Prof. B. Smith  
Cognitive Psychology with Laboratory  
Spring, 2015

Class Meets: MWF, 9:15 a.m. - 10:20 a.m., WH 218  
Lab Meets: W, 3:15 p.m. - 6:00 p.m., WH 218

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Email: bsmith@westmont.edu  
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Office hours: Mondays & Tuesdays, from 2:00 p.m. to 3:00 p.m.; Thursdays, from 1:30 p.m. to 3:00 p.m.; Fridays, from 11:30 a.m. - 12:30 p.m., or by appt. --Check office hours for a given week and make an appointment at http://www.westmont.edu/_offices/academic_advising/AdvisingAppointments.html

Katie Mukai  
Office: Winter Hall 336  
Phone: 565-7025  
Email: kmukai@westmont.edu

Office hours: Mondays & Fridays, from 11:00 a.m. to 12:30 p.m.; Tuesdays & Thursdays, from 3:00 p.m. to 4:00 p.m.

Required Texts:

Recommended Resources:

A statistics text

The following articles are available on Canvas for downloading:

Course Requirements:

Readings. Read the appropriate sections of your chapters before you come to class, so that you are prepared to write and think about the material. Read the information for what you don’t know; write down questions about information you don’t understand and ask those questions in class.

Lab Work.
Participation & Attendance is required for two reasons. First, the lab serves as a way to illustrate classic, and often counterintuitive, studies in cognitive psychology as well as a means to acquaint you with the methods of cognitive psychology. It also provides additional practice in thinking cognitively. Second, we have a relatively small number of people in the class. Ideally, I want to use your data from each lab to illustrate results. If you miss, less data are available, so your participation is important for your classmates’ learning as well as your own.

Lab begins promptly at 3:15 p.m. In order to participate in the day’s lab exercise and earn attendance points, you must be present, in your seat, and ready to work at 3:15.

Excel & SPSS Assignment. This assignment is designed to review and extend your knowledge of data entry, analysis, and interpretation in Excel and SPSS. A spreadsheet showing means, SDs, and SEM, a graph of the data, and SPSS print-outs of your work: the data view and variable information that you created; and the data analyses that you performed with a written interpretation of those analyses must be turned in for credit.

Experimental Reports will report on the rationale, method and results, along with a discussion of each laboratory exercise. Your grasp of the theory, procedure, results, and conclusion, along with the ability to
communicate your understanding clearly and concisely, with the appropriate voice, will comprise about 50% of the grade, and your knowledge of APA format will make up the remainder of the grade. All graphs and tables must be formatted in APA style. These assignments must be turned in via Canvas as pdf documents. Use the naming convention of Lastname_Studyname.pdf (smith_stroop.pdf).

**Your Own Study.** Throughout the semester, you will work on designing your own study, that you will then run and analyze near the end of the semester. You will give an oral presentation of the project and its results with the support of PowerPoint slides. Your grade for the project will be based on all aspects of your behavior as it indicates creativity and originality; planning, organizing, and decision-making; problem-solving, persistence, and reliability; and ability to complete the tasks well. The oral presentation will be graded separately. Information to help you get started on your research project is available on Canvas, as are two documents to help you prepare a presentation of your project and its results.

You will need to find, read, and cite sources for the introductions of your study and the experimental reports that are assigned. Two to 5 empirical, research articles are probably sufficient to write a coherent rationale for an experimental study. Search the last 5-50 years of *PsycInfo* to find these sources, and make copies, download, or order them through interlibrary loan. **You may not be able to find appropriate research reports in our library, so do your research early and order your articles through interlibrary loan immediately.**

**Tests.** There will be 3 tests composed of 30 multiple choice questions and 6 short answer/essay questions. Each multiple choice question is worth 2 points; each essay is worth 10 points. You will answer 4 of the 6 essay questions presented on the test.

The essay questions will be taken from the Study Guide questions that will be available on Canvas. You are strongly encouraged to begin answering the study guide questions as soon as possible, using information from the text and the lecture, and to work on learning the answers throughout the weeks preceding the test. Do not expect to do well if you wait to answer the study guide questions just before the test.

**Point Breakdown and Grading Scale:** Grades will be based on the following distribution of points:

<table>
<thead>
<tr>
<th>Task</th>
<th>Points</th>
<th>Total Points Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Work</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance</td>
<td>3</td>
<td>~72</td>
</tr>
<tr>
<td>Excel Assignment</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SPSS Assignment</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Experimental Reports</td>
<td></td>
<td>160</td>
</tr>
<tr>
<td>Scrambled Words</td>
<td>20</td>
<td></td>
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<tr>
<td>Levels of Processing</td>
<td>30</td>
<td></td>
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<tr>
<td>Healy Task</td>
<td>30</td>
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<tr>
<td>Bransford &amp; Franks</td>
<td>40</td>
<td></td>
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<tr>
<td>Concepts and Memory</td>
<td>40</td>
<td></td>
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<tr>
<td>Your Own Study</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Presentation of Your Own Study</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td><strong>Tests over 3 sections of the course</strong></td>
<td>100</td>
<td>300</td>
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<tr>
<td>Total:</td>
<td>~627</td>
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The following grading scale will be used to calculate grades:

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<thead>
<tr>
<th>Grade</th>
<th>Percent</th>
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<tbody>
<tr>
<td>A</td>
<td>95+</td>
</tr>
<tr>
<td>A-</td>
<td>90-94</td>
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<tr>
<td>B+</td>
<td>87-89</td>
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<tr>
<td>B</td>
<td>83-86</td>
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<tr>
<td>B-</td>
<td>80-82</td>
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<tr>
<td>C+</td>
<td>77-79</td>
</tr>
<tr>
<td>C</td>
<td>73-76</td>
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<tr>
<td>C-</td>
<td>70-72</td>
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<tr>
<td>D+</td>
<td>67-69</td>
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<td>D</td>
<td>63-66</td>
</tr>
<tr>
<td>D-</td>
<td>60-62</td>
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Policies:

Academic accommodations. Students who have been diagnosed with a disability (learning, physical/medical, or psychological) are strongly encouraged to contact the Disability Services office as early as possible to discuss appropriate accommodations for this course. Formal accommodations will only be granted for students whose disabilities have been verified by the Disability Services office. These accommodations may be necessary to ensure your full participation and the successful completion of this course. For more information, contact Sheri Noble, Director of Disability Services (565-6186, snoble@westmont.edu) or visit the website http://www.westmont.edu/_offices/disability

Academic honesty. All students are expected to subscribe to the highest ideals of academic integrity. Any form of academic dishonesty is likely to incur a grade of F in the course. "Academic dishonesty" includes, but is not limited to, plagiarism (see below), cheating, and falsification. Please refer to the College’s policy on Academic Honesty (http://www.westmont.edu/_offices/registrar/academic_policies/academic-dishonesty.html).

All computer and written assignments must be done independently--no collaborating; that is, no "working together." You may discuss what generally should be included in a particular section of an experimental report before any writing, data entry or analysis is done, but the final product must obviously and clearly be the work of one person. Each person must enter the data, and create his or her own graphs and tables, word processing files, and print out and turn in his or her own creations.

Students who are involved in "working together," or receive "help" from other sources when it is not appropriate, will earn penalties that range from an F on the assignment to an F in the course, at the instructor's discretion. Additional penalties may include suspension or expulsion from the college.

Attendance. Students are responsible for knowing course material and announcements made during class and laboratory meetings. If you miss a class meeting, get notes from one or two other students, compare those notes with the readings, and (if necessary) schedule an appointment with me to answer specific questions.

Missed exams. A student who misses an examination without making prior arrangements with me receives a score of 0 for that exam. Make-up exams may be scheduled ahead of time only under extenuating circumstances. You may not take the final exam at any other time other than that scheduled for the course. Please check your final exam schedule early in the semester for potential conflicts.

Late work. Assignments other than exams are due on the day and at the time specified in the schedule below. Assignments turned in after this time incur a 10% per day penalty.

Plagiarism. To plagiarize is to present someone else's work—his or her words, line of thought, or organizational structure—as your own. This occurs when sources are not cited properly, or when permission is not obtained from the original author to use his or her work. Another person's "work" can take many forms: printed or electronic copies of computer programs, musical compositions, drawings, paintings, oral presentations, papers, essays, articles or chapters, statistical data, tables or figures, etc. In short, if any information that can be considered the intellectual property of another is used without acknowledging the original source properly, this is plagiarism. Please review the Westmont College Plagiarism Policy which can be found at http://www.westmont.edu/_offices/provost/plagiarism/plagiarism_policy.html.

This document defines different levels of plagiarism and the penalties for each. It also contains very helpful information on strategies for avoiding plagiarism. It cannot be overemphasized that plagiarism is an insidious and disruptive form of academic dishonesty. It violates relationships with known classmates and professors, and it violates the legal rights of people you may never meet.

The first instance of minimal plagiarism in a student's career at Westmont, if it occurs in this course, will result in an F on the assignment until it is rewritten satisfactorily. The maximum grade on this assignment is one letter grade lower (e.g., B → C) than it otherwise would have earned.

The second instance of minimal plagiarism, if it occurs in this course, will be considered substantial plagiarism and the consequences for substantial plagiarism, as described in the Westmont College Plagiarism Policy, will be applied.

In all cases of plagiarism, a report will be submitted to the Provost's Office documenting the incident.
Learning Goals and Outcomes for PSY 120. The College and the Department each maintain separate but overlapping list of goals and outcomes for our students. Each psychology course is designed not only to develop the skills and knowledge appropriate to that course, but also to help students develop toward these outcomes.

Although most of our courses are designed to contribute to all of our outcomes, some courses focus more particularly on some outcomes. PSY 120 focuses on the institutional and departmental outcomes (*italicized in parentheses*) checked in the list below:

- **Knowledge Base**: Demonstrate the ability to identify, recognize, or otherwise articulate key elements of content (e.g., core concepts, theories, and individuals) in cognitive psychology. (Goal: Knowledge Base)

- **Competence in Written and Oral Communication**: Write efficiently, creatively, and competently using APA style in both theoretical/review and research report genres. (Goal: Written and Oral Communication)

- **Christian Understanding/Practices/Affections**: Demonstrate ability to identify important contemporary areas of overlap between psychology and Christian theology and spirituality, and is positively disposed towards them and inclined towards practicing them. (Goal: Values and Character)

- **Critical and Interdisciplinary Thinking**: Demonstrate ability to recognize good vs. bad experimental designs, theories, and arguments in psychology, and reason in ways that link psychology with other disciplines. (Goal: Scientific Thinking, Methods, & Skills)

- **Research and Information Literacy**: Use disciplinary and general-purpose databases and search engines effectively and efficiently to refine research questions in psychology and identify extant answers within the literature; recognize and apply appropriate disciplinary methods to further address these questions. (Goal: Scientific Thinking, Methods, & Skills)

- **Diversity and Global Awareness**: Engage as active global citizens with an awareness of cultural diversity, one's own culture(s), and the responsibility of self towards others. (Goal: Values and Character)

- **Active Societal/Intellectual/Engagement**: Engage as active agents in one's local communities, bringing intellectual and academic abilities and interests to bear on improving the lives of those around him or her. (Goal: Applications)

- **Creative Expression**: Recognize the creative aspects of theory construction, experimental design, application and collaborative work in psychology, and demonstrate such creativity in one's own disciplinary work. (Goal: Scientific Thinking, Methods, & Skills)

PSY 120 thus focuses on developing a knowledge base in psychology by presenting important historical and contemporary developments in the field of cognition; honing critical thinking through the application of scientific skills and methods; further developing scientific writing through multiple APA-style empirical research reports on the experiments conducted in lab; developing values, character and questions of the Christian faith as we explore the ways in which people process, understand and respond to various environmental stimuli, and ways in which we can responsibly and effectively study such activity; and developing creative ways to contribute to our understanding of cognition.

We encourage students to visit the departmental web page and talk with their academic advisors for more information about learning outcomes and goals, and about the structure of our curriculum.

**GE Requirements Satisfied**: This course meets the requirements for Writing Intensively within the Major.
### Tentative Lecture, Laboratory, and Assignment Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Readings/Lecture Topic/Lab Activity</th>
<th>Assignments</th>
</tr>
</thead>
</table>
| Jan 12 M | Chapter 1—Introduction to Cognitive Psychology  
What is Cognitive Psychology?  
The Rationalist & Empiricist Traditions |                                                                           |
| Jan 14 W | Chapter 1—Cognitive Psychology, con't.  
Mind as . . .  
*Laboratory Study #1: Scrambled Words*  
Excel & SPSS Review; Analyzing & Interpreting Scrambled Word Data |                                                                           |
| Jan 16 F | Chapter 1—Cognitive Psychology, con't.  
Mind as . . .  
Conclusions | *Scrambled Words SPSS output & data view with rationale for analysis & interpretation of results; Excel spreadsheet and graph* |
| 19 M | **Martin Luther King Holiday**—no class |                                                                           |
| 20 T | **Monday Classes Observed**  
Chapter 2—From Sensation to Perception  
From Sensory Transduction to Perceptions  
Gestalt Psychology |                                                                           |
| 21 W | Chapter 2—From Sensation to Perception  
Pattern Perception & Binding  
Summary  
*Laboratory Study #2: Levels of Processing*  
Analyzing & Interpreting Levels of Processing | *LR #1: Scrambled Words; submit electronically in pdf format named (lastname_scrambledwords.pdf)* |
| 23 F | Chapter 3—Attention in a Noisy World  
The Filter Metaphor and Broadbent's Model  
The Leaky Filter: Moray & Truesman  
The Resource Metaphor & Automatic & Controlled Processing |                                                                           |
| 26 M | Chapter 3—Attention, con't.  
Building Bridges between Mind & Brain  
Space-Based Attention & Neglect |                                                                           |
| 28 W | Chapter 3—Attention, con't  
The Spotlight Metaphor  
Spatial & Object-Oriented Neglect  
Conclusions: Attention  
*Design Your Own (Laboratory Study #6): Questions to Ask?* |                                                                           |
| 30 F | Chapter 4—The Modal Model of Memory  
Background  
The Modal Model  
George Sperling's Discovery of Sensory Memory |                                                                           |
| Feb 2 M | Chapter 4—The Modal Model of Memory, con't.  
Short-Term or Primary Memory  
Summary | *LR #2, Levels of Processing; submit electronically in pdf format (lastname_lom.pdf)* |
| 4 W | Chapter 5—Working Memory & the Central Executive  
Working Memory circa 1974 and 2000  
*Laboratory Study #3: Healy Task*  
Analyzing & Interpreting Healy Task |                                                                           |
| 6 F | Chapter 5—Working Memory & the Central Executive, con't.  
Future Directions of Working Memory  
Building Bridges: The Central Executive & the Frontal Lobes |                                                                           |
| 9 M | Chapter 6—Making Memories (Transferring from STM to LTM)  
Factors Influencing Memory Encoding  
Electroconvulsive Therapy & Memory  
Building Bridges: Consolidation of Encoding Conclusions |                                                                           |
<table>
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<tr>
<th>Date</th>
<th>Readings/Lecture Topic/Lab Activity</th>
<th>Assignments</th>
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</thead>
</table>
| Feb 11 W | Chapter 7—Retrieval & Memory Distortion  
Ebbinghaus’ Memory over Time  
Why Do We Forget?  
**Lab: Test #1; Chapters 1 – 5** | |
| 13 F | Chapter 7—Retrieval & Memory Distortion, con’t.  
Memory Distortion  
Conclusions: Retrieval & Memory Distortion | |
| 16 M | **President’s Holiday** | |
| 18 W | Chapter 8—Variations of Long-Term Memory  
Types of Long-Term Memory  
Declarative, Explicit Memory: Episodic Memory  
Autobiographical Memory  
**Design Your Own (Laboratory Study #6): How to Answer the Q; Experimental Design** | |
| 20 F | Chapter 8—Variations of Long-Term Memory, con’t.  
Implicit Memory  
Knowing vs. Remembering  
Do Episodic Memories Become Semantic Memories? | LR #3, Healy Task; submit electronically in pdf format (lastname_healytask.pdf) |
| 23 M | Chapter 8—Variations of Long-Term Memory, con’t.  
Building Bridges: Temporal Lobe & Striatum  
Conclusions: One Memory or Many? | |
| 25 W | Chapter 9—Categorization & Meaning  
Categories & Semantic Networks: The Classical Model  
Feature Comparison Models  
**Laboratory Study #4: Bransford and Frank  
Analyzing & Interpreting Bransford and Frank** | |
| 27 F | Chapter 9—Categorization & Meaning, con’t.  
Schemata, Frames, & Scripts  
Imagery-Based Knowledge Representations | |
| Mar 2 M | Chapter 9—Categorization & Meaning, con’t.  
Connectionist Models of Mind  
Conclusions: Categories and Meaning | |
| 4 W | Chapter 10—Consciousness  
The Problem of Consciousness  
The Characteristics of Consciousness  
The Theatre of Consciousness  
**Design Your Own (Laboratory Study #6): What Stimuli & Tasks? Create Stimuli & Tasks** | |
| 6 F | Chapter 10—Consciousness, con’t.  
Perceptual Binding as a Model  
Bridging Brain & Mind: The Global Neuronal Workplace  
Awareness of Self & Others | |
| 9 M | Chapter 10—Consciousness, con’t.  
Conclusion: The Zombie Within—The Purpose of Consciousness | |
| 11 W | Chapter 11—The Description & Overview of Language  
Language & Speech  
The Speech Signal  
Semantic, Top-Down Influence on Speech Perception  
Morphemes  
**Test #2; Chapters 6 – 9** | |
| 13 F | Chapter 11—The Description & Overview of Language, con’t.  
Syntax: Surface and Deep Structure  
Words, Sentences, and the Extraction of Meaning  
From Sentences to Narrative and Discourse | |
<table>
<thead>
<tr>
<th>Date</th>
<th>Readings/Lecture Topic/Lab Activity</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>16 M</td>
<td>Chapter 11—The Description &amp; Overview of Language, con't. Building Bridges: Inference &amp; the Brain Conclusions</td>
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<tr>
<td>20 F</td>
<td>Chapter 12—Fundamental Issues in Language Theory, con't. The Development of Language The “Language Gene”</td>
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<tr>
<td>23 M</td>
<td>Chapter 12—Fundamental Issues in Language Theory, con’t. Influence of the Environment Thought Before Language?</td>
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<tr>
<td>25 W</td>
<td>Chapter 12—Fundamental Issues in Language Theory, con’t. Modularity of Language Conclusions Design Your Own (Laboratory Study #6): What Stimuli &amp; Tasks? Create Stimuli &amp; Tasks</td>
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<tr>
<td>27 F</td>
<td>Chapter 13—Information Processing &amp; Artificial Intelligence Artificial Intelligence Protocol Analysis—Simon</td>
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<tr>
<td>30 – Apr 6</td>
<td>SPRING RECESS and EASTER Holiday</td>
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<tr>
<td>Apr 8 W</td>
<td>Chapter 13—Information Processing &amp; Artificial Intelligence, con’t. Game Theory Design Your Own (Laboratory Study #6): What Stimuli &amp; Tasks? Create Stimuli &amp; Tasks</td>
<td></td>
</tr>
<tr>
<td>10 F</td>
<td>Chapter 13—Information Processing &amp; Artificial Intelligence, con’t. Expert Systems Conclusions</td>
<td>LR #5, Memory &amp; Concepts: Results &amp; Discussion; submit electronically in pdf (lastname_memconcepts.pdf)</td>
</tr>
<tr>
<td>13 M</td>
<td>Chapter 14—Problem Solving &amp; Reasoning Early Research on Problem Solving</td>
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<tr>
<td>15 W</td>
<td>Chapter 14—Problem Solving &amp; Reasoning, con’t. Reasoning: Deductive and Inductive Run Your own Study in class</td>
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<tr>
<td>17 F</td>
<td>Chapter 14—Problem Solving &amp; Reasoning, con’t. Reasoning: Heuristics</td>
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<tr>
<td>20 M</td>
<td>Chapter 14—Problem Solving &amp; Reasoning, con’t. Mental Models</td>
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<tr>
<td>22 W</td>
<td>Chapter 14—Problem Solving &amp; Reasoning, con’t. Building Bridges: Imaging Decision Making Analyze &amp; Interpret Results; Prepare PowerPoint Presentation</td>
<td></td>
</tr>
<tr>
<td>24 F</td>
<td>Chapter 14—Problem Solving &amp; Reasoning, con’t. Decision Making</td>
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<tr>
<td>27 M</td>
<td>Chapter 14—Problem Solving &amp; Reasoning, con’t. Decision Making</td>
<td>LR #6, Submit PowerPoint electronically in pdf (lastname_mystudy.pdf)</td>
</tr>
<tr>
<td>29 W</td>
<td>Last Day of Class Chapter 14—Problem Solving &amp; Reasoning, con’t. But Are We Really Ilogical? Presentation of Your Study</td>
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<tr>
<td>May 1 F</td>
<td>Study Day</td>
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<tr>
<td>5 T</td>
<td>8:00 am – 10:00 am Test #3; Chapters 10 – 14</td>
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