Historically, the study of development has focused on childhood and, more recently, on adulthood and old age. The teenage years were left out. Times are changing, however, and new techniques for examining the brain are beginning to show the significance of adolescence. In this special issue, we review current research examining the biological and psychological changes experienced during this important developmental period.

Randall W. Engle, 2013

We're so used to seeing adolescence as a problem. But the more we learn about what really makes this period unique, the more adolescence starts to seem like a highly functional, even adaptive period. It's exactly what you'd need to do the things you have to do then.

B.J. Casey, Nat Geo 2011

...adolescence itself is changing, and in ways that make our prevailing views of it outdated, wrong and even dangerous.

Larry Steinberg, 2014

Welcome to the psychology honors program. On June 14th, 2015 the movie Inside Out hit the big screen to great acclaim. It took on a topic that has blossomed in the last 5 years: the teenage brain and a new way to think about the storm and stress that many experience during adolescence. While this field was starting to mature, you were in high school going through the marked changes that brought you through adolescence and into early adulthood. Let’s try to remember those good ol’ times – did you ever drive too fast? Text while you were driving and say that the warnings did not apply to you? Did you get enough sleep (do you now?) and did your parents ever yell at you for taking a risk that just maybe you should not have taken? And did you ever feel emotionally confused? Or just plain sad? This term we are going to try to explain the younger you. We are also going to analyze the movie Inside Out to see whether the image it presents to viewers is accurate or distorted. How much of what it shows us about the teenage brain is true to the science we study?

You have heard the rap before. Teens are bad. Remember the fame-obsessed teenagers known as the Bling Ring who robbed Paris Hilton, Megan Fox and Orlando Bloom, among others? Why did they do this? And when will we hear about Justin Bieber's next adventure?

Brain science says there is a lot of change from 14 to 17 years and the social development is just not caught up to cognitive development. Maybe, just maybe, teens are not really bad at all and a little rebellion (although not in this class!) is a good thing. As B.J. Casey argues above, the more we learn, the more adolescence starts to seem highly functional – at least from an evolutionary perspective. And in a bold move, Professor Larry Steinberg argues that the teen years might well be an Age of Opportunity. In his book by the same name, he makes the case for this interpretation.
This class raises a host of questions about the way we view our field, about the way science chooses to answer age-old questions in new ways, about how certain fields within our science grow in prominence and about the ways we gather and use our data to better understand the human condition. If we are lucky and we do a good job of reading, understanding, and debating the primary material, you may learn a little bit about yourself and about how to do good science.

You will find that the honor’s class takes a hot button item like the teenage brain and then uses that topic as our base camp to explore the field of psychology. How did our field come into being? How did the field mature into the subdisciplines that we have today? What counts as evidence in this field? How do we build a base of understanding about the human condition? How might we use what we learn to improve the human condition?

In the first semester, we will explore these questions by learning a little about the philosophy of science and how basic assumptions about research have shaped our field. The class is organized as two classes in one. The Tuesday meetings offer a basic course in research methodology, demonstrating how laboratory designs have been used to make progress across all of the subdisciplines within psychology. The Thursday classes use this knowledge as a platform for exploring the nature of science itself. What is science? What makes an inquiry scientific rather than just commonsense or hearsay? We have to go beyond the old adage that adolescence is just a troubled period of life.

All 2991 and 3991 students must attend both the Tuesday and Thursday lecture/discussion. 4991 and 4996 students need only to attend the Thursday classes. These students also become elder statespersons who will be there for research and social support. I hope you enjoy the theme this semester. There is so much to say here and so little time to discuss, but at least we will try to better understand our own biases and to comprehend why the teenage brain has become such a current issue in 2013.

Requirements

Class Meetings: The class meets on Tuesdays and Thursdays from 11:00-12:20pm in Weiss 711. Students are expected to attend all classes and to have the reading assignments and paper assignments completed for the assigned class.

Blackboard: Students must have a Temple account to register for Blackboard. Upon registration for the course, you will be automatically put on the blackboard account for the class. Blackboard has a number of exciting features that allow you to download each lecture (located under the course content) and additional course materials (e.g., your syllabus, course readings) and other applications (e.g., e-mail your classmates), etc. Please make sure that you are familiar with Blackboard and registered for the course so you can access information there.
Discussion postings:
Each student is required to post one thoughtful discussion question on blackboard by 8am on Tuesday (before the discussion class) to assist the discussion leaders for that week. This means you should read the Thursday material by Tuesday morning to post provocative questions and comments. This posting and familiarity with all class postings will be considered in your class participation grade.

Discussion leaders, please post your discussion leader themes/information for the discussion by Wednesday night at 8 pm so all can be prepared to participate on Thursday. All students will be assigned to participate as discussion leaders for particular weeks. All are expected to be familiar with the articles, but discussion leaders should prepare in more depth by gathering additional relevant information about the day’s topic (articles, news, etc) as they prepare to lead the class.

NOTE: Under “About Honors” and “Assignments” on blackboard you will find a document with additional information regarding discussion leader requirements, honors’ philosophy and goals, and research practicum guidelines/requirements, and evaluations.

Required texts for this course:

All other required articles are available on Blackboard under ‘Contents.’ Remember to check your syllabus each week for your required readings.
**Means optional reading

Grading:
Students will have a midterm, a final and two journal synopsis papers for this class. Class participation is also central. Also, this is a writing intensive course so writing and rewriting and rewriting is key. And your grade will be based on your very best attempt and on the way you grow as you work through your writing with us.
- Midterm: 25%
- Final: 25%
- Paper 1: 15%
- Paper 2: 15%
- Class participation: 20%

Reaching me:
My office hours are from 10:30 until 11:00 and 12:30 to 1:15 on Tuesday and Thursdays in 316 Weiss Hall as well as by appointment. I can also be reached by phone at my office phone, 215-204-5243 or at my lab phone in Ambler 267-468-8610. My e-mail address is khirshpa@temple.edu. Ashley will be available on Mondays and Wednesdays from 11:00am-12:00pm on the 5th floor of Weiss Hall (Room 555). Her email address is ashdrew@temple.edu.
**Note:**
The syllabi, forms for assignments and some interesting links to other sites can be found on blackboard.

**Disability Statement:**
Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible.

**Statement on Academic Freedom:** Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy # 03.70.02) which can be accessed through the following link: [http://policies.temple.edu/getdoc.asp?policy_no=03.70.02](http://policies.temple.edu/getdoc.asp?policy_no=03.70.02)
Orientation. A place for psychology among the sciences: The birth of a field

Week 1
August 25: Introduction to the class
Where knowledge about the human condition meets science.
What science can and cannot address.
Goals of the course: The IDEO model and The 6Cs

August 27: The Teenage Brain: An Introduction
We’ve always known that we change dramatically during adolescence. First there’s puberty, when our bodies morph into unfamiliar versions of our old selves. Socially, the research tells us that we are more likely to take risks, to listen to our peers, and to do “dumb” things. Academically, Piaget’s formal logic kicks in, enabling us to form hypotheses and to generate theoretical explanations (at least partially). In the last decade, we have also learned that there are monumental changes in the brain that undergird these more apparent shifts. In fact, the latest research suggests that the neurological changes that are witnessed in adolescence are paralleled only by the changes that emerge in the first two years of life. Today, we get our first glimpse of these changes as we read several papers that offer an overview of this paradigm shift in research on adolescence.

Reading:


Week 2
September 1: The Romantic meets the Rationalist: Understanding the human condition through art and science
What is art? What is science? Is adolescence best understood through the arts or through the sciences? What role could and should science play in understanding the human condition?
On questions raised by movies like The Matrix and Inception
On scientific truth versus social constructivism
For this class, each of you is asked to bring in a poem, song or work of art that speaks to our understanding of adolescence.

Reading:
September 3:

**Reading:** Watch either *Never Been Kissed* or *Now and Then*.

**Assignment:** While watching the movie, consider the following questions –
- What is the main thesis of the movie?
- What might the rationalist study, if (s)he were to make this a scientific exploration of adolescence?

In a single, concise paragraph with no-fluffy filler words, identify the thesis offered in the movie and suggest one central question, from the rationalist’s point of view.

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**Week 3**

**September 8:** Psychology takes its slice of the pie: Just what does psychology consider to be its purview within the sciences? How do we see ourselves? Do we use the logico-mathematical or the narrative approach the way we represent our field?

Even within science itself, there are different ways in which we can do our business. You will see this in depth as we move through our discussion of the science of learning and the ways in which we think about educating the next generation of citizens. For today, however, I ask you to become the hunters and gatherers within the field of psychology so that you can see these philosophical approaches (logico-mathematical and narrative) play out in the way we teach and represent our science.

You are each asked to look at the table of contents for 3 introductory textbooks and for 3 syllabi in introductory psychology (e.g., Temple, Harvard, University of Pennsylvania, Cornell, etc.) You can easily get this information from the web and you are to discover which texts are out there. What do these books and syllabi contain as subject matter? Are all people in all universities studying exactly the same topic areas when they study psychology? Do all syllabi and texts start with biological and move to social? Is the philosophy of the course or the orientation of the instructors evident from the books they chose and the syllabi they design? You are to examine what you find and to address these questions with respect to the assumptions about science that we have been studying. You are to produce notes that give a review of the books and syllabi that you found as well as a 1-page descriptive response to what you found. How do the syllabi and textbooks approach the study of adolescence?

**Reading:**
See the *Analyzing Syllabi* sheet under Course Content on Blackboard.
September 10: It is not just about content: Content is packaged in a theoretical perspective

If even textbooks are written from a perspective and with a philosophical approach in mind, so too is the research we do that will be the foundation for our evidence-based study of adolescence. Three philosophers of science frame our discussion: Popper, Kuhn and Lakatos.

Popper was one of the first philosophers to define the boundary lines of what we call science. It was Popper who set forth the ideas of disconfirming evidence as central to the enterprise. We use him not as the Holy Grail but as a thoughtful scholar who set the standard that much of science followed and that became the beacon for newer responses on the nature of science and the scientific perspective. We will leave this class with the uneasy, but important perspective that science is less about the discovery of truth than about a coherent understanding of an area and a progression of knowledge that helps to cement that understanding.

Readings:

Karl Popper from the Stanford Encyclopedia of Philosophy.
Please concentrate on sections 2, 3 and 4 and bring some of the text with you for discussion. Available on the web at: http://plato.stanford.edu/entries/popper/

Thomas Kuhn from the Stanford Encyclopedia of Philosophy.
Please concentrate on sections 2, 3, 4, 5 and 6 and bring some of the text with you for discussion. Available on the web at: http://plato.stanford.edu/entries/thomas-kuhn/

Lakatos, I. Science and Pseudoscience. Transcript from the London School of Economics.
http://www.lse.ac.uk/collections/lakatos/scienceAndPseudoscienceTranscript.htm


**For those of you who want to better meet the philosopher, take a peek at Kuhn thru the eyes of his graduate student Errol Morris and learn about the day Kuhn threw an ashtray at him –

Morris, E. The ashtray: Ultimatum (Part 1):

4991/4996 students- We need you to review these articles again, but you are also charged with a special task. Become a hunter-gatherer. Check out American Psychological Association (APS is too new) and find out when adolescence research took off. Can you witness a field coming into being?
Note: the Society for Research in Adolescence (SRA) was first established in 1984, just 30 years ago. Larry Steinberg’s classic book, *Adolescence*, appeared in its 1st edition in 1985. The flagship journal from the SRA only appeared in the year 2001, a mere 12 years ago. Might this burst in the study of adolescence be teaching us something about the development of a subarea within science? Take a look at journals like *Child Development*, pre- and post 1985 to see whether there are any changes in the study of adolescence. The introduction of the adolescent brain represents a convergence in the emerging study of adolescence with the new trend in neuropsychology. When did this trend first take root?

**Week 4**

**September 15: And our perspectives fall out in a historical context**

Around the turn of the century, the study of psychology was moving out from English and Philosophy departments to establish itself as an independent discipline. One of the primary goals at this time was to ensure that psychology could achieve status within the “real” sciences. In this class we look at some of those attempts and ask whether decisions about the field made at this time shaped the way in which the field looks today. We also examine the force that certain philosophical assumptions about the human condition have on the way we craft our theories and gather our data. We will see that the assumptions we bring about the science guides our implicit orientation to our field. It guides the kinds of questions that can be asked within the science and even the subdiscipline within which we feel comfortable. These philosophical assumptions and the historical context in which they arise shape our view of the field. Every article and every textbook has an author that brings with him/her certain assumptions about the field. The grid they use frames the way in which the field is presented and the data interpreted. In this class, I ask you to begin to see the grid that authors bring and the grid that you bring to everything that you read. Did you know that you can diagnose an author’s perspective early in a research article?

Note: This is the second day of Rosh Hashana. Anyone who is observant is excused from class and can make up the assignments.

**Reading:**

**September 17: Teenagers then and now**

Adolescence was basically ignored in the study of human development for a long time. But all of that is changing. Margaret Mead’s (1928) classic book, *Coming of Age in Samoa*, was groundbreaking in its focus on adolescents girls. In an era well before we could look at the neuroscience, she asked the question of whether the “disturbances that vex our adolescents [are] due to the nature of adolescence itself or to the civilization?” By the 1920s G. Stanley Hall, one of the fathers of modern developmental psychology, started the scientific study of adolescence in psychology. It occupied virtually no space in textbooks of the time or in the syllabi written by leading psychologists even in the late 20th Century. In 1985, our own Larry Steinberg authored a textbook called *Adolescence* that assembled the latest data. The book is now in its 10th edition and helps us understand not only the field in the context of psychology, but also how we think about adolescence
in the context of our culture. For example, consider how changing sociological trends (delayed marriage) and economic conditions may be related to the latest statistic that 36% of 18-31 year olds still live at home with their parents. How do new realities affect our scientific study of adolescence?

**Readings:**


**Week 5**

**September 22: Will the real psychology please stand up: Is behaviorism the gold standard?**
Popper’s legacy lives on. We have seen the textbooks. We have been reading about the history of psychology along with essays on science and the scientific method. No one exemplifies the hallmark of the scientific method in psychology like B.F. Skinner. Skinner outlined a program of research that was consistent with Popper’s philosophy, pushing psychology to the forefront as a major and respectable science. One could argue that Skinner’s main philosophical approach helped shape the way in which we think about the science of our field.

**Readings:**


**September 24: Is adolescent risk inborn or manufactured?**
There is a huge literature on socio-behavioral theory and parenting to suggest that the social environment is at least one factor in shaping who we become. This idea is exemplified in the classic gang scene from *West Side Story*. The Jets, a group of Polish-American youth, argue that their delinquency is “just a social disease”. What we have been learning lately is that some of the social influences on the teenager actually interact with particular areas of the teenage brain. Remarkably, these seem to affect the reward or reinforcement centers of the brain. What research teaches us is that nature / nurture, social / biological dichotomies are not as distinctly separate, as we may have hoped for. This research also teaches us a newer way to look at reinforcement theory and its potential neurological role.
Readings:


Steinberg, L. (2014) Age of Opportunity, Chapters 5 & 6, 85-140

Week 6
September 29: The many faces of psychology: A struggle defined
We have now gained some background in the history of our field and in the philosophical assumptions that ground us and that shape the development of our science. Today we look at how writers specializing in two subspecialties viewed the philosophical disputes within a historical context: social psychology and clinical psychology. In what ways can we apply what we have learned up until now to the birth of these subdisciplines? How did the assumptions that governed these subfields at the turn of the last century sculpt who we are today?

Readings:


October 1: At the intersection of science and public policy
Traditionally, adolescents under the age of 18 years who are accused of breaking the law are handled in the juvenile court system. In the 1980s and 1990s, however, “transfer” laws expanded, allowing these juvenile offenders to be transferred from the juvenile court system into the adult court systems (US Dept of Justice, 2011). The idea that an “adult” crime deserves an “adult” punishment sounds like justice to some. However, new research from neuroscience (including findings discovered right here at Temple!) suggests that adolescents committing this “adult” crimes may not have the same level of “adult” cognitive development, which has implications for how we should approach criminal cases with adolescents. For example, Lee Boyd Malvo was a teenager when he murdered several individuals as part of the DC Beltway sniper tragedy. Sentenced to life in prison without parole, his case is now being re-examined in light of a 2012 Supreme Court ruling that blocks such life sentences for juvenile offenders. In this class, we will explore this intersection of science and law.
Readings:


II. Preparation for the study of psychology in the 21st century

The first part of this class allowed you to dissect the birth of a field -- to understand the issues and forces that shaped who we are today. It forced you to ask about the ideas that mold a field and that lie beneath the surface of what you usually study. Equipped with these tools, we now ask how we go about our science. In the remainder of the class for this semester, we use what we have learned to look at lab research and true experimental design. Laboratory research in psychology forms the basis for much of what we learn in introductory psychology. One could make a strong case that we became a real science when we were able to apply true experimental design to the study of the human condition, when we could use lab research to better understand what makes us human.

Week 7
October 6: Origins of research ideas
We come to every research endeavor with a backdrop of assumptions and with a history of what has gone before us. But how do we move from where we start to a question that is both psychologically interesting and researchable? How would we or could we or SHOULD we research ideas like “god,” “love,” “creativity,” “prejudice” and “imagination?” Where do our ideas come from in the first place? Today we explore this idea as we focus on the origins or research ideas. We start with your lay ideas that are grounded in folk psychology, we look at the news and then we refine what counts as a good idea within science and an idea that might be interesting but is not scientifically based. What is within and outside of our purview?

Readings:
Rosnow & Rosenthal (2013), Chapter 2

**MIDTERM WILL BE AVAILABLE AFTER CLASS TODAY. YOUR MIDTERM WILL BE ON BLACKBOARD AND MUST BE COMPLETED BY THE START OF CLASS ON OCTOBER 13.**
October 8: The Sleepy Teen
Where do research ideas come from? Today, we explore what Dr. Maas describes as “walking zombies” otherwise known as sleepy teenagers (NYT, May 23, 2011). Before class, please take this Sleep questionnaire (yoursleep.aasmnet.org/pdf/CASQ.pdf) and bring your results into class. Then, if you aren’t too tired, take a look at the following articles, which discuss everything from the teenage brain to what time high schools should really start to optimize your ability to think.

Readings:


Week 8
October 13: From ideas to research questions and hypotheses
One of the hardest processes in research concerns the movement from ideas to the construction of research questions that are clearly motivated and that have clearly defined constructs. In the next couple of classes we examine how one achieves this task. The first place to start is at the library or with computer searches. How can we use the many tools like on-line computer library searches to refine our questions and to ensure that they are not just interesting ideas, but ideas that are psychologically and scientifically interesting? We learn how to ask whether a question fits into a program of research. Our goal is to find pertinent articles published in good sources that are on-point and up-to-date. We will also learn how to become explorers who find the authors doing the research and then learn more about what they are currently researching.

**MIDTERM MUST BE TURNED IN TODAY BEFORE CLASS.**
October 15: Issues in Identity Development during Adolescence
Who am I? This question captures the classic crisis of adolescence. According to Erikson’s theory of psychosocial development, adolescents are faced with the challenge of identity versus role confusion. Marcia expanded upon this idea in his 1966 paper. Today, we will explore adolescent sexual identity, topic that demands sensitivity and respect.

Readings:


Week 9
October 20: Reading primary research
Finding the research on a question is part of the task. Learning how to read it and to reap the benefits of the research is another challenge. What is the structure of a research article? How does the article expose the question being asked and the possible answer to the question posed? How can we get to the main message and evaluate for ourselves whether the data really offer the best evidence for the question? In this class you will be introduced to my “hour glass” system of reading scientific articles. You will become critical readers of research. We will go over this in class and then swap papers with a friend so that we all learn how to edit and read primary literature. Be sure to consult and take seriously the piece under "Assignments" that tells you how to write a journal synopsis. I promise you that this looks deceptively easy. It is not.

Reading to be analyzed for 1st Journal Synopsis:

**FIRST JOURNAL SYNOPSIS DUE BEFORE CLASS.**
October 22: Decision Making in Adolescence
Understanding adolescents’ decision-making process has been the focus of much research. Why do they make different decisions than older adults? What brain mechanisms underpin those decisions?

Readings:


Week 10

October 27: Writing in psychology and other sciences
Writing is not a single verb. When we write a literature paper, an opinion piece or a persuasive argument, we use different styles. So, what makes scientific writing good or bad? Today we review the publicity and controversy surrounding the article that you read for your first journal synopsis. Today I would also like you to examine the way in which Dr. Steinberg wrote in his book. What makes his style different than the style of a journal article or of a textbook?

Reading:
Please review the article by Beall and Tracy (2013).


Steinberg, L. (2014) *Age of Opportunity*, Chapter 8, 141-164

October 29: The bright side of adolescence
Until now, we have been discussing the “darker” side of adolescence. Today we explore the “bright” side of this developmental period. What supports the development of prosociality? How does that relate to what we have learned on the “darker” days?

Readings:
Week 11

November 3: A word on ethics

Once you have defined the question, you need to explore various methodological options so that you can ethically and optimally research the question. Today we begin to look at issues in the treatment of subjects and design. Every research question we ask needs to be reviewed by the IRB. What is the IRB? What are the ethical obligations of the professor? The student? Are there constraints on the types of participants I can use to address my question? In this class we examine these issues and get familiarized with the IRB process. We also examine a recent ethical disaster: The case of well-known morality researcher Marc Hauser. What went wrong here and how could it have been avoided. You will see that the number of these cases is growing. Why?

Readings:
Rosnow and Rosenthal (2008), Chapter 3, pp. 49-73
Rosnow & Rosenthal (2013), Chapter 3


November 5: Presentations.

III. Choosing a design: The true experimental design

Once we have a hypothesis and have looked at ethical considerations, we can choose a research design. This semester, we will focus on only one type of design, the true experimental design. This is the design most closely linked with lab research. It is the design that comes closest to the promise of finding cause and effect and of placing psychology within the realm of the hard sciences. The true experimental design is widely
used and embraces a number of assumptions about how evidence should be collected and weighed.

**Week 12**
**November 10: True experimental design I**
In this class we begin our investigation of true experimental designs or what are sometimes called, “randomized experiments.” What is the framework for this research? Can we truly discern cause and effect in these designs?

**Reading to be analyzed for 2nd Journal Synopsis:**

**SECOND JOURNAL SYNOPSIS DUE BEFORE CLASS.**

**Reading:**
Rosnow & Rosenthal (2013), Chapter 7

**November 12: Presentations.**

**Week 13**
**November 17: Prediction and control**
How much can we really control? What does it mean to be double-blind? To counterbalance? And what can we really say about our findings once we collect them? In this class, we finish issues of design and move to questions of interpretation. Can we ever know truth? Can we approximate truth? These questions force us to reconsider some of the issues we visited in our philosophical discussions. I also ask that we look at an article and diagnose how we can be certain that they found what they said they found. What is the design and what controls were put into the design to make us confident of their result?

**Reading:**
Please revisit Rosnow and Rosenthal, Chapter 7 for this class.

**November 19: Presentations.**

**Week 14: FALL BREAK**
**November 24: No class**

**November 26: No class – Thanksgiving.**

**Week 15**
**December 1: Putting the study of psychology in perspective**
Today we revisit the journey we have taken and we try to understand how our field takes a “psychologically interesting” question and begins to unpack and understand that question in a scientific way. How has the philosophy of science and our history shaped
the science of today? Today I not only review, but will also ask you to think about the study of adolescence within the context of what political scientist Daniel Stokes (1997) called, Pasteur’s Quadrant and what he termed, “use-inspired basic research.”

December 3: Re-examining adolescence
And so the term comes to a close and we ask what we have learned about the field by looking at a deeper level. Is psychology a loosely fit coalition of topics? Is there something that links the neuropsychologist and the social psychologist beyond the binding of the text? If so, what is that link? Were you convinced? Is there an alternative to what you saw? In this class, I suggest that there is such an alternative -- indeed there may be at least three answers to this question. I also ask you to go and see the movie that inspired our discussion this term. Revisit this movie if you have seen it before. Did Inside Out get it right? If you were the advisor to this film, what might you have changed and why?

FINAL IS AVAILABLE TODAY AFTER CLASS TO BE RETURNED BY DECEMBER 10 AT 12:00 noon.