

University of Waterloo
Department of Psychology
PSYCH 389-043
PSYCH 389 Social Science Advanced Research Methods
Topic: Research Methods in Personality and Clinical Psychology
Fall 2020

Instructor and T.A. Information

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Course Description

In this course we will pursue a brief program of research investigating properties of the Affective Neurosciences Personality Scales (ANPS; Davis & Panksepp, 2011), a self report measure of individual differences in day-to-day emotional experiences. The individual differences assessed by the ANPS are proposed to reflect activity of six relatively discrete subcortical emotional systems. In the first half of the course we will evaluate the ANPS. Along the way we'll review Classical Test Theory and its implications for psychometric analysis.

The second half of the course will begin with pursuing a replication of work connecting the ANPS to the more familiar framework of the Five Factor Model of personality. Along the way we'll learn about structural models and how they are estimated in correlational research analyzed with multiple regression.

The course will conclude with a consideration of data from an experiment (a replication of Harmon-Jones, Summerell, & Bastian, 2018) testing implications of related theorizing on motivation and emotion. We'll consider data from this study in three ways in order to illustrate the differences between related experimental and quasi-experimental designs.

To accomplish all of this, the course is organized around three assignments. The first assignment focuses on classical test theory and construct-driven measurement. The second assignment applies these insights as we consider correlational methods. The course concludes with an assignment based on experimental and quasi-experimental methods.

Course Goals and Learning Outcomes

This course is about the research methods commonly used in the scientific study of personality and clinical psychology. We will not be able to cover many important research designs (e.g. randomized controlled trials, single-case experiments, longitudinal designs, qualitative methods, and so on). Instead we will focus on a deeper appreciation of the main classes of research methods and data analysis.

Upon completion of this course, students should be able to:

- A. Understand and Apply Classical Test Theory
 - Estimation of reliability
 - Standard error of measurement
 - Standard error of estimate
 - Spearman-Brown prophecy formula
 - Correction for attenuation
- B. Conduct Psychometric Analyses
 - Item analysis
 - Reliability analysis
 - Exploratory factor analysis
- C. Develop a Test from a Construct-Driven Approach to Test Development
 - Develop familiarity with the 3 main approaches to test development
 - Construct definition
 - Domain specification
 - Nomological networks and theory development
 - Technical aspects of survey development
- D. Develop familiarity with correlational research methods
 - Develop competence with data integrity analyses
 - Review correlation and covariance
 - Develop competence using multiple regression for statistical control.
 - Gain experience using multiple regression to estimate linear additive models with interactions
- E. Conduct analyses to evaluate and select stimuli.
 - Consideration of the multiple properties of typical stimuli
- F. Apply common methods for data reduction.
- G. Compare analysis and interpretation of data from similar research designs.
 - Analyze basic experimental data
 - Analyze experimental data with a measured covariate
 - Analyze data from a quasi-experiment with groups created via selection

Required Text

- none

Readings Available on LEARN

- Allen, T.A., Carey, B.E., McBride, C., Bagby, R.M., DeYoung, C.G., Quilty, L.C. (2018). Big Five aspects of personality interact to predict depression. *Journal of Personality*, 86, 714-725. DOI: 10.1111/jopy.12352
- Antony, M.M., Bieling, P.J., Cox, B.J., Enns, M.W., Swinson, R.P. (1998). Psychometric properties of the 42-Item and 21-Item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, 10 (2), 176-181. Doi: <http://dx.doi.org/10.1037/1040-3590.10.2.176>
- Boag, S. (2015). Personality assessment, 'construct validity', and the significance of theory. *Personality and Individual Differences*, 84, 36-44. <http://dx.doi.org/10.1016/j.paid.2014.12.039>
- Clark, L.A., Watson, D. Constructing validity: Basic issues in objective scale development. In A. Kazdin (Ed.) *Methodological Issues and Strategies in Clinical Research*, 4th Ed., American Psychological Association. <http://dx.doi.org/10.1037/14805-012>
- Cronbach, L.J., Meehl, P.E. (1955). Construct validity in psychological tests. *Psychological Bulletin*. 52 (4), 281-302. Doi: <http://dx.doi.org/10.1037/h0040957>
- Curran, P.G. (2016). Methods for the detection of carelessly invalid responses in survey data. *Journal of Experimental Social Psychology*, 66, 4-19. Doi: <http://dx.doi.org/10.1016/j.jesp.2015.07.006>
- Davis, K.L., & Panksepp, J. (2011). The brain's emotional foundations of human personality and the Affective Neuroscience Personality Scales. *Neuroscience and Biobehavioral Reviews*, 35, 1496-1958. doi:10.1016/j.neubiorev.2011.04.004
- DeYoung, C.G., Quilty, L.C., Peterson, J.B. (2007). Between facets and domains : 10 Aspects of the Big Five. *Journal of Personality and Social Psychology*, 93, 880-896. DOI: 10.1037/0022-3514.93.5.880
- Harmon-Jones, C., Bastain, B., Harmon-Jones, E. (2018). The Discrete Emotions Questionnaire: A new tool for measuring state self-reported emotions. *PLoS ONE* 11(8): e0159915. doi:10.1371/journal.pone.0159915
- Harmon-Jones, C., Summerell, E., Bastian, B. (2018). Anger increases preference for painful activities. *Motivation Science*, 4, 301-314. <http://dx.doi.org/10.1037/mot0000090>
- Hogan, T.P. Tsushima, W.T. (2016). Psychometrics and Testing. In Norcross, J.C., VandenBos, G.R., Freedheim, D.K., Krishnamurthy, R. (Eds). (2016). *APA handbook of clinical psychology: Applications and methods*, Vol. 3, (pp. 31-54). Washington, DC, US: American Psychological Association. Doi: <http://dx.doi.org/10.1037/14861-003>
- Maniaci, M.R., Rogge, R.D. (2014). Caring about carelessness: Participant inattention and its effects on research. *Journal of Research in Personality*, 48, 61-83. Doi: <http://dx.doi.org/10.1016/j.jrp.2013.09.008>
- Montag, C., Panksepp, J. (2017). Primary emotional systems and personality: An evolutionary perspective. *Frontiers in Psychology*, 8: 464. doi: 10.3389/fpsyg.2017.00464
- Pingault, J.-B., Pougà, L., Grèzes, J. Berthoz, S. (2012). Determination of emotional endophenotypes: A Validation of the Affective Neuroscience Personality Scales and further perspectives. *Psychological Assessment*. 24 (2), 375-385. Doi: 10.1037/a0025692

- Slovic, P., Peters, E. (2006). Risk perception and affect. *Current Directions in Psychological Science*, 15, 322-325. Doi: <http://dx.doi.org/10.1111/j.1467-8721.2006.00461.x>

Course Requirements and Assessment

This course is based on three related assignments:

Assessment	Date of Evaluation	Weighting
Measurement	Sep 28 – Oct 2	35%
Correlational Methods	Nov 2 – Nov 6	35%
Quasi-Experimental Methods	Nov 23 – Nov 27	30%
Total		100%

Measurement

This assignment reviews the basics of Classical Test Theory and applies this knowledge to a psychometric analysis of one component of the ANPS. This analysis will include item analysis, reliability analysis, and exploratory factor analysis. The assignment also involves generating an alternative measure of the selected component of the ANPS using a construct-driven approach to test construction.

Correlational Methods

By completing this assignment you will further develop your understanding of correlation and covariance, the use of multiple regression for statistical control, and the use of multiple regression to evaluate linear additive models that include interactions (moderation).

Quasi-Experimental Methods

By completing this assignment you will gain experience assessing and selecting stimuli. We will use the same basic research design to compare analysis and interpretation of 1) a basic experiment; 2) an experiment with a measured covariate; 3) a quasi-experiment with groups created via selection.

Course Outline

Week	Date	Topic	Readings Due
1	Sep 8 – 11	Welcome to Psych 389	Video – Introduction Video – Course Guide (Week 1) Montag & Panksepp (2017) Watch Panksepp's (2012) TEDx talk Review Syllabus Complete Student Survey
2	Sep 14 – 18	Measurement (1)	Video – Measurement Video – Course Guide (Week 2) Hogan & Tsushima (2016) Video – Classical Test Theory Video – Psychometric Analysis

Week	Date	Topic	Readings Due
3	Sep 21 – 25	Measurement (2)	Video – Course Guide (Week 3) Video – Overview of EFA Video – Number of Factors / Components Problem Video – Orthogonal vs Oblique Rotation
4	Sep 28 – Oct 2	Measurement (3)	Video – Course Guide (Week 4) Video – Test Construction Davis & Panksepp (2011) Clark & Watson (1995)
5	Oct 5 – 9	Wrap-Up Week	
6	Oct 12 – 16	Reading Week	
7	Oct 19 – 23	Correlational Methods (1)	Video – Correlational Methods Video – Course Guide (Week 7) Video – Data Integrity Maniaci & Rogge (2014) Curran (2016) skim DeYoung, Quilty, & Peterson (2017) skim Antony, Bieling, Cox, Enns, Swinson (1998)
8	Oct 26 – 30	Correlational Methods (2)	Video – Course Guide (Week 8) Video – Introduction to Multiple Regression Video – Correlation, Partial Correlation, Bivariate Regression Video – Confidence Intervals for Correlations
9	Nov 2 – 6	Correlational Methods (3)	Video – Course Guide (Week 9) Video – Continuous Variable Interactions Video – Continuous Variable Interaction Example Allen, Carey, McBride, Bagby, DeYoung, & Quilty (2018)
10	Nov 9 – 13	Wrap-Up Week	

Week	Date	Topic	Readings Due
11	Nov 16 – 20	Quasi-Experimental Methods (1)	Video – Quasi-Experimental Methods Video – Course Guide (Week 11) Harmon-Jones, Summerell, & Bastian (2018)
12	Nov 23 – 27	Quasi-Experimental Methods (2)	Video – Course Guide (Week 12) Harmon-Jones, Bastian, Harmon-Jones (2018)
13	Nov 30 – Dec 4	Wrap-Up Week	

Late Work

Note that the due dates for each assignment are the final week listed for work on each assignment. The Measurement assignment is due between Sep 28 and Oct 2, the Correlational Methods assignment is due between Nov 2 and Nov 6, and the Quasi-Experimental Methods assignment is due between Nov 23 and Nov 27. After each of these ‘deadline weeks’ there is a ‘wrap-up week’. Assignments submitted during that week will be considered late, but with NO PENALTY. Assignments submitted after the ‘wrap-up week’ will receive a 5% reduction in the maximum grade for that assignment. For example, submitting an assignment worth 35% one day following the wrap-up week will result in a perfect grade on that assignment being worth only 30 out of 35%.

If you think that you will need to submit an assignment late, please submit the part that you have completed on time and then contact either the course instructor or the Teaching Assistant to make alternative arrangements for assignment completion.

Institutional-required statements for undergraduate course outlines approved by Senate Undergraduate Council, April 14, 2009

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. Check the [Office of Academic Integrity webpage](#) for more information.

Discipline

A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for their actions. Check [the Office of Academic Integrity](#) for more information. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students

should refer to [Policy 71 - Student Discipline](#). For typical penalties check [Guidelines for the Assessment of Penalties](#).

Concerns about a Course Policy or Decision

Informal Stage. We in the Psychology Department take great pride in the high quality of our program and our instructors. Though infrequent, we know that students occasionally find themselves in situations of conflict with their instructors over course policies or grade assessments. If such a conflict arises, the Associate Chair for Undergraduate Affairs (Richard Eibach) is available for consultation and to mediate a resolution between the student and instructor: Email: reibach@uwaterloo.ca; Ph 519-888-4567 ext. 38790

Grievance

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances](#), Section 4. When in doubt, please be certain to contact Richard Eibach, the Associate Chair for Undergraduate Affairs who will provide further assistance; reibach@uwaterloo.ca.

Appeals

A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 - Student Discipline may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to [Policy 72 - Student Appeals](#).

Note for Students with Disabilities

The [AccessAbility Services](#) office, located on the first floor of the Needles Hall extension (NH 1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.

Faculty of Arts-required statements for undergraduate course outlines

Cross-listed Course (if applicable)

Please note that a cross-listed course will count in all respective averages no matter under which rubric it has been taken. For example, a PHIL/PSCI cross-list will count in a Philosophy major average, even if the course was taken under the Political Science rubric.

Accommodation for course requirements for Psychology courses.

Policies of the Psychology department pertaining to course requirements are available on the [department website](#).

Chosen/Preferred First Name

Do you want professors and interviewers to call you by a different first name? Take a minute now to verify or tell us your chosen/preferred first name by logging into [WatiAM](#).

Why? Starting in winter 2020, your chosen/preferred first name listed in WatIAM will be used broadly across campus (e.g., LEARN, Quest, WaterlooWorks, WatCard, etc). Note: Your legal first name will always be used on certain official documents. For more details, visit [Updating Personal Information](#).

Important notes

- If you included a preferred name on your OUAC application, it will be used as your chosen/preferred name unless you make a change now.
- If you don't provide a chosen/preferred name, your legal first name will continue to be used.

Mental Health Support

All of us need a support system. The faculty and staff in Arts encourage students to seek out mental health support if they are needed.

On Campus

Due to COVID-19 and campus closures, services are available only online or by phone.

- Counselling Services: counselling.services@uwaterloo.ca / 519-888-4567 ext. 32655
- [MATES](#): one-to-one peer support program offered by the Waterloo Undergraduate Student Association (WUSA) and Counselling Services

Off campus, 24/7

- [Good2Talk](#): Free confidential help line for post-secondary students. Phone: 1-866-925-5454
- Grand River Hospital: Emergency care for mental health crisis. Phone: 519-749-4300 ext. 6880
- [Here 24/7](#): Mental Health and Crisis Service Team. Phone: 1-844-437-3247
- [OK2BME](#): set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 extension 213

Full details can be found online on the Faculty of Arts [website](#)

Download [UWaterloo and regional mental health resources \(PDF\)](#)

Download the [WatSafe app](#) to your phone to quickly access mental health support information.

Territorial Acknowledgement

We acknowledge that we are living and working on the traditional territory of the Attawandaron (also known as Neutral), Anishinaabe and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes ten kilometres on each side of the Grand River.

Academic freedom at the University of Waterloo

[Policy 33, Ethical Behaviour](#) states, as one of its general principles (Section 1), “The University supports academic freedom for all members of the University community. Academic freedom carries with it the duty to use that freedom in a manner consistent with the scholarly obligation to base teaching and research on an honest and ethical quest for knowledge. In the context of this policy, 'academic freedom' refers to academic activities, including teaching and scholarship, as is articulated in the principles set out in the Memorandum of Agreement between the FAUW and the University of Waterloo, 1998 (Article 6). The academic environment which fosters free debate may from time to time include the presentation or discussion of unpopular opinions or controversial material. Such material shall be dealt with as openly, respectfully and sensitively as possible.” This definition is repeated in Policies 70 and 71, and in the Memorandum of Agreement, Section 6