ggplot2 优雅的给文本添加背景

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目录

本节来介绍如何使用 **ggplot2** 来给图像文本添加阴影，下面通过两个小栗子来进行展示

1 安装并加载 R 包

```
package.list=c("tidyverse","grid","GGally","aplot")

for (package in package.list) {
  if (!require(package,character.only=T, quietly=T)) {
    install.packages(package)
    library(package, character.only=T)
  }
}
```

2 导入数据

```
load("data.Rdata")
```

3 修改默认主题

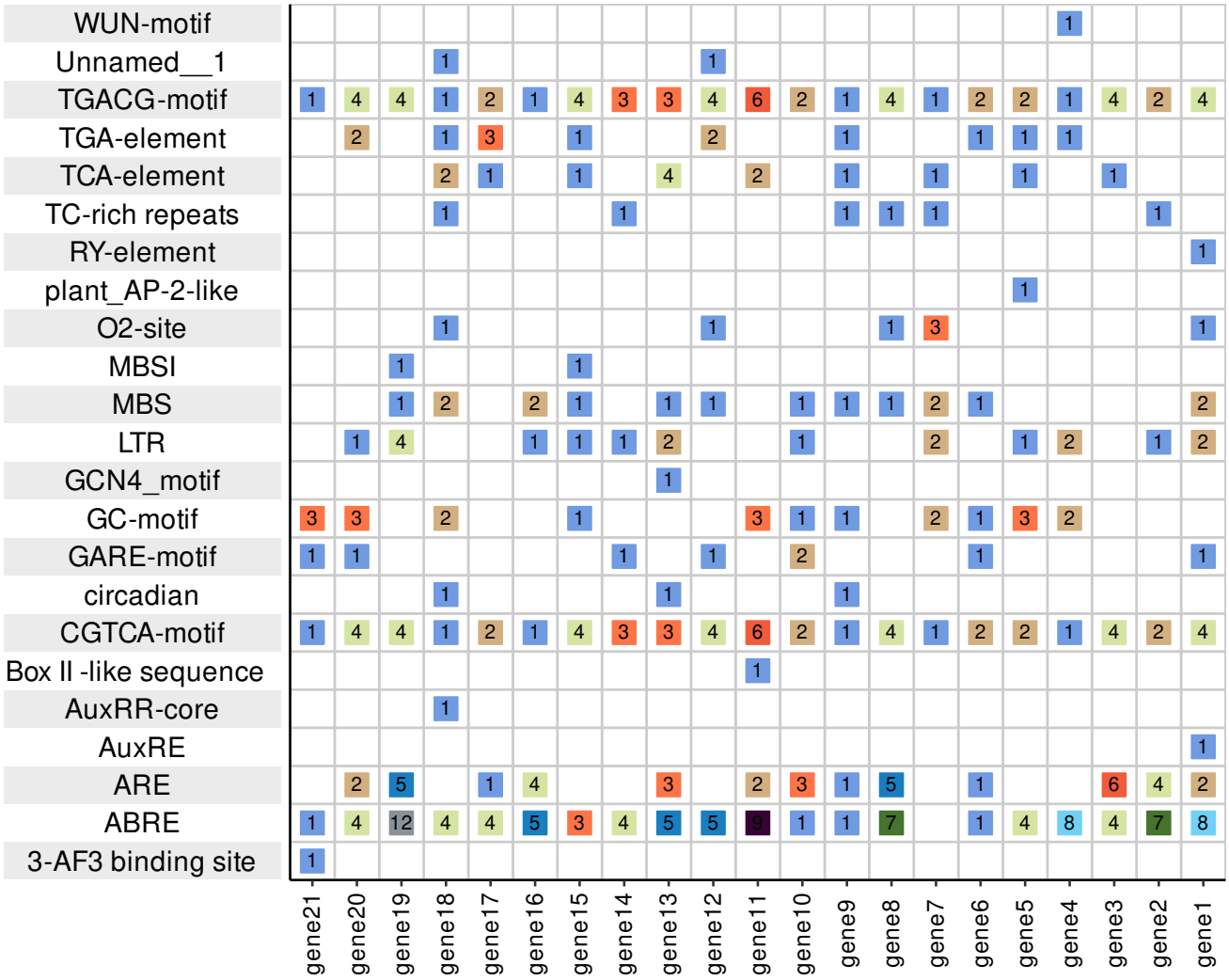
```
element_custom <- function(...) {
  structure(list(...), class = c("element_custom", "element_blank"))
}

element_grob.element_custom <- function(element, label, x,y, ...)  {
  tg <- textGrob(label, y=y,gp=gpar(col=element$colour))
  padding <- unit(0.1,"line")
  rg <- rectGrob(y=y,width=grobWidth(tg)+padding,height=unit(1,"line")+padding,
                 gp=gpar(fill = element$fill, col=NA, alpha=0.1))
  gTree(children=gList(rg, tg),width=grobWidth(tg) + padding, cl="custom_axis")
}

widthDetails.custom_axis <- function(x) x$width + unit(1,"mm")
```

4 案例一

```
df %>% ggplot(.,aes(X1,name,color=value,fill=value))+
  geom_tile(color="grey80",fill="white",size=0.5)+
  geom_point(pch=22,size=5)+
  geom_text(aes(label=signif),size=3,color="black")+
  labs(x = NULL,y = NULL,color=NULL)+
  scale_color_manual(values=color)+
  scale_fill_manual(values=color)+
  scale_x_discrete(expand=c(0,0)) +
  scale_y_discrete(expand=c(0,0),position="left")+
  theme_classic()+
  theme(axis.text.y = element_custom(colour="black",fill=c("grey20","white")),
        axis.ticks.y=element_blank(),
        axis.text.x=element_text(angle = 90,color="black",size=10,vjust=0.5),
        legend.position = "non")
```



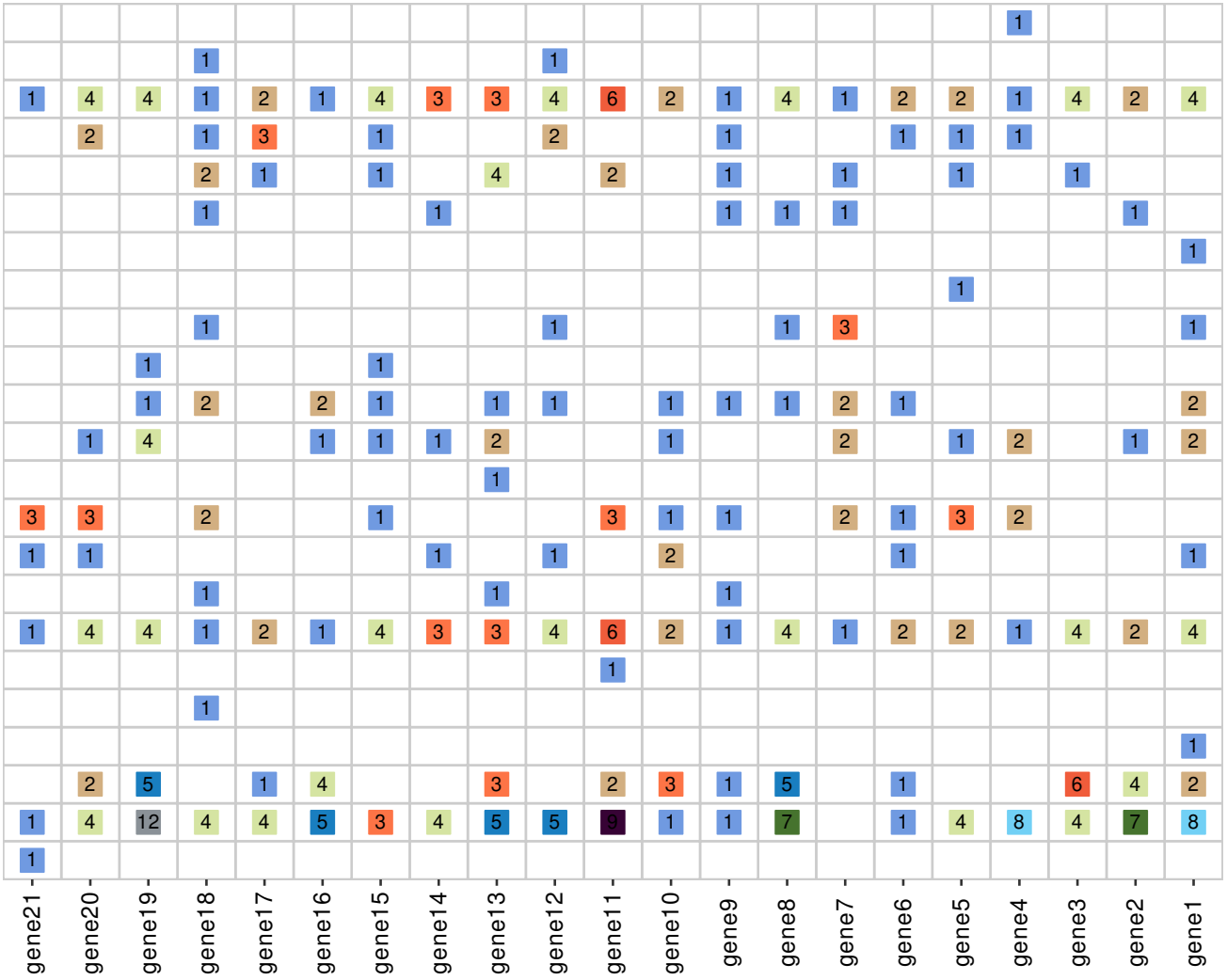
可以看到过程及其繁琐也不便于理解，而且文本大小也增大了显的不兼容，那么改如何解决；答曰**拼图**, 绘制一张主图, 在绘制阴影文本图,**aplot** 进行拼接完美解决问题，下面来看具体操作

5 案例二

- 主图绘制

```
p1 <- df %>% ggplot(.,aes(X1,name,color=value,fill=value))+
  geom_tile(color="grey80",fill="white",size=0.5)+
  geom_point(pch=22,size=5)+
  geom_text(aes(label=signif),size=3,color="black")+
  labs(x = NULL,y = NULL,color=NULL)+
  scale_color_manual(values=color)+
  scale_fill_manual(values=color)+
  scale_x_discrete(expand=c(0,0)) +
  scale_y_discrete(expand=c(0,0),position="left")+
```

```
  theme(axis.text.y = element_blank(),
        axis.ticks.y=element_blank(),
        axis.text.x=element_text(angle = 90,color="black",size=10,vjust=0.5),
        legend.position = "non")
```



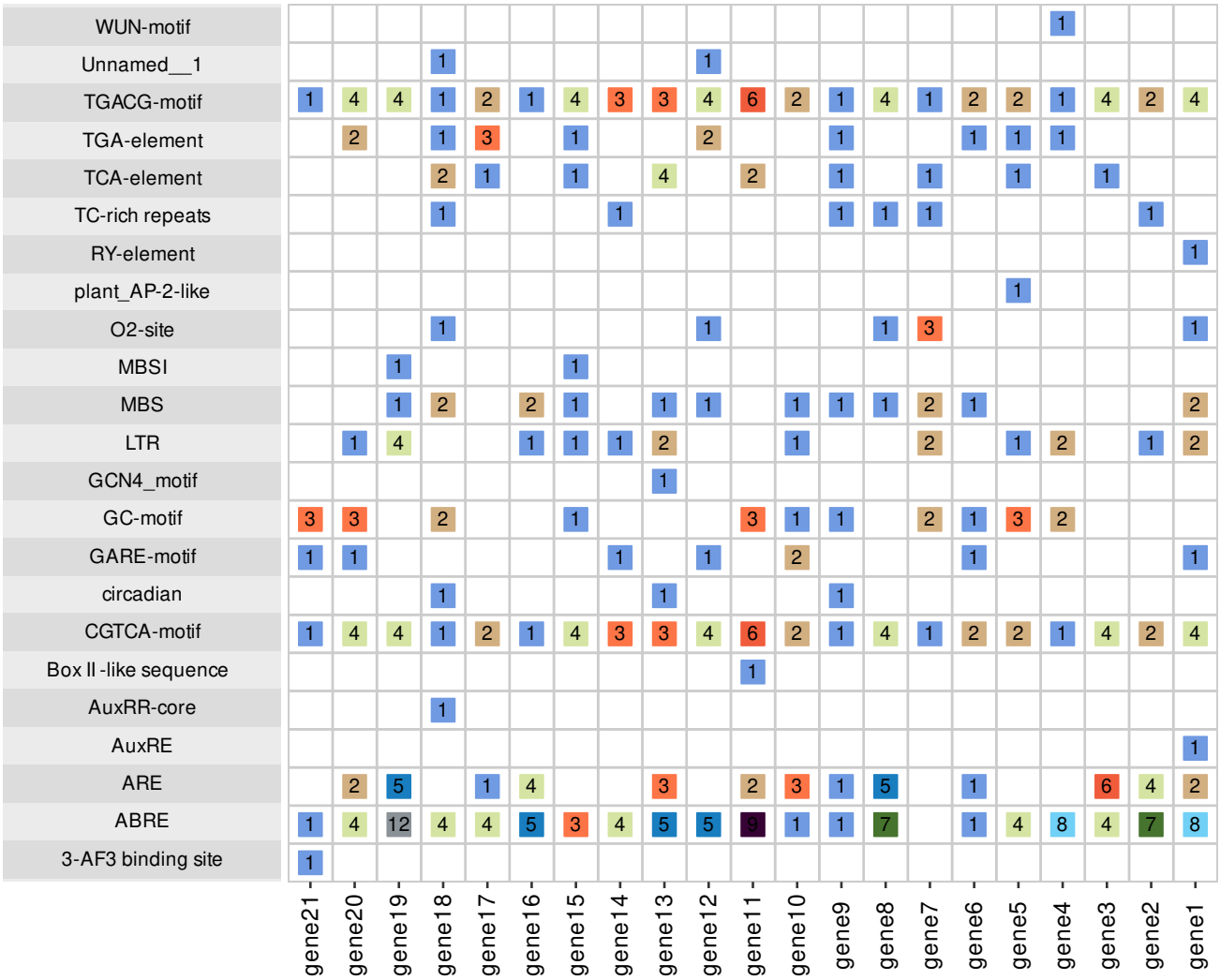

```
p2 <- df %>% select(name) %>% distinct() %>% mutate(group="A") %>%
  ggplot(aes(group,name))+
  geom_text(aes(group,name,label=name),size=3,color="black") +
  geom_stripped_rows()+
  theme(panel.grid.major = element_blank(),
        axis.text=element_blank(),
        axis.ticks = element_blank(),
        axis.title = element_blank())
```

WUN-motif
Unnamed__1
TGACG-motif
TGA-element
TCA-element
TC-rich repeats
RY-element
plant_AP-2-like
O2-site
MBSI
MBS
LTR
GCN4_motif
GC-motif
GARE-motif
circadian
CGTCA-motif
Box II -like sequence
AuxRR-core
AuxRE
ARE
ABRE
3-AF3 binding site

6 拼图

在此使用 Y 叔开发的 **aplot** 进行拼图

```
p1 %>% insert_left(p2,width = 0.3)
```


WUN-motif
Unnamed__1
TGACG-motif
TGA-element
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ABRE
3-AF3 binding site
gene21
gene20
gene19
gene18
gene17
gene16
gene15
gene14
gene13
gene12
gene11
gene10
gene9
gene8
gene7
gene6
gene5
gene4
gene3
gene2
gene1