# Revision history for misig repository

Nathan (Nat) Goodman December 1, 2019

#### Release 1.40 2019-12-01

Support posted version of confi blog post. 'Ladies And Gentlemen, I Introduce To You, "Plausibility Limits"'.

CAVEAT: TRN needs Word documents, but the Rmd-to-Word converter doesn't handle output scaling of figures. The workaround I devised for the effit post didn't work here: the scaling messed up the in-plot text. Since the scaling didn't work, I didn't bother learning how to adjust the file layout for for 1 row, 2 columns. Instead, I used the same full-size figures as in the html and pdf versions, and manually scaled the figures in Word to 40% scale.

#### Major code changes

· Added withrows function to iterate over rows of cases data frame. Replaces withcase

#### New files

- confi.Rmd, confi.TRN.Rmd and related
  - Source files for confi blog post.
- dat\_confi.R, doc\_confi.R
  - Data and document generation functions for confi blog post

- R/dat.R
  - Do simulations in chunks. Much more efficient when m is big
  - Use withrows instead of withcase to iterate over cases
- dat\_ovrfx.R, doc\_ovrfx.R, dat\_ovrht.R, doc\_ovrht.R, dat\_readme.R, doc\_readme.R
  - Minor parameter changes mainly for stylistic consistency
- dat\_readmesupp.R
  - Minor parameter changes mainly for stylistic consistency
- doc\_readmesupp.R
  - Use withrows instead of withcase to iterate over cases
  - Minor parameter changes mainly for stylistic consistency
- R/datman.R
  - Use nvq\_file to construct filenames more flexibly. Especially useful for simulation chunks
  - Add function to concentate simulation chunks
- R/doc.R
  - Add support for multiple figures per plot file (figdev). Used to generare nicer Word output for TRN
  - Continue replacing deprecated parent function by param
- R/init.R
  - Add tmpdir. Used mainly for simulation chunks
  - Only create output directories needed by specific doc
  - Remove params for obsolete supp documents
  - Add ability to clean specific data types: subdirs and top level files
- R/plot.R
  - Add legend.label to top-level plot functions to control label for pval\_legend. Used to display plausibility legends in confi blog post

- Add plot\_empty function. Was used in now obsolete ovrhtsupp. Though not used now, seems worth keeping
- Add fill\_area function to fill abitrary areas
- plotpvsd: simplify setting of line properties for confi blog post
- plotm: let x be matrix; add linear smoothing method
- vhline: generalize hlab, vlab controls for displaying labels
- pval\_legend: add label param to control legend title
- fill-tail: continue removing deprecated parent function
- R/source.R
  - Add source\_ifexists function to source optional files
  - Only source doc-specific files if param environment setup; fixes bug in de novo startup
- R/stats.R
  - Change ci.lo, ci.hi variables to lo, hi for style
- R/util.R
  - Upper-case argument names in functions like nvq to avoid conflicts with user-supplied arguments
  - Add nvq\_file function to more flexibly generate filenames
  - Add i\_pretty function to pretty print i (used for simulation chunks)
  - Add pretty wrapper for pretty printing functions
  - Continue trying to create parent function that works:). Not sure I have it yet...
  - Add linear smoothing method
  - Add smooth wrapper for smoothing functions
  - Add span parameter to loessm smoothing function
  - Add withrows function to iterate over cases data frame; replaces withcase
  - Add rounding functions
  - Add pick function to pick n items approximately evenly spaced
  - Add tol argument to between to handle imprecise decimals
  - Add tback function: wrapper for traceback with arguments set the way I like them

#### Release 1.30 2019-06-12

First real version of README supplement

Major code changes

- Improve code for figure titles: generic figtitle function to generate figure titles instead of doc-specific functions; auto-scaling instead of setting cex.main
- Start cleanup of figure/table numbering scheme

#### New files

- READMEsupp.Rmd
  - Source file for README supplement
- R/dat\_readmesupp.R, R/doc\_readmesupp.R
  - Data and document generation functions for README supplement
- R/source.R
  - Handle problem of name collisions among doc-specific functions through source\_all function that sources correct doc-specific files for current doc

- README.Rmd
  - Incorporate new scheme for programmatically inserting figures
  - Add doc codes for README and README supplement in table
  - Change order of simulations in document to match order in code
- R/dat.R
  - Clean up setting of verbose in data generation functions

- Implement data generation functions for all four statistics of interest, all simulation types, and both data generation models
- Start incorporating new withcase function to lapply loops; expect more later
- R/dat\_ovrht.R
  - Minor changes for stylistic consistency
- R/dat readme.R
  - Remove data generation functions not mentioned in README document, now that README supplement exists
- R/doc.R
  - Implement 'section block' figure/table numbering scheme, in which each section is a figure or table block; a step toward cleaning up figure/table numbering scheme
  - Add figtitle function to generate figure titles; replaces previous doc-specific functions
- R/doc\_ovrfx.R, R/doc\_ovrht.R
  - Remove cex.main from function args in favor of auto-scaling
  - Replace doc-specific title\_ovrfx, title\_ovrht by figtitle
- R/doc\_readme.R
  - Remove cex.main from function args in favor of auto-scaling
  - Replace doc-specific title readme by figtitle
  - Incorporate new 'section block' figure/table numbering scheme
- R/init.R
  - Add params for README supplement
  - Add call to new source\_doc function to source doc-specific files
  - Add sect param in init\_doc function to support new 'section block' figure/table numbering scheme
- R/plot.R
  - Implement auto-scaling of titles via cex title function
  - Add checks for empty plot inputs in plotdvsd, plothist functions
  - Add checks in vhline function for lines and labels outside plot area to avoid writing labels in the margins
  - Replace T, F by full words TRUE, FALSE after discovering that R doesn't always treat these as synonyms
  - Add vhdigits arg to top level plot functions and propagate to vhline function
- R/run.R
  - Move sourcing of other files to R/source.R to address name collisions among doc-specific functions
- R/util.R
  - Extend pmatch\_choice function to (optionally) match patterns in the middle of the text; I thought
     I'd use this in doc\_readmesupp but didn't
  - Add withcase function to improve lapply loops operating on rows of cases data frame; still not happy with it; expect further changes

# Release 1.21 2019-05-22

Shortened README to contain only two figures per plot type; also added material for heterogeneous effect sizes

Changed and new files

- README.Rmd
  - Shorten README to only two figures per plot type
  - Add material for heterogeneous effect size model
  - Change words about how many simulations are run, performance, and so forth
- R/dat.R
  - Finish transition from special purpose save and load (aka get) functions for top level data to general purpose save\_data and load\_data (aka get\_data) functions

- Add dopower\_hetd function to compute power from hetd simulation
- Add dopval\_hetd function to compute p-values from hetd simulation
- Add dopval\_d2ht to compute p-values from d2ht distribution
- Add doci\_d2ht to compute confidence intervals from d2ht distribution
- R/dat ovrht.R
  - Replace inline computation of pval and ci tables with call to new functions in R/dat.R
- R/dat\_ovrhtsupp.R, R/doc\_ovrhtsupp.R
  - Renamed from R/dat mndht.R, R/doc mndht.R
  - Change mndht to ovrhtsupp in function names
  - Replace meand and power params by hetd params
- R/dat\_readme.R
  - Complete rewrite to use functions in R/dat.R
- R/datman.R
  - Remove obsolete special purpose save and load(aka get) functions for top level data files; code now uses general purpose save\_data and load\_data (aka get\_data) functions
  - Add base argument to save\_data and load\_data (aka get\_data) functions to make it easier to specify file names for top level data files
- R/doc ovrfx.R
  - Remove obsolete computation of meand from simulation
- R/doc\_ovrht.R
  - Change get\_data calls to use new names of data files; see R/dat\_ovrht.R
  - Change figure and function names from infl to over for stylistic consistency
- R/doc\_readme.R
  - Extensive rewrite for new README.Rmd
  - Only plot two figures per plot type
  - Add code for heterogeneous effect size model
- R/init.R
  - Increase m.fixd for README from 1e2 to 1e3
  - Add hetd params for README
  - Remove params for theoretical mean significant effect size and power; code now uses simulation params
  - Add params for ovrht pval and ci tables
  - Change clean and sectpx params for README to reflect current usage
  - Edit some comments for stylistic consistency
- R/plot.R
  - Improve handling of "extra" vertical and horizontal lines and labels: only render if within plot region
- R/run.R
  - Change source statements to reflect that mndht document renamed to ovrhtsupp
- R/stats.R
  - Fix typo in comment

# Release 1.20 2019-05-01

Support posted version of ovrht blog post. "Your P-Values are Too Small! And So Are Your Confidence Intervals!"

Major code changes

- Refactored data generation code into multiple files analogous to R/doc... files
- Added support for d2ht (aka 'het') distribution

New files

• ovrht.Rmd, ovrht.TRN.Rmd and related

- Source files for ovrht blog post. TRN is modified to generate Word document that can be ported to TRN more easily
- R/dat.R
  - Top-level and generic data generation functions, analogous to R/doc.R
- R/dat\_mndht.R, R/dat\_ovrfx.R, R/dat\_ovrht.R, R/dat\_readme.R
  - Data generation function for each document
- R/doc mndht.R
  - Document generation functions for mndht blog post. Runs, but still a rough sketch. Expect name to change before post goes public
- R/doc\_ovrht.R
  - Document generation functions for ovrht blog post

# Changed files

- R/datman.R
  - Add functions for top level data stored in datadir
  - Add functions for hetd simulations
  - Extend save\_tbl to save nonflat objects. These aren't tables, of course, but it's sometimes useful to store them in table directories
- R/doc.R
  - Add param to dotb1 for saving nonflat objects
- R/doc\_ovrfx.R
  - Replace n.meand, d.meand params by n.fixd, d.fixd
- R/doc readme
  - Replace n.meand, d.meand params by n.fixd, d.fixd
  - More TBD
- R/init.R
  - Abandon n.meand, d.meand params redundant with n.fixd, d.fixd
  - Add outdir param to drive creation of output directories. Needed now that documents have become so varied
  - Add params for ovrht document
  - Add params for saving top level data
  - Remove obsolete params fpr.cutoff, fnr.cutoff
  - Stop setting params for doc types that don't use those params
- R/plot.R
  - plothist: add add, color params
  - plotpvsd: add support for d2ht (aka 'het') distribution
  - plotm: add spar param for spline smoother
  - hline, vline: add cex param
- R/run.R
  - Add source commands for new R/dat.R, dat\_<document>.R files
  - Remove obsolete source command for R/dodata.R
  - Replace calls to dosim, domeand by more general call to dodat
- R/stats.R
  - Add many functions for d2ht (aka 'het') distribution
  - Replace obsolete calls to parent by param
  - Vectorize ci\_d2t function
- R/util.R
  - Add spar param to splinem smoothing function
  - Add ignore param to nvq to ignore NULL and non-existent names

#### Known bugs

- 1. Functions in the various doc\_ files are clobbering each other. Could also happen with dat\_ files
  - Suggests I've reached the limit of my ersatz object-like programming
  - One solution is to move sourcing of doc specific files into init. Be aware this will break my current

#### Release 1.10 2019-02-19

First real version of README. Renamed and refactored top-level file. See below.

Changed, new, and deleted files

- README.Rmd
  - First version of README doc
- Rename top level R/ovrfx.R to R/run.R and move data generation code to R/dodata.R. When writing README, I saw that old scheme made it hard to explain how to run program
- R/doc.R
  - Improve management of figure and table labels numbers, prefixes, suffixes
  - Add sect\_start function to adjust figure and table labels at start of new section
  - Change need.init default in dodoc to F works better with current init scheme
- R/doc\_readme.R
  - Support first version of README doc
- R/init.R
  - Update defaults for readme doc
  - Change figure and table labels per new scheme in R/doc.R
- R/plot.R
  - Fix xlab, ylab defaults when x, y are not defaults
- R/util.R
  - Fix bug in loess smoother when data column names are not valid formula symbols

# Release 1.01 2019-02-16

Support posted version of ovrfx blog post.

#### Release 1.00 2019-02-14

Support third version of ovrfx blog post. Final or near-final version.

- R/doc\_ovrfx.R
  - Remove the 'zoom' figure (old figure 2)
  - Add 'sampling distribution' figure (new figure 3)
  - Use theoretical meand calculations for 'average significant effect size' (figure 4) and numbers in text
- R/init.R
  - Unify parameters for fixed simulation (used for empirical meand calculation) and theoretical meand calculation
- R/ovrfx.R
  - Turn theoretical meand calculation on again
- R/plot.R

- Minor cleanup of plotpysd
- R/stats.R
  - Fix blunder in d\_d2t. Have to scale by  $\operatorname{sqrt}(n/2)$  to account for difference in x-density
  - Mistake also in repwr/R/stats.R, which I will fix separately
- css/html document.css
  - Add css for blockquote. Rmd's built-in blockquote style sets the font too big
  - Solution from https://stackoverflow.com/questions/44191576. Thanks!

#### Release 0.90 2019-02-13

Support second version of ovrfx blog post. Current title "When You Select Significant Findings, You're Selecting Inflated Estimates". Not final version but close.

#### Major code changes

- Abandon file caching. Way more trouble than it's worth
- Handle multiple types of simulation
  - rand the original siumulation scheme: randomly choose d and run one simulation per choice
  - fixd more typical simulation scheme: set d to certain fixed values and run many simulations for each value
- Handle two ways of calculating mean significant effect sizes, 'meand'
  - empi estimate empirically from simulation data
  - theo theoretical calculation from sampling distribution

- R/datman.R
  - Add functions to save and load new file types: sim\_rand, sim\_fixd, meand\_empi, meand\_theo
  - Replace generic functions, eg, save\_nd, by ones specific to each file type. Though seemingly less
    factored, it's way simpler now that I've abandoned caching, esp. since we have so few file types at
    present
  - Remove keep functions. These supported now-abandoned file caching
  - Remove caching related code from save and load functions
  - Redefine get functions to be synonyms for load. Previous distinction was needed for nowabandoned file caching
- R/doc\_ovrfx.R
  - Near complete rewrite for second version of blog post
- R/init.R
  - Add params for multiple types of simulation: sim\_rand, sim\_fixd
  - Add params for calculation of mean significant effect sizes: meand
  - Remove params for caching: load, keep, clean.cache
  - Remove code for initializing cache
  - datadir no longer has m component. Makes no sense with multiple simulation types
- R/ovrfx.R
  - Add function for fixd simulation and rename function for original rand simulation: dosim\_fixd, dosim\_rand
  - Add function for empirical calculation of mean significant effect size and rename function for theoretical calculation: domeand\_empi, domeand\_theo
  - Incorporate new R/datman.R functions for saving files
  - Remove code for getting data from cache if possible
- R/plot.R
  - Add function to plot histogram: plothist
  - Fiddle with 'extra' line params and code. Removed specialized params like d.crit and d.pop in favor of the more general vline and hline

- Add x0 param to pval\_legend function to adjust location. Crude but adequate for immediate needs
- Add convenience function d2col that maps d values to colors by combining d2pval and pval2col

# Release 0.50 2019-02-03

Support first real version of ovrfx blog post ready for external review. Current title "Significance Testing Makes Bad Choices"

- Rename repo from effit to misig. Better reflects the content I expect for this repo
- Rename first blog post from siglo to ovrfx stands for 'overestimate with fixed effect size'

# Release 0.10 2019-01-01

First version. Contains boilerplate files such as this one and the document sigbi.Rmd (presently just a stub). Will contain code to support the document when released.

# Copyright & License

Copyright (c) 2019 Nathan Goodman

The software is **open source and free**, released under the MIT License. The documentation is **open access**, released under the Creative Commons Attribution 4.0 International License.