

# Package ‘mcreplicate’

October 13, 2022

**Description** Multi-core replication function to make it easier to do fast Monte Carlo simulation. Based on the mcreplicate() function from the 'rethinking' package. The 'rethinking' package requires installing 'rstan', which is onerous to install, while also not adding capabilities to this function.

**Title** Multi-Core Replicate

**Version** 0.1.2

**Date** 2021-05-29

**Imports** parallel

**License** AGPL (>= 3)

**Encoding** UTF-8

**RoxygenNote** 7.1.1

**Suggests** testthat (>= 3.0.0), covr

**Config/testthat/edition** 3

**NeedsCompilation** no

**Author** Christopher Gandrud [aut, cre],  
Olivier Binette [ctb],  
AUTUMN41 [ctb]

**Maintainer** Christopher Gandrud <christopher.gandrud@gmail.com>

**Repository** CRAN

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mc\_replicate                      *Multi-core replicate.*

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### Description

Use multiple cores for repeated evaluation of an expression. This also works on Windows using a parallel socket cluster.

### Usage

```
mc_replicate(
  n,
  expr,
  mc.cores = detectCores(),
  cluster,
  varlist,
  envir,
  packages,
  refresh = 0.1
)
```

### Arguments

n	integer; the number of replications.
expr	the expression (a language object, usually a call) to evaluate repeatedly.
mc.cores	number of cores to use.
cluster	logical. If TRUE then clustering, rather than forking, is used to replicate the specified function in parallel. Note: if you are using Windows, only cluster is available.
varlist	Only used on Windows! Character vector of variable names to export on each worker. Default is all variables in the current environment which do not begin with a ".". See <a href="#">clusterExport</a> for more information.
envir	Only used on Windows! Environment from which to export variables. Default is the environment from which this function was called. See <a href="#">clusterExport</a> for more information.
packages	Only used on Windows! Environment from which to export variables. Default is all loaded packages. See <a href="#">clusterExport</a> for more information.
refresh	Not on Windows! status update refresh interval

### Value

A vector, matrix, or list of length n.

**Source**

Modified from: Richard McElreath (2020). rethinking: Statistical Rethinking book package. R package version 2.13. <https://github.com/rmcelreath/rethinking>

**Examples**

```
one_sim <- function(n = 100, control_prob = 0.1, rel_effect = 0.01) {  
  treat_prob <- control_prob + (control_prob * rel_effect)  
  cy <- rbinom(n = n, size = 1, prob = control_prob)  
  ty <- rbinom(n = n, size = 1, prob = treat_prob)  
  mean(ty) - mean(cy)  
}  
  
mc_replicate(10, one_sim(), mc.cores = 2)  
  
# On Windows, when no particular packages or additional variables are needed  
# mc_replicate(10, one_sim(), , mc.cores = 2, packages = NULL,  
#             varlist = "one_sim", envir = environment())
```

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