The School of Psychology
University of St Andrews

PS5233
Developmental Psychology

Module Handbook
2020
Draft Copy

PS5233 Developmental Psychology
Student Module Booklet 2020

School of Psychology
University of St. Andrews

Index

*DRAFT COPY * PROVISIONAL*

Jan 30- Feb 27

Thursday	**9am-11am**	**Morning Lecture: location TBA**
	1-2:30pm	**Afternoon lab practicum: Psychology Seminar Room**
Friday		**Specialist Tutorial Session: time & location TBA**

You are expected to attend both the lecture, lab, & tutorial!

INTRODUCTION

'The baby, assailed by eye, ear, nose, skin and entrails at once, feels it all as one great blooming, buzzing confusion' --- James. 1890. I. 488

How do we come to parse the 'blooming buzzing confusion' of our physical and social environments into meaningful representations? This course examines current experimental research and theoretical debates regarding the development of children from infancy to pre-adolescence, with an emphasis on the emergence of social cognition. Topics include neurodevelopment, perception, physical knowledge, language acquisition, memory, categorization, moral reasoning, theory of mind, and the role of culture in human development. A central focus of the course is how scientific theory can inform our understanding of these capacities as they emerge in the first years of life, and how this knowledge enhances what we understand about psychology more broadly.

Instructor Information
Dr Erin Robbins (er70)
Room 1.21
Office Hours: Tuesday 2-4pm and by appointment

Required Reading

- **All journal articles available online and via our Moodle page (see Course Topics & Readings at end of booklet for details)**

Highly Recommended Texts

Exploring Developmental Psychology: Understanding Theory and Methods, Margaret Harris, 2012, SAGE Publications Ltd. ISBN: 9781412903356.

This is an excellent resource for anyone who wants practice understanding and writing empirical research reports. The book contains several articles on a variety of developmental topics, all accompanied by

commentary designed to help students understand the study rationale, design strategy, assessment measures and key variables, statistical analyses, and interpretation of results. A variety of methodologies are represented, with a diverse sample of infant, child, and adolescent studies. BEST OF ALL, IT IS AVAILABLE AT THE ST ANDREWS LIBRARY AS AN E-BOOK.

Developmental Psychology: The Growth of Mind and Behaviour, Frank Keil. 2013, WW Norton. ISBN 978-0-393-97885.

> *This used to be the required course textbook, and I think it does an excellent job providing background information for the topics we cover. It also goes into depth on topics we will not have time to cover, such as personality, adolescence, and child psychopathology.*
> *Please note: It is much, much cheaper to purchase the eBook. Check out:*
> ***http://www.ebooks.com/1514070/developmental-psychology/keil-frank/***

Course Objectives:

You will learn about the development of human cognition; how to design and analyse empirical studies to answer outstanding questions in developmental psychology; and how to communicate material succinctly in written and oral form.Upon completion of this module, students should be able to achieve the following objectives:

- Characterize and differentiate between major theories of human cognitive development
- Explain how experimental methods can be used to test theoretically driven hypotheses regarding behaviour in pre-verbal and pre-adolescent populations
- Formulate hypotheses and identify statistical tests appropriate to address those claims
- Evaluate research findings, evaluate their rigor, and pose the next set of research questions
- Demonstrate comprehension of APA style, and apply it a written research proposal
- Communicate research to scientific/lay audiences in a concise, veridical, & compelling manner

Provisional Schedule of Topics and Timetable
Specific details about readings & assignments detailed at end of booklet

Date	Lectures 9am-11am Thursdays, location TBA	Lab 1-2:30pm Psychology Seminar
Week 1 **31 Jan**	Theories of development Neurobiological development	**Lab 1** Designing experiments in developmental psychology (emphasis on methods appropriate for very young infants)
Week 2 **07 Feb**	Action perception Object Knowledge	**Lab 2** Action experience and object exploration
Week 3 **14 Feb**	Cognitive Development (including categorisation, number cognition, & language)	**Lab 3** Abstraction
Week 4 **21 Feb**	Social Cognition I (including face perception, imitation, and theory of mind, & autism)	**Lab 4** Behavioural coding (also practice with visual abstracts)
Week 5 **28 Feb**	Social Cognition II (including prosocial and moral development, social categorisation)	**Lab 5** Social cognition & culture

WEEK	Devo in Depth	Psychology in the Real World
1	Epigenesis & gene-co evolution Models of development	What can you do with a psych degree? *Before class: Write a brief introductory paragraph about your career goal
2	Statistics: Handling age	Evaluating statistics in written publications
3	Language Development & Categorisation	Communicating research
4	Autism & theory of mind	Should scientists be advocates?
5	Cross-cultural developmental psyc	Research ethics

Note about the tutorial: These specialist sessions are intended to provide more depth to the topics we cover in lecture. They are also an opportunity to talk about other issues that may arise in your psychological training. As such, the format is rather flexible and informal. These topics above are suggested— I encourage students to raise issues they would like to address or topics they would like to explore in more detail.

CONTINUOUS ASSESSMENT ASSIGNMENTS

The grade for this class is based on three pieces of continuous assessment: 1) an original research proposal (1500 words) in which you explore a topic appropriate to developmental psychology; 2) a visual abstract summarising the key points of your experimental proposal; and 3) a pedagogical tool or teaching demo that communicates a core principle of developmental psychology to a non-scientific audience

The visual abstract is due in advance of the research proposal. This allows me to provide some feedback on your experimental design before you submit the proposal, which constitutes the majority of your mark in the module.

The exact research question and design for your proposal is of your own choosing. Your may opt to explore in depth a topic raised in lab/ lecture, or you may elect to address a topic outside the immediate scope of the course, provided you can clearly demonstrate how it pertains to infant/child development. In either case, the proposal should describe a novel, critical approach to your topic. (It should go without saying that your proposal also incorporates a developmental perspective.) A proposal that boils down to a replication and mild extension of an extant study will simply not cut it.

Visual Abstract: (provisional deadline, Monday March 2nd at 5pm). The visual abstract is your chance to creatively and concisely summarise your proposal. The key points of your design and your expected outcomes should be represented in a way that is impactful and that would be accessible to an outside audience. A strong piece of advice: this is much harder than it looks, so don't put it off to the last minute!

As with a traditional abstract, this graphical representation of your study should summarise the key elements of your proposal, including your research question/hypotheses, design, sampling strategy, anticipated findings, and conclusions/implications. *The goal of a visual abstract is to create a summary of your study that carries impact—and that an outside audience could understand without necessarily having read all the details in your paper!* You must decide which elements of your proposal are important to highlight and how best to convey this information in a concise, clear, and compelling format.

Note that you are limited to **ONE PAGE** (standard letter/A4 size). See guidelines on Moodle for specifics regarding resolution and other stylistic considerations. There is no word limitation for this assignment, but you do need to abide by the guidelines and ensure that whatever text or images you include are appropriately referenced. Remember—your abstract needs to be easy to see and read, so be wise about how you choose to portray content!

The visual abstract should be uploaded to MMS as a PDF, and it should include the standard cover sheet and scoring rubric/feedback form. **DO NOT** submit your abstract as a word or powerpoint file, as any special formatting is likely to become wonky.

The visual abstract constitutes **15% of your overall mark**.
Feedback on this work will be provided on or before Monday 16 March

Research proposal: (provisional deadline, Friday April 3rd at 5pm). Detailed guidelines are posted on moodle, but in brief your proposal will need to include the following elements:

- **Background:** This section should concisely summarise the literature and major findings that inform your research question. It is expected that you will incorporate at least one source outside those covered in class/lecture
- **Rationale and hypotheses**: Here you should specify what gaps, unanswered questions, or theoretical tensions necessitate your research. In other words, you are explaining what problem exists and why you wish to investigate it. You should then clearly state your hypotheses.
- **Methodology:** This section should detail how you will tackle your research question. Who are your participants, and why have you chosen this group? Paradigms, assessments, apparatuses, etc. should be clearly described. A reader should be able to understand why these methods are the best way to address your topic. It should also be clear to a reader how these measures will generate your data, and what your dependent/independent variables are. Finally, you should offer a plan for how you would analyse your data—what statistical test(s) would be most appropriate and why? What pattern of results would you expect to see, given your hypotheses?
- **Impact and implications:** The last section of your proposal should explain the importance of your findings. Would your findings be able to resolve a theoretical debate? Are their implications for education or health? Make a case for why your results would be meaningful.
- **Style (Including References and Clarity of Expression)**: Don't forget to cite things in APA style, and be sure to write concisely and with scholarly tone

The research proposal constitutes **70% of your overall mark**.
Feedback on this work will be provided no later than May 1st
Thank you in advance for your patience—there are over 130 students in the course, so I appreciate your understanding for the time it takes to provide constructive feedback

Proposal Formatting: The proposal should be presented as follows: a title page stating the title of the work, student's matriculation number, the module number, the word count, and the date. There must be at least a 1" margin all round (top, bottom, right and left). Text must be in Arial or Times New Roman font at 12 point, 1.0 line spaced. The reference list does not count towards the word limit, nor do brief, appropriate labels for optional figures/diagrams. Your final document should be submitted as a PDF or Word file that includes a copy of the scoring rubric/feedback form.

Length Limitations (Word Count Restrictions)
Word limit: 1500 words (does not include reference list). Per School guidelines, an accurate word count must be noted on the front sheet for each piece of submitted work. Word counts do not include the title, tables, figure legends, reference lists, or appendices (e.g., diagrams, example stimuli). All other words, including sub-headings (e.g. Methods, Results etc.) count towards the overall work length. Marks will be deducted if the word count is anything above the word limit and will be penalized with 1 point for any over-length up to 5%, then 1 further mark for every 5% over-length. The School of Psychology & Neuroscience uses option C for penalising over-length (follow this link for details).

How to submit coursework: The proposal and visual abstract should be submitted electronically via MMS on or before the due date. If you experience difficulties with coursework submission contact me or someone in the main Psychology Office *__before__* the deadline— the inconveniences of the digital age ("computer ate my homework") are not valid excuses for late or missing assignments.

Assignment 3: Pedagogical Tool/Teaching Demo
(provisional deadline: Friday 01 May by 5pm)
*note that this deadline is somewhat flexible; pending UNANIMOUS agreement by the class, we can push this deadline into reading week

Choose a topic in developmental psychology covered in the course and devise a pedagogical tool or teaching demo that dynamically explains this concept or finding to a non-scientific audience. The idea is to make something interactive and engaging—to cite a few examples, you could record a podcast, film a YouTube video, build an inter-active web game. There is considerable room for creativity, and I encourage you to think outside the box. For this reason, I strongly suggest that you avoid traditional presentation formats like PowerPoint.

Your pedagogical demo should be accompanied by a short (no more than 250 word) lay summary— think of this as the synopsis or metadata that would accompany your demo online. The summary should provide a concise explanation of the phenomena and explain why this knowledge is important. How might this knowledge change the way a layperson thinks about human development in particular and scientific practice more generally?

Students have the opportunity to receive informal feedback about their idea by submitting an outline or mini-proposal (deadline TBA). Specific guidelines about the demo and corresponding write-up are available on moodle.

The pedagogical demo & lay summary are collectively worth 20% of your overall mark.
Feedback on both components of the assignment will be returned by Friday May 15.

GENERAL SUBMISSION POLICIES

How to submit coursework: The proposal and visual abstract should be submitted electronically via MMS on or before the due date. These should be separate submissions— make sure you upload the files to independently. If you experience difficulties with coursework submission contact me or someone in the main Psychology Office **_before_** the deadline— the inconveniences of the digital age ("computer ate my homework") are not valid excuses for late or missing assignments.

Important note on plagiarism and Turnitin

Please note that all submissions are automatically checked for similarity to other essays or published works using the software Turnitin. Cutting and pasting of text from journals or internet resources (which Turnitin cleverly and thoroughly picks out and highlights) is forbidden. Turnitin also flags any text duplicated between candidates' submissions, including your own in different years! Given the penalties for copying, including cutting and pasting, the lesson is simple and clear:
Always write in your own words!

Late Submissions:

Late submissions of coursework should be submitted via MMS. If you have good reasons you may ask for extension **_in advance of the deadline_** by using the Notification of Student Problems form. No extensions are permitted for assessments without University approval. In the event of an emergency or otherwise unforeseen complication, it is your responsibility to initiate this process via the online form, or through your Advisor of Studies, who can start this process on your behalf. Marking and examination procedures follow a tight timetable that is set by the University. Although I am willing to accommodate late coursework when the student has a valid reason, assessment formalities must proceed according to University timetables, as specified below:

- Late submission prior to return of work to other students in course: 1 point (of 0-20 scale) deducted per day or part thereof. Note that every day will be considered as counting toward a late penalty; this rule will apply to holidays (public and University) and includes weekends, with Sunday and Saturday each counting as one day.

- Work submitted so late that corrected copies of the exercise have been returned to other students will be awarded a mark of zero

- All assessed written assignments must be submitted, even after the return of exercises to other students, by the end of the semester (4pm on the last Friday of the exam period) in which they were due. Failure to do so may lead to the automatic failure of the module.

Marking scheme
The documents that follow outlines the provisional marking schemes used for the research proposal and graphical abstract – this may vary slightly depending how the term progresses.

Marking Criteria for Research Proposal

Provisional

Grade……		FAIL	7	8-10	11-13	14-16	17-20
Introduction	**Background**	No valid presentation of content or material	Widespread deficiencies in presentation.	Unsatisfactory depth of literature review; over- reliance and uncritical acceptance of sources. No clear organisation.	Frequent use of secondary or out-of-date material and/or substantive errors; little evidence of critical analysis. Unorganized structure or progression of ideas.	Some use of secondary sources or out-of-date material; may contain minor errors. Evidence of critical thought. Mostly clear and logical structure.	Scholarly depth of literature review plus extensive critical analysis of material. Well-structured and clear, logical organisation
	Rationale & Hypotheses	No rationale or hypotheses specified	One element missing (either aims and relevance of research to psychology omitted, or no hypotheses)	Poor linkage between research and larger literature; no clear distinction between rationale & hypotheses. Hypotheses vague or unclearly presented.	Minimal linkage between proposal & extant literature; unclear or minimal description of research hypotheses and/or goals.	Rationale presented in context of psychological theories; research hypotheses and goals described, though some points may require minor clarification	Novel, creative research question; it is clear how study advances the field. Hypotheses are stated clearly & follow from rationale
Methodology	**Paradigm & measures**	No methodology described	Description insufficient to understand protocol, may contain inaccuracies. Not feasible or ethical.	Inappropriate methodology or poor description. Errors or contradictions in description of design/protocol. Poorly justified, not clearly linked to hypotheses	Major aspects of the method are missing or ambiguous. Link between methods and hypotheses is present but unclear.	Appropriate methodology suitable for developmental study, but some details of method may be missing or ambiguous. Link between methods and hypotheses mostly clear.	Careful and clear reasoning for selection of methodology. It is clear how these methods test the hypotheses specified. Methods are innovative.
	Sample	Missing description of participants or sampling method	Major elements missing; sampling strategy is unethical	Participants and/or sampling strategy inappropriate for research question	Description of participants and sampling strategy generic; not enough detail provided	Participants identified and rationale evident, but some details about sampling strategy unclear	Participants identified with clear justification for sampling strategy
	Analysis	Missing description of data analysis or statistical tests	Data analysis inappropriate for research question; no statistical tests mentioned	Analysis plan too broad and generic; proposed analysis inappropriate based on data or research question	Analysis plan contains inaccuracies in description/choice of statistical tests	Mostly clear description & justification of analysis strategy; some description of statistical tests may require more detail	Clear and precise of analysis strategy. Appropriate choice of statistical tests.
Impact & Implications		No contextualisation of findings or relevance provided	Importance of findings directly copied and pasted from introduction. No mention of practical importance.	Description of findings inconsistent with study rationale; importance may be overstaed/underjustified or extremely minimal.	Provides statement about importance of results, but interpretation seems minimal or inconsistent with hypotheses/rationale.	Includes description of likely outcome and relevance to theory; some reference to practical importance of findings.	Clear description anticipated findings & how results relate to theory/extant literature; reference to larger impact of work (e.g., for other researchers, for educators, etc.)
Precision of Expression & Refs (Appendices)		Missing and irrelevant material	Major omissions; major problems in clarity and syntax	Some important references provided but also widespread omissions; writing unclear	Some problems with precision of expression or style; some errors with citations/references	Generally well-written but with some weaknesses of presentation (either in style or use of citations/references)	Observes APA stylistic conventions. Writing is clear and concise. Comprehensive references cited correctly

This sheet provides guidance for markers to consistently evaluate submissions. It is not intended to indicate an overall grade by application of weighted averages – sections will be weighted differently in the final determination of the overall mark. All instances of possible plagiarism will be referred to the Academic Misconduct Officer and may result in a grade of 0 being awarded.

PROVISIONAL PEDAGOGICAL DEMO MARKING CRITERIA

Grade……	FAIL	7	8-10	11-13	14-16	17-20
Content	Content is purely speculative or personal conjecture, based in no evidence	Inaccurate description, misrepresents key issues and/or ignores major findings. Not appropriate for lay audience	Inaccurate description of topic and/or overreliance on jargon or technical language; inaccessible to lay audience	Accurate description of topic, but presented in way that would be hard for a lay audience to understand	Accurate description of topic; demo may contain jargon but mostly accessible to non-scientists	Accurately describes the topic in a way that is appropriate for a non-scientific audience; clearly articulated ideas grounded in research
Execution	Quality of materials so poor that it completely obscures content and make demo unusable	Demo is non-functional or inappropriate for target audience; would not be effective demo	Chosen modality of presentation may be audience appropriate but would be hard to hear/see/use. Would not be effective demo	Chosen modality is high quality, some question about whether this would be most effective way to engage target audience. Could be more effective with some edits	Generally high quality presentation, but some mild technical difficulties in execution; minor issues with visual/auditory content	Demo works as intended (if interactive); high quality content is easy to see/hear; would be easily accessible to target audience
Structure	No logical relationship between ideas; demo lacks a sense of purpose and no clear pedagogical use	Minimal logical structure; information presented without clear sense of how ideas related; no sense of what demo should be teaching/illustrating	Overall topic is clear, but minimal logical structure to demo; ideas presented without clear motivating framework	Ideas logically ordered, but purpose of the demo is unclear; an audience would not understand what they are meant to learn or why topic relevant	Overall strong progression of ideas, and clear sense of what user will learn; may be lacking overall take-home message	Purpose of the demo is clearly identified; ideas flow logically; an audience would have clear sense of topic importance & take-home message
Creativity	No effort to engage audience beyond lecture-style tool; content completely obscured by medium	Overreliance on text or extant tools to explain topic; minimal efforts to present content engagingly	Signs of creative effort but medium does not lend itself well to the topic and makes it difficult to understand central point of demo	Content may be presented in an interesting, non-traditional way, but in a medium that makes it hard to understand the central point	Demo goes beyond traditional academic tools (like powerpoint lectures) and would be interesting to a wide audience	Demo presents information in a novel way; medium emphasises or compliments the topic in a way that engages audience; demonstrates original thought
Summary	No recognition of intended audience; relevance to lay audience missing; no statement of purpose. No description of demo.	Demo and lay summary inappropriate for a lay audience. Summary is purely descriptive and does not clearly identify purpose of the learning tool; unclear what audience should learn. Little or no description of the demo itself.	Minimal effort to identify audience and explain relevance of topic. Unclear pedagogical purpose. Summary describes the topic but does not provide details about why this is important. Discrepancies between the demo & the description.	Unclear target audience; vague sense of who could benefit from this demo and why. Summary requires more articulation about the relevance of the topic. Description of the demo does not map clearly onto the product itself.	Clear target audience, though relevance for this audience may be a bit less clearly identified or obvious. Clear pedagogical purpose, though overall importance of this knowledge may be underspecified or not as clearly linked to the demo itself	Well-identified target audience—it is clear who is intended to use this demo and why it would be relevant to them. Clear sense of what demo is intended to teach/illustrate and why topic is important. The demo itself is well-explained.

Provisional Marking Criteria for Visual Abstract

Section	Major issues	0-4	5-10	11-13	14-16	17-20
Research question	Clear articulation of the purpose of the project					
Specific Aims	Clear articulation of hypotheses that gives sense of major variables and measurable outcomes					
Design	Clearly defined subjects and sampling strategy					
	Key methodological elements clearly described or depicted					
Impact	Implications of results clearly explored					
Style	Concise; not overly reliant on verbiage					
	Abstract is visually appealing and easy to read; graphics are appropriate and well-integrated					
	Abstract is engaging and creatively depicts major core elements of the proposed project					

RESOURCES & PREPARATION

Your consistent attendance in both lecture and lab is designed to reinforce what you have learned and help you stay up to date with the course material and deadlines. It is strongly advised that you to come to class on time, prepared to participate and ready to ask questions. Although there will be opportunities for informal feedback along the way, the resources below may also be of use. These resources may also help you prepare for the course before you arrive in St Andrews.

- Provisional Office Hours: Tuesday 2-4pm and by appointment (Psychology 1.21)

- Preliminary slides will be posted in advance of the lecture; on occasion, these slides may be revised and re-posted to include content from in-class exercises and discussion

- Academic skills support: You should acknowledge that previous academic preparation (e.g., writing skills) may affect your performance in this course. If you find yourself struggling with the written component of the course, I encourage you to utilize the resources of CAPOD (https://www.st-andrews.ac.uk/capod/students/studyskillsandadvice/academicskills/)

- You can review the basics of APA style using this guide: https://owl.english.purdue.edu/owl/resource/560/1/.

- The Institute for Digital Research and Education at UCLA has an excellent stats tutorial that includes a wealth of information on choosing analytical tests & running stats in SPSS: http://www.ats.ucla.edu/stat/spss/

- StatSoft is a free online text for statistics—see the Basic Stats section if you need a refresher on the purpose & assumptions of several different tests

Don't suffer in silence—if you are having trouble with the material, please explore these resources, or utilize my office hours! Don't allow yourself to fall behind!

My Manifesto
(Teaching Philosophy)

Here is what I expect from students:

Success in this module depends on your ability to independently analyse, synthesize, and integrate information that we cover in the course of the lectures with material that you explore outwith class. In other words, you are expected to demonstrate independent critical thought.

I expect students to treat everyone in the class—including peers, the lecturer, demonstrators, and visiting guests—with the respect due to all human beings. Some of these topics may be sensitive, and you may not agree with all of the points raised, but I expect everybody to act with maturity when we engage in discussion. I expect you to attend every class and give your full attention to the material. This means no playing with mobile devices or computers during lecture/discussion. **I reserve the right to ban electronic devices from the lecture hall if they prove distracting.**

Be an active consumer of knowledge! This means approaching what you read and hear with a critical mind and asking questions rather than just sitting in your seat soaking up knowledge passively. You will be in the best position to learn and to ask questions when you complete the assigned readings *before* class and lab. We cannot possibly discuss everything from the readings in exhaustive detail. You are responsible for familiarizing yourself with the content in our readings; lecture is intended to supplement this information and will focus on selective topics from the readings.

Please note that slides will be available in advance of the lecture; these materials may be revised and reposted to reflect content from in-class activities and discussion. Taking good notes from both reading and lecture is a skill that you can develop and refine, and which will serve you well during the tenure of your time at St Andrews. A few recommendations from someone who has been there: Avoid copying verbatim (either from the lecture or the book), and try to actively digest the material and find ways to explain the ideas and concepts in your own words. This will greatly increase the chance that you remember new content, and it will aid in your ability to integrate this new knowledge with what you already know.

Here is what students can expect from me:

I will treat you with the respect due all human beings. I will not discriminate against you because of your identity or your well-informed viewpoints. I will manage the class in a professional manner; that may include educating you in appropriate and professional behaviour. I will prepare carefully for every class, and I will begin and end class on time. I will make myself available to you for advising, and I am willing to work with you and the University Disability Team as needed. Please note that I try to respond to emails within 24 hours during the regular week and 48 hours during the weekend. I will maintain confidentiality concerning your performance. Your mark will reflect the quality of your work and nothing else. I am interested in your feedback about the class, and above all I am most interested in what you learned.

Like learning, teaching requires a tremendous amount of time and energy. I do not expect everyone to become a researcher or psychologist, but what I do expect is for you to do your reading, participate in class discussion, and show up for class. This class is meant to make you think critically and to challenge how you interpret knowledge that you generate and that people share with you. It is also an opportunity to explore your own ideas and beliefs about human behaviour and how we study it. **Ultimately, this class is not about memorization—it is an application course.**

The following schedule details the topics and corresponding readings we will cover each week. Readings under the Lecture and Practicum headings are compulsory. ***It is highly encouraged that you read these materials in advance of the lecture and lab.*** The materials under Additional Resources are optional but highly recommended—they supplement the required course readings, often in further depth than we have time for in class, and may be of particular interest to those of you considering psychology as a career.

Finally, you should note that the lecture and lab will introduce material not covered in the readings; by not attending class, you risk missing this content along with instructions, information, and guidelines about assignments. ***Your attendance in both sessions is therefore crucial to your success in the module.*** The lecture and corresponding lab are times to review content but also to practice the skillsets included in your assessment for the course. Historically, I have found that students who regularly attend class score several points higher than their peers who do not.

Week 1: Introduction & Theoretical Debates

How has the view of the infant changed over historical time? Is human development a legitimate topic of scientific inquiry? This week, we discuss perennial theoretical tensions in the study of infant and child research. We also discuss the challenges of empirically studying pre-verbal infants and young children.

Lecture
- Keil Chapter 1 (pp. 3-31)
- Keil Chapter 3 (pp. 56-70 **only**)
- Keil Chapter 5 (pp. 147-166 **only**)
-

Lab:
- Bendersky, M., & Sullivan, M. W. (2007). Basic methods in infant research. In A. Slater & M. Lewis (Eds.), *Introduction to Infant Development* (pp. 16-36)*.* Oxford: Oxford University Press.

Additional resources:
- Nurrenbern, S. C. (2001). Piaget's theory of intellectual development revisited. *Journal of Chemical Education, 78*(8), 1107-1110.
- Spelke, E. S. (1998). Nativism, empiricism, and the origins of knowledge. *Infant Behavior and Development, 21*(2), 181-200.
- Fogel, A. (2010). Historical Reflections on Infancy. *The Wiley-Blackwell Handbook of Infant Development, Basic Research*, *1*, 1-31.

Week 2: Core Knowledge & Action Perception

We discuss the possibility of a core knowledge system for representing objects and actions. In lab we will discuss motor development, and how this relates to children's burgeoning understanding of action and intention.

Lecture:
- Keil Chapter 3 (pp. 78-95)
- Keil Chapter 4 (pp. 116-143)
- Keil Chapter 5 (pp. 166-175 **only**)
- Spelke, E., & Kinzler, K.(2007). Core knowledge. *Developmental Science, 10*(1), 89-96.

Additional Resources:
- Wynn,K.(1992). Addition and subtraction by human infants. *Nature,358,*749-50
- Baillargeon, R. (2004). Infants' reasoning about hidden objects: evidence for event-general and event-specific expectations. *Developmental science*, *7*(4), 391-414.
- Hood, B. M. (2004). Is looking good enough or does it beggar belief? *Developmental Science*, 7(4), 415-417.
    - ***Note: This is a response to the Baillargeon (2004) article above. Good example of scientific dialogue in action!

Week 3: Cognitive development

How do infants parse the world into meaningful chunks? How do infants form categories? What is the role of language in abstract thought?

Lecture:
- Keil Chapter 3 (pp. 95-56 **only**)
- Keil Chapter 8 (pp. 260-295)
- Keil Chapter 9 (pp. 320-337 **only**)
- Gordon, P. (2004). Numerical cognition without words: Evidence from Amazonia. *Science*, *306*(5695), 496-499.

Additional readings:
- Kelly, D. J., Quinn, P. C., Slater, A. M., Lee, K., Ge, L., & Pascalis, O. (2007). The other-race effect develops during infancy evidence of perceptual narrowing. *Psychological Science*, *18*(12), 1084-1089.
- Sugita, Y. (2009). Innate face processing. *Current Opinion in Neurobiology*, 19, 39-44.

Week 4: Theory of mind & self-consciousness

What does it mean to be a "mind reader"? We discuss what kinds of mental attributions infants and children make about others, and relate this topic to recent theories of autism spectrum disorder. What does it mean to have a sense of self, and what implications does this have for social cognitive development? Is self-consciousness a uniquely human phenomenon?

Lecture:
- Keil Chapter 10 (pp. 344-358 on Memory **only**)
- Keil Chapter 13 (pp. 482-499 on theory of mind **only**)
- Kiel Chapter 16 (pp. 588- 592 on Autism **only**)
- Baillargeon, R., Scott, R.M., & He, Z. (2010). False-belief understanding in infants. *Trends in Cognitive Sciences,* 14, 110-118.
- Bloom, P., & German, T.P. (2000). Two reasons to abandon the false belief task as a theory of mind. *Cognition,* 77, B25-31.

Additional Resources:
- Amsterdam, B. (1972). Mirror self-image reactions before age two. *Developmental psychobiology*, *5*(4), 297-305.
- Onishi, K. H., & Baillargeon, R. (2005). Do 15-month-old infants understand false beliefs? *Science*, *308* (5719), 255-258.
- Wellman, H.M., Cross, D., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development*, 72, 655-684.
- Callaghan, T., Rochat, P., Lillard, A., Claux, M. L., Odden, H., Itakura, S., ... & Singh, S. (2005). Synchrony in the onset of mental-state reasoning evidence from five cultures. *Psychological Science*, *16*(5), 378-384.
- Rajendran, G., & Mitchell, P. (2007). Cognitive theories of autism. *Developmental Review, 27*(2), 224-260.
- Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a "theory of mind"? *Cognition*, *21*(1), 37-46.
- Suddendorf, T., & Whiten, A. (2001). Mental evaluation and development: Evidence for secondary representation in children, great apes, and other animals. *Psychological Bulletin, 127*(5), 629-650.
- Wakefield, A. J., Murch, S. H., Anthony, A., Linnell, J., Casson, D. M., Malik, M., ... & Valentine, A. (1998). RETRACTED: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *The Lancet*, *351*(9103), 637-641.
    - ***Note: If you've ever wanted to know where the idea that autism & vaccines are related (THEY ARE NOT), here's the original study, which has been retracted
- Gerber, J. S., & Offit, P. A. (2009). Vaccines and autism: a tale of shifting hypotheses. *Clinical Infectious Diseases*, *48*(4), 456-461.
    - ***Note: This is a response to the Wakefield paper—good review!

Week 5: Moral Reasoning

*How do children develop into moral agents with beliefs about how things **ought** to be done? Is there a difference between being helpful and prosocial versus moral? This week we discuss what might constitute the blocks of moral reasoning in our species.*

> **Lecture:**
> - Keil Chapter 12 (pp. 427-465 **only**)
> - Hamlin, J. K., Wynn, K., & Bloom, P. (2007). Social evaluation by preverbal infants. *Nature, 450*, 557-560.
>
> **Additional background:**
> - Blake, P.R., McAuliffe, K., Corbit, J., Callaghan, T. C., Barry, O., Bowie, A., Kleutsch, L., Kramer, K. L., Ross, E., Vongsachang, H., Wrangham, R., & Warneken, F. (2015). The ontogeny of fairness in seven societies. *Nature, 528(*7581), 258-261.
> - Fehr, E., Bernhard, H., & Rockenbach, B. (2008). Egalitarianism in young children. *Nature*, *454*(7208), 1079-1083.