McGILL UNIVERSITY
Faculty of Medicine
School of Communication Sciences & Disorders
2001 McGill College Ave, Unit 800
Winter 2015

**ERP approaches to L1-L2 interference and transfer in bilinguals**

SCSD Advanced Research Seminar / Language Acquisition Program
SCSD-652-653-654 (3 credits) / SCSD-712 (2 credits)

Tuesdays 10:00 a.m. – 12:00 pm, Rm 831

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**Instructor:** Karsten Steinhauer, Ph.D.

**Office:** Rm 817

**Office Phone:** (514) 398-2413

**Office Hours:** By appointment (set up by email)

**Email:** karsten.steinhauer@mcgill.ca

*(I prefer to be contacted by email; if you do not get a response within 2 days, please contact me again.)*

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**COURSE CONTENT:**

This course will provide an overview of research findings related to the ways in which first language (L1) and second language (L2) influence each other in bilinguals. Focus will be on electro-physiological studies using event-related brain potentials (ERPs), especially in the domains of morpho-syntax and phonology. The course will begin with a general introduction to both (a) current ideas of L1-L2 interactions and (b) ERP methodology and ERP components reflecting psycho-linguistic processing. Thus, *no prior knowledge of ERPs is required, but interest in neurocognitive research is expected from all participants.* During most classes, we will discuss original research papers using ERP techniques as well as the underlying theoretical frameworks, also focusing on their methodological approaches (and possible shortcomings). *Students are expected to give powerpoint presentations, to prepare discussions, and to write a final paper* (typically a fake doctoral fellowship proposal for an ERP experiment in this field). At least one course day will be dedicated to ‘hands-on’ experience in my EEG lab; i.e., students will learn how to collect EEG data for an experiment relevant to the course topic and how to do basic ERP analyses.
TOPICS:

- EEG generation in the brain; EEG recording and ERP analysis
- Language-related ERP components: N400, P600/SPS, [E]LAN, MMN (PMN, CPS) in L1 and L2
- Models of L1 – L2 interactions
- Specific topics in psycholinguistic ERP research on bilingualism and second language acquisition (SLA): phonology; lexicon + semantics, morphology, syntax, transfer effects and co-activation, critical periods, language attrition, simultaneous bilinguals, individual variability.
- [Note: these topics may change.]

LEARNING OUTCOMES:

After this course, you should be able to …

- explain the general principles of EEG generation and ERP analysis
- identify and characterize at least 5 language-related ERP components, their temporal dynamics, and the cognitive processes they are assumed to reflect
- explain main assumptions of neurocognitive models in SLA research and current ideas of L1 – L2 interactions
- critically analyze and orally present psycholinguistic ERP studies in SLA and criticize the experimental approach, the employed methods, the hypotheses, interpretation and conclusion
- design a psycholinguistic ERP experiment and justify your hypotheses and choice of methods in a written project proposal

INSTRUCTIONAL METHOD:

- Lecture/Seminar, including power-point presentations and discussions
- Hands-on experience in the EEG lab.

COURSE MATERIALS:

- All readings and power point presentations will be posted on MyCourses

McGill Policy and Statement:

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/students/six/honest/ for more information).

In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded.
Part I: Basic Issues


2. January 13: Introduction to EEG/ERPs (the neural generation of brain waves, analyzing EEG/ERP data, ERP components in L1 and L2)
   Lecturer: Karsten Steinhauer  Readings: TBA $\rightarrow$ MyCourses

3. January 20: (a) Bilinguals, ERPs, and L1-L2 interactions
   Lecturer: Karsten Steinhauer  Readings: TBA $\rightarrow$ MyCourses
   (b) quick EEG lab session (?)  (Ideally: Assignment of student presentations)

4. January 27: EEG Lab Session  Readings: TBA $\rightarrow$ MyCourses

Part II: Specific topics (student presentations)

5. February 03: Lab Session 2 or Phonology / Semantics  Readings: TBA $\rightarrow$ MyCourses

6. February 10: Phonology / Semantics  Readings: TBA $\rightarrow$ MyCourses

7. February 17: Morphology/Morphosyntax  Readings: TBA $\rightarrow$ MyCourses

8. February 24: Morphosyntax  Readings: TBA $\rightarrow$ MyCourses

! March 03: NO CLASS (Reading Week)

9. March 10: Special topic  Readings: TBA $\rightarrow$ MyCourses

----------------------------------- End of course for LAP students (2 credits) -----------------------------------

10. March 17: Special topic  Readings: TBA $\rightarrow$ MyCourses

11. March 24: Special topic  Readings: TBA $\rightarrow$ MyCourses

12. March 31: Special topic  Readings: TBA $\rightarrow$ MyCourses

13. April 07: Special topic  Readings: TBA $\rightarrow$ MyCourses

!! COURSE PAPERS ARE DUE ON 20th APRIL !!
**Course Structure and Requirements**

In each class, there will first be a 1-2 hour lecture or 1-2 power point presentations (by students; details TBA). On one or two occasions, we may also spend time in the EEG lab. Questions from students are strongly encouraged. **Topics + Readings for the power point presentations will be announced during our second meeting and will be assigned to students on the third course day (20th January).** Abstracts of all corresponding papers will be available on *MyCourses* in advance.

**Important note:** To access the readings and other course information on *MyCourses*, please select cross-linked course SCSD-652-653-654-SCSD-712 (Winter 2015). All readings and most other postings will be made available through *MyCourses* only. External students and auditors will be added to the list of participants upon request. Should you encounter any problems accessing the information, please contact the course instructor!

After each lecture or presentation, the respective topic or study will be discussed in more depth (e.g., with respect to experimental designs and interpretation of the findings), and open questions will be clarified. **All students are required to read both the relevant background papers and the papers of the presentations (except for optional readings). Readings will be available on MyCourses.** After class, the power point file of the presentation should be updated by the presenting students to reflect the outcome of our discussion. The updated file has to be sent to the course instructor by Sunday noon of the same week (as email attachment to karsten.steinhauer@mcgill.ca).

A **course paper** (in English, 4.0 pages max, 11 pt Times, 1.5 line spacing) is **due on April 20th** (by email + hardcopy in my mailbox). It should either have the form of a grant proposal for a doctoral ERP research project, based either on the **critical evaluation of an ERP study presented in class or another project related to the course topic**. That is, the paper should critically review and discuss a controversial issue in bilingualism research and then **develop the design and exact methodology for a single ERP experiment that is likely to solve one (or more) specific question(s) relevant to this issue.** The background section (critical review of previous research) should lead to specific hypotheses, motivate the experiment described in the second part, and indicate its scientific significance. The second part should describe the experiment in detail, consider alternative methodological approaches, and make clear why the proposed design was chosen. Where appropriate, students are encouraged to propose alternative theories or methods (or modifications to existing ones). **A 0.5 - 1 page expose of your paper topic (by email) is due on April 10th** (earlier is OK) and must be approved by a course instructor. There will be no final exam.

Class participation is **required**; you cannot pass the course without active participation.

**Course Evaluation**

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<thead>
<tr>
<th>Your grade will depend upon</th>
<th>SCSD-652/653/654 (3 credits; 2 presentations)</th>
<th>SCSD-712 (LAP) (2 credits; 1 presentation)</th>
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</thead>
<tbody>
<tr>
<td>- your class participation: questions and discussions</td>
<td>(all classes) 20 %</td>
<td>(classes Sept-Oct) 20 %</td>
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<tr>
<td>- Powerpoint presentations</td>
<td>2 x 25 % = 50 %</td>
<td>40 %</td>
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<tr>
<td>- the course paper/’grant proposal’ (3-4 pages)</td>
<td>30 %</td>
<td>40 %</td>
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Auditors may be required to present a paper.