

Eine methodenkritische Evaluation der biomedizinischen Depressionsforschung: Wie zuverlässig und praxisrelevant sind vielbeachtete neurobiogenetische Befunde?

Michael P. Hengartner

Literatur

Asendorpf, J. B., Conner, M., De Fruyt, F., De Houwer, J., Denissen, J. J. A., Fiedler, K. et al. (2013). Recommendations for increasing replicability in psychology. *European Journal of Personality*, 27 (2), 108-119.

Bakker, M., van Dijk, A., & Wicherts, J. M. (2012). The rules of the game called psychological science. *Perspectives on Psychological Science*, 7 (6), 543-554.

Barsaglini, A., Sartori, G., Benetti, S., Pettersson-Yeo, W., & Mechelli, A. (2014). The effects of psychotherapy on brain function: a systematic and critical review. *Progress in Neurobiology*, 114, 1-14.

Bastiaansen, J. A., de Vries, Y. A., & Munafo, M. R. (2015). Citation distortions in the literature on the serotonin-transporter-linked polymorphic region and amygdala activation. *Biological Psychiatry*, 78 (8), e35-36.

Bennett, C. M., & Miller, M. B. (2010). How reliable are the results from functional magnetic resonance imaging? *Annals of the New York Academy of Sciences*, 1191, 133-155.

Borsboom, D., Cramer, A. O. J., Kalis, A. (2019). Brain disorders? Not really: Why network structures block reductionism in psychopathology research. *Behavioral and Brain Sciences*, 42, e2.

Border, R., Johnson, E. C., Evans, L. M., Smolen, A., Berley, N., Sullivan, P. F., & Keller, M. C. (2019). No support for historical candidate gene or candidate gene-by-interaction hypotheses for major across multiple large samples. *American Journal of Psychiatry*, 176 (5), 376-387.

Bousman, C. A., & Hopwood, M. (2016). Commercial pharmacogenetic-based decision-support tools in psychiatry. *Lancet Psychiatry*, 3(6), 585-590.

Boutron, I., & Ravaut, P. (2018). Misrepresentation and distortion of research in biomedical literature. *Proceedings of the National Academy of Sciences of the United States of America*, 115 (11), 2613-2619.

Carp, J. (2012). The secret lives of experiments: methods reporting in the fMRI literature. *Neuroimage*, 63 (1), 289-300.

Caspi, A., Sugden, K., Moffitt, T. E., Taylor, A., Craig, I. W., Harrington, H. et al. (2003). Influence of life stress on depression: moderation by a polymorphism in the 5-HTT gene. *Science*, 301 (5631), 386-389.

Cipriani, A., Furukawa, T. A., Salanti, G., Chaimani, A., Atkinson, L. Z., Ogawa, Y. et al. (2018). Comparative efficacy and acceptability of 21 antidepressant drugs for the acute treatment of adults with major depressive disorder: a systematic review and network meta-analysis. *Lancet*, 391 (10128), 1357-1366.

Clarke, H., Flint, J., Attwood, A. S., & Munafo, M. R. (2010). Association of the 5-HTTLPR genotype and unipolar depression: a meta-analysis. *Psychological Medicine*, 40 (11), 1767-1778.

Clarke, J., & Gawley, A. (2009). The triumph of pharmaceuticals: the portrayal of depression from 1980 to 2005. *Administration Policy in Mental Health and Mental Health Services Research*, 36 (2), 91-101.

Cohen-Woods, S., Craig, I. W., & McGuffin, P. (2013). The current state of play on the molecular genetics of depression. *Psychological Medicine*, 43 (4), 673-687.

Cohen, J. (1994). The earth is round ($P < .05$). *American Psychologist*, 49 (12), 997-1003.

- Dewa, C. S., Hoch, J. S., Lin, E., Paterson, M., & Goering, P. (2003). Pattern of antidepressant use and duration of depression-related absence from work. *British Journal of Psychiatry*, 183, 507-513.
- Dumas-Mallet, E., Smith, A., Boraud, T., & Gonon, F. (2017). Poor replication validity of biomedical association studies reported by newspapers. *PLoS One*, 12 (2), e0172650.
- Eklund, A., Nichols, T. E., & Knutsson, H. (2016). Cluster failure: Why fMRI inferences for spatial extent have inflated false-positive rates. *Proceedings of the National Academy of Sciences of the United States of America*, 113 (28), 7900-7905.
- Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science*, 196 (4286), 129-136.
- Fava, G. A. (2014). Rational use of antidepressant drugs. *Psychotherapy and Psychosomatics*, 83(4), 197-204.
- FDA (2018, November 1). The FDA warns against the use of many genetic tests with unapproved claims to predict patient response to specific medications: FDA safety communication. Verfügbar unter: <https://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/ucm624725.htm> [25.04.2019]
- Flint, J., & Kendler, K. S. (2014). The genetics of major depression. *Neuron*, 81 (3), 484-503.
- Fornaro, M., Anastasia, A., Novello, S., Fusco, A., Pariano, R., De Berardis, D. et al. (2018). The emergence of loss of efficacy during antidepressant drug treatment for major depressive disorder: An integrative review of evidence, mechanisms, and clinical implications. *Pharmacological Research*. 155 (1), 772-785.
- Gartlehner, G., Hansen, R. A., Morgan, L. C., Thaler, K., Lux, L., Van Noord, M. et al. (2011). Comparative benefits and harms of second-generation antidepressants for treating major depressive disorder: an updated meta-analysis. *Annals of Internal Medicine*, 155 (11), 772-785.
- Gomory, T., Wong, S. E., Cohen, D., & Lacasse, J. R. (2011). Clinical social work and the biomedical industrial complex. *Journal of Sociology and Social Welfare*, 38 (4), 135-165.
- Gotzsche, P. C. (2014). Why I think antidepressants cause more harm than good. *Lancet Psychiatry*, 1 (2), 104-106.
- Gotzsche, P. C. (2015). *Deadly psychiatry and organised denial*. Copenhagen: People's Press.
- Greenberg, S. A. (2009). How citation distortions create unfounded authority: analysis of a citation network. *BMJ*, 339, b2680.
- Greenslit, N. P., & Kaptchuk, T. J. (2012). Antidepressants and advertising: psychopharmaceuticals in crisis. *Yale Journal of Biology and Medicine*, 85(1), 153-158.
- Hall, L. S., Adams, M. J., Arnau-Soler, A., Clarke, T. K., Howard, D. M., Zeng, Y. N. et al. (2018). Genome-wide meta-analyses of stratified depression in Generation Scotland and UK Biobank. *Translational Psychiatry*, 8.
- Harvey, S. B., Sellahewa, D. A., Wang, M. J., Milligan-Saville, J., Bryan, B. T., Henderson et al. (2018). The role of job strain in understanding midlife common mental disorder: a national birth cohort study. *Lancet Psychiatry*, 5(6), 498-506.
- Healy, D. (2015). Serotonin and depression. *BMJ*, 350, h1771.
- Hengartner, M. P. (2018). What is the threshold for a clinical minimally important drug effect? *BMJ Evidence-Based Medicine*, 23, 225-227.
- Hengartner, M. P., Angst, J., & Rössler, W. (2018). Antidepressant use prospectively relates to a poorer long-term outcome of depression: Results from a prospective community cohort study over 30 years. *Psychotherapy and Psychosomatics*, 87(3), 181-183.
- Hengartner, M. P., & Plöderl, M. (2018). Statistically significant antidepressant-placebo differences on subjective symptom-rating scales do not prove that the drugs work: Effect size and method bias matter! *Frontiers in Psychiatry*, 9, 517.
- Howard, D. M., Adams, M. J., Shiri, M., Clarke, T. K., Marioni, R. E., Davies, G. et al. (2018). Genome-wide association study of depression phenotypes in UK Biobank identifies variants in excitatory synaptic pathways. *Nature Communications*, 9 (1), 1470.

- Insel, T. R., & Cuthbert, B. N. (2015). Brain disorders? Precisely. *Science*, 348 (6234), 499-500.
- Ioannidis, J. P. (2011). Excess significance bias in the literature on brain volume abnormalities. *Archives of General Psychiatry*, 68 (8), 773-780.
- Ioannidis, J. P. (2019). Therapy and prevention for mental health: What if mental diseases are mostly not brain disorders? *Behavioral and Brain Sciences*, 42, e13.
- Ioannidis, J. P., Munafo, M. R., Fusar-Poli, P., Nosek, B. A., & David, S. P. (2014). Publication and other reporting biases in cognitive sciences: detection, prevalence, and prevention. *Trends in Cognitive Sciences*, 18 (5), 235-241.
- Ioannidis, J. P., & Panagiotou, O. A. (2011). Comparison of effect sizes associated with biomarkers reported in highly cited individual articles and in subsequent meta-analyses. *JAMA*, 305 (21), 2200-2210.
- Jorm, A. F., Patten, S. B., Brugha, T. S., & Mojtabai, R. (2017). Has increased provision of treatment reduced the prevalence of common mental disorders? Review of the evidence from four countries. *World Psychiatry*, 16 (1), 90-99.
- Kapur, S., Phillips, A. G., & Insel, T. R. (2012). Why has it taken so long for biological psychiatry to develop clinical tests and what to do about it? *Molecular Psychiatry*, 17 (12), 1174-1179.
- Karg, K., Burmeister, M., Shedden, K., & Sen, S. (2011). The serotonin transporter promoter variant (5-HTTLPR), stress, and depression meta-analysis revisited: evidence of genetic moderation. *Archives of General Psychiatry*, 68 (5), 444-454.
- Kohler, C. A., Evangelou, E., Stubbs, B., Solmi, M., Veronese, N., Belbasis, L., . . . Carvalho, A. F. (2018). Mapping risk factors for depression across the lifespan: An umbrella review of evidence from meta-analyses and Mendelian randomization studies. *Journal of Psychiatric Research*, 103, 189-207
- Kriegeskorte, N., Simmons, W. K., Bellgowan, P. S., & Baker, C. I. (2009). Circular analysis in systems neuroscience: the dangers of double dipping. *Nature Neuroscience*, 12 (5), 535-540.
- Krishnan, V., & Nestler, E. J. (2008). The molecular neurobiology of depression. *Nature*, 455 (7215), 894-902.
- Kvaale, E. P., Gottdiener, W. H., & Haslam, N. (2013). Biogenetic explanations and stigma: a meta-analytic review of associations among laypeople. *Social Science and Medicine*, 96, 95-103.
- Lacasse, J. R., & Leo, J. (2005). Serotonin and depression: a disconnect between the advertisements and the scientific literature. *PLoS Medicine*, 2 (12), e392.
- MacQueen, G. M., Campbell, S., McEwen, B. S., Macdonald, K., Amano, S., Joffe, R. T., . . . Young, L. T. (2003). Course of illness, hippocampal function, and hippocampal volume in major depression. *Proceedings of the National Academy of Sciences of the United States of America*, 100 (3), 1387-1392.
- Makowski, C., Lepage, M., & Evans, A. C. (2018). Head motion: the dirty little secret of neuroimaging in psychiatry. *Journal of Psychiatry and Neuroscience*, 44 (1), 62-68.
- Marwood, L., Wise, T., Perkins, A. M., & Cleare, A. J. (2018). Meta-analyses of the neural mechanisms and predictors of response to psychotherapy in depression and anxiety. *Neuroscience and Biobehavioral Reviews*. 95, 61-72.
- McCormack, J., & Korownyk, C. (2018). Effectiveness of antidepressants. *BMJ*, 360, k1073.
- Munafo, M. R., Durrant, C., Lewis, G., & Flint, J. (2009). Gene X environment interactions at the serotonin transporter locus. *Biological Psychiatry*, 65 (3), 211-219.
- Murphy, S. E., Norbury, R., Godlewska, B. R., Cowen, P. J., Mannie, Z. M., Harmer, C. J., & Munafo, M. R. (2013). The effect of the serotonin transporter polymorphism (5-HTTLPR) on amygdala function: a meta-analysis. *Molecular Psychiatry*, 18 (4), 512-520.
- Padberg, T. (2018). Placebos, Drogen, Medikamente - Der schwierige Umgang mit Antidepressiva. *Psychotherapeutenjournal*, 4, 324-330.
- Palazidou, E. (2012). The neurobiology of depression. *British Medical Bulletin*, 101, 127-145.

Pescosolido, B. A., Martin, J. K., Long, J. S., Medina, T. R., Phelan, J. C., & Link, B. G. (2010). "A disease like any other"? A decade of change in public reactions to schizophrenia, depression, and alcohol dependence. *American Journal of Psychiatry*, 167 (11), 1321-1330.

Poldrack, R. A. (2006). Can cognitive processes be inferred from neuroimaging data? *Trends in Cognitive Sciences*, 10 (2), 59-63.

Priebe, S., Burns, T., & Craig, T. K. (2013). The future of academic psychiatry may be social. *British Journal of Psychiatry*, 202 (5), 319-320.

Reynolds, C. F., 3rd, Lewis, D. A., Detre, T., Schatzberg, A. F., & Kupfer, D. J. (2009). The future of psychiatry as clinical neuroscience. *Academic Medicine*, 84 (4), 446-450.

Risch, N., Herrell, R., Lehner, T., Liang, K. Y., Eaves, L., Hoh, J., . . . Merikangas, K. R. (2009). Interaction between the serotonin transporter gene (5-HTTLPR), stressful life events, and risk of depression: a meta-analysis. *JAMA*, 301 (23), 2462-2471.

Rogers, A. (2017, November 2017). Star neuroscientist Tom Insel leaves the Google-spawned verily for ... A startup? *Wired*. Verfügbar unter: <https://www.wired.com/2017/05/star-neuroscientist-tom-insel-leaves-google-spawned-verily-startup/> [25.04.2019]

Savitz, J. B., Rauch, S. L., & Drevets, W. C. (2013). Clinical application of brain imaging for the diagnosis of mood disorders: the current state of play. *Molecular Psychiatry*, 18 (5), 528-539.

Schmaal, L., Hibar, D. P., Samann, P. G., Hall, G. B., Baune, B. T., Jahanshad, N., . . . Veltman, D. J. (2017). Cortical abnormalities in adults and adolescents with major depression based on brain scans from 20 cohorts worldwide in the ENIGMA Major Depressive Disorder Working Group. *Molecular Psychiatry*, 22 (6), 900-909.

Schmaal, L., Veltman, D. J., van Erp, T. G., Samann, P. G., Frodl, T., Jahanshad, N., . . . Hibar, D. P. (2016). Subcortical brain alterations in major depressive disorder: findings from the ENIGMA Major Depressive Disorder working group. *Molecular Psychiatry*, 21 (6), 806-812.

Sharpley, C. F., Palanisamy, S. K., Glyde, N. S., Dillingham, P. W., & Agnew, L. L. (2014). An update on the interaction between the serotonin transporter promoter variant (5-HTTLPR), stress and depression, plus an exploration of non-confirming findings. *Behavioural Brain Research*, 273, 89-105.

Spence, D. (2013). Are antidepressants overprescribed? Yes. *BMJ*, 346, f191.

Sprooten, E., Rasgon, A., Goodman, M., Carlin, A., Leibu, E., Lee, W. H., & Frangou, S. (2017). Addressing reverse inference in psychiatric neuroimaging: Meta-analyses of task-related brain activation in common mental disorders. *Hum Brain Mapping*, 38 (4), 1846-1864.

Stansfeld, S. A., Shipley, M. J., Head, J., & Fuhrer, R. (2012). Repeated job strain and the risk of depression: longitudinal analyses from the Whitehall II study. *American Journal of Public Health*, 102 (12), 2360-2366.

Summerfield, D. (2018). NHS antidepressant prescribing: what do we get for pound266m a year? *BMJ*, 360, k1019.

Turner, B. O., Paul, E. J., Miller, M. B., & Barbey, A. K. (2018). Small sample sizes reduce the replicability of task-based fMRI studies. *Communications Biology*, 1, 62.

United Nations. (2017). World needs "revolution" in mental health care - UN rights expert [Press release]. Retrieved from <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=21689> [25.04.2019]

Wand, T. (2018). Is it time to end our complicity with pharmacocentricity? *International Journal of Mental Health Nursing*,

Wasserstein, R. L., & Lazar, N. A. (2016). The ASA's Statement on p-Values: Context, Process, and Purpose. *American Statistician*, 70 (2), 129-133.

Whitaker, R. (2010). *Anatomy of an epidemic*. New York, NY: Crown Publishers.

Whitaker, R., & Cosgrove, L. (2015). *Psychiatry Under the Influence*. London: Palgrave Macmillan.

World Health Organization. (2014). Social determinants of mental health. Geneva: World Health Organization.

Wray, N. R., Ripke, S., Mattheisen, M., Trzaskowski, M., Byrne, E. M., Abdellaoui, A. et al. (2018). Genome-wide association analyses identify 44 risk variants and refine the genetic architecture of major depression. *Nature Genetics*, 50 (5), 668-681.