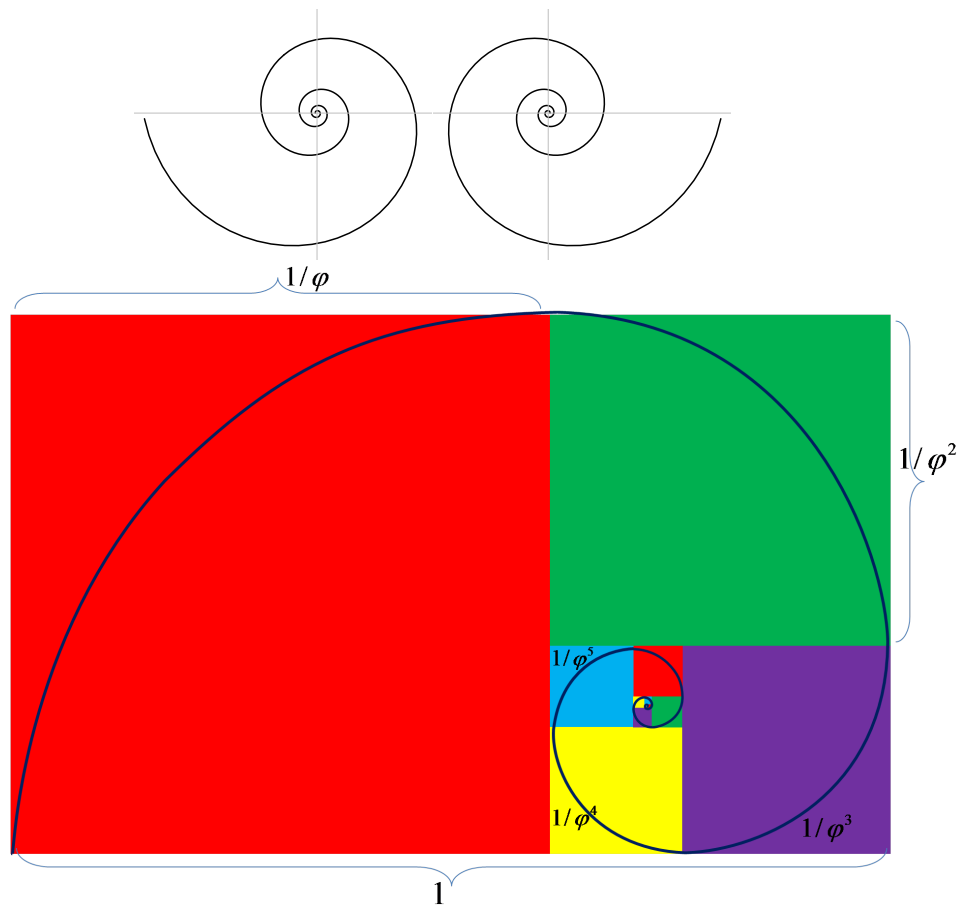


# Psychology of Æsthetic Judgment

PSYC 4541-005 & PSYC 5541-002

Spring 2014, Tuesday and Thursday, 9:30-10:45  
Muenzinger E311

**Lewis O. Harvey, Jr. – Instructor**



*Remember how in that communion only, beholding beauty with the eye of the mind, he will be enabled to bring forth, not images of beauty, but realities (for he has hold not of an image but of a reality), and bringing forth and nourishing true virtue to become the friend of God and be immortal, if mortal man may.*

**-Plato, Symposium**

*(Beauty lies in the eyes of the beholder.)*

**This Page Blank (except, of course, for these words and the header and the footer)**

## The Psychology of Aesthetic Judgment

This course will explore the psychological and neural bases of aesthetic judgments in photography, painting, and music. You will read and report on primary journal papers. You will search the scientific literature for additional articles relevant to topics that are of interest to you. You will design and conduct an experiment of your choice to explore current ideas and test hypotheses. This course is open to advanced undergraduates and graduate students.

The course is divided roughly into three parts:

1. Background reading and in-class presentations of scientific articles
2. Introduction of new student-generated reading and the formulation of testable hypotheses
3. Design and execution of experiments that test the hypotheses. Students will make presentations of their research findings both in class and at the Spring Undergraduate Research Day (30 April)

Course participants are expected to participate at a high level and engage in sparkling intellectual interactions with me and the other participants in the class. The two main goals of the course are to learn something and to have fun.

### Office Hours

|           |   |
|-----------|---|
| Name      | Lewis O. Harvey, Jr.  |
| Office    | MUEN D251b  |
| Hours     | 11:00–12:30 Tue, Thurs.;<br>9:00–10:00 Wednesday<br>and by appointment                |
| Telephone | 303-492-8882  |
| email     | lewis.harvey@colorado.edu   |
| web       | <a href="http://psych.colorado.edu/~lharvey/">http://psych.colorado.edu/~lharvey/</a> |

## Syllabus Topics and Reading Assignments

|        |                      |        |  |
|--------|----------------------|--------|--|
| 14 Jan | Introduction         | 11 Mar | New Readings   |
| 16 Jan | Faces                | 13 Mar | New Readings   |
| 21 Jan | Faces                | 18 Mar | New Readings   |
| 23 Jan | Faces                | 20 Mar | New Readings   |
| 28 Jan | Graphic Compositions | 25 Mar | <b>Spring Break</b>  |
| 30 Jan | Graphic Compositions | 27 Mar | <b>Spring Break</b>  |
| 4 Feb  | Graphic Compositions | 1 Apr  | Hypothesis Testing   |
| 6 Feb  | Music                | 3 Apr  | Hypothesis Testing   |
| 11 Feb | Music                | 8 Apr  | Hypothesis Testing   |
| 13 Feb | Music                | 10 Apr | Hypothesis Testing   |
| 18 Feb | New Readings         | 15 Apr | Hypothesis Testing   |
| 20 Feb | New Readings         | 17 Apr | Hypothesis Testing   |
| 25 Feb | New Readings         | 22 Apr | Data Analyses  |
| 27 Feb | New Readings         | 24 Apr | Data Analyses  |
| 4 Mar  | New Readings         | 29 Apr | Data Analyses  |
| 6 Mar  | New Readings         | 30 Apr | <b>Undergraduate Research Day</b><br>15:00–17:00, UMC Glenn Miller |
|        |                      | 1 May  | Final Class Meeting (FCQ)  |
|        |                      | 7 May  | <b>Final Exam</b><br><b>Wednesday (16:30–19:00)</b>                |

## Readings

- 
- |     |  |   |
|-----|--|---|
| 1.  | 14 Jan 2014<br>16 Jan 2014                   | (Eibl-Eibesfeldt, 1988)<br>(Langlois & Roggman, 1990)   |
| 2.  | 21 Jan 2014<br>23 Jan 2014                   | (Halberstadt, Pecher, Zeelenberg, Ip Wai, & Winkielman, 2013)<br>(Chatterjee, Thomas, Smith, & Aguirre, 2009; Rhodes et al., 2007)  |
| 3.  | 28 Jan 2014<br>30 Jan 2014                   | (Tyler, 2007)<br>(Ramachandran & Hirstein, 1999; Tyler, 1999)   |
| 4.  | 4 Feb 2014<br>6 Feb 2014                     | (Di Dio, Macaluso, & Rizzolatti, 2007; Pallett, Link, & Lee, 2010)<br>(Bigand, Vieillard, Madurell, Marozeau, & Dacquet, 2005)  |
| 5.  | 11 Feb 2014<br>13 Feb 2014                   | (Holbrook & Anand, 1990)<br>(Plomp & Levelt, 1965)  |
| 6.  | 18 Feb 2014<br>20 Feb 2014                   | (Madsen, 1997)<br>(Komori, Kawamura, & Ishihara, 2009)  |
| 7.  | 25 Feb 2014<br>27 Feb 2014                   | Sick Day: No Class<br>(Valentine, Darling, & Donnelly, 2004)  |
| 8.  | 4 Mar 2014<br>6 Mar 2014                     | (Eibl-Eibesfeldt, 1988)<br>(Cela-Conde, Agnati, Huston, Mora, & Nadal, 2011)  |
| 9.  | 11 Mar 2014<br>13 Mar 2014                   | (Kintsch, 2012)<br>(Krentz & Earl, 2013)<br>(Principe & Langlois, 2013)   |
| 10. | 18 Mar 2014<br>20 Mar 2014                   | (Mastandrea, Bartoli, & Carrus, 2011)<br>(Vartanian, Goel, Lam, Fisher, & Granic, 2013)   |
| 11. | 25 Mar 2014<br>27 Mar 2014                   | <b>Spring Break</b><br><b>Spring Break</b>  |
| 12. | 1 Apr 2014<br>3 Apr 2014                     | (Collins, Tillmann, Barrett, Delbé, & Janata, 2014)<br>(Augustin, Wagemans, & Carbon, 2012)   |
| 13. | 8 Apr 2014<br>10 Apr 2014                    | (Krentz & Earl, 2013)<br>(Perkiö & Hyvärinen, 2009)   |
| 14. | 15 Apr 2014<br>17 Apr 2014                   | (Karageorghis, Jones, & Low, 2006)<br>(Leder, 2013)   |
| 15. | 22 Apr 2014<br>23 Apr 2014                   | (Brattico & Pearce, 2013)<br>(Salimpoor & Zatorre, 2013)  |
| 16. | 29 Apr 2014<br><br>30 Apr 2014<br>1 May 2014 | (Cooper & Maurer, 2008)<br>(Zeki, Romaya, Benincasa, & Atiyah, 2014)<br><b>Undergraduate Research Day, 15:00–17:00, UMC Glenn Miller Ballroom</b><br><b>Final Class Meeting (FCQ)</b> |
- 

Copies of these papers are available to download for reading through D2L using your CU IdentiKey ID. See the reference section at the end of the syllabus for complete citation information.

## Conditions Under Which The Course Operates

### *Class Meetings:*

The class meetings will be highly interactive. Each student will make a minimum of two presentations of an original research article to the rest of the class. The whole class will evaluate the presentation and I will provide each student with feedback. Each presentation will be worth 50 points.

### *Additional Readings:*

There are 13 original journal papers that are assigned for the first part of the course. Each student is expected to research a paper topic (typically one that they present to the class) and find two additional papers that add to the topic. These papers will form the reading for the second segment of the course. The quality of these papers and the resulting presentation to the class will be worth 50 points

### *Hypotheses:*

As the semester progresses we will accumulate a list of testable hypotheses that will form the basis for the experiments that we will do. As part of each reading, you will formulate at least one testable hypothesis. Each hypothesis is worth 5 points.

### *Hypotheses Testing:*

We will form teams of 3-5 students. Each team will design and carry out a simple experiment to test one of the hypotheses that have been generated from the reading. The experiments will be executed on computers using available software tools. You do not have to be a computer programmer!!!! I will help you implement your experiments and carry out any statistical analyses.

### *Final Results:*

Each team will prepare a poster presentation for the Undergraduate Research Day, held on Wednesday, 30 May 2014, from 15:00–17:00, in the UMC Glenn Miller Ballroom. The quality of the poster will rate a maximum of 50 points. During the last week of classes, each group will give a 15 minute presentation of their results using PowerPoint or KeyNote to the rest of the class. The Quality of this presentation is worth 50 points. Finally each group will prepare a written summary of their experiment with Introduction, Methods, Results, Discussion, and Reference sections. This written paper is worth 50 points.

### *Grading:*

Your final grade is computed from your points as described above. The total possible points in the course is 300:

|       |                                   |
|-------|-----------------------------------|
| 100   | In-Class Presentations            |
| 25    | Hypotheses                        |
| 50    | Poster Presentation               |
| 50    | PowerPoint Presentation           |
| 50    | Written Description of Experiment |
| 25    | Enthusiasm                        |
| ----- |                                   |
| 300   | Total Possible Points             |

Your final letter grade in the course will be assigned in the following manner. First a "Reference Score" will be calculated by taking the mean of the top five percent of the class. Your grade will be determined by how well you have done in comparison to this reference score:

|            |           |                                  |
|------------|-----------|----------------------------------|
|            | A >96.6%, | A- >93.3% of the reference score |
| B+ >90.0%, | B >86.6%, | B- >83.3% of the reference score |
| C+ >80.0%, | C >76.6%, | C- >73.3% of the reference score |
| D+ >70.0%, | D >66.6%, | D- >63.3% of the reference score |
|            | F <63.3%  |                                  |

It is therefore possible for the entire class to receive the grade of A. By the same token, it is also possible that very few people would receive an A, depending on the spread of grades across the class.

## Comments About The Psychology of Æsthetic Judgment

### *Why Take This Course?*

There are four reasons to take this course:

1. To gain an understanding of the basis of our æsthetic experiences;
2. To sharpen your ability to critically evaluate the results of published experiments;
3. To gain practical skills in the use of computers for carry out experiments, for analyzing and graphing data, and for preparing reports of your findings;
4. Have fun during your last semester at CU.

### *Prerequisites:*

A broad understanding of the basic concepts from a general psychology course is assumed. You will be using methods of inferential statistics, such as those taught in Psychology 2101/3101, to evaluate the results of your experiment. A facile ability with these methods in particular will be necessary. **I am here to help you.**

You will be expected to write in a clear and grammatically correct style in this class. If you believe you will require extra help with your writing, please visit The Writing Center located in Norlin Commons (Norlin E111). More information can be found at: <http://www.colorado.edu/pwr/writingcenter.html>. You can also reach The Writing Center help desk by phone at (303) 735-6906.



## **AGREEMENTS FOR PARTICIPATING IN THE COURSE**

The purpose of these agreements is to create a condition that allows all people in the class to get maximum value from the course.

### **AGREEMENTS**

- 1 You agree to be responsible for these agreements.
- 2 You agree to be on time to class
- 3 You agree to complete the assigned reading on time.
- 4 You agree to complete your presentation assignments on time.
- 5 You agree to attend all class meetings unless an emergency comes up.
- 6 You agree to understand the material.
- 7 You agree to ask questions when you don't understand the material.
- 8 You agree to communicate any complaints and criticisms you may have only to someone who can do something about the situation and you agree not to complain or to criticize to someone who cannot do something about the situation.
- 9 You agree to get value out of your participation in the course.

If you attend the next class meeting, you are accepting responsibility for the above agreements.

## **Academic Integrity Policy**

A university's intellectual reputation depends on maintaining the highest standards of intellectual honesty. Commitment to those standards is a responsibility of every student, faculty, and staff member on the University of Colorado at Boulder campus.

A university's intellectual reputation depends on maintaining the highest standards of intellectual honesty. Commitment to those standards is a responsibility of every student, faculty, and staff member on the University of Colorado at Boulder campus.

### **Honor Code**

A student-run Honor Code was instituted on the Boulder Campus in 2002. The intent of the Honor Code is to establish a community of trust where students do not plagiarize, cheat, or obtain unauthorized academic materials. An honor code council collaborates with the colleges and schools in addressing allegations and instances of academic dishonesty and in assisting to educate all members of the university community on academic integrity issues.

Breaches of academic honesty include cheating, plagiarism, and the unauthorized possession of examinations, papers, computer programs, as well as other class materials specifically released by the faculty.

A student accused of academic dishonesty will either accept the accusation made by a faculty member or request a hearing before a student panel, who will make a decision on the accusation of academic dishonesty. In addition to academic sanctions imposed by the faculty, students found guilty of academic dishonesty also face consequences from the honor code council ranging from attending a mandatory class in ethics to expulsion from the campus. More information about CU-Boulder's Honor Code may be found at [www.colorado.edu/academics/honorcode/Home.html](http://www.colorado.edu/academics/honorcode/Home.html).

The following terms are clarified for the benefit of all members of the university community.

### **Cheating**

Cheating is defined as using unauthorized materials or receiving unauthorized assistance during an examination or other academic exercise. Examples of cheating include: copying the work of another student during an examination or other academic exercise (includes computer programming), or permitting another student to copy one's work; taking an examination for another student or allowing another student to take one's examination; possessing unauthorized notes, study sheets, examinations, or other materials during an examination or other academic exercise; collaborating with another student during an academic exercise without the instructor's consent; and/or falsifying examination results.

### **Plagiarism**

Plagiarism is defined as the use of another's ideas or words without appropriate acknowledgment. Examples of plagiarism include: failing to use quotation marks when directly quoting from a source; failing to document distinctive ideas from a source; fabricating or inventing sources; and copying information from computer-based sources, i.e., the Internet.

### **Unauthorized Possession or Disposition of Academic Materials**

Unauthorized possession or disposition of academic materials may include: selling or purchasing examinations, papers, reports or other academic work; taking another student's academic work without permission; possessing examinations, papers, reports, or other assignments not released by an instructor; and/or submitting the same paper for multiple classes without advance instructor authorization and approval.

Reproduced from: <http://www.colorado.edu/policies/academic-integrity-policy>

Check out <http://www.umuc.edu/writingcenter/plagiarism/> for explicit examples.

## Statements Recommended by Associate Vice Chancellor for Undergraduate Education, Michael Grant

1. *Recommended syllabus statement on disabilities:*

*If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu).*

*If you have a temporary medical condition or injury, see Temporary Injuries under Quick Links at Disability Services website (<http://disabilityservices.colorado.edu/>) and discuss your needs with your professor.*

2. *Recommended syllabus statement on religious observances:*

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please speak with me if you have a conflict. See policy details at [http://www.colorado.edu/policies/fac\\_relig.html](http://www.colorado.edu/policies/fac_relig.html)

3. *Recommended syllabus statement on classroom behavior:*

Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which students express opinions. See policies at

<http://www.colorado.edu/policies/classbehavior.html>/ and at [http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student\\_code/](http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code/)

4. *The Office of Discrimination and Harassment:*

*The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. The University of Colorado does not discriminate on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status in admission and access to, and treatment and employment in, its educational programs and activities. (Regent Law, Article 10, amended 11/8/2001). CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, or veteran status. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://hr.colorado.edu/dh/>*

5. *Recommended syllabus statement on the Honor Code:* All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Additional information on the Honor Code can be found at

<http://www.colorado.edu/policies/honor.html>/ and at <http://www.colorado.edu/academics/honorcode/>

## References

- Augustin, M. D., Wagemans, J., & Carbon, C.-C. (2012). All is beautiful? Generality vs. specificity of word usage in visual aesthetics. *Acta Psychologica*, *139*(1), 187-201. doi: <http://dx.doi.org/10.1016/j.actpsy.2011.10.004>
- Bigand, E., Vieillard, S., Madurell, F., Marozeau, J., & Dacquet, A. (2005). Multidimensional scaling of emotional responses to music: The effect of musical expertise and of the duration of the excerpts. *Cognition & Emotion*, *19*, 1113-1139.
- Brattico, E., & Pearce, M. (2013). The neuroaesthetics of music. *Psychology of Aesthetics, Creativity, and the Arts*, *7*(1), 48-61. doi: <http://dx.doi.org/10.1037/a0031624>
- Cela-Conde, C. J., Agnati, L., Huston, J. P., Mora, F., & Nadal, M. (2011). The neural foundations of aesthetic appreciation. *Progress in Neurobiology*, *94*(1), 39-48. doi: <http://dx.doi.org/10.1016/j.pneurobio.2011.03.003>
- Chatterjee, A., Thomas, A., Smith, S., & Aguirre, G. K. (2009). The neural response to facial attractiveness. *Neuropsychology*, *23*(2), 135–143.
- Collins, T., Tillmann, B., Barrett, F. S., Delbé, C., & Janata, P. (2014). A combined model of sensory and cognitive representations underlying tonal expectations in music: From audio signals to behavior. [doi:10.1037/a0034695]. US: American Psychological Association.
- Cooper, P. A., & Maurer, D. (2008). The influence of recent experience on perceptions of attractiveness. *Perception*, *37*(8), 1216-1226.
- Di Dio, C., Macaluso, E., & Rizzolatti, G. (2007). The Golden Beauty: Brain Response to Classical and Renaissance Sculptures. *PLoS ONE*, *2*(11), e1201. doi: 10.1371/journal.pone.0001201
- Eibl-Eibesfeldt, I. (1988). The biological foundation of aesthetics. In I. Rentschler, B. Herzberger & D. M. Epstein (Eds.), *Beauty and the Brain* (pp. 332). Boston: Birkhäuser Verlag.
- Halberstadt, J., Pecher, D., Zeelenberg, R., Ip Wai, L., & Winkielman, P. (2013). Two Faces of Attractiveness: Making Beauty in Averageness Appear and Reverse. *Psychological Science*, *24*(11), 2343-2346.
- Holbrook, M. B., & Anand, P. (1990). Effects of Tempo and Situational Arousal on the Listener's Perceptual and Affective Responses to Music. *Psychology of Music*, *18*(2), 150-162. doi: 10.1177/0305735690182004
- Karageorghis, C. I., Jones, L., & Low, D. C. (2006). Relationship Between Exercise Heart Rate and Music Tempo Preference. *Research Quarterly for Exercise and Sport*, *77*(2), 240-250.

- Kintsch, W. (2012). Musings About Beauty. *Cognitive Science*, 36(4), 635-654. doi: 10.1111/j.1551-6709.2011.01229.x
- Komori, M., Kawamura, S., & Ishihara, S. (2009). Averageness or symmetry: Which is more important for facial attractiveness? *Acta Psychologica*, 131(2), 136-142. doi: <http://dx.doi.org/10.1016/j.actpsy.2009.03.008>
- Krentz, U. C., & Earl, R. K. (2013). The baby as beholder: Adults and infants have common preferences for original art. *Psychology of Aesthetics, Creativity, and the Arts*, 7(2), 181-190. doi: 10.1037/a0030691
- Langlois, J. H., & Roggman, L. A. (1990). Attractive Faces Are Only Average. *Psychological Science*, 1(2), 115-121. doi: 10.1111/j.1467-9280.1990.tb00079.x
- Leder, H. (2013). Next steps in neuroaesthetics: Which processes and processing stages to study? *Psychology of Aesthetics, Creativity, and the Arts*, 7(1), 27-37. doi: <http://dx.doi.org/10.1037/a0031585>
- Madsen, C. K. (1997). Focus of Attention and Aesthetic Response. *Journal of Research in Music Education*, 45(1), 80-89. doi: 10.2307/3345467
- Mastandrea, S., Bartoli, G., & Carrus, G. (2011). The automatic aesthetic evaluation of different art and architectural styles. *Psychology of Aesthetics, Creativity, and the Arts*, 5(2), 126-134. doi: <http://dx.doi.org/10.1037/a0021126>
- Pallett, P. M., Link, S., & Lee, K. (2010). New “golden” ratios for facial beauty. *Vision Research*, 50(2), 149-154. doi: <http://dx.doi.org/10.1016/j.visres.2009.11.003>
- Perkiö, J., & Hyvärinen, A. (2009). Modelling Image Complexity by Independent Component Analysis, with Application to Content-Based Image Retrieval. In C. Alippi, M. Polycarpou, C. Panayiotou & G. Ellinas (Eds.), *Artificial Neural Networks – ICANN 2009* (Vol. 5769, pp. 704-714): Springer Berlin Heidelberg.
- Plomp, R., & Levelt, W. J. M. (1965). Tonal consonance and critical bandwidth. *Journal of the Acoustical Society of America*, 38(4), 548–560.
- Principe, C. P., & Langlois, J. H. (2013). Children and adults use attractiveness as a social cue in real people and avatars. *Journal of Experimental Child Psychology*, 115(3), 590-597. doi: <http://dx.doi.org/10.1016/j.jecp.2012.12.002>
- Ramachandran, V. S., & Hirstein, W. (1999). The science of art: A neurological theory of aesthetic experience. *Journal of Consciousness Studies*, 6(6-7), 15-51.
- Rhodes, G., Yoshikawa, S., Palermo, R., Simmons, L. W., Peters, M., Lee, K., . . . Crawford, J. R. (2007). Perceived health contributes to the attractiveness of facial symmetry, averageness, and sexual dimorphism. *Perception*, 36(8), 1244-1252.

- Salimpoor, V. N., & Zatorre, R. J. (2013). Neural interactions that give rise to musical pleasure. *Psychology of Aesthetics, Creativity, and the Arts*, 7(1), 62-75. doi: <http://dx.doi.org/10.1037/a0031819>
- Tyler, C. W. (1999). Is art lawful? *Science*, 285(5428), 673–674. doi: 10.1126/science.285.5428.673
- Tyler, C. W. (2007). Some principles of spatial organization in art. *Spatial Vision*, 20(6), 509–530. doi: 10.1163/156856807782758377
- Valentine, T., Darling, S., & Donnelly, M. (2004). Why are average faces attractive? The effect of view and averageness on the attractiveness of female faces. *Psychonomic Bulletin & Review (pre-2011)*, 11(3), 482-487.
- Vartanian, O., Goel, V., Lam, E., Fisher, M., & Granic, J. (2013). Middle temporal gyrus encodes individual differences in perceived facial attractiveness. *Psychology of Aesthetics, Creativity, and the Arts*, 7(1), 38-47. doi: <http://dx.doi.org/10.1037/a0031591>
- Zeki, S., Romaya, J. P., Benincasa, D. M. T., & Atiyah, M. F. (2014). The experience of mathematical beauty and its neural correlates. *Frontiers in Human Neuroscience*, 8, 1–12.