Overview

John A. Hanson Ph.D. LP
Assessment Consultant

Objectives

- discuss the fundamental changes from the WPPSI-III to the WPPSI-IV;
- describe how the changes impact assessment of young children and interpretation of results; and
- interpret assessment results to make decisions regarding eligibility and intervention.

WPPSI: A Historical Perspective

- WPPSI 1967
- WPPSI-R 1989
- WPPSI-III 2003
- WPPSI-IV 2012

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Structure

Two batteries:
- Ages 2:6−3:11
- Ages 4:0−7:3

Composite scores:
- Full Scale IQ (FSIQ)
- Verbal IQ (VIQ)
- Performance IQ (PIQ)
- Processing Speed Quotient (PSQ)
- General Language Composite (GLC)

Revision Goals

- Update theoretical foundations
- Increase developmental appropriateness
- Increase user friendliness
- Improve psychometric properties
- Enhance clinical utility
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WPPSI-IV (2012)

Core Subtests
Supplemental Subtests
Optional Subtests

Ages 2:6–3:11

Full Scale
- Verbal Comprehension
  - Receptive Vocabulary
  - Information
  - Picture Naming
- Visual Spatial
  - Block Design
  - Object Assembly
- Working Memory
  - Picture Memory
  - Zoo Locations

Primary Index Scales
- Verbal Comprehension
  - Receptive Vocabulary
- Visual Spatial
  - Block Design
  - Object Assembly
- Working Memory
  - Picture Memory
  - Zoo Locations

Ancillary Index Scales
- Vocabulary Acquisition
  - Receptive Vocabulary
  - Picture Naming
- Nonverbal
  - Block Design
  - Object Assembly
- General Ability
  - Receptive Vocabulary
  - Information
  - Picture Naming
  - Block Design
  - Object Assembly

Ages 4:0–7:7

Full Scale
- Verbal Comprehension
  - Similarities
  - Vocabulary
  - Comprehension
- Visual Spatial
  - Block Design
  - Object Assembly
- Fluid Reasoning
  - Picture Concepts
- Working Memory
  - Picture Memory
  - Zoo Locations
- Processing Speed
  - Picture Memory
  - zoo Locations
- Cancellation
  - Animal Coding

Primary Index Scales
- Verbal Comprehension
  - Similarities
- Visual Spatial
  - Block Design
  - Object Assembly
- Fluid Reasoning
  - Picture Concepts
- Working Memory
  - Picture Memory
  - Zoo Locations
- Processing Speed
  - Picture Memory
  - Zoo Locations
- Cancellation
  - Animal Coding

Ancillary Index Scales
- Vocabulary Acquisition
  - Receptive Vocabulary
  - Picture Naming
- Nonverbal
  - Block Design
  - Matrix Reasoning
  - Object Assembly
  - Picture Concepts
- General Ability
  - Information
  - Vocabulary
  - Comprehension
  - Block Design
  - Object Assembly
  - Matrix Reasoning
  - Picture Concepts
- Cognitive Proficiency
  - Picture Memory
  - Zoo Locations
  - Animal Coding

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**Subtest Changes from WPPSI-III**

- Dropped Word Reasoning & Picture Completion
- Revised retained subtests
  - New items include picture items on Similarities and Comprehension, and a new puzzle for Object Assembly
- Replaced Processing Speed subtests
  - Bug Search & Animal Coding
  - Added Cancellation
- New Working Memory subtests
  - Picture Memory
  - Zoo Locations

**WPPSI-IV Kit**

**Subtest Administration**
Getting Started

- “We’ll be doing a lot of things today, like looking at pictures, answering questions, and playing with blocks.
- Some things may be easy and some may be hard.
- Just try your best.”

Subtest Substitution*

<table>
<thead>
<tr>
<th>Age Band</th>
<th>Composite Score</th>
<th>Core Subtest</th>
<th>Allowable Substitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:6-3:11</td>
<td>FSIQ</td>
<td>Receptive Vocabulary</td>
<td>Picture Naming</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Block Design</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Object Assembly</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Picture Memory</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Zoo Locations</td>
<td></td>
</tr>
</tbody>
</table>

*Substitution may introduce additional measurement error. Therefore, only one substitution is allowed for each listed composite score.
### Subtest Substitution*

<table>
<thead>
<tr>
<th>Age Band</th>
<th>Composite Score</th>
<th>Core Subtest</th>
<th>Allowable Substitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:0-7:7</td>
<td>GAI</td>
<td>Information, Similarities, Block Design, Matrix Reasoning</td>
<td>Vocabulary or Comprehension, Object Assembly, Picture Concepts</td>
</tr>
<tr>
<td>CPI</td>
<td>Picture Memory, Zoo Locations, Bug Search, Cancellation</td>
<td>—</td>
<td>—, Animal Coding, Animal Coding</td>
</tr>
</tbody>
</table>

*Substitution may introduce additional measurement error. Therefore, only one substitution is allowed for each listed composite score.

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### Subtest Administration

**General Directions**

- Start, Reverse, Discontinue

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First Step to the Correct Start Point = Calculation of Chronological Age

<table>
<thead>
<tr>
<th>Test Date</th>
<th>Birth Date</th>
<th>Test Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>2006</td>
<td>06</td>
</tr>
<tr>
<td>08</td>
<td>01</td>
<td>07</td>
</tr>
<tr>
<td>24</td>
<td>11</td>
<td>13</td>
</tr>
</tbody>
</table>

“Must I always start at the age-appropriate start point?”

Reverse Rules

For ages 4:0-7:7, reverse rules are included to help you determine when to administer items prior to a start point (i.e., reversal items) when the child does not begin with item 1 and does not obtain a perfect score on either of the first two items given.

*Note exception for Picture Memory and Similarities*
Discontinue Rules: Younger Battery

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Consecutive Scores of 0: WPPSI-III</th>
<th>Consecutive Scores of 0: WPPSI-IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>BD</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>IN</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>OA</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PN</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Discontinue Rules: Older Battery

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Consecutive Scores of 0: WPPSI-III</th>
<th>Consecutive Scores of 0: WPPSI-IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>IN</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>MR</td>
<td>4 or 4 of 5</td>
<td>3</td>
</tr>
<tr>
<td>VC</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>PC</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>OA</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>CO</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>SI</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>PN</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>RV</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

General Testing Guidance

- Timing on the WPPSI-IV
- Five subtests have strict time limits
- 30 second guideline for subtests without time-limits
General Testing Guidance

- Teaching items
- Demonstration items
- Sample Items

Subtest Administration

Queries, Prompts, Repetitions

Queries are used to elicit additional information when a child’s response is marginal, vague, incomplete, unclear, generalized.

e.g.,
✓ Explain what you mean.
✓ Tell me more.
Queries

How often should I query?

Prompts . . .
Used to teach or remind child of task.

For example: children who mark more than one shape for an item on the Animal Coding subtest are reminded to mark only one shape for each animal.

Instructions for prompting are included in the General Directions section of relevant subtests in Chapters 3 and 4 and are typically noted with a P on the Record Form.

Repetitions

For subtests that do not have strict time limits for child to respond, instructions may be repeated as often as requested by the child.

(i.e., Comprehension, Information, Picture Naming, Receptive Vocabulary, Similarities, Vocabulary, Matrix Reasoning, Picture Concepts, *Picture Memory, and *Zoo Locations)

*Note Stopwatch required for PM and ZL to accurately time stimulus exposure.*
**Repetitions**

It is generally good practice to repeat the instructions if the child has not responded within 5-10 seconds. However, instructions should not be repeated if it is clear that the child is considering his or her response.

**Repetitions**

For subtests that require strict timing of the child’s response with a stopwatch, instructions may be repeated as often as necessary, but the time to repeat the instructions or to provide necessary prompts is included in the completion time.

*(Animal Coding, Block Design, Bug Search, Cancellation, and Object Assembly)*

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**Recording Responses**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q</td>
<td>Administered Query</td>
</tr>
<tr>
<td>P</td>
<td>Administered Prompt</td>
</tr>
<tr>
<td>R</td>
<td>Repeated Item</td>
</tr>
<tr>
<td>DK</td>
<td>Child indicated that s/he did not know the answer</td>
</tr>
<tr>
<td>NR</td>
<td>Child did not respond</td>
</tr>
</tbody>
</table>
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Subtests

Verbal Subtests

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Ages 2:6-3:11</th>
<th>Ages 4:0-7:7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Receptive Vocabulary</td>
<td>C</td>
<td>O</td>
</tr>
<tr>
<td>Picture Naming</td>
<td>S</td>
<td>O</td>
</tr>
<tr>
<td>Similarities</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Comprehension</td>
<td>S</td>
<td></td>
</tr>
</tbody>
</table>

Information (IN)

- Core Verbal Comprehension subtest for ages 2:6-7:7.
- Consists of 29 items: 4 picture items and 25 verbal items.
- All 4 picture items are retained, and 12 verbal items are retained with little or no change in wording. There are 13 new verbal items.
- Scoring criteria for all retained verbal items were revised.
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**IN: Description**

<table>
<thead>
<tr>
<th>Picture Items</th>
<th>Verbal Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>The child selects the pictures that best answer questions about general-knowledge topics.</td>
<td>The child verbally answers questions about a broad range of general-knowledge topics.</td>
</tr>
<tr>
<td>The Information subtest measures ability to acquire, retain, and retrieve general factual knowledge.</td>
<td></td>
</tr>
</tbody>
</table>

**Receptive Vocabulary (RV)**

- Receptive Vocabulary is a Verbal Comprehension subtest for ages 2:6-7:7.
- Receptive Vocabulary has 31 items.
- A total of 23 items are retained from WPPSI-III, and 8 are new.

**RV: Description**

The child selects the picture that best represents the word the examiner reads aloud.

RV measures receptive language ability and language development.
Picture Naming (PN)

- Verbal Comprehension subtest for ages 2:6-7:7.
- Picture Naming has 24 items.
- A total of 20 items are retained from WPPSI-III, and 4 are new.

PN: Description

The child names depicted objects.

The Picture Naming subtest measures expressive language ability and language development.

Similarities (SI)

- Core Verbal Comprehension subtest for ages 4:0-7:7.
- Consists of 23 items: 4 picture items and 19 verbal items.
- All 19 verbal items are retained. All 4 picture items and the sample picture item are new.
- Scoring criteria for all retained items were revised.
### SI: Description

<table>
<thead>
<tr>
<th>Picture Items</th>
<th>Verbal Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>The child selects the response option that is from the same category as two other depicted objects.</td>
<td>The child is read two words that represent common objects or concepts and describes how they are similar.</td>
</tr>
<tr>
<td>The Similarities subtest measures verbal concept formation and reasoning.</td>
<td></td>
</tr>
</tbody>
</table>

### Vocabulary (VC)

- Verbal Comprehension subtest for ages 4:0-7:7.
- Consists of 23 items: 3 picture items and 20 verbal items.
- Ten items were retained (1 picture item and 9 verbal items) and 13 items are new (2 picture items and 11 verbal items).
- Scoring criteria for all retained items were revised.

### VC: Description

<table>
<thead>
<tr>
<th>Picture Items</th>
<th>Verbal Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>The child names depicted objects.</td>
<td>The child defines words that are read aloud.</td>
</tr>
<tr>
<td>The Vocabulary subtest measures word knowledge and verbal concept formation.</td>
<td></td>
</tr>
</tbody>
</table>
### VC: General Scoring Principles

<table>
<thead>
<tr>
<th>Score</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Good understanding of the word - synonym, major use, general classification.</td>
</tr>
</tbody>
</table>
| 1     | • Response is correct, but shows poverty of content - vague, or less pertinent synonym, minor use, not elaborated.  
        • Major classification - less pertinent. |
| 0     | • No clear understanding of word.  
        • Any clearly incorrect response. |

### Comprehension (CO)

- Verbal Comprehension subtest for ages 4:0-7:7.
- Comprehension has 22 items: 4 picture items and 18 verbal items.
  - All 4 picture items are new.
  - Of the verbal items, 17 are retained and 1 is new.
- Scoring criteria for all retained items were revised.

### CO: Description

<table>
<thead>
<tr>
<th>Picture Items</th>
<th>Verbal Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>The child selects the picture that represents the best response to a general principle or social situation.</td>
<td>The child answers questions based on his or her understanding of general principles and social situations.</td>
</tr>
<tr>
<td>The Comprehension subtest measures verbal reasoning and conceptualization, verbal comprehension and expression, the ability to evaluate and use past experience, and the ability to demonstrate practical knowledge and judgment.</td>
<td></td>
</tr>
</tbody>
</table>
### Visual-Spatial Subtests

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Ages 2:6-3:11</th>
<th>Ages 4:0-7:7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Design</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Object Assembly</td>
<td>C</td>
<td>S</td>
</tr>
</tbody>
</table>

---

### Block Design (BD)

- BD has 17 items: 13 retained; 4 new.
- One of the new items is a diamond-shaped item with four blocks to extend the ceiling of the subtest.
- A new sample item was added to Part B to familiarize the child with the solid color sides of two-color blocks, and the other sample item is retained.

---

### BD: Description

Working within a specified time limit, the child views a model and/or a picture in a Stimulus Book and uses one- or two-color blocks to re-create the design.

The Block Design subtest measures ability to analyze and synthesize abstract visual stimuli.
BD: Description of Task

- Block Design is divided into two parts – A and B.
- Part A (Items 1-8) is primarily designed for ages 2:6-3:11 and utilizes one-color blocks.
- No degree of rotation, even complete 180° reversals, is penalized in Part A.

BD: Description of Task

- Two-color blocks are used on Part B (Items 9-17), and only pronounced rotations of 30° or more are penalized.
- Modifications to administration procedures were made for some items to smooth the transition from model to stimulus book presentation.

BD: Description of Task

As on the WPPSI-III, no time bonuses are utilized due to the relative unfamiliarity of preschoolers with performance under time constraints.
Orientation

- Left-Handed Child
- Right-Handed Child
- Examiner
- Model
- Stimulus Book
- Model and Stimulus Book

Block Design-Rotation Errors

- Rotation of 30° or more is considered an error.
- Correct 1st rotation error on Part A and on Part B. “See it goes this way.”
- Penalize rotation errors on Part B only: score = 0.

BD: Gaps & Misalignment

*Only those* designs with gaps and/or misalignments that are > ¼” are penalized and should be scored 0 points.

Acceptable Gaps and Misalignments: ≤ ¼”
Object Assembly (OA)

- Object Assembly is a Visual Spatial subtest for ages 2:6-7:7.
- Object Assembly has a total of 13 items.
- Eleven items are retained from WPPSI-III.
- Two new items were added to improve the floor and ceiling of the subtest.

OA: Description

Working within a specified time limit, the child assembles the pieces of a puzzle to create a representation of an identified object.

The OA subtest measures visual-perceptual organization, integration and synthesis of part-whole relationships, nonverbal reasoning, and trial-and-error learning.

Fluid Reasoning Subtests

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Ages 2:6-3:11</th>
<th>Ages 4:0-7:7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrix Reasoning</td>
<td>NA</td>
<td>C</td>
</tr>
<tr>
<td>Picture Concepts</td>
<td>NA</td>
<td>S</td>
</tr>
</tbody>
</table>
Matrix Reasoning (MR)
- Fluid Reasoning subtest for ages 4:0-7:7.
- Matrix Reasoning has a total of 26 test items.
  - 21 items are retained
  - 5 are new
- All 3 sample items are retained.

MR: Description
The Matrix Reasoning subtest involves fluid intelligence, broad visual intelligence, classification and spatial ability, knowledge of part-whole relationships, simultaneous processing, and perceptual organization.

Picture Concepts (PC)
- Picture Concepts is a Fluid Reasoning subtest for ages 4:0-7:7.
- Picture Concepts has 27 items. Of the 22 retained items, 3 were substantively revised.
- There are 5 new items. Both sample items are retained.
- To eliminate inadvertent cues to the correct responses, much of the art is redrawn, and no art appears more than once on the subtest.
**Picture Concepts (PC)**

The child is presented with two or three rows of pictures and selects one picture from each row to form a group with a common characteristic.

**PC: Description**

The Picture Concepts subtest involves fluid and inductive reasoning visual-perceptual recognition, organization, and processing; and conceptual thinking and crystallized knowledge.

**Working Memory Subtests**

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Ages 2:6-3:11</th>
<th>Ages 4:0-7:7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture Memory</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Zoo Locations</td>
<td>S</td>
<td>S</td>
</tr>
</tbody>
</table>
Working Memory in WPPSI-IV

Subtests appear to be like traditional STM or recognition memory measures

- Picture Memory is similar to recognition tasks where target picture is identified among others
- Zoo Locations is similar to visual-spatial recall tasks

But, . . .

Working Memory in WPPSI-IV

- Picture Memory and Zoo Locations incorporate proactive interference through reuse of visual stimuli across trials.
- Recent research indicates proactive interference increases processing demands of working memory tasks (Blalock & McCabe, 2011; Carroll, et al., 2010).

Why Assess Working Memory in Young Children?

- Related to fluid reasoning.
- Implicated in variety of academic problems and clinical conditions that affect young children.

However, measuring WM in young children is challenging methodologically.
### Picture Memory (PM)

- Picture Memory is a Working Memory subtest for ages 2:6-7:7.
- Picture Memory has 35 items.
- The child views a stimulus page of pictures for a specified time and then selects these pictures from options on a response page. (familiarize-recognize: Reznick, 2009).

### PM: Description

The child views a stimulus page of pictures for a specified time and then selects these pictures from options on a response page. The Picture Memory subtest measures visual working memory using the familiarize-recognize paradigm, for which a set of stimuli is viewed and then recognized from among a set of responses.

### PM: General Directions cont’d

- Sample Item B is designed to introduce the child to items that require the selection of multiple response options.
- If the child has not met the discontinue criterion following administration of Item 6, administer Sample Item B before proceeding to Item 7.
Zoo Locations (ZL)

- The child views animal cards on a zoo layout for a specified time, and then places each card in the previously viewed location.
- Consists of 20 items.

ZL: Description

The child views animal cards on a zoo layout for a specified time, and then places each card in the previously viewed location. (Observe-Perform: Reznick, 2009).

The Zoo Locations subtest measures visual-spatial working memory using the observe-perform paradigm, wherein some action or actions are observed and then repeated or reproduced.

ZL: Materials

- Administration and Scoring Manual
- Record Form
- Zoo Locations Layouts
- Zoo Locations Animal Card
- Stopwatch
Processing Speed Subtests

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Ages 2:6-3:11</th>
<th>Ages 4:0-7:7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bug Search</td>
<td>NA</td>
<td>C</td>
</tr>
<tr>
<td>Cancellation</td>
<td>NA</td>
<td>S</td>
</tr>
<tr>
<td>Animal Coding</td>
<td>NA</td>
<td>S</td>
</tr>
</tbody>
</table>

Ink Dauber

BS and AC: Test Items

If child completes last item on a page before time limit expires, EXAMINER turns page. Say, Keep working as fast as you can.

Bug Search (BS)

- Bug Search is a Processing Speed subtest for ages 4:0-7:7.
- Bug Search has 66 items.
- Working within a specified time limit, the child marks the bug in the search group that matches the target bug.
**BS: Description**

Working within a specified time limit, the child marks the bug in the search group that matches the target bug.

Bug Search is conceptually similar to Symbol Search, which involves short-term visual memory, visual-motor coordination, cognitive flexibility, visual discrimination, and concentration.

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**BS: Materials**

- Administration and Scoring Manual
- Record Form
- Response Booklet 1
- Ink dauber
- Stopwatch
- Bug Search Scoring Key
- Moistened disposable towelettes (recommended)
- Paper Towel (or something similar)

---

**BS: General Directions**

All children complete Dauber Practice on back cover of Response Booklet before proceeding to the demonstration, sample, and test items.
BS: General Directions

- Each item contains a target and a search group.
- As directed in the instructions for the demonstration and sample items, point to the target and search group as you explain the task to the child.

BS: Sample Items

- When the child has successfully completed the sample items, say, That’s right. Now you know how to do them.
- Proceed to Test Items.

**NOTE:** Do not proceed with the test items until the child understands the task.

Cancellation (CA)

- Cancellation is a Processing Speed subtest for ages 4:0-7:7.
- Working within a specified time limit, the child scans two arrangements of objects (one random, one structured) and marks target objects.
- CA has two items - random (CAR) and structured (CAS).
CA: Description

Working within a specified time limit, the child scans two arrangements of objects (one random, one structured) and marks target objects.

The Cancellation subtest involves perceptual speed, rate of test taking, speed of visual processing and mental operation, scanning ability, and visual-perceptual recognition and discrimination. It may also involve attention, concentration, and visual recall.

CA: Materials

- Administration and Scoring Manual
- Record Form
- Response Booklet 2
- Ink dauber
- Stopwatch
- Cancellation Scoring Template
- Moistened disposable towelettes (recommended)

CA: General Directions

- The Item 1 and Item 2 targets are articles of clothing.
- The objects for Item 1 are in a random arrangement.
- The objects for Item 2 are in a structured arrangement (i.e., rows).
CA: General Directions

- Response Booklet is three folded 17 x 11 pages.
- Center page includes the demonstration and sample items.
- Items 1 and 2 appear on the second and third pages, respectively.
- The child should see the entire 17 x 11 spread as each page is administered.

CA: General Directions

- Each 17x11 page is administered separately to avoid smearing the ink.
- Completed pages are removed from the child's view and allowed to dry as subsequent pages are administered.

CA: General Directions

- Explain and illustrate the task using the demonstration item.
- Allow the child to practice by completing the sample item.
- Proceed to Item 1 only when the child understands the task.
CA: Scoring

Marks on a target

Correct

Incorrect

Marks on a non-target

Animal Coding (AC)

- Animal Coding is a Processing Speed subtest for ages 4:0-7:7.
- Animal Coding has 72 items.

AC: Description

Working within a specified time limit and using a key, the child marks shapes that correspond to pictured animals.

The Coding subtest on WPPSI-III assessed short-term memory, learning and visual scanning ability, cognitive flexibility, attention, and motivation.
Interpretation

Age 4:7

<table>
<thead>
<tr>
<th>Index/Subtest</th>
<th>Composite &amp; Scaled Score</th>
<th>Index/Subtest</th>
<th>Composite &amp; Scaled Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Comprehension</td>
<td>132</td>
<td>Working Memory</td>
<td>97</td>
</tr>
<tr>
<td>Information</td>
<td>15</td>
<td>Picture Memory</td>
<td>10</td>
</tr>
<tr>
<td>Similarities</td>
<td>16</td>
<td>(Zoo Locations)</td>
<td>9</td>
</tr>
<tr>
<td>Visual Spatial</td>
<td>112</td>
<td>Processing Speed</td>
<td>91</td>
</tr>
<tr>
<td>Block Design</td>
<td>12</td>
<td>Bug Search</td>
<td>9</td>
</tr>
<tr>
<td>Object Assembly</td>
<td>12</td>
<td>(Cancellation)</td>
<td>8</td>
</tr>
<tr>
<td>Fluid Reasoning</td>
<td>114</td>
<td></td>
<td></td>
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<tr>
<td>Matrix Reasoning</td>
<td>12</td>
<td></td>
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<tr>
<td>(Picture Concepts)</td>
<td>13</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Scale IQ = 117</td>
</tr>
</tbody>
</table>

Using GAI and CPI

Consider deriving and interpreting the GAI and the CPI in a number of clinical situations, not limited to, but including the following:
### Compare WMI and PSI to Other Indexes

- A significant and unusual discrepancy exists between the WMI and MIS or FSIQ.
- A significant and unusual discrepancy exists between the PSI and MIS or FSIQ.
- A significant and unusual discrepancy exists between the VCI and WMI.
- A significant and unusual discrepancy exists between the VCI and PSI.

### GAI and CPI

- A significant and unusual discrepancy exists between the VSI and WMI.
- A significant and unusual discrepancy exists between the VSI and PSI.
- A significant and unusual discrepancy exists between the FRI and WMI.
- A significant and unusual discrepancy exists between the FRI and PSI.
- A significant and unusual discrepancy exists between the WMI and PSI.
- A significant and unusual discrepancy exists between subtests that contribute to either the WMI or to the PSI, or
- A significant and unusual discrepancy exists between a Working Memory or Processing Speed subtest and the MSS-I or MSS-F.
Overview of the Wechsler Preschool and Primary Scale of Intelligence-Fourth Edition

Psychometric Properties

WPPSI-IV Normative Sample

- Total n = 1,700
  - n = 600 for ages 2:6-3:11
  - n = 1,100 for ages 4:0-7:7

- Nationally stratified sample
  - Age
  - Sex/Gender
  - Race/Ethnicity
  - Parent education level (5 levels)
  - Geographic Region (NE, S, MW, W)

Internal Consistency Reliability

<table>
<thead>
<tr>
<th>Composite</th>
<th>Average Reliability Coefficient</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2:6-3:11</td>
</tr>
<tr>
<td>VCI</td>
<td>.94</td>
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<tr>
<td>VSI</td>
<td>.89</td>
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<tr>
<td>FRI</td>
<td>--</td>
</tr>
<tr>
<td>WMI</td>
<td>.93</td>
</tr>
<tr>
<td>PSI</td>
<td>--</td>
</tr>
<tr>
<td>FSIQ</td>
<td>.96</td>
</tr>
<tr>
<td>VAI</td>
<td>.94</td>
</tr>
<tr>
<td>NVI</td>
<td>.94</td>
</tr>
<tr>
<td>GAI</td>
<td>.95</td>
</tr>
<tr>
<td>CPI</td>
<td>--</td>
</tr>
</tbody>
</table>
Overview of the Wechsler Preschool and Primary Scale of Intelligence-Fourth Edition

**Special Group Studies**

- Intellectually Gifted
- Intellectual Disability-Mild Severity
- Intellectual Disability-Moderate Severity
- Developmental Delay-Cognitive
- Developmental Risk Factors

**Developmental Delay-Cognitive**

<table>
<thead>
<tr>
<th>Composite</th>
<th>Clinical Mean</th>
<th>Control Mean</th>
<th>Mean Diff.</th>
<th>p value</th>
<th>Std. Diff.</th>
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<tbody>
<tr>
<td>VCI</td>
<td>81.7</td>
<td>98.7</td>
<td>16.94</td>
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<tr>
<td>VSI</td>
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<td>PSI</td>
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<td>FSIQ</td>
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<td>VAI</td>
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<td>96.1</td>
<td>14.81</td>
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<td>NVI</td>
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<td>97.9</td>
<td>14.80</td>
<td>&lt;.01</td>
<td>1.05</td>
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<tr>
<td>GAI</td>
<td>81.6</td>
<td>98.5</td>
<td>16.85</td>
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<tr>
<td>CPI</td>
<td>85.9</td>
<td>95.4</td>
<td>9.54</td>
<td>&lt;.02</td>
<td>.65</td>
</tr>
</tbody>
</table>

n = 72; ages 2:6-7:6

**WPPSI-IV Younger Battery: Core + Supplemental Subtests**

- Verbal Comprehension
- Visual-Spatial
- Block Design
- Object Assembly
- Working Memory
- Picture Memory
- Zoo Locations

AGFI .97; RMSEA .05
Summary
Clinical Utility of WPPSI-IV

WPPSI-IV: Enhanced Clinical Utility

- Test structure.
- Score differences comparison methodology.
- Upward age range extension.
- Expressive language requirements.
- Ancillary composite scores.
- Special group studies.
- Statistical linkage to measure of achievement.

CHC Factors and WPPSI-IV

<table>
<thead>
<tr>
<th>CHC Factor</th>
<th>WPPSI-IV Index</th>
</tr>
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<tbody>
<tr>
<td>Crystallized Ability</td>
<td>Verbal Comprehension Index</td>
</tr>
<tr>
<td>Fluid Reasoning</td>
<td>Fluid Reasoning Index</td>
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<tr>
<td>Visual-Spatial Processing</td>
<td>Visual Spatial Index</td>
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<tr>
<td>Short-Term Memory/Long-Term Storage and Retrieval</td>
<td>Working Memory</td>
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<tr>
<td>Cognitive Processing Speed</td>
<td>Processing Speed</td>
</tr>
<tr>
<td>Auditory Processing</td>
<td>Vocabulary Acquisition Index</td>
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