

Appendix A

References

- Aan het Rot, M., Hogenelst, K., & Schoevers, R. A. (2012). Mood disorders in everyday life: A systematic review of experience sampling and ecological momentary assessment studies. *Clinical Psychology Review*, 32(6), 510–523. doi: 10.1016/j.cpr.2012.05.007 72
- Abegaz, F., & Wit, E. (2013). Sparse time series chain graphical models for reconstructing genetic networks. *Biostatistics*, kxt005. 31, 73, 79, 98, 107, 112
- Abegaz, F., & Wit, E. (2015). SparseTSCGM: Sparse time series chain graphical models [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=SparseTSCGM> (R package version 2.2) 31, 98
- Aggen, S. H., Neale, M. C., & Kendler, K. S. (2005). DSM criteria for major depression: evaluating symptom patterns using latent-trait item response models. *Psychological Medicine*, 35(04), 475–487. 143, 144
- Agresti, A. (1990). *Categorical data analysis*. New York, NY: John Wiley & Sons Inc. 65, 153, 158, 159
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR* (4th ed., text rev. ed.). Washington, DC, USA: Author. 44
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-V* (5th ed. ed.). Arlington, VA, USA: Author. 61
- Anderson, C. J., Li, Z., & Vermunt, J. (2007). Estimation of models in the rasch family for polytomous items and multiple latent variables. *Journal of Statistical Software*, 20(6), 1–36. 157
- Anderson, C. J., & Vermunt, J. K. (2000). Log-multiplicative association models as latent variable models for nominal and/or ordinal data. *Sociological Methodology*, 30(1), 81–121. 157
- Anderson, C. J., & Yu, H.-T. (2007). Log-multiplicative association models as item response models. *Psychometrika*, 72(1), 5–23. 157
- Arbuckle, J. L. (2010). *Amos 19 user's guide*. Chicago, IL: Amos Development Corporation. 222, 234

A. REFERENCES

- Arbuckle, J. L., Marcoulides, G. A., & Schumacker, R. E. (1996). Full information estimation in the presence of incomplete data. *Advanced structural equation modeling: Issues and techniques*, 243-277. 141
- Armour, C., Fried, E. I., Deserno, M. K., Tsai, J., Southwick, S. M., & Pietrzak, R. H. (2016). A Network Analysis of DSM-5 posttraumatic stress disorder symptoms? and clinically relevant correlates in a national sample of U.S. military veterans. *PsyArXiv preprint*. Retrieved from <https://osf.io/p69m7/> 18, 20
- Ashton, M. C., & Lee, K. (2005). A defence of the lexical approach to the study of personality structure. *European journal of personality*, 19(1), 5–24. 197, 219
- Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the hexaco model of personality structure. *Personality and Social Psychology Review*, 11(2), 150–166. 199, 219
- Ashton, M. C., & Lee, K. (2009). The hexaco-60: A short measure of the major dimensions of personality. *Journal of personality assessment*, 91(4), 340–345. 199, 200
- Bache, S. M., & Wickham, H. (2014). magrittr: A forward-pipe operator for R [Computer software manual]. Retrieved from <https://CRAN.R-project.org/package=magrittr> (R package version 1.5) 44
- Barabási, A.-L. (2009). Scale-free networks: a decade and beyond. *science*, 325(5939), 412–413. 220
- Barabási, A.-L., & Albert, R. (1999). Emergence of scaling in random networks. *science*, 286(5439), 509–512. 162
- Barber, R. F., Drton, M., & Others. (2015). High-dimensional Ising model selection with Bayesian information criteria. *Electronic Journal of Statistics*, 9(1), 567–607. 106
- Barrat, A., Barthelemy, M., Pastor-Satorras, R., & Vespignani, A. (2004). The architecture of complex weighted networks. *Proceedings of the National Academy of Sciences of the United States of America*, 101(11), 3747–3752. 206, 209
- Barzel, B., & Biham, O. (2009). Quantifying the connectivity of a network: The network correlation function method. *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics*, 80(4), 046104. doi: 10.1103/PhysRevE.80.046104 34
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1–48. doi: 10.18637/jss.v067.i01 104
- Benet-Martinez, V., & John, O. (1998). Los Cinco Grandes across Cultures and Ethnic Groups: Multitrait Multimethod Analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology*, 75, 729–750. 25, 138, 179
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological bulletin*, 107(2), 238–346. 122
- Bentler, P. M., & Wu, E. J. (1993). *EQS6 structural equations program manual*. Multivariate Software. 234

-
- Besag, J. (1975). Statistical analysis of non-lattice data. *The statistician*, 24, 179–195. 159
- Birnbaum, A. (1968). Some latent trait models and their use in inferring an examinee's ability. In F. Lord & M. Novick (Eds.), *Statistical theories of mental test scores*. Reading, MA: Addison-Wesley. 154
- Bland, J. M., & Altman, D. G. (1995). Multiple significance tests: the bonferroni method. *Bmj*, 310(6973), 170. 42
- Boccaletti, S., Latora, V., Moreno, Y., Chavez, M., & Hwang, D. (2006). Complex networks: Structure and dynamics. *Physics reports*, 424(4-5), 175–308. 178, 205, 220
- Boker, S., Neale, M., Maes, H., Wilde, M., Spiegel, M., Brick, T., ... others (2011). OpenMx: an open source extended structural equation modeling framework. *Psychometrika*, 76(2), 306–317. 190, 222
- Boker, S. M., McArdle, J., & Neale, M. (2002). An algorithm for the hierarchical organization of path diagrams and calculation of components of expected covariance. *Structural Equation Modeling*, 9(2), 174–194. 221, 225, 231, 232
- Bollen, K. (1989). *Structural equations with latent variables*. New York, NY, USA: Wiley. 190, 225
- Bollen, K., & Lennox, R. (1991). Conventional Wisdom on Measurement: A Structural Equation Perspective. *Psychological Bulletin*, 110(2), 305–314. 164, 166, 178, 188
- Bollen, K. A., & Stine, R. A. (1992). Bootstrapping goodness-of-fit measures in structural equation models. *Sociological Methods & Research*, 21(2), 205–229. 39
- Bonacich, P. (1972). Factoring and weighting approaches to status scores and clique identification. *Journal of Mathematical Sociology*, 2(1), 113–120. 208
- Bonacich, P. (1987). Power and centrality: A family of measures. *American journal of sociology*, 1170–1182. 208
- Bonacich, P. (2007). Some unique properties of eigenvector centrality. *Social networks*, 29(4), 555–564. 208
- Bonacich, P., & Lloyd, P. (2001). Eigenvector-like measures of centrality for asymmetric relations. *Social networks*, 23(3), 191–201. 208
- Borgatti, S. P. (2005). Centrality and network flow. *Social networks*, 27(1), 55–71. 206, 207
- Borgatti, S. P., & Everett, M. G. (2006). A graph-theoretic perspective on centrality. *Social networks*, 28(4), 466–484. 206
- Borsboom, D. (2005). *Measuring the mind: Conceptual issues in contemporary psychometrics*. Cambridge, UK: Cambridge University Press. 164, 219
- Borsboom, D. (2008). Psychometric Perspectives on Diagnostic Systems. *Journal of clinical psychology*, 64(9), 1089–1108. 1, 116, 119, 120, 178
- Borsboom, D. (in press). A network theory of mental disorders. *World Psychiatry*. 7, 72
- Borsboom, D., & Cramer, A. O. J. (2013). Network analysis: an integrative approach to the structure of psychopathology. *Annual review of clinical psychology*, 9, 91–121. 7, 11, 13, 34, 60, 72, 75, 86, 119, 143, 165, 169, 196, 209, 237

A. REFERENCES

- Borsboom, D., Cramer, A. O. J., Schmittmann, V. D., Epskamp, S., & Waldorp, L. J. (2011). The small world of psychopathology. *PloS one*, 6(11), e27407. 1, 59, 60, 65, 75, 86, 119, 120, 152, 166, 217, 245
- Borsboom, D., Mellenbergh, G. J., & Van Heerden, J. (2003). The theoretical status of latent variables. *Psychological review*, 110(2), 203–219. 113, 164, 196, 197, 219
- Boschloo, L., Van Borkulo, C. D., Rhemtulla, M., Keyes, K. M., Borsboom, D., & Schoevers, R. A. (2015). The network structure of symptoms of the diagnostic and statistical manual of mental disorders. *PLoS ONE*, 10(9), e0137621. 34, 59, 61, 64, 67, 70, 75
- Brandes, U. (2001). A faster algorithm for betweenness centrality. *Journal of mathematical sociology*, 25(2), 163–177. 207
- Brandes, U. (2008). On variants of shortest-path betweenness centrality and their generic computation. *Social Networks*, 30(2), 136–145. 207, 208
- Brandes, U., & Fleischer, D. (2005). Centrality measures based on current flow. In *Annual symposium on theoretical aspects of computer science* (pp. 533–544). 208
- Bringmann, L. F., Lemmens, L. H., Huibers, M. J., Borsboom, D., & Tuerlinckx, F. (2015). Revealing the dynamic network structure of the beck depression inventory-ii. *Psychological medicine*, 45(04), 747–757. 56, 72, 86
- Bringmann, L. F., Vissers, N., Wichers, M., Geschwind, N., Kuppens, P., Peeters, F., ... Tuerlinckx, F. (2013). A network approach to psychopathology: new insights into clinical longitudinal data. *PloS one*, 8(4), e60188. 72, 73, 80, 86, 99, 100, 104, 208, 219, 220
- Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, 21(2), 230–258. 122
- Bühlmann, P. (2013). Statistical significance in high-dimensional linear models. *Bernoulli*, 19(4), 1212–1242. 161
- Bühlmann, P., & van de Geer, S. (2011). *Statistics for high-dimensional data: Methods, theory and applications*. New York, NY, USA: Springer. 161, 162
- Bulteel, K., Tuerlinckx, F., Brose, A., & Ceulemans, E. (2016). Using raw var regression coefficients to build networks can be misleading. *Multivariate Behavioral Research*, 51(2-3), 330–344. 79
- Butts, C. T. (2008). Social network analysis: A methodological introduction. *Asian Journal of Social Psychology*, 11(1), 13–41. 205
- Butts, C. T. (2010). sna: Tools for social network analysis [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=sna> (R package version 2.2-0) 182, 206
- Butts, C. T., Handcock, M. S., & Hunter, D. R. (2011). network: Classes for relational data [Computer software manual]. Retrieved from <http://statnet.org/> (R package version 1.7) 178
- Butts, C. T., et al. (2008). Social network analysis with sna. *Journal of Statistical Software*, 24(6), 1–51. 208
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin*, 56(2), 81–105. 201

-
- Cattell, R. B. (1988). The data box. In *Handbook of multivariate experimental psychology* (pp. 69–130). New York, NY, USA: Springer. 88
- Cervone, D. (2005). Personality architecture: Within-person structures and processes. *Annual Review of Psychology*, 56, 423–452. 219
- Chalmers, R. P. (2012). mirt: A multidimensional item response theory package for the R environment. *Journal of Statistical Software*, 48(6), 1–29. 162
- Chandrasekaran, V., Parrilo, P. A., & Willsky, A. S. (2012). Latent variable graphical model selection via convex optimization (with discussion). *The Annals of Statistics*, 40(4), 1935–1967. 122, 127, 170, 220
- Chen, G., Glen, D. R., Saad, Z. S., Hamilton, J. P., Thomason, M. E., Gotlib, I. H., & Cox, R. W. (2011). Vector autoregression, structural equation modeling, and their synthesis in neuroimaging data analysis. *Computers in biology and medicine*, 41(12), 1142–1155. 112
- Chen, J., & Chen, Z. (2008). Extended bayesian information criteria for model selection with large model spaces. *Biometrika*, 95(3), 759–771. 14, 38, 61, 92, 129, 160
- Chernick, M. R. (2011). *Bootstrap methods: A guide for practitioners and researchers* (Vol. 619). New York, NY, USA: John Wiley & Sons. 41
- Chin, W. W. (2001). PLS-Graph user's guide [Computer software manual]. CT Bauer College of Business, University of Houston. 222
- Cohen, J. (1977). *Statistical power analysis for the behavioral sciences*. New York, NY, USA: Academic Press. 41, 56
- Cohen, J. (1994). The earth is round ($p<0.05$). *American Psychologist*, 49(12), 997–1003. Retrieved from <http://doi.apa.org/getdoi.cfm?doi=10.1037/0003-066X.49.12.997> 42
- Costa, P. T., & McCrae, R. R. (1992). *Professional manual: revised neo personality inventory (NEO-PI-R) and NEO five-factor inventory (NEO-FFI)*. Odessa, FL, USA: Psychological Assessment Resources. 179, 201
- Costantini, G., Epskamp, S., Borsboom, D., Perugini, M., Mõttus, R., Waldorp, L. J., & Cramer, A. O. J. (2015). State of the aRt personality research: A tutorial on network analysis of personality data in R. *Journal of Research in Personality*, 54, 13–29. 13, 24, 34, 37, 38, 77, 116, 169
- Costantini, G., & Perugini, M. (2014). Generalization of clustering coefficients to signed correlation networks. *PloS one*, 9(2), e88669. 205, 209, 213, 220
- Costantini, G., Richetin, J., Borsboom, D., Fried, E. I., Rhemtulla, M., & Perugini, M. (2015). Development of indirect measures of conscientiousness: combining a facets approach and network analysis. *European Journal of Personality*, 29(5), 548–567. 34
- Costenbader, E., & Valente, T. W. (2003). The stability of centrality measures when networks are sampled. *Social networks*, 25(4), 283–307. 41, 43, 57
- Cover, T. M., & Thomas, J. A. (2012). *Elements of information theory*. Hoboken, NJ, USA: John Wiley & Sons. 243, 244
- Cox, D. R. (1972). The analysis of multivariate binary data. *Applied statistics*, 21, 113–120. 154
- Cox, D. R., & Wermuth, N. (1993). Linear dependencies represented by chain graphs. *Statistical science*, 204–218. 60, 202

A. REFERENCES

- Cox, D. R., & Wermuth, N. (1994). A note on the quadratic exponential binary distribution. *Biometrika*, 81(2), 403–408. 13, 154
- Cramer, A. O. J., & Borsboom, D. (2015). Problems Attract Problems: A Network Perspective on Mental Disorders. *Emerging Trends in the Social and Behavioral Sciences: An Interdisciplinary, Searchable, and Linkable Resource*, 1–15. 72
- Cramer, A. O. J., Borsboom, D., Aggen, S. H., & Kendler, K. S. (2012). The pathoplasticity of dysphoric episodes: differential impact of stressful life events on the pattern of depressive symptom inter-correlations. *Psychological medicine*, 42(05), 957–965. 60
- Cramer, A. O. J., Sluis, S., Noordhof, A., Wichers, M., Geschwind, N., Aggen, S. H., ... Borsboom, D. (2012). Dimensions of normal personality as networks in search of equilibrium: You can't like parties if you don't like people. *European Journal of Personality*, 26(4), 414–431. 7, 34, 86, 116, 119, 166, 169, 196, 197, 201, 237
- Cramer, A. O. J., Waldorp, L., van der Maas, H., & Borsboom, D. (2010). Comorbidity: A Network Perspective. *Behavioral and Brain Sciences*, 33(2-3), 137–150. 1, 7, 34, 60, 65, 72, 75, 86, 116, 119, 120, 143, 164, 166, 169, 178, 217, 218, 220, 237
- Cressie, N., & Holland, P. W. (1983). Characterizing the manifest probabilities of latent trait models. *Psychometrika*, 48(1), 129–141. 157
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological bulletin*, 52(4), 281–302. 102
- Crucitti, P., Latora, V., Marchiori, M., & Rapisarda, A. (2004). Error and attack tolerance of complex networks. *Physica A: Statistical Mechanics and its Applications*, 340(1), 388–394. 206
- Csardi, G., & Nepusz, T. (2006). The igraph software package for complex network research. *InterJournal, Complex Systems*, 1695. 162, 178, 182, 184, 206, 222, 232
- Dalege, J., Borsboom, D., van Harreveld, F., van den Berg, H., Conner, M., & van der Maas, H. L. J. (2016). Toward a formalized account of attitudes: The Causal Attitude Network (CAN) model. *Psychological review*, 123(1), 2–22. 6, 34, 61, 116
- da Silva, A. R., Cecon, P. R., & Puiatti, M. (2015). Phenotypic correlation network analysis of garlic variables. *Multi-Science Journal*, 1(3), 9–12. 6
- de Haan-Rietdijk, S., Kuppens, P., & Hamaker, E. L. (2016). What's in a Day? A Guide to Decomposing the Variance in Intensive Longitudinal Data. *Frontiers in Psychology*, 7, 891. Retrieved from <http://journal.frontiersin.org/article/10.3389/fpsyg.2016.00891> doi: 10.3389/fpsyg.2016.00891 81
- De Nooy, W., Mrvar, A., & Batagelj, V. (2011). *Exploratory social network analysis with pajek* (Vol. 27). Cambridge, UK: Cambridge University Press. 195, 205
- De Raad, B., Barelds, D. P., Timmerman, M. E., De Roover, K., Mlačić, B., & Church, A. T. (2014). Towards a pan-cultural personality structure: Input from 11 psycholinguistic studies. *European Journal of Personality*, 28(5), 497–510. 219

-
- Deserno, M. K., Borsboom, D., Begeer, S., & Geurts, H. M. (2016). Multicausal systems ask for multicausal approaches: A network perspective on subjective well-being in individuals with autism spectrum disorder. *Autism*. doi: 10.1177/1362361316660309 12
- Di Battista, G., Eades, P., Tamassia, R., & Tollis, I. (1994). Algorithms for Drawing Graphs: An Annotated Bibliography. *Computational Geometry-Theory and Application*, 4(5), 235–282. 182
- Digman, J. (1989). Five Robust Trait Dimensions: Development, Stability, and Utility. *Journal of Personality*, 57(2), 195–214. 25, 138, 179
- Dijkstra, E. W. (1959). A note on two problems in connexion with graphs. *Numerische mathematik*, 1(1), 269–271. 207
- Dolan, C., Oort, F., Stoel, R., & Wicherts, J. (2009). Testing Measurement Invariance in the Target Rotated Multigroup Exploratory Factor Model. *Structural Equation Modeling: A Multidisciplinary Journal*, 16(2), 295–314. 179, 201
- Drton, M., & Perlman, M. D. (2004). Model selection for gaussian concentration graphs. *Biometrika*, 91(3), 591–602. 13, 204
- Dryden, I. L., Scarr, M. R., & Taylor, C. C. (2003). Bayesian texture segmentation of weed and crop images using reversible jump markov chain monte carlo methods. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*, 52(1), 31–50. 158
- Dziak, J. J., Coffman, D. L., Lanza, S. T., & Li, R. (2012). Sensitivity and specificity of information criteria. *The Methodology Center and Department of Statistics, Penn State, The Pennsylvania State University*. 16, 30, 140
- Edwards, J., & Bagozzi, R. (2000). On the Nature and Direction of Relationships Between Constructs and Measures. *Psychological Methods*, 5(2), 155–174. 164, 166, 178, 188
- Efron, B. (1979). Bootstrap methods: another look at the jackknife. *The Annals of Statistics*, 7(1), 1–26. 39
- Eichler, M. (2007). Granger causality and path diagrams for multivariate time series. *Journal of Econometrics*, 137(2), 334–353. 96
- Ellis, J. L., & Junker, B. W. (1997). Tail-measurability in monotone latent variable models. *Psychometrika*, 62(4), 495–523. 122, 165, 166, 169
- Enders, C. K. (2001). A primer on maximum likelihood algorithms available for use with missing data. *Structural Equation Modeling*, 8(1), 128–141. 239
- Epskamp, S. (2013). lisrelToR: Import output from LISREL into R [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=lisrelToR> (R package version 0.1.4) 222
- Epskamp, S. (2014). IsingSampler: Sampling methods and distribution functions for the Ising model [Computer software manual]. Retrieved from github.com/SachaEpskamp/IsingSampler (R package version 0.1.1) 40, 65, 159
- Epskamp, S. (2015). graphicalVAR: Graphical var for experience sampling data [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=graphicalVAR> (R package version 0.1.3) 31, 79, 98
- Epskamp, S. (2016). elasticIsing: Ising network estimation using elastic net and k-fold cross-validation [Computer software manual]. Retrieved from github.com/SachaEpskamp/elasticIsing (R package version 0.2) 68, 161, 162

A. REFERENCES

- Epskamp, S., Borsboom, D., & Fried, E. I. (2016). Estimating psychological networks and their accuracy: a tutorial paper. *arXiv preprint*, arXiv:1604.08462. 2, 11, 238
- Epskamp, S., Cramer, A., Waldorp, L., Schmittmann, V. D., & Borsboom, D. (2012). qgraph: Network visualizations of relationships in psychometric data. *Journal of Statistical Software*, 48(1), 1–18. 12, 18, 61, 75, 93, 164, 196, 199, 201, 206, 218, 237
- Epskamp, S., Deserno, M. K., & Bringmann, L. F. (2016). mlvar: Multi-level vector autoregression [Computer software manual]. (R package version 0.3.0) 106
- Epskamp, S., Maris, G., Waldorp, L., & Borsboom, D. (in press). Network psychometrics. In P. Irwing, D. Hughes, & T. Booth (Eds.), *Handbook of psychometrics*. New York, NY, USA: Wiley. Retrieved from <http://arxiv.org/abs/1609.02818> 60, 70, 86, 116, 120
- Epskamp, S., Rhemtulla, M., & Borsboom, D. (2016). Generalized network psychometrics: Combining network and latent variable models. *arXiv preprint*, arXiv:1112.5635. 238
- Fan, J., Feng, Y., & Wu, Y. (2009). Network exploration via the adaptive lasso and scad penalties. *The annals of applied statistics*, 3(2), 521–541. 204
- Fitzmaurice, G. M., Laird, N. M., & Rotnitzky, A. G. (1993). Regression models for discrete longitudinal responses. *Statistical Science*, 8, 284–299. 154
- Fleeson, W. (2001). Toward a structure-and process-integrated view of personality: Traits as density distributions of states. *Journal of personality and social psychology*, 80(6), 1011–1027. 96, 219
- Foa, E. B., Riggs, D. S., Dancu, C. V., & Rothbaum, B. O. (1993). Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *Journal of traumatic stress*, 6(4), 459–473. 45
- Forbush, K., Siew, C., & Vitevitch, M. (2016). Application of network analysis to identify interactive systems of eating disorder psychopathology. *Psychological Medicine*, 46(12), 2667–2677. 34
- Fox, J. (2006). Structural Equation Modeling With the sem Package in R. *Structural Equation Modeling*, 13(3), 465–486. 177, 178, 179, 190, 221, 222
- Foygel, R., & Drton, M. (2010). Extended Bayesian information criteria for Gaussian graphical models. *Advances in Neural Information Processing Systems*, 23, 2020–2028. 12, 14, 15, 16, 18, 24, 25, 38, 39, 45, 50, 61, 92, 107, 129, 160, 170, 238
- Foygel, R., & Drton, M. (2011). Bayesian model choice and information criteria in sparse generalized linear models. *arXiv preprint*, arXiv:1112.5635. 204
- Foygel Barber, R., & Drton, M. (2015). High-dimensional Ising model selection with bayesian information criteria. *Electronic Journal of Statistics*, 9(1), 567–607. 14, 38, 61, 160
- Franić, S., Borsboom, D., Dolan, C. V., & Boomsma, D. I. (2014). The big five personality traits: psychological entities or statistical constructs? *Behavior genetics*, 44(6), 591–604. 201
- Freeman, L. C. (1978). Centrality in social networks conceptual clarification. *Social networks*, 1(3), 215–239. 206, 207

-
- Freeman, L. C., Borgatti, S. P., & White, D. R. (1991). Centrality in valued graphs: A measure of betweenness based on network flow. *Social networks*, 13(2), 141–154. 208
- Fried, E. I., Bockting, C., Arjadi, R., Borsboom, D., Amshoff, M., Cramer, O. J., ... Stroebe, M. (2015). From loss to loneliness: The relationship between bereavement and depressive symptoms. *Journal of abnormal psychology*, 124(2), 256–265. 2, 34, 60, 76, 116
- Fried, E. I., Epskamp, S., Nesse, R. M., Tuerlinckx, F., & Borsboom, D. (2016). What are ‘good’ depression symptoms? Comparing the centrality of DSM and non-DSM symptoms of depression in a network analysis. *Journal of Affective Disorders*, 189, 314–320. 12, 35, 36, 57, 72, 86
- Fried, E. I., Nesse, R. M., Zivin, K., Guille, C., & Sen, S. (2014). Depression is more than the sum score of its parts: individual DSM symptoms have different risk factors. *Psychological medicine*, 44(10), 2067–2076. 167
- Fried, E. I., & van Borkulo, C. (2016). Mental disorders as networks of problems: a review of recent insights. *PsyArXiv Preprint*. Retrieved from osf.io/6n8cg 116
- Fried, E. I., van Borkulo, C. D., Epskamp, S., Schoevers, R. A., Tuerlinckx, F., & Borsboom, D. (2016). Measuring depression over time... or not? lack of unidimensionality and longitudinal measurement invariance in four common rating scales of depression. *Psychological Assessment*, Advance Online Publication. Retrieved from <http://psycnet.apa.org/psycinfo/2016-04481-001/> 239
- Friedman, J. H., Hastie, T., & Tibshirani, R. (2008). Sparse inverse covariance estimation with the graphical lasso. *Biostatistics*, 9(3), 432–441. 12, 14, 39, 92, 98, 159, 170, 220
- Friedman, J. H., Hastie, T., & Tibshirani, R. (2010). Regularization paths for generalized linear models via coordinate descent. *Journal of Statistical Software*, 33(1), 1–22. 159, 161
- Friedman, J. H., Hastie, T., & Tibshirani, R. (2014). glasso: Graphical lasso-estimation of gaussian graphical models [Computer software manual]. Retrieved from <https://CRAN.R-project.org/package=glasso> (R package version 1.8) 14, 18, 39, 45, 93, 98
- Frijda, N. H. (1988). The laws of emotion. *American psychologist*, 43(5), 349–358. 76
- Fruchterman, T., & Reingold, E. (1991). Graph drawing by force-directed placement. *Software: Practice and Experience*, 21(11), 1129–1164. 6, 182, 234
- Funder, D. C. (1991). Global traits: A neo-allportian approach to personality. *Psychological Science*, 2(1), 31–39. 197
- Gates, K. M., & Molenaar, P. C. (2012). Group search algorithm recovers effective connectivity maps for individuals in homogeneous and heterogeneous samples. *NeuroImage*, 63(1), 310–319. 112, 124
- Gates, K. M., Molenaar, P. C., Hillary, F. G., Ram, N., & Rovine, M. J. (2010). Automatic search for fMRI connectivity mapping: an alternative to granger causality testing using formal equivalences among SEM path modeling, VAR, and unified SEM. *Neuroimage*, 50(3), 1118–1125. 112

A. REFERENCES

- Gelman, A., & Hill, J. (2006). *Data analysis using regression and multilevel/hierarchical models*. New York, NY, USA: Cambridge University Press. 103
- Gelman, A., Jakulin, A., Pittau, M. G., & Su, Y.-S. (2008). A weakly informative default prior distribution for logistic and other regression models. *The Annals of Applied Statistics*, 1360–1383. 241
- Gentry, J., Long, L., Gentleman, R., Falcon, S., Hahne, F., Sarkar, D., & Hansen, K. (2011). Rgraphviz: Provides plotting capabilities for r graph objects [Computer software manual]. (R package version 1.27.0) 179
- Genz, A., Bretz, F., Miwa, T., Mi, X., Leisch, F., Scheipl, F., & Hothorn, T. (2008). mvtnorm: Multivariate normal and t distributions [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=mvtnorm> (R package version 0.9-2) 40
- Goldberg, L. (1993). The Structure of Phenotypic Personality Traits. *American Psychologist*, 48(1), 26–34. 25, 138, 179
- Goldberg, L. R. (1990a). An alternative “description of personality”: the big-five factor structure. *Journal of personality and social psychology*, 59(6), 1216–1229. 25, 138, 179
- Goldberg, L. R. (1990b). An alternative “description of personality”: the big-five factor structure. *Journal of personality and social psychology*, 59(6), 1216–1229. 219
- Goold, C., Vas, J. B., Olsen, C., & Newberry, R. C. (2015). A network approach to understanding dog personality. *Journal of Veterinary Behavior: Clinical Applications and Research*, 10(5), 446. 6
- Granger, C. W. J. (1969). Investigating causal relations by econometric models and cross-spectral methods. *Econometrica: Journal of the Econometric Society*, 424–438. 96
- Green, P. J., & Richardson, S. (2002). Hidden markov models and disease mapping. *Journal of the American statistical association*, 97(460), 1055–1070. 158
- Gsell, A. S., Özkundakci, D., Hébert, M.-P., & Adrian, R. (2016). Quantifying change in pelagic plankton network stability and topology based on empirical long-term data. *Ecological Indicators*, 65, 76–88. 7
- Haberman, S. J. (1972). Log-linear fit for contingency tables—algorithm AS51. *Applied Statistics*, 21, 218–225. 158
- Hallquist, M., & Wiley, J. (2013). MplusAutomation: Automating mplus model estimation and interpretation [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=MplusAutomation> (R package version 0.5-4) 222
- Hamaker, E. L. (2012). Why researchers should think “within-person”: A paradigmatic rationale. *Handbook of research methods for studying daily life*, 43–61. 72, 101, 103, 113
- Hamaker, E. L., Dolan, C. V., & Molenaar, P. C. (2005). Statistical modeling of the individual: Rationale and application of multivariate stationary time series analysis. *Multivariate behavioral research*, 40(2), 207–233. 219
- Hamaker, E. L., & Grasman, R. P. (2014). To center or not to center? investigating inertia with a multilevel autoregressive model. *Frontiers in psychology*, 5, 1492. 103, 104

-
- Handcock, M., Hunter, D., Butts, C., Goodreau, S., & Morris, M. (2008). statnet: Software tools for the representation, visualization, analysis and simulation of network data. *Journal of Statistical Software*, 24(1), 1548. 178
- Harary, F. (1969). *Graph theory*. Reading, MA, USA: Addison-Wesley. 178
- Haslbeck, J. M. B., & Waldorp, L. J. (2016a). mgm: Structure estimation for time-varying mixed graphical models in high-dimensional data. *arXiv preprint*, arXiv:1510.06871. 30, 39, 81, 238
- Haslbeck, J. M. B., & Waldorp, L. J. (2016b). Structure estimation for mixed graphical models in high dimensional data. *arXiv preprint*, arXiv:1510.05677. 38
- Hastie, T., Tibshirani, R., & Friedman, J. (2001). *The Elements of Statistical Learning*. New York, NY, USA: Springer New York Inc. 12, 62
- Hastie, T., Tibshirani, R., & Wainwright, M. (2015). *Statistical learning with sparsity: the lasso and generalizations*. Boca Raton, FL, USA: CRC Press. 12, 40, 57
- Hayduk, L. A. (1987). *Structural equation modeling with LISREL: Essentials and advances*. Baltimore, MD, USA: Johns Hopkins University Press. 118, 222, 230
- Hien, D. A., Wells, E. A., Jiang, H., Suarez-Morales, L., Campbell, A. N. C., Cohen, L. R., ... Nunes, E. V. (2009). Multisite randomized trial of behavioral interventions for women with co-occurring ptsd and substance use disorders. *Journal of consulting and clinical psychology*, 77(4), 607–619. 37, 44
- Hoekstra, H., de Fruyt, F., & Ormel, J. (2003). Neo-Persoonlijkhedsvragenlijsten: NEO-PI-R, NEO-FFI [Neo personality questionnaires: NEO-PI-R, NEO-FFI]. *Lisse: Swets Test Services*. 179, 201
- Hoerl, A. E., & Kennard, R. W. (1970). Ridge regression: Biased estimation for nonorthogonal problems. *Technometrics*, 12(1), 55–67. 134
- Hofmann, R. J. (1978). Complexity and simplicity as objective indices descriptive of factor solutions. *Multivariate Behavioral Research*, 13(2), 247–250. 200, 210
- Holland, P. W. (1990). The dutch identity: A new tool for the study of item response models. *Psychometrika*, 55(1), 5–18. 157
- Holland, P. W., & Rosenbaum, P. R. (1986). Conditional association and unidimensionality in monotone latent variable models. *The Annals of Statistics*, 14, 1523–1543. 118, 122
- Holst, K. K., & Budtz-Joergensen, E. (2013). Linear latent variable models: The lava-package. *Computational Statistics*, 28, 1385–1452. doi: 10.1007/s00180-012-0344-y 234
- Holzinger, K. J., & Swineford, F. (1939). A study in factor analysis: The stability of a bi-factor solution. *Supplementary Educational Monographs*, 48. 224, 226
- Howell, R. D., Breivik, E., & Wilcox, J. B. (2007). Reconsidering formative measurement. *Psychological methods*, 12(2), 205–218. 164
- Humphries, M. D., & Gurney, K. (2008). Network ‘small-world-ness’: a quantitative method for determining canonical network equivalence. *PloS one*, 3(4), e0002051. 208, 210, 215

A. REFERENCES

- Ising, E. (1925). Beitrag zur theorie des ferromagnetismus. *Zeitschrift für Physik A Hadrons and Nuclei*, 31(1), 253–258. 60, 91, 120, 148
- Isvoranu, A. M., Borsboom, D., van Os, J., & Guloksuz, S. (2016). A Network Approach to Environmental Impact in Psychotic Disorders: Brief Theoretical Framework. *Schizophrenia Bulletin*, 42(4), 870–873. 12, 34, 76, 116
- Isvoranu, A. M., van Borkulo, C. D., Boyette, L., Wigman, J. T. W., Vinkers, C. H., Borsboom, D., & GROUP Investigators. (2016). A Network Approach to Psychosis: Pathways between Childhood Trauma and Psychotic Symptoms. *Schizophrenia Bulletin*. (Advance Access published May 10, 2016) 12, 34, 61, 75, 76, 86, 116
- Jackson, J. J., Bogg, T., Walton, K. E., Wood, D., Harms, P. D., Lodi-Smith, J., ... Roberts, B. W. (2009). Not all conscientiousness scales change alike: a multimethod, multisample study of age differences in the facets of conscientiousness. *Journal of personality and social psychology*, 96(2), 446–459. 212
- Jacobucci, R., Grimm, K. J., & McArdle, J. J. (2016). Regularized structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 23(4), 555–566. 118, 127, 134
- Jaya, E. S., Hillmann, T. E., Reininger, K. M., Gollwitzer, A., & Lincoln, T. M. (2016). Loneliness and psychotic symptoms: The mediating role of depression. *Cognitive Therapy and Research*. Retrieved from <http://dx.doi.org/10.1007/s10608-016-9799-4> 12
- Jensen, A. R. (1998). *The g factor: The science of mental ability*. Westport, CT, USA: Praeger. 164, 165
- Jeong, H., Mason, S. P., Barabási, A.-L., & Oltvai, Z. N. (2001). Lethality and centrality in protein networks. *Nature*, 411(6833), 41–42. 206
- Jolliffe, I. (2002). *Principal Component Analysis*. Wiley Online Library. 188
- Jöreskog, K. G. (1967). A general approach to confirmatory maximum likelihood factor analysis. *ETS Research Bulletin Series*, 1967(2), 183–202. 118
- Jöreskog, K. G., & Sörbom, D. (1996). *LISREL 8: User's reference guide*. Scientific Software. 222, 232
- Kac, M. (1966). *Mathematical mechanism of phase transition*. New York, NY, USA: Gordon & Breach. 63, 152, 171
- Kalisch, M., & Bühlmann, P. (2007). Estimating high-dimensional directed acyclic graphs with the pc-algorithm. *Journal of Machine Learning Research*, 8(Mar), 613–636. 112
- Kalisch, M., Mächler, M., Colombo, D., Maathuis, M. H., & Bühlmann, P. (2012). Causal inference using graphical models with the R package pcalg. *Journal of Statistical Software*, 47(11), 1–26. 3, 112
- Kalisch, M., Maechler, M., & Colombo, D. (2010). pcalg: Estimation of cpdag/pag and causal inference using the ida algorithm [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=pcalg> (R package version 1.1-2) 179
- Kalna, G., & Higham, D. J. (2007). A clustering coefficient for weighted networks, with application to gene expression data. *AI Communications*, 20(4), 263–271. 209

-
- Kaplan, D. (2000). *Structural equation modeling: Foundations and extensions*. Thousand Oaks, CA, USA: Sage. 116
- Kass, R. E., & Raftery, A. E. (1995). Bayes factors. *Journal of the american statistical association*, 90(430), 773–795. 241
- Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry*, 62(6), 617–627. 65
- Kindermann, R., Snell, J. L., et al. (1980). *Markov random fields and their applications* (Vol. 1). Providence, RI, USA: American Mathematical Society. 202
- Klaiber, J., Epskamp, S., & van der Maas, H. L. J. (2015). Estimating ising models on complete and incomplete psychometric data. *Unpublished master's thesis*. Retrieved from <http://www.scriptiesonline.uba.uva.nl/571364> 239
- Knefel, M., Tran, U. S., & Lueger-Schuster, B. (2016). The association of posttraumatic stress disorder, complex posttraumatic stress disorder, and borderline personality disorder from a network analytical perspective. *Journal of Anxiety Disorders*, 43, 70–78. 12
- Kolaczyk, E. D. (2009). *Statistical analysis of network data*. New York, NY, USA: Springer. 5, 37, 126, 158, 205, 206, 207
- Koller, D., & Friedman, N. (2009). *Probabilistic graphical models: principles and techniques*. Cambridge, MA, USA: MIT press. 22, 37, 86, 126, 241
- Kossakowski, J. J., Epskamp, S., Kieffer, J. M., van Borkulo, C. D., Rhemtulla, M., & Borsboom, D. (2016). The application of a network approach to health-related quality of life (HRQoL): Introducing a new method for assessing hrqol in healthy adults and cancer patient. *Quality of Life Research*, 25, 781-92. 12, 34, 61, 86, 116, 119
- Krämer, N., Schäfer, J., & Boulesteix, A.-L. (2009). Regularized estimation of large-scale gene association networks using graphical gaussian models. *BMC Bioinformatics*, 10(1), 1–24. 14, 30, 39, 93, 204, 212, 214, 220
- Kroeze, R., Van Veen, D. C., Servaas, M. N., Bastiaansen, J. A., Oude Voshaar, R., Borsboom, D., ... Riese, H. (2016). Personalized feedback on symptom dynamics of psychopathology: A proof-of-principle study. *Manuscript under revision*. 76, 78
- Kruis, J., & Maris, G. (2015). On the mathematical equivalence, biological plausibility, & sparsity assumptions of network models. *Unpublished master's thesis*. 70
- Kruis, J., & Maris, G. (2016). Three representations of the ising model. *Scientific reports*, 6(34175), 1–11. 70
- Kunegis, J., Lommatzsch, A., & Bauckhage, C. (2009). The slashdot zoo: mining a social network with negative edges. In *Proceedings of the 18th international conference on world wide web* (pp. 741–750). 205, 209
- Lane, S., Gates, K., Molenaar, P., Hallquist, M., & Pike, H. (2016). gimme: Group iterative multiple model estimation [Computer software manual]. Retrieved from <https://CRAN.R-project.org/package=gimme> (R package version 0.1-7) 112

A. REFERENCES

- Langfelder, P., & Horvath, S. (2012). Fast R functions for robust correlations and hierarchical clustering. *Journal of statistical software*, 46(11). 206
- Langley, D. J., Wijn, R., Epskamp, S., & Van Bork, R. (2015). Should I Get That Jab? Exploring Influence to Encourage Vaccination via Online Social Media. *ECIS 2015 Research-in-Progress Papers*, Paper 64. 12, 61
- Latora, V., Nicosia, V., & Panzarasa, P. (2013). Social cohesion, structural holes, and a tale of two measures. *Journal of Statistical Physics*, 151(3-4), 745–764. 208
- Lauritzen, S. L. (1996). *Graphical models*. Oxford, UK: Clarendon Press. 2, 12, 13, 25, 34, 37, 38, 60, 62, 75, 77, 86, 89, 91, 105, 116, 121, 126, 145, 170, 202, 204, 241
- Lawley, D. N. (1940). VI.—the estimation of factor loadings by the method of maximum likelihood. *Proceedings of the Royal Society of Edinburgh*, 60(01), 64–82. 118
- Lee, J. J. (2012). Correlation and causation in the study of personality. *European Journal of Personality*, 26(4), 372–390. 197
- Lee, S.-I., Lee, H., Abbeel, P., & Ng, A. Y. (2006). Efficient ℓ_1 regularized logistic regression. In *Proceedings of the national conference on artificial intelligence* (Vol. 21, p. 401). 160
- Leskovec, J., Huttenlocher, D., & Kleinberg, J. (2010). Signed networks in social media. In *Proceedings of the sigchi conference on human factors in computing systems* (pp. 1361–1370). 205
- Levine, S. Z., & Leucht, S. (2016). Identifying a system of predominant negative symptoms: Network analysis of three randomized clinical trials. *Schizophrenia Research*. Retrieved from <http://dx.doi.org/10.1016/j.schres.2016.09.002> 12
- Li, Z., & Hong, F. (2014). plRasch: Log linear by linear association models and rasch family models by pseudolikelihood estimation [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=plRasch> (R package version 1.0) 157
- Liepmann, D., Beauducel, A., Brocke, B., & Amthauer, R. (2010). *Intelligentie Structuur Test*. Amsterdam, NL: Hogrefe Uitgevers B.V. (Dutch Translation by H.C.M. Vorst) 193
- Lin, K.-Y. (1992). Spontaneous magnetization of the Ising model. *Chinese Journal of Physics*, 30(3), 287–319. 152
- Little, J. (2013). Multilevel confirmatory ordinal factor analysis of the life skills profile-16. *Psychological Assessment*, 25(3), 810–825. 224
- Liu, H., Han, F., Yuan, M., Lafferty, J. D., & Wasserman, L. (2012). High-dimensional semiparametric gaussian copula graphical models. *The Annals of Statistics*, 40(4), 2293–2326. 38, 170
- Liu, H., Lafferty, J. D., & Wasserman, L. (2009). The nonparanormal: Semiparametric estimation of high dimensional undirected graphs. *The Journal of Machine Learning Research*, 10, 2295–2328. 13, 170
- Liu, Q., & Ihler, A. (2012). Distributed parameter estimation via pseudo-likelihood. *Proceedings of the International Conference on Machine Learning (ICML)*. 159

-
- Lord, F. M., Novick, M. R., & Birnbaum, A. (1968). *Statistical theories of mental test scores*. Oxford, UK: Addison-Wesley. 118
- Ly, A., Verhagen, A., & Wagenmakers, E.-J. (2016). Harold Jeffreys's default Bayes factor hypothesis tests: Explanation, extension, and application in psychology. *Journal of Mathematical Psychology*, 72, 19–32. doi: <http://dx.doi.org/10.1016/j.jmp.2015.06.004> 241
- Lykken, D. T. (1968). Statistical significance in psychological research. *Psychological bulletin*, 70(3p1), 151–159. 202
- Lykken, D. T. (1991). What's wrong with psychology anyway. *Thinking clearly about psychology*, 1, 3–39. 202, 219
- MacCallum, R. C., Wegener, D. T., Uchino, B. N., & Fabrigar, L. R. (1993). The problem of equivalent models in applications of covariance structure analysis. *Psychological bulletin*, 114(1), 185–199. 4, 37, 90, 117, 124
- Mair, P., & Wu, E. (2012). REQS: R/EQS interface [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=REQS> (R package version 0.8-12) 234
- Marchetti, G. M., Drton, M., & Sadeghi, K. (2015). ggm: Functions for graphical markov models [Computer software manual]. Retrieved from <https://CRAN.R-project.org/package=ggm> (R package version 2.3) 93
- Marcoulides, G. A., & Papadopoulos, D. (1993). Lispath: a program for generating structural equation path diagrams. *Educational and psychological measurement*, 53(3), 675–678. 222
- Markus, K. A., & Borsboom, D. (2013a). *Frontiers of test validity theory: Measurement, causation, and meaning*. New York, NY, USA: Routledge. 113
- Markus, K. A., & Borsboom, D. (2013b). Reflective measurement models, behavior domains, and common causes. *New Ideas in Psychology*, 31(1), 54–64. 164, 165
- Marsh, H. W., Morin, A. J., Parker, P. D., & Kaur, G. (2014). Exploratory structural equation modeling: An integration of the best features of exploratory and confirmatory factor analysis. *Annual Review of Clinical Psychology*, 10, 85–110. 127
- Marsman, M., Maris, G., Bechger, T., & Glas, C. (2015). Bayesian inference for low-rank ising networks. *Scientific reports*, 5(9050), 1–7. 62, 63, 70, 155, 162, 245
- McArdle, J. J., & McDonald, R. P. (1984). Some algebraic properties of the reticular action model for moment structures. *British Journal of Mathematical and Statistical Psychology*, 37(2), 234–251. 222, 230
- McCrae, R. R., & Costa, P. T. (1997). Personality Trait Structure as a Human Universal. *American Psychologist*, 52(5), 509–516. 1, 25, 92, 138, 179
- McCrae, R. R., & Costa, P. T. (2008). Empirical and theoretical status of the five-factor model of personality traits. *Sage handbook of personality theory and assessment*, 1, 273–294. 164, 165, 197, 201
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of personality*, 60(2), 175–215. 106
- McDonald, R. P. (2003). Behavior domains in theory and in practice. *Alberta Journal of Educational Research*, 49, 212–230. 165, 169

A. REFERENCES

- McGill, R., Tukey, J. W., & Larsen, W. A. (1978). Variations of box plots. *The American Statistician*, 32(1), 12–16. 130
- McNally, R. J. (2016). Can network analysis transform psychopathology? *Behaviour Research and Therapy*, 86, 95–104. 12
- McNally, R. J., Robinaugh, D. J., Wu, G. W., Wang, L., Deserno, M. K., & Borsboom, D. (2015). Mental disorders as causal systems a network approach to posttraumatic stress disorder. *Clinical Psychological Science*, 3(6), 836–849. 13, 34, 75, 86, 116
- Meehl, P. E. (1990). Why summaries of research on psychological theories are often uninterpretable. *Psychological Reports*, 66(1), 195–244. 202
- Meinshausen, N., & Bühlmann, P. (2006). High-dimensional graphs and variable selection with the lasso. *The annals of statistics*, 1436–1462. 12, 91, 92, 105, 159, 170
- Meinshausen, N., Meier, L., & Bühlmann, P. (2009). P-values for high-dimensional regression. *Journal of the American Statistical Association*, 104(488), 1671–1681. 161
- Mellenbergh, G. J. (1989). Item bias and item response theory. *International Journal of Educational Research*, 13(2), 127–143. 167
- Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika*, 58(4), 525–543. 167, 226
- Milgram, S. (1967). The small world problem. *Psychology today*, 2(1), 60–67. 209
- Mohammadi, A., & Wit, E. C. (2015). BDgraph: An R package for Bayesian structure learning in graphical models. *arXiv preprint*, arXiv:1501.05108. 112
- Mohammadi, A., Wit, E. C., et al. (2015). Bayesian structure learning in sparse gaussian graphical models. *Bayesian Analysis*, 10(1), 109–138. 220
- Møller, J., Pettitt, A. N., Reeves, R., & Berthelsen, K. K. (2006). An efficient markov chain monte carlo method for distributions with intractable normalising constants. *Biometrika*, 93(2), 451–458. 158
- Monecke, A., & Leisch, F. (2012). semPLS: Structural equation modeling using partial least squares. *Journal of Statistical Software*, 48(3), 1–32. 234
- Mooij, J. M., Peters, J., Janzing, D., Zscheischler, J., & Schölkopf, B. (2016). Distinguishing cause from effect using observational data: Methods and benchmarks. *Journal of Machine Learning Research*, 17(32), 1-102. Retrieved from <http://jmlr.org/papers/v17/14-518.html> 37, 38
- Mõttus, R., Epskamp, S., & Francis, A. (2016). Within-and between individual variability of personality characteristics and physical exercise. *Journal of Research in Personality*. doi: 10.1016/j.jrp.2016.06.017 87, 106
- Mõttus, R., Penke, L., Murray, A. L., Booth, T., & Allerhand, M. (2014). Personality differences without common-cause latent factors are possible and can explain key findings in personality psychology. *Manuscript submitted for publication*. 218, 220
- Mulaik, S. A., & McDonald, R. P. (1978). The effect of additional variables on factor indeterminacy in models with a single common factor. *Psychometrika*, 43(2), 177–192. 165
- Mulder, J. (2014). Bayes factors for testing order-constrained hypotheses on correlations. *Journal of Mathematical Psychology*, 72, 104–115. 241

-
- Murphy, K. P. (2012). *Machine learning: a probabilistic perspective*. Cambridge, MA, USA: MIT press. 2, 12, 86, 91, 121, 145, 146, 151
- Murray, I. (2007). *Advances in markov chain monte carlo methods* (Unpublished doctoral dissertation). Gatsby Computational neuroscience unit, University College London. 158
- Murray, I., Ghahramani, Z., & MacKay, D. J. C. (2006). MCMC for doubly-intractable distributions. In *Uncertainty in artificial intelligence (UAI)* (pp. 359–366). AUAI Press. 158
- Musek, J. (2007). A general factor of personality: Evidence for the big one in the five-factor model. *Journal of Research in Personality*, 41(6), 1213–1233. 202
- Muthén, B. (1984). A general structural equation model with dichotomous, ordered categorical, and continuous latent variable indicators. *Psychometrika*, 49(1), 115–132. 240
- Muthén, B. O. (1998–2004). *Mplus technical appendices*. Los Angeles, CA, USA: Muthén & Muthén. 222, 230
- Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide*. (Seventh Edition ed., Vol. 5). Los Angeles, CA, USA: Muthén & Muthén. 222, 229, 234
- Myin-Germeys, I., Oorschot, M., Collip, D., Lataster, J., Delespaul, P., & van Os, J. (2009). Experience sampling research in psychopathology: opening the black box of daily life. *Psychological medicine*, 39(09), 1533–1547. 72, 86
- Neale, M. C., Hunter, M. D., Pritikin, J. N., Zahery, M., Brick, T. R., Kirkpatrick, R. M., ... Boker, S. M. (2016). Openmx 2.0: Extended structural equation and statistical modeling. *Psychometrika*, 81(2), 535–549. 127
- Newman, M. E. J. (2003). The structure and function of complex networks. *SIAM review*, 45(2), 167–256. 209
- Newman, M. E. J. (2004). Analysis of weighted networks. *Physical Review E*, 70(5), 056131. 37, 206, 208
- Newman, M. E. J. (2005). A measure of betweenness centrality based on random walks. *Social networks*, 27(1), 39–54. 208
- Newman, M. E. J. (2010). *Networks: an introduction*. Oxford, UK: Oxford University Press. 3, 5, 6, 34, 77, 195, 205, 208
- Newman, M. E. J., & Girvan, M. (2004). Finding and evaluating community structure in networks. *Physical review E*, 69(2), 026113. 208
- Olkil, I., & Tate, R. F. (1961). Multivariate correlation models with mixed discrete and continuous variables. *The Annals of Mathematical Statistics*, 32, 448–465. 157
- Onnela, J.-P., Saramäki, J., Kertész, J., & Kaski, K. (2005). Intensity and coherence of motifs in weighted complex networks. *Physical Review E*, 71(6), 065103. 209
- Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716–aac4716. 36
- Opsahl, T., Agneessens, F., & Skvoretz, J. (2010). Node centrality in weighted networks: Generalizing degree and shortest paths. *Social Networks*, 32(3), 245–251. 6, 34, 77, 178, 207, 208, 220, 241

A. REFERENCES

- Opsahl, T., & Panzarasa, P. (2009). Clustering in weighted networks. *Social networks*, 31(2), 155–163. 209
- Ouellette, D. V. (1981). Schur complements and statistics. *Linear Algebra and its Applications*, 36, 187–295. 89
- Park, T., & Casella, G. (2008). The Bayesian lasso. *Journal of the American Statistical Association*, 103(482), 681–686. 241
- Pe, M. L., Kircanski, K., Thompson, R. J., Bringmann, L. F., Tuerlinckx, F., Mestdagh, M., ... Gotlib, I. H. (2015). Emotion-network density in major depressive disorder. *Clinical Psychological Science*, 3(2), 292–300. 72
- Pearl, J. (2000). *Causality: Models, Reasoning, and Inference*. Cambridge Univ Pr. 3, 13, 22, 37, 62, 76, 77, 90, 91, 102, 112, 124, 145, 178, 190, 240
- Pearl, J., & Verma, T. S. (1995). A theory of inferred causation. *Studies in Logic and the Foundations of Mathematics*, 134, 789–811. 198
- Pettersson, E., & Turkheimer, E. (2010). Item selection, evaluation, and simple structure in personality data. *Journal of research in personality*, 44(4), 407–420. 200
- Plate, T. (2009). RSVGDevice: An R svg graphics device with dynamic tips and hyperlinks [Computer software manual]. (R package version 1.0-1) 184, 187
- Pornprasertmanit, S., Miller, P., Schoemann, A., & Rosseel, Y. (2013). semTools: Useful tools for structural equation modeling. [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=semTools> (R package version 0.4-0) 226
- Pötscher, B. M., & Leeb, H. (2009). On the distribution of penalized maximum likelihood estimators: The LASSO, SCAD, and thresholding. *Journal of Multivariate Analysis*, 100(9), 2065–2082. 42
- Pourahmadi, M. (2011). Covariance estimation: The GLM and regularization perspectives. *Statistical Science*, 369–387. 91, 202
- Quax, R., Apolloni, A., & Sloot, P. M. (2013). The diminishing role of hubs in dynamical processes on complex networks. *Journal of The Royal Society Interface*, 10(88), 20130568. 243
- Quax, R., Kandhai, D., & Sloot, P. M. (2013). Information dissipation as an early-warning signal for the lehman brothers collapse in financial time series. *Scientific reports*, 3(1898). 243
- R Core Team. (2016). R: A language and environment for statistical computing [Computer software manual]. Vienna, Austria. Retrieved from <https://www.R-project.org/> 12, 14, 36, 93, 158, 179, 188, 196, 221
- Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Copenhagen, DM: Danish Institute for Educational Research. 154
- Ravikumar, P., Wainwright, M. J., & Lafferty, J. D. (2010). High-dimensional Ising model selection using ℓ_1 -regularized logistic regression. *The Annals of Statistics*, 38(3), 1287–1319. 159, 160
- Reckase, M. D. (2009). *Multidimensional item response theory*. New York, NY, USA: Springer. 62, 64, 120, 154
- Reichenbach, H. (1991). *The direction of time* (Vol. 65). Berkeley, CA, USA: University of California Press. 164

-
- Reingold, E. M., & Tilford, J. S. (1981). Tidier drawings of trees. *Software Engineering, IEEE Transactions on*, SE-7(2), 223–228. 232
- Reise, S. P., & Waller, N. G. (2009). Item response theory and clinical measurement. *Annual review of clinical psychology*, 5, 27–48. 165
- Revelle, W. (2010). psych: Procedures for psychological, psychometric, and personality research [Computer software manual]. Evanston, Illinois. Retrieved from <http://personality-project.org/r/psych.manual.pdf> (R package version 1.0-93) 1, 25, 92, 117, 138, 179, 188, 199
- Rhemtulla, M., Brosseau-Liard, P. E., & Savalei, V. (2012). When can categorical variables be treated as continuous? a comparison of robust continuous and categorical sem estimation methods under suboptimal conditions. *Psychological methods*, 17(3), 354–373. 239
- Rhemtulla, M., Fried, E. I., Aggen, S. H., Tuerlinckx, F., Kendler, K. S., & Borsboom, D. (2016). Network analysis of substance abuse and dependence symptoms. *Drug and alcohol dependence*, 161, 230–237. 24, 61
- Rosa, M., Friston, K., & Penny, W. (2012). Post-hoc selection of dynamic causal models. *Journal of neuroscience methods*, 208(1), 66–78. 124
- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36. 18, 26, 45, 177, 178, 179, 190, 221, 222
- Rothman, A. J., Levina, E., & Zhu, J. (2010). Sparse multivariate regression with covariance estimation. *Journal of Computational and Graphical Statistics*, 19(4), 947–962. 31, 79, 98
- RStudio, & Inc. (2013). shiny: Web application framework for R [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=shiny> (R package version 0.5.0) 234
- Ruzzano, L., Borsboom, D., & Geurts, H. M. (2015). Repetitive Behaviors in Autism and Obsessive–Compulsive Disorder: New Perspectives from a Network Analysis. *Journal of Autism and Developmental Disorders*, 45(1), 192–202. 75
- Sabidussi, G. (1966). The centrality index of a graph. *Psychometrika*, 31(4), 581–603. 207
- Saramäki, J., Kivelä, M., Onnela, J.-P., Kaski, K., & Kertesz, J. (2007). Generalizations of the clustering coefficient to weighted complex networks. *Physical Review E*, 75(2), 027105. 209
- Saucier, G., Thalmayer, A. G., Payne, D. L., Carlson, R., Sanogo, L., Ole-Kotikash, L., ... Zhou, X. (2014). A basic bivariate structure of personality attributes evident across nine languages. *Journal of Personality*, 82(1), 1–14. 219
- Schäfer, J., Opgen-Rhein, R., Zuber, V., Ahdesmäki, M., Silva, A. P. D., & Strimmer, K. (2015). corpcor: Efficient estimation of covariance and (partial) correlation [Computer software manual]. Retrieved from <https://CRAN.R-project.org/package=corpcor> (R package version 1.6.8) 93
- Scheffer, M., Bascompte, J., Brock, W. A., Brovkin, V., Carpenter, S. R., Dakos, V., ... Sugihara, G. (2009). Early-warning signals for critical transitions. *Nature*, 461(7260), 53–59. 168

A. REFERENCES

- Schlegel, K., Grandjean, D., & Scherer, K. R. (2013). Constructs of social and emotional effectiveness: Different labels, same content? *Journal of Research in personality*, 47(4), 249–253. 201
- Schmittmann, V. D., Cramer, A. O. J., Waldorp, L. J., Epskamp, S., Kievit, R. A., & Borsboom, D. (2013). Deconstructing the construct: A network perspective on psychological phenomena. *New Ideas in Psychology*, 31(1), 43–53. 2, 11, 24, 59, 62, 86, 116, 119, 120, 124, 178, 196, 237
- Schuurman, N. K., Grasman, R. P. P. P., & Hamaker, E. L. (2016). A comparison of inverse-wishart prior specifications for covariance matrices in multilevel autoregressive models. *Multivariate Behavioral Research*, 51(2-3), 185-206. 103
- Scutari, M. (2010). Learning Bayesian Networks with the bnlearn R Package. *Journal of Statistical Software*, 35(3), 1–22. 3, 4, 112
- Sebastiani, G., & Sørbye, S. H. (2002). A bayesian method for multispectral image data classification. *Journal of Nonparametric Statistics*, 14(1-2), 169–180. 158
- Selig, J. P., & Little, T. D. (2012). Autoregressive and Cross- Lagged Panel Analysis for Longitudinal Data. *Handbook of Developmental Research Methods*. (Chapter 12), 265–278. 73
- Servaas, M. N., Riese, H., Ormel, J., & Aleman, A. (2014). The neural correlates of worry in association with individual differences in neuroticism. *Human brain mapping*, 35(9), 4303–4315. 208
- Shannon, P., Markiel, A., Ozier, O., Baliga, N. S., Wang, J. T., Ramage, D., ... Ideker, T. (2003). Cytoscape: a software environment for integrated models of biomolecular interaction networks. *Genome research*, 13(11), 2498–2504. 222
- Sharpsteen, C., & Bracken, C. (2010). tikzDevice: A device for R graphics output in pgf/tikz format [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=tikzDevice> (R package version 0.5.3) 184
- Sherman, R. A., Nave, C. S., & Funder, D. C. (2010). Situational similarity and personality predict behavioral consistency. *Journal of personality and social psychology*, 99(2), 330–343. 212
- Silva, A. R. d., Rêgo, E. R. d., Pessoa, A. M. d. S., & Rêgo, M. M. d. (2016). Correlation network analysis between phenotypic and genotypic traits of chili pepper. *Pesquisa Agropecuária Brasileira*, 51(4), 372–377. 6, 7
- Spearman, C. (1904). "general intelligence," objectively determined and measured. *The American Journal of Psychology*, 15(2), 201–292. 164
- Spirites, P., Glymour, C., & Scheines, R. (2000). *Causation, prediction, and Search*. Cambridge, MA, USA: The MIT Press. 178
- Sporns, O., Chialvo, D. R., Kaiser, M., & Hilgetag, C. C. (2004). Organization, development and function of complex brain networks. *Trends in cognitive sciences*, 8(9), 418–425. 37
- Stevens, J. (1996). *Applied Multivariate Statistics for the Social Sciences*. Hillsdale, NJ, USA: Lawrence Erlbaum Associates. 188, 190
- Stevens, S. S. (1946). On the theory of scales of measurement. *Science, New Series*, 103(2684), 677–680. 239

-
- Strimmer., K. (2011). fdrtool: Estimation and control of (local) false discovery rates [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=fdrtool> (R package version 1.2.7) 187
- Sytema, S., & Van der Krieke, L. (2013). Routine outcome monitoring: A tool to improve the quality of mental health care? In G. Thornicroft, M. Ruggeri, & D. Goldberg (Eds.), *Improving mental health care: The global challenge* (pp. 246–263). Chichester, UK: John Wiley & Sons. 78
- Tett, R. P., & Guterman, H. A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality*, 34(4), 397–423. 212
- Tibshirani, R. (1996). Regression shrinkage and selection via the lasso. *Journal of the Royal Statistical Society. Series B (Methodological)*, 58, 267–288. 13, 38, 61, 92, 117, 134, 159
- Valente, T. W. (2012). Network interventions. *Science*, 337(6090), 49–53. 206
- Van Bork, R. (2015). Latent variable and network model implications for partial correlation structures. In *80th annual meeting of the Psychometric Society (IMPS)*. 24
- Van Borkulo, C., Boschloo, L., Kossakowski, J., Tio, P., Schoevers, R., Borsboom, D., & Waldorp, L. (2016). Comparing network structures on three aspects: A permutation test. *Manuscript submitted for publication*. 24
- van Borkulo, C. D. (2016). NetworkComparisonTest: Statistical comparison of two networks based on three invariance measures [Computer software manual]. Retrieved from github.com/cvborkulo/NetworkComparisonTest (R package version 2.0.0) 238
- van Borkulo, C. D., Borsboom, D., Epskamp, S., Blanken, T. F., Boschloo, L., Schoevers, R. A., & Waldorp, L. J. (2014). A new method for constructing networks from binary data. *Scientific reports*, 4(5918), 1–10. 14, 26, 30, 37, 38, 39, 61, 62, 67, 69, 75, 86, 92, 107, 109, 128, 129, 140, 160, 161, 238
- van Borkulo, C. D., Boschloo, L., Borsboom, D., Penninx, B. W. J. H., Waldorp, L. J., & Schoevers, R. A. (2015). Association of Symptom Network Structure With the Course of Depression. *JAMA psychiatry*, 72(12), 1219–1226. 12, 34, 61, 76, 86, 116
- van Borkulo, C. D., & Epskamp, S. (2014). IsingFit: Fitting Ising models using the elasso method [Computer software manual]. Retrieved from <http://CRAN.R-project.org/package=IsingFit> (R package version 0.2.0) 30, 61, 63, 161
- van de Geer, S., Bühlmann, P., & Ritov, Y. (2013). On asymptotically optimal confidence regions and tests for high-dimensional models. *arXiv preprint*, arXiv:1303.0518. 161, 162
- van de Leemput, I. A., Wichers, M., Cramer, A. O. J., Borsboom, D., Tuerlinckx, F., Kuppens, P., ... Scheffer, M. (2014). Critical slowing down as early warning for the onset and termination of depression. *Proceedings of the National Academy of Sciences*, 111(1), 87–92. 60, 168, 247
- van der Krieke, L., Emerencia, A. C., Bos, E. H., Rosmalen, J. G., Riese, H., Aiello, M., ... de Jonge, P. (2015). Ecological Momentary Assessments and Automated Time Series Analysis to Promote Tailored Health Care: A Proof-of-Principle Study. *JMIR research protocols*, 4(3), e100. 72

A. REFERENCES

- Van Der Maas, H. L., Dolan, C. V., Grasman, R. P., Wicherts, J. M., Huizenga, H. M., & Raijmakers, M. E. (2006). A dynamical model of general intelligence: the positive manifold of intelligence by mutualism. *Psychological review*, 113(4), 842–861. 1, 86, 120, 143, 144, 164, 166, 169, 218
- von Oertzen, T., Brandmaier, A. M., & Tsang, S. (2013). Onyx user guide [Computer software manual]. Retrieved from <http://onyx.brandmaier.de/> 222
- Wagenmakers, E.-J. (2007). A practical solution to the pervasive problems of values. *Psychonomic bulletin & review*, 14(5), 779–804. 16, 42, 240
- Wainwright, M. J., & Jordan, M. I. (2008). Graphical models, exponential families, and variational inference. *Foundations and Trends® in Machine Learning*, 1(1-2), 1–305. 151
- Ware Jr, J. E., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care*, 30, 473–483. 119
- Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge, UK: Cambridge University Press. 12, 34
- Watts, D., & Strogatz, S. (1998). Collective dynamics of small-world networks. *Nature*, 393(6684), 440–442. 5, 34, 50, 205, 208, 209
- Wetzel, R., & Wagenmakers, E.-J. (2012). A default bayesian hypothesis test for correlations and partial correlations. *Psychonomic Bulletin & Review*, 19(6), 1057–1064. 241
- Whittaker, J. (1990). *Graphical models in applied multivariate statistics*. Chichester, UK: John Wiley & Sons. 159
- Wichers, M., Groot, P. C., Psychosystems, ESM Group, & EWS Group. (2016). Critical Slowing Down as a Personalized Early Warning Signal for Depression. *Psychotherapy and psychosomatics*, 85(2), 114–116. 60, 81, 247
- Wichers, M., Lothmann, C., Simons, C. J., Nicolson, N. A., & Peeters, F. (2012). The dynamic interplay between negative and positive emotions in daily life predicts response to treatment in depression: a momentary assessment study. *British Journal of Clinical Psychology*, 51(2), 206–222. 72
- Wickens, T. D. (1989). *Multiway contingency tables analysis for the social sciences*. Hillsdale, NJ, USA: Lawrence Erlbaum Associates. 153
- Wigman, J., van Os, J., Borsboom, D., Wardenaar, K., Epskamp, S., Klippe, A., ... Wichers, M. (2015). Exploring the underlying structure of mental disorders: cross-diagnostic differences and similarities from a network perspective using both a top-down and a bottom-up approach. *Psychological medicine*, 45(11), 2375–2387. 72, 86
- Wild, B., Eichler, M., Friederich, H.-C., Hartmann, M., Zipfel, S., & Herzog, W. (2010). A graphical vector autoregressive modelling approach to the analysis of electronic diary data. *BMC medical research methodology*, 10(1), 28. 31, 73, 79, 97
- Wilkins, M. R., Shizuka, D., Joseph, M. B., Hubbard, J. K., & Safran, R. J. (2015). Multimodal signalling in the north american barn swallow: a phenotype network approach. *Proceedings of the Royal Society B*, 282(1816), 20151574. 7
- Witten, D. M., Friedman, J. H., & Simon, N. (2011). New insights and faster computations for the graphical lasso. *Journal of Computational and Graphical*

-
- Statistics*, 20(4), 892–900. 92
- Woodward, J. (2005). *Making things happen: A theory of causal explanation*. Oxford, UK: Oxford University Press. 102
- Wright, S. (1921). Correlation and causation. *Journal of agricultural research*, 20(7), 557–585. 116
- Wright, S. (1934). The method of path coefficients. *The Annals of Mathematical Statistics*, 5(3), 161–215. 118
- Yin, J., & Li, H. (2011). A sparse conditional gaussian graphical model for analysis of genetical genomics data. *The annals of applied statistics*, 5(4), 2630–2650. 114, 128
- Yuan, M. (2012). Discussion: Latent variable graphical model selection via convex optimization. *The Annals of Statistics*, 40, 1968–1972. 220
- Yuan, M., & Lin, Y. (2007). Model selection and estimation in the gaussian graphical model. *Biometrika*, 94(1), 19–35. 92
- Zhang, B., Horvath, S., et al. (2005). A general framework for weighted gene co-expression network analysis. *Statistical applications in genetics and molecular biology*, 4(1), 1128. 209, 213
- Zhao, L. P., & Prentice, R. L. (1990). Correlated binary regression using a quadratic exponential model. *Biometrika*, 77(3), 642–648. 154
- Zhao, P., & Yu, B. (2006). On model selection consistency of lasso. *The Journal of Machine Learning Research*, 7, 2541–2563. 14
- Zhao, T., Li, X., Liu, H., Roeder, K., Lafferty, J., & Wasserman, L. (2015). huge: High-dimensional undirected graph estimation [Computer software manual]. Retrieved from <https://CRAN.R-project.org/package=huge> (R package version 1.2.7) 14, 30, 39, 93
- Ziegler, M., Booth, T., & Bensch, D. (2013). Getting entangled in the nomological net. *European Journal of Psychological Assessment*, 157–161. 6, 201
- Zou, H. (2006). The adaptive lasso and its oracle properties. *Journal of the American statistical association*, 101(476), 1418–1429. 204
- Zou, H., & Hastie, T. (2005). Regularization and variable selection via the elastic net. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 67(2), 301–320. 134, 161
- Zou, H., Hastie, T., Tibshirani, R., et al. (2007). On the “degrees of freedom” of the lasso. *The Annals of Statistics*, 35(5), 2173–2192. 135