

Translating R package documentation. Part I. Errors, warnings, and messages

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Translating errors, warnings, and messages

```
$ R -e "BiocManager::install(repos = 'foo')"  
> BiocManager::install(repos = 'foo')  
Error: 'repos' argument to 'install()' not allowed  
Execution halted
```

```
$ LANGUAGE=fr R -e "BiocManager::install(repos = 'foo')"  
> BiocManager::install(repos = 'foo')  
Erreur : l'argument 'repos' pour 'install()' est interdit  
Exécution arrêtée
```

```
$ LANGUAGE=es R -e "BiocManager::install(repos = 'foo')"  
> BiocManager::install(repos = 'foo')  
Error: argumento 'repos' no permitido en 'install()'  
Ejecución interrumpida
```

```
$ LANGUAGE=ja R -e "BiocManager::install(repos = 'foo')"  
> BiocManager::install(repos = 'foo')  
エラー: 'install()'への'repos'引数は許されていません  
実行が停止されました
```

```
$ LANGUAGE=zh_CN R -e "BiocManager::install(repos = 'foo')"  
> BiocManager::install(repos = 'foo')  
错误: 'install()' 函数不接受 `repos` 参数  
停止执行
```

How does it work?

stop(), warning(), message(), gettextf() text in R files, e.g., [R/install.R](#)

```
stop("'repos' argument to 'install()' not allowed")
```

Collate into [po/R-BiocManager.pot](#)

```
msgid "'repos' argument to 'install()' not allowed"  
msgstr ""
```

Create a translation in [po/R-es.po](#) ('es' indicates Spanish translation)

```
msgid "'repos' argument to 'install()' not allowed"  
msgstr "argumento 'repos' no permitido en 'install()'"
```

Install as part of the package [inst/po/es/LC_MESSAGES/R-BiocManager.mo](#)

Uses GNU [gettext](#) tools

gettext() / gettextf() do the work

Like sprintf(fmt, ...), but fmt is translated to the current domain, if possible

```
$ LANGUAGE=es R
> gettextf("'repos' argument to 'install()' not allowed", domain = "R-BiocManager")
[1] "argumento 'repos' no permitido en 'install()'"
```

Fails gracefully (returns original string) if no translation available

```
> gettextf("An untranslated message", domain = "R-BiocManager")
[1] "An untranslated message"
```

sprintf() interpolation

```
> gettextf(
  "use `BiocManager::install(version = '%s')` with R version %s",
  "3.12", "4.0.5",
  domain = "R-BiocManager")
[1] "utiliza `BiocManager::install(version = '3.12')` con R versión 4.0.5"
```

Resources

Writing R extensions

- Chapter 1.8 [Internationalization](#)

[potools](#) package

- From Michael Chiroco, being developed in conjunction with data.table

useR! 2021 workshop: [Translating R to Your Language](#)

- Michael Chiroco, Michael Lawrence

Bioconductor community slack -- [#documentation-translation](#)

Resources in the wider community -- Qt [Linguist](#), [Gnome](#), ...

Some technical challenges we're still learning about

- Specifying language on each operating system!
- Standardizing BiocManager to use `gettextf()` / `stop()` / `warning()` / `message()`
 - Allows use of tools for automatically generating .pot files, etc.
- Validating translations
 - Correct use and pattern of variable substitutions
 - Subtle language issues, e.g., "%s %d packages" where "%s" could be 'upgrade' or 'downgrade'. Some languages would like to change order, "%d packages %s" but simple `sprintf`-style variable substitution does not work this way!
 - Accurate and consistent with project Code-of-Conduct
- Workflow for updating translations -- even typos require re-translation (though failed translations appear in English so do not cause an error)
 - Probably there is a relatively clean solution to this, we're still learning!
- ...

Is it a good idea? Seems so at first, but...

- Maintainers must understand how translation works, creating significant 'technical debt'
- Users require English language skills to work with R / Bioconductor, and `stop()` / `warning()` etc., are comparatively easy to understand compared to a vignette or help page -- only marginal benefit from translation?
- Adopting a single language (by default, English) for the project simplifies communication, e.g., on the support site.
- It seems like a good way to get less experienced members of 'the community' involved, but actually contributors to date are experts!
- [Additional issues.](#)

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Michael Chiroco has provided some initial commentary through email

Try it out!

- [po-translations](#) branch of BiocManager
- [README-Translation.md](#) for notes / hints
- Translation is not too bad, only about 30 messages