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Do You See What I See?: Exploring the Relationship Between OCD Symptomatology and Theory of Mind Ability

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Abstract

A great deal of research supports that Theory of Mind (ToM; the ability to make inferences about the emotions, beliefs, and intentions of others) is impaired in people with symptoms of schizophrenia, autism, bipolar disorder, panic disorder, and obsessive compulsive disorder (OCD), to name a few. The present study focused on OCD, hypothesizing a negative correlation between the presence of OC symptomatology and ToM ability. Participants ($N = 179$) were undergraduate students from Butler University as well as participants recruited from mental health facilities, hospitals, and other organizations in the Indianapolis area. Participants completed several questionnaires, including measures of ToM (the Reading the Mind in the Eyes test, the Hinting task) and OCD symptoms (the OCI-R). As hypothesized, higher OC levels correlate with lower levels of some aspects of ToM.

Investigation of the Correlation Between OCD Symptomatology and Theory of Mind Ability

Theory of mind (ToM) is the ability to make inferences about the emotions, beliefs, and intents of others. A great deal of research has indicated that there is a strong negative correlation between the symptomatology of certain disorders and ToM ability. One meta-analysis, which pulled data from 29 studies on mentalizing abilities (a concept similar to and often inclusive of ToM), assessed the magnitude and deficit of ToM in schizophrenia patients (Sprong, Schothorst, Vos, Hox & Van Engeland, 2007). Results from this analysis strongly support the conclusion that there is a significant ToM impairment in schizophrenia – across the 29 studies, schizophrenia patients performed significantly more poorly on ToM tasks than non-schizophrenia controls (Cohen's d = -1.255; Sprong et al., 2007). Research looking at the relationship between illness phase of schizophrenia and ToM mainly points to ToM disruptions as being specific deficits, like social dysfunction, rather than reflecting generalized deficits in areas like language or memory (Abdi & Sharma, 2004). Additionally, sub-clinical symptoms of schizophrenia, including subtle forms of positive symptoms, social dysfunction, and diminished expression are also associated with decreased ToM ability (Abdi & Sharma, 2004). Abdi & Sharma (2004) concluded that, regardless of the specific region and pathology of deficit, schizophrenia patients evidence severe ToM impairments.

Schizophrenia is not the only disorder characterized by significant ToM impairment. In fact, considerable research focuses on autism and ToM ability. For example, Baron-Cohen, Leslie & Frith (1985) propose that children with autism totally lack ToM and are thus unable to make inferences about others' beliefs and thoughts. A great deal of research on this topic supports the general conclusion that the vast majority

of children with autism perform significantly more poorly than those without autism (Abdi & Sharma, 2004; Baron-Cohen, Leslie & Frith, 1985; Happé, 1994). In addition to the research on autism, ToM disruption has been implicated in a host of other conditions, from bipolar disorder (e.g., Wolf, Brune & Assion, 2010) to panic disorder (Cucchi et al., 2012). Clearly, ToM disruption seems to be associated with a number of psychiatric disorders and may represent a cognitive predisposing factor for psychopathology in general.

Another disorder in which ToM disruptions have been noted is Obsessive Compulsive Disorder (OCD). As described in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM–5*; American Psychiatric Association [APA], 2013), the characteristic symptoms of OCD are the presence of obsessions (repetitive and persistent thoughts, images, or urges that cause great anxiety) and/or compulsions (repetitive and ritualistic behaviors or mental acts that the individual feels driven to perform in response to an obsession). In one illustrative study establishing the relationship between OCD and ToM, Cucchi et al (2012) studied metacognition in OCD. Using the Metacognition Questionnaire (MCQ) as a measure of beliefs about symptoms, results showed that patients with OCD and those with Panic Disorder (PD) scored significantly higher than healthy subjects on the MCQ negative beliefs (Cucchi et al., 2012). Examples of items on the MCQ include things like positive beliefs about worry (e.g., "worrying helps me cope") as well as negative beliefs about worry concerning uncontrollability and danger, among other beliefs about symptoms (Wells & Matthews, 1996). Thus, the MCQ measures a variant of ToM (i.e., beliefs about symptoms), not ToM *per se*. While many authors consider beliefs about symptoms to be related to ToM (e.g., Wells & Matthews,

1996), they are not synonymous constructs. Furthermore, both patients with OCD and those with PD display increased dysfunctional metacognition, providing evidence that these beliefs are vulnerability factors for anxiety disorders (Cucchi et al., 2012). These disrupted metacognitions help to maintain the disorders and may be partly responsible for their onset, but this latter assertion is highly speculative (Cucchi et al., 2012).

O'Kearney & Nicholson (2008) found a connection between metacognition, thought-action fusion, theory of mind, and obsessive-compulsive symptomology. Their study used a non-clinical sample and found a negative relationship between obsessive compulsive symptoms and metacognitive ability using the Private Self-Consciousness scale (Fenigstein, Scheier, & Buss, 1975), a measure of reflection on one's own mental state. Results suggest a relationship between certain aspects of thought-action fusion (TAF) and ToM. In essence, TAF revolves around the overestimation of the importance of thoughts particularly inferences that thinking is equivalent to action. Additionally, TAF can be described as the obsessive belief that if you think something it is the same as doing it (O'Kearney & Nicholson). Ultimately, this study may be helpful in further understanding of the metacognitive biases in OCD by examining the relationship of ToM or mentalising abilities to the TAF and to OCD symptoms. But like Cucchi et al. (2012), O'Kearney & Nicholson used a measure of specific metacognition related to symptoms. Further research is necessary to explore the extent to which general ToM abilities are intertwined with OC symptomatology.

Grisham, Henry, Williams & Bailey (2010) also explored the relationship between obsessive-compulsive symptoms and ToM, but used a non-clinical sample. Results suggest significant negative correlations between OC symptoms and two

measures of ToM having to do with emotion recognition. Thus, greater OCD symptoms were associated with reduced ToM. However, the range of ToM tasks used in this study was severely constricted – only emotion-recognition tasks were used, and no consideration of the social-relational aspect of ToM (i.e., knowing others' intentions or thoughts; Tager-Flusberg & Sullivan, 2000) was made.

Using these studies to lay the framework for a preliminary, if conflictual, relationship between obsessive-compulsive symptoms and ToM, the current study will further explore the specific correlation between the presence OC symptomatology and ToM ability. Several previous studies merely included measures used to assess symptom-based metacognition and not general ToM ability. Additionally, previous studies lack a range of different tests of ToM (e.g., social-relational vs. social-perceptual varieties of ToM; Tager-Flusberg & Sullivan, 2000). Thus, further exploring the relationship between OC symptomatology and ToM ability is of value. With this background research in mind, I hypothesize a negative correlation between the presence of OC symptomatology and ToM ability, such that, as symptoms increase, ToM functioning decreases.

Method

Participants

Participants ($N = 179$) included male and female undergraduate students from Butler University. Because the range of OC symptoms is often restricted in undergraduate samples, participants were also recruited via poster (see Appendix A) from mental health facilities, hospitals, and other organizations in the Indianapolis area. Participants from the community were recruited from treatment-seeking populations in

order to better capture the full range of symptoms. The larger portion of the participants, comprised of 149 Butler students, was compensated with extra credit in a Psychology course according to their professor's guidelines. Thirty participants, including both students and community members, received a gift card for participation in the study.

Materials

Demographic Questionnaire. To describe the obtained sample and to account for possible covariates, participants reported their age, gender, race, religion, year in school, academic major, psychiatric and family history, estimated G.P.A., sleep patterns or habits, and marital status. Participants from the community sample reported their age, gender, race, religion, highest level of education, occupation, psychiatric and family history, sleep patterns or habits, and marital status. See Appendices B and C.

Obsessive-Compulsive Inventory-Revised (OCI-R; Foa et al., 2002; see Appendix D). The OCI-R is a well-validated and widely used measure of obsessive-compulsive symptoms. It is an 18 item self-report measure utilizing a Likert scale ranging from 0-4, yielding a possible range of scores from 0 to 72. It has demonstrated strong reliability in non-psychiatric samples (Cronbach alpha = 0.89, test-retest reliability = 0.84; Foa et al., 2002) and validity (convergent validity: Spearman r = .53 between the OCI-R and the Yale-Brown Obsessive-Compulsive Scale; Foa et al., 2002). Additionally, the measure also assesses six sub-factors of OC symptoms. The Obsessing Factor, for example, can be explained as intrusive thoughts of self-harm, harm to others, violent images, etc. The OCI Hoarding Factor encompasses thoughts around deciding what to throw out or collecting items. The Neutralizing Factor can be described as the mental counting of items or actions (Huppert, Walther, Hajcak, Yadin, Foa, Simpson, & Liebowitz, 2007). The

Washing subfactor revolves around concerns about contamination by bodily fluids, dirt, germs or other substances. The Ordering factor is best described as ordering or arranging things, while the Checking factor includes checking locks, stoves, appliances and checking to see if one made a mistake (Huppert et al., 2007). This measure was included in the present study to explore the relationship between obsessive-compulsive symptoms and Theory of Mind.

Center for Epidemiologic Studies – Depression Scale (CES-D; Radloff, 1977; see Appendix E). The CES-D is a well-validated and widely used measure of depressive symptoms. It is a 20 item self-report measure utilizing a Likert scale ranging from 0-3, yielding a possible range of scores from 0 to 60. It is particularly useful for identifying a range of depressive symptoms in non-clinical samples (Edwards, Cheavens, Heiy, & Cukrowicz, 2010) and has shown strong reliability (Cronbach alpha = .85; Radloff, 1977). It was included in the present study because depressive symptoms are commonly correlated with ToM and OC symptoms.

Reading the Mind in the Eyes Test-Revised (Eyes; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; see Appendix F). The Eyes test is one of the most widely used Theory of Mind measures (Bora, Yucel, & Pantelis, 2009) and requires participants to decode complex mental states in others. Consisting of 36 photos, cropped to include only a person's eyes, it is a social-perceptual task that measures ToM ability. Participants were asked to choose from four adjectives surrounding each photo the one that best describes the mental state of the individual in the photo. Participants' answers were coded either correct=1 or incorrect=0, yielding a possible range of scores from 0 to 36. The Eyes test has good reliability (KR-20 = .55 [Baron-Cohen et al., 2001]; test-retest r =

.60 [Hallerback, Lugnegard, Hjarthag, & Gillberg, 2009]) and validity (Cohen's *d* distinguishing patients from controls = .90 [Bora et al., 2009]; correlation with autism questionnaire scores = -.53 [Baron-Cohen et al., 2001]). It is one of the major dependent variables in the present study.

Hinting Task (Greig, Bryson, & Bell, 2004; see Appendix G). The Hinting Task, originally developed by Corcoran, Mercer, & Frith (1995) and adapted for North American use by Greig et al. (2004), is a very commonly used Theory-of-Mind measure (Bora et al., 2009) and requires participants to make inferences about someone's intended meaning. Consisting of 10 brief vignettes describing interactions between two characters where one character provides a fairly obvious hint to the other character, it measures the social-relational domain of ToM (Tager-Flusberg & Sullivan, 2000). Participants heard each vignette and explained to the experimenter what the main character "really meant." A correct answer received a score of 2. If the participant offered an answer other than the correct one, the experimenter read a second prompt; a correct answer following the prompt received a score of 1. An incorrect response received a score of 0, yielding a possible range of scores from 0 to 20. While the Hinting task has shown good validity (Cohen's *d* distinguishing patients from controls = 1.06; Bora et al., 2009), reliability in the present study was low (Cronbach's alpha = .481). Further analysis suggested that reliability would increase to .503 if the first item was dropped, and so the present study used a 9-question version of this task, changing the possible range of scores to 0 to18. It is one of the major dependent variables in the present study.

Procedures

Following informed consent, participants completed the Mind in the Eyes test and the Hinting Task. Participants then completed the self- report questionnaire packet containing the OCI-R, CES-D, and demographic questionnaire. Each folder was coded with a number to keep information confidential but to still allow information to be grouped for analysis. Participants were then debriefed and thanked for their time.

Results

Preliminary Analyses

Participant characteristics for the present sample are displayed in Table 1.

Table 1: Participant Characteristics (N = 179)	**N**	**%**
Gender = Female	140	78.2
Race = White	161	89.9
	M (SD)	**Min-Max**
Age	20.39 (5.10)	18-55
CES-D	4.57 (4.65)	0-27
Eyes	27.25 (3.61)	13-34
Hinting	17.16 (1.35)	9-18
OCI-R total	16.82 (11.34)	1-57
OCI washing	2.05 (2.46)	0-10
OCI obsessing	3.07 (2.95)	0-12
OCI hoarding	3.10 (2.67)	0-12
OCI ordering	4.21 (3.27)	0-12
OCI checking	2.53 (2.13)	0-12
OCI neutralizing	1.93 (2.55)	0-10

In order to determine whether any demographic variables affected the main DVs (i.e., the ToM tasks) or the IV (OC symptoms), a series of one-way ANOVA (gender, race) or correlation analyses (age, depression scores) was conducted. Since none of the demographic variables significantly related to the primary DVs or IV (all $p > .11$), they are not considered further in these analyses.

Main Analyses

Correlational analyses showed a negative correlation between OC symptomatology and social-relational theory of mind ability, such that a higher OCI-R score was associated with a lower score on the Hinting task, $r(176) = -.205$, $p=.006$. Thus, participants who experienced more distress or impairment from Obsessive-Compulsive symptoms performed less well on the Hinting task. This pattern of results, however, did not emerge when considering the Reading-the-Mind-in-the-Eyes task; the correlation between Obsessive-Compulsive symptoms and social-perceptual Theory of Mind was not significantly different from zero, $r(176) = -.010$, $p= .895$. Therefore, the results partially confirm my hypothesis: higher OC symptoms are associated with ToM impairment, but only in the social-relational domain.

To further explore the relationship between OC symptoms and ToM ability, I examined the sub-factors of the OCI-R total score. These sub-factors represent specific facets of OC symptomology and may shed further light regarding whether specific types of OC symptoms are more likely to interfere with ToM. For example, the OCI Obsessing Factor, $r(179) = -.172$, $p=.021$, the OCI Hoarding Factor, $r(179) = -.202$, $p=.007$, and the OCI Neutralizing Factor, $r(177) = -.148$, $p=.049$ each separately relate to performance on the ToM Hinting task. In other words, higher scores on these particular sub-factors of OC

symptomatology indicate poorer performance on the Hinting task. The other OCI-R subfactors (washing, ordering, checking) were not significantly related to the Hinting task (all p's>.063). Similarly, none of the sub-factors were significantly correlated to performance on the Reading-the-Mind-in-the-Eyes ToM task (all p's>.40).

Discussion

The present study examined the effect of OC symptomatology on Theory of Mind (ToM) ability. My hypothesis, that as OC symptoms increase ToM functioning decreases, was partially supported; participants with more distress or impairment due to OC symptoms displayed decreased social-relational ToM. In other words, the obsessions and compulsions associated with OCD appear to interfere with the ability to decode thoughts, emotions, and intentions in others.

More specifically, the correlation between OC symptomatology and ToM ability related directly to one of the two ToM measures, the Hinting task. While participants with increased or more distressing OC symptoms scored lower on the Hinting task, a measure of social-relational ToM ability, there was no similar correlation between more bothersome symptoms of OCD and performance on the social-perceptual Reading the Mind in the Eyes task. In a previous study, Sayin, Oral, Utku, Baysak & Candansayar (2010) made a specific distinction between "basic" and "advanced" ToM. In Sayin et al's study, "basic" ToM was operationalized as the ability to know one's own thoughts and emotions, while "advanced" ToM was the ability to define someone else's. It is important to note that Sayin et al's results indicate that basic ToM ability is preserved in OCD patients, but advanced ToM abilities are impaired.

The current study demonstrates that even "advanced" ToM is a multifaceted

construct that may be differentially affected by OC symptoms; social-relational ToM (reading between conversational lines) is negatively affected, but social-perceptual ToM (decoding others' emotional states from perceptual cues) is generally preserved. It is possible that there are noticeable differences in the cognitive capacities utilized in processing social-relational ToM versus social-perceptual ToM. In other words, this one facet of ToM might be affected because, generally speaking, there is a big difference in being able to simply recognize facial expressions and emotion than attempting to interpret and decode social cues and to fully understand what others think and feel. Furthermore, higher scores on the Obsessing, Hoarding, and Neutralizing sub-factors indicate poorer performance on the Hinting task as well. Thus, this seems to indicate the behavioral sub-factors negatively impact ToM ability whereas the mental or internal components of OC symptoms do not have the same affect.

Interestingly, Grisham, Henry, Williams & Bailey (2009) also explored the relationship between OCD and ToM, found a significant negative correlation between OCD symptoms (OCI-R score) and measures of both ToM (the Mind in the Eyes test) and facial affect recognition. The findings of the current study directly contradict those of Grisham et al. The current results indicate that participants with high scores on the OCI-R only score poorly on the Hinting task, and not the Reading the Mind in the Eyes measure of ToM. Also, results of the current study suggest that the OCI sub-factors of obsessing, hoarding, and neutralizing negatively correlate with performance on the Hinting task. There is no significant correlation between any of the OCI sub-factors and Mind in the Eyes scores. Thus, these results further implicate that higher levels of OC symptomatology only impact the social-relational aspects of ToM, not the social-

perceptual components of ToM. With these results in mind, it seems obvious that more research needs to be done in order to further uncover the relationship between aspects of OC symptomology and ToM ability.

One of the main advantages of the current study revolves around the fact that a non-diagnosed sample of participants was used. As such, this allows for generalizability to a larger group of people; the result that the presence of more bothersome OC symptoms correlates with impaired ToM functioning is thus significant even in those who are not specifically diagnosed with OCD. That being said, the sample did display a full range of OC symptomatology. With a mean score of 16.82 and a range of 1-57 on the OCI-R, the participants expressed a good range of OC symptoms. In particular, the addition of the final 30 participants recruited from mental health facilities, counseling offices, etc. increased the presence of the OC symptoms and further expanded the sample's range on this measure. In fact, the final 30 participants displayed an average OCI-R total score of 29.75 (SD=12.51), as compared to the general student sample mean of 14.38 (SD=9.31), a significant difference, $t(174)=7.55$, $p<.001$. Thus, a major goal of the study was accomplished by expanding the sample in order to increase the range and therefore the validity of the measurements.

Although the present research encompasses a more complete OC range, the vast majority of the participants were college students enrolled at the same university, potentially inhibiting generalizability. There is always risk that primarily sampling from only one institution will affect the ability to attribute significant results to the rest of the population. On that same note, as a whole, the sample was generally high functioning in terms of theory of mind. Future studies could expand the ToM range by utilizing a ToM

pretest to qualify participants for the study. Creating multiple target ToM ranges would allow for a better analysis of the unique relationship between ToM and OC symptomatology. Similarly, recruiting additional participants from mental health centers, community health centers, counseling offices, other universities, etc. in order to obtain a broader sample would enhance generalizability.

In summary, it is clear from the results of this study reveal a particular relationship between OC symptoms and Theory of Mind (ToM). More specifically, the ability to "read between the lines" of social interaction, termed social-relational ToM, is affected by the presence of OC symptoms, whereas social-perceptual ToM, the ability to perceive another's emotional state through facial cues, remains intact. This important finding lays the foundation for further exploration into the nature of the relationship between OCD and different facets of ToM.

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Appendix A

Department of Psychology Butler University

PARTICIPANTS NEEDED FOR RESEARCH ON ANXIETY SYMPTOMS

We are looking for adults with any anxiety disorder or Obsessive Compulsive disorder to take part in a study of the correlation between OCD and Theory of Mind Ability.

As a participant in this study, you would:

- Be asked to complete confidential questionnaires
- Participate for approximately 30 minutes
- **Receive a $20 gift card in appreciation of your time**

For more information about this study, please contact: Karsen McCloud at krmcclou@butler.edu or Dr. Joel Martin at jmmarti1@butler.edu or our lab phone number: (317) 940-6194

Anxiety Study krmcclou@butler.edu (317)940-6194

Appendix B
Student Sample Demographics

ID # _____

Gender: Male _____ Female _____

Age: _____

Marital Status: Single _____ Married ____ Divorced ____ Separated ____

Widowed ____

Race/Ethnic Background: White _____ African American or Black _____

Asian _____ Hispanic or Latino _____

American Indian _____ Multiracial _____

Other _____ Prefer not to answer _____

(please specify)

Religion: _____

Are you a full time student? Yes _____ No ____

If no, what is your occupation? _____

Year in college: First year ____ Sophomore ____ Junior ____ Senior ____ Other ___

Major: _____

What is your approximate cumulative GPA? _____

Have you ever been diagnosed with a psychological or learning disorder? Yes ____ No ____

If yes, please list diagnoses: _____

Are you currently taking any medication for the treatment of any psychological disorder?

Yes _____ No _____

About how many hours of sleep did you get last night? _____

About how many hours of sleep do you *usually* get per night? _____

Appendix C
Community Sample Demographics

ID # _____

Gender: Male _____ Female _____

Age: _____

Marital Status: Single _____ Married ____ Divorced ____ Separated ____

Widowed ____

Race/Ethnic Background: White _____ African American or Black _____

Asian _____ Hispanic or Latino _____

American Indian _____ Multiracial _____

Other _____ Prefer not to answer _____

(please specify)

Religion: _____

What is your highest level of education? _____

What is your occupation? _____

Have you ever been diagnosed with a psychological or learning disorder? Yes ____ No ____ If yes, please list diagnoses: _____

Are you currently taking any medication for the treatment of any psychological disorder?

Yes _____ No _____

About how many hours of sleep did you get last night? _____

About how many hours of sleep do you *usually* get per night? _____

Appendix D

OCI-R

The following statements refer to experiences that many people have had in their everyday lives. Place an X in the space that best describes HOW MUCH that experience has DISTRESSED or BOTHERED you during the PAST MONTH.

	Not at all	A little	Moderately	A lot	Extremely
1. I have saved up so many things that they get in the way	○	○	○	○	○
2. I check things more often than necessary	○	○	○	○	○
3. I get upset if objects are not arranged properly	○	○	○	○	○
4. I feel compelled to count while I am doing things	○	○	○	○	○
5. I find it difficult to touch an object when I know it has been touched by strangers or certain people	○	○	○	○	○
6. I find it difficult to control my own thoughts	○	○	○	○	○
7. I collect things I don't need	○	○	○	○	○
8. I repeatedly check doors, windows, drawers, etc.	○	○	○	○	○
9. I get upset if others change the way I have arranged things	○	○	○	○	○
10. I feel I have to repeat certain numbers	○	○	○	○	○
11. I sometimes have to wash or clean myself simply because I feel contaminated	○	○	○	○	○
12. I am upset by unpleasant thoughts that come into my mind against my will	○	○	○	○	○
13. I avoid throwing things away because I am afraid I might need them later	○	○	○	○	○
14. I repeatedly check gas and water taps and light switches after turning them off	○	○	○	○	○
15. I need things to be arranged in a particular order	○	○	○	○	○
16. I feel that there are good and bad numbers	○	○	○	○	○
17. I wash my hands more often and longer than necessary	○	○	○	○	○
18. I frequently get nasty thoughts and have difficulty in getting rid of them	○	○	○	○	○

Appendix E

ID#:_____

CES-D

Using the scale below, indicate the number which best describes how often you felt or behaved this way DURING THE PAST WEEK.

0	1	2	3
Rarely or none of the time (less than 1 day)	**Some or a little of the time (1-2 days)**	**Occasionally or a moderate amount of time (3-4 days)**	**Most or all of the time (5-7 days)**

During the past week:

1. _____ I was bothered by things that usually don't bother me.
2. _____ I did not feel like eating; my appetite was poor.
3. _____ I felt that I could not shake off the blues even with help from my family or friends.
4. _____ I felt that I was just as good as other people
5. _____ I had trouble keeping my mind on what I was doing.
6. _____ I felt depressed.
7. _____ I felt that everything I did was an effort.
8. _____ I felt hopeful about the future
9. _____ I thought my life had been a failure.
10. _____ I felt fearful.
11. _____ My sleep was restless.
12. _____ I was happy
13. _____ I talked less than usual.
14. _____ I felt lonely.
15. _____ People were unfriendly.
16. _____ I enjoyed life
17. _____ I had crying spells.
18. _____ I felt sad.
19. _____ I felt that people disliked me.
20. _____ I could not get "going."

Appendix F
Reading the Mind in the Eyes Test-Revised

practice

jealous panicked

arrogant hateful

Appendix G

HINTING TASK

SID# _____

Instructions:
I am going to read you a set of ten stories involving two people. Each story ends with one of the characters saying something. After I've read the stories, I'm going to ask you some questions about what the character meant. Listen carefully to the story.

Scoring Criteria:
Score 2--If correct interpretation is given on first try. If incorrect response is give first, read the additional prompt.
Score 1--If correct on second trial.
Score 0-- if response is a paraphrase of what the character said. **(Total possible score is 20)**

TOTAL SCORE: _____

1. George arrives in Angela's office after a long and hot journey down the highway. Angela immediately begins to talk about some business ideas. George interrupts Angela saying: My, My! It was a long, hot journey down the highway.
Question: What does George really mean when he says this?

_____

_____

Prompt: George goes on to say, "I'm parched!" **Question:** What does George want Angela to do?

_____

_____

Answer Key: 1. Long Journey: (George is tired and doesn't want to talk business immediately; --OR-- He'd like a little rest and something to drink).
SCORE: Response 1: _____ **Response 2:** _____

2. Melissa goes to the bathroom to take a shower. Anne has just had a bath. Melissa notices that the bathtub is dirty so she calls upstairs to Anne, "Couldn't you find the Ajax, Anne?" **Question:** What does Melissa really mean when she says this?

_____

_____

Prompt: Melissa goes on to say, "You're very lazy sometimes Anne." **Question:** What does Melissa want Anne to do?

_____

_____

Answer Key: 2. Dirty Bath: (Why didn't you clean the bathtub? --OR-- Please clean the bathtub).

SCORE: Response 1: _____ **Response 2:** _____

3. Gordon goes to the supermarket with his mother. They arrive at the cookie aisle. Gordon says, "Wow! Those Oreos look delicious." **Question:** What does Gordon really mean when he says this?

_____

_____

Prompt: Gordon goes on to say, "I'm hungry Mom." **Question:** What does Gordon want his mother to do?

_____

_____

Answer Key: 3. Oreos: (Can you buy me some Oreos, Mom? --OR-- I want Oreos).

SCORE: Response 1: _____ **Response 2:** _____

4. Paul has to go to an interview and he's running late. While he is cleaning his shoes, he says to his wife, "Jane, I want to wear that blue shirt but it's very wrinkled." **Question:** What does Paul really mean when he says this?

_____

_____

Prompt: Paul goes on to say, "It's in the ironing basket." **Question:** What does Paul want Jane to do?

_____

_____

Answer Key: 4. Wrinkled Shirt (Would you iron my shirt for me?)

SCORE: Response 1: _____ **Response 2:** _____

5. Lucy is broke but she wants to go out in the evening. She knows that David has just been paid. She says to him, "I'm flat broke!" "Things are so expensive these days." **Question:** What does Lucy really mean when she says this?

_____

_____

Prompt: Lucy goes on to say, "Oh well, I suppose I'll have to miss my night out." **Question:** What does Lucy want David to do?

_____

Answer Key: 5. Flat Broke (Could you lend me some money? --OR-- Would you take me out tonight)

SCORE: Response 1: _____ Response 2: _____

6. Donald wants to run a project at work but Richard, his boss, has asked someone else to run it. Donald says, "What a pity, I'm not too busy at the moment." **Question**: What does Donald really mean when he says this?

Prompt: Donald goes on to say, "That project is right up my alley." **Question:** What does Donald want Richard to do?

Answer Key: 6. Work Project (Will you change your mind and give the project to me? --OR-- I'd like to do that project).

SCORE: Response 1: _____ Response 2: _____

7. Rebecca's birthday is approaching. She says to her Dad, "I love animals, especially dogs." **Question:** What does Rebecca really mean when she says this?

Prompt: Rebecca goes on to say, "Will the pet shop be open on my birthday, Dad?" **Question:** What does Rebecca want her Dad to do?

Answer Key: 7. Birthday Present (Would you buy me a puppy for my birthday? --OR-- I want a puppy for my birthday).

SCORE: Response 1: _____ Response 2: _____

8. Betty and Michael moved into their new house a week ago. Betty has been unpacking glassware. She says to Michael, "Have you unpacked those shelves we bought, Michael?" **Question:** What does Betty really mean when she says this?

Prompt: Betty goes on to say, "If you want something you have to do it yourself!" **Question:** What does Betty want Michael to do?

Answer Key: 8. Glassware (Could you put the shelves up?)

SCORE: Response 1: _____ Response 2: _____

9. Jessica and Max are playing with a train set. Jessica has the blue train and Max has the red one. Jessica says to Max, "I don't like this train." **Question**: What does Jessica want Max to do?

_____

_____

Prompt: Jessica goes on to say, "Red is my favorite color!" **Question:** What does Jessica want Max to do?

_____

_____

Answer Key: 9. Train Set (Can we trade trains? --OR-- I want the red train).

SCORE: Response 1: _____ **Response 2:** _____

10. Patsy is getting off the train with three heavy suitcases. John is standing behind her. Patsy says, to John, "Gosh! These suitcases are a nuisance." **Question:** What does Patsy mean when she said this?

_____

_____

Prompt: Patsy goes on to say, "I don't know if I can manage all three. "**Question:** What does Patsy want John to do?

_____

_____

Answer Key: 10. Heavy Suitcases (Could you help me with these suitcases?)

SCORE: Response 1: _____ **Response 2:** _____