physiological factor. Moreover, it has given the explanation of why are the women are less affected to this syndrome. The theory concluded that the higher levels of fetal testosterone explain the higher risks of having the autism syndrome for males. Respectively, the lower levels of fetal testosterone, which are more common for females, represent the reason of their lower probability to become autistic.

In order to have a deeper understanding of the theory's concepts, it should

be reminded that the theory has divided the people into five types according to E-S basis. These types include:

**Type E ( $E > S$ ), which represents the people, who have their empathy levels considerably higher than the levels of systemizing;**

Type S ( $S > E$ ), which represents the opposite type of people with their systematizing levels considerably higher than their empathy levels;

Type B ( $S = E$ ) or the balanced type with the levels of empathy relatively equal to the same of systemizing;

Extreme type E ( $E \gg S$ ), which shows the above average levels of empathy and below average levels of systemizing, as well;

**Extreme type S ( $S \gg E$ ), the opposite type to the previous one.**

The results of Baron-Cohen's research show that the type E is more common for females, rather than males; moreover, the number of E-type women is more than twice bigger than the same for males. Respectively, there are twice more men of S-type compared to women. The results of the research have also concluded that approximately 65% of patients suffering from autism spectrum conditions fall under category of Extreme type S (Baron-Cohen, 2009). Extreme type E concept has also been offered for further researches; still, it has not been described and studied in full.

In addition to the EQ/SQ studies, there have been conducted various additional tests and studies that have proved male and female differences for the patients with Asperger syndrome or autism. For example, the differences among the brain models provide a comprehensive overview of

differences between sexes for the people with autism. The differences included hormone levels, brain structures etc. (Kreiser & White, 2013) In addition, there are several studies that have concluded that the brain regions, which vary in average size for females and males, also differ considerably between the patients with autism and the people without autism (Savic-Berglund, 2010).

Furthermore, Baron-Cohen has studied the relatives of patients with autism and Asperger syndrome in his respective studies and has concluded that the fathers and grandfathers of the patients are more likely to have a technical or engineering specialization in comparison to general population. In addition, the students of natural sciences are registered as the ones, who have more relatives with autism compared to the students of humanities (Baron-Cohen, Wheelwright, Stott, Bolton & Goodyer, 1997). Another Baron-Cohen's finding similar to the previous one is the so-called "Silicon Valley phenomenon". The phenomenon lies in the statement that the rates of autism prevalence are ten times higher here compared to the average rates for the population of US, which results from the high concentration of technical fields specialists working there. The research concludes that the environment may play crucial role for the autism syndrome development; moreover, the genetic factor has also been described as the influential for the autism prevalence, as the technical minded children have a higher probability to become autistic (Baron-Cohen, 2012).

In addition, Baron-Cohen claims that autism, according to his theory, is being caused by both social and genetic factors. He states that due to the fact that social world is the most unpredictable system, people with ASD mostly fail to react appropriately to various social changes. He explains autism as a result

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of oversystemizing - when the protective mechanism of prediction of potential future events becomes the only possible way of thinking. Therefore, the autistic people become "change-resistant", as they simply cannot react to any change in their lives (Baron-Cohen, 2006). Thus, summarizing the concepts of EMB theory, it should be stated that Baron-Cohen has developed and proved that the technical minded people and males are more likely to be diagnosed with autism.

Nevertheless, this theory is still being disputed, as the researchers have not yet proved and tested the theory with ASD-diagnosed patients, only with the people that might potentially be diagnosed with the syndrome due to ASD-similar traits. Despite the fact that Baron-Cohen's team has proved the fetal testosterone levels to have influence on further ASD development, the researchers will require more data and samples for the respective researches to have an adequate result, as statistically A is being diagnosed for approximately 1% of the population (Tachibana, 2010). Moreover, the scholars are interested in finding the associations between the current testosterone levels with probability to have autism, as there is no proof that the testosterone levels influence the ASD probability only on prenatal levels (Auyeung et al., 2009). In addition, the studies have found out that not only testosterone may potentially be associated with autism, as oxytocin can also potentially have its impact on attachment and social memory. The researchers also tend to assume that oxytocin may also affect ASDs with human bonding and maternal behaviour; moreover, some studies state that oxytocin treatment may improve social interaction and communication with autism-diagnosed patients (Guastella et al., 2010). Moreover, EMB has also been explained due to an experiment, which Frank has conducted. The <https://assignbuster.com/physiological-psychology-essays-example/>

experiment resulted in a statement that males do not keep their internally directed thoughts deactivated the same as women do, as they tend to deactivate them automatically. Frank concluded that such trait of male brain shares much in common with autism (Frank, Baron-Cohen & Ganzel, 2015). However, even the author accepts that these traits are only theoretical and need to be studied experimentally in a more detailed way.

As for my personal reflection regarding the statements of Baron-Cohen and his team, I agree that his view on ASD and its causes deserves its consideration among the variety of the rest of the causes of autism.

However, I personally cannot agree that autism can be caused solely by lack of empathy and with person's concentration on systematizing. In addition, due to increasing percentage of females being involved in technical specializations, the statement that autism is solely male syndrome seems doubtful. I also agree that due to lack of samples and data about ASD, we cannot state that it is the testosterone level on prenatal periods that affects the probability of being diagnosed with ASD. Moreover, the list of all causes of autism has not yet been formed completely. Therefore, the future researches might potentially decline not only the statements of Baron-Cohen, but may also reject other ASD-related theories. Still, statistically autism remains the male syndrome.

In addition, ASD is not the only one to have more prevalence among the males compared to females. For example, the antisocial personality disorder is much more prevalent among males despite the fact that the number of male patients in general population tends to vary depending on chosen methodology within a separate country. For example, lifetime prevalence in US studies has shown a figure of approximately 5% among males and less

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than 1% for females. The EU studies have shown 1.3% prevalence for males and almost no prevalence (0 – 0.2%) for females. These rates indicate that even taken the conservative estimations into consideration, the disorder shows the same prevalence among males as schizophrenia, the most discussed and studied condition among the psychologists and psychiatrists. Moreover, this trend remains true even taking into consideration the variations among the US/EU rates. Still, there are researches that assume that the number of occasions of antisocial personality disorder among women is rarer compared to the same of men; however, they also state that female antisocial personality disorders tend to have more severe symptoms caused by more sophisticated comorbidities for both Axis I/Axis II disorders with their respective outcomes. It should also be stated that the women diagnosed with antisocial personality disorder show much higher prevalence of substance misuse compared to males .

Therefore, the nature of some psychiatric disorders shows that gender factor for being diagnosed with one of the aforementioned syndromes truly matters. The fact is that both the ASD and antisocial personality disorder can be explained simply as resulted by higher testosterone levels in males compared to females. Studies on ASD have shown that the lack of empathy with increasing levels of testosterone can be associated with the higher potential probability to be diagnosed with autism; however, it should also be stated that the social role of every male is supposed to be more rational and systematical compared to females, therefore, males' lack of empathy can sometimes be mistakenly diagnosed as ASD-suspected. As for the explanation of antisocial personality disorder and its prevalence among males, it should be stated that the higher levels of testosterone naturally

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make males more antisocial and aggressive, especially in non-comfortable and dangerous environments. Antisocial behavior can be a representation of male protective mechanisms that seem to be aggressive or non-emotional. The social role of males and their upbringing from childhood are potentially focused on becoming more independent, aggressive and rational.

Summarizing everything that was mentioned above, it should be stated that physiological psychology is a broad sub-field of psychology and offers important explanations to various behavioral concepts. However, due to the fact that the majority of its theories remain disputed and doubted, it is evident that the theories need to be studied more comprehensively and profoundly. As a result, the serious psychiatric disorders like autism or antisocial personality disorders will not only find associations with physiology, but also will totally prove them experimentally.

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