Programmieren mit R für Einsteiger

4. Grafiken / 4.3 Balkendiagramme

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Zwei eingebaute Datensätze

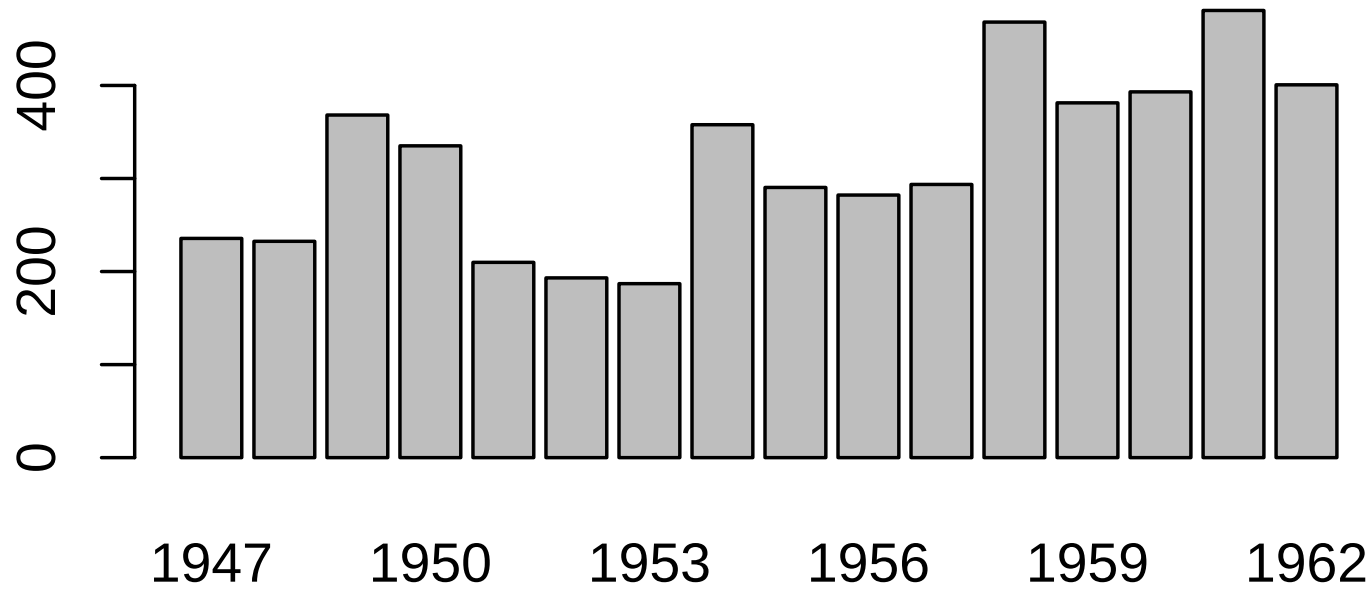
```
str(longley)
## 'data.frame': 16 obs. of  7 variables:
##  $ GNP.deflator: num  83 88.5 88.2 89.5 96.2 98.1 99 100 ...
##  $ GNP         : num  234 259 258 285 ...
##  $ Unemployed  : num  236 232 368 335 ...
##  $ Armed.Forces: num  159 146 162 165 ...
##  $ Population  : num  108 109 110 111 ...
##  $ Year        : int  1947 1948 1949 1950 1951 1952 1953 1954 ...
##  $ Employed    : num  60.3 61.1 60.2 61.2 ...
```

```
VADeaths
##       Rural Male Rural Female Urban Male Urban Female
## 50-54       11.7          8.7       15.4          8.4
## 55-59       18.1         11.7       24.3         13.6
## 60-64       26.9         20.3       37.0         19.3
## 65-69       41.0         30.9       54.6         35.1
## 70-74       66.0         54.3       71.1         50.0
```

```
data("longley") # lädt das ins globalenv()
# Rstudio str + View danach erklickbar
```

Säulendiagramme

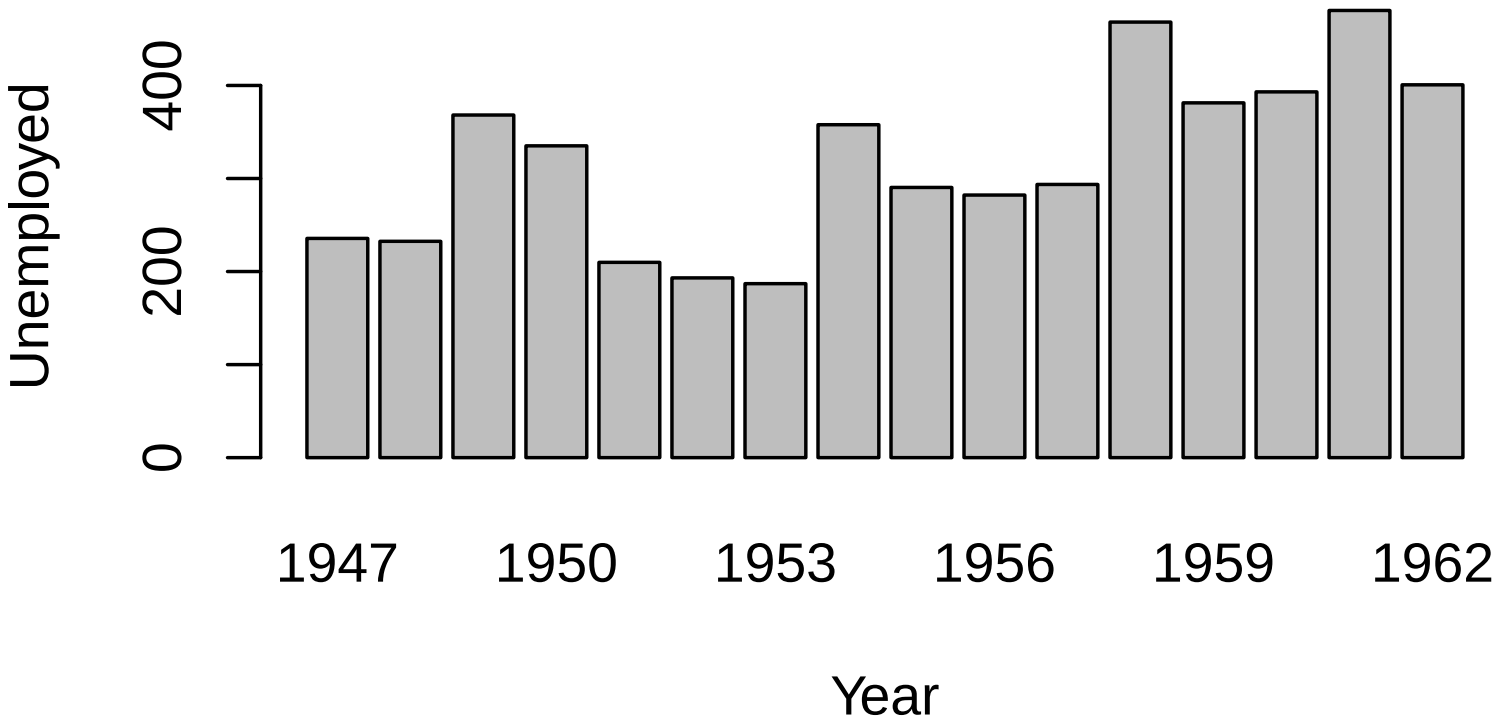
```
barplot(longley$Unemployed, names.arg=longley$Year)
```



Formula Interface: weniger tippen. ∼: lesen als 'abhängig von'

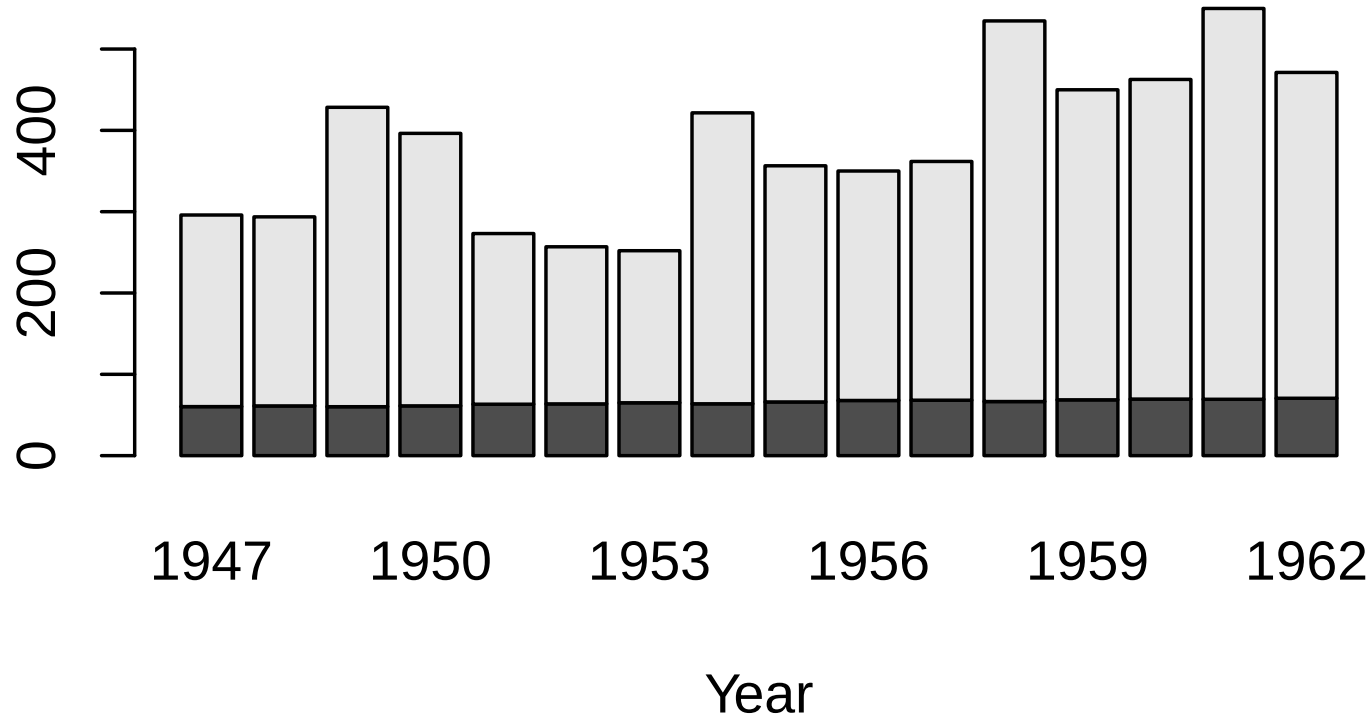
```
barplot(Unemployed ~ Year, data=longley)
```

AltGr + +, Option + N (+ Space)



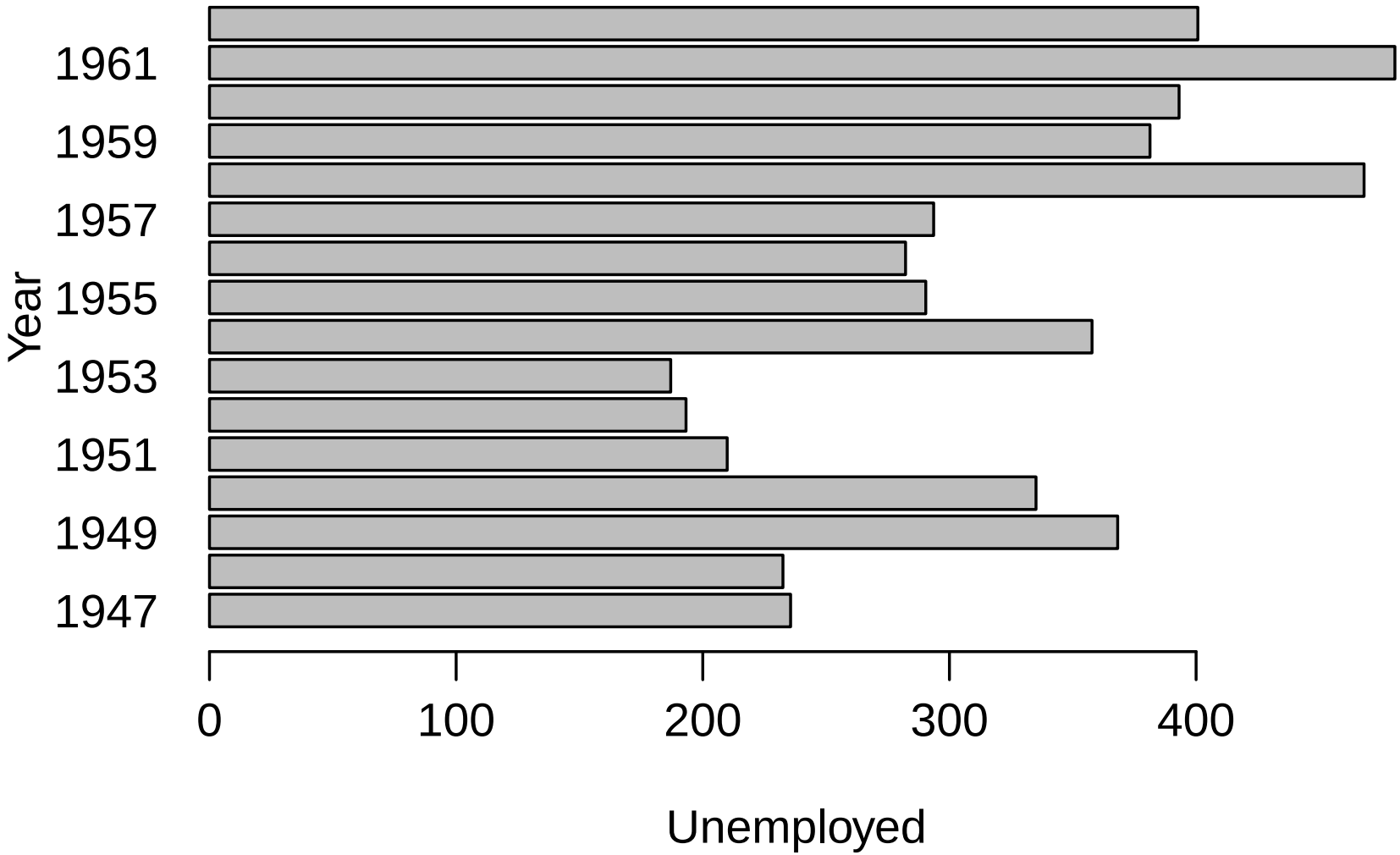
Formula Interface: flexibel erweiterbar

```
barplot(cbind(Employed, Unemployed) ~ Year, data=longley)
```



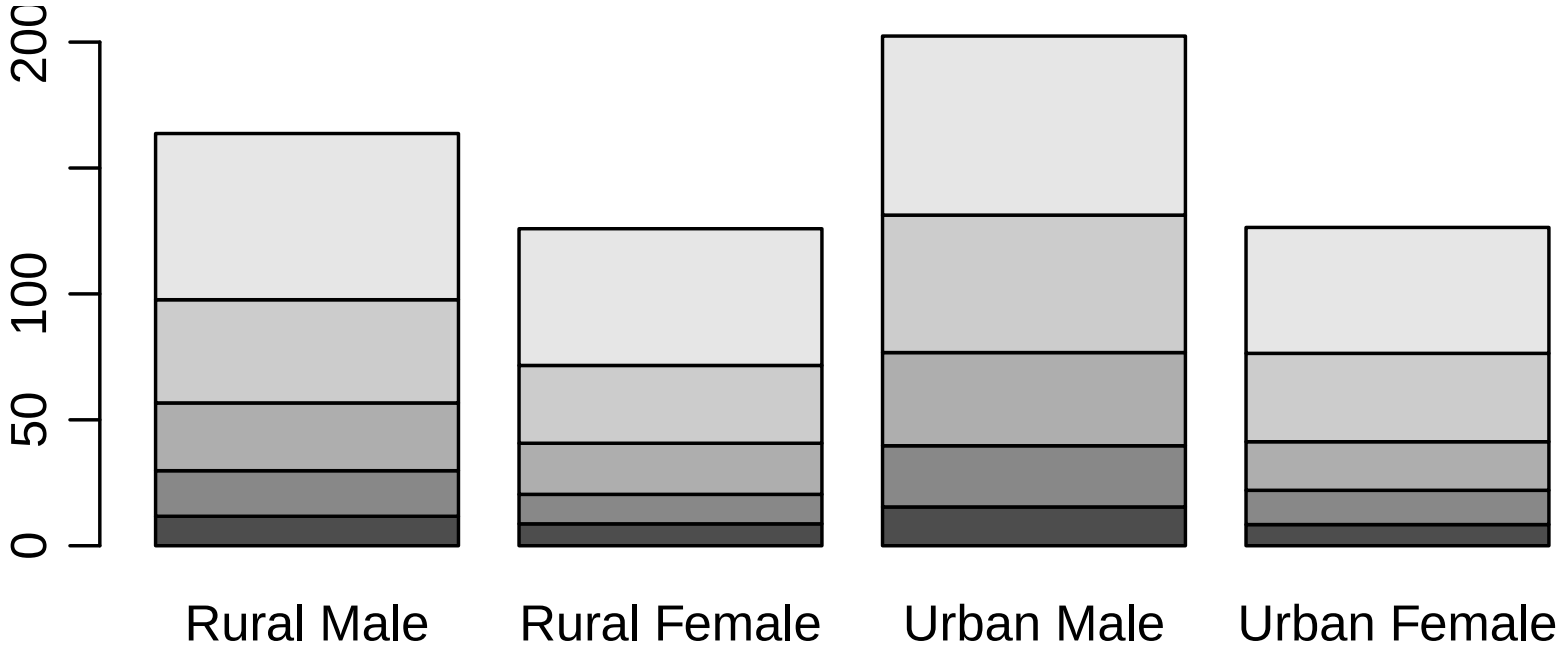
Balkendiagramm: horizontales Säulendiagramm

```
barplot(Unemployed~Year, data=longley, horiz=TRUE, las=1)
```



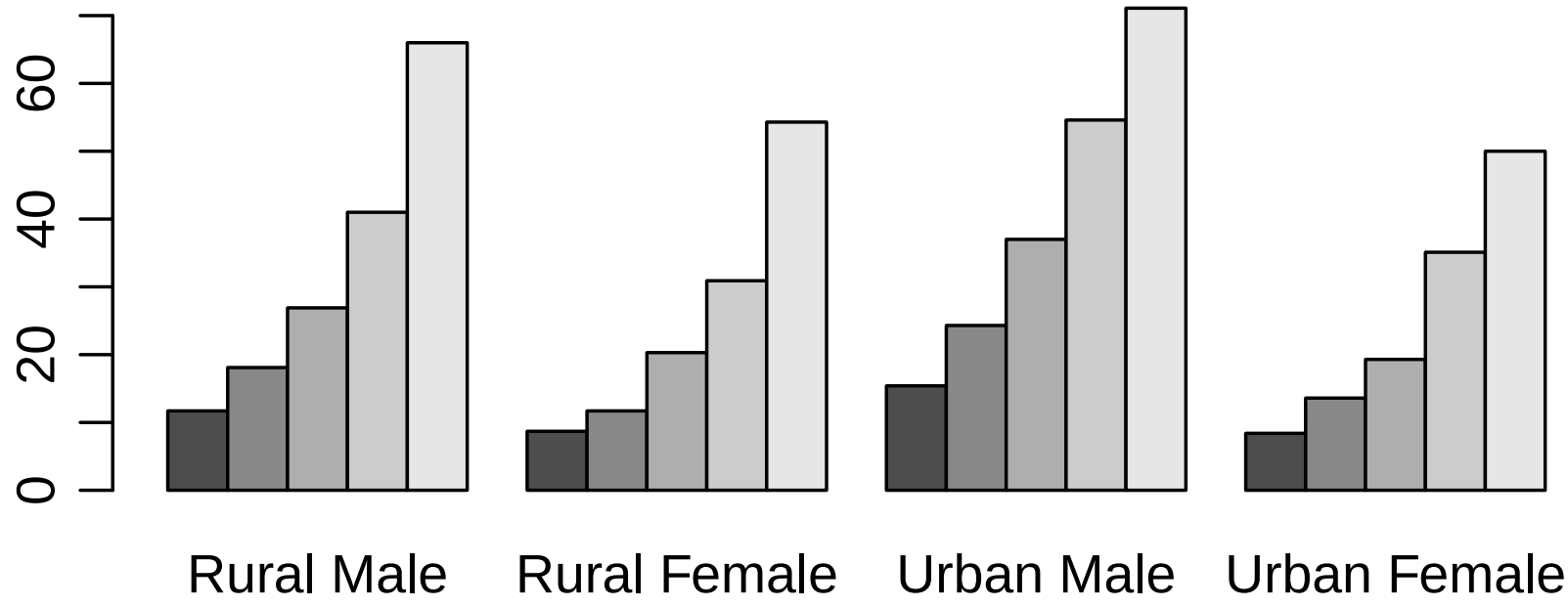
Balkendiagramm für eine Matrix

```
barplot(VADeaths)
```



Balkendiagramm: Gruppiert statt gestapelt

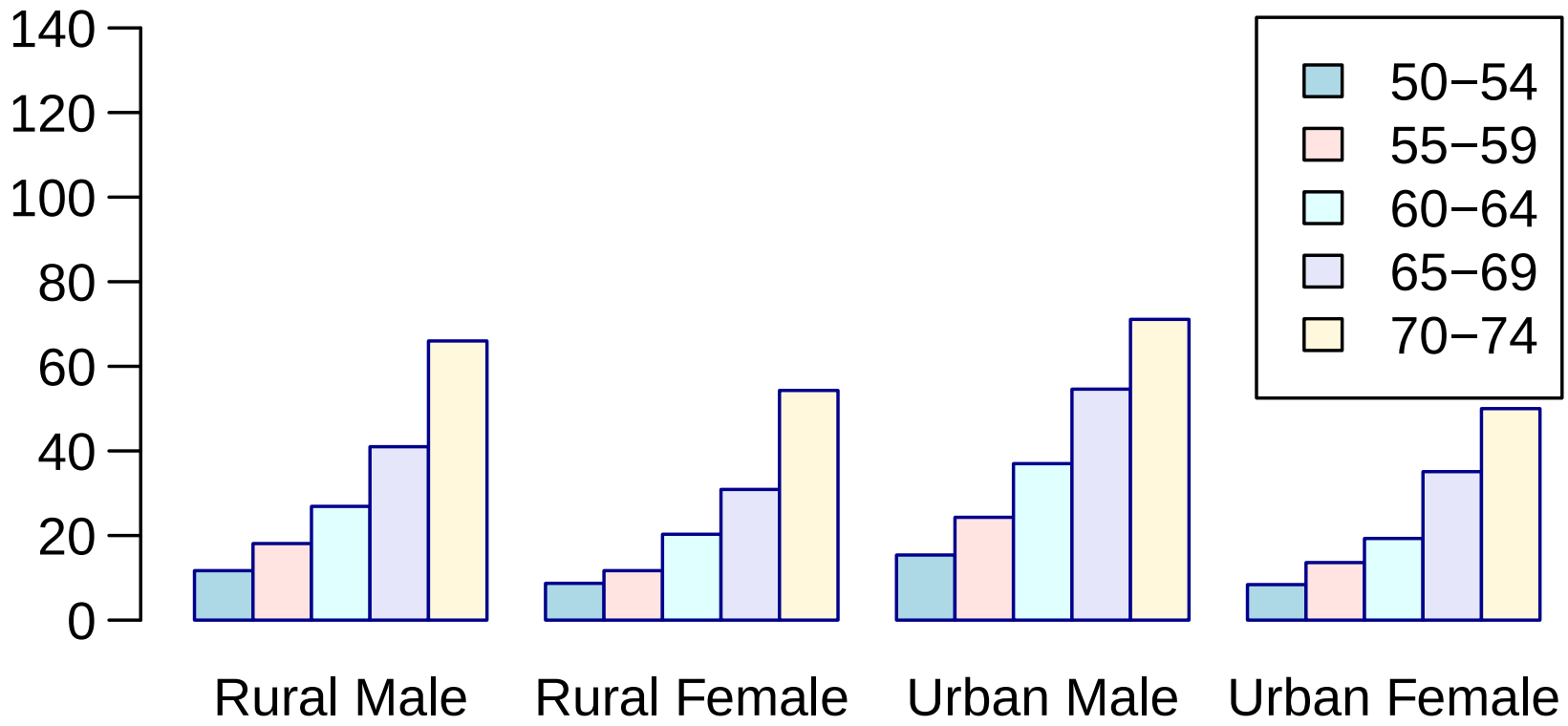
```
midpoints <- barplot(VADeaths, beside=TRUE)
```




```
midpoints
##      [,1] [,2] [,3] [,4]
## [1,]  1.5  7.5 13.5 19.5
## [2,]  2.5  8.5 14.5 20.5
## [3,]  3.5  9.5 15.5 21.5
## [4,]  4.5 10.5 16.5 22.5
## [5,]  5.5 11.5 17.5 23.5
```

Balkendiagramm: Legende

```
barplot(VADeaths, beside=TRUE, las=1,
        col=c("lightblue","mistyrose","lightcyan",
              "lavender","cornsilk"),
        legend=TRUE, ylim=c(0, 150), border="darkblue")
```



Zusammenfassung

Säulen- und Bakendiagramme:

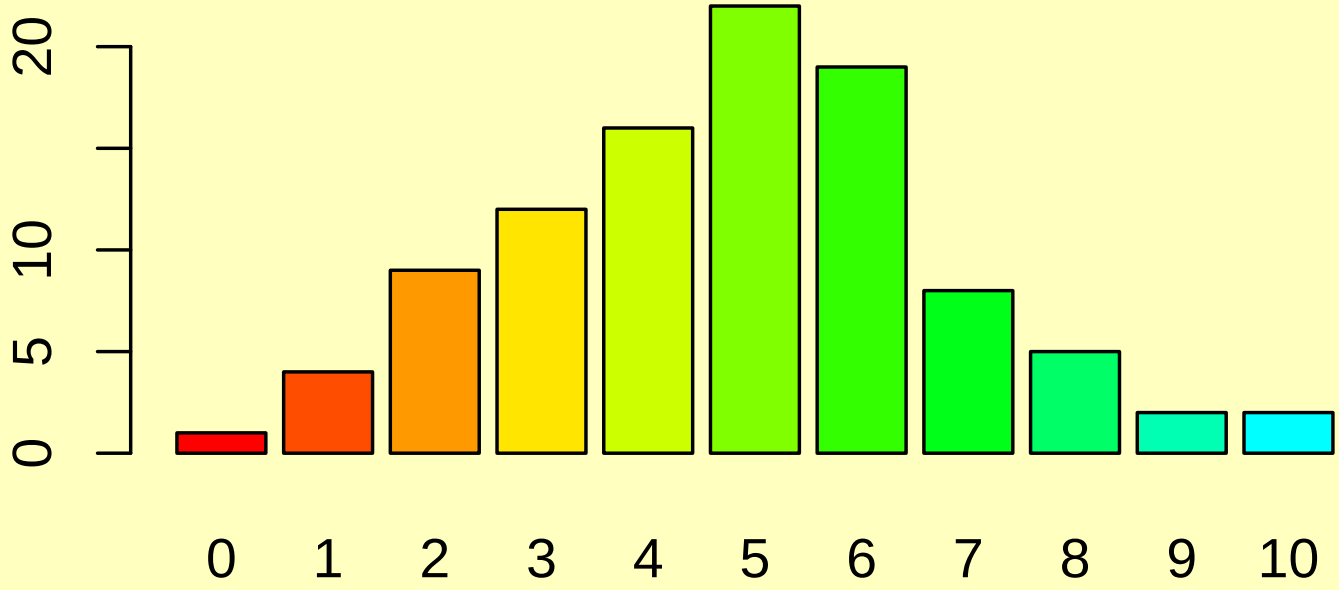
- `barplot`
- Formula interface: `y~x`

`barplot` Argumente:

- `height`
- `horiz`
- `las, col, ylim`
- `beside`
- `legend`

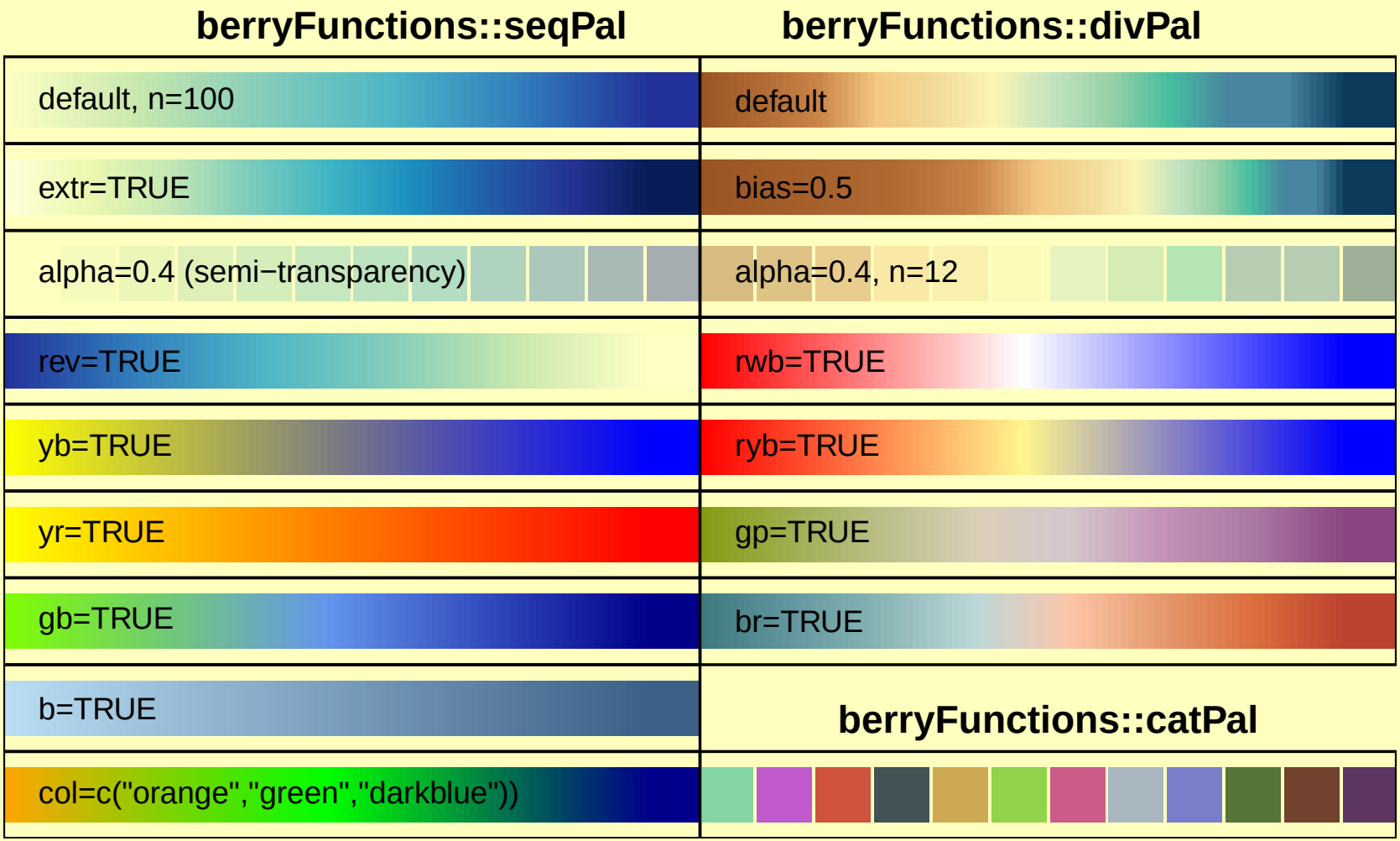
Eingebaute Farbpaletten

```
zahlen <- table(stats::rpois(100, lambda=5))
bp <- barplot(zahlen, col=rainbow(20))
```



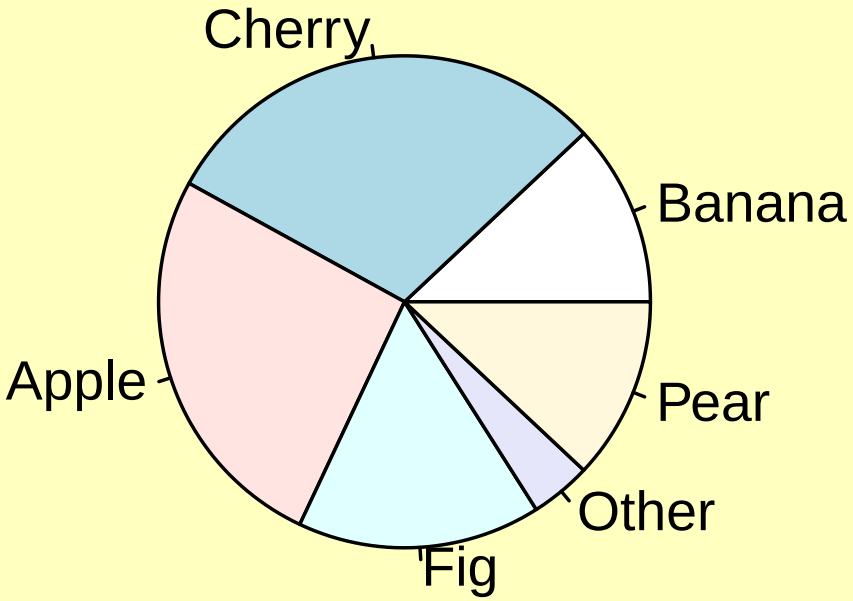
bessere Farbpaletten

```
berryFunctions::showPal()
```



Tortendiagramme nicht verwenden

```
vec <- c(12, 30, 26, 16, 4, 12)
names(vec) <- c("Banana","Cherry","Apple","Fig","Other","Pear")
pie(vec)
```



Wenn Diagrammbetrachter Proportionen vergleichen können sollen, wähle lieber Balkendiagramme, siehe z.B. death to pie charts oder save the pies for dessert.