



MSCI-261, *The Evolution of Play*

Department of Mathematics and Science, School of Liberal Arts and Sciences

Course Description:

This short course explores the evolution of play in a diversity of animals. Looking at the behavior of juveniles and adults, we will come to understand playfulness as an adaptation produced by Darwinian natural selection. In class we will use a variety of games to investigate the adaptive value of play; as a final project, students will produce a game of their own designed to aid the survival and/or reproduction of players or analyze a modern form of play from an evolutionary perspective.

Upon completion, this course is worth one (1) credit.

Meeting Times: *Section 01:* Tuesdays, 2:00 pm to 2:50 pm, Engineering 111
 Section 02: Tuesdays, 3:00 pm to 3:50 pm, Engineering 111

Instructor: Dr. Christopher Jensen
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Office Hours: Mondays 11:00 am to 12:30 pm, Wednesdays 12:30 to 2 pm, *or by appointment*

Course Goals:

- To understand what constitutes play and how play differs from other behaviors.
- To characterize the different forms of play displayed by animals and consider whether they are adaptive.
- To investigate which branches of the animal kingdom display play behaviors in order to better understand how play has evolved.
- To explore the benefits of various forms of play in terms of reproductive fitness.
- To assess the current debate in evolutionary biology over whether play behaviors are adaptive.
- To understand how human play behaviors are similar and/or different from the play behaviors of other animals.

Learning Objectives: Students who successfully complete *The Evolution of Play* will be able to...

- Differentiate play behaviors from other behaviors.
- Identify the various kinds play displayed by different animals.
- Reconstruct a phylogeny of animal play, recognizing where play behaviors are most likely to have first emerged.
- Explain the evolutionary advantages conferred on animals that play.
- Cite evidence that supports the hypothesis that play is adaptive.
- Analyze human play behavior from the perspective of evolutionary biology.
- Invent a novel form of play designed to increase the survival and/or reproductive fitness of players.

Assessment Criteria:

Below is a summary of how you will be graded in this course. All grades will be posted on the *LMS*, so please take advantage of the fact that you can always know how you are doing in the course.

Contribution to Grade	Category	Description
20%	<i>Reading Response</i>	During each week of class, I will post a series of reading response questions (RRQ's) on the <i>LMS</i> . These questions will help guide your reading and get you thinking about key issues that will be discussed in class. To receive credit, you must provide answers by 5:00 pm on the day before class. Unlike other assignments, late RRQ's will not be accepted.
20%	<i>Participation</i>	We'll be discussing course readings in light of our own particular concerns. I'll have questions for you; I will expect you to have questions for me. Come to class having read and thought about assigned readings, ready to actively engage in dialogue. To receive participation credit you need to be present in class; to receive full participation credit you need to be actively engaged in class discussions.
20%	<i>Assignments</i>	You will complete assignments during class. Some of these assignments will be done individually, others will require group cooperation. I will be grading each assignment based on its clarity of thought, level of insight, and contribution to class dialogue.
40%	<i>Final Project</i>	For your final project, you will either: A) invent an original form of play designed to increase the survival and/or reproduction of the player; or B) analyze a modern form of play from an evolutionary perspective. You will create a one-page poster depicting your project as well as a <i>Project Summary and Annotated Bibliography</i> . These will be shared with the class via Pratt's <i>Learning Management System</i> . Both INVENTION and ANALYSIS projects will be presented during the final weeks of class.



Under no circumstances will personalized extra-credit work be offered to any student



Lateness and Absence:

Of Students: I expect you to arrive to class on time. Lateness and absence can adversely affect your participation and assignments grades.

Of Assignments: Late assignments will be penalized by 10% per day. Late reading responses are not accepted.

Excuses: There are very few legitimate reasons to miss all or part of a class session or for submitting assignments after the stated deadlines. In order for an absence or lateness to be excused, you must provide formal documentation stating which classes/deadlines were affected and explaining the reason behind the absence; all documentation will be subject to strict verification. Valid excuses include family emergencies and chronic personal health issues. The following reasons do not excuse lateness or absence: oversleeping, excessive work load in other classes, inability to use the *Learning Management System*, or "forgetting".

Readings:

You will be assigned a series of reading materials from popular science periodicals, books, and the scientific literature. All readings will be posted on the *LMS* (see **Weekly Units** below), and the following resources will be on reserve in the Pratt Brooklyn library:

Bekoff, Marc (1998). *Animal Play: Evolutionary, Comparative and Ecological Perspectives*. Cambridge University Press. (ISBN: 978-0-52158-656-6)

Bekoff, Marc and Jessica Pierce (2009). *Wild Justice: The Moral Lives of Animals*. University of Chicago Press. (ISBN: 978-0-226-04161-2)

Brown, Stuart and Christopher Vaughn (2009). *Play: How It Shapes the Brain, Opens the Imagination, and Invigorates the Soul*. Penguin Group. (ISBN: 978-1-58333-333-4)

Burghardt, Gordon M. (2005). *The Genesis of Animal Play: Testing the Limits*. Massachusetts Institute of Technology Press. (ISBN: 0-262-02543-4)

You are encouraged to save paper by viewing these readings electronically (as opposed to printing them out).

Learning Management System (LMS):

During the course of the semester, we will make extensive use of Pratt's *Learning Management System (LMS)*. I recommend that you use the *Firefox* browser to access the *LMS* via this page: <http://lms.pratt.edu/> (I discourage you from using the *my.pratt.edu* entrance point, as it is not always working). Use your ONEKEY username and password to log in. I expect you to check the *LMS* several times a week for announcements, reading assignments, and updates to your class grade (note that you can also set the *LMS* to send you email messages every time our class page is updated). I will be using the *LMS* to send email announcements throughout the semester, so please make sure that you check the email address listed under your *LMS* profile regularly. "I forgot to check my Pratt email" is an invalid excuse.

I try to make the assignments, announcements, and other documents I post on the *LMS* as universally-readable as possible. The only proprietary program you will need to have loaded onto your computer is *Acrobat Reader*, which can be downloaded here: <http://www.adobe.com/products/acrobat/readstep2.html>. I strongly recommend that you use *Acrobat Reader*, rather than another program, to read all of the PDF's provided in this class.

Important: If you should have any problems with the *LMS*, you should:

1. Report the problem to the **Service Desk** and receive a "ticket number" by one of four means:
 - a. visiting their office in the basement of the Engineering Building; or
 - b. calling (718) 636-3765; or
 - c. emailing services@pratt.edu; or
 - d. using the "Submit a Service Request" function on the *Campus Tech* tab of my.pratt.edu.
2. Receive an email from the **Service Desk** assigning your problem a "ticket number".
3. Forward this email from the **Service Desk** to me.

In order for me to verify claims of *LMS* outages, you must contact the **Service Desk** when the *LMS* problem occurs, not hours or days later.

Reduced-Paper-Use Classroom:

Whenever possible, we will reduce the amount of paper that this course consumes. All of your out-of-class assignments, including the two-dimensional components of your two projects, must be submitted electronically via the *LMS*. Your work will be graded and returned electronically. Please do your best to reduce the amount of printing that you do for the course.

Classroom Civility and Academic Honesty:

I expect you to maintain the civility and integrity of our course in and out of the classroom. In class, this means arriving on time, turning off cell phones and refraining from sending text messages, maintaining focus on class discussion, respecting the right of others to speak, and leaving the classroom in good condition (among other things). Out of class, this means properly citing all work that is not your own (in other words, not plagiarizing).

Plagiarism means presenting, as one's own, the words, the work, information, or the opinions of someone else. It is dishonest, since the plagiarist offers, as his/her own, for credit, the language, or information, or thought for which he/she deserves no credit. Types of plagiarism include: (1) The use of any material from any source other than yourself in a paper or project without proper attribution. This includes material from the Internet, books, papers or projects by other students, and the media; (2) The extensive use of the ideas of others in your work without proper attribution; and (3) Turning in work done by another person, downloaded from the web, purchased from any agency or supplier, as one's own. Plagiarism occurs when one uses the exact language of someone else without putting the quoted material in quotation marks and giving its source. The method for documenting sources and references is established by a number of standards: please choose one of these standards (such as the *MLA Handbook for Writers of Research Papers* or the *Chicago Manual of Style*) and use it consistently. Any paper submitted that does not use proper referencing will not be marked.

Any disruptive, disrespectful, or dishonest behavior will be promptly reported to the appropriate campus authority. Students must adhere to all Institute-wide policies which include policies on attendance, academic integrity, plagiarism, computer, and network use. Please see http://www.pratt.edu/student_life/student_affairs/student_policies/ (click on *Online Student Handbook*) for policies and procedures for handling academic conduct issues.

Help with Writing:

The major project in this class will require you to produce written work. All students can benefit from feedback on their writing. I am happy to read and respond to a rough draft of your final assignment, provided it is emailed to me no later than 5 days before the day the project is due.

Pratt's *Writing and Tutorial Center* can also help you produce the best project possible. The center is located on the 1st Floor of North Hall (it has all the great fish tanks... you can't miss it!). Call them at (718) 636-3459 or send an email to wtc@pratt.edu to make an appointment.

Rights of Students with Disabilities:

If you have a physical or learning disability, ADD/ADHD, chronic disease, or physical condition that we should know about, please contact Mai McDonald at 718-636-3711, to discuss your needs and how we can best serve you. In order to receive classroom accommodations and other services, you must have documentation of your disability on file in our office. Your records will be kept completely confidential. For more information, please see the Pratt webpage for Disability Services (www.pratt.edu/student_life/student_services/disability_services/).

Weekly Units:

Major Topic(s)	Week	Date	Key Questions	Readings	Events and Assignments
What is Play?	1	Aug. 28th	How do we define play?		<ul style="list-style-type: none"> ➔ Syllabus distributed ➔ LMS Warm-up Assignments discussed
	2	Sept. 4th	What are the different forms of play?	▸ <i>The Genesis of Animal Play</i> Chapters 1, 4	➔ RRQ's due 5 pm EST Monday before class
	3	Sept. 11th	Why is play surprising from an evolutionary perspective?	▸ <i>Play</i> p. 15-21	<ul style="list-style-type: none"> ➔ RRQ's due 5 pm EST Monday before class ➔ CHOICE readings for Week 5 available on the LMS
Who Plays?	4	Sept. 18th	Which branches of the animal phylogeny exhibit play behavior?	▸ <i>The Genesis of Animal Play</i> Chapter 7	➔ RRQ's due 5 pm EST Monday before class
	5	Sept. 25th	When did the various forms of play evolve?	▸ CHOICE chapters in <i>The Genesis of Animal Play</i> (see the LMS to make your choice)	➔ RRQ's due 5 pm EST Monday before class
	6	Oct. 2nd	How many times has play evolved independently?		
Why Play?	7	Oct. 9th	What are the benefits of play?	▸ Spinka, Newberry, & Bekoff "Mammalian Play: Training for the Unexpected"	<ul style="list-style-type: none"> ➔ RRQ's due 5 pm EST Monday before class ➔ Final Project Guidelines distributed
	8	Oct. 16th	How do different forms of play boost fitness?	▸ <i>Wild Justice</i> Chapter 5	➔ RRQ's due 5 pm EST Monday before class
	9	Oct. 23rd	What evidence supports the hypothesis that play is an adaptation?	<ul style="list-style-type: none"> ▸ Pellis & Pellis "Rough-and-Tumble Play and the Development of the Social Brain" ▸ <i>Scientific American</i> "The Rat that Laughed" 	<ul style="list-style-type: none"> ➔ RRQ's due 5 pm EST Monday before class ➔ Final Project Proposal due October 23rd @11:59 pm EST

Major Topic(s)	Week	Date	Key Questions	Readings	Events and Assignments
Why Do Humans Play?	10	Oct. 30th	What kinds of play do humans display?	▸ <i>Play</i> Chapters 3 & 4	<ul style="list-style-type: none"> ➤ RRQ's due 5 pm EST Monday before class ➤ <i>Sign-up for Final Project Presentations</i> begins October 30th @ 5:00 pm EST
		Nov. 6th	<i>Election Day, No Class</i>		
	11	Nov. 13th	How does play provide fitness benefits to humans?	<ul style="list-style-type: none"> ▸ Wenner "A Serious Need for Play" ▸ <i>PLoS One</i> "Detecting Deception in Movement: The Case of the Side-Step in Rugby" 	<ul style="list-style-type: none"> ➤ RRQ's due 5 pm EST Monday before class
	12	Nov. 20th	What forms of play are unique to the human species?	<ul style="list-style-type: none"> ▸ <i>Play</i> Chapter 6 ▸ <i>National Geographic</i> "Daring, Defiant, Free" 	<ul style="list-style-type: none"> ➤ RRQ's due 5 pm EST Monday before class ➤ Final Project due November 20th @ 11:59 pm EST
Final Project Presentations 1	13	Nov. 27th	How do particular forms of human play provide benefits in terms of survival and/or reproduction?	▸ <i>Student Project Summaries 1 (posted on the LMS)</i>	<ul style="list-style-type: none"> ➤ RRQ's due 5 pm EST Monday before class ➤ <i>In-class presentation of Final Projects</i> (see the LMS for presentation schedule)
Final Project Presentations 2	14	Dec. 4th	<i>Same as above</i>	▸ <i>Student Project Summaries 2 (posted on the LMS)</i>	<ul style="list-style-type: none"> ➤ RRQ's due 5 pm EST Monday before class ➤ <i>In-class presentation of Final Projects</i> (see the LMS for presentation schedule)
Final Project Presentations 3	15	Dec. 11th	<i>Same as above</i>	▸ <i>Student Project Summaries 3 (posted on the LMS)</i>	<ul style="list-style-type: none"> ➤ RRQ's due 5 pm EST Monday before class ➤ <i>In-class presentation of Final Projects</i> (see the LMS for presentation schedule)