Chapter 7
The Neuropsychological Assessment Process

When a practitioner begins an assessment there are three major parts to the evaluation. These sections include the intake interview, the assessment, and the feedback. Each of these areas will be described in greater detail as well as the mechanics of neuropsychological report writing.

The Intake Interview

The first contact the patient has with the examiner is often following a phone call to schedule an appointment. Most neuropsychologists have established a routine form that asks specific questions to determine whether the referral is appropriate for the practice. These questions are important to determine whether the referral question is within the bounds of the clinician's competencies, whether it is warranted, and to explain what the evaluation entails. Parts of this process can be handled by a trained receptionist, but it is up to the individual clinician to determine whether or not the case is appropriate.

The conversation with the parent or guardian needs to discuss the costs involved, the amount insurance (if you take insurance) is likely to cover, how long the assessment will take, whether the entire assessment is done on the same day or on additional days, and what the parent can expect from the results. Dealing with these issues up front can assist in a smooth relationship with the parent.

Following the intake phone call it is advisable to have an in-person interview with the main caregivers. It is preferable to have both parents present if at all possible. The intake interview helps you get to know the parent and enables the parent to feel comfortable with you. It also provides a time to explain the testing process as well as time frames for when the testing will be done, when the results will be provided, and when to expect the report. In addition, this is a good idea to complete a written release of information form to obtain previous testing, to talk to the child's teacher, and to obtain any other additional medical information. At this time, you may consider having the parent complete the behavior rating scales as well as a developmental history form so that you can have these available before the assessment begins.

One example of a parent interview format is provided below. It is helpful to obtain information about the presenting concern of the parent—when the parent first became concerned about his/her child and what has been attempted to solve the problem. In addition, basic demographic information is important. Who does the child live with? Who else lives in the home? What is the educational level and occupation of the parent(s)?

During this time one needs to also ask about the child's developmental history (achievement of developmental milestones, birth and delivery history, etc.). The medical history is also important to obtain to document possible head injuries, severe illnesses and/or fevers, and chronic diseases and disorders. The child's school and academic history is an important area to investigate. How does the child get along with others, does he/she have a favorite teacher, a teacher that didn't work for him, a school setting that was particularly helpful or problematic? Has the child received tutoring or behavioral assistance—if so what kind and what was the result?

At this time it is also helpful to inquire about any learning, emotional, or behavioral problems that are present in the parent or siblings. Having the parent

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describe the child's behavior, temperament, coping strengths and weaknesses is an important aspect of the intake interview. A description of the child's interactions with others in the family as well as with his/her peers can provide information as to the child's social development.

Insert Developmental History Form About Here

Preparing the Child for the Assessment

It is helpful to assist the parent in preparing the child for the assessment. Many times children assume they will "fail" the assessment, or believe the outcome of the assessment will determine if they "pass" their current grade. It is far better for the parent to discuss the upcoming visit the night before the appointment to give the child an opportunity to ask questions as well as to adjust to the idea. It is not a good idea to label the tasks that are going to be done during the testing as "games." In this case, the child believes he/she will be coming to have fun and be very disappointed as most of the tasks are not games, but are work. I generally recommend that the parent describe the various tasks that will be done with the child and provide specific examples like building with blocks, looking at pictures, drawing, and answering questions.

For children with high anxiety, autistic spectrum disorders, or any disorder that requires additional transition time, it is helpful to prepare the child in sufficient time prior to the meeting. For some children that are particularly emotionally fragile or brittle, it is a good idea to have the child visit the office so that he/she can become more comfortable with the surroundings. It is not a good idea for these children to attempt to do the testing all in one day—rather it is better to parcel the testing into smaller amounts. The better the child is prepared for the evaluation, the easier the testing will be and the more applicable the results will be to estimate the child's current level of functioning.

The Evaluation

For the most part, a neuropsychological evaluation is similar to a psychological evaluation. It is the examiner's job to provide a comfortable and safe environment for the evaluation whether the examiner is the neuropsychologist or a technician. It is very helpful to give the child time to become acclimated to the room. Furniture should be the appropriate size and be comfortable. Setting the rules for the room often is very appropriate particularly for children that have behavioral difficulties or those who are anxious. The basic rules often regard not hitting, leaving the room, talking quietly, and not breaking materials. It is often very helpful to have tangible rewards particularly for children that may be recalcitrant or resistant to the testing.

It is not generally recommended to have the parent present in the evaluation room unless the child is unable to separate after a try or if the child is very young and requires the parent's presence. Often a parent will believe that she/he needs to be present, but if the examiner is firm and appears confident the child will often not require such presence. For more difficult cases it is possible for the parent to initially be present (with the caution to not answer for the child) and then leave after the child is comfortable. Many children can manage this type of separation, particularly if they know that the parent is in the waiting room.

If the examiner has decided to utilize a non-battery approach, then the appropriate tests should be readily available. For beginning practitioners it may be helpful to have a list ready, while for more advanced examiners may not need a list. If the testing is to be done by a technician, then it is important to prepare the technician for the tests that may be needed and to be available if testing results require flexibility. As will be discussed in Chapter 8, neuropsychological testing from a hypothesis testing approach provides flexibility to determine what measures may be utilized to best answer the question.

The initial portion of the evaluation can be simply talking with the child and getting to know him/her. It is very appropriate to talk to them about their likes and dislikes as well as querying why they believe they have come to see you. Depending on the developmental age of the child, I find it helpful to begin with tasks and then gradually talk about feelings and issues as the child becomes more comfortable with me. For other children who need to talk about why they are present, a discussion of why the testing is occurring and how the child feels about it is appropriate. Interviewing is an art and relies on the examiner being adept at sensing and interpreting the child's mood and affect, and adjusting the questioning appropriately (Semrud-Clikeman, 1995). Some children really need to talk about their concerns

immediately while others need time to get comfortable with the examiner.

Testing should begin with measures that are relatively easy and fun so the child can ease into the situation. As the child's comfort increases, it is possible to bring out some of the more challenging measures. It is also strongly suggested that the tests be alternated so that the challenging measures are not all grouped together, but instead interspersed with measures that may be easier. It is also important to end the session with a task for which the child feels success. In this manner the child is more likely to leave with a good feeling about how she/he has performed and happy about returning for another visit. For children who are anxious or rigid, it is often helpful to tell how many tests will be used for that period of time and to cross out the tests as they are completed. This strategy offers a feeling of completion and lets the child see there is an end to what is being asked of him/her. Moreover, as appropriate, the examiner can let the child choose which test is used. For example, we have often said, "Today we have to do a mathematics test and drawing test—which test would you like to do first?" In this manner the child has some control over the situation and feels a part of the decision.

At the end of the session, it is appropriate to tell the child that he/she has worked well and that there were a lot of things that he/she could do well—listing the tasks that he/she felt most comfortable with is helpful. If there is another appointment, it is very appropriate to state, "I will see you again in five days" or a specific date for older children. If the testing is completed, it is very appropriate to tell the child/adolescent that the testing is done and that you will meet with him/her in the near future to discuss the results.

Feedback Session

It is important to be cognizant of the parent's level of anxiety as they approach the feedback session. For many parents there are great fears that the neuropsychologist will actually find something seriously wrong with their child or that it is their fault. The feedback session can be very therapeutic if managed in a careful way. Work to keep jargon out of the feedback and, for beginning neuropsychologists, it may be difficult to realize what jargon is for the lay person. For example, one student began a feedback with a parent in this way:

> Thank you for coming today. Joey completed the WISC III, the WIAT II, and the Rey-Osterreith in our first session. We found that he had difficulties with working memory, processing speed, phonological coding and visual-spatial integration. These problems are consistent with LD as well as possibly sensory-integration difficulty.

One can see that a lay person would likely have no idea what was being said. Most parents will not stop you and ask, "what does this mean?" These mistakes are most common with beginning practitioners, but we have had parents who have received a feedback from an experienced practitioner ask for a reinterpretation of the results because, "I didn't understand anything that he/she said." To utilize the assessment in the most therapeutic manner requires that the findings be presented in *plain English*.

Keep in mind the main goal for the feedback is not just to provide scores and information to the parent (Handler, 2007), but to provide a forum to discuss possible interventions and remediation of difficulties. For example, it is a good idea to begin the feedback by summarizing the main reason the parent has sought the evaluation. This can be done simply, for example:

> I want to thank you for coming today to discuss the results of Cindy's testing. As we talked in our first meeting, I understand you are concerned about Cindy's difficulty with completing her work and following directions. You were concerned whether Cindy has any attentional problems or whether the work is too hard for. Cindy and I completed many tests to look at these issues and I'd like to talk to you about the results at this time. Please do not hesitate to stop me and ask a question if what I am saying is not clear.

In beginning the feedback it is advantageous to provide examples of how the child related to the examiner as well as the behaviors that were noted. For example if the child had difficulty remaining seated or paying attention it is appropriate to remark on these behaviors and then ask if the parent sees this type of behavior at home or in school. As one begins the feedback try to remember that the parent is going to be very anxious, wondering what the bottom line (diagnosis) is. It is important to convey to the parent that you really know their child and that you care. Relating an anecdote of how the child worked on a task is one way to convey your knowledge of the child. If the clinic or hospital in which you work uses technicians for the testing, it is important that you met and interacted with the

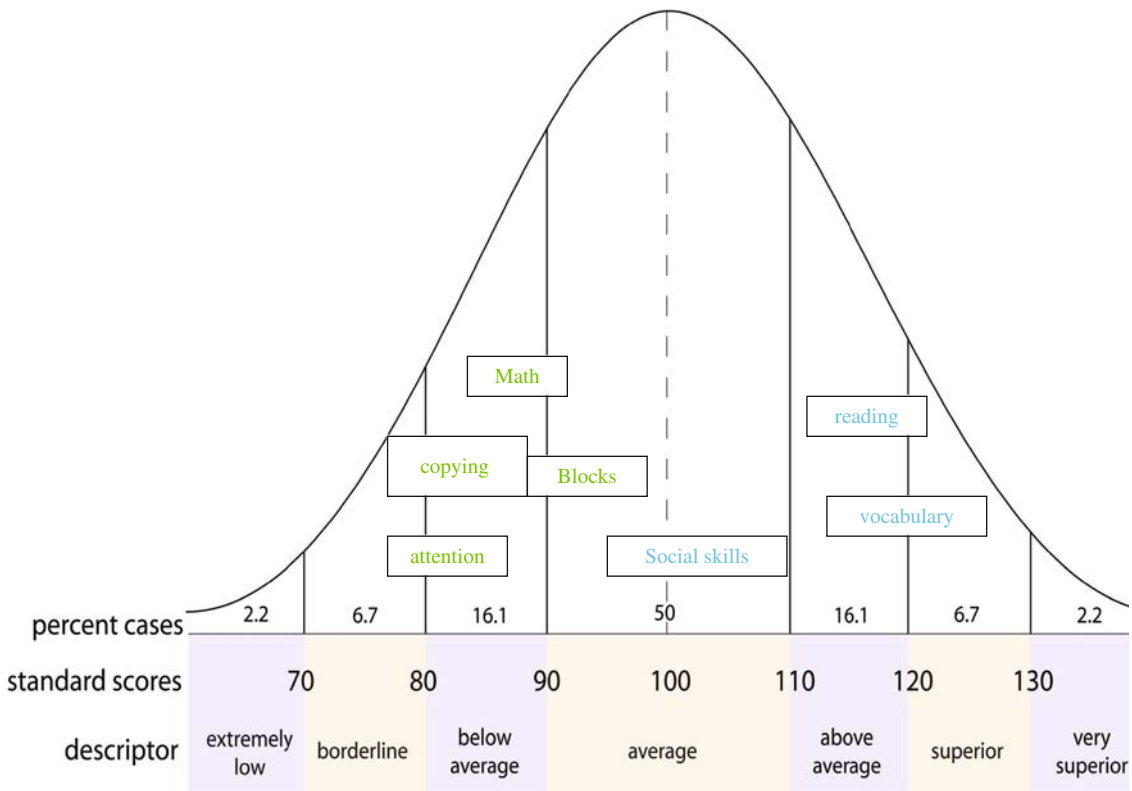
child. This helps you build a rapport with the parent and lends credibility to the later recommendations.

It can be very helpful to provide concrete examples of areas of strength and/or weakness. If the child has difficulty with Block Design on the WISC IV then phrasing this problem as, "Cindy had difficulty using blocks to copy a model in a short period of time. When I gave her extra time to do this task, she was able to copy the model. It appears that the difficulty in her skills is not that she cannot interpret what she sees, but that it takes her longer." The neuropsychologist can also discuss tasks where the child succeeded. "Cindy is very good at explaining what words mean. She approaches many tasks by using her excellent verbal skills to solve the problem."

As the feedback continues, check with the parent to determine if the neuropsychologist's observations are consistent with what is happening at home. Anticipating questions and prompting parents to give examples of what you have seen are very helpful in engaging the parent in the process, and to ensure that the information may be more readily used when the parent communicates with the school or interested parties (Baron, 2004). Generally, relating the findings should not focus on the scores but rather on the broad picture. Stating something like:

> "Cindy shows good overall ability with her scores in the high average range for her age. She shows particular strengths in her verbal ability to answer questions, define words, and recall facts. She has more difficulty when she is asked to solve a problem in her head (like 2×12) quickly or copy a block design quickly. Cindy has difficulty on tasks that require her to complete them quickly and which are monotonous. Her attention on these tasks started out well but then as the boring task continued she began to fidget and have difficulty staying with me. She would return to the task when I asked her to, but then would again need to be drawn back to the task at hand—are these behaviors you see at home?

In this manner the parent is drawn into the feedback and begins to relate the findings to the real world. Of course if they ask for the numbers you need to provide them. I often will utilize a normal curve and then mark the areas of strength in one color and the areas that are problematic in another.



This graph can then be taken home to help the parent explain the results to the teacher. I use a similar one with the child during feedback, emphasizing the child's strengths as well as areas that could be strengthened.

It is important to provide the diagnosis for the child, if there is one, and to discuss what the diagnosis means. During this discussion, explore how the parent understands the diagnosis and whether he/she agrees with it. At times there may be disagreement between the parents and the practitioner can assist with resolving some of these issues. One parent may be comfortable with the diagnosis while another may dispute the findings. It is important to stay calm and collected during these discussions and to not become combative or defensive. Helping the parent to think about what the disagreement is about, as well as trying to come to a resolution, is an important part of the feedback. Sometimes the disagreement is due to having fewer interactions with the child over the problems or not attending school meetings and thus being less informed. At other times, the disagreement may be due to the diagnosis hitting too close to home—in other words the parent has a similar problem and has not resolved the issue for him or herself.

If the child has a learning disability, it is important that you be very aware of the laws that are present in your state and nationally to obtain services (Magden & Semrud-Clikeman, 2007). It is disconcerting to the parent to be told a child qualifies for an educational service (such as a learning disability program) only to find out that the state law does not support such a conclusion. Thus, the practitioner needs to be cognizant of the rules and to write his/her report and conduct the feedback accordingly. It is imperative that the practitioner be aware whether the child is most appropriately referred for a special education evaluation or for a Section 504 evaluation (Magden & Semrud-Clikeman, 2007). It is also important for the practitioner to be able to discuss the difference and provide support in contacting appropriate school personnel.

Finally, and the most important part of the feedback, is discussing interventions. Provide concrete and direct suggestions to help the child in school and at home. The interventions also need to be realistic. At times the practitioner will use a "shot-gun" approach and recommend everything to be done at once. It is easy to lose sight of the fact that financial resources at home and school may be stretched and purchasing individual physical therapy in addition to school physical therapy may not be feasible. It is also important to realize that emotional resources may also be strained. Helping the parent to prioritize interventions can be very helpful and prevent burnout as the parent attempts to do everything at once. I find it helpful to say the first priority is . . . and then name it. If the child has a learning disability, then that is the first priority area to obtain services. If the child is ADHD, then determining whether a medication trial is appropriate should take precedence.

For a few patients it may take more than one session to fully manage the findings and secure appropriate interventions. For others, the feedback session may be followed up by a phone call to support the parent's efforts. Providing the written report at the end of the feedback session is very appropriate and allows the parent to read and reflect upon it. I always offer that they can come back and talk more if needed. Finally ending the session with a short summary of what was discussed is very helpful so that everyone understands what was said.

Child Feedback

It is also appropriate to offer to provide feedback to the child. This feedback can either be done after the main feedback to the parent or on another day. It should be done at the child's developmental level and may take a few minutes or longer, depending on the age and the nature of the child's questions. Similar to the parent feedback, the use of a visual chart can be very helpful to assist the child's understanding. Using examples of the tests to illustrate weaknesses and strengths helps the child to understand what the results mean. Providing numbers is not helpful and should be used. When the child feedback is discussed with the parent, it is helpful to have advance agreement whether the parent is comfortable not attending or whether they insist on being present. I generally suggest to the parent that it works better to ask the child if she/he wants the parent present. Usually the child assents to having the parent attend the feedback.

For adolescents, the feedback is a bit different and while most are comfortable having their parent

present during the feedback, some are not and this is a good avenue for discussion. Coaching the findings in terms of strengths and weaknesses is helpful, as is relating the findings to the adolescent's experience in school and at home. Discussing the main interventions is also important since many of the interventions with adolescents are only successful if the individual agrees to them. Explaining what a learning disability is provides information that the adolescent may not have; he/she may be assuming that they can't read because they are "stupid." Explaining some of the brain differences that have been found for these disorders can often lessen fears that the problem is unchangeable and insurmountable.

It is very appropriate and ethical to provide the parent with the report at the end of the final session (Semrud-Clikeman, Fine, & Harder, 2005). To make the parent wait an unreasonable amount of time for the report is not only poor clinical practice, it is unethical. At the very least, the report should follow the feedback within two weeks.

The following section discusses the neuropsychological report in detail and provides a model. While there are many different styles for writing a neuropsychological report most include sections for background and developmental history, behavioral observation, tests used, test results and interpretation, summary (or case formulation) and recommendations. Each of these areas is briefly discussed below.

Neuropsychological Reports

Reason for Referral

This section should briefly describe the reasons the client is currently being referred for testing, indicate who referred the child and what the main question is. In addition, this section should briefly describe where the client is currently, what grade he/she is in, and if he/she is in any special programs.

Background and Developmental History

A developmental and background history is important for a number of reasons. First, a developmental history can be important to identify risk factors during pregnancy and delivery that have been associated with neurodevelopmental disorders of childhood of a specific (e.g., learning disabilities) or global (e.g., cognitive disabilities) nature. Second, previous head trauma and/or other health factors (e.g., recurring ear infections, high fevers, or febrile seizures) can be uncovered in a review of developmental history. Third, a careful history is important to determine the presence of similar or related disorders in other family members or hereditary linkages that might be helpful to understand the etiology of a particular disorder. Fourth, a history of when the child attained motor and language milestones (walking, talking, etc.) is essential to determine the nature and extent of the developmental correlates of the child's problem. Fifth, background history is essential to determine the presence of coexisting disorders (e.g., conduct disorders, depression, anxiety) that affect long-term outcomes for children with various neurodevelopmental disorders. These conditions often must be addressed separately in treatment plans. It is important to include any pertinent medical and medication history. Finally, background information will shed light on the child's educational, psychosocial, and academic opportunities, which may assist in the proper diagnosis of a disorder (i.e., reading deficits). It is important to briefly discuss interventions that have been attempted and the success of these interventions in this section.

The extent to which environmental, genetic, and experiential factors affect the manner in which some CNS disorders progress or influence treatment approaches can be explored with a complete review of the child's history. This information is crucial for accurate differential diagnoses, particularly when the clinician is trying to determine whether the problem is neurodevelopmental in nature or the result of a lack of opportunity to learn, or the absence of appropriate modeling, stimulation, or reinforcement.

There are several methods for obtaining reliable background information, including the structured parent and child interviews from the Child Behavior Checklist (Achenbach, 1991) and the Behavior Assessment for Children-2 (Reynolds & Kamphaus, 2004). Most neuropsychological clinics use semi-structured interviews [i.e., K-SADS; (Kaufman, Birmaher, Brent, Rao, & Ryan, 1997)] for gathering

information, and many utilize questionnaires designed specifically to investigate a particular disorder, such as ADHD. Medical and school records also provide crucial information for identifying the child's biogenetic, health, and environmental history. A careful review of these materials often reveals risk factors and predisposing conditions that may interact with the child's specific problem, and this information may be useful in designing effective interventions.

Behavior Observations

Behavioral observations allow the person reading the report to truly understand what it was like to be in the room testing the client. At the very least the behavioral observations need to describe the client's language abilities, attention to task, ability to manage frustration, and his/her mood and affect. This section should describe how the child/adolescent communicated—was it with full sentences or just one word responses? Was he/she distractible? If so, was the examiner able to bring the client back to the task at hand? Most reports also provide information about how the child reacted to encouragement and praise, and how the client responded to frustration. Was the child's affect flat, animated, expansive, appropriate to the situation? How did the child approach certain tasks? Did she/he talk their way through the task? All of these behaviors can assist in understanding the findings. In this section, also, if changes needed to be made to standardized tests, then those changes need to be enumerated and qualified.

Tests Administered and Results

This section lists the tests that were administered. It then discusses the findings generally in the various neuropsychological domains (i.e., cognitive, academic, executive functioning, attention, memory, psychosocial). A good neuropsychological report provides not just the scores, but an interpretation that is understandable to the lay reader. Each domain should be presented clearly but concisely so that the findings are usable. We find it helpful to provide a short summary at the end of each domain that includes the strengths and weaknesses in that domain. This section provides the backbone of the report and the interpretation of what these findings mean.

In this section of the report it is often helpful to put the measures into a context with which the reader is familiar. For example, we generally state that standard scores are in the average range when they fall between 85 and 115, with similar statements made for scaled scores and for T scores. Many neuropsychologists prefer to have the body of the report to reflect the findings and attach a separate psychometric summary at the end of the report. See the attached report for a model.

Summary and Recommendations

This section is the most difficult to write and yet the most important section of the report. It ties together all of the issues involved and meshes the findings with the tests and recommendations. Some neuropsychologists will not include a diagnostic formulation here while others do. We suggest that when the diagnosis using DSM axis format is helpful, then it should be used and included.

The summary is also described as a case formulation. In this section the developmental history, medical history, school history, family history as well as the test results are integrated. In addition this section discusses findings that are unusual or difficult to understand and attempts to place them in a framework for the reader. Scores and statistics should not be present in this section. The summary is also the aspect of the report in which specialists (neurologist, psychiatrist, etc.) are generally most interested. Some practitioners now put this section at the beginning of the report.

The interventions need to be appropriate to the case at hand and reasonable. Many school professionals bristle at reports that tell them the child needs one-on-one intervention; a practice that is likely unfeasible. The interventions should also be tied to the diagnosis. For example, if ADHD is diagnosed there should be interventions that address problems with organization, attention, possible medical interventions, and impulse control problems. Likewise, if a learning disability is

present it is helpful to explain what types of reading and/or mathematics assistance and methods are appropriate (Semrud-Clikeman, 2006).

Neuropsychological Report Example

The following is an example of a neuropsychological report. Different clinics and hospitals have varying forms and the astute clinician will adapt the report accordingly. This is but one example of a report.

Hospital

Developmental/Behavioral Program

Patient Name: Sam

Medical Record Number:

Date of Birth:

Date of Evaluation: 8/5, 8/12, 8/26/

Chronological Age: 13–10

Neuropsychologist:

Reason for Referral: Sam was referred for evaluation by Dr. K to evaluate his current level of intellectual and academic functioning. Dr. K evaluated Sam and diagnosed him with ADHD: combined type, Conduct disorder: adolescent onset, Anxiety disorder NOS with rule outs for Bipolar disorder, and learning disorders. Dr. R, child psychiatrist, is evaluating Sam concurrent with this evaluation. Sam is not currently prescribed any medications.

Background Information: The following information was obtained through review of medical records, discussion with Dr. K, and parent and child interviews. Additional information is available through Dr. K's report to the interested professional. The following is a summary of Sam's history. Sam has a long history of acting out behaviors and sadness/anxiety disorder. Significant deficits have been found in attention, social skills, and activity level. His family history is positive for incarceration and substance abuse and has been notably unstable. He has been at a juvenile detention center twice with the most recent stay in the past school year. He was at the juvenile detention center most recently due to significant behavioral difficulties at home, school refusal, and suicidal ideation. Sam's older brother has been reportedly arrested several times and is currently in prison for burglary. His mother also has a history of incarceration and substance abuse, but is currently working on turning her life around and she reported she has been clean for 18 months.

The pregnancy was complicated by the use of heroin, caffeine, and nicotine during the first trimester, substances which were discontinued at that time. Pregnancy and delivery were reported as normal and delivery was by Cesarean Section. Sam was reported to be an active and fussy baby, but met all developmental milestones within normal limits. Sam's mother reports that he has significant difficulty sleeping and frequently doesn't sleep until early morning. Sam attends school at the ALC and has a history of suspensions and expulsions prior to his attendance at ALC. His achievement was reported to be in the average range. Sam has not had a psychological or neuropsychological evaluation. Dr. K's report indicates the presence of depression, anxiety, conduct problems, and peer problems. These findings were present on both home and school behavioral checklists and consistent with self-report measures completed by Sam.

Speech and Language assessment conducted at the hospital found Sam's language skills to be within normal limits for his age. An audiological evaluation through CHOA found an auditory processing deficit with recommendations for a repeat evaluation in one year.

Behavioral Observations: Sam was accompanied to the assessment by his mother. He was tested during two consecutive Thursday appointments for approximately three hours each. Sam was friendly throughout the evaluations and seemed to enjoy the tasks at hand. His language was age-appropriate and his speech was clear and unpressured. He reported that he had not slept well the nights before the assessment and was tired. Sam did appear to be lethargic during the testing which affected his attention at times. He responded well to redirection and worked on the tasks at hand. On tasks that were challenging for him Sam would give up easily and appeared to lack confidence in his abilities. He worked hard throughout the tests but did not push himself if he didn't know the answer. He did not become unduly frustrated on tasks that were challenging for him. Given his high level of cooperation, the following results are felt to be a reliable and valid representation of his level of current functioning.

Tests Administered: Differential Abilities Scales (DAS), Wechsler Individual Achievement Test-II (WIAT-II), California Verbal Learning Test-Children's Version (CVLT-C), Wisconsin Card Sorting Test (WCST), Judgment of Line Orientation (JLO), Rey-Osterreith Complex Figure Test, Rorschach Inkblot Test, Behavior Assessment System for Children–parent form (BASC), Review of Medical Records, Clinical Interview.

Test Interpretations

Cognitive Functioning: The Differential Abilities Scales (DAS) consists of core and diagnostic tests of general cognitive ability. The cognitive subtests assess the child's ability to understand and use language, complete puzzles and block designs, and interpret visual information. The diagnostic subtests evaluate the child's short- and long-term memory as well as his speed of information processing. Sam shows average overall functioning achieving a general cognitive index of 91 that places him at the 27th national percentile. There is a 90 percent assurance that his true ability lies between 86 and 95. There is a significant difference between his verbal and nonverbal skills; his verbal ability is in the strong average range and his nonverbal reasoning skills are below average for his age. Sam's spatial abilities are in the average range. On the verbal subtests Sam shows age-appropriate ability to define words and use abstract language concepts. He also shows average perceptual skills. Weakness is present in Sam's nonverbal reasoning skills, particularly in his ability to recognize patterns and complete sequencing tasks. The diagnostic tests indicate very good visual memory, both short- and long-term. His ability to process information quickly and his recall of auditory information are in the low average range for his age.

Academic Functioning: The Wechsler Individual Achievement Test is a measure of general academic functioning in the areas of reading, arithmetic and writing. On the reading subtests the child is asked to read single words and also to read a passage and answer questions about content. On the arithmetic subtests the child is asked to solve word problems as well as general calculation problems. The writing subtests require the child to spell words and then to write a story on a topic.

Sam's reading skills are within expectations for his age and grade placement. He shows better abilities understanding what he has read and appears to use context clues in order to understand passages. His ability to sound out words is not as well developed and he would not attempt to sound out words that he did not know. Sam's mathematics abilities are his weakest area, particularly his ability to complete calculation tasks. He has not mastered fractions and shows poor understanding of decimals. Sam's spelling skills are in the below average range and his ability to write a paragraph is significantly below his age and ability measures. His story was marked by poor word usage, lack of punctuation and capitalization, run-on sentences, and limited word usage. Sam shows adequate development of his ideas. Compared to his ability and, most particularly, compared to his verbal ability, Sam meets criteria for a learning disability in mathematics and written expression.

Learning and Memory: The California Verbal Learning Test-Children's Version (CVLT-C) was administered to assess Sam's ability to learn verbal material after several exposures. The task also provides measures of recall and recognition of previously learned material. Sam's scores on this measure are listed below. Sam shows average ability to encode and store auditory information. When asked to recall information for a short period of time, Sam's scores are significantly below average. Strategies for recalling information do not improve his score in either the short- or long-term.

The findings from the memory measures have important implications for Sam's school performance. He does not spontaneously generate efficient strategies for encoding, and may need to be taught more effective means of remembering new material. It also appears that new learning may be taking place, but that Sam is having difficulty with retrieval. Thus, he should be provided with a system of cueing himself to help him remember information that he has just learned. Additionally, new learning should be rehearsed often to help render retrieval somewhat easier. These findings are consistent with the possibility of a central auditory processing disorder.

Executive Functioning: The Wisconsin Card Sorting Test is a measure of executive or frontal lobe functioning, including the ability to form concepts, generate an organizational strategy, and use examiner

feedback to shift strategy to the changing demands of the task. Sam's performance is summarized below:

Sam shows excellent executive functioning skills. He is able to utilize examiner feedback to change his answers and to respond flexibly to a cognitive task. Sam did show difficulty staying on task and became distracted by additional stimuli. This finding indicates that he can be distracted from the task at hand and, when that happens, his ability becomes hampered in changing his method of response.

The Stroop Color Word Test was also administered to measure Sam's ability to inhibit responding. The Stroop has three parts—the first part requires him to read color words as quickly as possible, then colors, then words that are printed in opposing colors (the word red is printed in green ink and the child reads the color of the ink). Sam scored in the low average range in his ability to read color words quickly and for the colors. He scored in the below average range in his ability to inhibit his response when asked to complete the task where he reads the color, but not the word. He became increasingly frustrated at this task and this frustration also contributed to his very low score.

Attention: Sam was administered the Test of Variables of Attention (TOVA) to evaluate his abilities. He was administered the TOVA off of any medication, then on 10 mgs of methylphenidate. His scores without medication showed difficulties in all areas. With the medication his scores fell within average ranges.

These findings are consistent with observations during the evaluation as well as an interview with Sam and his mother. He endorsed eight symptoms of inattention, three of poor impulse control and four of high activity level. These findings are similar to those reported by Dr. K.

Perceptual-Motor Functioning: The Rey-Osterreith Complex Figure test requires the adolescent to copy a very detailed figure. Sam scored in the average range on this task, showing good visual-motor skills, but also good planning and organizational abilities.

Sam's basic visual perceptual skills were assessed using the Judgment of Line Orientation test which requires the adolescent to determine the correct directional orientation of a line pattern. On this measure, Sam showed significant deficits in his ability to match patterns. This finding is consistent with his difficulty on the DAS nonverbal reasoning tasks. Sam achieved a score of 14 which places him 3.5 standard deviations below expectations for his age.

Emotional Functioning: Sam completed the Behavioral Assessment System for Children-Self-report (BASC), an integrated system designed to facilitate the differential diagnosis and classification of a variety of emotional and behavioral disorders of children, and to aid in the design of treatment plans. His mother and teacher had previously completed the BASC during the evaluation with Dr. K. Findings indicated highly clinically significant difficulties present in learning, social functioning, activity level, and attention in school. At home significant problems were reported in attention, activity level, aggression, conduct, and self-esteem.

Sam's ratings indicate that he is feeling most stress in school and that his attitude toward school and teachers is problematic. He does not consider teachers as people who can help him, that they are unfair, and that they only look at the bad things you do. He also does not feel that school is a helpful place, and he really doesn't care about school and wants to get out as soon as possible. In addition, Sam indicates that he prefers excitement and will seek out such situations if they are not present. The risk for antisocial behavior is very high based on the BASC and he shows little anxiety about getting in trouble with authority figures. There are indications of concerns about his sense of worth and that he does not have the motivation to attempt tasks when they are more difficult. He reports adequate self-esteem and self-reliance, but problematic relationships with his parents.

The Rorschach Inkblot Test was also administered to attempt to uncover areas of emotional functioning that Sam did not appear to feel free to discuss. Sam's protocol indicates that he directs his behavior through internal means and attempts to keep his feelings aside when in coping situations so that their influence on his decisions is, at best, modest. This is a very marked and not very flexible coping style—in other words, he will persist in his behavior even in a situation in which an intuitive or trial-and-error style may be more appropriate. Sam is also showing significant signs of situational stress that appear to be interfering with his ability to direct his behavior in a more appropriate manner. He shows a conflict between possibly unmet dependency needs and his need to isolate himself—given his history he may feel that he needs to protect himself from opening up to anyone. He shows a tendency toward cognitive distortion that may make it more difficult for him to interpret interpersonal

behavior appropriately. His protocol indicates the risk for antisocial behavior and he does not perceive that people work together toward a goal. Positively, Sam shows an interest in people, but may not process human relationships very well. He shows signs of dysthymia as well as some indications that he seems himself as damaged or inadequate.

Summary and Recommendations: Sam is a 13-year, 10-month-old male with a history of aggressive behavior, attendance at a juvenile detention center, and a problematic childhood. Cognitive assessment indicates average ability in verbal and spatial skills with below average nonverbal reasoning skills. Achievement testing indicates age-appropriate reading skills with deficits present in mathematics and written expressions. He shows significant problems with attention which is improved with medication. Sam also has a history of social skills deficits as well as our finding of visual-spatial skill deficits. These findings are consistent with a diagnosis of a nonverbal learning disability. His difficulty in understanding appropriate social actions as well as containing his impulses make it difficult for him to participate in many social interactions. Instead Sam has developed behaviors that remove him from this difficulty through acting out. One cannot rule out that some of these behaviors may be related to his early development and his mother's probable substance abuse during pregnancy and after birth.

Sam shows good skills in utilizing feedback to change his behavior. However, he shows difficulty recalling information when presented orally—a finding consistent with his performance on the auditory processing test recently completed at the hospital. Emotionally Sam shows indications of being at high risk to develop antisocial behavior. He seeks out situations that are exciting for him and has a very low tolerance for boredom. There are indications of dysthymia in the projective testing as well as unmet needs for nurturance. Sam's difficulty in trusting adults in authority make it problematic for him to change his behavior, and his defiance is his way of asserting control over a situation. These feelings are likely grounded in his early experience where his mother was unavailable to him and his needs were not met in a timely manner. The picture presented by Sam is of an adolescent who is torn between a need to be cared for and nurtured, and a need to reject human contact. These concerns are complicated by his difficulty in perception that may frequently lead him to misinterpret people and their motives. It is believed that Sam is at a crossroads at this time and is at high risk to continue down his path of antisocial behavior. He requires intensive intervention at this time to provide as much assistance as possible to prevent such a possibility.

Given the above findings, the following recommendations are offered:

1. It is strongly recommended that his school convene a multidisciplinary team meeting to determine Sam's eligibility for special education services in the area of OHI and LD.
2. A sleep study is recommended to determine the cause of Sam's history of sleep difficulty.
3. Individual cognitive-behavioral therapy is recommended and can be arranged through the hospital.
4. Continuation of parent training with Dr. K. is strongly recommended. Moreover, continuation of therapy with Dr. R is also strongly recommended as well as consideration for medication.
5. It is very important that auditory information which requires encoding be paired with visual cues to improve Sam's ability to remember what he has learned.
6. Additional memory strategies are provided as follows.

Strategies for Improved Memory Skills

Teaching Behaviors which are helpful:

1. Break tasks into small steps
2. Use extensive repetition
3. Teach strategies for memory, such as verbal rehearsal, clustering or chunking, imagery, associations, note taking, etc.
4. Use massed and distributed practice

Focus on the following:

A. Working Memory: Teach the child how to remember directions and retain them long enough to complete the task. Younger children especially forget what they are supposed to do and start to "drift away." Use cues like "make yourself remember. . ." "This is important. . ." Do the first few items with the child, pointing out what is important.
B. Present information in short segments: Two sentences may be overwhelming. Monitor comprehension.

C. Get the child actively involved whenever possible. Use many visual aids, demonstrate, repeat, give many pages of the same idea. Your goal is comprehension, retention, and mastery.
D. The child needs memory strategies such as:
    - visualization (make a picture in your mind as you listen)
    - note taking (or buddy note taker)
    - repeating words in chunks
    - learning to associate related ideas
    - using "silly" cues such as, *Joe's Present*. *Joe* was born on *Sunday*, *July* 4th, in *Seattle*, *WA*, *USA* on *Book Street*. He got a *Ninja Turtle* from *Toys R' Us*. These sentences have all the rules for *capitalization*.
E. Only present the important information, leave out the frills and elaborations. Simplify, make it interesting, make it fun. Avoid long paragraphs or small print.

Techniques to Help Students with Attentional Problems in the Classroom

Physical Arrangement of Room

1. Have student seated near teacher
2. Move student's desk away from hallway, outside windows, etc.
3. Use desk dividers or study carrels if possible
4. Seat appropriate models next to students with attentional problems
5. Stand near student when giving directions or presenting lesson. Use student's worksheet as an example
6. Use rows for seating arrangement. Avoid tables with groups of students, if possible

Lesson Presentation

1. Provide an outline, key concepts, or vocabulary prior to lesson presentation
2. Include a variety of activities during each lesson
3. Make lessons brief
4. Actively involve the student during the lesson presentation:
    - Use cooperative learning activities
    - Develop learning stations
    - Provide self-correcting materials
    - Enable the student to make frequent responses
    - Interact frequently (verbally and physically) with the student
5. Use the student's name during your presentation
6. Pair students to check work
7. Arrange for peer tutoring to help students review concepts
8. Use colored chalk during presentations when using chalk board

Worksheets and Tests

1. Use larger type
2. Keep page format simple:
    - Don't include extraneous pictures
    - Provide only one or two activities to a page
    - Have white spaces on each page
3. Write clear, simple directions
4. Underline key direction words, vocabulary words, etc.
5. Draw borders around parts of page you want emphasized
6. Add reminders on worksheets to check work, etc.
7. Give frequent short quizzes and avoid longer tests
8. If necessary, allow student to take tests orally
9. Provide practice tests
10. Shorten assignments

Behavior

1. Implement a classroom behavior management system
2. Implement an individual behavior program and consistently chart progress (earn points for on-task time)
3. Use kitchen timer to help students stay on task
4. Use visual and auditory cues as behavioral reminders
5. Develop contracts/ behavior management systems in conjunction with parents to reinforce specific behaviors at home and at school
6. Implement a social skills curriculum
7. Give students choices ("You may work on your report or finish your math sheet")

8. Praise *specific* behaviors ("I like how you remembered to check your work before turning it in to me")
9. Define and review class rules each day. Post rules where students can see them
10. Be as consistent as possible in following through on classroom and individual behavior programs
11. Set hourly, daily, weekly, or monthly goals with the student and provide frequent feedback on student's progress

Thank you for the opportunity to work with this young man and his family. If you have any questions about this report, please do not hesitate to contact me at the Hospital.

Dr. X. Ph.D.

Licensed Psychologist

Psychometric Summary

Differential Abilities Scale-2

Average standard scores for the general cognitive index are between 85 and 115; average T-scores for the individual subtests are between 40 and 60.

	Standard Score	Percentile
Verbal Cluster	105	63
Nonverbal Reasoning	81	10
Spatial	91	27
General Conceptual Ability	91	27
Core Subtests	**T-Score**	**Percentile**
Verbal Subtests		
Word Definitions	54	66
Similarities	53	62
Spatial Subtests		
Recall of Designs	45	31
Pattern Construction	45	31
Nonverbal Reasoning Subtests		
Matrices	38	14
Sequential and Quantitative Reasoning	40	16
Diagnostic Subtests		
Recall of Digits	45	31
Recall of Objects—Immediate	57	76
Recall of Objects—Delayed	54	66
Speed of Information Processing	47	38

Wechsler Individual Achievement Test-II

Average standard scores are between 85 and 115. Sam's scores are as follows:

	Standard Score	Percentile
Basic Reading	86	18
Word Attack	83	14
Reading Comprehension	101	53
Reading Composite	**90**	**25**
Mathematics Reasoning	83	13
Numerical Operations	73	4
Mathematics Composite	**74**	**4**
Spelling	82	12
Written Expression	75	5
Writing Composite	**77**	**6**

California Verbal Learning Test-Children's Version

Scores have a mean of 0, with standard scores of −1.0 to +1.0 indicating performance within the broad average range.

	Raw Score	Standard Score
List A, Trial 1	7	0.0
List A, Trial 5	12	0.0
Trials 1–5	45	42
List B Free Recall	6	−0.5
List A Short Delay Free Recall	6	−2.0
List A Short Delay Cued Recall	7	−2.0
List A Long Delay Free Recall	8	−1.0
List A Long Delay Cued Recall	7	−2.0
Correct Recognition Hits	7	−3.5
Discriminability	66.67%	−5.0
Learning Slope	1.2	−0.5

Wisconsin Card Sorting Test

Categories Achieved:	6	Normal range = 5–6
Failure to Maintain Set	4	Normal range = 0–1
	Raw Score	**Standard Score (100 + 15)**
Total Errors	15	116
Perseverative Responses:	11	108
Perseverative Errors:	10	109
Non-perseverative Errors:	5	118

(continued)

Percent Conceptual Level Responses	82%	118

Test of Variables of Attention-Visual
Average scores run between 85 and 115

	Off Ritalin	On 10 mg
Omissions	65	103
Commissions	66	105
Response Time	77	110
Variability	55	95

Stroop Color Word Test
Average scores range between 40 and 60

Words	47
Colors	45
Color/Words	32

Behavior Assessment Scale for Children—Self-Report

Domain	T-Score	Percentile
Attitude to School	74*	99
Attitude to Teachers	74*	99
Sensation Seeking	70	97
School Maladjustment	*78**	*98*
Atypicality	69+	94
Depression	49	64
Somatization	65+	91
Anxiety	49	64
Sense of Inadequacy	62+	86
Social Stress	54	69
Clinical Maladjustment	*57*	*75*
Personal Adjustment	*39+*	*14*
Emotional Symptoms Index	*55*	*73*

For the following scales, higher scores are desirable.

Relations with Parents	30*	7
Interpersonal Relations	41	15
Self-Esteem	50	37
Self-Reliance	46	26

+at risk
*high scores indicate problem behaviors

Developmental and Family History

Child's Name _____ Birth date _____ Age _____

Home Address _____

Street City Sate Zip

Phone

Child's school _____ Teacher's Name _____

Is Child in Special Education? Yes No If so, what category? _____

Father _____ Age _____ Education (yrs) _____

Employment _____

Mother _____ Age _____ Education (yrs) _____

_____

Employment _____

Is child adopted? Yes No If yes, what age at adoption? _____

Parent status Married Separated Divorced

Race/Ethnicity (birth father) _____

Race/Ethnicity (birth mother) _____

Race/Ethnicity (child) _____

Family and Extended Relationships

Please list all other children in the family:

Name	Age	School grade	Please list any problems the child is experiencing

Please list all other people living in the home:

	Relationship (i.e., Uncle, Friend, etc.)	Age	Please list any difficulties the individual is experiencing

Pregnancy and Delivery

A. Length of pregnancy (e.g., full term, 40 weeks, 32 weeks, etc.)	
B. Length of delivery (number of hours from initial labor pains to birth)	
C. Child's birth weight	

E. Did the mother experience any of the following conditions during pregnancy/delivery?

1. Bleeding	No Yes
2. Excessive weight gain (more than 30 lbs.)	No Yes
3. Toxemia/preeclampsia	No Yes
4. Rh factor incompatibility	No Yes
5. Frequent nausea or vomiting	No Yes
6. Serious illness or injury	No Yes
7. Took prescription medications a. If yes, name of medication: _____	No Yes
8. Took medications or recreational drugs on your own	No Yes
9. Used alcoholic beverage a. If yes, approximate number of drinks per week: _____	No Yes
10. Smoked cigarettes a. If yes, approximate number of cigarettes per day (e.g., 1/2 pack):_____	No Yes
13. Had a breech delivery	No Yes
14. Had a cesarean section delivery	No Yes
15. Other problems—please describe	No Yes

Pregnancy and Delivery (continued)

F. Did any of the following conditions affect your child during delivery or within the first few days after birth?

1. Injured during delivery	No Yes
2. Delivered with cord around neck	No Yes
3. Had trouble with heartbeats (“distress”) during delivery	No Yes
4. Had trouble breathing following delivery	No Yes
5. Needed oxygen	No Yes
6. Was cyanotic, turned blue	No Yes
7. Was jaundiced, turned yellow	No Yes
8. Had an infection	No Yes
9. Had seizures	No Yes
10. Was given medications	No Yes
11. Born with a congenital defect	No Yes
12. Was in hospital more than 7 days	No Yes

Infant Health and Temperament

A. During the first 12 months, was your child:

1. Difficult to feed	No Yes
2. Difficult to get to sleep	No Yes
3. Colicky	No Yes
4. Difficult to put on a schedule	No Yes
5. Alert	No Yes
6. Cheerful	No Yes
7. Affectionate	No Yes
8. Sociable	No Yes
9. Easy to comfort	No Yes
10. Difficult to keep busy	No Yes
11. Overactive, in constant motion	No Yes
12. Very stubborn, challenging	No Yes

Early Developmental Milestones

A. At what age did your child first accomplish the following:

1. Sitting without help	
2. Crawling	
3. Walking alone, without assistance	
4. Using single words (e.g., “mama,” “dada,” “ball,” etc.)	
5. Putting two or more words together (e.g., “mama up”)	
6. Bowel training, day and night	
7. Bladder training, day and night	

Health History

A. Date of child's last physical exam: _____

B. At any time has your child had the following:

1. Asthma	Never Past Present
2. Allergies	Never Past Present
3. Diabetes, arthritis, or other chronic illnesses	Never Past Present
4. Epilepsy or seizure disorder	Never Past Present
5. Seizures with a fever	Never Past Present
6. Chicken pox or other common childhood illnesses	Never Past Present
7. Heart or blood pressure problems	Never Past Present
8. High fevers (over 103°)	Never Past Present
9. Broken bones	Never Past Present
10. Severe cuts requiring stitches	Never Past Present
11. Head injury with loss of consciousness	Never Past Present
12. Lead poisoning	Never Past Present
13. Surgery	Never Past Present
14. Hospitalization for more than one night	Never Past Present
15. Speech or language problems	Never Past Present

16. Chronic ear infections	Never Past Present
17. Hearing difficulties	Never Past Present
18. Eye or vision problems	Never Past Present
19. Fine motor/handwriting problems	Never Past Present
20. Gross motor difficulties, clumsiness	Never Past Present
21. Appetite problems (overeating or undereating)	Never Past Present
22. Sleep problems (falling asleep, staying asleep)	Never Past Present
23. Soiling problems	Never Past Present
24. Wetting problems	Never Past Present
25. Sensory-integration difficulties (sensitivity to light, touch, noise)	Never Past Present
26. Other health difficulties—please describe	

Evaluation and Treatment History

Has your child ever been evaluated previously for developmental, behavioral, or learning problems?	**Yes No**
If so, when, who provided the evaluation, what type of evaluation did the child have, and what were you told about your child regarding the results of any evaluations?	*[Circle one]*
Has your child ever been seen or treated by a neurologist?	**Yes No**
If so, when, who was the doctor, what tests (EEGs, brain scans) were done, and what medications were prescribed?	*[Circle one]*
Has your child ever received any psychiatric or psychological treatment?	**Yes No**
If so, what type of treatment did he/she receive and how long did the treatment last?	*[Circle one]*
Who provided this treatment to your child?	
Has your child ever received any *medication* for his/her behavior or emotional problems?	**Yes No**
If so, who was the doctor, what type of medication did your child take, at what dose and for how long?	*[Circle one]*

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