PSYCH 467

ADVANCED PERCEPTION

Blog Post Assignments

Learning Outcomes

In completing this project, you will:

- exercise your scientific research skills
- apply your writing and critical thinking
- enhance your ability to perform knowledge mobilization
- develop your ability to explain the content of scientific journal articles to a general audience
- optionally, apply an AI chatbot to this task, and evaluate its accuracy and usefulness

These are important abilities that are highly valued by employers and post-graduate schools.

Requirements

To complete each assignment, you will search for a peer-reviewed primary research journal article on a topic in sensation or perception, with a publication date of 2021 to 2025. (Choose an experimental paper; do *not* use a review article, systematic review, or meta-analysis. Do not use a preprint article.) Then write a blog post to summarize the article in a way that is understandable to the general public, and explain its relevance or importance. Include a relevant decorative image and give the URL of the source. Alternatively, you may use an AI chatbot to write the actual blog post. However, you will then evaluate the accuracy of the AI's output.

Research Article

It is strongly recommended that you use the PSYCInfo® database to find an appropriate article (here is a brief tutorial). The Library's Psychology subject guide can help step you through the research process.

Some examples of topics in perception include:

- visual perception (e.g., colour perception, motion perception, depth perception, etc.), visual illusions
- auditory perception or music perception
- tactile or haptic perception
- gustatory or olfactory perception
- time perception
- face perception
- synesthesia or multisensory perception
- perception and art
- neuromagic

Although some of these topics are presented in lecture, not all of them are. Your topic does not have to relate directly to course content, but doing so may help you to learn and understand course material better.

Another approach is to browse through scientific journals that only publish articles on topics in perception:

- *Perception*, *i-Perception*, *Journal of Vision*, *Vision Research*, *Visual Neuroscience*, *Journal of Illusion*
- *ACM Transactions on Applied Perception*, *Chemical Senses*, *Music Perception*

Some journals publish articles on a range of topics, including perception (be careful when choosing):

- *Attention, Perception, & Psychophysics*, *Perceptual and Motor Skills*
- *Journal of Experimental Psychology: Human Perception and Performance*

Some journals publish on a diverse array of topics in science, and may include articles on perception:

- *Nature*, *Science*, *PLOS One*, *Psychological Science*, *Frontiers in Psychology*

(To access full articles, you may need to use the University of Alberta Library website.)

Option #1: Blog Post

After selecting a relevant article, you will then write a blog-style post that summarizes the findings of the research article and explains its relevance to a general audience. This is not intended to be a mini-term paper! Below are some examples of blogs posts written on perception-related topics (listed from best to worst):

- Scientific American Illusion Chasers: Lions see these illusions the same way you do
- Mind Hacks: Chromostereopsis [more posts here]
- Research Hive: Life in slow motion: Can time perception and the speed of information processing be manipulated?
- Psychology Today: How your body changes your visual perception as you walk
- Brain's Idea: Why ear plugs are great for clubbing and concerts
- Why Aren't You Studying? #TheDress explained

Another way to think of your blog post is like a press release. In fact, organizations like the Association for Psychological Science, the American Association for the Advancement of Science, and publishers like Frontiers Media issue press releases to highlight new papers appearing in their journals. Independent websites like ScienceDaily also write short press-release-like articles.

- APS: Touting flavor before nutrition encourages healthy eating
- AAAS: Synesthesia's mysterious 'mingling of the senses' may result from hyperconnected neurons
- Eurekalert! Power of illusion can help with learning new movements
- Frontiers: Our sense of smell changes the colors we see, show scientists
- ScienceDaily: Study finds perception of time linked to heartbeat

For more information on this approach, including basic content requirements and structuring the information you present, see:

- Purdue Online Writing Lab: Writing press releases
- Writing@CSI: Press releases

You can determine the Gunning fog readability score of your blog post by using this readability calculator. Anything above 12 is aimed at an audience that has some college or university education; your post should be not greater than 13.00.

Forma

Each assignment must be submitted online using Canvas. Use complete sentences; do not use point form. Include a relevant decorative image and give an attribution (e.g., URL) for it. It is your responsibility to ensure that your assignment has been properly submitted.

APA style citations and references to your primary sources are required. This is an example of an APA style in-text citation: (Hershlag et al., 1998). This is an example of an APA style reference:

Hershlag, N., Hurley, I., & Woodward, J. (1998). A simple method to demonstrate the enzymatic production of hydrogen from sugar. *Journal of Chemical Education*, *75*(10), 1270-1274. https://doi.org/10.1021/ed075p1270

Here are some free online APA style resources:

- the American Psychological Association's APA style website
- the Purdue Online Writing Lab's overview and information on APA formatting and style
- the University of Alberta Library's APA Citation Style subject guide

Most aspects of APA formatting (e.g., fonts, spacing, margins, etc.) **do not apply** to this assignment--use APA style only for citations and references. Do not use direct quotes from your source.

Scoring Rubric for Blog Post

Each post is graded out of 10 marks: 2 marks for APA style and presentation, and 8 marks for content. Your blog post must not exceed **500 words**.

APA Style	
Poor	**Excellent**
APA style errors in citation and/or reference.	No APA style errors in citation or reference.
0.0	**1.0**

Presentation	
Poor	**Excellent**
Many spelling or grammatical errors that make it difficult to understand the content. Jarring transitions between paragraphs.	No spelling or grammatical errors. Writing flows naturally. Relevant decorative image with URL has been included. Gunning fog index is not greater than 13.00.
0.0	**1.0**

Content				
No Credit	**Limited**	**Underdeveloped**	**Satisfactory**	**Exceptional**
Post does not relate to sensation or perception, or source was published before 2021, or no post submitted.	Post summarizes source poorly; findings are misinterpreted; explanations and relevance/ importance to a general audience are unclear.	Post summarizes source adequately, but findings are misinterpreted or explanations and relevance/ importance to a general audience are unclear.	Post summarizes source adequately; findings and explanations are clear. But relevance/ importance to a general audience is unclear. Post exceeds 500 words.	Post summarizes source well; findings and explanations are clear. Relevance/ importance to a general audience is evident.
0.0	**2.0**	**4.0**	**6.0**	**8.0**

Option #2: AI Alt

For this option, you will use the Google Gemini chatbot to summarize a research paper. First, choose an appropriate peer-reviewed, primary research article and upload the PDF to the chatbot. Then, write prompts that tell the AI what you want.

- you will have to explicitly specify the maximum word count of 500, the style of writing, readability level, etc.
- instruct the AI to include an APA style citation to the source in the post, as well as an APA style reference at the end
- submit the blog post on Canvas, and include an AI-generated decorative image created by Gemini
- include "**[AI]**" at the end of the subject line
- also include all prompts that you gave the chatbot

Then, using up to **400 words**, critique the AI post:

- compare the AI's output to the original article, listing any errors or "hallucinations"
- calculate readability and give the Gunning fog index, and relate this to the goal of explaining the source to a general audience
- evaluate the AI's blog post by applying the Scoring Rubric for Blog Post (see above) to it; assess the quality of the summary given, based on your reading of the article and knowledge of perception

Scoring Rubric for AI Alternative

If you choose the AI alternative, your work will be evaluated using this scoring rubric.

APA Style	
Poor	Excellent
Student did not detect APA style errors in the AI's citation and/or reference. Or prompt given to AI did not specify APA style for citation and reference.	Student listed and explained all of the APA style errors in the AI's citation and/or reference. Or, the AI's citations and references were all correct.
0.0	1.0

Presentation	
Poor	Excellent
Student did not prompt the AI with correct format or style. Student did not evaluate the presentation of the AI's blog post. No readability score was calculated.	Student correctly prompted and evaluated the format and style of the AI's blog post. Readability score was given and interpreted with implications for a general audience.
0.0	1.0

Content				
No Credit	Limited	Underdeveloped	Satisfactory	Exceptional
Student chose article that did not relate to sensation or perception, or source was published before 2020, or no post submitted.	Student missed all errors and hallucinations made by the AI. Did not evaluate the AI's blog post using Scoring Rubric for Blog Post.	Student missed major errors and hallucinations made by the AI. Inadequate evaluation of the AI's summary of the article. Student provided few critical comments, but lacked depth or clarity.	Student effectively identified and discussed major errors and hallucinations made by the AI. Good evaluation of the AI's summary and the level of detail given. Several critical comments given that show an understanding of perception. Student's critique exceeded 400 words.	Student explained all errors and hallucinations made by the AI. Provided a nuanced and insightful critique of the AI's summary, including correct information. Demonstrates an excellent grasp and understanding of perception.
0.0	2.0	4.0	6.0	8.0

AI [illegible]ple

Here's an AI-created post based on a given research article PDF (prompts have not been included):

Researchers have discovered a new visual illusion that makes circles look like they have strange, angular shapes (Taya & Ishikawa, 2023). It's called the "bumpy circle illusion," and it could help explain how our brains make sense of the shapes we see.

Here's how the illusion works: If you put black circles on a checkered background of dark and light gray squares, the circles will start to look distorted. They appear to transform into polygon shapes, with bumpy "corners" sticking out.

But flip the colors around - make the circles lighter than the background - and the illusion disappears. The circles look perfectly round again. This shows that the illusion has to do with the difference in brightness between the circles and the squares.

The researchers think this illusion reveals something important about how our visual system processes shape information. They believe it involves an interaction between two key steps:

First, cells in the early visual areas of the brain detect the edges and orientation of the shapes. The luminance differences around the circles seem to distort these basic shape signals.

Then, higher-level areas of the brain try to integrate all these local edge signals into a coherent global shape representation. But the disrupted edge information from earlier leads these areas to "smooth over" the circles into the bumpy polygon shapes.

Interestingly, the illusion only seems to occur when the luminance differences are on the outside of the circles, not the inside. The researchers think this may be related to a well-known bias in shape perception - our visual system is more sensitive to outward-curving contours compared to inward-curving ones. In other words, the brain prioritizes processing the outer edges of an object, where key shape info is most available. When those outer edges get distorted by luminance differences, it leads to the illusion of an angular, polygon-like form.

While more research is needed, the bumpy circle illusion offers a powerful new way to study shape perception in the brain. By teasing apart how early and late visual areas work together to construct our experience of shapes, it could shed light on fundamental questions about object recognition and visual awareness.

So the next time you see some strangely-shaped circles, don't be fooled - your brain is just hard at work, translating raw sensory information into the meaningful shapes we know and recognize.

Reference:
Taya, S., & Ishikawa, M. (2023). The bumpy circle illusion: apparent shape-distortion of filled circles placed on a checkered pattern. *Journal of Illusion*, *4*, Article 9658. https://doi.org/10.47691/joi.v4.9658

Errors and Hallucinations:

The summary misses the entire point of the article: to scientifically test four specific theories to explain the illusion. Paragraph 5 contains a major error: the smoothing-over explanation is the opposite of what is happening (the illusion creates the appearance of corners or bumps on a physically smooth object; it is an angular-distortion effect, not a "smoothing" one). Next, the post's "early vs. high-level" explanation is not what the paper concludes; only the "corner effect theory" (a phenomenon in which the angle of a corner appears different than it is) is "the most promising" because it correctly predicts the illusion's appearance and its absence in other conditions (like with outline circles). Finally, in Paragraph 6 it misinterprets the "inside vs. outside" difference by attributing it to a "well-known bias in shape perception... [the] visual system is more sensitive to outward-curving contours." But the article itself presents this as merely an assumption for the "corner effect theory" to work, not as a settled fact linked to a known bias. The paper explicitly states that this phenomenon requires further investigation. The blog post presents an unproven assumption as a confident conclusion.

Evaluation: 6.0/10.0

APA Style: 1.0. Correct in-text citation format for two-author journal article. Mostly correct APA style reference (including correct italicization of journal name and volume), although the word "Apparent" should be capitalized because it follows a colon. DOI correctly goes to the article web page.

Presentation: 1.0. Writing is grammatical, although the paragraphs are very short. Even after multiple prompts, it still has a high Gunning fog index of 13.68, so it requires some post-secondary education to understand it. This means that it is not well-suited to a general audience.

Content: 4.0. The AI accurately describes the illusion itself, and then correctly describes the researchers' explanation of it (the luminance difference between the circles and the background squares), and incorporates known findings about visual processing in the brain in terms of edge detection and early versus late stages of processing, including high-level integration of features. The post has a significant omission (the testing of theories), a major error (smoothing over explanation), an inaccurate conclusion, and a misinterpretation. Taken together, this is shoddy work. It does try to relate the findings to a general audience, but it is very narrowly focused. It is also unlikely that people will encounter "strangely shaped circles" in everyday life.

Due Dates & Late Policy

- **Blog Post Assignment #1** (10 marks, worth 5%) -- due **Tuesday, February 3** at 11:59 p.m.
- **Blog Post Assignment #2** (10 marks, worth 5%) -- due **Tuesday, March 31** at 11:59 p.m.

Late assignments will lose 1 mark per 24-hour period, starting immediately after the due date & time. That is, if you submit your assignment 1 minute late, you will lose 1 mark. If you submit your assignment 23 hours and 59 minutes late, you will still lose only 1 mark. But if you submit your assignment 24 hours and 1 minute late, you will lose 2 marks. If you edit or make any changes to your Canvas submission in any way after the due date & time, you will receive a **late penalty**.

Do **not** email assignments to the instructor or the TA. Late (or early) assignments may be submitted via Canvas. However, after 6 days past the due date, you will no longer be able to submit your assignment online. If you have exceptional extenuating circumstances (e.g., you cannot submit your assignment because you have alien hand syndrome, or the Time Variance Authority pruned your timeline from existence), please contact the instructor.

Technical Support

"Technical problems" are not accepted as an excuse for late or incomplete assignments. University of Alberta Canvas Support has articles on Using Canvas (For Students) and Accessing Courses on Canvas. Instructure has a Canvas Student Guide that explains announcements, assignments, course navigation, discussions, grades, modules, and more. For non-Canvas IT problems, contact IST.

The Fine Print

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Academic Integrity Policy and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence.

Academic dishonesty is a serious offence and can result in suspension or expulsion from the University. These resources from Student Conduct and Accountability, and the University of Alberta Library can help:

- Academic Integrity: Introduction to Academic Culture - videos on citing, quoting, summarizing, and paraphrasing
- Avoiding Plagiarism Guide - defines word and idea plagiarism, and gives tips for avoiding plagiarism
- Research Skills Modules: Why and How to Cite - online module on citing sources
- Citing, Quoting, Paraphrasing & Summarizing - how-to document that compares and contrasts them
- Don't Do It (Cheating & Plagiarism) - Faculty of Science document on academic misconduct and resulting penalties

Based on Metz, M. (2018). Writing for comprehension, communication, and community: Blogging in the advanced psychology classroom. In T. L. Kuther (Ed.), *Integrating writing into the college classroom: Strategies for promoting student skills* (pp. 198-217). https://teachpsych.org/ebooks/integratingwriting

