The Role Played by Theory of Mind and Empathy in the Feigning of Psychopathology

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Abstract

In this article, we hypothesized that in order to feign mental illness, one would need to have empathy and be able to understand other's mental states. To test this hypothesis, we asked 432 healthy volunteers to feign depression, PTSD or schizophrenia while completing a self-report test that measures the severity of the feigned condition's symptoms and the Inventory of Problems – 29 (IOP-29). Additionally, all participants were administered a theory of mind (ToM) task and an empathy measure with the request to respond truthfully. Results from a series of linear regression models revealed that higher cognitive empathy is associated with increased symptom endorsement on self-report symptom questionnaires and higher ToM abilities are associated with less credible feigned profiles, especially in the case of feigned depression.

Keywords: Theory of Mind; Empathy; Malingering; Assessment; IOP-29.

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Malingering is the intentional feigning, production, or significant exaggeration of physical or psychological symptoms, or the intentional misattribution of genuine symptoms to an unrelated event or series of events when this is specifically motivated by external incentives or rewards (American Psychiatric Association, 2013; World Health Organization, 2018). Given the utilitarian connotation of the phenomenon, malingering is strictly related to some specific contexts, for example to avoid work, to evade criminal prosecution or to obtain economic indemnities thanks to a physical or psychopathological diagnosis. While the exact prevalence of malingering is unknown, malingering has been suspected in an estimated 30% of over 3,500 disability cases (Mittenberg, et al., 2002) and in 40% of cases where individuals claimed to have a mild traumatic brain injury in the USA (Larrabee, 2003). According to Young (2017), a more reasonable base rate estimate for civil litigation settings would be around 15%; in criminal forensic settings, however, this percentage may even approximate or exceed 50% (Ardolf et al., 2007). Malingering detection remains challenging yet is crucial for making correct diagnoses when it is likely to occur, and to ensure that resources will be allocated appropriately to those that actually require them. Economic and social consequences associated with malingering are considerable; the cost of malingering in 2011 was estimated to amount to over $20 billion in the USA (Chafetz & Underhill, 2013).

To understand malingering in more depth, three theoretical models have been proposed (Rogers, 1997), the first of which is the *pathogenic* model. According to this model, the patient exaggerates pre-existing symptoms in an attempt to convince others of their veracity. Their motivation is to gain control over their real, emerging symptoms and in time, they become less

able to control their malingering behaviors. The second is the *criminological* model, in which the patient aims to avoid legal consequences of their actions, i.e., malingering is conceived of as an antisocial act. The third one has been referred to as the *adaptation* model in which the patient undertakes a cost-benefit analysis and is more likely to malinger when faced with adversity and limited alternatives.

While these models are a useful starting point to understand the malingering process, knowledge of exactly which processes underlie successful malingering is elusive. Most research is focused on antisocial personality traits (Edens, et al., 2000; Poythress, et al., 2001), one of which is the aptitude to lie. People who are more often involved in illegal situations are more likely to have an Antisocial Personality Disorder diagnosis and to have practical advantages in successfully feigning physical or psychological symptoms. With these samples, it could be challenging to distinguish the situation-related behavior from the personality-related behavior. Young and colleagues (Young, et al., 2016) investigated the correlation between malingering and personality traits, and found that malingering is a behavior more related to a specific situation than to specific personality traits.

Several different cognitive and psychiatric disorders are commonly malingered. Amongst psychiatric disorders, the malingering of depression is particularly widespread in the forensic-psychiatric field. A study by Mittenberg and colleagues found that the prevalence in the USA of simulating depression for compensation in civil and criminal proceedings was 16.8% (Mittenberg et al., 2002). Depressive symptoms are intuitive and well known among the general population, which makes depression one of the most easily and frequently simulated mental disorders (Monaro et al., 2018). PTSD is also vulnerable to malingering as the diagnosis is primarily based on the individual's subjective symptom report (Brady, et al., 2000; Koch, et al.,

2005; Sparr, 1996). Many of the characteristic symptoms of the disorder - cognitive alteration and oscillations in mood, suicidal ideation, the re-experience of trauma, anxiety, avoidance, emotional detachment, psychic numbness – are difficult to verify (Hall & Pritchard, 1996). However, given the devastating impact that malingered PTSD can have on the medical-patient alliance, the economic system and the person who malingers them self, it is of great importance that the presence of feigned PTSD is adequately identified, with the ultimate goal of providing adequate and effective treatment for all patients (Ali, et al., 2015). Finally, the detection of simulating schizophrenia can be particularly challenging as the symptoms that characterize this psychopathology are often illogical. Consequently, the evaluator will have to distinguish between expected and unexpected symptoms (Fauteck, 1995). When people malinger, they tend to emulate positive symptoms associated with schizophrenia such as auditory and visual hallucinations as well as delusions, as opposed to more subtle negative symptoms. Other symptoms such as derailment, neologisms and "word salad" are usually not feigned as it is not easy to reproduce such complex symptomatology that entails the ability to imitate thought processes (Resnick & Knoll, 2005).

Basically, to feign in a successful manner, one has to emulate a person affected by the condition that they are trying to feign. To be able to do this, it seems reasonable to believe that the person who feigns must have some knowledge of the features that characterize the disorder attempting to be feigned and be able to put themselves in the shoes of someone who truly suffers from that disorder. Two psychological constructs would be particularly relevant to the latter ability, i.e., Theory of Mind (ToM) and empathy.

Theory of Mind, Empathy and Feigning

During the first years of life, children develop Theory of Mind (ToM; Frith & Frith,

1999). ToM is a combination of processes, separated but interconnected, that contribute to improving someone's capabilities to understand others' behaviors and to make inferences about them. In normal conditions, this development starts at about 18 months with joint attention and protodeclarative pointing. From ages 3 to 4, children can represent others' mental states, i.e. they understand that other people can have a representation of the world different from their own – *I understand that my mental state does not correspond to your own*. From 6 to 7, children also understand that other people can represent mental states of others, even if these mental states do not correspond between them – *I understand that your representation about his/her state of mind is wrong because it is different from my representation about his/her state of mind*. The last level, the faux-pas, is the most developed one: when someone says/does something they should not have said/done, not realizing that they should not have said/done it (Gregory et al., 2002; Stone, et al., 1998). A good example of a faux-pas is a gaffe. To understand that a gaffe is occurring, the beholder has to represent two mental states: that of the person who does not understand that a sentence/behavior is inappropriate, and that of the other person hearing/seeing it, who would feel insulted or hurt. Once someone can understand the "Feel Hurt" element alongside the ToM elements that developed earlier, faux-pas can be understood and ToM is complete.

Empathy is a large and complex process, which is usually split into a cognitive component (perspective taking and mind flexibility), an affective component (emotional contagion) and an overlapping zones component (emotional recognition) (Rankin, et al., 2005). Cognitive empathy is the capability to understand others' emotional states and the reasons why they are in a specific mood. Affective empathy is the spontaneous and visceral arousal due to the exposure to others' emotions. Sub-components of empathy include perspective taking, mental

flexibility, emotional contagion and others' expression identification. These processes can occur together, independently or even inversely of each other.

Empathy is often associated with positive, prosocial and desirable acts; however it has been contested that it is also crucial in aiding social trickery and hostile deception – a concept known as 'tactical empathy' (Bubandt & Willerslev, 2015). This darker form of empathy helps an individual to imitate or copy behaviors in order for them to exploit, deceive or manipulate others, thus using this 'empathy' to their advantage. Bubandt and Willerslev (2015) consider that actions such as torture rely on the same elements of empathy as moral actions. De Waal (2009) also suggests that torture requires an individual to appreciate what others feel (awareness) and switch off (or not have) the ability for compassion, which is the higher-level concern for another individual (Hoffer, et al., 2018). Similarly, in the case of malingering, the capability to understand others' affective or cognitive states is used in a manipulative way and in order to obtain a selfish aim.

The person who feigns a psychiatric disorder has to think about how someone with depression, PTSD or psychosis thinks and acts; moreover, they have to convince the examiner that these thoughts and actions are their own! Thus, they have to be able to understand what the examiner is thinking about their behaviors and responses. To succeed in this challenge, the people who feign must manipulate the examiner's representation of their health condition. In this process, ToM and empathy capabilities could be "a plus" or a "must-have": if one has high levels of empathy and thus the ability to vicariously experience another's feelings, could this help them to fake diseases in a more convincing and effective way? There is little research on this question in the literature. Grieve and Mahar (2010) tested if emotional intelligence represented an advantage in malingering, and in their studies emotional intelligence was not related to a better

simulation performance. General intelligence also appears to be unrelated to faking ability (Anderson, et al., 1984; Alliger, et al., 1996; Mersman and Shultz, 1998; Moyer, et al., 2006; Steffan, et al., 2007), although it is reasonable to believe that the presentation of individuals with very low IQ may be classified relatively easily as 'noncredible' by the forensic assessor and/or their clinical instruments. Nevertheless, to our knowledge, so far, no study has specifically investigated the role of ToM and empathy in the feigning of psychiatric disorders.

Current Study and Hypotheses

This research aimed to analyze whether an individual with higher levels of Theory of Mind (ToM) and/or empathy would be more capable of feigning[1] psychological symptoms of several mental health disorders. We tested this with the feigning of three psychological disorders: depression, PTSD or schizophrenia. Successful feigning was measured in two ways. Firstly, by a self-report measure of symptoms of the condition the participants were meant to feign. Secondly, a symptom validity test (SVT) was included. This would assess whether the participants were able to feign in a credible way.

Two hypotheses were proposed. The first was that participants with high levels of ToM and empathy would provide more dramatic portrayals of symptoms on the clinical tests, because good skills in ToM or empathy are likely provide a greater identification with the psychopathological condition, and this in turn can lead to elevating the scores of the related, clinical scales. The second hypothesis was that participants with high levels of ToM and empathy would however not necessarily provide more credible results on the SVT. Indeed, SVTs typically evaluate two chief dimensions: (a) the extent to which the test-taker endorses symptoms that are

[1] In this paper, we refer to "malingering" to indicate the deliberate fabrication or gross exaggeration of symptoms motivated by external incentives, and to "feigning" to indicate fabrication or gross exaggeration of symptoms without any assumptions about its goals.

(mainly) inconsistent with a given condition (e.g., reporting hallucinations to claim to be suffering from a major depression); (b) the extent to which the test-taker presents themselves in an overly dramatic manner (e.g., by endorsing too many items describing particularly severe or rare symptoms). On the one hand, we expected that good skills in ToM or empathy would reduce the risk to endorse items describing symptoms that are rather inconsistent with the condition to be feigned; on the other hand, however, we anticipated that – as noted above – high levels of ToM and empathy could provide more dramatic portrayals, thereby counterbalancing the overall effect.

Should we find that ToM and empathy abilities affect feigning or the credibility of feigning, this would have important practical implications as forensic assessors using symptom validity tests (SVT's) might wish to attempt to measure ToM and/or empathy as well or else highly empathetic people and/or people with high ToM skills would be more likely to go undetected when malingering.

Method

Participants

A total of 432 healthy Italian volunteers (female n = 298, male n = 147; M_{age} = 30, SD = 12.1) participated in this study. In order to participate, individuals had to be Italian citizens, be age 18 or older, be clinically healthy with no clinically relevant disorders (i.e., not be receiving any form of psychiatric or psychotropic treatment), with no previous history of the pathologies being simulated and have the ability to read and understand Italian. Any participant who declared that they did not meet these criteria was excluded. Only two participants were non-native speakers, originally from Romania, who had lived in Italy for over 20 years. Informed consent was given by all participants and ethical approval was obtained from the ethics committee at the

University of Turin. One participant was excluded during statistical analyses – see below – thus the final sample consisted of 431 subjects.

Materials

The Faux-pas Recognition Test (Gregory et al., 2002; Stone et al., 1998). The Faux-pas test, initially developed to detect ToM skills in children (Baron-Cohen, et al., 1999), is a commonly used tool to assess the Faux-pas recognition abilities in adults. It evaluates social aptitude via the interpretation of potentially awkward situations. It is composed of 10 stories in which a faux-pas is described and 10 neutral control stories.

An example of a faux-pas story is: *Helen's husband was throwing a surprise party for her birthday. He invited Sarah, a friend of Helen's, and said, "Don't tell anyone, especially Helen." The day before the party, Helen was over at Sarah's and Sarah spilled some coffee on a new dress that was hanging over her chair. "Oh!" said Sarah, "I was going to wear this to your party!" "What party?" said Helen. "Come on," said Sarah, "Let's go see if we can get the stain out."* An example of a neutral story is: *Bob went to the barber for a haircut. "How would you like it cut?" the barber asked. "I'd like the same style as I have now, only take about an inch off," Bob replied. The barber cut it a little uneven in the front, so he had to cut it shorter to even it out. "I'm afraid it's a bit shorter than you asked for," said the barber. "Oh well," Bob said, "it'll grow out."*

Each story is followed by six questions about faux-pas detection (e.g. *Did someone say something they shouldn't have said*?), understanding of the faux-pas (e.g. *Who said something they shouldn't have said?*), and the protagonists' intentions (e.g. *Why shouldn't they have said it?*), motivations (e.g. *Why did they say it*?), beliefs (e.g. *Did they know each other*?) and emotions (e.g. *How do you think they felt*?).

For each faux-pas story, the subject receives 1 point for each question answered correctly. Moreover, each story has two control questions about the general understanding of the story (e.g., colors of objects, age of characters, specific words, etc.). The control questions are intended to discriminate if wrong responses to the test were due to low levels of comprehension or attention. The total FPRT score is obtained by the sum of the correct answers.

To score and interpret participants' answers, the instructions of Stone et al. (1998) were used. To test interrater reliability, each one of the three judges involved in the research independently re-coded 20 stories of the other two judges so that a total of 60 were coded independently by three judges, and the ICC was .96, thus indicating excellent reliability.

Questionnaire of Cognitive and Affective Empathy (QCAE; Reniers, et al., 2011). The QCAE is a measure of empathy comprised of 31 items, rated on a 4-point Likert scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree)*. It provides separate, reliable scores for the cognitive and affective components of empathy. The subcomponents of Cognitive Empathy are the capability to put oneself in another person's shoes (perspective taking; PT), and the capability to use this information in order to predict other's future intentions (online simulation; OS). The subcomponents of Affective Empathy assess the emotion contagion when the subject is near to the other person (emotion contagion; EC), when the subject and the person are in the same context (Proximal Responsivity; PrR), and when the person is in a detached context, such as a film (peripheral responsivity; PeR).

The Italian version of the QCAE, demonstrated adequate interrater and test-retest reliability, and significant correlations in the expected direction with related constructs (Di Girolamo, Giromini, Winters, Serie, & de Ruiter, 2019). It also demonstrated structural

equivalence with the original QCAE. In the current study, alphas were .87 for Cognitive Empathy and .79 for Affective Empathy.

The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a self-report tool comprised of 20 items relating to affective, cognitive and somatic symptoms associated with depression and anxiety. Individuals must select from a 4-point Likert scale (0 = "rarely/less than 1 day" to 3 = "most of the time/5-7 days") how often the statements applied to them in the previous week. Scores range from 0 to 60 and individuals are categorized into one of four groups depending on their total score: a) not depressed (0–9 points), b) mildly depressed (10–15 points), c) moderately depressed (16–24 points) or d) severely depressed (more than 25 points). A cut-off score of ≥ 16 is a widely used indicator for probable clinically meaningful depressive symptoms (Radloff, 1977). The Italian version of the CES-D was used, which was developed and validated by (Fava, 1983). In the current study, Cronbach's alpha was .84.

Impact of Event Scale – Revised (IES-R; Weiss, 2004; Weiss & Marmar, 1997). The IES-R is one of the most widely used screening tools to assess symptoms of PTSD (Elhai, et al., 2005). It is a self-report, 22-item scale ranging from 0 (*not at all)* to 4 *(extremely*) regarding the subjective distress of each of the items that has been experienced by the individual in the past week. It consists of three separate but correlated subscales representative of the major symptom clusters of PTSD (*rs* = .52 to .87 (Creamer, et al., 2003)): intrusion (8 items), avoidance (8 items) and hyperarousal (6 items). An Italian version was used, which has been shown to have good psychometric properties and good internal consistency (Craparo, et al., 2013). In the current study, Cronbach's alpha was .82.

The Eppendorf Schizophrenia Inventory (ESI; Mass, R., Haasen, & Wolf, 2000). The ESI is a clinical questionnaire used to assess self-experienced cognitive disturbances across four sub-scales that are considered to be diagnostically specific for schizophrenia: The Attention and Speech Impairment subscale (AS), The Ideas of Reference subscale (IR), The Auditory Uncertainty subscale and The Deviant Perception subscale (DS). The ESI-R also contain a five-item Frankness subscale (FR), representing a propensity to answer questions in a socially desirable manner. The convergent and divergent validity of the ESI have been confirmed (Mass, et al., 2005). The validated Italian version of the ESI was used which has been shown to have good reliability (with Cronbach Alpha values greater than or equal to .70) (Galeazzi, et al., 2004). In the current study, Cronbach's alpha was .88.

The Inventory of Problems-29 (IOP-29; Viglione & Giromini, 2020). The IOP-29 is a 29 item, self-administered test that aims to assist in the assessment of the credibility of symptom presentation of various psychiatric and cognitive disorders. The test taker must answer either "true", "false" or "doesn't make sense" to 27 of the items with statements relating to emotional, cognitive and social experiences. The remaining two are open-ended questions requiring the application of mathematical reasoning. The responses are analyzed using a logistic regression-derived formula to generate the main feigning index of the IOP-29, the False Disorder Probability Score (FDS): the lower the FDS, the higher the credibility of the reported symptoms, with zero being the minimum and one being the maximum, with cut-off scores of FDS $\geq$ .50 having been shown to ensure the best balance between sensitivity and specificity (Giromini et al., 2018; Viglione et al., 2017).

An SVT was included because in addition to testing whether people with higher levels of ToM and/or empathy would have elevated scores on the relevant clinical scales when instructed

to feign a disorder, the IOP-29 could assess whether they were able to feign in a more credible way. The IOP-29 was selected for this study as opposed to other SVT's because it is very short (it takes approximately 10 minutes to complete) yet extremely effective for all conditions addressed in this study. Indeed, it showed superior validity in the discrimination between genuine and experimentally feigned depression, PTSD and schizophrenia over the widely utilized SIMS (Giromini, et al., 2018), and it was shown to provide incremental validity when used with the TOMM (Giromini, et al., 2019; Viglione et al., 2017) or Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Giromini et al., 2019). Furthermore, it demonstrated similar sensitivity to various symptom presentations, including depression, PTSD, mTBI and schizophrenia-related diagnoses (Giromini, et al., 2019), and its validity has been demonstrated in various formats and cultural contexts (e.g., Banovic et al., 2021; Carvalho et al., 2021; Gegner et al., 2021; Giromini et al., 2021; Ilgunaite et al., 2020; Roma et al., 2019; Šömen et al., 2021; Winters et al., 2020).

Procedure

A convenience sample was recruited by sending emails to potential volunteers (i.e., acquaintances of the students involved in the implementation of the study), posting adverts on social media (i.e., Facebook) and via a snowball effect. The advert informed potential participants that they would be trying to fake a disorder and if they were able to do so in a credible way, they had the possibility of winning a €20 Amazon Voucher.

All measures were administered online, via Google® Form. The initial stage was the completion of an informed consent form and without agreeing to the terms, individuals were unable to continue. Participants were then assigned to one of three feigning conditions, i.e., either feigning depression, PTSD or schizophrenia. All participants took four tests. Specifically,

all completed the FRPT and QCAE with the request to respond honestly. All completed the IOP-29 and one of the three clinical scales described above while feigning. Thus, in addition to the IOP-29, participants instructed to feign depression took the CES-D, those instructed to feign PTSD took the IES-R, and those instructed to feign schizophrenia took the ESI. The order of administration of the IOP-29 and clinical scales was randomized and counterbalanced.

Analytic Approach

Design. The three independent variables of primary importance for our analyses were the scores of the FPRT (continuous variable, with higher scores indicating higher ToM abilities) and QCAE Affective and Cognitive Empathy scales (continuous, with higher scores indicating higher empathy). A fourth independent variable taken into consideration was the condition to be feigned (depression, PTSD, schizophrenia). Lastly, because it is well-known that there are important gender differences on ToM and empathy abilities (Di Girolamo et al., 2019; Eisenberg & Lennon, 1983; Michalska, et al.,, 2013; Queirós et al., 2018; Reniers et al., 2011; Stone et al., 1998), a fifth independent variable included in our analyses was the gender of the respondent (male versus female).

With regard to the dependent variables, the IOP-29 FDS scores were used to evaluate the credibility of presented complaints, and the clinical tests' scores (i.e., CES-D, IES-R, and ESI-R) were used to measure the severity of self-reported symptoms. To analyse all clinical tests' scales in the same model(s), CES-D, IES-R, and ESI-R scores were transformed first into z-scores so they all have the same unit measure.

Statistical Analyses. Linear regression models were built in R using the LM function in the R stats package (which is part of the system library) and compared using the ANOVA function. Graphs were derived from the models using the effects package (Fox & Weisberg,

2019). Our analytic approach was to build the models in a simple to complex order. If models did not differ significantly, the model with the smaller degrees of freedom was considered the better model. Once the better model of a comparison was determined, a new model with a new predictor was created and compared to the best model of the last comparison.

For both dependent variables, the models were built in the same order. The first model had only condition as a predictor. In the next model gender was added, in the model after that the Cognitive and Affective Empathy QCAE scales and the FPRT were added. Then any non-significant empathy measures were removed. Then interactions between significant predictors were added. Reported in the result section are the results from the best models for each dependent variable.

In one of the early models, the residuals vs. leverage plots suggested that one participant was an outlier on clinical z-score. Visual inspection confirmed this: their z-score was – 5.69. That participant was removed from the dataset manually and all models reported here exclude that participant.

Results

Descriptive statistics for all measures included in this study are presented in Table 1 and Table 2, divided by gender. As expected, women scored remarkably higher than men on both ToM and empathy (Cohen's $d \geq 0.26$ within the entire sample), with the biggest gender differences being found for affective empathy ($d = 0.66$). Also consistent with extant literature, Table 3 shows that when considering the standard cut-off score of FDS ≥ .50, the IOP-29 achieved excellent sensitivity levels in all conditions, ranging from 84% (for the depression subgroup) to 96% (for the schizophrenia subgroup).

A first series of linear regression models tested the influence of ToM, empathy, feigned condition, and gender on clinical tests' scores. The best model showed that the QCAE Cognitive Empathy scale was the only significant predictor of clinical tests' z-transformed scores (*estimate* = 0.02, *SE* = 0.005, *t* = 3.5, *p* = 0.001) (see Figure 1). These analyses indicate that participants with higher cognitive empathy endorsed more symptoms of the disease they were feigning. The intercept was also significant (*estimate* = -1.08, *SE* = 0.32, *t* = -3.41, *p* = 0.001).

A second series of linear regression models tested the influence of ToM, empathy, feigned condition, and gender on IOP-29 scores. The best model showed a significant interaction effect between condition and FPRT scores (Figure 2). There were no other significant interactions or predictors. Depression by FPRT score differed significantly from both PTSD by FPRT score (*estimate* = -0.004, *SE* = 0.002, *t* = -2.08, *p* = 0.04) and schizophrenia by FPRT score (*estimate* = 0.006, *SE* = 0.005, *t* = -2.91, *p* = 0.004). The effects plot shows that for participants feigning depression there is a strong positive relationship between FPRT score and IOP-29 score, while for participants feigning PTSD and schizophrenia this relationship is close to neutral. The model also shows a main effect of condition (depression vs PTSD *estimate* = 0.26, *SE* = 0.12, *t* = 2.18, *p* = 0.03; depression vs schizophrenia *estimate* = 0.41, *SE* = 0.11, *t* = 3.67, *p* = 0.0003). This indicates that feigners of schizophrenia obtained the highest (most indicative of feigning) IOP-29 scores, followed by those feigning PTSD, with depression feigners having the lowest IOP-29 scores. The model also contains a main effect of FPRT scores (*estimate* = 0.006, *SE* = 0.002, *t* = 3.51, *p* = 0.001), indicating that participants with high FPRT scores were more likely to be identified as feigners. The intercept was also significant (*estimate* = 0.43, *SE* = 0.09, *t* = 4.62, *p* < 0.0001).

Additional Analyses. As noted above, differently from the CES-D, which only allows to generate a total score, the IES-R and ESI also allow to calculate a number of subscale scores. Thus, to determine whether empathy and theory of mind could perhaps associate differently with the different subscale scores of these measures (i.e., IES-R and ESI), we performed additional analyses. That is, firstly, we tested whether the correlations to the FPRT and QCAE scores generated by each of the subscales of the IES-R differed from each other. Then, we used the same approach and tested whether the correlations to the FPRT and QCAE scores generated by each of the subscales of the ESI differed from each other.

The results of these additional analyses indicated that the correlations to empathy and theory of mind generated by the different subscales of the same instrument did not significantly differ from each other: IES-R subscales by FPRT, all $z < -0.44$, all $p > 0.60$; IES-R subscales by Cognitive empathy, all $z < -0.93$, all $p > 0.35$, IES-R subscales by affective empathy, all $z < -1.26$, all $p > 0.21$; ESI subscales by FPRT, all $z < -1.57$, all $p > 0.12$; ESI subscales by cognitive empathy all $z < -1.27$, all $p > 0.2$, ESI subscales by affective empathy, all $z < -0.68$, all $p > 0.50$.

Discussion

To test if theory of mind (ToM) and/or empathy could be associated with one's ability to feign psychopathology in a credible way, we instructed 432 healthy volunteers to feign depression, PTSD or schizophrenia while responding to a clinical test measuring the severity of the feigned condition's symptoms and the IOP-29. Taken together, the results revealed that higher cognitive empathy scores were associated with more extreme symptom endorsement on the clinical scales measuring the severity of the feigned condition's symptoms and higher ToM scores were associated with less credible symptom presentations on the IOP-29. This effect was strongest for those feigning depression and weak to non-existent for those feigning PTSD or

schizophrenia. Additionally, there was no evidence that people with different levels of empathy and ToM were differentially endorsing symptoms from different subscales of the clinical tests.

A hypothesized, but still intriguing finding is that cognitive empathy – but not affective empathy or ToM – was significantly positively associated with the severity of the feigned condition's symptoms (Figure 1). What is most noteworthy, is that while cognitive empathy did perhaps aid our participants in endorsing the symptoms of the feigned conditions so to look more psychologically troubled, it likely did not help them to do so in a more credible way. Indeed, empathy did not significantly associate with the IOP-29 scores. This has implications for the assessment of malingering in a clinical and forensic setting. As reviewed above, the criminological model of malingering assumes that people with antisocial or psychopathic traits are more likely to malinger (Rogers & Bender, 2018). Psychopathic traits are associated with reduced empathy (Jonason & Krause, 2013) and with reduced understanding of some elements of the Faux Pas task (Dolan & Fullam, 2004). Future research should focus on whether our results replicate in this subpopulation as well. Doing so may help us understand the extent to which the presence of poor cognitive empathy could really make the presentation of someone with higher psychopathic traits appear somehow less severe or dramatic.

The fact that higher scores on the Faux-pas Recognition Test (FPRT) are associated with higher, less credible scores on the IOP-29 is surprising. Our second hypothesis was that skills in ToM and empathy would not contribute to a better simulating performance, because emotional intelligence and intelligence in general, do not seem to provide better performance on the SVT. Had we found that ToM performance was associated with more credible performance on the IOP-29 (i.e., lower scores), we would not have been too surprised. ToM allows people to understand others' behaviors, find explanations and make inferences about them (Frith & Frith,

1999), and this may be beneficial while feigning. However, we can only speculate why ToM may be associated with lower credibility on the IOP-29.

Firstly, it is possible that individuals with higher versus lower ToM skills approached our feigning tasks differently. To pretend to be mentally ill, those with poor mentalization abilities perhaps relied on their personal memories and experiences more than those with good mentalization abilities did, who instead relied more on their ability to put themselves in another's shoes. For instance, to fake depression, participants with poor ToM maybe tried to remember how they felt when they felt sad and then tried to amplify those mental states, whereas those with good ToM perhaps relied more on their cognitive understanding of how one might feel when affected by major depression. To some extent, the former approach would represent a more 'genuine' approach to taking the test, as one would truly rely on their own real experiences and memories to respond, whereas the latter would be a more artificially 'fabricated' one, as the test-taker would essentially respond as if they were someone else. This could in turn explain the fact that the former yields a more credible profile whereas the latter a less credible profile. Providing some support for this possible explanation, multiple studies suggest that the more familiar someone is with the symptoms of the disorder(s) to be feigned, the more credible their performance or symptom presentation would be on a feigning task (Giromini et al., 2019; Monaro et al., 2018; Rogers & Bender, 2018). Using one's own experience and familiarity with the symptoms does help to produce a more credible presentation. Furthermore, the fact that Figure 1 shows that the association between the FPRT scores and IOP-29 FDS is progressively weaker when going from the feigned depression, to the feigned PTSD, to the feign schizophrenia conditions also yields some support to our hypothesis. Relying on one's own experiences and memories is more likely to help when one is asked to fake depression or, to a lesser extent, PTSD

than it is when one is asked to feign schizophrenia, because depression is the more common disorder. However, because our study did not include any measures investigating what approaches one used to fake psychopathology in our experiments, additional research is needed to evaluate whether or not our speculation has some foundation.

A second possible explanation for the positive association between FPRT and IOP-29 scores might be that individuals with greater ToM skills tend to produce more dramatic symptom presentations simply because they understand the various subtle nuances characterizing the experience of mentally ill more deeply. It is possible that those with higher mentalization abilities tended to 'over-do it' when they approached our feigning tasks, and research demonstrates that such a behavior typically elevates symptom validity test scores (Rogers & Bender, 2018; Viglione, et al., 2001). On the other hand, the fact that high FPRT scorers did not endorse more symptoms than low FPRT scorers on the clinical tests measuring the severity of the feigned symptoms makes this second account less likely.

Of course, it is also possible – albeit unlikely, given the relatively large sample size (N = 432) – that the positive association between FPRT and IOP-29 scores is just a random finding that future research will not be able to replicate. Independent replication attempts are necessary.

Limitations and Strengths

This study is not without its limitations. Although the high IOP-29 and clinical scales' scores suggest that participants did attend to our feigning instructions, we did not include any formal manipulation checks (albeit see Abbey & Meloy, 2017, for possible downsides associated with this procedure), and with an online study one cannot control for possible distractions or the exact conditions in which individuals take the survey. Together with the fact that we relied on a convenience sampling approach, this also means that it cannot be determined whether the sample

was representative of the population and whether the results would generalize to other, e.g. non-Italian speaking populations. Perhaps more importantly, our sampling approach likely excluded from -or made it unlikely to include in- our sample individuals with a very low IQ or cognitive impairment, so that additional research on these specific populations would be particularly beneficial. Besides this concern, experimental feigning is different from malingering or feigning in real-life (Rogers & Bender, 2018). This means that there is the possibility that the study has poor ecological validity. To try and counteract this we offered an incentive to successfully feign without being detected as feigners. We also provided symptoms of the disorder to be feigned as well as vignettes (Rogers & Bender, 2018; Rogers et al., 2020; Viglione et al., 2001). Another limitation that deserves mentioning is that we relied on the IOP-29 only to evaluate symptom credibility. We chose to do this because it showed very promising results and works for many different symptom presentations (Ilgunaite, et al., 2020; Roma et al., 2019; Viglione & Giromini, 2020; Winters et al., 2020). However future studies should replicate this study using other instruments, such as the SIMS. It is also worth pointing out that our research design did not include any measures to assess effort or impression management for the FPRT and QCAE. As such, we cannot rule out that some individuals may have presented themselves in an artificially inflated or deflated manner on the empathy and theory of mind measures, too. Lastly, our study did not investigate the extent to which our participants were familiar with the disorder they were asked to feign. It is therefore possible, for instance, that some of them had lived with a loved one with a mental illness (such as a parent, sibling, or spouse), which could potentially affect their ability to feign in a credible way.

Despite all these limitations, our study still has the merit to be the first to shed some light on the role of ToM and empathy in the feigning of psychopathology. In particular, a major

strength of this project is that we measured both 'genuine' symptom endorsement and symptom validity, anticipating that generating high scores on a clinical scale measuring the severity of symptoms of a given psychopathology would not be the same as offering a fully credible presentation of those symptoms. Indeed, it is one thing to be able to identify the symptoms of a disorder and simulate them, it is quite another to simulate them in a credible way. Another major strength of this project is that we inspected the feigning of three different psychopathological conditions, which potentially contributes to extending the generalizability of our results to various evaluation contexts. With this regard, however, it should be pointed out that we did not investigate the feigning of cognitive impairment, so that our findings may not generalize to forensic evaluations assessing that condition. Lastly, our relatively large sample size also represents a noticeable strength of this study.

Implications and Conclusion

The results of our study suggest that ToM and empathy should only minimally influence one's ability to pretend to be mentally ill. Higher levels of cognitive empathy could make the presentation of symptoms of any condition seem slightly more severe; higher ToM levels might make the presentation of depression symptoms seem slightly less credible. From a practical standpoint, these findings once again underscore the importance of including symptom validity checks when performing a forensic mental health evaluation (Boone, 2013; Larrabee, 2012). Indeed, if an evaluee has low levels of empathy, their clinical profile is unlikely to appear impaired, because less empathetic individuals tend to have lower scores on clinical tests such as the CES-D, IES-R and ESI (Figure 1). If they have high levels of empathy, on the other hand, their overall presentation may perhaps look similar to that of an individual suffering from genuine mental health problems, when inspecting the scores of a clinical test, but a

psychometrically sound SVT like the IOP-29 would likely raise questions on the overall credibility of presented complaints also in this case. Accordingly, if the forensic assessor uses both clinical tests and effective SVTs, then the feigning of psychopathology is more unlikely to go undetected regardless of the empathy skills of the evaluee.

On the other hand, our findings also suggest that individuals with poorer ToM abilities are for some reason more prone to generate credible results on a validity check when feigning depression (Figure 2). Although we could not find a definitive explanation for this unexpected and to some extent surprising result, and even though we cannot rule out that this could be just a random finding, for the time being we recommend forensic practitioners to be particularly cautious when assessing the credibility of symptoms of depression presented by individuals with very low ToM levels. As shown in Figure 2, indeed, even though the IOP-29 was able to classify as noncredible (IOP-29 FDS $\geq$ .50) the great majority of feigners even when ToM was at the low end, for some reason, individuals with lower ToM abilities yielded relatively more credible results on this SVT. Especially when assessing individuals with poor ToM skills, thus, administering more than one SVT would be beneficial.

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Table 1. ToM and Empathy Scores Obtained in the Honest Condition: Descriptive Statistics by Gender and Subgroup.

	Depression Subgroup (n. 101)		PTSD Subgroup (n. 151)		Schizophrenia Subgroup (n. 190)		Entire Sample (432)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
FPRT								
Total Score								
M	53.4	11.7	51.0	12.2	57.0	14.0	54.3	13.1
F	55.7	12.5	57.3	12.9	59.2	13.9	57.8	13.2
QCAE								
Cognitive Empathy								
M	55.3	7.6	56.5	8.2	55.1	7.5	55.6	7.7
F	58.3	7.8	58.0	8.9	57.1	8.7	57.7	8.6
Affective Empathy								
M	31.8	6.1	31.5	6.4	31.6	5.4	31.7	5.8
F	34.7	6.1	35.6	5.4	35.6	5.6	35.4	5.6
Total Score								
M	87.1	10.9	88.0	10.9	86.7	9.6	87.2	10.2
F	93.1	11.0	93.6	9.9	92.7	11.6	93.2	10.8

FPRT = Faux-pas Recognition Test; QCAE = Questionnaire of Cognitive and Affective Empathy.

Table 2. IOP-29 and Clinical Scales' Scores Obtained in the Feigning Condition: Descriptive Statistics by Gender and Subgroup.

	Depression Subgroup		PTSD Subgroup		Schizophrenia Subgroup		Entire Sample	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
IOP-29 FDS								
M	.69	.23	.80	.19	.80	.23	.78	.22
F	.78	.21	.75	.25	.88	.12	.81	.20
Clinical Scale [a]								
M	41.0	7.8	64.2	12.4	58.3	16.0		
F	44.3	6.8	66.2	9.3	61.2	16.4		

[a] Clinical scales were the Center for Epidemiological Studies Depression Scale (CES-D) for the Depression Subgroup, the Impact of Event Scale – Revised (IES-R) for the PTSD Subgroup, and the Eppendorf Schizophrenia Inventory (ESI) for the Schizophrenia Subgroup. IOP-29 = Inventory of Problems – 29; FDS = False Disorder Score.

Table 3. Classification Accuracy of the Inventory of Problems – 29 (IOP-29).

	Depression Subgroup		PTSD Subgroup		Schizophrenia Subgroup		Entire Sample	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
IOP-29								
FDS ≥ .50	82	**83.7**	131	**87.3**	177	**96.2**	390	**90.3**
FDS < .50	16	16.3	19	12.7	7	3.8	42	9.7

FDS = False Disorder Score. Bolded values represent sensitivity.

Figure 1. The Effect of the QCAE Cognitive Scale on Clinical Tests' Z-Transformed Scores.

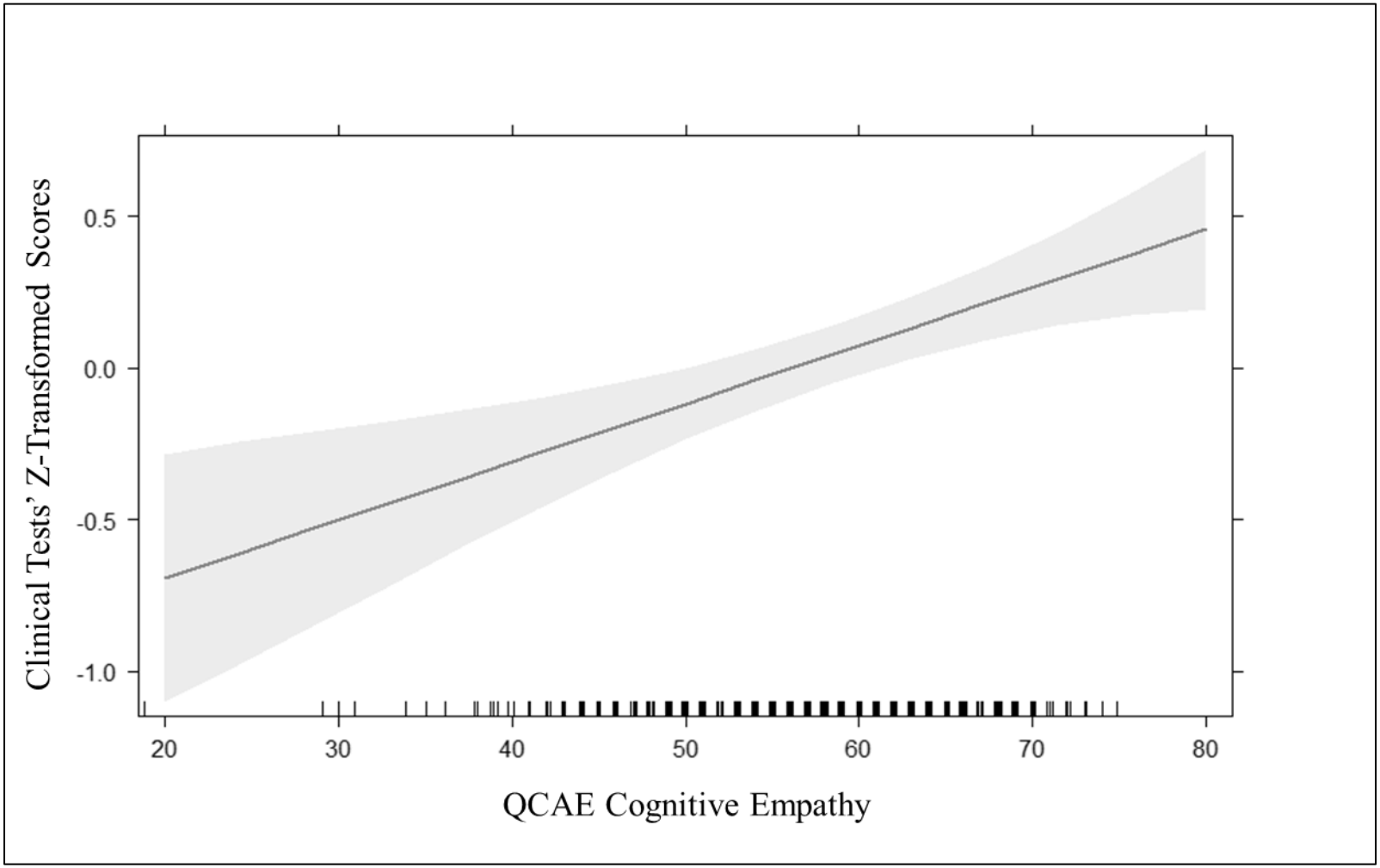

Figure 2. Interaction Effect of FPRT and IOP-29.