PRESENTATIONS ON AN APPLIED ISSUE IN PERCEPTION

Students are required to give a Power Point Presentation on an applied issue in perception. This Power Point Presentation is worth a maximum of **50** points and should be **10 minutes** in length. Psychological research can have many applications, but it takes knowledge of both real-world problems and basic research for such applications to be realized. Each student brings to this course a unique history of experiences that will allow him/her to understand how a particular theory or body of research could be applied to a particular real-world problem.

Below I have provided you with a number of real-world problems that have or could benefit from research and/or theory in the area of Perception. The class will choose problems from this list on **September 16th**. Only one student will be allowed to present on each problem. Because you won't necessarily be assigned your first-choice in problems, I suggest that you choose several problems that you would be interested in researching and presenting on and then look over your textbook to explore how research and theory in Perception could be applied to this problem. You may also want to review the body of research in **scientific journals** regarding both the problem and the research/theory that you will be applying to that problem.

When preparing your presentation, make sure that the research and theory you are applying to the real-problem is discussed in your *Sensation and Perception* text. To do this I suggest that you skim through the chapters and read those sections that catch your eye or that you find interesting. Then review the body of research in **scientific journals** regarding both the problem and the research/theory that you will be applying to that problem. In your presentation provide a thoughtful review of the research that has been done on the problem you have chosen. This review **MUST INCLUDE** at least **FOUR ORIGINAL BASIC RESEARCH ARTICLES** that address your topic. At least **TWO** of these article must be dated between **2004 AND THE PRESENT**. Cite the research according to the format of the **AMERICAN PSYCHOLOGICAL ASSOCIATION** (APA) on the last slide of your Power Point Presentation.

- Basic research *"is driven by a scientist's curiosity or interest in a scientific question. The main motivation is to expand man's knowledge, not to create or invent something" (Human Genome Project).*
- An original research article's main motivation and purpose is to present the results of an original research project and so it must contain the following sections: (1) *Methods* which includes subjects/participants, measures, design, etc. and (2) *Results*.

Layout of Your Power Point Presentation

The Real-World Problem: You should begin your presentation by explaining the real-world problem you are exploring. Make sure to define the problem and provide enough detail so that someone with no knowledge of the problem could fully understand both the problem and why you believe it is important to spend time, money, and resources to solve this problem. At least **2** of your journal articles should relate specifically to this problem and you should cite them in this section.

Theory and Research in Perception that you are Applying to the Problem: Next you should explain the research and theory you are using to help resolve this problem. Again, this theory and/or research should be mentioned in your *Sensation and Perception* text and elaborated on in the articles you cite. Make sure to fully explain the theory and research and then make connections from this research to the problem. That is, don't just present the research. You must also demonstrate in a very straight forward and obvious manner how this theory and/or research addresses your problem and how it may ultimately lead to a resolution or treatment. At least **2** of your journal articles should relate specifically to this theory and/or research. Make sure to cite these articles in this section in APA format and then include each on your reference page, which should be the final slide of your Power Point Presentation.

Conclusion: Talk about the strengths and weaknesses of your proposed solution to the problem. Discuss what future research in perception is needed to improve our ability to resolve this problem.   Make sure to provide enough detail here to warrant the 10 possible points for this section.

PRESENTATION GUIDELINES

Length:
- **10 Minutes** - This time includes setup and presentation. Therefore, get to class **early** on the day of your presentation to load your Power Points Slides onto the computer in the classroom.
- To ensure that you do not go over or under your allotted 10 minutes you must **PRACTICE, PRACTICE, PRACTICE**…. Failure to abide by the time limits will result in a significant reduction in points. Also, failure to appear well practiced will result in a significant reduction in points.

Handout for Audience (classmates):
- You must provide a **1-page handout** to all students in the class and your instructor (**30** copies). This should be more than an outline or just a copy of your Power Point slides. It should be a summary of your talk and must contain all relevant information that would allow your fellow students to **take away the major points of your presentation.**

Power Point Slides Hard and Electronic Copies Due Prior to Presenting:
- On the day of your presentation you must provide Dr. Ruva with a hard copy of your power point slides with no more than 1 slide per page**.**
- On the day of your presentation you must also provide Dr. Ruva with an electronic copy of your Power Point Presentation via **Blackboard**.

Presentation Due Date:
- Presentations will take place on **NOVEMBER 18TH through DECEMBER 2ND**. I have December 7th listed as a possible day for presentation and this will only happen if we find that the number of presentations assigned each day runs over the allotted class time. You will be assigned to either to a date by **November 2nd** (after last day to withdraw). You must present on your assigned date and if you fail to do so you will receive **NO CREDIT** for your presentation. There will be **NO MAKE-UP PRESENTATIONS – NO EXCEPTIONS!**

PLEASE SEE ME IF YOU DO NOT UNDERSTAND WHAT I WANT YOU TO DO OR IF YOU WISH TO DISCUSS YOUR IDEAS BEFORE YOU GIVE YOUR PRESENTATION!

ACADEMIC HONESTY: You must hand in a **SIGNED COPY** of the attached **ACADEMIC HONESTY FORM** on the day you present. You will not receive a grade for your presentation until Dr. Ruva receives this form.

ACADEMIC DISHONESTY: Per the USF Undergraduate Catalog Academic Dishonesty includes **PLAGIARISM**, which is defined as:

"'literary theft' and consists of the unattributed quotation of the **exact words** of a published text, or the unattributed borrowing of **original ideas by paraphrase** from a published text. On written papers for which the student employs information gathered from books, articles, web sites, or oral sources, each direct quotation, as well as **ideas and facts that are not generally known to the public at large**, or **the form, structure, or style of a secondary source** must be attributed to its author by means of the appropriate citation procedure."

Any plagiarism in this course will result in an **"FF"** for the class and a recommendation for disciplinary action by USF.

TOPICS FOR PRESENTATIONS

1. **Perceptual Development:**
    a. **Hearing:** Argument for mandatory hearing tests. Normal hearing is necessary for language development. Undetected hearing loss could retard language development.

    b. **Vision:** Argument for mandatory vision tests. Certain visual deficits if gone undetected can result in permanent visual deficits (e.g., congenital astigmatism and strabismus).

    c. **Importance of independent movement on depth perception.** Researchers believe that crawling is so important in structuring infants' experience of the world, it may promote a new level of brain organization by strengthening certain synaptic connections in the cortex.

    d. **Importance of experience on development of perceptual system:** How do you get the word out to parents and/or what toys may promote these experiences.

2. **Object Recognition:**
    a. **Pigeons as baggage screeners:** They don't get bored like humans doing such menial tasks and their visual systems are exceptional for object recognition.

    b. **Medical image perception** (e.g., Elizabeth A. Krupinski in Atten Percept Psychophys 2010;72 1205-1217): "At a fundamental level, this diagnostic process involves two basic processes: visually inspecting the image (visual perception) and rendering an interpretation (cognition). The science of medical image perception is dedicated to understanding and improving the clinical interpretation process."

3. **Attention:**
    a. **Inattentional or Change blindness in a real-world tasks** (e.g., sports, driving, speed dating; see Furley, Memmert, & Heller in Atten Percept Psychophys 2010;72 1327-1337): Inattentional Blindness "can be considered a limitation of the visual system, but it also highlights a critical aspect of visual processing, which allows us to remain focused on the important aspects of the world. But … it is possible to induce an *attentional set*—for example, by sport-specific instructions—that leads to players' missing important game-relevant information."

4. **Perception of Movement or Action:**
    a. **Detect known terrorist** by the way they walk (gait) or by retina scan at airport.

    b. **Athletes**: What does the research suggest for those who want to improve their athletic performance?

5. **Perceiving Color**
    a. **How color affects taste and smell:** Useful for consumer product tasting and others specializing in food quality (e.g., chefs, parents trying to get little ones to eat).

    b. **Color blindness**: problems that arise and solutions to them.

6. **Touch:**
    a. **Importance of touch to blind people**: Suggestions to increase this experience. For example, Touch Town for Blind Children. In this town, blind children can touch and feel stop signs, shingles, traffic lights, etc., to gain a better understanding of everyday objects in their environment.

    b. **The importance of a mother's and/or father's touch on infant and child development**: For example, research has found that massaging premature infants results in weight gain, more activity, more alertness, and ability for them to go home earlier. Another example, father's touch has been found to be especially important to the development of self-esteem.

7. **Audition:**
    a. **Hearing loss and aides**: Advances in our understanding of the auditory system has led to new hearing aide technology.

    b. **Cochlear Implants**: The deaf and hearing community feel differently about cochlear implants. What is the argument and which side does the research perception seem to support and why? Are cochlear implants the solution to deafness? If so why? If not, why not?

8. **Language Perception:**
    a. Infants and children perceive language fundamentals (e.g., word meaning, grammar/syntax, prosody) long before they can use language: How can this knowledge be used by parents and others interested in language development?

    b. **Machine Speech Recognition**: Computers are not speaker independent language perceivers. Why haven't scientist been able to develop a computer that can recognize speech of any person that you or I can understand? What problems need to be overcome (e.g., lack of invariance)? Any suggests on how these problems may be resolved?

9. **Audition & Forensic Applications:**
    a. **Earwitness Testimony**: What are the forensic problems with this type of testimony and how might knowledge of sensation and perception help solve these problems?

10. **Vision & Forensic Applications:**
    a. **Eyewitness Testimony**: What are the forensic problems with this type of testimony and how might knowledge of sensation and perception help solve these problems? Warning – this presentation must focus on basis perceptual research and how research in this area can help increase our knowledge of what eyewitnesses can and cannot do accurately (what factors affect accuracy and why from a perceptual point of view).

11. **Blindness:**
    a. Perceptual research leads to new technology for the blind that allows them to work in industry. Employers need to be educated in these advances in order to realize that blind people can be just as productive as sighted people.

    b. **Macular degeneration results in no central vision**. There is a new video headset that blocks out the hole of the damaged area and greatly improves vision.
    c. Implanting computer chips in the brain to improve vision?

    d. "Dogs blinded by an inherited retinal degenerative disease had their vision restored after treatment with genes from healthy dogs, marking the first successful gene therapy for blindness in a large animal. The treatment offers hope for humans with a similar condition." (Cornell University, 2001)

12. **Vision Testing of Elderly for Drivers License**: Is the standard visual acuity test enough? If not, what else is needed and why? How would you implement these changes?

13. **Human-Machine Interaction**:
    a. Designing Airplane Cockpits that improve pilots ability to get information that need quickly and accurately especially in a noisy environment (e.g., war, emergency situation).

    b. Designing computers or automobiles that are more human friendly. That is, are made to optimize human performance and this optimization has taken into consideration human perception.

14. **Topics Not Covered Above**
   a. Prior to the day that we select problems/issues for your application presentation (September 16th) you are free to propose a problem not listed above. If Dr. Ruva believes that the problem fits the requirements of the presentation (see above) then you will be allowed to do your presentation on this problem. Note, the purpose of having students choose problem topics in class is to prevent multiple students from covering the same problem. Therefore, if you come up with a unique and applicable problem and can demonstrate to Dr. Ruva that you have done some research on this topic (e.g., have read and can provide cites to relevant journal articles) you will most likely be allowed to use this topic for your presentation. If you want to go this route you should discuss this with Dr. Ruva before September 16th and send her an e-mail outlining the problem and some of the articles you have read that addressed this problem.

ACADEMIC HONESTY FORM

Please hand in this half of the page on the day of your presentation.

PERCEPTION APPLICATION PRESENTATION

Name (Please Print): _____

Class (day and time): Tuesday & Thursday, 12:30 pm – 1:45 pm

Instructor's name: Christine L. Ruva, Ph.D.

By signing this line, I am certifying that I was academically honest in preparing this presentation and handout:

Name _____ Date _____

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