The Importance of Social Cognition:

The impact of age, gender and personality on Social Cognition

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2016

BSc in Psychology

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Foreword

Submitted in partial fulfillment of the requirements of the BSc Psychology degree, Reykjavík University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.
Abstract – English
Previous studies of social cognition have demonstrated its importance in every day communication. Recent studies have examined the relationship between social cognition and mental illnesses and the results have indicated that individuals diagnosed with autism and schizophrenia lack abilities in social cognition. The purpose of this study is to examine whether gender, age or personality have any effect on social cognition abilities. Participants of the study were 100 individuals, 16 males and 82 females. All the participants in the study completed two tests, The Facial Emotional Identiﬁcation Task (FEIT) and SIPP Personality Test (SIPP), along with answering background questions about their age, gender and education. The results conﬁrmed previous research and presented signiﬁcant difference in social understanding between genders, where males did worse than females. No signiﬁcant difference was found between age of the participants, but the results showed that the younger group had a slightly higher average of correct answers than the older group. When personality was viewed in the context of social cognition, the results showed no evidence of any relationship between the two. The results of the study indicate that personality characteristics have no association with social cognition abilities, but gender can be a good predictor for the individual’s social cognition abilities.

Key words: Social cognition, gender, age, education, personality
The importance of Social Cognition

Facial expressions are a fundamental source of information in all communications and they influence how people understand and experience their surroundings in everyday life (Wilhelm, Hildebrandt, Manske, Schacht, & Sommer, 2014). Facial expressions also have survival importance as individuals with higher social cognition abilities know to avoid angry and fearful faces (Calvo & Lundqvist, 2008) and that can lead to better survival. Failure to interpret facial expressions correctly can interfere with successful social interactions and often leads to frustration and even aggressiveness (Lambrecht, Kreifelts, & Wildgruber, 2014).

Only recently researchers started studying social cognition independently from general intelligence in order to learn why some people have better understanding in the non-social world, as in math and physics, but find themselves in trouble understanding the social world (Baron-Cohen et al., 1999). There are also individuals that are the opposite, i.e. they have good social ability but do not understand the non-social world and often lack problem solving skills. Research in social cognition has grown rapidly and knowledge about human behavior and mental illnesses has expanded. Studies have concluded that individuals have different strengths and impairments (Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997; Beeney et al., 2015) and it is now thought that diagnosis of mental illnesses can be categorized on a spectrum.

Social cognition and autism

One of the main characteristics of autism spectrum disorder is lack of social communications and limited or no “theory of mind” skills (Association, 2013), i.e. an ability to attribute a mental state to our self or to another person. “Theory of mind” is a way of predicting and distinguishing feelings or emotions of another person. Individuals
with autism spectrum disorder have trouble reading expressions and reading between the lines when spoken to or understanding behavior of others. As a result, people with autism and Asperger’s show little empathy for other people (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001). Tranel & Hyman (1990) determined from their study that individuals with higher social cognition abilities demonstrated more function in the amygdala, orbital prefrontal cortex (OPC) and the superior temporal gyrus (STG) and damage to the STG showed impaired ability to face perception. These results indicate that individuals with high functional autism and Asperger’s show limited function in these part of the brain and lack social intelligence and function (Baron-Cohen et al., 1999, 1997; Baron-Cohen & Hammer, 1997; Tranel & Hyman, 1990).

Baron-Cohen et al. (1999) performed a study with six (6) subjects that had been diagnosed with Autism and twelve (12) subjects in a normal comparison group. Subjects were presented with photographs of eyes and where asked to indicate the mental state and gender of the person in the photograph. In this study, Baron-Cohen et al. (1999) were testing the “theory of mind” ability of the subjects and the hypothesis was that individuals with autism spectrum disorder would do significantly worse on this test. Individuals with high functional autism and normal intelligence showed deficits in this task (Baron-Cohen et al., 1999, 1997). Considering this study had relatively few subjects, subjects with autism did significantly worse in the “theory of mind” test. However in larger sample study, the gender recognition was evident (Baron-Cohen et al., 1997).

Social cognition and schizophrenia

Schizophrenia is a chronic and disabling mental disorder that affects millions of people around the world (Gupta & Kulhara, 2010). Schizophrenia is a complex disorder and the causes are not fully known. It is believed that various factors impact schizophrenia, ranging from a genetics to brain development disorders. Still there are many unanswered
questions about schizophrenia, but it is known to be a complex disorder that cannot be explained by a single mechanism. The main symptoms in schizophrenia have been separated into negative and positive symptoms, ranging from loss in functions to more than normal functions. Positive symptoms include hallucinations, delusions, strange and confusing speech. Negative symptoms are lack of exercise or behavior, attention and concentration problems, and may include social withdrawal and lack of emotions and initiatives. Often people diagnosed with schizophrenia are seen as being flat, dull or emotionless (Association, 2013; Gupta & Kulhara, 2010; Marjoram et al., 2005).

Individuals that suffer from heterogeneous schizophrenia usually show poor performance in most psychometric tests compared to normal control subjects (Corcoran, Mercer, & Frith, 1995). In Firth’s study in 1992, he claims that schizophrenia is a disorder where individuals misinterpret representations of mental states and non-verbal communications. The main positive symptoms in schizophrenia are connected to social cognition as auditory hallucinations and delusions (Corcoran et al., 1995). Firth’s proposal is that individuals with schizophrenia fail to represent understanding of other people’s emotions and intensions that is demonstrated in the positive symptoms in schizophrenia. The negative symptoms are mirrored in the impairment in social communications and “theory of mind”. Schizophrenia and autism disorder have in common the “theory of mind” impairment that causes the misinterpretation of another person’s emotions and intentions (Baron-Cohen et al., 1999, 2001; Corcoran et al., 1995). The low ability in “theory of mind” reflects in the inability to communicate in social situations compared to individuals that score high on same tests.

Mazza et al (2001) did a study on thirty five (35) individuals that met criteria for schizophrenia DSM-5 and seventeen (17) normal individuals in a controlled group. All the subjects concluded four “theory of mind” stories that examined the ability for false belief
and deception. Their results showed a significant difference between the schizophrenic and controlled group, where the individuals with schizophrenia demonstrated defected ability in “theory of mind” (Mazza et al., 2001).

Foerster (1991) argued that schizophrenic patients with heterogeneous negative symptoms show poorer social functions in childhood and that the ability to assume intentions and emotions in others are attained in childhood. Other studies have linked negative features in schizophrenia to social difficulties in childhood, particularly in men, and these results are associated with the hypothesis that men and boys are more likely to suffer from schizophrenia and autism disease (Baron-Cohen et al., 1997).

When an individual suffers from third person auditory hallucination, it has been argued that their assumptions about misinterpretation of emotion and intentions in others are sensed as coming from a third person (Corcoran et al., 1995) and that links to deficits in specific cognitive processes. When schizophrenic individuals misinterpret another person’s behavior or state of mind, that is often the main foundation in their delusions, hallucinations and misidentification of the world around them (Corcoran et al., 1995; Foerster et al., 1991). Thus the argument has been made that third person hallucinations arise when individuals experience failure of the self-monitoring system and conclude that their thoughts are replaced by the reality of the third person (Corcoran et al., 1995). The self-monitoring ability is mostly located in the frontal lobes and the amygdala (Tranel & Hyman, 1990) and the lack of perceiving other peoples intentions and the “theory of mind” limitations in schizophrenia has been linked to deficits in that area of the brain.

There was some evidence in Firth’s study 1992 that individuals with schizophrenia have impaired frontal function and memory and that both schizophrenia and autism show impairment in similar brain regions. These symptom could explain why these individuals would have specific difficulties in the ability to assume what is going on in the mind of
others (Corcoran et al., 1995). Doody et al. (1998) conducted a study on schizophrenia with affected patients and a normal control group. He found an association between the “theory of mind” difficulty in autism and negative symptoms in schizophrenia, and that they had similar features. Addington et al. (2006) supported previous studies that symptoms of schizophrenia included inferior ability in “theory of mind” and also that they did poorly in FEIT task. Furthermore, these deficits may be vulnerability factors and affect perception and social cognition abilities in schizophrenia as the study (Addington et al., 2006) supports association between facial recognition and social cognition abilities.

All previous studies have supported the results that individuals diagnosed with schizophrenia have impaired “theory of mind” ability (Baron-Cohen & Hammer, 1997; Corcoran et al., 1995; Doody et al., 1998; Foerster et al., 1991; Marjoram et al., 2005; Mazza et al., 2001). This impairment has been linked to abnormality in social cognition in schizophrenia and also impaired facial recognition. Results have shown that individuals with high level of delusion and hallucinations performed worse in “theory of mind” tests compared to normal study groups. That supports the hypothesis that chronic positive symptoms in schizophrenia results in impairments and misunderstanding in social communications.

**Social cognition and personality**

Personality is something that everybody has, but is very hard to measure and objectify (Denissen & Asendorpf, 2006). One of the most influential developments in personality research is the Five-Factor Model. The Five-Factor Model maps personality traits into five independent factors: neuroticism, extroversion, agreeableness, conscientiousness and culture (Denissen & Asendorpf, 2006; Feenstra, Hutsebaut, Verheul, & Busschbach, 2011). Researchers have tried to connect all kinds of behaviors and abilities to these personality factors and have determined that personalities that are more extrovert
and agreeable do better in social cognition tasks than personalities that are neurotic and more introvert (Denissen & Asendorpf, 2006).

Social cognition and age

Young people today live completely different lives than their parents or grandparents lived at their age. The internet has made the world much smaller and many people spend more time online then talking to other people face to face (Sparrow & Chatman, 2013). “Living our lives in cyberspace changes what kinds of information we most frequently process an how we habitually deploy our cognitive resources, for better and for worse” (Sparrow & Chatman, 2013, p 1). Studies have concluded that people that spend much time on the internet detect other people’s facial expressions differently. The internet is full of self-portraits that individuals, mostly young people, take of themselves and post on their Facebook or Instagram pages and are referred to as “selfies”. Because of this trend, people are constantly looking at other people’s facial expressions during their time on the internet.

Researches have stated that young people are mostly on the internet to explore social media and to access information about individuals that they are interested in, while adult use the internet for information seeking and emails (F. Gross, 2004). Due to these demographic differences in the uses of the internet, social media researchers are interested in seeing if the ability in social cognition is different as well. That is why one of the hypotheses in this study examines social cognition abilities in younger individual compared to those who are older.

Social cognition and gender

A big factor in interpreting nonverbal communications successfully could be linked to gender, regardless if the subject is born male or female. Hall et al. concluded in his research in 1984 (Lambrecht et al., 2014) that females exceed males when it comes to
decoding nonverbal emotions, especially in communication with infants, children and adolescents. A research by Fujisawa and Shinohara in 2011 indicated that females appear to be more sensitive to sad and happy emotions in faces of others compared to angry faces (Lambrecht et al., 2014). Calvo and Lundquist (2008) supported those results and found that males have higher tendency to respond to angry faces and that both genders detected happy and neutral expressions more accurately. There is a limited amount of research on gender difference in social cognition tasks and therefore it is important to take a closer look. Previous studies on gender roles show a big difference in communication and how gender interprets non-verbal communications and facial expressions (Fujisawa & Shinohara, 2011; Lambrecht et al., 2014; Ramos-Loyo, Mora-Reynoso, Sánchez-Loyo, & Medina-Hernández, 2012). The tendency for males to react more to angry faces may have an evolutionarily advantage in order for them to protect their family and for their survival.

We know that males are much more likely than females to be diagnosed with autism spectrum disorder and schizophrenia (Baron-Cohen & Hammer, 1997; Baron-Cohen et al., 2001; Fujisawa & Shinohara, 2011; Ramos-Loyo et al., 2012) and that both disorders have been associated with poorer social cognition skills. Therefore, it could be concluded that males lack social cognition abilities compared to females. The importance of a social cognition research is to look closer at potential factors, such as facial recognition, and to increase our understanding of human behavior and deficits. Furthermore, it is possible that those factors may be targets for intervention to prevent or find better treatments for mental illnesses.

The following hypotheses were examined. First, males have poorer social cognition skills than females. Second, individuals younger than 25 years old do better on social cognition task compared to older population. Third, personality affects social cognition skills; those who measure extrovert and more social show better performance in reading
facial emotional expressions in others. As previous researchers have concluded that social
cognition abilities affect people in everyday life and are different in individuals, this study
explored what characterizes those who display high scores in social cognition tests and
have high understanding in the social world.

Method

Participants

One hundred individuals volunteered to participate in this study. Some of the
volunteers were recruited from a participant pool where first and second year student in
undergraduate psychology students in Reykjavik University, Iceland could register to get
extra course credit for their participation. The sample contained 16 males (16.2%) and 82
females (82.8%). The participants’ were grouped by age and most of the participants where
in the age groups 25 years old or younger (35) and 26 years old to 50 years old (35) and the
smallest age group contained those that were 50 years old or older (30).

Measures and Materials

Background measurements. The questionnaire included questions about
background information (see Appendix C). The questions included information about
gender, age, education and field of work.

The Facial Emotional Identification Task. The ability to detect facial expression
and emotional state in other people was tested with the Facial Emotional Identification
Task (Barkhof, de Sonneville, Meijer, & de Haan, 2015) (see Appendix B). That test
included 18 photographs of different faces (adult males, adult females and one child), each
of them expressing different emotional state. All the photographs where in the same
standardizes size and where in black and white. Under each picture where six different
choices of mental state (happy, angry, scared, sad, surprised or ashamed) where only one
answer was the correct one. In addition, the subjects were asked how sure they are about their answer with four available options (not sure, pretty unsure, pretty sure or very sure).

**SIPP Personality Test.** To measure personality traits, the SIPP test was used in this study. The SIPP test is a dimensional measurement for personality measured with 60 questions aimed to measure the core component in adaptive personality functioning (Feenstra et al., 2011) (see Appendix D). The SIPP test asks the participants to think about the last 3 months before they answer how much they agree with the questions, like “I frequently say things I regret later” or “I often feel like my life is meaningless” (Feenstra et al., 2011, p 648). The responses are in 4 categories, ranging from score of 1 to 4 and described as *fully disagree, partly disagree, partly agree* or *fully agree*. The questions cover subjects about *Self-control, Identity integration, Responsibility, Relational Capacities and Social concordance*. Getting high score on this test indicates that the person has better adaption functioning, whereas lower scores indicates person’s inability to adapt.

**Procedure**

This study was in the form of an online survey (see Appendix A, B, C, D). The researcher made questionnaire on the website in a Google application where the form containing the questions was created. The survey was put on the Internet and distributed there on 26 February 2016. The survey was advertised on the contact’s Facebook page and requested participation of individuals of all ages. The participants answered the survey on their own computers and the survey took about 25 – 35 minutes to complete. The participants were informed in the beginning of the purpose of the survey and that it was a part of BSc graduation project in Reykjavik University, Iceland (see Appendix A). Also, the participants were informed of what was expected of them and that the survey had approval from the Icelandic human review committee. It also stated that the survey would be anonymous, so the answers could not be attributed to individual respondents. It was not
necessary for the participants to answer all of the questions to be able to finish the survey. After the participant gave informed consent, The Facial Emotion Identification Task was presented to them (see Appendix B). In the next section, the background information questions were asked (see Appendix C) and the survey ended with the SIPP personality test (see Appendix D). The survey was open to participants for five weeks, but it was subsequently closed on 2 April 2016. Finally, the data was transferred from the Google application into SPSS Statistics.

**Design and data analysis**

Analyzes of correlation and ANOVA was used to test the hypothesis. The dependent variable in this study was social cognition abilities and the independent variables were age, gender and personality. The SPSS software version 20 where used to conduct the statistical analysis. Gender (male = 1, Female = 2). The values for age were divided into 3 groups, 25 years old or younger (1), 26 – 35 years old (2) and 36 years old or older (3). For The Facial Emotional Identification Task (FEIT) participants indicated their experience for all of the 18 photographs by choosing one option out of six (“Happy”, “Angry”, “Afraid”, “Sad”, “Surprised” and “Ashamed”). All of the 18 answers where than split into two groups. Those who answered correctly (1) and those who answered wrong (0). For the SIPP Personality Test included 60 questions, where every question had four options (“Completely disagree = 1”, “Tend to disagree = 2”, “Further agree = 3”, “Completely agree = 4”). Total score was calculated by adding together the scores from all participants. Then the questions about personality where calculated in 5 domains: self-control, identity integration, responsibility, relational capacities and social concordance domain.

**Results**

**Descriptive Statistics**
This study examined the difference between age, gender and personality in ability in social cognition (The Facial Emotional Identification Task). The participants that answered the 18 questions in the task were 99% (n = 99).

Descriptive statistics for The Facial Emotional Identification Task (FEIT) can be seen in table 1. The table shows that the highest score was 17 out of 18 possible and the lowest score was 5, the lowest possible score was 0. The table shows that no participant in the survey got all of the answers wrong and no participant got all of them right. The mean score for the total participants on the FEIT was 12.808 (M = 12 SD 2.43561).

Table 1

<table>
<thead>
<tr>
<th>FEIT</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>5.00</td>
<td>17.00</td>
<td>128.081</td>
<td>2.4</td>
</tr>
</tbody>
</table>

In table 2, the group statistics for gender performance in The Facial Emotional Identification Task is presented. There were 82.8% females and 16.2% males who participated in the survey, the mean score for the females on the FEIT task was 13.04 (M = 13.048; SD = 2.346) and for males the mean score was 11.43 (M = 11.437; SD = 2.529). Females did significantly better on the FEIT task than males (t(96) = 2.48, p = .015).

Table 2

<table>
<thead>
<tr>
<th>FEIT</th>
<th>Mean</th>
<th>SD</th>
<th>Std Error Mean</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>
The age variable was divided into 3 categories, 25 years old or younger, 26 – 35 years old and 36 years old or older.

The results from the ANOVA for age difference did show somewhat higher average mean score for the age group 25 years old or younger \((M = 13.428; SD = 2.239)\) than the older groups that where for the participants 26 years old or older \((M = 12.588; SD = 2.709)\) on the FEIT task. The participant that where 25 years old or younger scored minimum 7 points on the task and the highest 17 points of 18 points available, compared to the participants that where 26 years old or older that had the minimum of 5 points. That is 2 points lower than the lowest score for the younger age group. No significant difference was found between the 3 age groups when testing the FEIT task \(F(2, 96) = 1.877, p = .159\).

Table 3

*The Mean, Standard Deviation, Lower and Upper Bound, Min and Max for Participants’ Score on The Facial Emotional Identification Task (FEIT) Depending on Age.*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Min</th>
<th>Maxi</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 years or</td>
<td>35</td>
<td>13.42</td>
<td>2.2</td>
<td>12.65</td>
<td>14.19</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>younger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 - 35 years</td>
<td>34</td>
<td>12.58</td>
<td>2.7</td>
<td>11.64</td>
<td>13.53</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>
Descriptive statistic for the SIPP five personality dimensions can be seen in table 4. As seen in the table below 98% (N = 98) of participants answered the survey and all of them scored rather high in all of the personality dimensions. The lowest score was for the self-control domain on the SIPP test with the minimum score of 1.42. All of the domains got the same highest score and was it the highest score possible with 4. Dimensions averages were similar to each other, the responsibility domain had the lowest average score ($M = 3.34; SD = .40$) and the identity integration domain had the highest mean score out of all the domains ($M = 3.46; SD = .48$). That reflects that all of the participants did very similar on the SIPP test. Based on the results of the survey, none of the personality domains rank higher or lower in the FEIT task.

Table 4

*The Mean, Standard Deviation for Participants’ Score in SIPP Personality Test*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-control domain SIPP</td>
<td>98</td>
<td>1.42</td>
<td>4</td>
<td>3.40</td>
<td>.45902</td>
</tr>
<tr>
<td>Identity integration domain SIPP</td>
<td>98</td>
<td>2.00</td>
<td>4</td>
<td>3.46</td>
<td>.48497</td>
</tr>
<tr>
<td>Responsibility domain SIPP</td>
<td>97</td>
<td>2.18</td>
<td>4</td>
<td>3.34</td>
<td>.40760</td>
</tr>
<tr>
<td>Relational capacities domain SIPP</td>
<td>98</td>
<td>1.83</td>
<td>4</td>
<td>3.37</td>
<td>.52867</td>
</tr>
</tbody>
</table>
As seen in table 5, there were no significant correlation between any of the SIPP Personality Test domains and the FEIT task, self-control $r = .01, p < .05$, identity integration $r = -.01, p < .05$, responsibility $r = -.05, p < .05$, relational capacities $r = .06, p < .05$, social concordance $r = .01, p < .05$. There are no indications that any of the personality domains have any effect on how well or bad participants did on the FEIT task.

Table 5

*The Correlation Coefficient for Participants’ Score in SIPP Personality Test, Depending on The Facial Emotional Identification Task (FEIT).*

<table>
<thead>
<tr>
<th>Correlation coefficient</th>
<th>Sig</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-control domain SIPP</td>
<td>.01</td>
<td>.861</td>
</tr>
<tr>
<td>Identity integration domain SIPP</td>
<td>-.01</td>
<td>.871</td>
</tr>
<tr>
<td>Responsibility domain SIPP</td>
<td>-.05</td>
<td>.487</td>
</tr>
<tr>
<td>Relational capacities domain SIPP</td>
<td>.06</td>
<td>.403</td>
</tr>
<tr>
<td>Social concordance domain SIPP</td>
<td>.01</td>
<td>.859</td>
</tr>
</tbody>
</table>

**Discussion**

In this study the aim was to examine what impacts social cognition abilities in individuals. Does gender and age give a good hint about social abilities or is it the personality of the individual that influences how secure they are in their social skills? The study utilized the Facial Emotional Identification Task (FEIT) and SIPP Personality Test,
but neither FEIT nor SIPP have been used in similar studies before. It is important to see the results from these tests using healthy subjects before FEIT and SIPP are used with controlled subjects, like individuals that have been diagnosed with mental illness as autism or schizophrenia. Three hypotheses where in this study, first: males do worse on social cognition tasks then females. Second: individuals under 25 years of age have better social cognition skills than older individuals and the last hypothesis was that individuals that have extrovert personality are better in social situations and therefore, have higher scores in social cognition tasks.

Only one of the hypotheses was supported with this study, i.e. that males were significantly worse in social cognition tasks than females. The study displayed that males had more trouble than women reading facial emotions in others, but in this study there were relatively few males and that could have influenced the results. The findings for age difference in social cognition tasks were not supported by this study. However, the results showed that individuals 25 years old or younger had a higher average score in the FEIT task than the older age group and that indicates that if the total sample in this study had been larger, the results would likely have revealed a significant difference between the age groups. It would be interesting to explore the age groups hypothesis in more detail with a larger sample study. The difference between ages in social cognition abilities could be influenced be social media, e.g. Facebook culture or the newest trends of “selfies”. The hypothesis stating that personality affects abilities to recognize emotion and expression in other peoples’ faces was not supported either. The findings indicate that personality does not affect social cognition abilities in any way. Those individuals who measured with introvert or extrovert personalities did not do better or worse on the FEIT task.

These findings about gender difference are parallel to the results from the Lambrecht, Kreifelts and Wildgruber (2014) study, but they found that males did poorer in
social recognition tasks compared to females. These findings also support the results in Fujisawa and Shinohara (2011) and Corcoran et al (1995) studies where it was determined that males were more likely to be diagnosed with autism and schizophrenia. While those findings are not correlated, they are supported by Baron-Cohen et al (1997) study where individuals with autism and schizophrenia present similar impairments in social cognition abilities. It has also been questioned if those findings are linked due to brain deformation in males. There are still many unanswered questions on how these findings are connected that are important to research in more details.

This study had some limitations as there were relatively few subjects and very few males that participated in the survey. That may have influenced the lack of significance in two out of the three hypotheses in this study. It would have been a better fit to have a larger sample in the survey and a greater distribution in participants’ gender and age. Despite these limitations, this study gives us more knowledge about what causes the difference in social cognition in individuals and the results may give deeper information about connection between social cognition and mental illnesses.
References


Appendix A

Félagsskilingur og persónuleikaþættir

Félagsskilningur og persónuleikaþættir
Upplýsingar til þátttakenda
Kæri viðtakandi
Vinsamlega þú þægðu neðangreindar upplýsingar vandlega áður en þú ákveður hvort þú viljir taka þátt í þessari rannsókn.
Tilgangur þessra rannsóknar er að kanna tengl félagsskilnings og persónuleikaþátta.

Verkefnið er hluti af lokaverkefni Hrannar Gauksdóttur til BSc gráðu við sálfræðisvið Háskólahreðsins í Reykjavík Hér með er óskað eftir þátttöku þinni í rannsókninni sem felst í því að fylla út þrjá spurningalista sem tekur u.þ.b. 10 mínútur. Athugið að einungis er leitast er eftir einu svari fyrir hverja spurningu.

Þátttakendum er frjálst að hafna þátttöku eftir að rannsókn er hafin. Þér er hvorki skylt að svara einstaka spurningum né spurningalistanum í heild, en þó er okkur afar mikilvægt að þú svariðið í þágu rannsóknarinnar.


Ef þú hefur einhverjar spurningar um rannsóknina eða þátttöku þína er þér velkomið að hafa samband við Hrönn Gauksdóttur rannsakanda (hronng13@ru.is) eða Brynja Björk Magnúsdóttir, prófessor við Háskólan í Reykjavík, brynjabm@ru.is.

Ég hef kynnt mér ofangreindar upplýsingar og veiti samþykki mitt fyrir þátttöku
Já ég samþykki

Appendix B

The Facial Emotional Identification Task

Vinsamlegast skoðaðu hverja mynd og merkku við þá tilfinningu sem passar best við svipbrigði manneskjunnar á myndinni. Merktu einnig við það hversu viss þú ert um að þú hafir valið rétt svipbrigði.

VINSAMLEGA SVARADU ÖLLUM SPURNINGUNUM. EF ÞÚ ERT EKKI VISS, SKALTU SAMT GISKA Á ÞAÐ SVAR SEM ÞÉR FINNST VERA BEST.
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
   Glaður
   Reiður
   Hræddur
   Dapur
   Hissa
   Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
   Alls ekki viss
   Nokkuð óviss
   Nokkuð viss
   Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
- Glaður
- Reiður
- Hraeddur
- Dapur
- Hissa
- Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
- Alls ekki viss
- Nokkuð óviss
- Nokkuð viss
- Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
Glaður
Reiður
Hraeddur
Dapur
Hissa
Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
Alls ekki viss
Nokkuð óviss
Nokkuð viss
Mjög viss
Mynd 4

Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
- Glaður
- Reiður
- Hraeddur
- Dapur
- Hissa
- Skömmmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
- Alls ekki viss
- Nokkuð óviss
- Nokkuð viss
- Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
   Glaður
   Reyður
   Hræddur
   Dapur
   Hissa
   Skömmustulegur
Hversu viss ertu um að hafa rétt fyrir þér?
   Alls ekki viss
   Nokkuð óviss
   Nokkuð viss
   Mjög viss
Mynd 6

Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
  Glaður
  Reiður
  Hraeðdur
  Dapur
  Hissa
  Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
  Alls ekki viss
  Nokkuð óviss
  Nokkuð viss
  Mjög viss
Mynd 7

Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
- Glaður
- Reiður
- Hraeddur
- Dapur
- Hissa
- Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
- Alls ekki viss
- Nokkuð óviss
- Nokkuð viss
- Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
Glaður
Reiður
Hraeddur
Dapur
Hissa
Skömmustulegur
Hversu viss ertu um að haft rétt fyrir þér?
Alls ekki viss
Nokkuð óviss
Nokkuð viss
Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
- Glaður
- Reiður
- Hræddur
- Dapur
- Hissa
- Skömmustulegur

Hversu viss ertu um að hafarétt fyrir þér?
- Alls ekki viss
- Nokkuð óviss
- Nokkuð viss
- Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
  Glaður
  Reiður
  Hræddur
  Dapur
  Hissa
  Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
  Alls ekki viss
  Nokkuð óviss
  Nokkuð viss
  Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
- Glaður
- Reiður
- Hraeddur
- Dapur
- Hisa
- Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
- Alls ekki viss
- Nokkuð óviss
- Nokkuð viss
- Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
  Glaður
  Reiður
  Hræddur
  Dapur
  Hissa
  Skömmmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
  Alls ekki viss
  Nokkuð óviss
  Nokkuð viss
  Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
  Glaður
  Reiður
  Hræddur
  Dapur
  Hissa
  Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
  Alls ekki viss
  Nokkuð óviss
  Nokkuð viss
  Mjógg viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
  Glaður
  Reiður
  Hræddur
  Dapur
  Hissa
  Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
  Alls ekki viss
  Nokkuð óviss
  Nokkuð viss
  Mjög viss
Hvaða tilfinnigu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
  Glaður
  Reiður
  Hræddur
  Dapur
  Hissu
  Skömmustulegur
Hversu viss er þú um að hafa rétt fyrir þér?
  Alls ekki viss
  Nokkuð óviss
  Nokkkuð viss
  Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
- Glaður
- Reiður
- Hræddur
- Dapur
- Hissa
- Skömmustulegur

Hversu viss erti um að hafa rétt fyrir þér?
- Alls ekki viss
- Nokkuð óviss
- Nokkuð viss
- Mjög viss
Mynd 17

Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
- Glaður
- Reiður
- Hráddur
- Dapur
- Hissa
- Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
- Alls ekki viss
- Frekar óviss
- Nokkuð viss
- Mjög viss
Hvaða tilfinningu finnst þér passa best við svipbrigði manneskjunnar á myndinni?
   Glaður
   Reiður
   Hræddur
   Dapur
   Hissa
   Skömmustulegur

Hversu viss ertu um að hafa rétt fyrir þér?
   Alls ekki viss
   Nokkuð óviss
   Nokkuð viss
   Mjög viss
Appendix C

Bakgrunnsupplýsingar

Leiðbeiningar: Vinsamlega svaraðu eftirfarandi spurningum eftir bestu getu með því að KROSSA í viðeigandi reit eða SKRIFA á línurnar. Krossaðu aðeins í EINN REIT við hverri spurningu.

Hver er aldur þinn?
18 ára eða yngri
18 - 25 ára
26 - 30 ára
31 - 35 ára
36 - 40 ára
41 - 49 ára
50 ára og eldri

Hvert er kyn þitt?
Karlkyn
Kvenkyn
Annað

Hvaða menntun hefur þú lokið?
Grunnskólamenntun
Hóf nám við framhaldsskóla og/eða lönmenntun en lauk ekki framhaldsskólamenntun og/eða lönmenntun
Hóf nám við Háskóla (BSc, BAc,BEd, o.s.frv) en lauk ekki Háskólamenntun (BSc, BAc,BEd, o.s.frv)
Framhaldsmenntun á Háskólastigi (MA, MS, MBA, PHD, o.s.frv)
Appendix D

**SPURNINGALISTI UM PERSÓNULEIKA (SIPP SF-60)**

*Personality task*

Þessi spurningalisti inniheldur staðhæfingar eða fullyrðingar um þig. Þessar staðhæfingar eiga við síðustu 3 mánuðina. Með því að gefa til kynna hve ósammála eða sammála þú eft hverri staðhæfingu efti að lýsa því hvernig þú hefur haft það **síðustu 3 mánuði**. Þetta gerir þú með því að setja kross í reitinn við svarið sem lýsir því best hvernig þú hefur haft það.

<table>
<thead>
<tr>
<th>Staðhæfing</th>
<th>Algerlega ósammála</th>
<th>Frekar ósammála</th>
<th>Frekar sammála</th>
<th>Algerlega sammála</th>
</tr>
</thead>
</table>

Til dæmis:

Kross í fremsta reit merkir að þú sért **algerlega ósammála** staðhæfingunni.

<table>
<thead>
<tr>
<th>Staðhæfing</th>
<th>Algerlega ósammála</th>
<th>Frekar ósammála</th>
<th>Frekar sammála</th>
<th>Algerlega sammála</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Kross í þriðja reitinn merkir að þú sért **frekar** (eða að hluta til) **sammála** staðhæfingunni.

<table>
<thead>
<tr>
<th>Staðhæfing</th>
<th>Algerlega ósammála</th>
<th>Frekar ósammála</th>
<th>Frekar sammála</th>
<th>Algerlega sammála</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

TAKTU EFTIR:

- Spurningalistinn fjallar um síðustu 3 mánuði.
- Það er aðeins þín skoðun sem gildir, ekki það sem aðrir segja.
- Það er mikilvægt að þú lesir allar spurningarnar vandlega, en hugsdu þig ekki of lengi um; fyrsta svarið sem þér dettur í hug er venjulega það besta.
- Það er bara hægt að gefa eitt svar við hverri spurningu.
• Vinsamlegast slepptu engri spurningu.
<table>
<thead>
<tr>
<th></th>
<th>Hversu sammála ertu eftirfarandi staðhæfingum miðað við síðustu 3 mánuði?</th>
<th>Algerlega ösammála</th>
<th>Frekar ösammála</th>
<th>Frekar sammála</th>
<th>Algerlega sammála</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stundum þyrmir svo yfir mig að ég get ekki stjórnað viðbrögðum mínunum</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2</td>
<td>Ég á auðvelt með að taka fólki eins og það er jafnvel þegar það er öðruvísi</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3</td>
<td>Ég trúi því staðfastlega að lífíð sé þess virði að lífa því</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4</td>
<td>Á heildina littið finnst mér að það sem ég geri veiti mér ánægju</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5</td>
<td>Ég get unnið með fólki að sameiginlegu verki þrátt fyrir persónulegan ágreining</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6</td>
<td>Ég hitti sjaldan einhvern sem ég þori að deila hugsunum mínum og tilfinningum með</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7</td>
<td>Ef ég hef gert samkomulag við einhvern um hvernig eigi að gera hlutina stend ég yfirleitt við samkomulagið</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8</td>
<td>Þegar einher nefur komið mér í uppnám langar mig oft til að meiða hann eða hana</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9</td>
<td>Venjulega hef ég nógu góða stjórn á tilfinningum mínunum</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Hversu sammála ertu eftirfarandi staðhæfingum miðað við síðustu 3 mánuði?</th>
<th>Algerlega ösammála</th>
<th>Frekar ösammála</th>
<th>Frekar sammála</th>
<th>Algerlega sammála</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Stundum verð ég svo reið(ur) að mig langar til að lemja eða sparka í fólk sem er í kringum mig</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>11</td>
<td>Það er erfitt fyrir mig að virða fólk sem hefur skoðanir sem eru ólíkar</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Hversu sammála ertu eftirfarandi staðhæfingum miðað við sístu 3 mánuði?</td>
<td>Algerlega ósammála</td>
<td>Frekar ósammála</td>
<td>Frekar sammála</td>
<td>Algerlega sammála</td>
<td></td>
</tr>
<tr>
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<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Stundum er ég ekki eins áreiðanleg(ur) og ég ætti kannski að vera</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>21</td>
<td>Ég segi oft hluti sem ég sé svo eftir seinna</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>22</td>
<td>Ég missi stundum stjórn á mér það mikil að það folk verður hrætt við mig</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>23</td>
<td>Ég kem oft með harkalegar athugasemdir um skoðanir eða gjördir annarra</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>24</td>
<td>Pað er erfitt fyrir mig að hafa</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
raunverulega ánægju af því að gera hluti

25 Það er erfitt fyrir mig að vinna með ódrum nema þeir fallist á að gera hlutina eins og ég vil gera þá

26 Jafnvel þegar ég er með góðum vinum mínun þá opna ég ekki mikið

27 Ég hef tilhneigingu til að byrja á hlutum og gefast svo upp á þeim

28 Ég hef svo sterkar tilfinningar að ég missi auðveldlega stjórn á þeim

29 Mér tekst oft ekki að greiða skuldir mínar tímanlega

---

<table>
<thead>
<tr>
<th>Hversu sammála ertu eftirfarandi staðhæfingum miðað við sústú 3 mánuði?</th>
<th>Algerlega ósammála</th>
<th>Frekar ósammála</th>
<th>Frekar sammála</th>
<th>Algerlega sammála</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 Það er erfitt fyrir mig að umgangast fólk sem hefur annað gildismat en ég</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 Mér finnst líf mitt oft vera tilgangslaust</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 Mig virðist skorta þá ábyrgðartilfinningu sem er nauðsynleg til þess að ég sinni skyldum mínun</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33 c</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34 Annað fólk hefur sagt mér að ég ætti að reyna betur að forðast að missa stjórn á tilfinningum mínun</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 Mér finnst oft að ég sé ekki jafn mikils virði og aðrir</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Ég tel að flest fólk vilji ekki umgangast mig</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37 Stundum er eins og allt innra með mér komi á einhvern hátt í veg fyrir að ég geti haft gaman</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Í vinnunni verð ég auðveldlega
pirruð/pirraður yfir því hvernig
aðrir gera hlutina

Það er erfitt fyrir mig að finna fyrir
væntumþykju þeirra sem ég tengist
náið

| Hversu sammála ertu eftirfarandi staðhæfingum miðað við síðustu 3
mánuði? | Algerlega osammála | Frekar osammála | Frekar sammála | Algerlega sammála |
|---------------------------------|-----------------|----------------|---------------|-----------------|
| 40 Eitt af vandamálum mínun er að
ég á erfitt með að leyfa mér að
hafa gaman | | | | |
| 41 Ég ræð oft ekki við mig og læt
skap mitt í ljós á óviðeigandi hátt | | | | |
| 42 Ég virðist oftar gera hluti sem ég
sé eftir en annað fólk | | | | |
| 43 Ég á erfitt með að hemja
árásargírní mína í garð annars
fólks | | | | |
| 44 Ég get sýnt öðrum væntumþykju
án þess að mér finnist það of
þægilegt | | | | |
| 45 Það er erfitt fyrir mig að njóta
vanalegra sambanda eða
vinskapar | | | | |
| 46 Sumt fólk hefur gagnrýnt mig fyrir
að vera ekki nógú ábyrg(ur) | | | | |
| 47 Stundum er erfitt fyrir mig að
verða ekki árásargjarn við aðra | | | | |
| 48 Það er oft mjög óútreiknanlegt
hvernig mér líður eða hvernig ég
bregst við | | | | |
| 49 Mér finnst erfitt að sýna öðrum
væntumþykju mína | | | | |
<table>
<thead>
<tr>
<th>Hversu sammála ertu eftirfarandi staðhæfingum miðað við síðustu 3 mánuði?</th>
<th>Algerlega ósammála</th>
<th>Frekar ósammála</th>
<th>Frekar sammála</th>
<th>Algerlega sammála</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Eitt af vandamálum mínnum er að ég á erfitt með að virkilega trúa því aðannað fólk elski mig</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>51 Pví miður er ég ekki eins dugleg(ur) og ég mundi vilja vera</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>52 Annað fólk hefur kvartað yfir því að ég sé ekki nógu áreiðanleg(ur)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>53 Ég geri oft of mikið úr minni háttar vandamálum</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>54 Ég hegða mér oft á hvatvíslegan hátt jafnvel þótt ég viti að ég muni sjá eftir því síðar</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>55 Ég átta mig oft ekki á því hvers konar persóna ég er í raun og veru</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>56 Degar ég reyni að skilja sjálfan mig verð ég oft enn ruglaðri en áður</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>57 Ég hef venjulega lítið álít á sjálfr/sjálfum mér</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>58 Ég lendi reglulega í deilum við aðra á vinnustað eða heima</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>59 Ég hef getað myndað varanleg vináttubönd</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>60 Dó ég sjá í eftir því þá verð ég að viðurkenna að ég er ekki eins einlægr og ég ætti að vera</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

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Takk kærlega fyrir þátttökuna!