

Psychology 1500 (revised 8/4/12)  
Mythbusting: Distinguishing Fact and Fallacy in Psychology and Everyday Life  
Fall, 2012; T & T, GAB 406 at 3:30 and GAB 206 at 5

Instructor: Dr. Linda L. Marshall, Professor  
Office hours: 2:30, T & T and by appointment

Email: Linda.Marshall@unt.edu  
Class Email: psyc1500@yahoo.com

**Texts** – all are paperback

Levy, D. A. (2010). *Tools of Critical Thinking: Metathoughts for Psychology* (2<sup>nd</sup> ed). Waveland Press.  
Required and bring it to class once the readings start. Referred to as L in the reading list.

Ruscio, J. (2006). *Critical Thinking in Psychology: Separating Sense from Nonsense* (2<sup>nd</sup> ed). Wadsworth, Belmont, CA. Required reading and bring it to class once the readings start. Referred to as R in the reading list.

Chabris, C. & Simons, D. ((2009). *The Invisible Gorilla and Other Ways Our Intuitions Deceive Us*. Broadway Paperbacks, NY.

**Overview**

This course is on metacognition – thinking about thinking. Students discover how cognitive biases can be useful and can lead us to accept myths. Mythbusters use tactics and strategies to counter these biases.

Traditional, experiential, and action learning methods will help you become a proficient mythbuster. (Note the term is experiential, *not* experimental.) If you exert sufficient effort in class, in log entries and other assignments, you will master the material and skills.

This course is writing intensive and labor intensive. The rule of thumb for college courses, is students should spend two hours outside class for each hour inside class. Plan to spend an average of 9 hours each week.

Please make mistakes. That's the most valuable thing you can do because people learn more from mistakes than from being right.

**Grading Points**, 225 possible points for requirements

Grading will be on a curve (A = 90%; B=80-89.9%; C=70-79.9%; D=60-69.9%; F = <60%). Everyone can earn an A, B is typical if all the requirements are completed on time. No more than half of the possible points will be given for any late assignment. **STUDENTS MUST COME TO CLASS AND MUST DO THE LOG ENTRIES TO PASS.** In other words, **an F is likely if either the log entries are not done or class is not attended regularly.**

**Individual Behavior** – 140 possible

30 pts attendance, 1 for class presence, ½ if late/excused absence, ¼ if email prior to unexcused absence

40 pts, 10 pts for each essay

20 pts for improvement, pre- to post-test

40 pts for log entries

5 pts for explicitly seeking Marshall's feedback on alternative perspective entries – no later than Sept. 27

5 pts for explicitly seeking Marshall's feedback for application log entries – no later than Oct. 9

**Family Behavior** – 85 possible

30 pts for overall family behavior; involvement, contributions, responsibility

20-15-10-5 pts for most to least family improvement pre-post test

15 pts for rotation of roles (devil's advocate, leader, spokesperson, critical commentator) within the family

10 pts peer evaluation of each member's contributions showing critical thinking and absence of response biases

10 pts for being the one judged to have helped others the most, improved the most, was most important

(each family should have 3 different people for these awards—can get only one of these awards)

**Additional Points**

Bonus points may be given for in class presentations, for outstanding individual and/or family behavior, perfect attendance, and/or proving all log entries were done each week by turning a copy in every week via email.

Extra Credit: 1) 10 pts earned by participating in or writing a research paper for insight into evaluating data resulting from research. Go to <http://www.psyc.unt.edu/undergraduate/undergraduate-research.2>) 3% of highest earned grade for an individual who completes SETE. 3) 2% of highest earned grade for all family members if the entire family completes SETE

## Dates

Sept 13, class time: Implicit Associations Test **Demo** for Age and for Religion completed for class discussion  
<https://implicit.harvard.edu/implicit/demo/>  
Sept 20, midnight: Essay 1 on Implicit Associations Test **research experience** due  
Sept 25, class time readings start with #1 due with succeeding readings due weekly on Tuesdays  
Sept 27, start weekly application log entries  
Sept 27, midnight: last day to turn in alternative perspective log entries for points or feedback  
Oct 18, midnight: last day to turn in application log entries for points or feedback  
Oct 30, midnight: essay on conservative column (not a blog)  
Nov 20, midnight: essay on liberal column (not a blog)  
Nov 29, class time: evaluations of family members  
Dec 4, class time: families share summaries of *The Invisible Gorilla*  
Dec 4, midnight: entire log with all entries – submit both types of entries in one Word file  
Dec 6, midnight: essay # 4 (self evaluation)  
Dec 11, 1:30 (class 1) or 5 (class 2): post test

## Instructions for email and formatting assignments – psyc1500@yahoo.com

Assignments will be turned in via email as an attachment using Word. The filename must include your last name in the title. Every student should provide two email addresses in case there is a problem with one.

Log entries and essays must have ½ to ¾ inch margins, single spacing and a 10 to 12 point font. Most assignments will be due at midnight. Failure to follow formatting instructions will result in points lost.

## Mandatory Attendance – 6 absences constitute nonattendance which will result in a WF (Oct. 10 to Nov. 29)

You are **REQUIRED** to attend class because intense involvement and class practice is necessary to break old habits and effectively develop the skills and habit of using critical thinking techniques. Explanations must be emailed to me ahead of time whenever possible, whether or not the absence will be officially excused by a medical or university approved memo.

**YOU MUST** sign your own name on the sign-up sheet each and every day to document attendance and to receive an attendance point. An administrative drop of WF for nonattendance is calculated into GPA. The total of 6 includes both excused (e.g., medical note, university approved) and unexcused absences.

## Pre-Post Test – Sept. 6 (regular class time) & Dec. 11 (1:30 or 5)

You will be given versions of a standardized test. The results help direct the course to be most relevant to each specific class. Change in scores across the semester indicates individual and family improvement and ways the course should be adjusted. Your family configuration will help you determine how best to help each other.

## Homework Log (changed 7/31/12)

The purpose is to ensure you practice critical thinking by applying what you learn. Date and describe the type of each entry. Keep every week's entries together labeled with either the date or the week number. The number of points earned will be based on the number of entries, breadth of entries (i.e., number of different areas/topics), writing clarity (i.e., degree to which any reader can understand the points made), depth of thinking, improvement in thinking and communication, and responsiveness.

**FROM CLASS:** Once every week write about something that happened in class – something that strikes you as interesting, odd, frustrating, surprising, annoying, stupid, makes you think, etc. Describe what it was and give your thoughts about it.

**ALTERNATE PERSPECTIVE:** Once every week you must purposefully attempt to take a perspective opposite to your “normal” reaction. Describe what you thought first, why you decided to use this situation to practice thinking in an alternative way, and describe what you think when you take the alternate perspective. That is, describe both the (original and alternative) content of your thoughts and the process you used to take an alternate perspective on the information. (This exercise must be contemporaneous. Previous experiences will not count.) You may turn in two weeks of entries for feedback (and 5 points) on or before September 20.

**APPLICATION:** Three entries each week based on a construct for that week in the reading list. The specific constructs to apply each week are named in the reading schedule *in brackets*. Name the construct. Describe the information or event to which you applied the construct/principle. Be sure to describe the source, the principle, and your conclusion. One purpose of application entries is to force you to learn the strategies and

constructs out of context, leading to the ability to think in new ways. You may turn in two weeks of entries (i.e., 6 entries) for feedback (and 5 points) on or before October 18.

### **Analytic Essays**

These essays will have a minimum of 500 words and a maximum of 750 words unless otherwise specified. Grading criteria include details involved in the format & appearance of the essay (e.g., no typos, margins as required, consistency of space after periods); technical details involved in appropriate writing (e.g., sentencings, paragraphing); the clarity and thoughtfulness of the content; the depth and thoroughness of the content; and how responsive it is to the assignment. A late assignment will receive no more than 5 points and may receive less. Three of the essays are to help you learn to limit effects of cultural biases we all have.

**1)** Implicit Associations Test, due by midnight Sept. 20, via email. To be an effective mythbuster we need to learn more about ourselves and culture which is the purpose and function of Implicit Associations Tests. For this essay you will complete 2 of the tests on the website that will be assigned randomly when you login at <https://implicit.harvard.edu/implicit/research/> and choose study. What did you learn about yourself? How do the results compare with what you think you know about yourself (e.g., what was surprising, what was as you would expect)? What effect do the results have on the way you think about yourself and why? What does the experience imply about the culture? Turn in the pages showing the results of the tests you took.

**2 & 3)** Two assignments will be: Find a column in a newspaper or news magazine by a conservative (liberal) columnist from the list of names I give you. Not a blogger and not a TV or radio "personality." You will include the internet link to the column so I can read it and evaluate your understanding. Find and identify: a) The grain of truth and your alternate source for that truth, b) misleading statements or lies and how you know they are misleading or lies, c) Show which tactics and strategies referring each to class or the text, d) List the sources you used to check for accuracy of the column's content and justify why you judged each source to be likely to have accurate information.

**4)** Self-Evaluation in lieu of a final. This will be a minimum of 1000 words. Use critical thinking to evaluate the quality of your performance in all aspects of the class. Include attention to strengths, weaknesses, and change during the semester. Address all course requirements, including how you were affected by others in your family and how you affected them. Address your effort, involvement, and accomplishments in all aspects of the course. Include any issue that caused you to perform at a less than optimal level. Detailed information is necessary. Be sure to discuss ways your thinking improved and evidence for that improvement. You may use this as a chance to influence your grade, but I will be most influenced by the quality of your thinking as shown in your essay. You might want to keep notes during the semester to help prepare for this.

### **Family Behavior** (see Family Teamwork, page 6)

I will create resource-based families that you will remain with all semester. Family members should get to know each other well, communicating during and outside of class. Members are required to take turns in different roles. During each class, each family should have an assigned: 1) devil's advocate, 2) group leader, 3) spokesperson, and 4) critical commentator/reviewer. Family members should learn early how to give and accept critical feedback from each other. The critical commentator will turn in the list of people with their roles and critical comments on individual contributions and family process.

Family members are expected to be responsible to and for each other. Family members must be able to rely on each other for contributing to the family's tasks. It is everyone's responsibility to help the other family members improve their critical thinking skills. This cooperation and collaboration requirement is emphasized by being able to earn up to 20 points for family improvement on the post test. Further, this is one other reason why attendance is required. It is not possible to be a responsible family member in absentia.

To be a responsible family member, you must work to ensure everyone participates in every task and that each person learns to participate in a variety of ways. Each time a family task is presented to the class, it must reflect the combined contributions of everyone. It will not be sufficient for family members to simply present different parts of the task. Instead, it will be necessary for everyone to be flexible and to practice negotiation skills within their family. Everyone should challenge each other to improve their thinking.

### **Peer evaluation**

Every family member will evaluate the others in their own family on a variety of behaviors. Your evaluations must show critical thinking skills and the ability to make judgments despite any bias you have about an individual. Response biases must not be evident (e.g., little variation in specific ratings for a specific individual or little variation in ratings across individuals).

**Readings** - When we start Reading #1, you are expected to bring the texts to class for reference.

## **#1**

R – Evaluating Sources; C1 & C2. Introduction: Pseudoscience and the Need for Critical Thinking and Science: Evaluating Claims to Knowledge.

[To evaluate sources – Is there a commercial purpose? Who is responsible for accuracy? Updated when & how often? Well documented with reliable references? Is size or likelihood of effect given? Consistency of evidence? Alternative interpretation given?]

[10 keys to pseudoscience: superficial appearance of science, peer review absent, personal experience, evades risky tests, supernatural explanation, refers to holism, inconsistencies, appeal to authority, promise too much, static & stagnant. 6 keys to science: falsifiability, logic, comprehensiveness, honesty, replicability, sufficiency. Misplaced belief in everyone is different.]

## **#2 - Deception and Conceptualizing –**

L – C1, C2 & C3 - Evaluative Bias of Language; Reification Error; and Multiple Levels of Description

[Description vs prescription. A name doesn't make it real. Differing perspectives and "starting points."]

R – C3 – Language: Misleading and Evasive Tactics.

[weasel words, framing, quality-based on adequate evidence, quantity-appropriately informative, directly relevant information, unambiguous language (clear & concise), false dichotomies, slippery slope.]

## **#3 - Self-Deception and Conceptualizing –**

L - C4 through C9 - Nominal Fallacy & Tautologous Reasoning, Dichotomous & Continuous Variables; Contrasting; Similarity & Uniqueness; Naturalistic Fallacy; and Barnum Effect

[4-naming doesn't explain; repeating with different words doesn't convey information. 5-dichotomy vs continuum. 6-define by contrast with opposite. 7-similarities and differences (differences can obscure similarities & similarities can obscure differences). 8-common ≠ good, uncommon ≠ bad, common ≠ bad, uncommon ≠ good. 9-overly inclusive & generic interpretations.]

R – C7 - Plausibility: All Beliefs Are Not Created Equal.

[Plausibility: claim vs reality; empty promises; evasive maneuvers; contamination effect (affecting reliability & validity of info); contradictions]

## **#4 – Explaining –**

L - C10 through C14 – Correlation & Causation; Bidirectional Causation; Multiple Causation; Degrees of Causation; and Different Causes, Same Effect

[10-association ≠ cause (what vs why); contiguity-causation error; 11-bidirectional causes. 12-multiple causes. 13-partial cause. 14-multiple pathways (different cause, same effect).]

R – C8 - Association: Establishing and Interpreting Correlations.

[establish & interpret associations (correlations): presume association through examples; presume association through one rate; pattern of correlations for possible causation (consistency, strength, dose-response relationship, plausibility, coherence of associations)]

## **#5 – Misattributions –**

L - C15 through C19 – Fundamental Attribution Error; Intervention-Causation Fallacy; Consequence-Intention Fallacy; If I feel it, it must be right; and Spectacular Explanation Fallacy

[15-cognitive & motivational biases (e.g., just world, blame victim, illusion of control). 16-don't infer cause based on response to intervention. 17-a consequence does not reflect or imply intent. 18-feelings do not reflect or imply truth; memory can be true or false. 19-extraordinary events typically have common causes.]

R – C6 - Experience: The Limitations of Testimonials as Evidence.

[self-deception; competing explanations (i.e., evaluate for placebo, spontaneous remission; cyclic diseases; misdiagnosis, symptomatic relief, hedged bets, derivative benefits); distorted reality; single cases vs general principles]

## **#6 – Biases –**

L - C20 through C29 – Deductive & Inductive Inference; Reactivity; Self Fulfilling Prophecy; Assimilation Bias; Confirmation Bias; Belief Perseverance; Hindsight Bias; Representativeness Bias; Availability Bias; Insight Fallacy [salience and absence]

[20-deductive reasoning, inductive reasoning. 21-observing = disturbing. 22-expectations can create reality. 23-schema biases affect what perceptions (assimilation, accommodation, availability, belief perseverance, confirmation, hindsight, self-fulfilling prophecy). 24-looking for = finding, selectively gather information to confirm beliefs or question (disconfirmation not as salient as confirmation evidence). 25-belief

perseverance-discounting, denying, ignoring challenges (harder to change than create beliefs). 26-knew it all the time, retrospective clarity. 27-representativeness affected by invalid schema, underused base rates, small samples, misunderstood probability, motivational biases). 28-availability affected by salience, vividness, over generalizing, recency. 29-understanding  $\neq$  change

### **#7 - More Biases –**

R – C9 through C12 - Risk: Biased Perceptions and the Media Paradox; Belief: Confirmation Bias, Post-Hockery, and Overconfidence; Schemas: Seductive Grand Conspiracy Theories; Illusions: Perception of Control.

[Risk: vividness; availability; 4 principles to evaluate media information (p113). Belief persistence: discover vs verify (prediction vs *post hoc* “cause”; confirmation bias; absent, misleading or misperceived feedback; hindsight bias; overconfidence. Schemes: conspiracy theories. Illusions: endowment effect; perceived control; certainty; just world beliefs; self-blame; learned helplessness; problems with illusions of control]

### **#8 - Decision Making -**

L - C30 – Decision-making Trade-Offs

[30-costs & benefits, pluses and minuses.]

R – C13 through C15 - Assessment: Classical Decision Theory; Decisions: Clinical Vs. Statistical Approaches; and Ethics: The Use and Promotion of Unverified Treatments.

[Assessment: frequency trees; base rate (also positive & negative prediction); validity (also sensitivity & specificity; threshold (also false positives & false negatives). Clinical vs statistical decision making (i.e., belief in own judgment vs believing results of research. Unverified treatments: rephrased sections-when you hear hoof beats, think horses not zebras: cost-benefit analysis (projections of benefit & harm)]

### **#9 – Summary –**

L - Metathoughts Summary & Antidote Table – summary of critical thinking principles in text

R – C16 - Tools: Suggestions for Critical Thinking – summary of critical thinking principles in text

## **POLICIES**

Plans and dates may be modified during the semester.

See <http://www.unt.edu/catalog/undergrad/enrollment.htm> for the UNT attendance policy. You document your attendance on the sign in sheet. You must sign your name each and every day to receive an attendance point.

You are expected to remain in the classroom during each class period. If you leave during class, I will assume an illness or emergency. You will not return to class that day.

If used in class, electronic devices and ear buds, etc. may be taken away. Texting is not allowed. If you absolutely must have your telephone on due to a possible emergency, you must have prior permission from me.

*Incompletes.* This course is more cumulative than most. Knowledge and skills gained in the course build on and use knowledge and skills addressed in previous classes and assignments. Moreover, students will be relying on each other for their own improvement. Consequently, it will be extremely difficult, if not impossible, to get an I. In any rare situation where an I is assigned, the student must complete the entire course again. It will not be possible to “make up” an assignment out of the context of the entire course.

*Plagiarism and Cheating.* Academic misconduct is very serious and will not be tolerated. This includes, but is not limited to looking at another person’s exam, citing another person’s ideas or using words without proper acknowledgement. Plagiarism and/or any form of cheating will be grounds for an F in the course and possible sanctions by the university. All students should be familiar with UNT’s policies on academic misconduct.

*ODA.* UNT is committed to the spirit and letter of federal equal opportunity legislation. With passage of the Americans with Disabilities Act, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. I will not discriminate on the basis of a disability. Students must inform me of the need for reasonable accommodations and provide authorized documentation through administrative channels. See [www.unt.edu/oda/apply/index.html](http://www.unt.edu/oda/apply/index.html), visit the Office of Disability Accommodation Union (room 321) or call (940) 565-4323.



## FAMILY TEAMWORK

Complaints about students who either autocratically assumed control or neglected to pull their weight, can be avoided if a sports model of teamwork in action is used. Chantel L. Lumpkin (2012) created a collection of sports examples that illustrate how teams operate together to achieve success. Families should use these models.

**Baseball, or *everyone gets a turn at bat***, allows for varying strengths and levels of participation. Each team member is responsible for contributing something in preparation of the final project. For the presentation, team members take multiple turns presenting but in a predetermined order. The presentation may resemble innings of a game, with each inning covering a different aspect of the topic.

**Basketball** has two approaches, *star players* and *man-to-man zone*. The star players are the team leaders, who are allowed to ad lib as necessary during presentations. Other group members are support players who prepare and provide materials and assist the stars. The man-to-man zone strategy is more egalitarian, with each team member covering a particular area with limits on how much time a player has the ball and spotlight. There is cohesiveness and synergy as the “ball” is constantly changing hands during the presentation.

In **football, or *pass, run, kick***, the quarterback is the leader responsible for calling plays, passing, or handing off the ball to other team members. The quarterback knows the strengths of teammates and plays to their areas of expertise. Kickers can highlight or quickly summarize key points. In addition, football allows for anyone on the team to recover the ball and score after a fumble.

In **track (relay), or *pass the baton***, each team member has equal responsibilities, materials, and time. There are two possible strategies for presenting. 1) The presentation is split into equally timed parts, with each team member delivering a section and then passing the baton to the next member. 2) Timed round-robin stations illustrate the track model as well. Team members are stationary and the audience (or parts of it) moves from one team member’s station to another at timed intervals. Each station is interdependent, requiring all to be visited to get the full picture.

In **volleyball, or *keep the ball in the air***, each team member must know the topic and quickly react when the ball “falls in their court.” They are expected to serve, volley, or “hit it over.” The presentation includes ongoing active interaction between team members and the audience, who may pose questions.

**Wrestling, or *take it to the mat***, works best for groups that cannot reach a consensus regarding what to do or how to do it. A panel debate allows each team member to present individual views on the topic and to answer questions. If the group is split on an issue, it can use a “tag team” debate with each side presenting its views. If “stuck” or unprepared, team members may tag another to step in and make the points.

Two sports that people rarely view as team sports are **golf, or *my clubs, my rules***, and **NASCAR, or *there can be only one driver***. Golf has the golfer, caddy, and cart driver. Car racing has the driver, pit crew, and crew chief. In both, one team member is at the center of the action. The rest of the members provide the support and necessary resources like a ride to the next hole or fuel for the car.

**Rowing and synchronized swimming** require perfect harmony and simultaneous actions and are more appropriate for performance groups expected to move as one. In rowing, the coxswain keeps beat for the rowers who move together as one. In synchronized swimming, the movements are coordinated and matched to occur simultaneously and in harmony.