

# The bicaption package\*

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## Abstract

This package supports the typesetting of bilingual captions.

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# 1 The user interface

## 1.1 Loading the package

`\usepackage` This package will be loaded by

```
\usepackage[\langle options \rangle]{bication} .
```

The options for the bication package are the same ones as for the caption package and specify settings which are used for the second language *additionally*. In fact

```
\usepackage[\langle options \rangle]{bication}
```

is identical to

```
\usepackage{bication}  
\captionsetup[bi-second]{\langle options \rangle} .
```

## 1.2 Setting options

`\captionsetup`

```
\captionsetup[bi]{\langle options \rangle}
```

do setup options which will be used for bilanguage captions *additionally* to the ones which are setup for the specific floating environment.

```
\captionsetup[bi-first]{\langle options \rangle}
```

do setup options which will be used for the *first* heading of the bilanguage captions *additionally* to the ones which are setup for the specific floating environment and the ones which are setup by `\captionsetup[bi]{...}`.

```
\captionsetup[bi-second]{\langle options \rangle}
```

do setup options which will be used for the *second* heading of the bilanguage captions *additionally* to the ones which are setup for the specific floating environment and the ones which are setup by `\captionsetup[bi]{...}`.

Options specified with `\usepackage[...]{bication}` and `\captionsetup[bi...]{...}` will override the ones specified by `\captionsetup{...}` and `\captionsetup[figure]{...}` (same for 'table'). So finally we have the following order how settings for bilingual captions are applied:

1. Global settings (`\usepackage[...]{caption}` and `\captionsetup{...}`)
2. Environmental settings (`\captionsetup[figure -or- table]{...}`)
3. Local settings (`\captionsetup{...}` inside figure or table environment)
4. Custom 'bi' settings (`\captionsetup[bi]{...}`)

5. Custom ‘bi-first’ resp. ‘bi-second’ settings (`\usepackage[...]{bication}` and `\captionsetup[bi-first]{...}` resp. `\captionsetup[bi-second]{...}`)

An example:

```
\usepackage[labelsep=quad,indentation=10pt]{caption}
\usepackage[labelfont=bf]{bication}
\captionsetup[table]{labelfont=it,position=top}
```

causes the second heading of the bilingual caption inside `table` environments to be typeset with the settings

```
labelsep=quad,indentation=10pt,position=top,labelfont=bf.
```

### 1.3 Additional options

These options are available additional to the ones offered by the `caption` package:

<code>language=</code>	<code>lang=</code>	<p>Sets the language of the caption, e.g.</p> <pre>\usepackage[lang=english]{bication}</pre> <p>will typeset the second caption of bilingual captions in English. (The language will be set with <code>\selectlanguage</code> internally, so the <code>babel</code> package must be loaded for using this option.)</p>
<code>bi-lang=</code>	<code>bi-lang=</code>	<p>Causes a selection of the headings of bilingual captions.</p> <pre>\captionsetup{bi-lang=both}</pre> <p>will cause that both caption headings are being typeset. (This is the default.)</p> <pre>\captionsetup{bi-lang=first}</pre> <p>will cause that only the <i>first</i> heading is being typeset, and</p> <pre>\captionsetup{bi-lang=second}</pre> <p>will cause that only the <i>second</i> heading is being typeset.</p>
<code>bi-singlelinecheck=</code>	<code>bi-slc=</code>	<p>Switches the common single-line-check on or off, i.e. when switched on only a single check will be done for both captions, and the result will affect both captions afterwards. So if only one caption is longer than a single line, both captions will be treated as if they are longer than a single line, even if the second one isn't. (The default is on.)</p>
<code>bi-swap=</code>	<code>bi-swap=</code>	<pre>\captionsetup{bi-swap}</pre> <p>will swap the primary and secondary language, making the first language the second one and vice versa. (The default is <code>false</code>.)</p>

## 1.4 The `\bicaption` commands

`\bicaption` Bilingual captions will be typeset by

```
\bicaption[⟨list entry #1⟩]{⟨heading #1⟩}
           [⟨list entry #2⟩]{⟨heading #2⟩}
\bicaption*{⟨heading #1⟩}{⟨heading #2⟩}
```

The `\label` should be placed either after this command, or inside the first heading.

`\bicaptionbox` Bilingual caption boxes will be typeset by

```
\bicaptionbox[⟨list entry #1⟩]{⟨heading #1⟩}
              [⟨list entry #2⟩]{⟨heading #2⟩}
              [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
\bicaptionbox*{⟨heading #1⟩}{⟨heading #2⟩}
              [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
```

The `\label` should be placed inside the first heading.

(For a description of the optional parameters `⟨width⟩` and `⟨inner-pos⟩` please take a look at the caption package documentation, `\captionbox`.)

If the `subcaption` package is loaded, these commands are available additionally:

`\bisubcaption` Bilingual sub-captions will be typeset by

```
\bisubcaption[⟨list entry #1⟩]{⟨heading #1⟩}
              [⟨list entry #2⟩]{⟨heading #2⟩}
\bisubcaption*{⟨heading #1⟩}{⟨heading #2⟩}
```

The `\label` should be placed either after this command, or inside the first heading.

`\bisubcaptionbox` Bilingual sub-caption boxes will be typeset by

```
\bisubcaptionbox[⟨list entry #1⟩]{⟨heading #1⟩}
                 [⟨list entry #2⟩]{⟨heading #2⟩}
                 [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
\bisubcaptionbox*{⟨heading #1⟩}{⟨heading #2⟩}
                 [⟨width⟩][⟨inner-pos⟩]{⟨contents⟩}
```

The `\label` should be placed inside the first heading.

(For a description of the optional parameters `⟨width⟩` and `⟨inner-pos⟩` please take a look at the subcaption package documentation, `\subcaptionbox`.)

## 1.5 A sample document

```
\documentclass[english,ngerman]{article}
\usepackage{selinput}
\SelectInputMappings{adieresis={ä},germandbls={ß}}

\usepackage{babel}
\usepackage[lang=english,font=it]{bicaption}
\usepackage[format=hang]{subcaption}

\begin{document}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox
    {Teilabbildung A\label{fig:test:A}}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \quad
  \bisubcaptionbox
    {Teilabbildung langer Titel B\label{fig:test:B}}
    {Subfigure long title B}[0.4\textwidth]{IMAGE}%
  \bicaption{Deutscher Titel}{English Title}
  \label{fig:test}
\end{figure}

\captionsetup{bi-lang=both}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox[A]
    {Und eine gaaaanz lange Caption: Teilabbildung A}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \quad
  \bisubcaptionbox[B]
    {Teilabbildung B}
    {Subfigure B}[0.4\textwidth]{IMAGE}%
  \bicaption[Abbildungsverzeichnistitel]
    {Und eine noch viel viel viel
     längere deutsche Beschriftung: Deutscher Titel}
    {Short English heading}
\end{figure}

\captionsetup{bi-slc=0}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox[A]
    {Und eine gaaaanz lange Caption: Teilabbildung A}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \quad
```

```

\bisubcaptionbox[B]
  {Teilabbildung B}
  {Subfigure B}[0.4\textwidth]{IMAGE}%
\bicaption[Abbildungsverzeichnistitel]
  {Und eine noch viel viel viel
   längere deutsche Beschriftung: Deutscher Titel}
  {Short English heading}
\end{figure}

\captionsetup{slc=0}

\begin{figure}[!htb]
  \centering
  \bisubcaptionbox[A]
    {Und eine gaaaanz lange Caption: Teilabbildung A}
    {Subfigure A}[0.4\textwidth]{IMAGE}%
  \quad
  \bisubcaptionbox[B]
    {Teilabbildung B}
    {Subfigure B}[0.4\textwidth]{IMAGE}%
  \bicaption[Abbildungsverzeichnistitel]
    {Und eine noch viel viel viel
     längere deutsche Beschriftung: Deutscher Titel}
    {Short English heading}
\end{figure}

\end{document}

```

IMAGE  
(a) Teilabbildung A  
(a) *Subfigure A*

IMAGE  
(b) Teilabbildung langer Titel B  
(b) *Subfigure long title B*

Abbildung 1: Deutscher Titel  
*Figure 1: English Title*

IMAGE  
(a) Und eine gaaaanz lange Caption:  
Teilabbildung A  
(a) *Subfigure A*

IMAGE  
(b) Teilabbildung B  
(b) *Subfigure B*

Abbildung 2: Und eine noch viel viel viel längere deutsche Beschriftung: Deutscher Titel  
*Figure 2: Short English heading*

IMAGE  
(a) Und eine gaaaanz lange Caption:  
Teilabbildung A  
(a) *Subfigure A*

IMAGE  
(b) Teilabbildung B  
(b) *Subfigure B*

Abbildung 3: Und eine noch viel viel viel längere deutsche Beschriftung: Deutscher Titel  
*Figure 3: Short English heading*

IMAGE  
(a) Und eine gaaaanz lange Caption:  
Teilabbildung A  
(a) *Subfigure A*

IMAGE  
(b) Teilabbildung B  
(b) *Subfigure B*

Abbildung 4: Und eine noch viel viel viel längere deutsche Beschriftung: Deutscher Titel  
*Figure 4: Short English heading*

## 1.6 Customising lists

`list=` As default both caption texts will be insert into the List of Figures resp. List of Tables. To suppress the second entry just pass the option `list=off` to the `bicaption` package, e.g.:

```
\usepackage[lang=english,...,list=off]{bicaption}
```

`listtype+=` Another option is separating the lists. For that purpose the option

```
listtype+= $\langle$ list type extension $\rangle$ 
```

can be used to tell the `bicaption` package to use a different list for the second caption text. The given value will be appended to the current environment type; for example with `listtype+=X` the list entries will be put into the list responsible for the types `figureX` ( $= \text{figure} + X$ ), `tableX` ( $= \text{table} + X$ ) etc.

Such a  $\langle$ list type $\rangle$  can be defined using `\DeclareFloatingEnvironment` offered by the `newfloat` package, but some document classes or other packages offer macros for defining new floating environment types (and their corresponding lists) as well.

A sample document:

```
\documentclass[a4paper]{article}

% Use "ngerman" as 1st language, "english" as 2nd one
\usepackage[english,ngerman]{babel}

% Load the bicaption package with 2nd language set to
% "english", and list type "figureEng" resp. "tableEng"
\usepackage[lang=english,listtype+=Eng]{bicaption}

\usepackage{newfloat}
% Define the new floating environment type "figureEng"
\DeclareFloatingEnvironment[fileext=lof2]{figureEng}
[Figure][List of Figures]
% Define the new floating environment type "tableEng"
\DeclareFloatingEnvironment[fileext=lot2]{tableEng}
[Table][List of Tables]

\begin{document}
\listoffigures      % typeset "Abbildungsverzeichnis"
\listoffigureEnges  % typeset "List of Figures"

\begin{figure}
  \centering
  A placeholder for an image or whatever
  \bicaption{Deutscher Text}{English text}
\end{figure}

\end{document}
```

A different approach is using one list for both languages, but with different formatting. Since the `caption` package does not offer options and commands for customising the format of the lists, one needs an additional package for this purpose, for example the `titletoc` package:

```
\documentclass[a4paper]{article}

% Use "ngerman" as 1st language, "english" as 2nd one
\usepackage[english,ngerman]{babel}

% Load the bicaption package with 2nd language set to
% "english", and list type "figure2" resp. "table2"
\usepackage[lang=english,listtype+=2]{bicaption}

% We load the titletoc package for customizing lists
% Note: Loading titletoc should be done prior defining
% additional floating environments with \DeclareFloatingEnvironment
\usepackage{titletoc}

\usepackage{newfloat}
% Define the new floating environment type "figure2"
% Use the same file extension as for "figure" (.lof) here
\DeclareFloatingEnvironment[fileext=lof]{figure2}
% Define the new floating environment type "table2"
% Use the same file extension as for "table" (.lot) here
\DeclareFloatingEnvironment[fileext=lot]{table2}

% We use the titletoc package for customizing "figure2"
% which is appropriate for the second language captions
\titlecontents{figure2}[3.8em]
{} % no above code
{} % empty numbered entry format
{} % empty numberless entry format
{} % empty filler page format

\begin{document}
\renewcommand\listfigurename
{Abbildungsverzeichnis / List of Figures}
\listoffigures

\begin{figure}
\centering
A placeholder for an image or whatever
\bicaption{Deutscher Text}{English text}
\end{figure}

\end{document}
```

## 2 The implementation

### 2.1 Identification

```
1 \NeedsTeXFormat{LaTeX2e}[1994/12/01]
2 \ProvidesPackage{bicaption}[2011/10/30 v1.0a Bilingual Captions (AR)]
3 \RequirePackage{caption}[2011/08/28] % needs v3.2c or newer
4 \caption@AtBeginDocument{\caption@ifcompatibility{%
5   \caption@Error{%
6     The 'bicaption' package does not work correctly\MessageBreak
7     in compatibility mode}}{}}
```

### 2.2 Initial code

```
\bicaption@Warning \bicaption@Warning{<message>}
8 \newcommand*\bicaption@Warning[1]{%
9   \bicaption@WarningNoLine{#1\on@line}}

\bicaption@WarningNoLine \bicaption@WarningNoLine{<message>}
10 \newcommand*\bicaption@WarningNoLine[1]{%
11   \PackageWarning{bicaption}{#1.^J\bicaption@wh@gobbletwo}}
12 \newcommand*\bicaption@wh{%
13   See the bicaption package documentation for explanation.}

\bicaption@Error \bicaption@Error{<message>}
14 \newcommand*\bicaption@Error[1]{%
15   \PackageError{bicaption}{#1}\bicaption@eh}
16 %\let\bicaption@KV@err\bicaption@Error
17 \newcommand*\bicaption@eh{%
18   If you do not understand this error, please take a closer look\MessageBreak
19   at the documentation of the 'bicaption' package.\MessageBreak\@ehc}
```

### 2.3 Declaration of options

The option `bi-lang` will setup which language(s) will actually be typeset, the first one, the second one, or both of them.

```
20 \newcount\bicaption@lang
21 \DeclareCaptionOption{bi-lang}{%
22   \caption@ifinlist{#1}{0,all,both}{%
23     \bicaption@lang=0\relax
24   }{\caption@ifinlist{#1}{1,1st,first}{%
25     \bicaption@lang=1\relax
26   }{\caption@ifinlist{#1}{2,2nd,second}{%
27     \bicaption@lang=2\relax
28   }}{
29     \bicaption@Error{Undefined bi-lang value '#1'}%
30   }}}
```

The option `bi-singlelinecheck` will setup if a single check will be used for both languages (`=on`), or if both languages will be checked individually (`=off`).

```
31 \DeclareCaptionOption{bi-singlelinecheck}[1]{%
32   \caption@set@bool\bicaption@ifslc{#1}}
33 \DeclareCaptionOption{bi-slc}[1]{%
34   \caption@set@bool\bicaption@ifslc{#1}}
```

The option `bi-swap` will swap the primary and secondary language, making the first language the second one and vice versa.

```
35 \DeclareCaptionOption{bi-swap}[1]{%
36   \caption@set@bool\bicaption@ifswap{#1}}
```

The option `lang=⟨language⟩` will setup the language of the caption.

```
37 \DeclareCaptionOption{lang}{\def\bicaption@language{#1}}
38 \let\KV@caption@language\KV@caption@lang
```

`\bicaption@selectlanguage` Set the language via `\selectlanguage`.

```
39 \newcommand*\bicaption@selectlanguage{%
40   \@ifstar
41     {\bicaption@select@language\select@language}
42     {\bicaption@select@language\selectlanguage}}
43 \newcommand*\bicaption@select@language[1]{%
44   \caption@ifundefined\bicaption@language{}{%
45     \expandafter#1\expandafter{\bicaption@language}}}
```

`\caption@applyfont` (of the caption package kernel) will be extended here so the language setting will actually take effect.

```
46 \g@addto@macro\caption@applyfont{%
47   \bicaption@selectlanguage*}
48 \g@addto@macro\caption@prepareslc{%
49   \let\bicaption@language\@undefined}
```

## 2.4 Execution of options

Setup default values for `bi-lang` and `bi-singlelinecheck`.

```
50 \caption@ExecuteOptions{caption}{bi-lang=0,bi-slc=1,bi-swap=0}
```

Set the language for the first caption.

```
51 \ifcsname bbl@main@language\endcsname
52   \edef\@tempa{\noexpand\captionsetup[bi-first]{lang=\bbl@main@language}}
53   \@tempa
54 \else\ifcsname xpg@main@language\endcsname
55   \edef\@tempa{\noexpand\captionsetup[bi-first]{lang=\xpg@main@language}}
56   \@tempa
57 \else
58   \bicaption@WarningNoLine{Please load this package after the babel package}
59 \fi\fi
```

We use `\caption@ProcessOptions` here to add the options to the ‘`bi-second`’ option list instead of executing them immediately.

```
60 \caption@SetupOptions{bicaption}{\captionsetup[bi-second]{#2}}%
61 \caption@ProcessOptions*{bicaption}
```

## 2.5 Main code

```

on@kernel@addcontentsline We patch \caption@kernel@addcontentsline (of the caption package kernel)
so \bication@addcontentsline will be used for bilingual captions instead.
62 \let\caption@kernel@addcontentsline@ORI\caption@kernel@addcontentsline
63 \renewcommand*\caption@kernel@addcontentsline[2]{%
64   \caption@ifundefined\bication@lentry
65     {\caption@kernel@addcontentsline@ORI{#1}{#2}}%
66     {\expandafter\bication@addcontentsline\expandafter{\bication@lentry}{#1}{#2}}%
67     \global\let\bication@lentry\@undefined}}

\bication@addcontentsline \bication@addcontentsline{<list entry #2>}{<type>}{<list entry #1>}
Typeset both captions using the original version of \caption@addcontentsline.
68 \newcommand\bication@addcontentsline[3]{%
69   \begingroup

Execute the options setup with \captionsetup[bi]{...}.
70   \caption@setoptions{bi}%

Do the first list entry, if requested.
71   \ifnum\bication@lang=2\relax \else
72     \begingroup
73       \caption@setoptions{bi-first}%
74       \bication@@addcontentsline{#2}{#3}%
75     \endgroup
76   \fi

Do the second list entry, if requested.
77   \ifnum\bication@lang=1\relax \else
78     \begingroup
79       \caption@setoptions{bi-second}%
80       \bication@@addcontentsline{#2}{#1}%
81     \endgroup
82   \fi
83 \endgroup}

84 \newcommand*\bication@@addcontentsline[2]{%
85   \caption@ifcontentsline{#2}{%
86     \bication@selectlanguage\relax
87     \caption@kernel@addcontentsline@ORI{#1}{#2}}}

\caption@@make We patch \caption@@make (of the caption package kernel) so \bication@@make
will be used for bilingual captions instead.
88 \let\caption@@make@ORI\caption@@make
89 \renewcommand\caption@@make[2]{%
90   \caption@ifundefined\bication@text
91     {\caption@@make@ORI{#1}{#2}}%
92     {\expandafter\bication@@make\expandafter{\bication@text}{#1}{#2}}%
93     \global\let\bication@text\@undefined}}

\bication@@make \bication@@make{<text #2>}{<label>}{<text #1>}
Typeset both captions using the original version of \caption@@make.
94 \newcommand\bication@@make[3]{%

Execute the options setup with \captionsetup[bi]{...}.
95   \caption@setoptions{bi}%

```

Perform the common single-line-check for both captions, if requested.

```

96 \ifnum\bicaption@lang=0\relax
97   \bicaption@ifslc
98     {\caption@@slc{#2}{#3}{\captionwidth}{}}%
99     {\caption@set@bool\bicaption@ifslc0}%
100   \caption@@slc{#2}{#1}{\captionwidth}{}%
101     {\caption@set@bool\bicaption@ifslc0}}%
102   {}%
103 \fi

```

Typeset the first caption, if requested. (Otherwise we only apply the label of it.)

```

104 \ifnum\bicaption@lang=2\relax
105   \bicaption@label
106   \global\let\bicaption@label\relax
107 \else
108   \begingroup
109     \caption@setoptions{bi-first}%
110     \caption@@make@ORI{#2}{#3}%
111   \endgroup
112 \fi

```

Typeset the second caption, if requested.

```

113 \ifnum\bicaption@lang=1\relax
114 \else
115   \begingroup
116     \caption@setoptions{bi-second}%
117     \caption@@make@ORI{#2}{#1}%
118   \endgroup
119 \fi

```

### 2.5.1 The `\bicaption` commands

```

\bicaption \bicaption*[\langle list entry #1 \rangle]{\langle text #1 \rangle}[\langle list entry #2 \rangle]{\langle text #2 \rangle}
120 \newcommand\bicaption{\@bicaption\caption}

\bicaptionbox \bicaptionbox*[\langle entry #1 \rangle]{\langle text #1 \rangle}[\langle entry #2 \rangle]{\langle text #2 \rangle}[\langle ... \rangle]{\langle ... \rangle}
121 \newcommand\bicaptionbox{\@bicaption\captionbox}

\bisubcaption \bisubcaption*[\langle list entry #1 \rangle]{\langle text #1 \rangle}[\langle list entry #2 \rangle]{\langle text #2 \rangle}
122 \newcommand\bisubcaption{\@bicaption\subcaption}
123 \let\subbicaption\bisubcaption

\bisubcaptionbox \bisubcaptionbox*[\langle entry #1 \rangle]{\langle text #1 \rangle}[\langle entry #2 \rangle]{\langle text #2 \rangle}[\langle ... \rangle]{\langle ... \rangle}
124 \newcommand\bisubcaptionbox{\@bicaption\subcaptionbox}
125 \let\subbicaptionbox\bisubcaptionbox

\@bicaption \@bicaption{\langle cmd \rangle}*[\langle entry #1 \rangle]{\langle text #1 \rangle}[\langle entry #2 \rangle]{\langle text #2 \rangle}...
126 \newcommand*\@bicaption[1]{%
127   \def\bicaption@cmd{#1}%
128   \@ifstar
129     {\l@addto@macro\bicaption@cmd*%
130       \@@bicaption}%
131     {\caption@dblarg\@@@bicaption}}

```

```

132 \newcommand\@bication[1]{%
133   \@@@bication{}{#1}[]}
134 \long\def\@@@bication[#1]#2{%
135   \caption@dblarg{\@@@bication{#1}{#2}}
136 \long\def\@@@bication#1#2[#3]#4{%
137   \bication@getlabel#2\label{}\@nil
138   \bication@ifswap
139     {\bication@setup{#1}{#2}%
140     \bication@cmd[{}]{#4}}%
141     {\bication@setup{#3}{#4}%
142     \bication@cmd[{#1}]{#2}}

```

`\bication@getlabel` Gets the label command out of the (first) caption text and stores it to `\bication@label`.

```

143 \long\def\bication@getlabel#1\label#2#3\@nil{%
144   \def\@tempa{#2}%
145   \ifx\@tempa\@empty
146     \let\bication@label\relax
147   \else
148     \def\@tempb{*}%
149     \ifx\@tempa\@tempb
150       \def\bication@label{\label*}%
151       \bication@@getlabel#3\@nil
152     \else
153       \def\bication@label{\label}%
154       \bication@@getlabel{#2}#3\@nil
155     \fi
156   \fi}
157 \long\def\bication@@getlabel#1#2\@nil{%
158   \def\@tempa{#1}%
159   \def\@tempb{[]}%
160   \ifx\@tempa\@tempb
161     \bication@@@getlabel#1#2\@nil
162   \else
163     \l@addto@macro\bication@label{{#1}}%
164   \fi}
165 \long\def\bication@@@getlabel[#1]#2\@nil{%
166   \l@addto@macro\bication@label{[{}#1]}%
167   \bication@@getlabel#2\@nil}

```

`\bication@setup` `\bication@setup{<list-entry>}{<text>}`  
 Initiates the bilingual caption typesetting by storing the extra texts into `\bication@l-entry` and `\bication@text`.

```

168 \newcommand\bication@setup[2]{%
169   \def\bication@lentry{#1}%
170   \def\bication@text{\ignorespaces#2}}

```

`\caption@freeze` To make `\bication` work inside SCfigure and FPfigure environments we need to add `\bication` to `\caption@freeze`.

```

171 \AtBeginDocument{%
172   \ifx\caption@freeze\@undefined \else
173     \g@addto@macro\caption@freeze{%
174       \let\caption@frozen\bication\bication

```

```

175 \def\bicaption{%
176 \caption@withoptargs\caption@SC@bicaption}%
177 \long\def\caption@SC@bicaption#1#2{%
178 \@ifnextchar[%
179 {\caption@SC@bi@caption{#1}{#2}}%
180 {\caption@SC@bi@caption@{#1}{#2}}}%
181 \long\def\caption@SC@bi@caption#1#2[#3]#4{%
182 \caption@@freeze{\bicaption#1{#2} [{#3}] {#4}}%
183 \ignorespaces}%
184 \long\def\caption@SC@bi@caption@#1#2#3{%
185 \caption@@freeze{\bicaption#1{#2}{#3}}%
186 \ignorespaces}%
187 \l@addto@macro\caption@warmup{%
188 \let\bicaption\caption@frozen@bicaption}}%
189 \fi}

```

`\bicaption@listof` **Make commands like `\listoffigure2s` work. (Is this a good idea or not!?)**

```

190 \newcommand*\bicaption@declarelist[1]{%
191 \@namedef{listof#1}{\bicaption@listof#1}}
192 \@onlypreamble\bicaption@declarelist
193 \def\bicaption@listof#1 {\@nameuse{listof#1}}
194 \caption@ForEachType{\bicaption@declarelist{#1}}

```