Examples of output from plotting functions

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Some minimal examples showing the output of plots from the examples.

1 autoplot.Ten

The ‘autoplot’ function is a generic S3 method used by ‘ggplot2’.

1.1 Simple examples

data("kidney", package="KMsurv")
t1 <- ten(survfit(Surv(time, delta) ~ type, data=kidney))

## Error in ten(survfit(Surv(time, delta) ~ type, data = kidney)): could not find function "ten"

autoplot(t1)

## Error in autoplot(t1): could not find function "autoplot"

Now, we increase the line size and use jitter to prevent overlap; we also make the relative size of the table larger.

print(autoplot(t1, type="fill", survLineSize=2, jitter="all"), tabHeight=0.35)

## Error in autoplot(t1, type = "fill", survLineSize = 2, jitter = "all"): could not find function "autoplot"

A more customized example follows. Note that we return only the element marked ‘plot’ from the result (which is a list with two elements).

autoplot(t1, timeTicks="months",
type="CI", jitter="all",
legLabs=c("surgical", "percutaneous"),
title="Time to infection following catheter placement by type of catheter, for dialysis patients",
titleSize=10, censSize=2)$plot
Here we assign the result in order to modify the y axis.

```r
str(a1 <- autoplot(t1), max.level=1)
## Error in autoplot(t1): could not find function "autoplot"

## check the output is what we want
a1$plot + ggplot2::scale_y_continuous(limits=c(0.8, 1), name="Survival")
## Error in eval(expr, envir, enclos): object 'a1' not found

## this is one simple way
a1 <- autoplot(t1)

## Error in autoplot(t1): could not find function "autoplot"

suppressMessages(a1$plot <- a1$plot +
  ggplot2::scale_y_continuous(limits=c(0.8, 1), name="Survival")
)
## Error in withCallingHandlers(expr, message = function(c) if (inherits(c, : object 'a1' not found

a1
## Error in eval(expr, envir, enclos): object 'a1' not found

## or we can assign them as follows
a1 <- autoplot(t1)
## Error in autoplot(t1): could not find function "autoplot"

ls(a1$plot$scales$scales[[3]]$super$super)
## Warning in ls(a1$plot$scales$scales[[3]]$super$super):  'a1$plot$scales$scales[[3]]$super$super' converted to character string

## Error in as.environment(pos): no item called "a1$plot$scales$scales[[3]]$super$super" on the search list

is.environment(a1$plot$scales$scales[[3]]$super$super$limits)
## Error in eval(expr, envir, enclos): object 'a1' not found

is.null(a1$plot$scales$scales[[3]]$super$super$limits)
## Error in eval(expr, envir, enclos): object 'a1' not found

a1$plot$scales$scales[[3]]$super$super$limits <- c(0.8, 1)
## Error in a1$plot$scales$scales[[3]]$super$super$limits <- c(0.8, 1): object 'a1' not found

a1
## Error in eval(expr, envir, enclos): object 'a1' not found
```
1.2 Modifying the legend

Reordering the legend labels (example with 3 groups).

```r
data("bmt", package="KMsurv")
b1 <- ten(Surv(time=t2, event=d3) ~ group, data=bmt)

## Error in ten(Surv(time = t2, event = d3) ~ group, data = bmt): could not find function "ten"

autoplot(b1)

## Error in autoplot(b1): could not find function "autoplot"

tenplot(b1, legOrd=c(1, 3, 2))

## Error in autoplot(b1, legOrd = c(1, 3, 2)): could not find function "autoplot"

Here we also re-label the legend.

tenplot(b1, legOrd=c(3, 2, 1), legLabs=letters[1:3])

## Error in autoplot(b1, legOrd = c(3, 2, 1), legLabs = letters[1:3]): could not find function "autoplot"

Now, let’s put the legend inside the plot itself.

a2 <- autoplot(b1)

## Error in autoplot(b1): could not find function "autoplot"

## ensure this is what we want
a2$plot + ggplot2::theme(legend.position=c(0.75, 0.75))

## Error in eval(expr, envir, enclos): object 'a2' not found
a2plot <- a2$plot + ggplot2::theme(legend.position=c(0.75, 0.75))

## Error in eval(expr, envir, enclos): object 'a2' not found
a2

## Error in eval(expr, envir, enclos): object 'a2' not found
```

1.3 One group only

A number of options for plotting a line with just one group.
t2 <- ten(survfit(Surv(time=time, event=delta) ~ 1, data=kidney))

## Error in ten(survfit(Surv(time = time, event = delta) ~ 1, data = kidney)): could not find function "ten"

autoplot(t2, legLabs="")$plot

## Error in autoplot(t2, legLabs = ""): could not find function "autoplot"

autoplot(t2, legend=FALSE)

## Error in autoplot(t2, legend = FALSE): could not find function "autoplot"

### 1.4 Using confidence bands

Here we change the default pointwise confidence intervals to bands.

```
data("rectum.dat", package="km.ci")
t3 <- ten(survfit(Surv(time, status) ~ 1, data=rectum.dat))

## Error in ten(survfit(Surv(time, status) ~ 1, data = rectum.dat)): could not find function "ten"

## change confidence intervals to confidence bands

ci(t3, how="nair", tL=1, tU=40)

## Error in ci(t3, how = "nair", tL = 1, tU = 40): could not find function "ci"

autoplot(t3, type="fill", alpha=0.6, legend=FALSE)

## Error in autoplot(t3, type = "fill", alpha = 0.6, legend = FALSE): could not find function "autoplot"
```

### 1.5 More customization

If the output of `autoplot.ten` is assigned, it can be modified in place. The list elements are ggplot2 objects which can be altered as usual.

```
## manually changing the output

# manually changing the output

t4 <- ten(survfit(Surv(time, delta) ~ type, data=kidney))

## Error in ten(survfit(Surv(time, delta) ~ type, data = kidney)): could not find function "ten"

(a4 <- autoplot(t4, type="CI", alpha=0.8, survLineSize=2)$plot)

## Error in autoplot(t4, type = "CI", alpha = 0.8, survLineSize = 2): could not find function "autoplot"
```
## change default colors

```r
suppressMessages(a4 + list(
    ggplot2::scale_color_manual(values=c("red", "blue")),
    ggplot2::scale_fill_manual(values=c("red", "blue")))
)
```

## Error in withCallingHandlers(expr, message = function(c) if (inherits(c, : object 'a4' not found

## change limits of y-axis

```r
suppressMessages(a4 + ggplot2::scale_y_continuous(limits=c(0, 1)))
```

## Error in withCallingHandlers(expr, message = function(c) if (inherits(c, : object 'a4' not found

2  autoplot.StratTen

An example of the plots from a stratified model:

```r
data("pbc", package="survival")
t1 <- ten(Surv(time, status==2) ~ trt + strata(edema), data=pbc, abbNames=FALSE)
```

## Error in ten(Surv(time, status == 2) ~ trt + strata(edema), data = pbc, : could not find function "ten"

```r
suppressWarnings(str(a1 <- autoplot(t1), max.level=1))
```

## Error in autoplot(t1): could not find function "autoplot"

```r
a1
```

## Error in eval(expr, envir, enclos): object 'a1' not found

3  profLik

Plotting profile likelihood.

```r
data("pbc", package="survival")
c1 <- survival::coxph(formula = Surv(time, status == 2) ~ age + edema + log(bili) +
                      log(albumin) + log(protime), data = pbc)
```

## Error in Surv(time, status == 2): could not find function "Surv"

```r
profLik(c1, col="red", devNew=FALSE)
```

## Error in profLik(c1, col = "red", devNew = FALSE): could not find function "profLik"