Reliability of the Pragmatic Rating Scale in High Functioning Adults with Autism Spectrum Disorder

Vanessa Funk, Danielle Scherz and Pamela Thompson

Supervisor: Dr. Joanne Volden; Reader: Dr. Karen Pollock

Reliability of the PRS in ASD

ABSTRACT

Background*:* Pragmatic skills are, by definition, impaired in people with Autism Spectrum Disorders (ASD). These difficulties can negatively influence a person's interpersonal relationships, their ability to find employment and their overall quality of life. Currently, there is little research that characterizes the pragmatic communication difficulties that affect high-functioning adults with ASD. The *Pragmatic Rating Scale* (Paul et al., 2009) is one scale that may prove helpful for quantifying pragmatic impairments but its reliability has not been documented in adults with ASD.

Purpose/Aim: To determine if the *Pragmatic Rating Scale* can be used to make reliable judgments regarding the quality of communication in high functioning adults with ASD.

Method: Following training, audio recordings of simulated job interviews of twenty adults with ASD and twenty controls, matched for chronological- and nonverbal mental-age plus five unmatched ASD participants, were transcribed using *Systematic Analysis of Language Transcripts* (SALT; Miller & Iglesias, 2008) and then rated using the *Pragmatic Rating Scale*. Pairs of raters independently evaluated each interview. Inter-rater agreement was determined by using the following formula: {number of agreements/(number of agreements + number of disagreements)} x 100. Overall, raters achieved consistently high reliability calculated to 90% for 'broad reliability' and 88% for inter-rater reliability. Having a reliable tool to help identify areas of need and strengths regarding pragmatic skills in people who have ASD could help facilitate success in the workplace and in gaining employment.

INTRODUCTION

Autism Spectrum Disorder (ASD) affects individuals throughout their lives; but most studies have focused on children and adolescents, rather than adults (Moxon and Gates, 2001; National Professional Development Center on Autism Spectrum Disorders, 2010). According to the Diagnostic and Statistical Manual of Mental Disorders (2013), individuals with ASD struggle with social communication, social interaction and repetitive behaviors, all of which lead to impairment in daily functioning. The range of skills in those with ASD varies greatly but for the purposes of this study, the focus will be on those who score within typical limits on intelligence tests, also known as those with high functioning autism (HFA)(Rao, Beidel & Murray, 2008). A primary feature of HFA is impaired social communication or pragmatics (Paul, Orlovski, Chuba Marcinko, & Volkmar, 2009). Some pragmatic deficits noted in HFA include difficulty in initiating conversations and interpreting verbal and nonverbal social cues, showing inappropriate emotional responses, use of irrelevant details, and sudden topic changes (Rao et Al., 2008; Lam & Yeung, 2012).

These pragmatic impairments lead to difficulties in many aspects of life but one particular area of difficulty is with employment, as less than 20% of those with HFA are employed (Taylor & Seltzer, 2010). In a job interview, individuals need to use pragmatic skills, specifically while engaging with the interviewer and answering questions in an appropriate manner (Einhorn, 1981). This may be difficult for people with HFA due to their communication and social difficulties. As a result, it seems likely that poor job interview skills will limit

employability. This study employed an interview format to examine differences in pragmatics between adults with HFA and typically developing adults. In order to make reliable judgments concerning pragmatic difficulties in adults with HSA, an evaluation tool needed to be identified.

Several different rating scales have been suggested for rating conversational skills but there is no single accepted instrument (Paul, Orlovski, Marcinko & Volkmar, 2009). Most of the scales available were designed to assess conversational behavior in children with language impairments caused by sources other than ASD and may not cover all the areas of concern when one is interested in conversational behavior in speakers with ASD (Paul et al., 2009). The Pragmatic Rating Scale (PRS) was first developed by Landa, Piven, Wzorek, Gayle, Chase, and Folstein, (1992) to use in analyzing the pragmatics of parents of children with autism. The PRS includes 18 items of atypical pragmatic behavior, most of which focus on turn-taking and topic management (Landa et al., 1992). Each behavior (e.g. "vague speech") is defined and then rated according to frequency with which it occurs in the person's spontaneous language (e.g., 0 - occurs almost never, 1- occurs sometimes, 2- occurs almost always).

Landa et al. (1992) found that parents of children with ASD had mild pragmatic abnormalities and that the scale was reliable both between raters and from test to retest. Because it had been useful in detecting the mild impairments present in parents, Paul et al. (2009) extended the use of the PRS to evaluating the conversational pragmatic skills of high-functioning youth, between the ages of 12 and 18, with ASD. Lam and Yeung (2012) also used it to rate conversational behaviors in children and youth (aged 6 – 15) with HFA. Both studies

found significant differences between youth with HFA and typically developing youth on the PRS ratings. Using the PRS with high functioning young adults (18-30) with ASD is a logical expansion of the use of the PRS, which can be used to fill in a gap in the literature about how this group functions in their pragmatic language use.

To ensure reliable judgments using subjective observational instruments (including the PRS) raters must undergo extensive inter rater reliability training (Castorr, Thompson, Ryan, Phillips, Presott & Soeken, 1990). When the users of observational tools are not trained properly (including the opportunity to practice using the tool on samples not included in the study), evaluated after training, and consistently monitored to ensure continued reliability, user bias can influence outcomes (Stemler, 2004; Castorr et al. 1990). Ensuring accurate documentation of the methods and techniques used to achieve inter-rater reliability is vital to guarantee the validity of results and outcomes of a study and observational tool (Kerlinger, 1986).

The current study examines if the PRS can be employed to make reliable judgments regarding the quality of communication in high functioning young adults with Autism Spectrum Disorder.

METHODS

Participants

The data for this study were collected as part of a study focused on the communication abilities of high-functioning young adults with ASD (personal communication Wendy Mitchell, 2013). Forty-five participants between the ages of 18 and 30, living in Edmonton, Alberta or Calgary, Alberta, participated in this study. Twenty-five were diagnosed with ASD, and 20 did not have ASD. Inclusion criteria for all participants included (1) English as the participants' primary language, (2) having successfully graduated from high school or having received some post-secondary education, and (3) a nonverbal IQ (NVIQ) of 80 or greater on the non-verbal subtests of the Wechsler Abbreviated Scale of Intelligence-II (WASI-II; Weschler, 2011). Participants with ASD diagnoses also had their diagnosis confirmed by meeting criteria on the Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, DiLavore & Risi, 2003). The Autism-Spectrum Quotient (AQ; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001) was administered to participants in the control group to confirm that they did not have an excessive number of autism features

Originally, there were 25 participants with ASD, five of whom were eliminated from the original sample. Two had ADOS scores that did not meet the cutoff and three did not meet the full inclusion criteria (i.e. they had not graduated from high school or they mentioned that they had autism in the interview so ratings could possibly have been influenced by knowing the participant's diagnostic status). These five participants were used in the present study for training purposes. Participants were recruited in Edmonton and Calgary through the Autism Society, a physician at the Glenrose Hospital in Edmonton, or a service provider in Calgary.

Sixteen participants with ASD were from Edmonton and four were from Calgary. The 20 participants with ASD were matched for age, gender and NVIQ, and broadly matched for educational experience (i.e. finished high school and working, finished high school and enrolled in postsecondary education, completed undergraduate degree, and doing higher level degree) with 20 typically developing young adults. The typically developing participants were recruited using posters and word of mouth. Nineteen of the control participants were recruited from Edmonton and one from Calgary. Along with the 5 aforementioned participants, there were 45 total participants in the current study.

Procedure

Participants completed a "getting to know you" interview. The interview was designed following review of the vocational literature, and after consulting with recruitment consultants. Almost all interviews were conducted by a recruitment consultant who had more than 13 years of Human Resource/Management experience, who was blind to participant diagnosis and not familiar with ASD. She followed a written protocol for the interviews (see appendix A for a transcript of the interview protocol). Three interviews were completed by a member of the research team, also blind to diagnosis, who was familiar with, and followed the same written protocol. For the participants with ASD, the ADOS was completed in the first visit and the interview occurred on a second visit. The control participants completed the interview and the AQ on their first visit. All of the interviews were audio and video recorded and the voice recordings were used for subsequent analysis.

Training

Three graduate students were trained in use of *Systematic Analysis of Language Transcripts* (SALT) software, a software program for language analysis (SALT, 2013) and in using the PRS. Training used practice interviews from participants who were not included in the study. During training, each of the PRS codes developed by Landa et al. (1992) and Paul et al. (2009) were discussed and refined to increase consistency.

Each interview was divided into 6 segments (see appendix A for interview questions), and each segment was coded for all of the PRS items after raters had listened to and transcribed the complete interview. Raters were encouraged to listen to the interviews as many times as necessary and to refer to the SALT transcripts if clarification was needed. During training the three raters independently rated the same interview and subsequently met to discuss differences in their codes. Raters came to a consensus on how to score the PRS for each item on which there were differences. In order to facilitate agreements, the definitions for the following PRS items "inappropriately formal", "out of synch", "inadequate clarification", "vague speech", "informal speech", and "awkward expression of ideas" were further defined. These revisions were clarifications of how raters would code specific situations, such as using 'I guess' at the end of an utterance (see Table 1). One category ("unresponsive to examiner's cues") was removed as it was not necessary for the purposes of an interview scenario. The final version of the PRS definitions used is included in Appendix B. Practice interviews were then coded with the refined definitions until 80% reliability among the three raters was achieved.

Table 1. Changes made to PRS definitions

PRS Item Revised	**Additions to the original definition**
Inappropriately Formal	include the second occurrence of uncommon multisyllabic words when more common words would suffice
Out of Sync	include when the participant doesn't answer the question
Vague Speech	include 'I guess', 'I dunno' 'you know' (at end of utterance) showing lack of confidence in their answer
Informal	include 'like' when it is not used in a meaningful way or when used as a hedge.
Awkward Expression of Ideas	include error words or error utterances, and 'you know' and 'like' at the start of an utterance

The scoring of the PRS was also revised. Originally each section was rated on a scale of 0-2 (with 0= occurs almost never, 1= occurs sometimes, and 2 = occurs almost always) for each item of the PRS. The researchers found that this was too subjective (i.e. on discussion it appeared one rater's notion of "sometimes" for example, was not the same as another's) or not entirely appropriate in the context of an interview. A scale of 0-2 was still used but the definition of each score was changed to a frequency count (0 = occurs almost never, 1 = occurs 1-2 times, and 2 = occurs more than twice). Other options for rating the interview were CNR- "could not rate" or NO- "no opportunity" (e.g.,. after initial greeting there were no other opportunities for greetings in subsequent questions).

Before coding the interviews of participants involved in the study, a final practice interview was assessed for reliability in two ways. The first assessment included percent

reliability where both raters used the exact same code (i.e. both raters coded a "2" for "terse") and was termed 'exact reliability.' The second assessment included broad inter-rater agreement, signifying that the raters agreed on the category for coding, however the frequency was judged differently (i.e. one rater would score a "1" and one would score a "2" for "terse"). This was termed 'broad reliability'. Inter-rater reliability on this practice tape among the three raters was found to be 84% for 'exact reliability' (i.e. all raters would give the same score) and improved to 87% on 'broad reliability'. After the training phase, raters continued to meet to report reliability and then discuss discrepancies. Occasionally new discrepancies occurred and two raters came to consensus on how these should be coded.

Transcription

Each interview was transcribed using SALT by two trained student raters who were blind to the diagnosis of participants and a consensus transcription was agreed upon. The two trained raters who transcribed the interview each rated the audio recorded interview using the final revised PRS codes (see Appendix B). The consensus transcription was then referred to when clarification of a word or phrase was needed.

Reliability

Inter-rater agreement was chosen to determine reliability, as using inter-rater agreement provided information about the ability of judges to "apply their rating in a manner that is predictable and replicable" (Stemler, 2004). A high level of agreement was obtained

(0.89) when this method was used previously by Paul and colleagues (2009). To calculate inter-rater agreement the formula: {number of agreements/(number of agreements + number of disagreements)} x 100 was applied. For each interview inter-rater reliability for both 'exact reliability' and 'broad reliability' was determined.

RESULTS:

Inter-rater agreement of the PRS is tabulated below (Table 2). For 'exact reliability', the lowest inter-rater reliability was 74% on subject 24. Overall the average inter-rater agreement for the 'broad reliability' was calculated to be 90%, with a range of 80-98% and a standard deviation of 4.6. The average inter-rater reliability for the 'exact reliability' was calculated to be 88% with a range of 74-97% and a standard deviation of 5.39.

Table 2: Inter-rater agreement from 45 participants

Subject Number	Broad Reliability	Exact Reliability
1	96%	96%
2	93%	93%
3	90%	90%
4	87%	84%
5	86%	86%
6	89%	86%
7	94%	93.5%
8	90%	90%
9	86%	85%
10	85%	83%
11	93%	93%
12	90%	90%
13	95%	95%
14	93.5%	93%

15	90%	90%
16	93%	92%
17	93.5%	90.7%
18	81%	80%
19	89%	88%
20	90%	84%
21	93%	90%
22	92%	91%
23	93.5%	90%
24	81%	74%
25	88%	87%
26	94%	91.6%
27	91%	90%
28	98%	97%
29	86	83%
30	96%	96%
31	80.5%	77%
32	96%	93.5%
33	88%	85%
34	81%	78%
35	84	84%
36	96%	94%
37	91%	90%
38	81%	80%
39	94%	94%
40	91%	91%
41	95%	94%
42	92%	92%
43	96%	95%
44	93.5%	92.5%
45	91%	91%

DISCUSSION:

Results indicate that it is possible to achieve high levels of inter-rater agreement when using the PRS to rate "getting to know you" simulated interviews with young adults. Slightly

higher inter-rater agreement was achieved when 'broad reliability' was calculated. Although reliability was achieved, the following factors seemed to contribute to either an increase or decrease in inter-rater agreement.

Transcribing the interviews using the SALT program contributed to higher reliability. When transcribing each participant's interview, error words and error utterances were reported in the transcript. The consensus transcript including the reported error words and utterances were consulted when scoring the participant on the PRS. Any error words or error utterances were subsequently coded in the 'awkward expression of ideas.' Having the opportunity to meticulously analyze the transcripts ensured that small details and less obvious pragmatic issues were found.

Training in the use of the PRS instrument helped to verify the scale and ensure the definitions would meet the needs of the researchers. Removing items that were not necessary and revising definitions with practice interviews helped to increase reliability by ensuring raters were reliable prior to rating participants. However, changing the definitions also caused coding to become difficult when items like 'you know' and 'like' could be coded in more than one category based on their use. For example, if 'you know' was placed at the end of a sentence, it would be perceived as uncertainty and coded as 'vague' , versus using 'you know' at the beginning of a phrase, where it was used as an interjection and coded as 'awkward'.

Occasionally both raters would code the same PRS item, but for different reasons. For example, although both raters would give a score of "1" for 'awkward expression of ideas', one

rater would score it for an error in word structure while the other rater would score for the use of 'you know'. Although this contributes to a higher inter-rater agreement, it may not be fully representative of the pragmatics of the individual participant. Sometimes this would lead to an increase in the consensus code (from a "1" by both raters to a "2"). In other cases, the PRS coding of "0", "1" or "2" did not seem to fully represent the extent of the noticeable pragmatic problems and did not seem to convey the full extent of the disorder, (when both raters had scored a "2", but for different reasons).

The definitions of the PRS also caused issues when raters would code the same response in different PRS categories. This was especially frequent between PRS items of 'confusing accounts' and 'out of sync', as some responses could be argued to fit into either category. For responses that were lengthy there was more than one category that the response could fit in but in an effort to avoid double coding a particular response, raters would have different codes. For example, if a participant had a tangential response that was also confusing and difficult to follow, the raters could code the response in opposing categories. This problem was more frequent when a participant received scores in many categories.

At times the behaviors or responses of certain participants did not quite fit with any of the definitions from the PRS, which led to different ratings as each rater tried to justify the behavior in different categories. For example, a participant would share a slightly surprising or personal piece of information that would originally be scored in 'strikingly candid' or 'overly direct or blunt', but the score would be removed in the consensus document because it did not

strictly fit with the definition of either category. Other behaviors that were noted in certain participants were unusual volume changes and pace of speech. Although these behaviors caught the raters' attention as strange, there was no category in which the responses fit.

Although most categories were objective and quantifiable, there were some subjective items on the PRS that varied according to what the raters considered within normal limits. This problem was particularly evident with 'terse', 'overly talkative' and 'overly formal'. The applicability of a code depended on the question, the personality of the participant, and their previous life experience. For example, the amount of previous work experience they had would affect the length of their response. This made it more difficult to judge whether a response needed to be rated as pragmatically inappropriate.

Although there were difficulties with coding the behaviors into the proper category, the final results indicate that extensive training prior to rating participants and consistent inter-rater monitoring was effective in achieving high inter-rater agreement using the PRS with young adults.

CONCLUSION:

There were aspects of the PRS definitions and scoring that affected the reliability of the inter-rater agreement; however, these issues did not significantly alter the overall reliability that was achieved. The problematic areas that were discussed above are issues in which future

research could be corrected. Altering the PRS definitions to prevent ambiguity and to include certain behaviors, such as volume and rate of speech, would improve reliability on the PRS. Training in SALT transcription and the PRS contributed to the reliability of the raters and should be included in later studies.

Having the ability to make reliable, accurate and quantifiable judgments on pragmatic impairments could contribute to the success of people who have Autism Spectrum Disorder. Knowing areas of strength and areas of need required to complete a successful job interview and gain employment may contribute to an increase in quality of life.

REFERENCES:

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.) DOI: 10.1176/appi.books.9780890425596.514988

Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). The Autism Spectrum Quotient (AQ): Evidence from Asperger Syndrome/ high-functioning autism, males and females, scientists and mathematicians. *Journal of Autism and Developmental Disorders, 31*, 5–17.

Bastiaansen, J. A., Meffert, H., Hein, S., Huizinga, P., Ketelaars, C., Pijnenborg, M., Bartels, A., Minderaa, R., Keysers, C. & de Bildt, A. (2011). Diagnosing autism spectrum disorders in adults: the use of Autism Diagnostic Observation Schedule (ADOS) module 4. *Journal of Autism and Developmental Disorders, 41*(9), 1256-1266

Brown, W., Cammuso, K., Sachs, H., Winklosky, B., Mullane, J., Bernier, R., Svenson, S., Arin, D., Rosen-Sheidley, B., & Folstein, S. (2003). Autism-related language, personality, and cognition in people with absolute pitch: Results of a preliminary study. *Journal of Autism and Developmental Disorders*, *33*(2), 163-167.

Castorr, A. H., Thompson, K. O., Ryan, J. W., Phillips, C. Y., Presott, P. A., & Soeken, K. L. (1990). The process of rater training for observational instruments: Implications for interrater reliability. *Research in Nursing & Health, 13*(5), 311-318.

Colle, L., Baron-Cohen, S., Wheelwright, S., & van der Lely, H. K. (2008). Narrative discourse in adults with high-functioning autism or Asperger syndrome. *Journal of Autism and Developmental Disorders, 38*(1), 28-40.

Einhorn, L. (1981). An inner view of the job interview: an integration of successful communication behaviors. *Communication Education, 30*, 217-225.

Fleming, J.A., McCracken, J., & Carran, D. (2004) A comparison of two methods of determining interrater reliability *Assessment for Effective Intervention, 29*, 39-51.

Kerlinger, F.N. (1986) *Foundations of behavioral research* (3rd edition) New York: Holt, Rinehart and Winston.

Lam, Y., & Yeung, S. (2012). Towards a convergent account of pragmatic language deficits in children with high-functioning autism: Depicting the phenotype using the Pragmatic Rating Scale. *Research in Autism Spectrum Disorders, 6*, 792-797.

Landa, R., Piven, J., Wzorek, M., Gayle, J., Chase, G., & Folstein, S. (1992). Social language use in parents of autistic individuals. *Psychological Medicine, 22*, 245-254.

Lord, C., Rutter, M., DiLavore, P., & Risi, S. (2003). *Autism Diagnostic Observation Schedule manual.* Los Angeles, CA: Western Psychological Services.

Losh, M. & Piven, J. (2007). Social-cognition and the broad autism phenotype: identifying genetically meaningful phenotypes. *Journal of Child Psychology and Psychiatry, 48*(1), 105-112.

Miller, J. F. & Iglesias, A. (2008). Systematic Analysis of Language Transcripts (SALT), English & Spanish (Version 9) [Computer software]. Madison, WI: University of Wisconsin-Madison, Waisman Center, Language Analysis Laboratory.

Moxon, L., & Gates, D. (2001). Children with autism: supporting the transition to adulthood. *Educational and Child Psychology, 18*, 28-40.

National Professional Development Center on Autism Spectrum Disorders. (2010, Jan. 20), Evidence Based Practices for children and youth with ASD, Retrieved October, 20, 2011 from http://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/NPDC_Flyer_2010.pdf

Nippold, Mansfield, & Billow (2007). Peer conflict explanations in children, adolescents, and adults: examining the development of complex syntax. *American Journal of Speech-Language Pathology, 16*, 179-188.

Paul, R., Orlovski, M., Marcinko, H., & Volkmar, F. (2009). Conversational behaviors in Youth with High-functioning ASD and Asperger Syndrome. *Journal of Autism Development Disorders, 39*, 115-125.

Rao, P., Beidel, D., & Murray, M. (2008). Social skills interventions for children with Asperger's Syndrome or High-Functioning Autism: A review and recommendations. *Journal of Autism and Developmental Disorders, 38,* 353-361.

Stemler, S. (2004). A comparison of consensus, consistency and measurement approaches to estimating interrater reliability. *Practical Assessment, Research and Evaluation, 9*(4)

Taylor, J. & Seltzer, M. (2010). Employment and post-secondary educational activities for young adults with autism spectrum disorders during the transition to adulthood. *Journal of Autism and Developmental Disorders, 40*(12), 1431-1446.

Weschler, D. (2011). *Wechsler Abbreviated Scale of Intelligence – second edition (WASI-II) manual.* San Antonio, TX: Psychological Corporation

Appendix A: Interview: Questionnaire and Peer Conflict Resolution Task

Section 1:

Good afternoon (good morning), thank you for coming in to meet with me today. How are you?

Before I get into the questions, I just want to let you know the process. I will be asking a series of questions so that I can get to know you better and I will be writing down your answers so that I can remember them later on. If you need me to repeat or clarify any of the questions please ask. Thank you and let's get started.

1. Please tell me about your experience and education.

Section 2:

2. What do you consider to be your greatest strength? And something that you need to improve upon? (Have you done anything to help you improve in that area?)

Section 3:

3. What are you most proud of in terms of your accomplishments? (from school or work or extra curricular)

Section 4:

4. Please describe the work environment that you would work the best within. **OR** Tell us about your best supervisor? What qualities made them a good supervisor?

Section 5:

5. What do you do to handle frustrations (stress) in the workplace? (What do you do outside of work to relax?)

Section 6:

Peer Conflict Resolution Task as outlined in Nippold, Mansfield, Billow (2007) Peer conflict explanations in children, adolescents, and adults: examining the development of complex syntax. *American Journal of Speech-Language Pathology,* 16, 179-188).

"To introduce the task, the interviewer read the following statement aloud to the participant (adapted from Selman et al., 1986, p. 459):

People are always running into problems with others at school, at work, and at home. Everyone has to work out ways to solve these problems. I am going to read you a story that illustrates this type of problem. I would like you to listen carefully and be ready to tell each story back to me, in your own words. Then I will ask you some questions about the story. I want to know what you think about the issue and how it should be handled.

Story B: " The Fast-Food Restaurant "

Mike and Peter (Jane and Kathy) work at a fast-food restaurant together. It is Mike's (Jane's) turn to work on the grill, which he (she) really likes to do, and it is Peter's (Kathy's) turn to do the garbage. Peter (Kathy) says his (her) arm is sore and asks Mike (Jane) to switch jobs with him (her), but Mike (Jane) doesn't want to lose his (her) chance on the grill.

Now I'd like you to tell the story back to me, in your own words. Try to tell me everything you can remember about the story.

Now I'd like to ask you some questions about the story:

1. What is the main problem here?
2. Why is that a problem?
3. What is a good way for Mike (Jane) to deal with Peter (Kathy)?
4. Why is that a good way for Mike (Jane) to deal with Peter (Kathy)?
5. What do you think will happen if Mike (Jane) does that?
6. How do you think they both will feel if Mike (Jane) does that?"

Thank you for coming in today, I appreciate you taking the time…

Appendix B: PRS with modifications

NO: No opportunity, Frequency counts: 0, 1 or 2
***Inappropriate / Absent Greeting:** Fails to greet or acknowledge the examiner's greeting (e.g. makes insulting remarks about the interviewer's presence rather than welcoming remarks).
Strikingly Candid: Expresses **very personal information** or makes **highly critical**, evaluative comments about people or situations. ** PCR*
Overly Direct or Blunt: Overly blunt or straightforward in expression of opinions or instructions.
Inappropriately Formal: Uses extremely precise articulation; uncommon multisyllabic words in *(a casual)* conversation where more common words would suffice. More than one occasions of an inappropriately formal word is needed to code a 1.
Inappropriately Informal: Profanity; overly familiar terms including slang when referring to professionals. The overuse of 'like' as a hedge as in valleyspeak.
Overly talkative: Difficult to interrupt; talks too long despite being given cues to relinquish conversational turn. A score of 2 is given if interviewer tries to interject / comment. Note interviewer's patience waiting to take a conversational turn OR within a response talks to long regarding first aspect of the response and then again talks to long regarding second aspect of a response.
Irrelevant / Inappropriate detail: Provides **minute details** about an event or tells technical aspects when asked a general question.
Out of sync content / unannounced topic shifts: Elaborates on insignificant aspects of

interviewer's statements rather than on main point; tangential responses; frequent and obvious **misinterpretation** of interviewer's statements or queries. Talks but fails to answer the interviews question. **Abruptly changes topic** without using typical social markers that signal the change or indicate the relevance of the off-topic information (e.g. 'This is off the subject but . . . ' or 'That reminds me of the time when ...'
Confusing Accounts: Disorganized presentation of information; inappropriate use or absence of **cohesive devices** that indicate how current information is related to previous discourse.
Topic Preoccupation/ Perseveration: (Frequently) brings up **previously discussed topics without being prompted** to do so by the interviewer. Discussion of previous topic is **redundant**.
Little Reciprocal To-and-Fro Exchange: (Frequently) **interrupts**; **fails to expand or acknowledge** the interviewer's statements; (rarely attempts to elicit conversational participation from the interviewer).
Terse: Rarely speaks unless presented with a query; **short, un-elaborated** responses.
Odd Humor: Fails to signal humorous statements or to indicate the humorous nature of message when humor clearly not detected by interviewer.
Insufficient Background Information: **Fails to indicate clearly the specific noun phrase to which a pronoun refers**; uses **technical jargon** that a lay person would not understand; discusses events or people without providing the background information necessary for the interviewer to understand the account.
Failure to Reference Pronouns / Terminology: Fails to substitute definite articles and relative clauses to reference old information (i.e. continues to use fully specified noun phrases even after the reference has been clearly established).
***Inadequate Clarification:** Fails to revise a message sufficiently to clear up confusion resulting

from the original message. *Need something from interviewer – code NO otherwise.*
Vague Speech and Language Behaviors: Accounts are general or global and **only peripherally address the enquiry**. Multiple **enquiries must be made to obtain (very) basic details**. Despite adequate quantity of verbal output, little content is expressed. If participants are not consistently confident in their answer, including the constant use of 'I dunno' or 'I guess'. The constant use of 'you know' especially at the end of answers also suggests lack of confidence in the answer and would be coded here.
Awkward Expression of Ideas: ***Semantically inappropriate use of words / figures of speech. Frequent seemingly stereotypic use of a phrase during an interview even when it doesn't make sense in the context.*** Includes 'you know' and 'like' if consistently used at the beginning of an utterance. Includes all error words coded in SALT.