

ABSTRACT

The package crefthe provides a command `\crefthe` parallel to cleveref's `\cref` for handling definite articles properly (especially for the article contractions in some European languages).

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The motivation

1 By default, with cleveref's `\cref` to reference theorem-like environments, the names do not
2 contain definite articles. While this might be acceptable for English, it is certainly not good
3 enough for languages such as French, Italian, Portuguese, Spanish, etc. – in these cases there
4 shall be grammatical errors and would give you a strong feeling that it is machine-generated.
5 However, even if we manually add the definite articles to the names, there would still be
6 other problems. As an example, if we define the French names to be:

```
\crefname{theorem}{le théorème}{les théorèmes}
\crefname{proposition}{la proposition}{les propositions}
```

7 then when one writes (which means “*We can deduce this from ...*”)

On peut le déduire de `\cref{thm1,thm2,prop3}`.

8 the result would be:

On peut le déduire de les théorèmes 1 et 2 et la proposition 3.

9 which is wrong, as the correct result should be:

On peut le déduire des théorèmes 1 et 2 et de la proposition 3.

10 `\cref` cannot handle such cases automatically — that is when `\crefthe` comes into play.

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The usage

2.1 | How to load it?

11 Simply load the package with:

```
\usepackage{crefthe}
```

TIP

- Since `crefthe` uses `cleveref` internally, it should usually be placed at the last of your preamble, and notably, after `varioref` and `hyperref`.
- To handle article contractions correctly, `\crefthe` shall detect the current language, thus you need to use packages such as `babel` or `polyglossia` to set your languages, and use commands like `\selectlanguage` to select them appropriately.

2.2 | How to use it?

Before everything, you need to define the names, which can be done with `\crefthename`. Its syntax is similar to `\crefname`, but now you can specify the definite articles, for example:

```
\crefthename{theorem}[le]{théorème}[les]{théorèmes}
```

TIP

The `\crefthenames` should be placed in your preamble, otherwise the `\cref` formats will not be set. These names can, however, be reset within the document body.

Then you can use the command `\crefthe` as follows:

```
\crefthe[<prep>]{<labels>}
```

- This will pass the preposition `<prep>` to the definite articles that follows. Its behavior depends on the current language (for example, in Spanish, `<prep>` is passed only to the first definite article, while in French it is passed to everyone).

```
\crefthe- [ <prep> ] { <labels> } and \crefthe+ [ <prep> ] { <labels> }
```

- In case the automatic version does not meet your needs, here are two manual ones. The `-` version passes the preposition `<prep>` only to the first definite article, while the `+` version passes `<prep>` to every definite article.

TIP

There is also a starred version `\crefthe*` for generating the same referencing text but without creating hyperlinks.

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Example

Let us come back to the example at the beginning, now you can do this:

```
\crefthename{theorem}[le]{théorème}[les]{théorèmes}
\crefthename{proposition}[la]{proposition}[les]{propositions}
```

And the sentence shall be written as:

```
On peut le déduire \crefthe[de]{thm1,thm2,prop3}.
```

which would result in (provided that you have done `\selectlanguage{french}`):

On peut le déduire **des** théorèmes 1 et 2 et **de la** proposition 3.

Voilà !

Regarding the upper and lower cases

1 The commands also have corresponding uppercased version: `\Crefthename` and `\Crefthe`,
 2 similar to `cleveref`'s `\Crefname` and `\Cref`, reserved for use at the beginning of a sentence.
 3 `\Crefthe` can handle case changing automatically: for example, with `\Crefthe [À] {thm1`
 4 `, thm2, prop3}`, you will get something like

Aux théorèmes 1 et 2 et à la proposition 3

5 Of course you will have to define the `\Crefthenames` separately, for example as:

```
\Crefthename{theorem} [Le] {théorème} [Les] {théorèmes}
\Crefthename{proposition} [La] {proposition} [Les] {propositions}
```

For writing multi-language documents

6 To place hyperlinks at the right place, `\crefthename` touches the corresponding `\crefformat`
 7 internally, which makes the format language-dependent. If you are writing multi-language
 8 documents, you may consider putting `\crefthename` inside your language configuration
 9 so as to reset it each time you select a new language.

The relationship with `cleveref`

10 `crefthe` loads `cleveref` automatically and pass all the options to it. All its commands, used
 11 without optional arguments, degenerate to those in `cleveref`. For example, `\crefthe{...}`
 12 is the same as `\cref{...}`, and `\crefthename` is the same as `\crefname` if the definite
 13 articles are not specified. That said, you can safely use the command `\crefthe` everywhere
 14 in your document without causing extra trouble.

15 With the package option `overwrite`, user commands in `cleveref` will be replaced by those
 16 offered here, thus you can simply write `\cref` for `\crefthe` – and similarly with `\Cref`,
 17 `\crefname` and `\Crefname`.

Known issues

- crefthe currently works for French, Italian, Portuguese (European and Brazilian) and Spanish, certainly more would be added to this list.
- The current mechanism does not work for German. The author plans to adopt a more refined approach in later versions in order to support the various situations in German. Meanwhile, you may consider the package zref-clever, which has a much more powerful and sophisticated interface for configuring cross referencing.
- The names of theorem-like environments are not provided here, you need to define them by yourself. However, users are encouraged to use the ProjLib toolkit (more specifically, the internal package create-theorem), which already handles everything for you.

If you run into any issues or have ideas for improvement, feel free to discuss on:

<https://github.com/Jinwen-XU/crefthe/issues>

or email me via ProjLib@outlook.com.