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Methods in Empirical Musicology 1
How to read & think like a scientist

1. Schedule: Wednesday, 15:30-19:00

W#	Seminar	Übung	Assignment	Note
42	What is Empirical Musicology?	How does Science work?		
43	**How to read & review**	**Demo**: finding papers		
44	Research methods 1	Research methods 2		(recording)
45	-	-		(ISMIR)
46	-	-		(Retreat)
47	-	**Students' presentation**	**Review**	
48	**Study design**	**Demo**: experiment design		
49	How to write?	Individual progress review		
50	Research ethics	Individual progress review	**Proposal**	
51	-	-		Break
52	-	-		Break
1	-	-		Break
2	**Stimulus creation**	**Demo**: stimulus modeling		(Korea)
3	Stimulus creation 2	Individual progress review		(Korea)
4	**Experiment creation 1**	**Demo**: online study platforms	**Stimuli**	
5	Experiment creation 2	Individual progress review		
6	Wrap-up	Individual progress review	**Experiment**	

Teaching period: 02.Oct.2023–10.Feb.2024 | All Saint's Day (1.Nov.2023) | Christmas break: 24.Dec.2023 – 06.Jan.2024 | W#: Week number

2. Assignments

Topic	Due (23:59)	What to submit	Grading criteria (see below)
How to review	22 Nov	Review (slides)	Presentation
Study design	17 Dec	Proposal (abstract)	Writing
Stimulus creation	28 Jan	Stimuli (files and scripts)	Code
Experiment creation	11 Feb	Experiment (e.g., .HTML, online webpage)	Code

- Submission deadlines
  - On the designated date, until 23:59 Central European (Summer) Time (CET/CEST)
  - In case of a **late submission**, the grade will be discounted by 10% after each day (24 hours): $(OriginalScore \times (0.9)^{DelayedDays}$; i.e., 48% after 7 days, 4% after 30 days).

- Extensions will be considered in case of unexpected emergencies and health issues, provided they are supported by official documents.
- Grading criteria of mini-assignments
  - **Presentation**: {Logic in ideas + Clarity in Presentation + Completeness in Review}
  - **Writing**: {Novelty in Ideas + Logic in Ideas + Clarity in Writing + Completeness in Writing} × -Plagiarism $\in$ {-1, +1}
  - **Code**: {Executability (no syntax error & portability) + Human-readability + Validity (no semantic error & doing the intended tasks)} × -Fabrication $\in$ {-1, +1}
  - **Total grade =** $\sum_{i=1}^{4}$ **25%×[assignment #*i*]**

3.   Contacts
- MOODLE (course site): https://moodle/hfm-karlsruhe.de/moodle/
- Zoom: https://eu02web.zoom-x.de/my/sgkim
- Email: seung-goo.kim@ae.mpg.de

4.   References
- What is "Open Access"? Click on the cartoon below to watch Jorge Cham's beautiful video: "Open Access Explained"! 👇

- Empirical Music Research:
  - Clarke et al., 2004, Empirical Musicology: Aims, Methods, Prospects, Oxford University Press, https://doi.org/10.1093/acprof:oso/9780195167498.001.0001 (*closed access*)
- Psychological methods:
  - Jhangiani et al., Research Methods in Psychology (Ed. 4), https://kpu.pressbooks.pub/psychmethods4e/ (*open access*)
- Statistics:
  - *Introductory*: Oja, 2022, PSYC 2200: Elementary Statistics for Behavioral and Social Sciences, LibreTexts, https://stats.libretexts.org/Courses/Taft_College/PSYC_2200%3A_Elementary_Statistics_for_Behavioral_and_Social_Sciences_(Oja) (*open access*)
  - *A bit more rigorous*: Heumann et al., 2016, *Introduction to Statistics and Data Analysis*, Springer, https://doi.org/10.1007/978-3-319-46162-5 (*open access*)
  - *Discussion related to p-hacking*: Gruber et al., 2020, *The Theory of Statistics in Psychology*, Springer, https://doi.org/10.1007/978-3-030-48043-1 (*open access*)
  - James et al., 2021, *An Introduction to Statistical Learning*, Springer, free PDF: https://www.statlearning.com/

- Hastie et al., 2009, *The Elements of Statistical Learning*, Springer, https://doi.org/10.1007/978-0-387-84858-7
- Neuroscience:
  - *Comprehensive reference*: Purves et al., 2018, *Neuroscience (Ed. 6)*, Oxford University Press, https://learninglink.oup.com/access/purves-6e (*closed access*)
  - *Auditory-specific*: Poeppel et al., 2012, *The Human Auditory Cortex*, Springer, https://doi.org/10.1007/978-1-4614-2314-0 (*open access*)
- M/EEG:
  - *Introductory*: Cohen, 2014, *Analyzing Neural Time Series Data: Theory and Practice*, MIT Press, https://doi.org/10.7551/mitpress/9609.001.0001 (*open access*)
  - *A bit more rigorous*: Hansen et al., 2010, *MEG: An Introduction to Methods,* Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195307238.001.0001 (*open access; downloadable per chapter*)
- Functional MRI:
  - *Introductory*: Poldrack et al., 2011, *Handbook of Functional MRI Data Analysis*, Cambridge University Press, https://doi.org/10.1017/CBO9780511895029 (*closed access*)
  - *Introductory Youtube channel*: Mumford, 2015, *Mumford Brain Stats*, https://www.youtube.com/c/mumfordbrainstats (*depending on your Youtube subscription/ad-blockers*)
  - *Oldies but goodies*: Frackowiak et al., 2004, *Human Brain Function (2nd Ed.)*, Elsevier, https://doi.org/10.1016/B978-0-12-264841-0.X5000-8 (*open access*)
- Qualitative methods:
  - *Reference*: Taylor et al., 2015, *Introduction to Qualitative Research Methods: A Guidebook and Resource (4th Ed.),* Wiley & Sons*.* https://www.wiley.com/en-us/Introduction+to+Qualitative+Research+Methods%3A+A+Guidebook+and+Resource%2C+4th+Edition-p-9781118767290 (closed access)
  - *The third way*: Teddie et al., 2009, *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*, Sage, https://us.sagepub.com/en-us/nam/foundations-of-mixed-methods-research/book252072 (closed access)
- AI-aided learning & writing:
  - ChatGPT: https://chat.openai.com/
  - ZeroGPT: https://www.zerogpt.com/
- Music Information Retrieval (MIR) packages:
  - Essentia: https://github.com/MTG/essentia
  - librosa: https://github.com/librosa/librosa
  - madmom: https://github.com/CPJKU/madmom
  - and more: https://www.ismir.net/resources/software-tools/
- Psychological experiment development tools:
  - jsPsych: https://jspsych.org/
  - Lab.js: https://lab.js.org/
  - PsyNet: https://www.psynet.dev
- Hosting platforms:
  - Cognition: https://www.cognition.run/
  - Google Forms: https://docs.google.com/forms/