Acting Training, Theory of Mind, and Empathy: Is There a Relationship?

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Abstract

Acting requires an actor to understand the character's mental world and the experience of the character's feelings. Acting thus involves what is referred to in psychological terms as theory of mind (the ability to understand and interpret other individuals' mental and emotional states) and empathy (the ability to experience the feelings of others). This exploratory study compared the ToM and empathy of 20 theatre and performance students with different levels of acting training. The ToM measures used were Movie for the Assessment of Social Cognition (MASC) and Reading the Mind in the Eyes Test (RMET). The empathy measures used were the Interpersonal Reactivity Index and the Empathy Quotient (EQ). No significant differences were found between the levels of ToM and empathy of the novice and experienced group. The small sample size of this study raises the possibility that studies with larger sample sizes might still find that acting training teaches and develops ToM and empathy. Additionally the study also investigated the measures used for ToM and empathy. The results of the ToM measures raised concerns regarding whether these measures are sensitive enough for high functioning individuals, particularly actors. Both empathy measures were found to be reliable.

Keywords: Actors, acting, acting training, pretend play, theory of mind, empathy, social cognition, MASC, IRI, EQ, RMET

Acting Training, Theory of Mind, and Empathy: Is There a Relationship?

Pretending to be another person for the enjoyment of others is a peculiar activity, yet acting has been part of society for centuries (Goldstein & Winner, 2010). Most people have in some way been involved in the world of acting, either as actors or audience members. Acting involves playing a character which not only demands the understanding of the character's internal life world, but also requires the recreation and representation of another individual and all the accompanying emotions, beliefs, motivations and desires on stage. Acting thus appears to require the use of cognitive and affective skills, more specifically theory of mind (ToM) and empathy.

ToM refers to the ability to impute mental states to one self and others (Goldstein, 2009; Goldstein, Wu, & Winner, 2009-2010; Goldstein & Winner, 2010; Obiols & Berrios, 2009; Premack &Woodruff, 1978). It is therefore the ability to mind-read and understand others' emotional states, beliefs, thoughts and desires (Whiten, 1991). The aspect of acting similar to ToM is the actor's understanding and interpretation of the character's mental world (Goldstein & Winner, 2010).

Baron-Cohen and Wheelwright (2004) define empathy as the ability to understand, interpret and experience the feelings and emotions of others. The aspect of acting that might be related to empathy is the actor's experience of the character's emotions (Goldstein & Winner, 2010).

According to Stanislavski (1937), a famous actor and acting teacher, "to play truly means to be right, logical, coherent, to think, strive, feel, and act in unison with your role...and thus assimilate a psychological technique of living a part" (p. 14). Although the practitioners of acting have recognised that acting is a psychological process, limited research have been done on the cognitive and affective skills of actors. Psychologists also have little knowledge about acting expertise and what it might entail (Noice & Noice, 2002). It is therefore unknown whether acting training might teach and develop ToM and empathy.

What Differentiates Actors from Non-Actors?

Despite acting being an activity requiring individuals to simulate real human beings, thus requiring individuals to engage their whole selves both psychologically and biologically to create another individual, psychologists have given little consideration to the mental processes underlying acting. They have however shown interest in actors regarding their differentiation from non-actors. Nettle (2006) compared the psychological profiles of actors

with non-actor control groups on the Five-Factor Personality Questionnaire, finding them to have higher levels of extraversion, agreeableness, openness and empathizing dimensions.

Additionally Goldstein and Winner (2009) compared actors to a lawyer control group in terms of attunement to others' mental states, imagination, attraction to fiction, and social skills, to assess the predictors of acting talent. Actors recalled being more attuned to others' mental states as well being more attracted to fiction. Their recall of their imagination and social skills as children did not reveal to be very different from the control group.

Actors also do not seem to differ from nonactors in terms of their social intelligence. Neuringer (1991) found acting students to have normal social intelligence in comparison to psychology students.

Apart from personality differences, the literature indicate that actors might differ from non-actors in terms of psychological abilities that relates to the mental processes of others. Whether these differences are innate to the individual when they start their acting training, thus possibly acting as intrinsic forces propelling individuals to choose a specific career, or result from acting training is still unknown (Kogan, 2002; Nettle, 2006).

The Expertise of Actors

The artistic and aesthetic nature of acting means that it cannot be entirely quantified or reduced to logical or scientific principles (Moseley, 2005). Consequently the expertise of actors has not been clarified. However, as a craft, one expects it to require a certain set of skills (Bruder et al., 1986).

Noice and Noice (2006) demonstrated how memory and learning skills of non-actors improve when making use of some of the cognitive skills that actors employ for example perspective-taking, extensive elaboration, and mood congruency. Interestingly, actors do not consider their ability to learn and memorise their lines as the skill that defines acting (Noice & Noice, 2002). Memory enables them to learn thousands of words, but does not enable them to effectively create the inner life of a character and move audiences with their portrayal of the character's emotions. What then, does enable them to create a realistic portrayal of a character? Do actors possess unusual cognitive and affective skills other than that of non-actors that enable them to create different characters and therefore to play multiple roles?

According to Nemiro (1997) who investigated the creative process of actors, they have to discover a character's inner life during the rehearsal process, creating a physical reality by using personal experiences to make the character real on stage. The adoption of characters might have such an intense emotional effect on actors that they might fear losing their own identities. This might be an indication of the actor's ability to literally feel and

experience another character's inner life, an ability similar to what has been defined as empathy.

Although the questions on what acting training involves and what it might teach individuals remain, it is noticeable in the reviewed literature that actors might possess finer developed cognitive and affective abilities than nonactors.

Goldstein & Winner (2010) have suggested that acting relies on two strong psychological components that might be closely related to the cognitive and affective constructs ToM and empathy. The first component, associated with ToM, is the actor's relation to the character's mind. The second component, specifically emphasized in *Method acting*, is the ability to feel the character's feelings.

Acting Training and Theory of Mind

In terms of the first component (the actor's relation to the character's mind), acting training firstly involves teaching actors how to discover the character's objectives (Nemiro, 1997). By analyzing the script actors learn how to identify all the needs, wants, thoughts, desires, motivations, and emotions of the character. To bring the character to life the actor then uses imagination, personal experiences and physicality in conjunction with the knowledge of the character's mentality. Verducci (2000) agrees that an actor lays the foundation of a character by answering all questions regarding the character and thus making the inner life of a character real. To do so, the actor must understand all aspects of the character, including mental life.

Secondly, acting training teaches actors to be able to differentiate between their own mental state and that of the character. They do this by creating a "psychological gesture", specific behaviour unique to the character (Chekhov, 1991, p. 65). This allows the actor to understand the character's intricate psychological make-up as well as being able to place the character in relation to the self.

Thirdly, acting training teaches the actor to see other characters from the perspective of the character they are playing (Goldstein & Winner, 2010). Actors therefore learn how to become attentive to the mental life of other characters through careful observation of the facial expressions, the eyes, the voice, speech and gestures, during interactions (Stanislavski, 1937).

The component of acting training that focuses on the character's mental life, as demonstrated in the above points, thus emphasizes similar aspects to what is associated with ToM. For this reason Goldstein et al. (2009-2010) hypothesized that actors might be more skilled in decoding mental states from facial expressions, gestures, words, and inflections.

They found both adolescent and adult actors able to infer more accurately the mental states of individuals than non-actors and consequently proposed that actors possessed an advanced level of ToM and social sensitivity, enabling them to read others' mental states. Apart from this study by Goldstein et al., no other research have been done in this field.

What is advanced theory of mind? Most research in the ToM domain have focused either on the development of ToM in children or impairment in individuals with social deficits (e.g., in individuals with autism) (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; Slessor, Phillips, & Bull, 2007). Although psychologists have made a discrepancy between first-order ToM tasks and advanced measures of ToM, they have not clarified what advanced ToM refers to.

The most simplistic definition explains it as the development of ToM past the age of 8 years (Goldstein & Winner, 2010). Children between the ages of 7 and 11 years scored significantly higher in a faux pas task (recognising utterances that might have implications for the speaker) than the younger age groups (Baron-Cohen, Riordan, Jones, & Plaisted, 1999). Choudhury, Blakemore, and Charman (2006) also found perspective-taking skills to develop in adolescents between the ages of 11 and 14 years – participants were asked to imagine how they or the protagonist of the told stories would feel during various scenarios.

A further definition of advanced ToM is the ability to recognise complex mental states in others (for example compassion) and the ability to infer the content thereof (e.g., compassion for another's loss) (Baron-Cohen et al., 2001).

Additionally Goldstein & Winner (2010) proposed that advanced ToM is also the ability to recognise more than one complex and often contradictory mental state in others given the possibility that individuals are often able to experience more than one emotion at the same time (e.g., feeling both content and sad after while watching movie).

Finally one might define advanced ToM in terms of individuals displaying exceptional skills of ToM. Adult fiction readers for example scored more points in Reading the Mind in the Eyes Test than non-fiction readers (Mar, Oatley, Hirsh, Dela Paz, & Peterson, 2006). This test involves inferring complex mental states from pictures of the eye region.

Acting training and advanced theory of mind. The ToM literature regarding deficits in children with autism has suggested that pretend play (an activity restricted by autism) is a building block of ToM (Rutherford, Young, Hepburn, & Rogers, 2007). Additionally Leslie (1987) noted that pretend play, being meta-representational (the ability to hold two representations in one's mind at once), is isomorphic with ToM.

Acting involves pretending to be another person or character (Goldstein & Winner, 2010) thus simulating pretend play in children by also requiring the representation of another. Goldstein et al. (2009-2010) hypothesised that actors might be highly skilled in ToM based on the above mentioned notions of pretend play. They found actors to be more skilled in ToM than non-actors, but mentioned that ToM might be innate to actors when they chose the direction of study.

Although it is still unknown whether acting training might develop ToM in children or advanced ToM in adults and adolescents, it has been shown that ToM skills can be taught via other methods. Orzonoff and Miller (1995) investigated the effect of social skills training on the ability of individuals with autism to infer the mental states of others. The pre-training and post-training scores differed and therefore indicated a change in ToM skills.

If ToM skills can be taught, acting training might therefore teach what has been inter alia identified in the literature as a heightened ability to understand and identify the mental states of other individuals, namely advanced ToM.

Acting Training and Empathy

The second psychological component of acting training is the focus on the ability to feel the character's feelings. According to Stanislavski (1937) an actor only portrays a character truthfully if he actually experiences the feelings specific to a scene. In order to do so, actors analyze a script to find the specific emotions of each moment (Goldstein & Winner, 2010).

Actors then create specific cues that will help them to generate the emotions (they might use specific objects or memories that remind them of the emotion in order to recall it when they need it). This technique ensures that actors are in the same affective state as their characters. Acting training thus teaches actors not only to be sensitive to emotions, but also to regulate emotions by being able to recall a specific emotion when needed. Decety & Jackson (2004) have proposed that the self-regulation of emotion is a vital component of empathy. The skills taught to actors to be able to regulate and experience a character's feelings thus appear to simulate empathy.

Limited research have however been done on the possible correlation between acting training and empathy. Nettle (2006) found actors to possess significantly higher empathising dimensions than non-actors. In addition Verducci (2000) proposed that method acting might cultivate empathy in individuals. Method acting is based on the belief that actors should awaken the psychological life of a character, thus in essence his emotions, feelings and beliefs, within himself where the physicality naturally follows.

In contrast however, Goldstein et al. (2009-2010) found that actors do not differ significantly from non-actors in terms of empathy. This might be as a result of the shift that actors have to make from their characters back to real life. Actors might stop their emotional experience when they choose to do so by means of a perfectly crafted set of techniques (Walsh-Bowers, 2006). They might therefore not display a raised sense of empathy in reality. There is a gap in the literature with regards to whether acting training and its focus on the ability to experience a character's emotions might lead to the development of empathy.

Measuring Empathy and Theory of Mind

A number of concerns have been raised regarding the measures used to test ToM and empathy (Baron-Cohen & Wheelwright, 2004). Firstly, due to the multi-dimensional nature of empathy, it has been argued that many instruments might measure factors other than empathy (Baron-Cohen & Wheelwright, 2004, Davis, 1983; Nettle, 2006). According to Decety and Jackson (2004) empathy encapsulates both the affective experience and understanding of others' feelings and emotions. Baron-Cohen and Wheelwright (2004) agree by mentioning that empathy consists of an affective component and a cognitive component (theory of mind). Although there are similarities between the constructs as empathy does require an individual to understand others' feelings and emotions in order to be able to experience it, these two constructs should be distinguished as they might not necessarily be correlated. Goldstein et al. (2009-2010) found actors to be more skilled in ToM and not empathy than non-actors. The term ToM refers to the cognitive understanding of another person's mental states whereas the term empathy refers to the feeling of another person's feelings.

Secondly empathy and ToM tests are mostly self-report measures. Subjects' individual scaling of attributes might therefore not correspond. Self-report measures might also be subject to social desirability where participants might not be completely truthful with regards to the attribute being measured.

Thirdly psychologists have found it difficult to develop ToM tests aimed at a specific level of ToM for example being sensitive to a dysfunction or challenging enough to measure advanced ToM (Baron-Cohen et al., 2001; Dziobek et al., 2006). I will now review a number of measures for each construct**.**

Advanced theory of mind measures. Neither the first or second-order tests were challenging enough for high functioning autistic individuals or normal adults (Dziobek et al., 2006). First-order tasks are named as such since they involve one person, the participant, to infer what another individual is feeling or thinking (Kleinman, Marciano, & Ault, 2001).

Second-order tasks involve making inferences of the thoughts and feelings of individuals based on an interaction between them (Proctor & Beail, 2007). Psychologists thus had to develop advanced ToM measures that involve making inferences of others' complex mental states and therefore measuring a heightened form of ToM in individuals of normal intelligence.

Happé (1994) developed The Strange Stories Task requiring subjects to make inferences about the mental states of characters of stories. This was the first more complex ToM test. Dziobek et al. (2006) however suggested that it might measure constructs in addition to ToM due to correlations found between verbal IQ and mentalising abilities. Story comprehension is therefore doubted with regards to its usefulness for testing social cognition.

The Reading the Mind in the Eyes Test, an improvement on The Strange Stories Task, requires participants to infer mental states from photographs of the eye region of individuals in real life contexts (Baron-Cohen, Joliffe, Mortimore, & Robertson, 1997). Both the original and the revised version showed differences in adult ToM skills as confirmed by Goldstein et al. (2009-2010). Baron-Cohen et al. (2001) however suggested that the first version might not tap into the second component of ToM, namely the ability to infer the content of mental states (e.g., the girl is sad, because her dog died). Additionally, both tests are criticised for using static stimuli which does not represent the real world.

Consequently Dziobek et al. (2006) developed the Movie for the Assessment of Social Cognition (MASC). Video-based tests have been developed as an attempt to simulate real life social cognition as well as increasing test sensitivity. This test requires subjects to make inferences of character's mental states in the video-clips. Although evidence have confirmed that this test is able to detect differences in advanced adult ToM skills, MASC might over-stimulate cognitive functions as revealed by correlations found when administered in conjunction with other cognitive tests.

There are however limited research investigating and comparing the advanced ToM measures in terms of their construct validity.

Empathy measures. The Questionnaire Measure of Emotional Empathy (QMEE) assesses the strength of individual reactions to another's experience on seven subscales (Mehrabian & Epstein, 1972). Although the authors suggest that it is a reliable measure of empathy, it may tap into general environment related emotional arousability rather than empathic responses to people (Mehrabian, Young, & Sato, 1988).

The Interpersonal Reactivity Index (Davis, 1980) makes use of four 7-item subscales to measure empathy: *perspective-taking, empathic concern, personal distress, and fantasy*.

Similar to the QMEE, the different subscales might measure constructs other than empathy (Baron-Cohen & Wheelwright, 2004). The relations among the scales are therefore not well understood in terms of their relevance to empathy.

Baron-Cohen and Wheelwright (2004) thus developed the Emotional Quotient (EQ), a self-report questionnaire comprising 60 questions believed to measure pure empathy. There are also a few concerns regarding this measure, including its self-report nature. Firstly, empathy consists of both state (experiential) and trait (genetic) components. Therefore some individuals might inherently have higher empathy dimensions. Secondly, day to day changes in state (as affected by for example alcohol, aggression, and sadness) might affect individuals' ability to reflect accurately on their empathic ability. Thirdly, the EQ might measure theory of mind in addition to empathy due to the definition used by the developers as encompassing both an affective and cognitive component.

Limited research have compared empathy measures with each other to investigate whether they yield the same results and therefore test the multidimensional construct, empathy.

Rationale for Research

Only one study has explored the possibility that actors have unusually high levels of ToM and empathy. In this study, Goldstein et al (2009-2010) however compared actors with non-actors and therefore it is still unknown whether during the course of their acting training, actors' ToM and empathy might increase or whether it is an ability that was already present when they started their course of study.

The reviewed literature showed how acting might be associated with ToM in terms of the way in which acting training assists individuals to acquire a deep understanding of the inner mentality of characters. It demonstrated that actors might develop an advanced insight and understanding of others by means of various techniques taught via acting training, therefore being a possible agent in developing advanced theory of mind. Additionally the literature also revealed that acting training might increase or develop empathy in individuals by teaching actors to create an inner life of a character and feeling what the character is feeling.

This study therefore compared two groups of theatre and performance students with different levels of acting training to investigate whether acting training might teach and develop ToM and empathy. The following research questions were asked:

1. Do theatre and performance students with more acting training have higher levels of ToM than theatre and performance students with less acting training?
2. Do theatre and performance students with more acting training have higher levels of empathy than theatre and performance students with less acting training?

The literature also suggested that ToM and empathy are complicated constructs to measure. Although researchers have identified limitations of the measures for these constructs, limited studies have compared advanced ToM measures or empathy measures. There is thus a gap in the literature regarding an investigation of advanced ToM and empathy measures. I therefore investigated the measures used in this study for advanced ToM and empathy by comparing two measures for each construct. The following questions were asked:

1. Do the measures of ToM give the same results?
2. Do the measures of empathy give the same results?

Additionally this study included a qualitative component that aimed to broaden the investigation of the measures to gain a deeper understanding of the ToM and empathy measures in terms of their efficiency in measuring ToM and empathy.

Finally it also aimed to assess the participants' opinion on whether acting training teaches the skills (i.e., ToM and empathy) that were needed to complete the test battery.

Methods

Research Design and Setting

This exploratory study consisted of a cross-sectional comparison of two groups on their levels of theory of mind and empathy. Two measures were used for each construct. The design was based on non-randomized selection criteria. The test order was counterbalanced by means of block randomization. Additionally participants were interviewed in the form of a structured interview adapted from Grey (2003) with the aim of investigating the measures used. Data were collected from students at the researcher's apartment. A quiet room, free of distractions was used for the administration of the test battery.

This study followed the ethical guidelines for research with human subjects outlined by the Health Professions Council of South Africa (HPCSA). Ethical approval was granted from the Research Ethics Committee of the Department of Psychology of the University of Cape Town. There were no risks involved with participation in this study. The content matter of the test battery and interview did not include any questions or material that could

have harmed or made the participants feel uncomfortable. All data were kept confidential and the identities of the participants were only disclosed to the researcher.

Participants

Theatre and performance students were recruited from the University of Cape Town. Participants were recruited from this tertiary institution for the ease of data collection as well as controlling for individuals with normal intelligence. The study aimed to have a total sample size of 50 participants based on the effect size of 0.55 from Goldstein et al. (2009) where the total sample consisted of 168 participants. A minimum of 25 participants per group were thus needed to reach the medium statistical power of 0.55 (Shaughnessy, Zechmeister, & Zechmeister, 2006). The theatre and performance students were however very unresponsive and unwilling to participate, consequently resulting in a small sample size of 20 participants. Students were recruited via email or personally approached and asked to participate in the study. Participants were recruited into two groups depending on the level of their acting training: a novice group and an experienced group. The first group comprised 10 first year students. The second group also comprised 10 students, including seven students in their third year of acting training, one honours degree student and two students who completed their honours degree the year preceding this study.

Exclusion criteria. Individuals who have had formal acting training other than secondary educational training before commencing with their first year at the University of Cape Town were excluded from the study. The groups thus differed in terms of the level of formal acting training. The novice group comprised first year students to ensure that they had less than one year of formal acting training at the time of data collection. The selection criterion for the experienced group was that individuals did not have more than six years of formal acting training. The age range was thus 18 to 30 years to allow for participants who did not complete their honours degree immediately following their undergraduate degree. Neither age nor gender was considered as selection criteria due to the limited number of theatre and performance students.

Measures

Theory of mind. Two advanced ToM measures were administered: The revised version of Reading the Mind in the Eyes test (RMET) developed by Baron-Cohen et al. (2001) and Movie for the Assessment of Social Cognition (MASC) developed by Dziobek et al. (2006).[1] RMET consisted of 36 black and white photographs of the eye region of actors or actresses taken out of magazines. The eyes, visible from just above the nose line to above the eyebrow, are 15 cm x 6 cm and set in the middle of the page (see Appendix A). Participants

were expected to choose between four multiple-choice options of complex mental states including emotions (for example excited and despondent) and cognitive states (for example sceptical and anticipating). A glossary, containing all the words used in the task, was also given to each participant to use in case they did not know the definition of a word.

MASC involves watching a short 15-minute film showing four people having a dinner party on a Saturday evening: Betty, Sandra, Michael and Cliff. The film, dubbed from German into English, was made by a professional camera crew and professional actors. The film consists of 46 segments and was paused by the administrator after each video clip. Participants were expected to carefully observe the characters' mental states and feelings and then to choose the correct multiple-choice answer. There were 45 questions of which six questions were control questions.

Empathy. Two empathy measures were administered: the Interpersonal Reactivity Index (Davis, 1980) and the Empathy Quotient (EQ) (Baron-Cohen and Wheelwright, 2004). Although the IRI has four subscales, an adapted version with only the *empathic concern* subscale was used (see Appendix B). This subscale assesses tendencies of empathic feelings toward other individuals. Participants were asked to rate statements on a five-point scale ranging from 0 (*does not describe me well*) to 4 (*describes me well*).

The EQ is a 60-item questionnaire with 40 questions related to empathy and 20 filler items to distract the attention from the empathy component. Participants were expected to answer all the forced-choice questions with the following options: *strongly agree, slightly agree, slightly disagree, and strongly disagree*.

The qualitative component. A structured interview adapted from Gray (2003) was conducted (see Appendix C). The aim of the interview was to investigate the measures used for ToM and empathy in terms of their efficiency in measuring ToM and empathy. Additionally participants were asked whether their acting training affected the way they answered the questions as a further attempt to answer the research questions.

All the tests as well as the interview were conducted in English. Language might thus have been a minor limitation as five participants' first language was Afrikaans. The study was however conducted under the assumption that all participants are or have been students at an English-language University.

Procedure

The test battery, consisting of two ToM measures and two empathy measures, was piloted on three psychology students from the University of Cape Town in order to make the necessary adjustments to the administration process. No adjustments were however needed.

Before starting the test administration, participants were asked to give their informed consent (see Appendix D). They were informed that they may withdraw at any time from the study and that they may take a break at any time during the administration should they feel fatigued. Participants were also informed of the opportunity to ask questions at any time during the administration process.

The test order was counterbalanced using block randomization to control for fatigue effects. Clear instructions were given prior to each test and participants were instructed to answer as truthfully as possible. After the administration of the four tests, the structured interview was conducted.

After the administration of the test battery, participants were debriefed and allowed to ask questions or express opinions with regards to the study and process. The participants were then thanked for their participation and rewarded with a free Labia cinema ticket. Each testing session lasted approximately 90 minutes.

Data Analysis

All data inspections and analyses were completed using STATISTICA version 9.0. The data were first inspected for outliers. None were found. A mixed design ANOVA (MANOVA) was then used for the main analysis as the study included multiple independent and dependent variables. The MANOVA was run with four dependent variables (MASC, RMET, IRI and EQ) and two independent variables (year and gender) each with two levels. Age was run as a covariate in the analysis to determine whether it is a variable that should be controlled for in future studies.

The main aim was to investigate whether there are differences between the means of the novice group and the experienced group (year) in terms of their ToM and empathy levels. As gender was not part of the inclusion/exclusion criteria, it was just run as an additional independent variable that might influence results. The effects for year and gender as well as the interaction effects between these variables were therefore investigated. Additionally age was run as a covariate to determine whether it has a mediating effect on the performances on the respective ToM and empathy measures.

Levene's test for the homogeneity of variance was inspected. All assumptions underlying MANOVA were upheld unless otherwise specified.

Additionally, a correlation was run between the two ToM measures as well as the two empathy measures as an investigation of construct validity. The Cronbach's alpha coefficient was also calculated for each measure to determine the internal reliability.

All data analyses were based on a significance level of .05 due to the directional nature of the research questions.

Finally the data from the interviews were analyzed by careful inspection of the notes made. Similar answers regarding each of the measures were grouped together. Only the groups of answers that included the views of the majority of participants were included in the results.

Results

Closer inspection of the descriptive statistics showed that the means and standard deviations of the performances of both the novice and experienced group were very similar for both measures of ToM and empathy (see Table 1). The means and standard deviations for the performances on both measures of ToM and empathy also did not appear to differ substantially between male and female participants (see Table 2). MANOVA was then run with year (the grouping variable for the novice and experienced group) and gender entered into the analysis as independent fixed factors to determine their effect on the dependent variables, the performances in MASC, RMET, IRI and EQ.

Table 1

Descriptive Statistics for Theatre and Performance Students

	Novice Group $n = 10$		Experienced Group $n = 10$	
Measure	*M (SD)*	95% CI	*M (SD)*	95% CI
Theory of Mind				
MASC	34.20 (2.66)	[31.90, 36.50]	33.50 (4.12)	[31.20, 35.80]
RMET	28.10 (2.28)	[26.02, 30.18]	27.80 (3.79)	[25.72, 29.88]
Empathy				
IRI	22.30 (3.86)	[19.65, 24.94]	20.80 (4.10)	[18.15, 23.45]
EQ	51.20 (9.78)	[45.10, 57.30]	49.40 (8.54)	[43.30, 55.50]

Note. CI = confidence interval

Table 2

Descriptive Statistics of Male and Female Test Results

	Male $n = 8$		Female $n = 12$	
Measure	*M (SD)*	95% CI	*M (SD)*	95% CI
Theory of Mind				
MASC	33.50 (3.07)	[30.77, 36.23]	34.08 (3.70)	[31.85, 36.32]
RMET	28.38 (2.72)	[25.91, 30.84]	27.67 (3.34)	[25.65, 29.68]
Empathy				
IRI	22.25 (2.31)	[19.24, 25.26]	21.08 (4.80)	[18.62, 23.54]
EQ	49.13 (8.06)	[42.12, 56.13]	51.08 (9.82)	[45.37, 56.80]

Note. CI = confidence interval.

Theory of Mind

Analysis of the results showed that there were no significant main effects for year ($F[1,18] = 0.15$, $p = 0.96$, $\eta^2 = 0.05$) or gender ($F[1,18] = 1.16$, $p = 0.37$, $\eta^2 = 0.26$). The results thus show that the experienced group did not perform better than the novice group in MASC or RMET. The performance of males and females also did not differ for any of the ToM measures.

Further statistical analysis revealed that there was also no interaction effect for year and gender ($F[1,18] = .29$, $p = .88$, $\eta^2 = .08$). This shows that the performances of the novice and experienced group did not vary as a result of gender and neither did male and female performances differ as a result of their experience level. No planned contrasts or post hoc tests were therefore needed.

Subsequently age was entered as a covariate. The results showed a significant effect for MASC ($F[1,4] = 5.49$, $p = .03$, $\eta^2 = .27$), but a non-significant effect for RMET ($F[1,4] = 1.99$, $p = .18$, $\eta^2 = .12$). Age therefore had a mediating effect on the performance in MASC, but not on the performance in RMET.

The assumption of homogeneity of variance was violated for RMET. Since ANOVA is a robust technique and sample sizes were equal, the data analysis could proceed.

Empathy

MANOVA showed that there were no significant main effects for year ($F[1,18] = 0.15$, $p = 0.96$, $\eta^2 = 0.05$) or gender ($F[1,18] = 1.16$, $p = 0.37$, $\eta^2 = 0.26$). The results thus show that the experienced group did not perform better than the novice group in the IRI or EQ. The performance of males and females also did not differ for any of the empathy measures.

The results also revealed no interaction effect for year and gender ($F[1,18] = .29$, $p = .88$, $\eta^2 = .08$). Gender thus had no effect on the results of the novice and experienced group for the empathy measures and the performances of male and female participants were not affected by their level of experience. No planned contrasts or post hoc tests were therefore needed.

Age run as a covariate yielded no significant effects for the IRI ($F[1,4] = .57$, $p = .46$, $\eta^2 = .04$) or EQ ($F[1,4] = .24$, $p = .63$, $\eta^2 = .02$). Age thus appears to have had no mediating effect on the performances in the empathy measures.

Theory of Mind Measures

Pearson's correlation coefficient was calculated for MASC and RMET and was found to be positive, moderate and significant ($r[18] = .47$, $p = .04$). The measures for ToM thus appear to have moderate construct validity (an indication that they do not necessarily measure the same construct).

Although all participants found the instructions for MASC clear and easy to understand, most of them reported that the actors did not portray their feelings clearly. Most participants thus found it difficult to read and interpret the relevant feelings and emotions for each particular clip. In contrast, a few participants mentioned that the blatant acting and general gestures of the actors helped to make the communication of their feelings and emotions easy to understand and interpret.

Most participants reported bad acting and the dubbing from German to English as distracting factors.

All except three participants found MASC too long. These participants also reported that the length affected the way they answered the questions, with the reasons being given as the lack of concentration either towards the middle or end of the movie.

The internal reliability (Cronbach's alpha coefficient) was calculated for the 45 multiple-choice items ($\alpha = .36$). This is a low internal reliability in comparison to Dziobek et al. (2006), the developers of MASC, who reported a Cronbach's alpha coefficient of .84 for a larger sample ($N = 40$).

Most participants found RMET confusing in terms of choosing the correct option for the pair of eyes. It often appeared to them that there were more than one available choice (sometimes contradicting one another) describing the emotion portrayed in the photograph.

Furthermore participants mentioned that they either tried to simulate the set of eyes or experience the resulting emotion, if someone were to look at them with that emotion in reality, as a means to determine the emotion in the photograph.

No participant found the test too long.

The internal reliability for the 36 items of RMET was $\alpha = .40$. This value is well below the Cronbach's alpha coefficient ($\alpha = .65$) reported by Allan (2009) with a sample size of 190 participants. However, both these values are below the cut-off point for acceptable internal reliability (Field, 2000).

Empathy Measures

The Pearson's correlation coefficient for the IRI and EQ was significant and revealed these measures to be positively and highly correlated ($r[18] = .74$, $p = .001$). According to these results the measures for empathy have high construct validity.

Most participants found the IRI clear and easy to answer. No participant reported it as being too long.

The internal reliability for the empathic concern subscale of the IRI was $\alpha = .70$ which is an acceptable value for internal reliability according to Field (2000) and consistent with Davis (1980) who found a Cronbach's alpha coefficient above .70 for a large sample ($N = 427$).

Most participants also found the EQ clear and easy to answer. Some participants mentioned that they found it easier to answer than the IRI with the reason being fewer options on the scale. No participant experienced the test as being too long.

The internal reliability (Cronbach's alpha coefficient) for the 60 items was .76. This finding is consistent with that of Baron-Cohen & Wheelwright (2004) who reported a high alpha value of .92 for a large sample ($N = 377$).

The final component of this study assessed the theatre and performance students' views on acting training and its relevance to the administered test battery. All, but one participant noted that the questions asked were very applicable to acting. Most participants stated that their acting training affected the way they answered the tests. Many participants from the novice group mentioned that the tests were based on similar topics discussed and taught in the acting classes, particularly the RMET. Additionally most participants from the experienced group stated that they would not have been able to answer the questions as effectively in their first year. These participants also mentioned that they felt much more able to delve into the self in order to answer the IRI and EQ.

Discussion

The aim of this study was to compare actors with different levels of acting training in terms of ToM and empathy to investigate the possibility that acting training might teach and/or develop ToM and empathy. Results showed that theatre and performance students with more acting training did not perform better in the ToM and empathy tasks than the theatre and performance students with less acting training. These findings suggest that the expected relationships between acting training and ToM and acting training and empathy are not there. Due to the exploratory nature of this study and the limited time frame within which research had to be completed, the final sample size was very small. As the main limitation of this study, it will be considered as one of the main reasons for the non-significant results. This factor should also be taken into account when regarding the methodological conclusions drawn from this study.

Acting Training and Theory of Mind

The results of this study showed that theatre and performance students with more acting training were no better than the theatre and performance students with less acting training in their interpretation of feelings and mental states included in the ToM tasks. This could indicate that acting training does not develop or teach ToM. However, this finding cannot be conclusive, given not only the cross-sectional nature of this study, but also that Goldstein et al. (2009-2010) found actors to be more skilled in ToM than non-actors and therefore proposed that acting training develops ToM.

Based on the above study, one could therefore begin to explain the non-significant results of the current study by arguing that actors already have high levels of ToM when starting their training and that they might be drawn to this direction of study or occupation due to their psychological profiles (Nettle, 2006). Knoll & Charman (2000) have mentioned that one should pay careful attention to the baseline levels of the skill (ToM) to be taught so

that the targeted skills are not already possessed prior to the training is implemented. Actors might thus already possess the ToM skills taught by acting and therefore show no development of these skills.

Another possibility why no relationship was found between acting training and ToM might be that the difference between one and three to four years of training might not be enough to indicate whether acting training has developed or refined their mind-reading abilities. Future studies should thus explore whether more than four years' acting training or professional experience as such could increase ToM skills.

Alternatively, the results could possibly be attributed to a number of methodological concerns. Firstly, the low alpha coefficients for both MASC and RMET raised concerns about the internal reliabilities of these measures. As suggested in the literature, there are different definitions for advanced ToM. It might thus be possible that all the questions of MASC and RMET do not necessarily measure the same 'form' of ToM or essentially the same construct.

Secondly, the ToM measures, being intended mostly towards individuals with subtle mind-reading deficits (for example individuals with autism) might not have been sensitive enough to pick up differences in high functioning individuals (Baron-Cohen et. al 2001). Dziobek et al. (2006) found the severity of impairment of individuals with Asperger syndrome (AS) to be directly associated with poorer scores on MASC. Similar to the current study, both Dziobek et al. and Montag et al. (2010) reported means of ±34 for normal adults in contrast to the means of the AS group and euthymic bipolar patient group that ranged between 24 and 30. This might be indicative of ceiling effects for MASC: It is thus possible that it was not sensitive enough to pick up more refined or advanced mind-reading skills in high functioning individuals.

Thirdly, there might have been an interaction effect between specific skills of the theatre and performance students and the measures. Most participants reported that they found RMET confusing as it appeared that there were more possibilities in terms of correct answers than the instructions that were set on choosing one correct answer. Since acting is based on creating imaginary worlds and characters, participants might have imagined more possible situations during which specific emotions could manifest and therefore created more options which they thought fitted each set of eyes. RMET however, only gives the option of one possible answer – it is therefore possible that it does not measure the component of advanced ToM that involves the recognition of opposing mental and emotional states present in one individual at the same time (Goldstein et al., 2009-2010).

Fourthly, the measure, MASC, had a number of distracting factors that might have influenced the performances of the participants – bad acting, voice dubbing and the length of the movie. The bad acting in particular might have resulted in the theatre and performance students (being actors themselves) critically analyzing the acting rather than paying careful attention to the feelings and mental states as they were instructed to (this could also be an example of an interaction effect between specific skills of theatre and performance students and the measures).

Lastly, apart from the concerns regarding the measures, age was found to have a significant effect on the performance in MASC, but not for RMET. Since the non-significant result for RMET is in accordance with previous research findings of no age related differences in individuals' ToM levels (MacPherson, Phillips, & Sala, 2002; Phillips, MacLean, & Allan, 2002; Saltzman, Strauss, Hunter, & Archibald, 2000; Slessor et al., 2007), one might want to question the reliability of MASC. Additionally, Goldstein et al. (2009-2010) reported that age had no influence on the differences of ToM found between actors and non-actors. Since the current study also had little age variability, this significant result will not be taken into further consideration

Acting Training and Empathy

The study found no differences between the novice and experienced group regarding their performance in the IRI and EQ and acting training might therefore not teach empathy. Although this finding cannot be confirmed due to the cross-sectional design, it is in accordance with Goldstein et al. who also reported no difference between the empathy levels of actors and non-actors and hence concluded that acting training does not teach empathy.

One might explain these findings firstly by arguing that empathy might be a skill practised on stage, but not necessarily a generic trait applied off stage. Verducci (2000) argues that the empathy exercised by an actor with a character in a play is not precisely the same as the empathy inherent in individuals. Actors learn to recognise the duality between themselves as "I" and their characters as "he" or "she". This might possibly explain why acting and the training there of in terms of how to place oneself in a character's shoes and experience their feelings on stage, but not off-stage, might not necessarily develop and/or teach empathy. Although not included in this study, the IRI's subscale, *perspective-taking* possibly measures the same skill learnt by actors that involves shifting their own perspectives to that of the character. The inclusion of the *perspective-taking* subscale in future studies might therefore yield different results.

Secondly, it might be possible that the theatre and performance students measured in this study have been taught techniques other than Method acting which in particular demands from the actor to create and evoke naturalistic performances, as close to reality as possible and therefore to feel what the character is feeling (Walsh-Bowers, 2006). They might have been taught a technique similar to the *Technique* approach that trains the actor to display the emotion, but not to feel it (Mamet, 1997). If this is the case, the theatre and performance students as a result did not receiving extra training in empathy since it involves actually feeling what another person (or the character) is feeling.

According to Hoffman (2000) "empathy is the spark of human concern for others, the glue that makes social life possible" (p. 3) and a factor that contributes to moral judgement. Generally empathy is viewed as a positive trait to have, a trait that makes somebody a moral and "good" person. The third reason for the non-significant results might thus be that, due to the self-report nature of both empathy tasks, it is probable that participants might have been subject to social desirability, hence trying to appear more empathic than they really are. Future studies, using empathy tasks other than self-report measures, might therefore still find that acting training does develop the empathizing abilities of individuals.

The explanations regarding the absence of a relationship between acting training and the cognitive and affective skills, ToM and empathy, as found by this current study do not exclude the possibility that further investigations should be made to establish whether acting training might develop theory of mind and empathy. Although Goldstein et al. (2009-2010) investigated this possibility by comparing actors to non-actors, this study is the first to compare actors in terms of their level of training and is therefore largely exploratory. Additional evidence will now be considered why it is possible that the above discussed results should not be conclusive.

From the interview it became apparent that the theatre and performance students regarded their acting training as an influential and helpful factor that assisted them in answering the questions of the respective tasks. Since most individuals from the experienced group mentioned that they would not have been able to answer the questions as effectively and easily in their first year, this opens up the possibility that the acting training must have taught them specific skills they did not have in their first year.

One might thus want to return to the question whether ToM and empathy can be taught at all? Orzonoff and Miller (1995) found a difference in the social ability of individuals with autism and therefore their levels of ToM after social skills training. Additionally role play situations and the attendance of theatre performances have also been

found to successfully increase the empathic ability of medical students (Shapiro & Hunt, 2003). Based on the above evidence, it appears that ToM and empathy can be taught. Is there however a possibility that acting training might teach these skills?

Banks and Kenner (1997) reported social skills (emotional sensitivity, social expressivity, and social control) of actors to be correlated with their amount of acting experience. This might be suggestive of social skills improvement with acting experience. Based on the finding that social skills are related to ToM as reported by Orzonoff and Miller (1995), future studies could perhaps also find ToM to be correlated with acting experience.

Then, role play is possibly the main component of acting since actors always have to take on a different role in the form of the each character they are playing. The finding that role play improved the empathic ability of medical students might thus be an indication that acting training could also improve empathy.

One nevertheless has to consider the possibility that acting training could develop ToM and empathy only in individuals who have deficits such as individuals with Autism spectrum disorders (Baron-Cohen & Wheelwright, 2004; Baron-Cohen et al., 2001), psychoses (Brüne, 2005), and euthymic bipolar disorders (Montag et al., 2010) and not in individuals who have normal levels of ToM and empathy. The success shown in the study used to teach empathy to medical students conversely indicates that it is possible to increase empathy of individuals without deficits. Future studies will however need to investigate firstly, the possibility of ToM development in normal individuals (i.e. the development of advanced ToM) and secondly, the development of ToM via acting training. To elucidate this possibility, the methodological issue regarding measure sensitivity for advanced ToM would have to be solved.

Moreover the literature have revealed acting to be based on principles similar to the psychological concepts of ToM and empathy. The teaching of these principles might thus result in the development ToM and empathy in individuals with deficits or advance these cognitive and affective skills in individuals with normal levels.

Stanislavski (1937), one of the leading acting teachers of the previous century, is of the opinion that good acting can only be achieved if the actors are able to fully understand and create a character as a psychological being, as a living person. Acting thus entails understanding a character's psychological make-up inclusive of all the objectives of the character. Apart from learning to shift their perspective to that of the character and learning to become attentive to the mental life of their character, actors also learn to carefully observe other actors and their characters. Acting and the training thereof thus largely focus on the

understanding of mental life, that ability to mind-read and understand others' emotional states, beliefs, thoughts and desires, which is known as ToM. (Whiten, 1991).

Furthermore Decety and Jackson (2004) have mentioned that empathy is impossible without self-awareness and emotion-regulation, two skills taught to actors during their training without which acting is impossible. Actors have to hide their own emotions on stage and portray that of the character, thus feeling what the character, another "person" is feeling. They might therefore be practicing the psychological construct known as empathy. Verducci (2000) thus argues that acting can provide a means via which empathic feelings might be developed.

As the above evidence suggest, the possibility that acting training might teach or develop ToM and empathy is there, but future studies are needed to establish whether the relationships between acting training and these skills exist. The recommendation would be to conduct a longitudinal study, assessing individuals' ToM before and after acting training of a minimum of five years.

The Measures of ToM and Empathy

The scores of on the measures for each construct were correlated to determine their construct validity. This methodological investigation was supplemented by a qualitative component in the form of a structured interview aimed at investigating the measures in terms of their efficiency. Results revealed high construct validity for the measures of empathy as shown by the significant Pearson's correlation coefficient of .74 and a significant moderate correlation for the measures of ToM as shown by the Pearson's correlation coefficient of .47. Although the measures for both empathy and ToM were therefore found to measure the same constructs, there are concerns with regards to whether these measures can effectively measure ToM and empathy as inter alia elicited in the post-test interview.

For MASC distracting factors (the length, bad acting and voice dubbing) were found to be the main influence that might have diminished its efficiency. The bad acting might have influenced the answers of participants who, instead of focusing on identifying the feelings and emotions of the characters, might have critically analyzed the acting and actors in the movie. Due to the actors not portraying their emotions clearly, participants might have found it more difficult to see the correct answer. Therefore, although psychologists have found it challenging to develop measures able to detect subtle cognitive dysfunction in adults with normal intelligence (Baron-Cohen et al., 2001), the possibility exists that nonactors might not be as critical and able to answer the questions better. This could be indicative that the test is just not sensitive enough to detect advanced ToM in actors. Limited research have

nevertheless been done with regards to whether the measures believed to be advanced ToM measures are sensitive enough to a heightened sense of social understanding and thus advanced ToM in adults with normal intelligence. Future studies are needed to clarify this issue.

The very small Cronbach's Alpha for MASC of .36 shows is indicative of low internal consistency and MASC might therefore be an unreliable measure of ToM. Further investigations are however needed to confirm whether MASC is a reliable measure, sensitive for advanced ToM as well as establishing whether it is sensitive for a population of actors.

Although it is considered to measure advanced ToM, RMET only measures the first part of ToM – to be able to recognise a complex mental state and not to infer the content thereof. It might thus be of limited scope to measure advanced ToM. Participants mentioned that each pair of eyes often seemed to display two different emotions. The test however specifies that there is only one possible answer. RMET does thus not provide the opportunity to participants to display their recognition of complex and contradicting emotions, another aspect speculated to be a component of advanced ToM (Goldstein et al., 2009-2010). Future research might want to investigate the possibility of including eyes that display complex and contradicting mental states.

Furthermore this test is static and real world never is (Baron-Cohen et al, 2001). RMET might thus not capture the essence of the social cognitive skills as utilised in the real world.

The Cronbach's alpha coefficient for RMET was low at .40, which, similar to MASC, indicates low internal consistency. Further investigations are necessary to establish RMET both as a reliable and sensitive measure of advanced ToM.

Empathy has been found to be a difficult construct to measure due to its multi-dimensional nature (Steplen & Baernstein, 2006). It has been suggested that the EQ might measure empathy in terms of both affect and cognition, thus not making it a pure measure of empathy. The high correlation of the empathy measures however shows the contrary. This is supported by the finding of Lawrence, Shaw, Baker, Baron-Cohen & Baker (2004) who also tested the reliability and validity of the EQ by comparison against the IRI. The high correlation of the EQ with the pure empathic concern subscale of the IRI might be an indication that the EQ does not measure ToM in addition to empathy (Baron-Cohen and Wheelwright, 2004).

The Cronbach's alpha coefficient for both measures was above .70 which, according to Field (2009), is an acceptable value for internal reliability. This alpha coefficient for the

EQ should however be interpreted with caution as Cortina (1993) reports that a measure with more than 20 items (the EQ has 60 items) could have an alpha coefficient of .70 even if the correlations between the items are very small.

The responses of the participants made it clear that they did not struggle with the answering of these tests. Most participants did mention that they found the EQ easier to answer with regards to the fewer answering options in terms of scales. This might be due to one less scaling option for answering the EQ.

Limitations and Future Directions

The only major limitation of this study was the small sample. This was due to the time frame within which the study had to be completed in addition to the limited number of theatre and performance students. Future investigations might thus benefit from a larger sample which would positively impact upon statistical power.

There are however a number of concerns as a result of which the findings should be interpreted with caution. Firstly, as a cross-sectional study, the effects of acting training on a particular group could not be investigated. A future research avenue might be a longitudinal study, following a group of actors across a number of years to investigate the effect of acting training (and possibly acting experience) on their levels of ToM and empathy. Future studies also might want to pay careful attention to the acting method used in the training as acting techniques (e.g., Method and Technique acting) differ with regards to what they might teach in terms of the experience of feelings and therefore possibly empathy.

Furthermore, MASC is a video-based task and RMET a task consisting of static stimuli. The construct validity for the ToM measures could be increased by using a second video-based test such as Reading the Mind in the Films Test that shows clips from feature films (Golan, Baron-Cohen, Hill, & Golan, 2006). Video-based tests are thought to have more sensitivity as well as being able to approximate real life social cognition and nevertheless a step forward from using static and unimodal tests such as the RMET (Dziobek et al., 2006; Roeyers & Demurie, 2010).

As far as I can establish, no other studies have attempted to qualitatively investigate the empathy and ToM measures used. This study thus elucidated a number of methodological concerns as a result of which the sensitivity of these measures might decrease for high functioning individuals, actors in particular.

Firstly, the lengthy nature of MASC might be distracting. Future investigations might want to investigate ways of shortening the movie. Secondly, the development of an original English version might exclude the voice dubbing as a distraction. Thirdly, as MASC

was specifically criticised for the bad acting, the developers of future versions should include stricter criteria for the actors used.

RMET seems to have limitations with regards to measuring the components of advanced ToM in terms of firstly inferring the content of complex mental states and secondly to be able to recognise more than one emotion (often contradicting) present in one individual at the same time (Baron-Cohen et al., 2001). Future directions might want to explore the possibility of including description options for the mental states in addition to questions that require individuals to choose multiple mental states for a particular set of eyes.

Conclusion

The possibility that acting training might teach and/or develop ToM and empathy was investigated in this study. Neither ToM nor empathy was found to be higher in actors with more acting training. The results of this study might indicate that acting training does not teach and/or develop these skills.

Why psychologists have not investigated the phenomenon of acting in more depth is puzzling, because acting is largely a psychological process, involving actors simulating human beings with all their accompanying emotions and mental states. As acting clearly requires both cognitive and affective skills, skills believed to be ToM and empathy, the possibility exists that acting training might teach these skills. If future investigations find these skills to be teachable, it might hold important implications for individuals with deficits in cognitive and affective skills, specifically ToM and empathy. Acting training could thus possibly be used to teach ToM skills to individuals with autism for example or individuals with empathic deficits such as delinquents, bullies or psychopaths (Mealey, 1995). It could however be possible that these skills could be teachable only in individuals who have some disability in this regard and not to not individuals where the skills are already present such as actors. The likelihood exists that the measures are not sensitive enough, particularly for ToM, to pick up small differences in high functioning individuals. The professional expertise of actors might nevertheless be a useful window via which psychologists can tap into the human experience (Andres-Hyman, Strauss & Davidson, 2007).

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Footnotes

[1] Permission to use MASC was granted by the Max-Planck-Institute for Human Development, Berlin. For further enquiries contact Dr Isabel Dziobek at isabel.dziobek@fu-berlin.de.

Appendix A

Example of the Photographs Used in RMET

Jealous Panicked

Arrogant Hateful

Appendix B

Interpersonal Reactivity Index: Empathic Concern Subscale

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate number on the scale at the top of the page: 1, 2, 3, 4, or 5. When you have decided on your answer, fill in the blank next to the item. Read each item carefully before responding. Answer as honestly and accurately as you can.

Answer Scale:

1	2	3	4	5
Does not Describe me Well				**Describes me very well**

1. I often have tender, concerned feelings for people less fortunate than me.
2. Sometimes I don't feel very sorry for other people when they are having problems.
3. When I see someone being taken advantage of, I feel kind of protective towards them.
4. Other people's misfortunes do not usually disturb me a great deal.
5. When I see someone being treated unfairly, I sometimes don't feel much pity for them.
6. I am often quite touched by things that I see happen.
7. I would describe myself as a pretty soft-hearted person.

Appendix C

Interview Schedule

1. What did you think of the questionnaire?
2. What did you think it was about?
3. Did you find it easy to understand? If not which question(s) did you find difficult?
4. What kinds of things were you thinking about when you filled it in?
5. What did you feel was wanted from you?
6. Was the questionnaire too long? Did you get tired during the administration process?
7. Did the length of the questionnaire affect your answers?
8. Did your acting training assist you in answering the questions?

Questions one to seven were asked for each measure.

Appendix D

Consent Form

Participation

- You are invited to take part in a research study investigating the association between acting, theory of mind and empathy. This research is aimed at exploring whether acting training might develop the ability to understand and read the mental states and feelings of other individuals (theory of mind) as well as the ability to experience what other individuals are feeling (empathy). The information you give me will be used to further the research on whether acting training might benefit individuals psychologically.
- I am a Psychology honours student at the University of Cape Town. I am not connected to a larger research program and no funding is required for this study.
- All participation is voluntary. You may refuse to participate or withdraw from participation at any time with no further consequences.
- You will not be paid money to participate in this study, but you will receive a free Labia cinema ticket.

Procedures

- If you decide to take part in this study you will be required to fill in four questionnaires. You will be expected to answer all the questions.
- An interview will be conducted after the completion of the questionnaires.
- You will be expected to answer all the questions as truthfully as possible.
- The administration process will take approximately 90 minutes.

Benefits

Apart from the Labia cinema ticket there are no direct benefits for participating in this study. The information however, will contribute to the researcher's understanding of the association between acting, theory of mind and empathy. In addition it might also contribute to future research in the field of the benefits of acting training.

Appendix D (continued)

Risks

There are no risks involved in this study. All information will be kept strictly confidential. Only the researcher will have access to the information.

If you have questions, concerns, or complaints about the study please contact me on 072 373 3857 or at lizeligt@gmail.com or my supervisor Johann Louw on 021-6503414.

Thank you
Lize Ligthelm

Signature

[Subject's name]_____ has been informed of the nature and purpose of the procedures described above including any risks involved in its performance. He or she has been given time to ask any questions and these questions have been answered to the best of the researcher's ability. A signed copy of this consent form will be made available to the subject.

_____

Researcher's Signature

Date

I have been informed about this research study and understand its purpose, possible benefits, risks, and discomforts. I agree to take part in this research as a subject. I know that I am free to withdraw this consent and quit this project at any time, and that doing so will not cause me any penalty or loss of benefits that I would otherwise be entitled to enjoy.

_____

Subject's Signature

Date