

AMERICAN ACADEMY OF CLINICAL NEUROPSYCHOLOGY
STUDY GUIDE FOR BOARD CERTIFICATION IN CLINICAL NEUROPSYCHOLOGY

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INTRODUCTION

Robert J. Ivnik, Ph.D.

Overview of the American Board of Professional Psychology and the American Board of Clinical Neuropsychology

At the start of the year 2000, the American Board of Professional Psychology (ABPP) is a federation of 11 member boards, each of which certifies psychologists in a different specialty area. The ABPP was established in 1947 (Bent, Packard & Goldberg, 1999) as an outgrowth, and on the recommendation, of the American Psychological Association (APA, 1946). The American Board of Clinical Neuropsychology (ABCN) is the ABPP specialty board that deals with all issues relating to Clinical neuropsychology. The ABCN was formally incorporated as part of The ABPP in 1984.

Originally, both the ABPP and ABCN were membership organizations. However, in 1996 The ABPP reorganized itself. One of the reasons for this reorganization was that it is not appropriate for entities that exist to certify professionals to also engage in advocacy on the part of those same professionals. A potential conflict of interest exists if an organization engages in both certification and advocacy. In the process of reorganization, The ABPP established itself as a federation of boards, with the ABCN being one of those boards. The ABPP's only "members" are representatives from each of its affiliated boards. One representative from each affiliated board serves on the ABPP Board of Trustees.

As part of the ABPP reorganization, each of its affiliated specialty boards also reorganized. Paralleling the ABPP, the ABCN became an organization that exists to evaluate and certify clinical neuropsychologists. The ABCN gave up being a membership organization of all ABPP-certified clinical neuropsychologists and a new membership organization, the American Academy of Clinical Neuropsychology (AACN), was formed. The ABCN now has a Board of Directors composed of 15 members who serve 5-year terms and are elected by all board-certified neuropsychologists who are AACN members. The Board of Directors of the ABCN developed and now refines, maintains, and administers the ABPP-approved application, credential review, examination, and certification procedures which lead to ABPP certification in Clinical neuropsychology (ABPP-CN).

Consistent with the ABPP mission and as articulated in its bylaws, the ABCN exists for the following purposes:

- To arrange and conduct investigations and examinations to determine the qualifications of individuals who apply to the Board for certification of their competence in Clinical neuropsychology.
- To certify competence in the field of Clinical neuropsychology for qualified applicants who have demonstrated advanced knowledge and skills in Clinical neuropsychology by virtue of education and training and by successfully completing all examinations required by the Board.
- To maintain a registry of persons who have completed the examination and are certified by the ABCN and ABPP as having competence in Clinical neuropsychology.
- To serve the public welfare by preparing and furnishing lists of persons who have been awarded Certificates by the Board to proper persons and agencies.

The ABPP and ABCN Credential Review and Examination Processes

Although the general outline of the ABCN's credential review and examination processes has been constant since the organization's inception, these same procedures are continually examined and refined. The process is a four-step procedure with each later step requiring successful completion of all earlier steps. The four steps that constitute the entire application and examination process include:

1. Successful completion of the written application and credential review process, during which the applicant's education, training, and supervised experiences are evaluated according to established and publicly-known standards
2. Completing a 100-item, multiple-choice Written Examination
3. Submitting a Work Sample (two cases) that is evaluated by three AACN members with regard to their acceptability for at the candidate's Oral Examination, and
4. Completing an Oral Examination.

Regarding the first step, applicants must hold a doctorate in Psychology, be licensed, be free of unresolved or outstanding ethical complaints and violations, and be both trained and supervised in Clinical neuropsychology. The standards that are used to judge each applicant's credentials are based upon the year the applicant received the doctoral degree. Therefore, the ABCN standards are appropriate to the time period during which the applicant trained and have evolved as our profession has matured. For example, there is no formal supervision requirement for applicants who completed their doctorate before 1981. For persons who completed their doctorate between 1981 and 1989, 1600 hours of clinical neuropsychological experience at the pre- or postdoctoral levels supervised by a clinical neuropsychologist are required. Persons who graduated after 1989 are required to have two years of clinical neuropsychological training supervised by a clinical neuropsychologist, one year of which may be pre-doctoral.

The current "highest standards" for training in Clinical neuropsychology are articulated in the Policy Statement of the Proceedings of the 1997 Houston Conference on Training in Clinical Neuropsychology (Hannay et al., 1998). Applicants to the ABPP and ABCN are not currently judged by Houston Conference standards. However, the ABCN's Board of Directors monitors education and training opportunities and will eventually decide when to apply the Houston Conference standards.

After an applicant's credentials are accepted by the ABPP and ABCN, the applicant becomes a "candidate" for ABPP-CN certification and is notified in writing of this fact. Candidates have a maximum of seven years from the date of their notification letter to accomplish all remaining steps in the ABCN certification process. *Candidates are responsible for monitoring their own progress toward ABPP-CN certification.*

The second step, the Written Examination, assures that candidates possess a sufficient breadth and depth of knowledge in Clinical neuropsychology. A multiple-choice examination achieves this purpose. The ABCN contracted with the Professional Examination Service (PES) to develop and validate a

written test. The Written Examination was constructed by having practicing neuropsychologists submit multiple-choice questions about facts that they thought experienced clinical neuropsychologists should know. PES oversaw a multi-stage process during which other board-certified clinical neuropsychologists debated, refined, and eventually approved every question. The content areas covered in the Written Examination cannot be specified, but it is reasonable to anticipate that questions *might* relate to some of the following examples of content areas:

- Neuropsychological conditions (e.g., amnesia, dementia)
- The neurosciences (e.g., neuroanatomy)
- Normal development (both neurologic and psychologic)
- Psychopathology
- Clinical neurology
- Psychometrics (e.g., test construction, standardization, validation)
- Ancillary neurodiagnostic procedures (e.g., neuroimaging, evoked responses)
- Experimental design or statistics

In the third step, candidates submit a sample of their work composed of two cases that the candidate evaluated without supervision. Three ABPP-certified neuropsychologists review each Work Sample. Candidates who identify themselves as working exclusively with either children or adults can have their Work Sample reviewed by reviewers with similar expertise. Reviewers judge the Work Sample against specific criteria to decide if it is acceptable for use at the Oral Examination. The Work Sample assures that appropriate clinical material exists for assessing the candidate's knowledge and skill in a practice area *that is directly relevant to the candidate and that the candidate selects*.

Step four, the Oral Examination, presents candidates with situations that allow them to demonstrate the breadth and depth of their professional experience, knowledge, skill and reasoning ability. A three-person Oral Examination committee works to discover how the candidate conceptualizes, evaluates, and manages neuropsychological problems. The Oral Examination has three components: Fact Finding, Work Sample, and Ethics and Professional Issues. Although it cannot be guaranteed, every attempt will be made to include one or two examiners in pediatric or adult neuropsychology, depending on the candidate's expressed preference. Each examiner rates the candidate's performance on (1) Evaluative Skills, (2) Intervention Skills, (3) Scientific and Professional Knowledge, (4) Ethics and Social Responsibility, and (5) Professional Commitment. The remainder of this section briefly discusses each of the three parts of the Oral Examination. More detailed information is provided in subsequent sections of this manual.

The Work Sample Review Component. This part of the examination presents an opportunity to evaluate the candidate's knowledge and skill in an area of neuropsychology selected by the candidate. The examiner assumes that the candidate is prepared to discuss and defend all aspects of the Work Sample. The examiner may question the candidate about specifics of the cases presented, or challenge candidates to explain and defend their work based on current professional standards, scientific

knowledge, or research findings. The examiner may inquire about any issue that is relevant to the case, including the scientific basis for conclusions.

The Fact Finding Component. This section of the examination requires the candidate to evaluate a neuropsychological problem *de novo*. Candidates have no advance knowledge of the case that is used for Fact Finding, except knowing that they can choose either a child or an adult case. The Fact Finding component presents each candidate with a similar clinical problem, and the examiner watches how the candidate collects, organizes, evaluates, weighs, and integrates information, conceptualizes the case, constructs differential diagnoses, and prepares recommendations for managing the problem.

Fact Finding cases are real. They were chosen because they present problems that an appropriately educated, trained, and experienced clinical neuropsychologist should be able to evaluate, diagnose, and manage. The Fact Finding component simulates a neuropsychological evaluation in a condensed time-frame.

The Ethics and Professional Issues Component. This component has two purposes. The first is to examine the candidate's knowledge of and sensitivity to ethical issues. The second is to learn about the candidate's professional practice and to evaluate his/her professional commitment and involvement.

During the Ethics portion, candidates read a short vignette that illustrates ethical and professional practice issues. They must identify the relevant issues, explain the ethical principles involved, and articulate the basis for the principle. A candidate's answers are judged relative to APA's Ethical Principles of Psychologists and Code of Conduct (1992).

During the Professional Issues portion, the examiner seeks to understand how the candidate functions day-to-day as a clinical neuropsychologist and his/her awareness of and sensitivity to professional issues. This information provides a context in which the candidate's performance throughout the Oral Examination can be judged. The examiner inquires about the candidate's training, clinical practice, professional involvement, and views about important issues in Psychology.

Role of the AACN and Relationship to the ABCN

As discussed above, the AACN was established in 1996 and is legally independent from The ABPP and ABCN because it is not proper for certification organizations to engage in activities that might be construed as professional advocacy. It is the largest membership organization of certified specialists in Clinical neuropsychology; every ABPP certified clinical neuropsychologist is encouraged to maintain an active AACN membership. Acting on its members' behalf, the AACN is neither ethically nor legally constrained from entering into a wider range of activities than either the ABPP or ABCN. With input from its members, the AACN serves our profession in any way that it chooses, including advocacy, education, and mentoring. For example, this study guide was prepared by AACN members. As an example of its involvement in professional issues, AACN members participated in and the AACN endorsed the Houston Conference's recommendations on the education, training and supervised experiences that define appropriately-prepared clinical neuropsychologists. The AACN is an active and collaborative organization. For example, its members keep in regular contact with each other via a listserver where organizational and professional issues are routinely discussed. Since

Introduction - R. Ivnik

AACN members have demonstrated the advanced professional competencies, it is appropriate that they, as individuals and as a group, provide mature and experienced leadership to the larger profession of clinical neuropsychology.

Final Thoughts About the Board Certification Process

The ABCN monitors success rates at various stages of the process, which is the basis for the following comments:

- Appropriately educated, trained, supervised, and experienced clinical neuropsychologists rarely, if ever, have their application and credentials rejected.
- The Written Examination success rates are usually in the 60% to 70% range. The success rate for 1993 to 1995 was 65% and for 1996 to 1998 was 59%.
- The ABCN does not keep statistics on how often candidates resubmit Work Samples, but it is rare to submit more than two Work Samples. The Work Sample acceptability rate in 1998 was 75%.
- The Oral Examination success rates are usually in the 60% to 70% range. The success rate for 1996 to 1998 was 65% and for 1997 to 1999 was 70%.
- It is not unusual for candidates who eventually become ABPP-CN fellows to repeat one of these stages.

The ABCN serves the public by reviewing, examining, and certifying clinical neuropsychological practitioners. The evolution of the ABCN's standards and procedures has paralleled our profession's maturation. Clinical neuropsychologists achieve ABPP/ABCN certification (fellow status) by completing rigorous, but fair, credential review procedures and both written and Oral Examinations. An applicant's academic status is irrelevant to the ABPP and ABCN reviews. Indeed, the majority of those who have ABPP-CN board certification have no formal academic affiliation or appointment. Any appropriately educated, trained, supervised, and experienced clinical neuropsychologist should be able to obtain ABPP certification; however, it takes some candidates more than one try.

The ABPP, ABCN, and AACN are proud of their history, tradition, and commitment to our profession's highest standards, and they will continue contribute to the profession of Clinical neuropsychology in the future.

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Bent, R. J., Packard, R. E. & Goldberg, R. W. (1999). The American Board of Professional Psychology, 1947 to 1997: A Historical Perspective. Professional Psychology: Research and Practice, 30, 65-73.

Hannay, H. J., Bieliauskas, L., Crosson, B. A., Hammeke, T. A., Hamsher, K. deS. & Koffler, S. (Eds.). (1998). Proceedings of The Houston Conference on Specialty Education and Training in Clinical Neuropsychology: Policy Statement. Archives of Clinical Neuropsychology, 13, 160-166.

THE APPLICATION PROCESS

Linus Bieliauskas, Ph.D.

Eligibility Criteria for Specialty Board Certification in Clinical Neuropsychology

The following outlines the current eligibility criteria for ABCN board certification.

ABPP Eligibility Criteria:

- Earned doctoral degree in psychology from a regionally accredited university.
- Membership in professional psychological organizations that have identified purposes and policies that are congruent with those of ABPP.
- Licensed or certified at the level of independent practice.
- Three years of experience in the specialty, satisfied by:
 - 3 years of experience, one of which may be a predoctoral internship with an emphasis in the specialty, or
 - 1 year pre or postdoctoral experience *and* successful completion of an accredited postdoctoral program in the specialty.
- Two years of supervision in the specialty practice, satisfied by:
 - 2 years of postdoctoral supervision or
 - 1 year of predoctoral and 1 year of postdoctoral supervision or
 - Completion of an accredited postdoctoral program in the specialty.

Time Criteria for Those Who Completed Graduate Training Earlier In their Careers. For those individuals who obtained their graduate training earlier in their careers, the following guidelines are in place. These are minimal entry level criteria for the independent practice of clinical neuropsychology for those who completed their doctoral training in the periods noted.

Those who completed training prior to 1981 should:

- Hold a valid state or provincial license/certification for the independent practice of psychology
- Have 4800 hours of postdoctoral experience in a neuropsychological setting, involving a minimum of 2400 hours of direct clinical service.

Those who completed training from 1981 to 1989 should:

- Hold a valid state or provincial license/certification for the independent practice of psychology
- Have 1600 hours of clinical neuropsychological experience *supervised by a clinical neuropsychologist* at the predoctoral or postdoctoral level.

Those who completed training after 1989 and started training before 1998 should:

- Hold a valid state or provincial license/certification for the independent practice of psychology

The Application Process - L. Bieliauskas

- Have successfully completed systematic didactic and experiential training in neuropsychology and neuroscience at a regionally accredited university
- Have two or more years of appropriate *supervised* training applying neuropsychological services in a clinical setting

Specialty Content Training Criteria. Documentation of training in the following areas is required at the undergraduate, graduate, internship, or postdoctoral level:

- Basic Neurosciences
- Neuropathology
- Neuroanatomy
- Clinical Neurology
- Psychological Assessment
- Clinical Neuropsychological Assessment
- Psychological Intervention
- Psychopathology

The above are basic specialty ABCN requirements, and require documentation of the required experiences and supervision. Formal course work is not necessarily required, though where it is absent, documentation should be provided by letter. Nevertheless, formal course work, internship, postdoctoral training provide the easiest documentation of having acquired appropriate training. Note that there are no longer time requirements in terms of experience, once appropriate education and training have occurred.

ABCN Requirements and the Houston Conference Guidelines (Training Started in 1998 or later)

The Houston Conference on Specialty Education and Training in Clinical Neuropsychology (Houston Conference) was held in September 1997 and provided a training model for the specialty (Hannay et al., 1998). The Houston Conference specified that training in specialty practice should continue through residency training, exit criteria for which include: “Eligibility for board certification in clinical neuropsychology by the American Board of Professional Psychology.” The Houston Conference also specified that generic psychological, clinical, and neuropsychology-specific education and training could occur in different proportions at the graduate, internship, and postdoctoral levels depending on the nature of the student’s programs. ABCN requires training according to the Houston Conference Guidelines for anyone entering training in 1998 or later, including documented postdoctoral training or its equivalent.

The Application Review Process

One first obtains application materials by contacting the ABPP central office:

The Application Process - L. Bieliauskas

American Board of Professional Psychology
514 East Capitol Avenue
Jefferson City, MO 65101

Once filled out, the application and supporting materials are returned to the ABPP, which then insures that general requirements have been met, including documentation of doctoral training, internship training, and state licensure. The ABPP also contacts the individual's state or province of licensure and the Ethics Committee of the American Psychological Association to insure that the candidate is in good standing in terms of being licensed and not having been sanctioned for breach of ethics or violations of the law.

After being approved by the ABPP office, the candidate's application materials are forwarded to the ABCN Credentials Committee, which reviews the content of the candidate's education and training background to insure adequate preparation in areas specific to the practice of clinical neuropsychology. Once approved by the ABCN Credentials Committee, the candidate is notified of credential approval and informed that he or she may now sit for the written exam.

Completing the Application

The application consists of:

- Description of training and regular course work
- Documentation of training and licensure, including transcripts, internship certificate, postdoctoral training certificate, and copies of relevant state/provincial licensure and/or certification.
- Three letters of recommendation.
- Supporting materials.
- Application fee

Description of training and course work. The application form is self-explanatory. The portion for ABPP includes lines for address, license numbers, educational degrees, internship, and registration in the National Register. The ABCN portion of the application consists of listing of formal and informal course work in the above areas, description of supervision at the predoctoral and postdoctoral levels, and a description of professional experience.

Letters of recommendation. The candidate is asked to provide names and addresses of up to five professionals who can attest to the nature, extent, and quality of your experience and competence in clinical neuropsychology. He or she is asked to arrange for letters of recommendation from at least two of these persons. Non-neuropsychologists may be listed as references. At least one, and preferably two or more, of the letters should be from people who are very familiar with the candidate's work as a clinical neuropsychologist. It is preferred that one or more of the individuals writing letters be board certified by the ABCN, have achieved Fellow status in APA Division 40, or have demonstrated a similar degree of advanced knowledge and training in the specialty. Applicants who are recent (i.e.,

The Application Process - L. Bieliauskas

within the last six years) graduates of clinical neuropsychology postdoctoral programs are strongly encouraged to arrange for at least one letter of recommendation from a neuropsychologist who played a significant supervisory role in their education and training, such as, the director of their postdoctoral program. Especially to the degree that portions of the candidate's training have been informal, letters from individuals who instructed or guided the candidate through that training are extremely helpful in providing documentation where formal documentation is not available for the particular experience.

Supporting materials. The candidate is asked to submit a current curriculum vitae that includes a listing of representative publications, presentations, service, and other academic and professional activities. He or she also is asked questions regarding any adjudication by ethics committees, licensure boards, or the judicial process.

Fee. The normal fee for applying for the ABPP credential review is \$150.00 and can be paid by making a check out to ABPP. There is a \$50.00 reduction in this fee if the applicant is credentialed as a Health Service Provider by the National Register or holds membership in Division 40 of the APA.

Sample Application

Educational Background:

<u>Title & Description:</u>	<u>Instructor</u>	<u>University</u>	<u>Dates</u>
Undergraduate: Neurophysiology	Peters	Xavier University	1983
Graduate: Basic Neuroscience	Schwartz	Ohio University	1986
Fundamentals of Neuroimaging	Rao	Ohio University	1987
Postdoctoral: Weekly Neuroscience Seminar	Axon	U. of Florida	1989
Clinical Neurology: Neurology Sequence in Medical School	Brain	U. of Michigan	1993

Informal Courses:

<u>Title & Description:</u>	<u>Instructor</u>	<u>University</u>	<u>Dates</u>
Weekly Neurology Rounds	As assigned	U. of Michigan	1993-present
Workshop in Halstead-Reitan	Stebbins	NAN Conf. Los Angeles	1992

Similar headings and descriptions are given for each area listed in the first section, Clinical Neurology, Neuropathology, Neuroanatomy, Psychological Assessment, Clinical Neuropsychological Assessment, Psychological Intervention, and Psychopathology.

Strategy/Tactics/Hints for Completing the Application

- Most of the application is very straightforward, with a listing or fill-in-the blanks format. For formal training, transcripts and certificates of internship and postdoctoral training, in conjunction with your course/supervisory descriptions, will be sufficient. For course work and experiences that are informal, a letter from either the course instructor, supervisor or training director, and/or copy of course catalog description are helpful. The crucial part here is *documentation*. Informal training is quite acceptable, provided that some kind of documentation is provided.
- Remember that letters of support should be from individuals who are *familiar* with your clinical training and/or work. Sometimes candidates will seek letters from individuals who are famous or well known, but who are not familiar with their training or work. Since board certification is for the purposes of endorsing specialty clinical practice, the letters should attest that the writer feels you are now ready to undergo exam to obtain this endorsement.
- Remember that the purpose of the credential review is not to construct a barrier to board certification, but to attempt to insure that the candidate is ready for the examination. Work and fees are necessary at this and the other stages of the examination process, and there is an attempt not to have the applicant spend effort and money without a good chance to move forward. If you are unsure as to whether your background and training will meet credential review, please feel free to call the ABCN office or contact a local board-certified clinical neuropsychologist for an informal consultation and review of your application package.

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THE WRITTEN EXAMINATION

Jack Spector, Ph.D.

Examination Development

The ABCN Written Examination is intended to assess each candidate's breadth of knowledge in clinical neuropsychology. It was constructed in the late 1980's and early 1990's by having practicing neuropsychologists submit multiple-choice questions covering information that they thought important for a competent clinical neuropsychologist to know. Authors provided citations for every submitted question. Any reasonable content area was acceptable, and a diversity of questions was encouraged.

Hundreds of potential questions were accumulated. Under the supervision of the Professional Examination Service (PES), "item writing workshops" were held during which teams of clinical neuropsychologists discussed, debated, re-worded, clarified, and classified each submitted question. Once questions were deemed acceptable, they were tested on actual ABCN candidates who took the written test before it became a required part of the examination process. If too many applicants answered a question correctly, it was eliminated as being too easy. If a given question was answered correctly too infrequently, it was eliminated as being too difficult. Many submitted questions were thus discarded. The final version of the examination consists of 100 multiple-choice questions.

The ABCN and PES continue to go through the described test construction process on a regular basis to keep the Written Examination relevant, reliable, and valid for its intended purpose. Questions are regularly added and discarded. As of 1993, all candidates had to complete the ABCN Written Examination as part of the examination process. The examination is now administered at each of the three major North American neuropsychology conferences each year--at the International Neuropsychological Society meeting in February, the Division of Clinical Neuropsychology/American Psychological Association meeting in August, and the meeting of the National Academy of Neuropsychology in November.

At the same time that it became a required part of the ABCN process, the timing of the ABCN Written Examination was changed. Although it was originally administered on the day of the candidate's Oral Examination, it was subsequently moved to administration after the credentials review process and before the submission of the Work Sample. The purpose for moving the ABCN Written Examination to this earlier position was to alert those candidates whose fund of scientific and professional knowledge was likely to be insufficient to permit them to complete the Oral Examination successfully. It was hoped this change would reduce the likelihood that candidates would be unsuccessful at their Oral Examination due to a significant limitation in their basic neuropsychological and neuroscientific knowledge. Anecdotal evidence suggests that this aim has been accomplished, and that oral examinees are better prepared regarding basic scientific and professional knowledge than they were before the Written Examination was moved.

The passing rate for the ABCN Written Examination is about 73%. As best can be determined, the success rate of persons taking the examination for the second time is about the same as that of individuals who have not taken it before. There are no readily available statistics comparing the education, training, and experience of those successfully completing the ABCN Written Examination with those who do not.

The Written Examination - J. Spector

Examination Characteristics

This is currently under revision and will be made available early in 2003.

The ABCN Written Examination Reading List

This reading list is intended to help ABCN applicants focus their studies before taking the ABCN Written Examination. It was prepared and refined by AACN members and was intended specifically to help applicants prepare for the ABCN Written Examination, as opposed to other elements of the ABCN examination process. However, two caveats are in order. First, the applicant should not assume that the ABCN Written Examination questions are drawn from these texts or that the test preparers used any of these particular books at all. By no means is reading these texts believed to represent sufficient preparation to take the ABCN Written Examination, in the absence of adequate academic and clinical preparation, training, supervision, and professional experience. Second, it is not necessary to read every book on the list. Rather, this list is offered as a selection of texts that board-certified neuropsychologists have found useful when preparing for the examination. Most likely, a candidate would sample from these texts, based on his or her background and experience.

Clinical Neuropsychology

Grant, I. and Adams, K. M. (Eds.). (1996). Neuropsychological assessment of neuropsychiatric disorders (2nd ed.). New York: Oxford University Press.

Heilman, K. M., and Valenstein, E. (Eds.). (1993). Clinical neuropsychology (3rd ed.). New York: Oxford University Press.

Loring, D. W. (1999). INS Dictionary of Neuropsychology. New York: Oxford University Press.

McCarthy, R. A., and Warrington, E. K. (1990). Cognitive neuropsychology: a clinical introduction. San Diego: Academic Press.

Walsh, K. W. (1994). Neuropsychology: a clinical approach (3rd ed.). Edinburgh/New York: Churchill-Livingstone.

Adult Neuropsychological Assessment

Lezak, M. D. (1995). Neuropsychological assessment (3rd ed.). New York: Oxford University Press.

Spreen, O., and Strauss, E. (1998). A compendium of neuropsychological tests: administration, norms, and commentary (2nd ed.). New York: Oxford University Press.

Basic Neuroscience

The Written Examination - J. Spector

Kandel, E. R., Schwartz, J. H., and Jessell, T. M. (Eds.). (2000). Principles of neural science. New York: McGraw Hill.

Reitan, R.M. and Wolfson, D. (1985). Neuroanatomy and neuropathology: A clinical guide for neuropsychologists. Tucson: Neuropsychology Press.

Shepherd, G. M. (1994). Neurobiology (3rd ed.). New York: Oxford University Press.

Clinical and behavioral neurology

Adams, R. D., Victor, M., and Rooper, A. H. (1996). Principles of neurology (6th ed.). New York: McGraw-Hill.

Feinberg, T. E., and Farah, M. J. (Eds.), (1997). Behavioral neurology and neuropsychology. New York: McGraw-Hill.

Lishman, W. A. (1998). Organic psychiatry (3rd ed). Oxford: Blackwell Science Ltd.

Psychological/Psychiatric Diagnosis and Psychopathology

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders: DSM-IV (4th ed.). Washington, DC: American Psychiatric Association.

Koocher, G. P., Norcross, J. C., and Hill, S. S. (1998). Psychologist's desk reference. New York: Oxford University Press.

Developmental and Pediatric Neuropsychology

Baron, I. S., Fennell, E. B., and Voeller, K. K. S. (1995). Pediatric neuropsychology in the medical setting. New York: Oxford University Press.

Frank, Y. (1996). Pediatric behavioral neurology. Boca Raton, FL: CRC Press.

Sattler, J. M. (1992). Assessment of children (3rd rev. ed.). San Diego: Jerome M. Sattler, Publisher.

Spreen, O., Risser, A. H., and Edgell, D. (1995). Developmental neuropsychology. New York: Oxford University Press.

Sample ABCN Written Examination Questions

Members of the AACN Internet listserver were asked to contribute a small number of test questions, each intended to assess a breadth and depth of neuropsychological knowledge similar to that addressed during the actual ABCN Written Examination. Approximately 100 total multiple-choice

The Written Examination - J. Spector

question were submitted. The questions were edited and reviewed, and ambiguous, overly easy, or overly difficult questions were discarded. The resulting set of questions was reviewed in order to remove questions that were inadvertently too similar to those found on the actual ABCN Written Examination, and supplemented to assure adequate coverage of the probable ABCN Written Examination core content areas. However, the proportion of sample questions in each content area cannot be assumed to resemble that in the actual ABCN Written Examination. The resulting sample of 30 examination questions are intended to resemble in depth, breadth, scope, and form the actual ABCN Written Examination.

1. Memory impairment in multiple sclerosis is best characterized as an inefficiency in:
 - a. retrieval of newly learned information
 - b. acquisition of new information
 - c. consolidation of new information
 - d. categorizing new information

2. The basal ganglia affect frontal lobe functioning via:
 - a. indirect projections through the thalamus and related nuclei
 - b. indirect projections through the cerebellum
 - c. direct projections to frontal cortex
 - d. diffuse cortical projections

3. The main activity/activities that electroencephalography measures is/are:
 - a. synaptic potentials
 - b. kindling phenomenon
 - c. axonal membrane voltage
 - d. speed of cognitive processing

4. Turner's Syndrome is characterized by all of the following except:
 - a. preserved nonverbal skills
 - b. one missing chromosome
 - c. high intra-uterine mortality
 - d. underdeveloped sex organs

5. Asperger's Disorder resembles Autistic Disorder except that in the former condition:
 - a. language development is usually much closer to normal patterns
 - b. there are usually no major impairments of social interaction
 - c. repetitive and stereotyped behaviors typically do not occur
 - d. the onset of symptoms is usually after the age of 10 years

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6. Landau-Kleffner Syndrome involves predominantly:
 - a. global aphasia
 - b. visual agnosia
 - c. motor apraxia
 - d. optic ataxia

7. Which of the following two vascular structures are the only two UNPAIRED vessels in the Circle of Willis?
 - a. superior cerebellar artery and the anterior communicating artery
 - b. posterior cerebellar artery and posterior communicating artery
 - c. anterior communicating artery and posterior communicating artery
 - d. basilar artery and anterior communicating artery
 - e. basilar artery and posterior communicating artery

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8. The Wada test in epilepsy surgery candidates is used to:
 - a. determine language dominance
 - b. establish the adequacy of memory in the non-involved hemisphere
 - contribute to determining seizure laterality by the disparity in memory performance between hemispheres
 - d. all of the above

9. The anterior and dorsomedial nuclei of the thalamus obtain their blood perfusion primarily from:
 - a. polar and paramedian arteries
 - b. lenticulostriate arteries
 - c. deep penetrators through the anterior perforated substance
 - d. recurrent artery of Huebner

10. Pallidotomy for refractory Parkinson's Disease has been shown to have the most dramatic improvement in:
 - a. tremor
 - b. rigidity
 - c. gait
 - d. pseudobulbar affect

11. Which of the following reliably differentiates patients with epileptic seizures from patients with pseudoseizures?
 - a. urination during seizure
 - b. MMPI-2 Scale 3 score within normal limits
 - c. cognitive test scores in impaired range
 - d. none of the above

12. The so-called "pseudodementia of depression" has mental status changes most similar to:
 - a. Alzheimer's Disease
 - b. multi-infarct dementia
 - c. Parkinson's Disease
 - d. Pick's Disease
 - e. alcoholic encephalopathy

13. On a test that has a dichotomous (i.e., forced-choice) response modality, a performance that is greater than one standard deviation below chance-level performance would suggest:
 - a. intentional suboptimal effort
 - b. severe cerebral impairment
 - c. random responding

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- d. poor content validity
14. The outcome most often reported in studies of very low birth weight (<1500 gm) children is:
 - a. global cognitive impairment
 - b. some depression in IQ with more pronounced impairments in math, attention, and motor skills
 - c. some depression in IQ with more pronounced impairments in language skills
 - d. specific reading disability
 15. Chronic alcoholics may develop Wernicke's encephalopathy as the result of:
 - a. thiamine deficiency
 - b. liver failure
 - c. neurotoxic effects of alcohol
 - d. malabsorption of electrolytes
 16. Lesions of the cerebellar hemisphere cause which of the following signs?
 - a. ataxic movements ipsilateral to the lesion
 - b. paresis ipsilateral to the lesion
 - c. ataxic movements contralateral to the lesion
 - d. spasticity contralateral to the lesion
 17. The transcortical aphasias are distinguished from other forms of aphasia by:
 - a. preserved repetition
 - b. defective phonemic discrimination
 - c. preserved visual naming
 - d. defective tactile naming
 18. Patients who have had complete sectioning of the corpus callosum cannot:
 - a. read material presented in the left visual field
 - b. name objects presented in the right visual field
 - c. identify a letter of the alphabet drawn on their right hand
 - d. reliably report right-ear stimuli during dichotic word listening
 19. Gait ataxia, urinary incontinence, and acute confusion (or dementia) is the classic symptom triad of:
 - a. normal pressure hydrocephalus
 - b. Parkinson's disease
 - c. lateral medullary syndrome
 - d. progressive supranuclear palsy (PSP)
 20. A 56-year-old hypertensive male developed the abrupt onset of forceful, violent, flailing contractions of the proximal left upper extremity. The lesion causing these lies in the:

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- a. right subthalamic nucleus
 - b. left caudate nucleus
 - c. right globus pallidus
 - d. left putamen
21. The theory that neurobehavioral syndromes can be understood by analyzing how anatomical linkages in the brain have been disrupted is known as:
- a. disconnectionism
 - b. hierarchicalism
 - c. integrative theory
 - d. localizationism
22. The taxonomic distinction between simple and complex partial seizures is based on:
- a. alteration of consciousness
 - b. loss of bowel and/or bladder control
 - c. presence of sensory symptoms
 - d. the underlying neuropathology
23. Congenital hydrocephalus is associated with a broad range of neuropsychological and psychosocial impairments. Which of the following is NOT associated with hydrocephalus?
- a. Performance IQ score lower than Verbal IQ score
 - b. difficulty with age appropriate peer relations
 - c. poor motor coordination
 - d. hemispatial neglect
24. Which of the following statements is false regarding the action potential in a motor neuron?
- a. there is an influx of calcium during the propagation of the action potential
 - b. the opening of the sodium channel ions drop the membrane potential from +50 to -70 mV
 - c. the size of the action potential is independent of the strength of the stimulus that initiated it
 - d. ion involvement is restricted to the unmyelinated spaces along the axon
25. Which of the following statements is false regarding the assumptions of the Pearson product-moment correlation?
- a. the relationship between the two sets of observations is linear
 - b. the error terms are distributed normally, with a mean of zero
 - c. the error terms are uncorrelated
 - d. the dependent variable is uncorrelated with the error term
26. A primary site of infection in childhood meningitis is:
- a. posterior fossa

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- b. frontal lobe
 - c. brainstem
 - d. subarachnoid space
27. Regarding persons legally incapable of giving informed consent for research , the most recent revision of the APA Ethics Code recommends that psychologists:
- a. refrain from research with children, the elderly, and the intellectually impaired
 - b. provide an appropriate explanation to all research subjects
 - c. obtain appropriate permission from a legally authorized person, if such consent is permitted by law
 - d. b and c
28. Which of the following is NOT a characteristic microscopic finding in Alzheimer's disease?
- a. neuritic plaques
 - b. neurofibrillary tangles
 - c. granulovacuolar degeneration
 - d. argentophilic bodies in the cytoplasm
29. What are Kayser-Fleisher rings?
- a. characteristic enhanced CT findings in toxoplasmosis
 - b. dark, butterfly-shaped markings around the eyes found in lupus
 - c. deposit found in the irises of patients with Wilson's disease
 - d. characteristic CSF finding found in patients following subarachnoid hemorrhage
30. Attention Deficit/Hyperactivity Disorder (Combined Type) is best understood as a disorder:
- a. associated with self-regulation difficulties involving the frontal lobes
 - b. associated with attentional difficulties representing neural circuits in the parietal area
 - c. problems with arousal associated with the reticular activating system
 - d. a behavioral difficulty due to poor parenting

Strategies/Tactics/Hints For Preparing for The ABCN Written Examination

Several ABCN neuropsychologists were asked what advice they might impart to colleagues planning to take the ABCN Written Examination. A sampling of their comments follows.

- Take a few months, or even longer to prepare...Concentrate on "classic" texts, rather than journals or monographs. There will be plenty of time for reviewing journals and studying speciality-specific texts when preparing the Work Sample or getting ready to sit for the Oral Examination.
- Try to find a study partner or study group, for the purpose of organizing information from diverse areas, but realize that you'll probably have to read the original texts yourself to learn information in

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the depth and detail required for the Written Examination. It is probably unwise to attempt to use outlines as your primary study resource, unless they are very detailed.

- Try to identify the areas of psychology or neuroscience with which you are least comfortable or competent: for some it is neuroendocrine functioning, for others the electrochemistry of nerve impulse propagation or the different types of validity. Try to construct multiple-choice questions testing the absolute limits of your knowledge in those areas. These questions will probably be harder than anything you'll actually get tested on. Confront your fears and move on.
- Don't underestimate the amount of rote learning required to take a multiple choice examination in clinical neurology or neuroanatomy. Think about preparing flash-cards for various syndromes, eponyms, clinical signs, cranial nerves, and tracts.
- Remember that you're a professional psychologist. Don't forget to study the material you should have learned in graduate school: psychometrics, reliability and validity, psychopathology, personality, diagnosis, and ethics. By all means study the DSM-IV.
- Everyone goes blank at some point during the examination. Don't panic. Remember that you're not expected to know everything and that the test was normed on people just like you, most of whom completed it successfully.
- This is the kind of test that lends itself to careful preparation, but not necessarily to cramming. Don't save all your preparation for the last minute. If you feel you need to study on the eve of the examination, limit your efforts to something more easily mastered, like the Ethics Code. Better yet, take in a movie and get to sleep early.
- It may be difficult, but try not to over-prepare in any one area. In particular, persons with sub-speciality training may want to make sure that they don't over-prepare in their area until the second (Work Sample/Oral Examination) phase of examinations.
- Don't wait too long to enter the process; you will probably never have a better knowledge base, more self-discipline, or a healthier diencephalon than you will right after fellowship.
- Enjoy the process. Treat this as an opportunity to consolidate your prior learning and thoroughly fill in the gaps in professional knowledge before other responsibilities intervene.

THE WORK SAMPLE

Joel E. Morgan, Ph.D. and Joseph Ricker, Ph.D.

Purpose of the Work Sample

Although the Written Examination is intended as a test of the candidate's overall knowledge base in neuropsychology and related areas (e.g., neuroanatomy/neuropathology, clinical psychology, among others), and therefore represents a broad perspective, the Work Sample review represents an opportunity for the applicant to demonstrate her/his skill in terms of *clinical practice*. Thus, the Work Sample should be representative of the candidate's day-to-day work in clinical neuropsychology, in terms of the actual work one performs with a patient, the types of patients one sees in her/his practice, and in general, how one goes about the job of "being a clinical neuropsychologist." To that end, the Work Sample should display the candidate's skills and knowledge as they pertain to clinical assessment, differential diagnosis, treatment, follow-up, and so on, and demonstrate depth and breadth of clinical ability. The Work Sample contains a report of a neuropsychological evaluation, as well as the relevant background of the patient and other supportive material (i.e., raw data) necessary for the ABCN reviewers to judge the candidate's skills. The Work Sample is used as the starting point in the Work Sample Review section of the Oral Examination, and is used by the examiner to formulate questions of the candidate. Therefore, the Work Sample should be a comprehensive assessment/treatment/follow-up of a case and display the candidate's clinical skills, report writing, and overall clinical work. It should *not be* a research report, an experimental study, a reprint, or a review of the literature. It is, rather, intended to be a good example of the candidate's ability to work up clinical cases, conceptualize them, answer referral/consultation questions competently and comprehensively, and demonstrate a maturity and breadth of experience as a clinical neuropsychologist who functions at the highest levels of competence and professionalism.

Guidelines for Case Selection

Work samples are reviewed by three ABPP board-certified clinical neuropsychologists who rate the samples on a number of specific criteria (see below). As the Work Sample reviewers read the Work Sample, they generate questions about the candidate's work. If two of the three Work Sample reviewers vote to accept the candidate's cases, they are used by the oral examiner, who utilizes the questions raised by the reviewers, as well as his/her own. Thus, the Work Sample is the "launching pad" for the Oral Examination Work Sample section. As such, the candidate can expect to be asked many questions about the cases presented, the assessment, conclusions, treatment, and follow-up. The Work Sample consists of two cases, which should be sufficiently different so as to present a breadth of clinical skills, competence, and experience. So, although one may see many dementia patients in his/her clinical practice, it is probably not the best strategy to present two dementia cases, even if they represent two different etiologies (e.g., dementia of the Alzheimer type [DAT] and frontal lobe dementia). It is preferable to present two cases with little in common. A mix of two cases differing in pathology, diagnosis, severity, outcome, demographics, treatment, prognosis, and so on provides evidence of *breadth of experience and breadth of practice*. For example, one could certainly present a basic dementia work-up, which most typically would be of an elderly patient with apparent cognitive decline, related self-care, competency, and family issues, whose differential diagnosis might be probable DAT. It would then be unwise to also present a case of a patient with vascular dementia or

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Parkinson's disease, as such cases are most common in the elderly, as well, and do not provide a sufficient difference from the first dementia patient. The goal here is to demonstrate one's versatility and broad competence, even though in actuality you may be a dementia expert. Therefore, select a second case with a clearly different form of pathology, a better prognosis, a younger person, or one with different findings. For example, you might consider presenting a case of mild traumatic brain injury (TBI) or post concussion syndrome along with your dementia case. A case of a patient with multiple sclerosis, Lyme disease, meningitis, or subarachnoid hemorrhage similarly would convey breadth. Recent successful Work Samples submitted by candidates have included:

- A 67-year-old male with middle cerebral artery stroke and aphasia and a 34-year-old female with multiple sclerosis
- A 22-year-old female college student with herpes encephalitis and a 71-year-old male with probable DAT
- A 69-year-old male status post resection of a glioblastoma multiforme and 42-year-old male with a ruptured anterior communicating artery aneurysm
- A 12-year-old boy with a history of dyslexia and ADHD and an 8-year-old girl status post total resection of the right hemisphere at age three due to intractable seizures
- A 14-year-old boy with myelomeningocele and a 10-year-old girl who suffered a severe traumatic brain injury

These kinds of case mixes provide ample evidence of one's breadth as a clinical neuropsychologist.

Cases should be different not only in pathology and demographics, but should also represent the candidate's ability to work up complex cases as opposed to those that are relatively simple. Thus, although a dementia case may be relatively easy diagnostically, if one sees many dementia cases in his/her practice, it might be better to select a dementia case which presents more *treatment* difficulty, such as one with complex family/psychosocial issues. Certain cases may present complex differential diagnostic issues, and those too may be a good choice. However, as a word of caution, one should probably avoid cases that are somewhat controversial. For instance at the present time, much is made of malingering or exaggeration of deficit in the literature on mild TBI/post concussion syndrome, chronic fatigue syndrome or fibromyalgia. Although one may do a fine job on such cases, it should be understood that they represent controversy in the field, and thus, they may not be the wisest choice for the Work Sample. As a general rule, avoid controversy or cases that are easily misdiagnosed or misunderstood. Likewise, rare or esoteric phenomena (e.g., reduplicative paramnesia, alien hand syndrome) may not be the best choices for the Work Sample. Although such phenomena are quite interesting, they typically do not lend themselves well to a sufficient demonstration of one's breadth of knowledge, skills, and abilities.

The candidate should select cases that will allow for demonstration of breadth in assessment skills. In other words, it would be better if the cases do not demonstrate identical test batteries. Although a candidate may certainly favor a given core battery for a particular diagnostic group or type of case, it will be very difficult to make a compelling argument in support of *identical* batteries for the necessarily

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diverse cases required for the successful Work Sample. Put simply, a “one battery fits all” approach is unlikely to be sufficient.

Overall, the candidate should select cases with the following considerations in mind:

- They should be different in meaningful ways
- They should avoid controversy
- They should demonstrate the candidate’s skills, i.e., depth and breadth.

It goes without saying that fundamental aspects of solid clinical work should be followed. Cases should represent your best work, yet also represent your practice. Avoid mistakes by having a more senior colleague, preferably one who is already an ABCN board-certified neuropsychologist, review your Work Sample prior to submission. Try to foresee potential problems and questions.

Contents of the Work Sample

Original Report. The ABCN guidelines request that one submit an original report. This is the case report that was written at the time of evaluation. It is not typical, however, that the original report be submitted in its original form. For example, one may work in a hospital practice setting where reports tend to be brief, written by hand, or on hospital progress note pages or other special forms. In such cases, it is advisable to clean the report, by retyping, correcting typographical errors, and fixing mistakes. Of course, all potential identifying information should be removed. In fact, a Work Sample that is found to have any identifying information will not be accepted. It is important, however, that the overall gist of the original report be maintained. If one routinely writes abbreviated reports in his/her work setting, another option may be to see several new cases with the Work Sample submission process clearly in mind. This is clearly permissible in that just because one’s work environment demands a minimalist approach to documentation of service delivery, this does not mean that such work represents the overall skill of the candidate.

Data Face Sheet (Test Scores). In keeping with good clinical practice and ease of use, the candidate should amend her/his report with a data sheet summarizing the test scores. When putting together the summary, make sure everything is scored correctly, that the normative data used are appropriate, and that the meaning of one’s abbreviations are clear. Similarly, be clear about which normative scores (i.e., z-scores, T-scores, scaled scores, standard scores, or percentiles) are being reported. Be clear about the sources of normative data. If the most widely used tests or norms are not used (e.g., Halstead-Reitan Battery, Heaton, Grant, and Matthews demographically-corrected normative data), be clear as to why. In general, have a good rationale for what you did and why.

Raw Test Data. You will need to submit copies of the actual test protocols of the patients presented for your Work Sample. Of course, they should be legible, with all identifying information removed. As noted, having any identifying information present will result in the Work Sample not being accepted. Again, be sure there are no errors in administration, scoring, or application of normative data.

Other Supporting Data in the Patient’s File. Assessment reports often must leave out valuable information about the case for numerous reasons, such as limited length of the report, the intended

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reader, or the venue. Specific information concerning your patient, her/his history, presentation, family, or other details that were not included in the original report, may be important material from a broader context.

Work Sample Evaluation Criteria and Guidelines for Examiners

The evaluation criteria that examiners use are fairly straightforward and, although tailored for clinical neuropsychology, are based upon criteria that have been developed by The ABPP across areas of professional practice. These criteria are as follows (and are identical to those contained in each Work Sample reviewer's evaluation checklist):

- Sufficient diversity is presented in the cases presented to demonstrate the candidate's breadth of clinical proficiency.
- The purposes of the examination and referral questions are clearly described.
- The conceptual basis/rationale for selection of testing procedures is clearly evident.
- The test data are accurately reported and presented in a clear, well-organized format.
- Conclusions/recommendations are supported by the data and by appropriate literature citations *if necessary*. The candidate does not have to write a doctoral dissertation.
- Relevant historical and medical factors are identified and integrated in the formulation of the report (or in supporting materials if the report is very brief).
- Emotional/psychopathological factors are appropriately assessed and incorporated into the report.
- The "original" clinical report serving as the basis for the Work Sample is written in a clear, professional style tailored to the background/needs of the identified primary consumer of the report.
- The Work Sample conforms to ethical standards and reflects an awareness of those standards.
- Treatment recommendations (including additional evaluative recommendations) are substantive, well founded, and given in sufficient detail to foster their implementation.

The Rejected Work Sample

Although all rejection (whether within the context of board examination or life in general) is likely to evoke an initially negative emotional reaction, the rejection of a Work Sample is not grounds for prolonged emotional turmoil, feelings of incompetence, or a decision to discontinue pursuit of board certification. To the contrary, many successfully board-certified neuropsychologists' Work Sample submissions were not *initially* advanced to the Oral Examination stage. Rejection at this point should be seen as an opportunity for professional development and growth.

In the event that a Work Sample submission is deemed unacceptable by at least two of the three reviewers, the candidate will receive written feedback as to the Work Sample's strengths, weaknesses, and recommendations for improvement. The written feedback that is received is *verbatim* from the reviewers (i.e., the comments are the actual written comments that each of the three examiners provided in reference to the Work Sample; none of the comments are hidden or kept from the candidate). Many Work Samples that are initially rejected simply need some degree of re-working, often in the form of providing greater elaboration in the commentary, or providing additional

documentation of some aspects of the case. At times, however, reviewers may determine that one of the cases should be replaced. This situation is most likely to occur when the Work Sample does not demonstrate sufficient diversity of practice (e.g., submitting two dementia cases; see the discussion above regarding selection of appropriate cases). Although the choice of whether or not to submit a different case for the resubmission ultimately rests with the candidate, it is highly recommended that the reviewers' comments be considered seriously.

It is also possible that the examiners may recommend selecting two entirely new cases. Although this scenario is less likely to occur than a recommendation to replace only one of the cases, it can occur in situations where the candidate has submitted cases that do not allow for sufficiently detailed evaluation of the candidate's knowledge, skills, and abilities as a clinical neuropsychologist. For example, cases that by their very nature allow for only minimal neuropsychological assessment and intervention, such as might occur in cases of severely advanced dementia, global aphasia, or with minimally conscious patients, may not readily lend themselves to the type of documentation and work-ups that are needed for thorough external review. Also, cases that are purely treatment-oriented and include no assessment data are not appropriate for the ABCN Work Samples. It must again be emphasized that careful case selection is extremely important, keeping in mind that the practice of neuropsychology is quite multidimensional in nature.

Strategy/Tactics/Hints for Preparing the Work Sample

Each Work Sample is unique, and thus there can be no prototypical Work Sample. Nonetheless, there are certain strategies and tactics that are recommended in order to facilitate the Work Sample review process and increase the probability of Work Sample acceptance. The following are some general guidelines:

- The Work Sample's purpose is to provide a forum in which the candidate can demonstrate the depth and breadth of her/his clinical knowledge, skills, and abilities. It is not a venue for attempting to resolve controversies in the field.
- Make sure that the content of the Work Sample is legible *in each copy*, and that all copies are clearly reproduced and aligned. For items that do not photocopy well (e.g., hospital or test forms that are printed in color), it may be necessary to include a typed version (a "translation" of sorts) in addition to a copy of the original form or document.
- Professional binding is not required, but it is recommended that each copy of the Work Sample be submitted in a physically-secure format. This will ensure that all of the materials make it to all of the reviewers (and that materials remain in the order that the candidate wishes to present them).

THE ORAL EXAMINATION: OVERVIEW, WORK SAMPLE, AND FACT FINDING

Michael Schmidt, Ph.D.

Overview and Purpose

This section is intended to provide a two-pronged orientation to the Oral Examination. First, the conceptual underpinnings of these examinations will be described, to help the candidate understand the purpose of each element and how these elements fit together cohesively. Second, the overview will help the candidate prepare for the practical and logistical elements that will be encountered as she or he participates in the Oral Examination.

Conceptual Overview

The Oral Examination is the final step in the board certification process. As with the previous steps, the Oral Examination is intended to provide the candidate with the opportunity to demonstrate the defining competencies to practice clinical neuropsychology. Although the domains of knowledge assessed in the Oral Examination are specific to clinical neuropsychology, the examination is conducted according to the general standards of the ABPP.

In its oversight role, the ABPP requires that professional psychologists at the Diplomate level demonstrate advanced competency within the particular specialty area. To accomplish this, three broad and interrelated areas are covered in the examinations:

- The effectiveness of the candidate's efforts toward constructive follow-up and/or intervention based on realistic assessment of the problem presented
- Awareness of the relevant research and theory
- Sensitivity to the ethical implications of professional practice

The examination format is very similar among the eleven specialties recognized by the ABPP, and the major differences lie in preparation requirements and the definition of competency activities within each specialty. The general criteria identified by The ABPP have been applied more specifically to neuropsychology by the ABCN, which has posited four specific capacities that define expertise in clinical neuropsychology:

- a. Performing a broad spectrum of clinical neuropsychological services including assessment and intervention in a manner that is consistent with professional standards
- b. Explaining and defending such practices based upon scientific research and the standards of ethical practice in the field of clinical neuropsychology
- c. Conveying information gained from assessments, interventions, and other evaluative methods to other professionals as well as to patients and their care givers, in a clear and understandable manner
- d. Knowing with reasonable certitude both (1) the limits of one's own expertise, and hence one's practice, and (2) the limits of the currently available knowledge base for the specialty of clinical neuropsychology

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These four capacities are explicitly incorporated into the three components of the ABCN Oral Examination — Work Sample Review, Fact Finding, and Ethics and Professional Issues. These capacities also have significant implications for the candidate progressing through the examination process. Criterion a) requires that the clinical neuropsychology Diplomate have broad expertise within the specialty of neuropsychology, not just within his or her subspecialty (e.g., learning disorders, epilepsy, a fixed battery approach) or clinical setting. However, no one is universally competent or expert, as indicated in criterion d). Another component of criterion d) is intellectual honesty: clinical neuropsychology Diplomates do not practice outside of their areas of expertise and do not pretend to possess knowledge that they do not have. Criterion b) requires that the neuropsychological practice be based on scientific knowledge, and the Diplomate must have a good foundation in relevant research. Note that ethical practice is emphasized throughout these criteria.

With these conceptual issues in mind, we can turn to more practical issues.

Structure of the Oral Examination

The Oral Examination is held in Chicago, because this is a centrally-located major transportation hub with easy access to most of North America. The examination is held in May and October so as to not coincide with major neuropsychology meetings and to take advantage of Chicago's climate at its most agreeable times.

The Oral Examination is held either in the morning or the afternoon, and the examination proper takes three hours. Candidates should allow a little extra time to get to the examination site, to avoid feeling rushed. At the examination site there will be an area for the candidates to gather, where refreshments will be available.

A 30-minute orientation precedes the examination. Members of the examination committee will make announcements and introductions and provide basic instructions. A confidentiality statement will be provided for candidates to review and sign. The candidates will be informed as to which examiners have been assigned to them. Each candidate will then have a brief, individual interview, typically with the president of the ABCN, to determine if there are any potential conflicts of interest with his or her examiners. If conflicts exist, a different examiner will be assigned.

Once the preliminary matters have been addressed, the Oral Examination commences. The examination consists of three one-hour blocks, one covering Work Sample, another devoted to the Fact Finding exercise, and one addressing Ethics and Professional Issues. The administration order of these components varies from candidate to candidate. Each component is covered by a different examiner, and thus each candidate will be examined by three different individuals (who comprise the examination team). After each component of the examination is completed, the candidate is returned to the gathering place, where he or she will be met by the next examiner and escorted to the private room where the examination is held. Because the components require coordination of the activities of several individuals, efforts are made to adhere to a strict schedule.

After all components are completed, the candidates are asked to remain on site for a short time. This is because, on rare occasion, the candidate may be asked to meet again with one of the examiners to clarify a specific question or issue pertaining to that part of the examination. The candidate is then

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asked to complete a rating form regarding his or her experience with the Oral Examination process. After all of this hard work, the candidate is advised to do something fun and relaxing. Enjoy Chicago!

Behind the Scenes

The examination process includes a number of steps, many of which are invisible to the candidate, to assure fairness, uniformity, and quality. Being aware of these may help the candidate be more comfortable with the examination process, to understand the issues that are emphasized by the ABCN and to better grasp the rationale behind many of the procedures employed in the examination.

First, feedback and reviews are used throughout the examination process to ensure quality and consistency. For example, the oral examiner responsible for doing the Work Sample portion of the examination provides feedback to the three Work Sample reviewers. This feedback includes information about whether the oral examiner agrees or disagrees with the conclusions reached by the reviewer and comments on the quality of the review. To maintain consistency and quality of the examination, the examination team participates in a workshop the day before the Oral Examination to make sure they are fully versed and familiar with examination procedures and criteria. Content for the Fact Finding and the Ethics and Professional Issues portions of the examination are finalized at this workshop. Another important review process is included in the Oral Examination proper. Observers, who are senior neuropsychologists very familiar with the examination process, sit in on the Oral Examination and rate the performance of the examiner. The observers also monitor the examining committee meeting after the examination, to assure that the ABCN procedures are followed during deliberations and decision-making regarding the performance of the candidates. The observer never comments on the performance of the candidate and never takes part in the decision-making. Finally, upon completion of the examination, each candidate rates each of her or his examiners.

Information from these review and feedback procedures is used to evaluate the examination process and the individuals administering it. Procedural errors in an examination may require remedial steps, as noted in the description of appeals processes. Poor ratings can lead to an individual being removed from the Work Sample review panel or the examiner cadre.

The examining committee decides whether or not the candidate demonstrated the qualities and competencies that are required for board certification. The manner in which this decision is made can be a little difficult to understand. It is important for the candidate to understand that one does not pass or fail any of the examination components (e.g., one does not “fail” Work Sample review and “pass” Fact Finding). Rather, the results of the three-hour examination are used to determine, *as a whole*, whether or not the candidate should be awarded with board certification. When the committee meets to deliberate the performance of the candidate, each member presents pertinent information about the particular component of the examination she or he administered. Some discussion and questioning may ensue. Each examiner integrates the information from all portions of the examination and rates the candidate in five areas. These are:

- Evaluative Skills
- Intervention Skills
- Scientific and Professional Knowledge

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- Ethics and Social Responsibility
- Professional Commitment

Typically, important information about each of these criteria is derived from more than one part of the examination. The decision to award or not award board certification is based on these criteria, and, as with the Work Sample reviews, is by a majority vote (two of the three examiners).

General Pointers for Taking the Oral Examination

Although case formulation and ethics are a routine part of the practice of clinical neuropsychology, oral examinations are not. The ABCN Oral Examination is a novel experience for the candidate, and it is useful to have a point of reference in preparing for it. The candidate might ask, “What have I done that is similar to this?” Most psychologists have gone through oral comps as part of obtaining the doctoral degree. These oral comps vary from university to university, but in general they are somewhat similar to the ABCN Oral Examination. Those neuropsychologists who do forensic practice have also had a form of oral examination in deposition and trial testimony. One might think of the ABCN Oral Examination as being similar to a deposition by a knowledgeable attorney with a nonabrasive style. In thinking about the ABCN Oral Examination, thinking of these somewhat similar experiences as reference points can help make the process seem more familiar and less daunting.

There are two steps in preparing for any examination. The first is learning the material. The second is getting ready to take the test. The candidate has probably already done a lot of reviewing and brushing up in preparation for the ABCN Written Examination and in putting together the supporting materials for the Work Sample. Additional specific recommendations for study are available elsewhere in this guide and in later parts of this section.

Getting ready to take the test often receives less attention than studying. Most individuals who have gone through the Oral Examination (including examiners!) experienced some degree of stress and anxiety. Even mild levels of anxiety can impede performance, and more severe anxiety can be a significant factor in successful test taking. It is important to be relaxed and to have a clear mind when going into the testing session. Everyone has a different approach to relaxing, but whatever the method, it can be very helpful to allow some time to relax and get mentally prepared prior to the Oral Examination. There will be a few minutes before each of the three sections of the Oral Examination to allow the candidates to relax, get something to drink, etc.

Although the Oral Examination can be stressful, it is important to view it in a proper perspective. The examination is not conducted under bright lights and is not akin to a harsh cross-examination by an arrogant attorney or to the kind of treatment the guest of honor receives at a roast. There will be no bamboo splints. The examination is conducted in a collegial and respectful fashion, and the tone is that of a peer-to-peer relationship. At the beginning of each examination hour, the examiner will introduce the particular focus of that portion of the examination and provide an orientation. A variety of questions will follow. Although the questions will vary in breadth, specificity, and difficulty, they are not intended to be obtuse, esoteric, or tricky. Remember, the goal of the examination is to allow the candidate the opportunity to demonstrate her or his capabilities.

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Each of the three examination components will emphasize different content, but they do have a number of features in common. First, at the outset of the hour, the examiner will provide an introduction to the particular areas that will be covered for that hour, which helps the candidate orient to the task facing her or him. Second, although the Oral Examination is not “open book” and the candidate may not bring notes to them, paper is available during all segments of the examination and the candidate is welcome to jot some notes, prepare a worksheet, write down mnemonic cues, and the like at any point during the examination. Taking notes is allowed in all segments of the examination and, in fact, is encouraged during the Fact Finding and the Ethics and Professional Issues segments. The candidate may not keep any of these notes after the examination is completed. Third, when interacting with the examiner, the candidate is urged to remember that this is a collegial process. If a question or issue is unclear, ask for clarification. In answering questions or discussing issues, take sufficient time to make sure that your answers are clear and reasonably complete. “Thinking out loud” and “showing your work” can be helpful. Do not assume that your examiners know that you know something, even if it seems obvious to you. Keep in mind that although being board certified requires that the candidate demonstrate expertise and knowledge, no one knows everything. In preparing for the Oral Examination, focus study efforts on core knowledge and well accepted principles rather than esoteric knowledge or the contradictory findings of the latest small scale, unreplicated studies. Examiners will be more impressed by solid knowledge of major issues and principles than by a plethora of trivia. Finally, when you do not know an answer, it is probably better to acknowledge this than to try to bluff your way through it.

The Examination Team

The candidate will meet a number of ABCN personnel at the Oral Examination. The Executive Director of the ABCN, the Chairman of the Examination Committee, and the Local Arrangements Coordinator will be there. Whenever possible, the President of the ABCN will attend. Two observers, as described earlier, will also be in attendance. Typically, an examiner-in-training will attend. The observers and examiner-in-training will sit in on many of the Oral Examinations. They will make every effort to be unobtrusive — remember, they are there to observe the examiner and the examination process, and they will not take part in any of the discussions regarding the candidate’s performance or decisions about awarding board certification.

Oral examiners are nominated from among ABCN board-certified neuropsychologists through a variety of mechanisms. For example, individuals who do particularly well in their own Oral Examinations, who do excellent Work Sample reviews, who serve on the ABCN board, or who are nominated by the ABCN board members can be considered as potential oral examiners. Once approved, an examiner-in-training is provided with detailed information about the examination policies and procedures. She or he will then attend an Oral Examination and participate in all phases (pre-examination workshop, several Oral Examinations, and committee deliberations) as an observer. Once this training is completed, she or he is ready to begin administering examinations. Each examiner serves for five years, and this appointment can be renewed.

Strong efforts are made to maintain balance and diversity in the examining cadre in terms of gender, geography, and expertise (adult, pediatric, and lifespan neuropsychology). The intent is that no

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particular approach to neuropsychology is emphasized, and that potential conflicts of interest between candidates and examiners (either via professional relationships or practicing in the same area) can be avoided. Pediatric neuropsychology is recognized as a subspecialty and the diverse expertise represented in the examiner cadre allows pediatric neuropsychology candidates to have examiners with relevant expertise.

Work Sample Review

The purpose of the Work Sample Review segment of the Oral Examination is to give the candidate an opportunity to present her or his actual work product. The Work Sample consists of two cases, complete with supporting material and raw test data, that were submitted for review. As mentioned elsewhere in this guide, the two cases should be sufficiently different to allow the candidate to demonstrate the breadth of her or his abilities.

The Work Sample is reviewed by three AACN members. To be admitted to the Oral Examination, at least two of these reviewers must have judged the Work Sample as acceptable. Successfully completing the review process does not mean the Work Sample is perfect, only that the cases do not have such serious flaws that they reflect clearly poor quality work, and thus would make it very difficult for the candidate to demonstrate sufficient levels of ability during the Oral Examination to it successfully. Having one's Work Sample judged acceptable means that it is sufficient to form the basis for the Oral Examination. Significant issues regarding the quality of the Work Sample may have been raised by the reviewers — remember that one reviewer may have felt the Work Sample should not have been judged acceptable. Comments and questions raised by the reviewers are communicated to the Work Sample oral examiner, who may have additional concerns after reading the Work Sample in preparation for the examination. One of the purposes of the Work Sample Review portion of the Oral Examination is to address these concerns.

Study and Preparation. The “good news” about the Work Sample Review is that the candidate gets to select the Work Sample cases, and thus should be fairly comfortable and familiar with the material covered during this portion of the examination. The “bad news” is that the candidate will be expected to have *detailed* knowledge about these cases and a high level of expertise in related issues. In other words, in this portion of the examination the candidate is allowed to pick the subject, but in turn she or he should be able to discuss it knowledgeably. For example, the candidate may be asked about the approach to assessment used in the cases, psychometric properties of the tests used, neuropathology and properties of the patient's diagnosis, differential diagnosis, psychological issues, the integration of collateral information into the assessment, and appropriateness of recommendations. Any topic may be expanded, and the Work Sample case may serve as a jumping-off place to discuss broader issues. Focused study can be effective in preparing for this portion of the examination. The candidate can review the most recent literature regarding the disorders presented in the Work Sample, including incidence, prevalence, neuropathology, differential diagnosis, outcome, and treatment. Similarly, the specific tests used in the evaluation can be reviewed. Recent review articles, where available, may be particularly helpful.

The candidate may also want to spend some time thinking about her or his approach to assessment. He or she should consider the following questions.

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- Why do I give certain tests and not others?
- In conducting an examination, on what information besides test results do I rely and why?
- What is the empirical and conceptual support for my approach to evaluation?
- Were my recommendations reasonable and potentially helpful?

Finally, in preparation for the examination, rereading the Work Sample cases is very helpful. The candidate should be very familiar with the cases and prepared to present them knowledgeably. As the candidate rereads the cases in preparation for the examination, it will be helpful to consider them in a critical light.

- What controversies might the cases raise?
- What weaknesses exist? (The perfect evaluation has yet to be done)
- What areas seem unclear?
- How can any weaknesses or deficiencies be defended, and how can controversies be addressed?

Presenting the Cases. The candidate should have a copy of her or his Work Sample to take into the examination. Each of the cases will be reviewed, although the amount of time spent on each case may differ. There is no standard format for this part of the examination, but it is not unusual for the examiner to ask the candidate to provide a brief synopsis or introduction to the case. From this point, a variety of questions about the cases and related issues will be asked. In particular, the candidate should expect questions about any controversies that might arise from the cases, as well as any problem areas or weaknesses in the cases that were raised by reviewers or the Work Sample oral examiner.

Responding to Questions. Because the subject of this portion of the examination has been selected by the candidate, it is expected that the candidate will be very comfortable and familiar with the material. Questioning will allow the candidate to demonstrate her or his grasp of the approach to assessment used, the particular tests employed, the means by which a case formulation was developed, and the breadth and appropriateness of recommendations that were made. Knowledge of relevant research may also be displayed. In answering questions, the candidate should keep in mind that this is an opportunity to show one's capabilities, both in terms of scientific knowledge and clinical acumen. Responses should be pertinent and reasonably concise, but also should demonstrate depth of understanding and thoughtfulness. There are very few areas in neuropsychology that are not touched by controversy, and the candidate should be prepared to compare and contrast differing perspectives.

Strategies/Tactics/Hints for Successfully Completing the Work Sample Review Component. As noted earlier, study of relevant scientific literature and review of the Work Sample can be an excellent preparation for this portion of the examination. Here are a few additional pointers.

- Be prepared, if asked, to provide a brief synopsis of each case. Rehearse this a few times.
- Be able to explain your approach to assessment in these two cases. Know the advantages and disadvantages of your particular methods.

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- Be familiar and up-to-date on all of the tests used. Know both the pros and cons of these tests.
- Be familiar and up-to-date about diagnoses and clinical issues presented in the cases. Know the major issues and the relevant research.
- Think of this component as a collegial discussion of these cases that you might have in your office.
- If a question seems unclear, ask for clarification.
- Be thoughtful in your answers. Remember that because time for the examination is short, the questions are probably not about trivial or inconsequential issues.
- Remember that some of the questions will be related to perceived weaknesses in the Work Sample. Poor answers to these questions may confirm to the examiner that the candidate has a deficiency in a particular area of knowledge or expertise, whereas good answers can have the opposite effect.
- Show what you know and what you can do! Although arrogance is not advocated, this is not a time to be shy, humble, or hesitant.
- If you have any follow-up information on the Work Sample cases, be prepared to offer this.
- More than anything else, know your cases!

Fact Finding

The purpose of the Fact Finding portion of the examination is to allow the candidate the opportunity to demonstrate competence in assessing, formulating and providing recommendations for a new, unfamiliar clinical case. The candidate will have a choice of either a child or an adult case. The examiner will then present a brief overview of the case, typically in the form of a referral question. Through a process of questioning the examiner, the candidate collects information about the case, formulates the information into a clinical picture, performs a differential diagnosis, and provides recommendations. As the candidate asks questions, the examiner is given an opportunity to observe the candidate assessing a case and to gain an understanding the methods and thought processes that he or she uses in working with clinical materials.

The Fact Finding component uses actual clinical cases that have not been altered in any way. There is really no way to predict what kind of case it will be — common or unusual, mundane or esoteric. The candidate entering the Fact Finding component should expect to deal with a clinically-rich case that has extensive neuropsychological data. Consequently, like most real-life cases, everything does not always fit neatly into place.

Study and Preparation. By its very nature, the Fact Finding portion of the examination is very difficult to study for. There is no way to know what kind of case will be presented, and thus there is no

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efficient way to study. The Fact Finding component will draw upon the candidate's accumulated knowledge and clinical skills.

Although there are no good ways to study for this portion of the examination, several important steps can be taken to *prepare* for it. When we do an assessment in our office, we go through the process of collecting and organizing information, but we rarely think about this process itself. To prepare for the Fact Finding component, the candidate should try to make this process explicit, to become aware of the steps she or he goes through in evaluating a case. In doing this, the following questions can be helpful:

- In addition to test results, what information do I routinely collect when I do an assessment?
- How do I use this information?
- How do I organize neuropsychological test data?
- How do I examine the collected information to reach a diagnosis?
- How do I formulate recommendations? What kinds of recommendations would I make for different kinds of cases (e.g., head injury, dementia)?

The candidate may want to create an outline or flowchart of the steps that she or he goes through in performing an evaluation. This outline can then be used to structure the questioning process during the Fact Finding component, and this will provide some distinct advantages to the candidate. First, having an outline or flowchart gives the candidate a “game plan” for the Fact Finding component. Remember, the candidate has to take an active role in questioning the examiner and collecting information. If the candidate does not know what questions she or he wants to ask, the Fact Finding component will not go well. Second, a lot of work has to be done during Fact Finding (collecting data, formulating the case, providing recommendations, discussing relevant issues), and time is limited. An outline or flowchart will help the candidate make efficient use of time and ensure that all of these tasks are addressed.

The candidate may also prepare for the format of the Fact Finding component. The process of collecting information through interview will seem somewhat artificial and unfamiliar to most candidates, and it can be very helpful to have some practice with this format before going to the examination. Mock Fact Finding exercises can be very useful in this regard. This can be done by having a colleague select a case and then simply sitting down and going over it in an interview fashion. The time for this should be limited to one hour, as in the actual examination. If face-to-face practice cannot be arranged, even practice over the telephone can be beneficial. It is essential that the candidate become familiar and comfortable with this format. Practice allows the candidate to gain a better sense of how long it takes to complete the different portions of the process and thus manage time better. Practice also helps the candidate fine tune her or his data collection process.

The candidate should keep in mind that neuropsychological assessment goes beyond the simple evaluation of test data. In clinical practice, the neuropsychologist collects and integrates a wide variety of information, including various aspects of the patient's history, collateral medical records, and neurodiagnostic information. During the examination, the candidate may (and should) ask for any type of information she or he feels is relevant. Some of the information may not be available, and this is

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consistent with the realities of clinical practice. Other information that could give the case away (e.g., neuroimaging results) may be withheld, as to provide this information would not allow the candidate to fully demonstrate her or his abilities in working with neuropsychological test data and other clinical information.

Approaches to Fact Finding and Advice for Interacting with the Examiner. The first task in the Fact Finding component is for the candidate to select with which case (child or adult) she or he wants to work. The candidate should make this decision before entering the examination.

After selecting the case, the candidate will be presented with a brief vignette that provides limited clinical information but serves to orient the candidate to the case. The candidate should then take a few minutes to organize questions and prepare to collect information and test data about the case. Paper will be provided, and the candidate may create an outline or worksheet for this purpose. Once the candidate is ready to proceed, questions about the case will be directed to the examiner. Remember, time is limited and the questions should be well organized and have a clear rationale. Questions about trivial or inconsequential aspects of the case will waste time and distract the candidate from the task at hand. Through efficient questioning, the candidate should be able to collect reasonably comprehensive information about the case in the allotted time.

Questions should be fairly specific, and the examiner will comment if a question is too broad or vague. Test data can be asked for by name or by type of test (e.g., “Was the California Verbal Learning Test given?” or “Was a word-list learning test given?”). Test data will be available as raw score, percentile, and a standardized score (e.g., T-score or standard score). The candidate may ask about specific tests with which she or he is not familiar, and a brief description will be provided. Taking notes is encouraged throughout the process.

After collecting relevant information, the candidate should take a few minutes to contemplate the case, perhaps review some of the test findings, and develop a case formulation. Once completed, this should be presented to the examiner. The candidate may then be presented with additional information and asked to consider this in the formulation. Finally, the candidate should make recommendations about interventions and further diagnostic procedures.

Time management is a critical element of the Fact Finding component. The recommended schedule for this examination is:

5-10 minutes.	Prepare and organize questions.
25 minutes.	Collect information about the case.
10 minutes.	Present conclusions and formulation.
Remaining time.	Follow up information, questions, and discussion.

As noted earlier, this is an unusual format for conducting a neuropsychological assessment. The candidate should keep in mind that the purpose for this format is for the examiner to observe the candidate’s approach to assessment, the thoroughness and relevance of information that is used, which factors are considered important and which are not, how test results are used, how information is weighed and integrated, the formulation of a differential diagnosis, and development of

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recommendations. This is not a parlor game or a mystery novel — there is no intent to be coy or obscure, or to withhold key information from the candidate.

Strategies/Tactics/Hints for Successfully Completing the Fact Finding Component. As mentioned earlier, studying specifically for the Fact Finding component is very difficult, but preparation can be critical. The following summarizes some helpful pointers.

- Know which case (child or adult) you are going to choose before you go into the examination.
- Have a strategy for collecting information.
- Practice Fact Finding in mock examinations with colleagues. This will help you become familiar with the format, polish information collection skills, and fine tune time management.
- If you have experience supervising trainees, think of Fact Finding as “reverse supervision.” That is, you are doing a role reversal to elicit the necessary information from the examiner, rather than teaching your trainees how to collect and review information.
- Prepare a worksheet or outline at the outset of the examination.
- Work through the case in a thorough and careful, but also efficient fashion. If you are efficient, there will be plenty of time to collect the necessary clinical information.
- As you collect information, make note of it in the appropriate place on the outline or worksheet.
- Ask for test scores in a format that is comfortable to you (e.g., raw scores, standard scores, percentiles).
- If you are unfamiliar with a test that was given in the case, ask about it.
- Remember that the Fact Finding case is clinically rich and is a real-life case in which the pieces will not necessarily fit together neatly. Be prepared to weigh the significance of various factors and test data.
- The candidate is responsible for time management, although the examiner may provide reminders. Some candidates find it helpful to lay their wristwatch on the table in front of them to help keep track of time.
- After the information is collected, take a few minutes to formulate the case. Think about the differential diagnosis and include this in your presentation. Even if you do not think you have the case entirely solved and have the “right answer”, do the best formulation you can.

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- Remember that the examiner is not only providing information, but she or he is also observing how you go about working with the clinical materials. The candidate should see this as an opportunity to demonstrate an organized, thorough, and thoughtful approach to evaluation.

Practice Fact-Finding Cases. Two sample Fact Finding cases, one child and one adult, are provided. These include the brief description, test data, and collateral information. The best use of these materials would be for the candidate to arrange a mock Fact Finding examination with a colleague. In doing this, the colleague would be given the materials and then serve as an examiner. If this cannot be arranged, the candidate may review the materials to see the kinds of information that are available in the Fact Finding component and to refine her or his approach to this portion of the examination.

The following materials for each case are provided. The first page for each case is the brief vignette, which is handed to the candidate. Several pages of case information follow, including background information and test scores. This information is provided to the candidate as she or he asks for it. Special instructions for providing this information are noted in italics. The final page contains the case formulation (conclusions and recommendations), which is *not* provided to the candidate. After the candidate reaches a formulation, it can be compared with the final case formulation, to determine the extent to which her or his conclusions and recommendations agree with those contained in the practice case.

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Sample Case — Adult

A 47-year old woman was found at home in an altered state of consciousness by her daughter. She is referred for neuropsychological evaluation by her family practice physician 13 months later.

Case Information

I. BACKGROUND INFORMATION

Identifying Information

Age	47 years, 11 months at the time of testing
Handedness	Right
Ethnicity	Caucasian

Education

Highest Grade. 14 years
History. Perhaps a little slow learning to read, otherwise no problems. No repeated grades. Graduated high school. Has attended college sporadically and has about 2 years total college education.

Social

Living Arrangement. Has been married 28 years. Husband retired from the military and presently has a job that takes him out of town regularly. They have no natural children and have adopted 3 children.
Work History. Has worked mostly in clerical positions. Hasn't worked for several years.
Activities. She is a homemaker and lives in a semi-rural setting where she and her family have horses. Volunteers with her church, 4-H, and at her children's schools.

II. PROBLEM & HISTORY

History of Presenting Illness

Referral. She was referred to determine her current cognitive status and to provide treatment recommendations, including possible supports needed for independent living.

Patient's Complaints. Problems with: anosmia, hearing with the left ear, low energy, attention, memory, visuospatial abilities, problem-solving, spelling, reading comprehension, and arithmetic. No significant emotional symptoms are noted. She has stopped driving a car, has some difficulty maintaining her household, and has some anxiety when her husband is called out of town.

She has an episode of altered consciousness about once every 3 months. Initially these came without warning but recently they are preceded by inability to talk and wanting to say "eee". They are shorter than initially. *[Withhold the following information until after the examinee completes a formulation.]* Her sister, who is a nurse, witnessed an early episode that lasted 3½ minutes and described it as a major motor seizure.

Course of Illness. Upon finding her, the daughter called 911 and the patient was taken to the hospital, where the admitting Glasgow Coma Scale was 12. Neurological exam was normal, except for confusion and inability to answer questions. Subsequently, she had fluent speech but receptive aphasia with neologisms, word substitution, and perseverations. No sensory defects or visual field defects were noted.

Six weeks after the initial event she developed increasing headache, fever, and episodes of disrupted consciousness. She had been prescribed Dilantin and this was changed to Tegretol because of possible medication-related fever. She had some additional medical procedures *[If examinee asks what, respond that she had a craniotomy but details aren't available.]* and her neurological status returned to baseline in about two weeks.

[Withhold the following information until after the examinee provides a formulation.] On initial hospitalization, neurosurgical consult revealed right hematomypanum, right Battle sign, and raccoon eyes (right worse than left). Slight right hyperreflexia and a right Babinski sign were noted.

[Also withhold this.] Prior to the second hospitalization, she had a loss of consciousness with tongue biting. The medical procedure done during this hospitalization was a left temporal craniotomy with open biopsy and removal of a blood clot. Brain biopsy was negative for neoplasm and infection.

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. **Medical Work Up**

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Past Medical History

No prenatal or perinatal medical problems and no developmental delays noted. Pneumonia in 4th grade and again in high school. Broken right wrist in 8th grade (healed well). Has had 12 miscarriages and a hysterectomy 15 years prior to this evaluation. Right knee surgery 9 years prior to this evaluation. Has allergies and has history of episodic vertigo.

Psychiatric. Some depression several years ago. No substance abuse.

Family. The oldest (13-year old) adopted daughter has a history of learning problems and anxiety. Has been verbally abusive towards patient and pushed her on one occasion.

Prior Cognitive Evaluations. A speech/language evaluation was done 4 days after the first incident and revealed verbal and reading comprehension defects, reduced attention, difficulty reading, anomia, paraphasias, neologisms, mild disorientation to time and place, and labile affect.

A psychological evaluation was done two weeks after the first incident. This found that thinking abilities had improved (with some residual problems in language, memory, and visuospatial abilities), there were no emotional problems, insight was good, but a dysexecutive syndrome and mild impulsivity were seen

Neurological and Medical Findings

Cerebrospinal Fluid. This was done during her second hospitalization and showed increased protein at 105, 42 white blood cells (82% lymphocytes), glucose of 50, and all CSF cultures were negative.

Neuroimaging. [*Note: Withhold this information until an initial formulation is made. This information may then be given, followed by asking the examinee how this would affect formulation*]. A series of CT and MRI studies during her first hospitalization revealed a large (3X4 cm) left temporal intraparenchymal hematoma and hemorrhagic contusion of the left frontal pole, and a small focal right cerebellar lesion. MR angiogram of the circle of Willis revealed no definite AVM but some mass effect on the left middle cerebral artery from the hematoma. Follow up CT scan 2 weeks later revealed the left temporal hematoma was resolving.

During the second hospitalization, neuroimaging revealed left temporal encephalomalacia but no abscess, left cerebral mass effect with increased vasogenic edema extending into the posterior external and extreme capsules, uncus swelling that caused slight effacement of the left cerebral peduncle, and questionable abnormality in the left anterolateral temporal lobe. The right cerebellar lesion was decreasing in size.

An MRI done 10 months post the initial hospitalization revealed resolution of the left temporal hematoma with residual encephalomalacia, gliosis, and hemosiderin. A small old right cerebellar infarct was noted.

EEG. [*Note: Withhold this information until an initial formulation is made. This information may then be given and ask the examinee how this would affect formulation*]. An EEG done during the second hospitalization showed slowing and occasional spikes in the left temporal lobe.

Medicines. Depakote, 2500 mg daily; Neurontin, 300 mg tid; Ambien, 5 mg hs.

III. NEUROPSYCHOLOGICAL EXAMINATION

1. Observations during Interview

She was friendly, polite, and appropriate throughout the examination. She was anxious at times but did not have excessive emotional displays. She was tested over several visits due to fatigue. She exhibited memory and word-finding problems during history taking, with frequent verbal paraphasias. Speech varied from fluid to hesitant. She used reading glasses and would cock her head to listen with her right ear. She needed clarification and elaboration of test directions.

2. Test Data. Scores are expressed as age-related scaled scores, standard scores, T scores, or percentiles. Heaton, Grant, and Matthews (1991) norms are used for many measures. Other norms will be noted as necessary.

General Intelligence/Wechsler Tests

WAIS-R Subtests	Scaled Score	Age-Corrected Scaled Score
Information	7	8
Digit Span	8	8
Vocabulary	8	8
Arithmetic	9	9
Comprehension	6	6
Similarities	7	8
Picture Completion	7	9
Picture Arrangement	11	13
Block Design	6	7
Object Assembly	6	7
Digit Symbol	9	11
Verbal IQ	88	
Performance IQ	96	
Full Scale IQ	90	

Impairment Indices

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Index	Raw	Transformation
Halstead Impairment Index	0.7	33 T-Score, 4 Percentile
Average Impairment Index	1.58	34 T-Score, 5 Percentile
Neuropsychological Deficit Scale	46	Moderate Impairment

Attention/Concentration

Test	Raw	Transformed
WAIS-R Digit Span	5 forward, 4 back	8 Scaled Score
Trail Making Test		
Part A	35 Sec.	43 T-Score, 24 Percentile
Part B	135 Sec., 1 Error	29 T-Score, 2 Percentile
Seashore Rhythm Test	22 Correct	36 T-Score, 8 Percentile
Speech Perception Test	11 Errors	35 T-Score, 7 Percentile

Memory

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Test	Raw	Transformed
Story Learning Test		
Learning	6.17	31 T-Score, 3 Percentile
4-hr Delay Percent Loss	18.9	44 T-Score, 27 Percentile
Interference Learning Test (a word-list learning test)		
Performance Summary	2/36	62 Percentile
Trial 1 Recall	5	50 T-Score, 50 Percentile
Trial 4 Recall	14	50 T-Score, 50 Percentile
Category Clustering	80	69 T-Score, 97 Percentile
Source Errors	7	45 T-Score, 31 Percentile
Confabulations	0	56 T-Score, 73 Percentile
30-Min Delayed Recall	11	49 T-Score, 46 Percentile
Recognition Discriminability	0.68	47 T-Score, 38 Percentile
Figure Learning Test		
Learning	8.0	40 T-Score, 16 Percentile
4-hr Delay Percent Loss	0.0	57 T-Score, 76 Percentile
Continuous Visual Memory Test		
Hits	31	2 Percentile
False Alarms	19	91 Percentile
d'	0.94	2 Percentile
Total Correct	65	3 Percentile
30-min Delayed Recognition	2	5 Percentile
Tactual Performance Test		
Memory	8	49 T-Score, 46 Percentile
Localization	3	46 T-Score, 34 Percentile
Brown-Peterson Consonant Trigram Learning		
0 Sec Delay	15	Within Normal Limits
9 Sec Delay	12	50 Percentile
18 Sec Delay	12	68 Percentile
36 Sec Delay	10	52 Percentile

Language

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Test	Raw	Transformed
Multilingual Aphasia Examination		
Visual Naming	52	39 Percentile
Sentence Repetition	9	7 Percentile
Controlled Oral Word Association	27	10 Percentile
Oral Spelling	9	15 Percentile
Written Spelling	10	39 Percentile
Token Test	37	5 Percentile
Aural Comprehension of Words and Phrases	17	41 Percentile
Reading Comprehension of Words and Phrases	18	59 Percentile
Verbal Concept Attainment Test	9	1 Percentile
<i>(See Attention/Concentration for Speech Perception Test. See Executive Functions and Abstraction for the Stroop Test.)</i>		

Sensory-Perceptual

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Test	Raw	Transformed
Finger Localization Test		
Right Hand Errors	4	--
Left Hand Errors	7	--
Fingertip Number Writing		
Right Hand Errors	1	Within Normal Limits
Left Hand Errors	5	--
Double-Simultaneous Visual Stimulation		
Right Errors	1	Within Normal Limits
Left Errors	1	Within Normal Limits
Double Simultaneous Tactual Stimulation		
Right Errors	3	--
Left Errors	1	--
Double Simultaneous Auditory Stimulation		
Right Errors	0	Within Normal Limits
Left Errors	1	Within Normal Limits
Total Errors on Halstead-Reitan Extended Sensory Perceptual Exam		
Right Errors	11	28 T-Score, 1 Percentile
Left Errors	17	18 T-Score, 1 Percentile
Total Errors	28	23 T-Score, 1 Percentile
Pocket Smell Test (Screening test for olfaction)	0/3	Impaired
<i>(See Attention/Concentration for Seashore Rhythm Test)</i>		

Executive Functions and Abstraction

The Oral Examination: Work Sample and Fact Finding - M. Schmidt

Test	Raw	Transformed
Controlled Oral Word Association		
F-A-S	15	15 Percentile
Halstead Category Test	50 errors	43 T-Score, 24 Percentile
Wisconsin Card Sorting Test		
Categories Achieved	6	>16 Percentile
Correct	82	--
Errors	16	51 T-Score, 55 Percentile
Perseverative Errors	8	61 T-Score, 87 Percentile
Perseverative Responses	8	51 T-Score, 55 Percentile
Percent Conceptual Level Responding	80.6	52 T-Score, 58 Percentile
Failures to Maintain Set	1	>16 Percentile
Stroop Color and Word Test (Golden Version)		
Word	66	33 T-Score, 4 Percentile
Color	56	37 T-Score, 10 Percentile
Color-Word	24	34 T-Score, 5 Percentile
<i>(See Attention/Concentration for Trail Making Test. See Language for Verbal Concept Attainment Test.)</i>		

Motor Functions

The Oral Examination: Work Sample and Fact Finding - M. Schmidt

Test	Raw	Transformed
Halstead-Reitan Finger Oscillation Test		
Right	46 taps	49 T-Score, 46 Percentile
Left	37 taps	46 T-Score*, 34 Percentile
Total	83	Impaired**
Grip Strength		
Right	32 kg	55 T-Score, 69 Percentile
Left	26 kg	54 T-Score*, 66 Percentile
Tactual Performance Test		
Right	10.0 min, 8 blocks placed	37 T-Score, 10 Percentile
Left	8.0 min, 10 blocks placed	39 T-Score, 14 Percentile
Both	5.3 min, 10 blocks placed	40 T-Score, 16 Percentile
Total	23.3 min, 28 blocks placed	36 T-Score, 8 Percentile
Name Writing		
Right	15 (27 letters)	–
Left	58 (27 letters)	–
Total	0.74 Letters/Second	Impaired**
* Raw score is significantly lower than right hand.		
** Using Dodrill norms.		

Personality/Emotional Factors (This page may be handed to the examinee)

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Personality Assessment Inventory	Main Scale T-Score	Subscale T-Score
Validity		
Inconsistency	49	
Infrequency	47	
Negative Impression	88	
Positive Impression	36	
Clinical Scales		
Somatoform Complaints	83	
Conversion		96
Somatization		73
Health Concerns		71
Anxiety	86	
Cognitive		78
Affective		86
Physiological		86
Anxiety-Related Disorders	71	
Phobia		70
Traumatic Stress		70
Depression	93	
Cognitive		90
Affective		83
Mania	62	
Paranoia	62	
Persecution		77
Schizophrenia	87	
Psychotic Experience		80
Thought Disorder		87
Borderline Features	67	
Identity Problem		74
Antisocial Features	42	
Alcohol Problems	43	
Drug Problems	50	
Treatment Scales		
Aggression	46	
Suicidal Ideation	66	
Stress	91	
Nonsupport	48	
Treatment Rejection	25	
Interpersonal Scales		
Dominance	27	
Warmth	53	
Note. Scores >70 are considered outside normal limits. Only significantly elevated subscales are reported.		

Case Formulation

IV. CONCLUSIONS

This patient apparently suffered a fall, for which she has no memory, and she was then found by her daughter. She subsequently had a complex course.

- . Five days after the fall, her hospital discharge diagnosis was basilar skull fracture, left intraparenchymal hemorrhage, right cerebellar contrecoup injury, and left frontotemporal edema. Differential diagnosis (without neuroimaging results) would be an acute event, most likely head trauma versus CVA. A psychiatric (e.g., conversion disorder) etiology might also be considered.

- . Upon return to the hospital about six weeks after the initial event, she was diagnosed with viral encephalitis. Discharge diagnosis was delayed post-trauma seizures, traumatic left temporal hematoma with edema and gliosis, inappropriate ADH, SIADH, and hyponatremia. Without neuroimaging, the examinee might note risk factors of exposure to horses (and they were healthy) and possible travel outside the U.S. with her husband's military career (in fact, she had never traveled outside the U.S.).

V. RECOMMENDATIONS

- . Audiological evaluation to assess left ear hearing loss.

- . Psychotherapy to help her with depression and anxiety.

- . Psychiatric consult to consider medication for anxiety and depression.

- . Development of compensatory strategies for memory and other cognitive problems.

- . Brief family counseling to address residual family issues and help the family cope more effectively and positively with the changes in her functioning.

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Sample Case — Child

An 8 year old boy with spina bifida is referred by his parents for assistance in developing an appropriate educational plan.

Case Information

I. BACKGROUND INFORMATION

Identifying Information

Age	8 years, 1 month
Handedness	Right
Ethnicity	Caucasian

Education

Grade. 3rd grade
History. He was enrolled in an infant stimulation program, later attended a preschool special needs program, and has been in the public schools for the past 4 years, where he receives special educational services, including a classroom aide, limited resource room instruction, speech/language therapy, occupational therapy, and physical therapy.
Academic Performance. He performs adequately in all academic areas except math and handwriting. A psychological evaluation at age 6 years, 4 months produced a WISC-R VIQ=102, PIQ=95, and FSIQ=99.
Other School Problems. He is described as having longstanding difficulties in the classroom with attention, listening, task completion, distractibility, self control, and “sportsmanship”.

Social

Living Arrangement. He lives with his 42-year old mother, 41-year old father, and 14-month old brother.
Parents’ Occupations. His mother completed college and two years of graduate study. She was a paralegal before becoming a homemaker. His father has a Master’s degree and has a civil service position as a program analyst.
Activities. He watches television excessively. Recently he has participated in little league baseball and Cub Scouts.

II. PROBLEM & HISTORY

History of Presenting Illness

Referral. He was referred for assistance in developing an appropriate educational plan.

Patient's Complaints. Not obtained.

Family's Complaints. Both of his parents were concerned that his social skills are immature. He does not appear to know how to interact with other children. He can be too "forward" with strangers. He is hyperverbal and likes to be the center of attention. He is often inattentive, impulsive, and distractible. He can become upset and scared easily.

Medical Work Up

Past Medical History

Birth/Developmental History. Product of a full term, uncomplicated pregnancy. Delivery was by Cesarean section, and the umbilical cord was loosely wrapped around his neck. APGARS were 8 and 9 at 1 and 5 minutes, respectively. He was born with L3-L4 myelomeningocele which was surgically repaired, a right equinovarus, and left internal tibial torsion. He has neurogenic bladder and bowel, and partial paralysis of his lower extremities. He has had 2 hip stabilization surgeries. He walks independently with KAFO braces and Lofstrand crutches.

Complications. He developed hydrocephalus which required surgical placement of a right VP shunt on the 8th day of life. The shunt has never required revision.

Psychiatric. None

Neuroimaging Findings

CT Scan. [*Note: Withhold this information until an initial formulation is made. This information may then be given, followed by asking the examinee how this would affect formulation*]. Done 2½ years earlier and showed mild left ventricular dilation. The interhemispheric fissure was widened with possible corpus callosum dysgenesis. There is a Chiari II malformation with caudal displacement of the cervical medullary junction and inferior cerebellar vermis to approximately C2-C3 level.

EEG. Done 1 year earlier and was within normal limits.

Medicines. None

Family Medical/Psychiatric History

There is a family history of dyslexia and hyperactivity in an uncle and seizure disorder in a maternal grandmother.

III. NEUROPSYCHOLOGICAL EXAMINATION

1. Observations during Interview

He separated without any difficulty from his mother. He walked with the aid of braces and forearm crutches. He was difficult to engage in testing because of limited attention span and distractibility. He was impulsive at times. His pragmatic language was noteworthy for a pseudomature, cocktail-party-like quality and for difficulties with turn-taking and topic maintenance. Overall, he showed a disorganized approach on many tasks. At times, perseverations in behavior and language were noted. He demonstrated immature social pragmatics. He frequently coughed in the examiner's face without awareness of social etiquette. Throughout the testing he appeared concerned that he do well and that the examiner like him.

2. Test Data. Scores are expressed as age-related scaled scores, standard scores, T scores, or percentiles.

Attention/Concentration

Test	Raw	Transformed
WISC-III Digit Span		12 Scaled Score
Trail Making Test		
Part A	42 Sec.	79 Percentile
Part B	110 Sec., 3 Errors	90 Percentile
Cancellation Test (Rudel, Denkla, & Browman)		
Target Stimulus		
Number (592)	206 Sec. 22 Errors*	90 Percentile 27 Percentile
Shape (Diamond)	120 Sec. 2 Errors**	>99 Percentile 27 Percentile
*	11 commission, 11 omission	
**	0 commission, 2 omission	

General Intelligence/Wechsler Tests

WISC-III Subtests	Scaled Score
Information	10
Similarities	16
Arithmetic	8
Vocabulary	13
Comprehension	9
Digit Span	12
Picture Completion	4
Coding	9
Picture Arrangement	5
Block Design	9
Object Assembly	5
Symbol Search	6
Verbal IQ	107
Performance IQ	78
Full Scale IQ	92
Verbal Comprehension	111
Perceptual Organization	76
Freedom from Distractibility	101
Processing Speed	88

Achievement Scores

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Woodcock-Johnson Psychoeducational Battery-Revised	
Standard Battery	Standard Score
Letter-Word Identification	138
Passage Comprehension	119
Calculation	89
Applied Problems	80
Dictation	106
Writing Samples	104
Science	101
Social Studies	112
Humanities	113
Standard Battery Cluster	
Broad Reading	127
Broad Mathematics	82
Broad Written Language	107
Broad Knowledge	109
Skills	110

Language

Test	Raw	Transformed
Boston Naming Test	49	>99 Percentile
Peabody Picture Vocabulary Test	93	50 Percentile
<i>(See Executive Functions for FAS)</i>		

Executive Functions

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Test	Raw	Transformed
Controlled Oral Word Association		
F-A-S	15	15 Percentile
Wisconsin Card Sorting Test		
Total Correct	52	
Total Errors	76	5 Percentile
Perseverative Responses	50	7 Percentile
Perseverative Errors	42	7 Percentile
Categories Completed	2	11-16 Percentile
Failures to Maintain Set	1	>16 Percentile
Percent Conceptual Level Responding	23	5 Percentile
<i>(See Attention/Concentration for Trail Making Test)</i>		

Memory

Test	Raw	Transformed
Wide-Range Assessment of Memory and Learning (Sheslow & Adams norms)		
Story Memory		
Immediate Recall	--	12 Scaled Score
Delayed Recall	62% Retention	Borderline Performance
Delayed Recognition	12/15 Correct	Average Performance
Sentence Memory	13	8 Scaled Score
Picture Memory	18	10 Scaled Score
California Verbal Learning Test-Children's Version		
Acquisition	9-4-2-5-7	8 Percentile
Trial 1	9	98 Percentile
Trial 5	7	16 Percentile
Semantic Clustering	10%	10 Percentile
Perseverations	7%	18 Percentile
Intrusions	26.8%	>99 Percentile
Free recall Short Delay	7	31 Percentile
Cued Recall Short Delay	10	69 Percentile
Free Recall Long Delay	10	69 Percentile
Cued Recall Long Delay	8	31 Percentile
Recognition Hits	15	84 Percentile
Recognition False Positives	3	50 Percentile
Rey-Osterrieth Complex Figure		
Immediate Recall	5.5	5 Percentile
Delayed Recall	5	4 Percentile

Visual Perception/Construction

Test	Raw	Transformed
Hooper Visual Organization Test	23.5	66 Percentile
Kaufman Assessment Battery for Children		
Gestalt Closure	14	7 Scaled Score
Raven Coloured Progressive Matrices		
A	7	13 Percentile
AB	4	18 Percentile
B	4	31 Percentile
Rey-Osterrieth Complex Figure		
Copy	11	5 Percentile
Beery Developmental Test of Visual-Motor Integration	12	84 Standard Score
WISC-III		
Picture Completion	--	4 Scaled Score
Block Design	--	9 Scaled Score
Object Assembly	--	5 Scaled Score
Symbol Search	--	6 Scaled Score

Sensory-Perceptual

Test	Raw	Transformed
Finger Localization Test		
Right Hand Errors	0	Within Normal Limits
Double-Simultaneous Visual Stimulation		
Right Errors	0	Within Normal Limits
Left Errors	0	Within Normal Limits

Motor Functions

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Test	Raw	Transformed
Halstead-Reitan Finger Oscillation Test		
Right	38.4 taps	38 Percentile
Left	30.8 taps	18 Percentile
Grip Strength		
Right	10 kg	15 Percentile
Left	8.25 kg	7 Percentile
Grooved Pegboard		
Right	97 sec, 1 drop	>99 Percentile
Left	105 sec, 0 drop	>99 Percentile

Personality/Emotional Factors

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Vineland Adaptive Behavior Scales	Standard Score	Age Equivalent
Interview Edition, mother informant		
Communication	92	7-7
Daily Living	36	3-3
Socialization	79	5-7
Adaptive Behavior Composite	64	5-6
Conner's Parent Rating Scale		
T-Score		
Mother		
Conduct Problems	53	
Learning Problems	86	
Psychosomatic	55	
Impulsive-Hyperactivity	55	
Anxiety	50	
Hyperactivity	65	
Conners' Teacher Rating Scale		
T-Score		
Teacher		
Conduct Problems	72	
Hyperactivity	61	
Inattention-Passive	70	
Hyperactivity Index	65	
Achenbach Child Behavior Checklist		
T-Score		
Mother		
Internalizing	46	
Externalizing	34	
Total Score	47	
Attention Problems	70	
Father		
Internalizing	63	
Externalizing	51	
Total Score	64	
Attention Problems	73	
Social Problems	73	
Teacher		
Internalizing	81	
Externalizing	71	
Total Score	79	
Attention Problems	93	
Thought Problems	80	
Social Problems	76	
Withdrawn	73	
Piers-Harris Children's Self-Concept Scale		
T-Score		
Behavior	36	
Intellectual & School Status	38	
Physical Appearance & Attributes	49	
Anxiety	52	
Popularity	36	
Happiness & Satisfaction	56	
Total Score	44	

Case Formulation

IV. CONCLUSIONS

- . Findings are consistent with the literature on neurobehavioral consequences of spina bifida and shunted hydrocephalus. (The examinee might also mention brain abnormalities associated with myelomeningocele as well as increased risk of seizures.)
- . Findings suggest a nonverbal learning disability or “right hemisphere” learning disability.
- . Findings also suggest ADHD with related deficits in executive functions.
- . Differential diagnosis might include semantic-pragmatic disorder, pervasive developmental disorder/Asperger’s syndrome, and prodromal schizotypal disorder.
- . Child’s functioning also might reflect, in part, the family’s role in encouraging over-dependency. Although there is no information about the family’s role in the case summary, this is a common problem in children with spina bifida who have various orthopedic and related difficulties.

V. RECOMMENDATIONS

- . Regular classroom placement with appropriate modifications and assistance.
- . Specific assistance with math and written expression.
- . Social skills training.
- . Parent training in behavior management techniques.
- . Increased stress on development of daily living skills.
- . Possible medication trial for attention problems.

THE ORAL EXAMINATION: PROFESSIONAL AND ETHICAL ISSUES

A. John McSweeney, Ph.D.

Purpose and Overview

The Professional and Ethical Issues section of the Oral Examination is somewhat different from the other sections of the examination in that it is not as specifically concerned with technical competence and scientific knowledge. Rather, it is concerned with how the candidate conducts his or her professional practice.

The Professional and Ethical Issues section has two major purposes. The first purpose is to assess the candidate's knowledge of the Ethical Principles and Code of Conduct (1992; hereafter referred to as the Ethics Code) of the American Psychological Association (APA), its application to clinical neuropsychological practice, and knowledge of and sensitivity to related professional and clinical issues in neuropsychological practice. This is assessed via an analysis by the candidate of a brief vignette that describes a situation with potential ethical and professional conflicts. The second purpose is to learn about the candidate's professional practice and related activities, as well as his or her service to the profession of clinical neuropsychology. This is accomplished in the context of a semi-structured interview.

Procedures

First, the candidate will be introduced to the examiner and after being seated, given a brief overview of the purpose and procedures for this section of the examination. Then, the candidate will be given the vignette with the potential ethical conflicts and allowed to read it for approximately five minutes. The candidate is welcome to take notes while reading the vignette in order to help analyze the issues, identify the relevant standards from the APA Ethics Code and organize his/her presentation to the examiner. Any notes taken will be collected at the end of this section of the examination.

After the candidate has finished reading the vignette, he or she will be asked to identify and discuss the ethical issues in it. The candidate will also be asked to identify the relevant standards from the Ethics Code. He or she does not need to know the numbers associated with the Ethical Standards or be able to quote them verbatim. However, the candidate should be able to describe the concepts involved in the Standards and discuss how they apply to the situation in the vignette, in other words, answering the question, "Just what are the (ethical) problems here?" The discussion of the Ethics Code should include an explanation of the reasoning behind them. The ABCN is aware that parts of the current Ethics Code are controversial, and if the candidate wishes to note disagreement with the principles, he or she should feel free to do so, as long as he or she can explain the position with respect to the intent of the Principle and why he or she believes it is flawed.

In addition to being able to identify and discuss the parts of the Ethics Code inherent in the situation described in the vignette, the candidate should be able to discuss how the situation might be handled differently. The candidate should ask him or herself, "What would I do in this situation to resolve it in an ethical fashion?" Be ready to discuss solutions as well as problems.

The discussion of the vignette may take up to approximately half of the 45-50 minute examination period, i.e., 20-25 minutes. Typically, however, the vignette discussion takes less time than the remaining part of the Ethical and Professional Issues section, the discussion of the candidate's professional activities. In this second section, the candidate will be asked to describe him or herself as

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a clinician and as an individual. All examiners have an outline which they use to guide their interview with candidates. Most interviewers will not follow the outline rigidly, but they will attempt to cover all or most of the topics included in it. Some areas may be explored in more depth than others, depending on how clear and comprehensive the information provided in the background summary the candidate enclosed with the Work Sample is. The following are some specific topics that may be included in the interview. Please note that the topics are not listed in any particular order.

- Educational background
- Continuing education activities
- Scholarship
- Educational (teaching and supervision) activities
- Practice
- Involvement in neuropsychological and professional psychological organizations
- Ethical issues discussion

The discussion of educational background may be relatively brief, if this was covered in the background summary and if the candidate's training was relatively straightforward and standard. If training differs somewhat from the norm, this may lead to a few more questions, but it does not indicate that there is a problem with the candidate's training. Rather it simply means that the examiner is interested in how he or she became trained in clinical neuropsychology. The candidate may be asked about graduate training, internship, postdoctoral training and other educational experiences in clinical neuropsychology, as well as in psychology general.

Examiners are interested in continuing education (CE) as it indicates a commitment to maintaining and upgrading one's skills and knowledge base for practice. Candidates for ABCN board certification are expected to have received their basic training in neuropsychology in organized graduate and post-doctoral settings. However, it is recognized that clinical neuropsychology and related behavioral and neuroscience fields are dynamic and that CE activities are the major method for keeping up with the changes inherent in the profession. CE activities are not limited to workshops; reading journals and books is equally important, and the candidate may wish to discuss some articles or books he or she has read recently. CE activities concerning ethics and other professional issues in clinical neuropsychology and professional psychology in general are particularly relevant to this part of the examination.

The next topics, scholarly and educational activities, will vary a great deal from candidate to candidate. There are no good or bad levels of scholarly and educational activity. It depends entirely on the candidate's responsibilities and interests in clinical neuropsychology. If the candidate is in an academic setting, research, publications, presentations at professional meetings, classroom teaching, and supervision of trainees may all be major parts of his or her professional activities and thus merit considerable discussion during the examination. Other clinical neuropsychologists may not engage in much scholarly or educational activity as part of their responsibilities and thus, this part of the interview may be brief. If the candidate has presented CE activities, this should be mentioned during this part of the discussion.

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The examiner will usually spend a substantial amount of time on the nature of the candidate's practice. The candidate should be prepared to discuss the types of patients seen, including ages, types of neuropathology, and referral questions. The candidate may be asked if there any patients he or she does not see but refers to others and, if so, why. The candidate may also wish to discuss the type of practice maintained. The following are some questions that might be asked:

- Is your practice purely assessment or a combination of assessment and rehabilitation?
- Is your practice exclusively in neuropsychology or do you also engage in the practice of general clinical psychology?
- How would you characterize the nature of your theoretical approach? Do you use a fixed battery or flexible-battery approach to assessment? Have you changed how you do things over the years and if so, how and why?

Again there are no right or wrong issues. The goal of this part of the examination is to put much of the rest of the examination in context of who the candidate is and what he or she does. For example, the examiner might expect different levels of sophistication in the discussion of dementing diseases with candidates who specialize in older adults and those who specialize in children.

The final topic concerns a general discussion of ethical issues related specifically to the candidate's practice. The candidate may be asked to discuss any ethical dilemmas he or she has encountered and how they were resolved. If the candidate believes that the resolution was not entirely successful, he or she may wish to discuss how the situation could be handled differently, if there were another opportunity. All clinicians make mistakes, and it is important to learn from them.

Suggested Readings

Of the various entries listed below, the most important is the American Psychologist article that contains the APA Ethics Code (American Psychological Association, 1992). The candidate should make a point of reading and becoming familiar with the Ethics Code before the examination. A particularly useful discussion of the Ethics Code is the book by Canter, Bennett, Jones, and Nagy (1994) published by APA. It includes the current Ethics Code in its entirety and gives a history of the development of the Ethics Code and ethics-related activities at APA in general. Most importantly, the authors attempt to explain each section of the Ethics Code in some detail and to suggest how psychologists might resolve potential ethical dilemmas. One limitation of the book is that it is written for psychologists in general rather than for clinical neuropsychologists. Thus, some sections are more relevant to clinical neuropsychologists than others. In addition, the book is a commentary rather than "truth with a capital T." Thus, the candidate may find him or herself in agreement with parts of it but not others. Keeping these limitations in mind, Canter et al. (1994) remains a useful book to review prior to the Oral Examination.

Another reference well worth reading before the examination is the article by Binder and Thompson (1995). This article analyzes the Ethics Code with respect to issues of particular interest to neuropsychologists, including forensic issues. It ends with a list of 20 recommendations for clinical neuropsychological practice based on the authors' analysis of the current Ethics Code.

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The other references either represent specific ethical or professional practice issues or are generalized discussions of ethics in psychology that are listed for completeness. The book by Eyde et al. (1993), for example, reviews the area of psychological assessment practices in some detail, while the book edited by Bersoff (1999) is a very broad review of ethics and psychology in general and includes some of the individual references listed below. The candidate may wish to review some of these resources to supplement reading of Binder and Thompson (1995) and Canter et al. (1994).

Adams, K. M. (1997). Comment on ethical considerations in forensic neuropsychological consultation. The Clinical Neuropsychologist, 11, 294-296.

American Education Research Association, American Psychological Association, National Council on Measurement in Education (1999). Standards for educational and psychological testing. Washington, DC: American Education Research Association.

American Psychological Association (1992). Ethical principles of psychologists and code of conduct. American Psychologist, 47, 1597-1611.

American Psychological Association (1993). Guidelines for providers of psychological services to ethnic, linguistic, and culturally diverse populations. American Psychologist, 48, 45-48.

American Psychological Association (1993). Record keeping guidelines. American Psychologist, 48, 308-310.

Artiola I Fortuny, L., & Mullaney, H. A. (1998). Assessing patients whose language you do not know: Can the absurd be ethical?. The Clinical Neuropsychologist, 12, 113-126.

Bersoff, D. N. (1999). Ethical conflicts in psychology (2nd edition). Washington, DC: American Psychological Association.

Bersoff, D. N., & Koepl, P.M. (1993). The relationship between ethical codes and moral principles. Ethics and Behavior, 3, 345-357.

Binder, L. M., and Thompson, L. L. (1995). The Ethics Code and neuropsychological assessment. Archives of Clinical Neuropsychology, 10, 27-46.

Canter, M. B., Bennett, B E., Jones, S. E., & Nagy, T F. (1994). Ethics for psychologists: A commentary on the APA Ethics Code. Washington, DC: American Psychological Association.

Committee on Ethical Guidelines for Forensic Psychologists (1991). Specialty guidelines for forensic psychologists. Law and Human Behavior, 15, 655-665.

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Eyde, L. D., Robertson, G. J., Krug, S. E., Moreland, K. L., Robertson, A. G., Shewan, C. M., Harrison, P. L., Porch, B. E., Hammer, A. L., & Primoff, E. S. (1993). Responsible test use: Case studies for assessing human behavior. Washington, DC: American Psychological Association.

Guilmette, T. J., & Hagan, L. D. (1997). Ethical considerations in forensic neuropsychological consultation. The Clinical Neuropsychologist, 11, 287-290.

Johnson-Greene, D., Hardy-Morais, C., Adams, K. M., Hardy, C., & Bergloff, P. (1997). Informed consent and neuropsychological assessment: Ethical considerations and proposed guidelines. The Clinical Neuropsychologist, 11, 454-460.

Kimmel, A. (1991). Predictable biases in the ethical decision-making of American psychologists. American Psychologist, 46, 786-788.

McCaffrey, R. J., Fisher, J. M., Gold, B. A., & Lynch, J. K. (1996). Presence of third parties during neuropsychological evaluations: Who is evaluating whom? The Clinical Neuropsychologist, 10, 435-449.

McSweeney, A. J. (1997). Regarding ethics in forensic neuropsychological consultation: A comment on Guilmette and Hagan. The Clinical Neuropsychologist, 11, 291-293.

McSweeney, A. J., Becker, B. C., Naugle, R. I., Snow, W. G., Binder, L. M. & Thompson, L. L. (1998). Ethical issues related to the presence of third party observers in clinical neuropsychological evaluations. The Clinical Neuropsychologist, 12, 552-559.

Nagy, T. F. (1999). Ethics in plain English: An illustrative casebook for psychologists. Washington, DC: American Psychological Association.

Naugle, R. I., and McSweeney, A. J. (1995). On the problem of routinely appending neuropsychological data to reports. The Clinical Neuropsychologist, 9, 245-247.

Sales, B. D., and Folkman, S. (2000). Ethics in research with human participants. Washington, DC: American Psychological Association.

Tymchuk, A. (1986). Guidelines for ethical decision making. Canadian Psychology, 27, 36-43.

Van Gorp, W. G., & McMullen, W. J. (1997). Potential sources of bias in forensic neuropsychological evaluations. The Clinical Neuropsychologist, 11, 180-187.

Sample Vignette

A clinical neuropsychologist in a Midwestern state who specializes in the assessment of learning disabilities agrees to see one of his post-doctoral fellows who has asked for an appointment to discuss a personal issue. The fellow tells the neuropsychologist that he is concerned that his father is dementing and he asks that the neuropsychologist help him perform an assessment. The fellow notes that his father was born in France and moved to the United States five years ago to seek employment as a skilled worker in the construction trade. The neuropsychologist did have supervised experience in a geriatric setting during his internship and thus agrees to perform the evaluation. Standard neuropsychological tests in the neuropsychologist's laboratory are used; the fellow serves as interpreter. Because the fellow has limited funds, the neuropsychologist agrees to accept his help as a temporary research assistant in lieu of cash payment. The patient scores below the average range on most of the tests which the neuropsychologist interprets as evidence of early Alzheimer's Disease.

Applicable APA Ethical Standards

1.17 Multiple Relationships. The neuropsychologist has initiated a clinical relationship with his fellow which may impair the neuropsychologist's objectivity as a supervisor.

1.04 Boundaries of Competence. (Also, Principle A - Competence) The neuropsychologist has agreed to provide services in an area (assessment of dementia) where he presumably has limited experience and probably no recent experience.

1.08 Human differences. The patient is a French national. Specialized assessment techniques may be required or a referral to a specialist may be appropriate. Using the patient's son as an interpreter is an inadequate solution to the problem. (See also 2.04 - Use of assessment in general and with special populations.)

1.18 Barter. The neuropsychologist has accepted the services of his fellow in lieu of payment. The neuropsychologist must be able to show that this arrangement is not exploitative. In addition, it adds another layer to the multiple relationship problem.

2.04 c. Use of Assessment in General and With Special Populations. The neuropsychologist should have considered the patient's non-English speaking background and his likely limited education when interpreting the below-average performances as evidence of dementia.

Discussion. The neuropsychologist could have avoided this situation by referring the fellow to a colleague, preferably one with some expertise in assessing French-speaking adult patients. Certainly the neuropsychologist should have not attempted to perform the assessment himself given his existing relationship with the fellow as his supervisor, his lack of recent or extensive experience in assessing the elderly, his lack of fluency in French and lack of appropriate French-language instruments.

Furthermore, the neuropsychologist compounded the multiple relationship issue by accepting the fellow's services as a research assistant in place of cash payment. Finally, he makes the mistake of interpreting substandard results from a non-standard examination as indicative of brain dysfunction.

The issue of assessing non-English speakers is a complex one and it is not always possible to locate a neuropsychologist who is competent in a patient's language. In some cases interpreters are used but they should be qualified professional medical interpreters rather than relatives. In addition, even when professional interpreters are used, the examination is non-standard, especially if English-language tests are simply translated "on the spot." Thus, it is difficult to apply meaning to the test

results. Some of the ethical issues inherent in assessing non-English speakers are discussed in the article by Artiola I Fortuny and Mullaney (1998) listed in the suggested readings.

Conclusion

Many examinees find the Ethics and Professional Issues section of the Oral Examination to be the most enjoyable part, because it gives them a chance to talk about themselves as a professional and as a person. With some preparation, completing this portion of the examination should be a rewarding experience.

Strategies/Tactics/Hints for Successfully Completing the Ethics and Professional Issues Component of the Oral Examination

This portion of the Oral Examination is less technical and in many ways less stressful than other sections of the examination for many examinees. Even so, it is equal in importance to the other two sections, and the candidate should take some time to prepare for it. The following are some suggestions.

- Read the Ethics Code. As noted above, the candidate does not need to quote the Ethical Standards verbatim or memorize the numbers. However, the candidate should know the concepts. Sections One (General Standards), Two (Evaluation, Assessment or Intervention), Five (Privacy and Confidentiality), Seven (Forensic Activities) and Eight (Resolving Ethical Issues) are of importance to all neuropsychologists, and the other sections may be relevant depending on your practice and employment situation.
- Read some analyses of the Ethics Code. The article by Binder and Thompson (1995) and the book by Canter et al. (1994) are particularly recommended. The book by Nagy (1999) provides some case examples, not all of which are relevant to neuropsychologists, however. Ethical Conflicts in Psychology by Bersoff (1999) is probably the most comprehensive review of ethical issues but it is too broad to read cover-to-cover for most neuropsychologists. The article on ethical decision-making by Tymchuk (1986) was written by a Canadian psychologist before the current Ethics Code was published but is still useful as a guide to resolving ethical problems. Review some of the other references according to interests, perceived knowledge gaps and time available.
- Try writing an ethics vignette. This is an exercise that can help the candidate think about the Ethics Code and how it might be applied to situations clinical neuropsychologists face in their practices. Think about how the dilemma in the vignette could be resolved successfully.
- Think about how you would present yourself during the interview . Try a practice interview with a colleague serving as an examiner in which you discuss your educational background, your practice, and your job responsibilities. Also think about some ethical and professional issues you have encountered in your practice. These need not be earth-shattering, good versus evil, situations.

The Oral Examination: Ethics and Professional Issues - A. J. McSweeney

The examiner is not interested in high drama but rather how you deal with ethical and professional issues on a day-to-day basis.

- Manage your time in analyzing the vignette. Take adequate time to read through the vignette and identify the issues. Again, most candidates do not need the entire 20-25 minutes allotted to this portion of the ethics examination so speed is less important than thoroughness in most cases.
- Take notes when analyzing the vignette. Taking notes can help you keep track of the ethical issues in the vignette and also help you organize your discussion with the examiner when you are finished with reading it.
- Feel free to ask questions. Do not be shy about asking for clarification if anything about this or any portion of the Oral Examination is unclear. Your examiner is not an inquisitor but a colleague. Your examiner may not be able to answer all of your questions but will certainly attempt to be helpful.

REPEATING THE ABCN ORAL EXAMINATION

Corwin Boake, Ph.D.

Overview

This section is addressed to candidates who have not been awarded board certification after taking the ABCN Oral Examination for the first time. These candidates have successfully completed the ABCN Written Examination and have had their Work Samples judged as acceptable, but were not awarded board-certification following the Oral Examination. In other words, these candidates have neuropsychological training that has been accepted by the ABCN, their factual knowledge of neuropsychology and related areas has been demonstrated by their Written Examination scores, and their competence in the practice of clinical neuropsychology has been judged adequate based on their Work Sample.

It is therefore surprising that about 30% of candidates who sit for the Oral Examination are not awarded board certification. Unfortunately, no data are available to identify the reasons for these outcomes. However, ABCN examiners generally state that the most common problem is one of integrating patient data with knowledge about neurology and neuropsychology.

Because many of the candidates who are not awarded board certification following their first Oral Examination have spent years in neuropsychological training and make a living practicing neuropsychology, it is reasonable for them to consider repeating the Oral Examination. Therefore, in writing this section of the candidates' guide, opinions were solicited from neuropsychologists who were not awarded board certification following their first ABCN Oral Examination, but were awarded board certification on their second attempt. It would probably be valuable for candidates who are considering repeating the Oral Examination to consult with neuropsychologists who have repeated the Oral Examination successfully. Unfortunately, these neuropsychologists are not publicly identified and so candidates need to network in order to contact someone who can share first-hand experiences of repeating the Oral Examination.

Reactions to Not Being Awarded Board Certification

All of the neuropsychologists surveyed reported that it was an emotional shock to learn that they had not completed the Oral Examination successfully. Whether or not they felt they had performed well on the examination, they reported feelings of disappointment and of doubt in their own expertise. Some of the neuropsychologists felt angry because they believed that the oral examiners had treated them unfairly. The majority did not reapply right away and, instead, reassessed their options. Most of them waited six or more months before repeating the Oral Examination.

Options for Follow Up

Unlike the Work Sample, it is not possible for candidates to challenge the examination decision on the grounds that the final decision was incorrect. It is possible to appeal the examination, but only on procedural grounds that the examination was conducted following improper procedures. Such an appeal, which would be handled by the ABPP, is probably rare or nonexistent. However, if an appeal were successful the candidate would be permitted to repeat the Oral Examination without payment of fees.

Repeating the Oral Examination - C. Boake, Ph.D.

Therefore, the only real option available to candidates who have not been awarded board certification following their first Oral Examination is to submit a new Work Sample and, if this is judged acceptable, to sit for the Oral Examination a second time. Candidates must submit two new cases and may not resubmit their original Work Sample, even in revised form. A disadvantage in preparing a new Work Sample is that candidates who are not awarded board certification following the Oral Examination are not provided with feedback comments from the Work Sample reviewers. Assuming that the new Work Sample is judged acceptable, the Oral Examination will be conducted by a new set of examiners, who are not informed that a candidate is repeating the examination. Note that the second Oral Examination must occur within seven years of the first attempt.

Candidates who are not awarded board certification on their second Oral Examination attempt have the same options as they did after the first attempt. They must submit a third Work Sample and, if this is judged acceptable, sit for the Oral Examination for a third time. The third Oral Examination must also occur within seven years of the first attempt. However, if board certification is not awarded after the third Oral Examination attempt, the candidate's only option is to repeat the entire ABCN application process, beginning with the initial application to The ABPP.

Preparing to Repeat the Oral Examination

Most of the neuropsychologists who contributed opinions and advice for this section believed that they had not prepared sufficiently for their first attempt. Their advice consisted primarily of specific ways to prepare for the Oral Examination. Most of the neuropsychologists commented that they felt anxious during their first Oral Examination because they found the examination setting unfamiliar and ambiguous, or because they perceived the examiners' behavior as threatening. Despite their apprehension when attempting the examination for a second time, they reported that during the second attempt they felt less anxious because they understood what was required.

Preparation for the Work Sample Review Component. Some of the neuropsychologists felt that they had not done well on the Oral Examination because of problems with their Work Sample. The most common recommendation was that the candidate should be prepared to discuss the Work Sample cases in detail. For example, it was recommended that the candidate read about the neuropathologic bases of the diseases involved in the Work Sample cases. Even if the Work Sample cases seem straightforward from a diagnostic standpoint, the candidate should be prepared to discuss the differential diagnosis of each case. The candidate should review the tests administered to the Work Sample clients, with particular attention to psychometric properties and norms.

Preparation for the Ethics and Professional Responsibility Component. Several neuropsychologists commented that they had read the APA ethics casebook and memorized the outline of the APA Ethics Code. One recommended that, during the ethics section of the Oral Examination, candidates should make written notes about the ethical issues involved in the vignette and then follow this outline while presenting their conclusions to the examiner. However, none of the neuropsychologists believed that this section of the examination was responsible for their not having been awarded board certification..

Preparation for Fact-Finding Component. Most of the neuropsychologists felt that this section was responsible for not having been awarded board certification following the Oral Examination. While

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the neuropsychologists did not agree on the same recommendations, they offered various recommendations. One recommendation was to hold “mock orals” with colleagues in order to adapt to the peculiar and somewhat artificial nature of this section. Another related recommendation was to review colleagues’ reports in an effort to practice taking the perspective of a neuropsychologist with a different conceptual and testing approaches. A number of recommendations were made about how to perform during the examination itself. One recommendation was for candidates to listen carefully to the initial details of the vignette as reported by the examiner (e.g., neurologic examination findings). The neuropsychologists were divided on the question of how much time to spend in data collection. On the one hand, it was recommended that candidates collect a thorough database before proceeding with the discussion of diagnosis. A related recommendation was to memorize a data collection outline format, to ensure that potentially important details were recorded (e.g., handedness, native language). The opposing viewpoint was for candidates to leave sufficient time at the end of the hour in order to reason through the data without feeling time pressure. Another recommendation was for candidates to present not only a definite conclusion about the most likely diagnosis, but also a differential diagnosis including other diagnostic possibilities.

Summary

This section was included in the study guide in the hope that candidates who do not complete the Oral Examination on their first attempt would take the necessary steps to succeed on later attempts and earn ABCN board certification. In medical specialties with success rates similar to those of the ABCN, it is common for candidates to repeat parts of the board examinations until eventually being awarded board certification. Probably clinical neuropsychology would be strengthened if the Oral Examination were repeated by more of the candidates who were not awarded board certification on their first attempt. As one of the neuropsychologists contacted for this section commented, “I have known several people who quit after failing their Written Examination, but once you are at the orals stage you really have to come back for another shot. It really is much easier, and more relaxed, the second time around, so people shouldn't hesitate to give it another try.”

PREPARING FOR THE ABCN EXAMINATION

Robert L. Mapou, Ph.D.

Overview

Because ABCN candidates are expected to be knowledgeable and competent in the practice of clinical neuropsychology, preparation for the ABCN examination is best viewed as an opportunity to consolidate information learned from prior training and experience, to review information that one may not have used in depth for some time, and to master information that may have been underemphasized in one's training. Furthermore, familiarizing oneself with the components of the examination and practicing case presentations, fact finding, and discussion of professional and ethical issues can be very helpful in reducing the anxiety associated with the examination process.

There are several ways to prepare for the ABCN examination. These include studying individually on one's own, attending continuing education (CE) workshops, working with a mentor, forming a peer study group, and participating in a mentored study group. When considering these preparation activities, it is important to remember that ABCN board certification is not an endpoint in one's training as a neuropsychologist. Rather, board certification is a recognition of competence in clinical neuropsychology, something that requires ongoing education during one's career.

Individual Study

Studying on one's own is the simplest route to preparation, although it is probably the most limited and least stimulating. The candidate can prepare by reviewing the seminal texts listed in this manual, many of which are used as textbooks for graduate courses in psychology and neuropsychology. Keeping up with the major neuropsychology journals also is important. Both activities will bolster the knowledge needed for the Written Examination and the current clinical knowledge needed for preparation of the Work Sample and evaluated during the Oral Examination. In addition, attending annual meetings of the International Neuropsychological Society, the National Academy of Neuropsychology, and the American Psychological Association is recommended. The presentations at these meetings provide information that is at the forefront of research and practice and not immediately available in journals or texts.

Other than these activities, there is little else that the candidate studying alone can do. This is the downside of this approach, because the candidate has no opportunity to receive feedback from peers or from a mentor on 1) the breadth of his or her knowledge, 2) the quality of his or her written and oral presentations, and 3) his or her ability to consider and discuss professional and ethical issues effectively. Moreover, studying alone does little to alleviate the anxiety that candidates can experience. Examinees studying alone are as likely to avoid as to approach particularly difficult topics or concepts. For these reasons, the interaction obtained by working with a mentor or with peers can be very valuable.

Continuing Education Workshops

Attending CE workshops is an excellent way to stay abreast of developments in neuropsychology. Indeed, CE is required for license renewal in most jurisdictions. From the standpoint of the ABCN examination, attending CE workshops helps the candidate stay up to date on current and emerging information in neuropsychological research and practice, something about which he or she will be questioned during the Oral Examination.

Preparing for the Examination - R. L. Mapou, Ph.D.

Besides neuropsychology CE workshops, there are more specific workshops oriented specifically toward preparing for the ABCN examination. Offered a few times a year, typically in conjunction with national neuropsychology or psychology meetings, these workshops provide information on board certification process and allow potential candidates to learn and ask questions about each phase of the examination process. They are designed to help demystify the process, to encourage qualified candidates to apply for board certification, and to alleviate the anxiety typically associated with the process.

Preparing Individually With a Mentor

The next preparation approach involves working with a mentor who has already completed the board-certification process. Because most ABCN board certified neuropsychologists also serve as Work Sample reviewers, a mentor will, at the very least, have an understanding of the knowledge and skills needed to have a Work Sample judged acceptable. Within the limits imposed by the ABCN on revealing the specific details of the examination process, a mentor can guide the candidate toward effective preparation for the Written Examination, the Work Sample, and the Oral Examination. In fact, at least one ABPP board (Rehabilitation) has included mentor guidance as an essential part of the preparation process. Because the ABCN currently has no formal involvement of mentors, the following are suggested as ways this can be accomplished.

First, a mentor can review a candidate's Work Sample, with an eye toward avoiding some of the common problems might arise. The most common problem is insufficient breadth of cases and evaluations that are too limited or that do not adequately reflect a candidate's everyday practice. By pointing out potential problems to the candidate, the mentor can guide the candidate toward preparing a more effective Work Sample.

Second, a mentor can recommend textbooks, journal articles, or current journals to read. Readings might even be assigned to the candidate. In this way, the candidate could get some additional structure and direction for his or her studies, which some find very helpful.

Third, a mentor could provide regularly scheduled teaching and supervision sessions. These sessions could cover specific topics, as outlined for the study groups below, and could be accompanied by assigned readings. The mentor could have the candidate present cases and could critique these presentations, in terms of the candidate's knowledge and ability to conceptualize and discuss the clinical issues effectively. Alternately, the mentor could quiz the candidate on professional and ethical issues, perhaps by describing ethical dilemmas encountered in practice and asking the candidate to discuss them. Finally, the mentor could present cases in the ABCN Fact Finding format, giving the candidate an opportunity to practice this portion of the examination.

Working with a mentor can give a candidate a structured, directed approach to examination preparation, but is likely to be expensive and time intensive. Although some mentors may be willing to review and comment on a Work Sample free of charge, few would be willing to provide more intensive educational activities without charging a reasonable fee. In addition, the more intensive approach requires working out a schedule acceptable to both the mentor and the candidate, something that can be difficult for professionals with busy schedules. Finally, applicants can benefit from exposure to a wide range of theoretical approaches and educational and clinical experiences. Even a well-informed

mentor may not possess a sufficient range of experiences needed to prepare an applicant adequately for the entirety of the board certification process.

Peer Study Groups

An excellent way to prepare for the examination is to establish a study group with other individuals who are seeking board certification. Ideally, members should share similar levels of neuropsychological training and expertise, but bring to the group a diversity of clinical skills and professional experiences.

Those of us who have had experience with this type of group recommend meeting twice a month. The emphasis of this type of preparation is on clinical issues; this will be most valuable for the Oral Examination and in honing the Work Sample. Candidates most likely will be preparing for the Written Examination through readings outside the group. Two-hour sessions, held twice a month for ten to 12 months, is a reasonable schedule. Each month, a particular clinical disorder is reviewed. The two Sample Schedules at the end of this section illustrates a 12-month syllabus one for an adult-focused group and one of a pediatric-focused group.

Within this model, during the first monthly session, one group member is responsible for reviewing that month's disorder, typically taking 60 to 90 minutes to update group members on basic and current knowledge about the disorder. This should cover etiology, neuropathology, and neuropsychological features. The responsible group member typically prepares a written review of the literature and annotated bibliography, along with a small selection of key articles that have been photocopied for group members. During the final portion of the meeting, a different group member presents a Fact Finding case, in the format currently used for the ABCN Oral Examination. The case should be on a disorder other than the one being covered that month. The presenting member typically begins with a several-line description of the case, has prepared a patient data summary sheet and brief case history (with identifying information removed), and has in his or her possession the entire case file, including notes and test protocols. Group members systematically ask for case information and data, ask questions, and think aloud about the issues in the case. In the last few minutes, group members are asked for a diagnosis and for treatment recommendations, after which the case is "unblinded," and the prepared data sheet and case history are distributed to the group.

The second monthly session begins with one member providing a case illustration of the disorder under discussion that month, in which the clinical features and neuropsychological profile are presented. This can last 45 minutes. Group members are given a data summary sheet, ideally one that has data prototypical of the disorder being discussed. Group members can then ask questions about the case and critique the presenting member's presentation and conceptualization of the case. In the next 45 minutes, another group member, typically someone who has not yet presented that month, presents a brief review and leads a discussion of a particular professional or ethical issue. Over the year, such issues as right to refuse treatment, confidentiality of professional records, response to subpoenas and court orders, use of paraprofessional personnel, involuntary hospitalization, and other professional and ethical matters are presented. As with the first session, the presenter will prepare and distribute a brief written review, an annotated bibliography, and several key articles. The group concludes with another fact-finding case.

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Advantages of a peer study group include 1) division of labor, 2) direct feedback from one's colleagues on one's breadth of knowledge and ability to conceptualize, 3) the intellectual stimulation of working and studying with peers, and 4) defusing of the anxiety that can accompany case presentations and Fact Finding during the Oral Examination. There are several difficulties with this approach. First, establishing an agreeable time for the group can be even harder than setting up individual meetings with a mentor. Second, if group members have different levels of expertise and experience, the more advanced members can feel held back by those who are less experienced, since materials cannot be prepared and questions cannot be asked at the same level. Third, different individuals deal with the anxiety of the examination process in different ways, which can create frictions that can hobble even the best-intentioned group activity. This is the reason that we recommend establishing a group with members who have similar amounts of training and experience, under the supervision of a mentor.

Mentored Study Groups

The group format just described can be lead by a mentor who is board certified and familiar with the examination process. The format is very similar, and the involvement of the mentor can vary, depending on the preference of group members. One approach is to have the mentor be responsible for preparing all written materials and for making all oral presentations. That is, the mentor would give group members bibliographies, articles, or prepared written reviews, would discuss the clinical disorder, would present a case example, would discuss professional and ethical issues and provide written materials, and would lead fact finding. This, however, will require considerable preparation by the mentor. The mentor might not have the time to do this, nor might group members wish to compensate a mentor for the time this would require. Therefore, a more workable format would be to have the mentor function as a consultant and facilitator. Assuming the same format as for the peer study group, the mentor would help group members assign responsibility for the different tasks, would help with scheduling, and would be present at each session to guide the discussion and to contribute his or her knowledge. From time to time, the mentor might do a presentation on a topic in which he is particularly knowledgeable (e.g., review of the disorder, case example, fact finding). Alternately, the mentor could be the first presenter and model the format to the group members, after which group members would be responsible for the presentations; this approach is illustrated in the two Sample Schedules, in which the mentor is responsible for the first two sessions. The mentor would always bring an additional fact-finding case or topic for discussion, should a group member fall ill or otherwise fail to appear for a scheduled presentation. Finally, a mentor could allay the group's anxieties about the examination process and actively encourage group members to progress toward taking the examination.

Sample Schedule and Monthly Topics for an Adult-Focused 12-Month ABCN Study Group

Topic	Date	Literature Review	Fact-Finding 1	Cases	Ethics	Fact-Finding 2
Cortical Dementia	1/4	Robb	Robb	Robb		
	1/18				Robb	Robb
Subcortical Dementia	2/1	Jan	Fred			
	2/15			Susan	John	Jim
TBI	3/1	Jim	Susan			
	3/15			Jan	Mark	Fred
CVA	4/5	John	Gloria			
	4/19			Jim	Fred	Mark
Amnesic Disorders	5/3	Mark	Jan			
	5/17			John	Susan	Gloria
Multiple Sclerosis	6/7	Susan	John			
	6/21			Linda	Gloria	Anne
HIV/AIDS	7/5	Anne	Gary			
	7/19			Gloria	Linda	Susan
Infectious Diseases	8/2	Gary	Linda			
	8/16			Fred	Jack	Linda
Seizure Disorders	9/13	Fred	Anne			
	9/20			Jack	Jan	Gary
Tumors	10/4	Linda	Mark			
	10/18			Gary	Jim	John
Psychiatric Disorders	11/1	Jack	Jim			
	11/15			Mark	Anne	Jan
Learning Disabilities and ADHD	12/6	Gloria	Jack			
	12/20			Anne	Gary	Jack

Sample Schedule and Monthly Topics for a Pediatric-Focused 12-Month ABCN Study Group

Topic	Date	Literature Review	Fact-Finding 1	Cases	Ethics	Fact-Finding 2
Prematurity and Low Birth Weight	1/4	Robb	Robb	Robb		
	1/18				Robb	Robb
Hydrocephalus	2/1	Jan	Fred			
	2/15			Susan	John	Jim
Seizure Disorders	3/1	Jim	Susan			
	3/15			Jan	Mark	Fred
TBI	4/5	John	Gloria			
	4/19			Jim	Fred	Mark
CVA	5/3	Mark	Jan			
	5/17			John	Susan	Gloria
Brain Tumors	6/7	Susan	John			
	6/21			Linda	Gloria	Anne
HIV/AIDS	7/5	Anne	Gary			
	7/19			Gloria	Linda	Susan
Other Infectious Diseases	8/2	Gary	Linda			
	8/16			Fred	Jack	Linda
Learning Disabilities and ADHD	9/13	Fred	Anne			
	9/20			Jack	Jan	Gary
Environmental Neuro-Toxins	10/4	Linda	Mark			
	10/18			Gary	Jim	John
Metabolic and Neurodegenerative Disorders	11/1	Jack	Jim			

Topic	Date	Literature Review	Fact-Finding 1	Cases	Ethics	Fact-Finding 2
	11/15			Mark	Anne	Jan
Other Medical Disorders	12/6	Gloria	Jack			
	12/20			Anne	Gary	Jack

Final Strategies/Tactics/Hints For Preparing for The ABCN Examination

- Neuropsychology should be a regular part of your practice, that is, 50% or more of your time. Those for whom neuropsychology is a lesser percentage of their practice often lack the everyday familiarity with clinical neuropsychological issues that is a key to completing the examination successfully.
- Be familiar with material covered in recognized neuropsychological texts and journals. Have an active working knowledge of brain function and neuropathology, neurology, core psychological skills, and clinical neuropsychological assessment. Keep your knowledge up to date by reading journals regularly and by taking CE workshops focused on neuropsychology.
- Be very familiar with the clinical issues involved with the cases that you prepare. Prepare cases that represent your day-to-day practice. If, for example, you see unusual neurological disorders in your practice, then it is to your advantage to present one of these. If you have a specialty (e.g., lupus, HIV/AIDS, multiple sclerosis), then present a case from your specialty. If you work in rehabilitation, then present a TBI, CVA, or other rehabilitation case.
- Do not try to learn information that you did not learn originally and that is critical to neuropsychological practice. That is, preparation for the examination should not be a substitute for neuropsychological training. This is an evaluation of current competence, not your ability to cram new information for an examination. You must have the background for the examination, both written and oral, to complete it successfully. If you have not trained as a neuropsychologist, then complete training using a model outlined by the 1997 Houston Conference on Speciality Education Training in Clinical Neuropsychology, before applying for the ABCN diploma.

