Similarity Judgment Task Graphs

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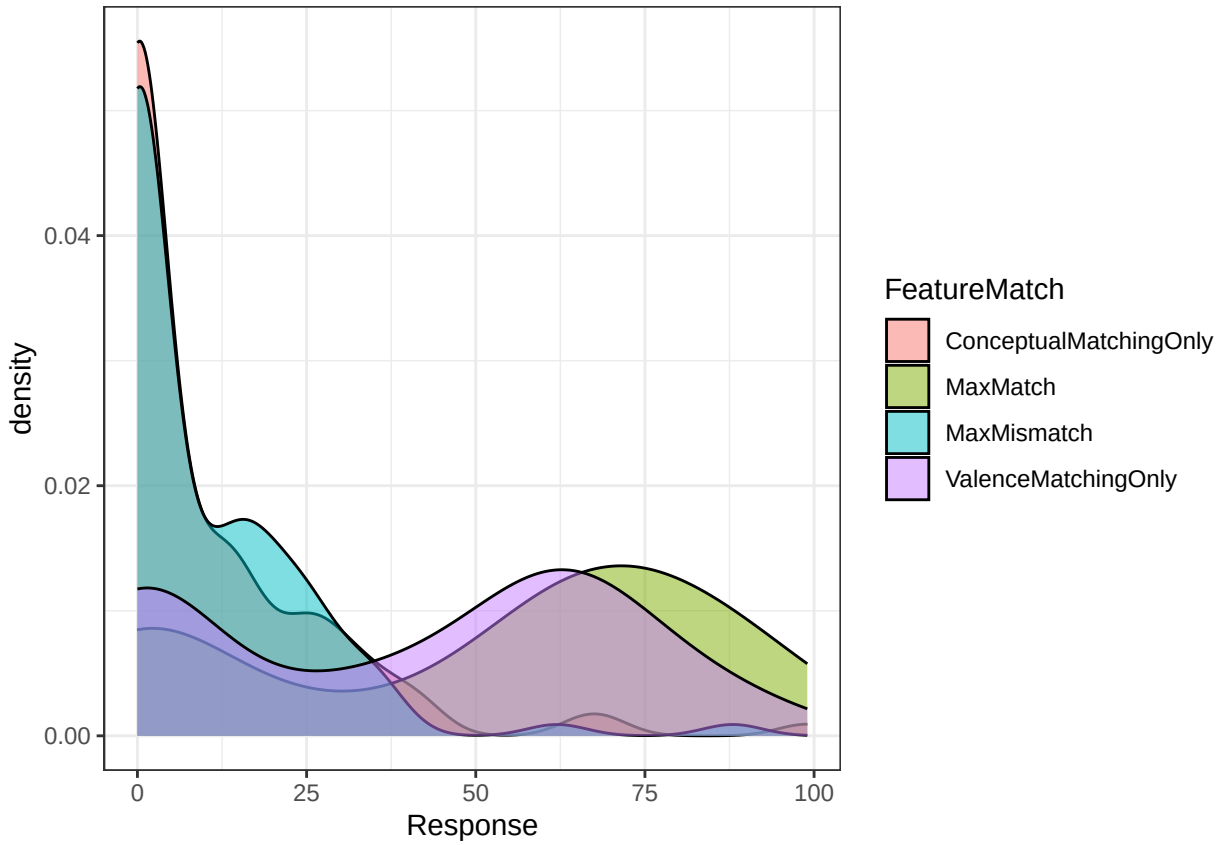
Summary Stats

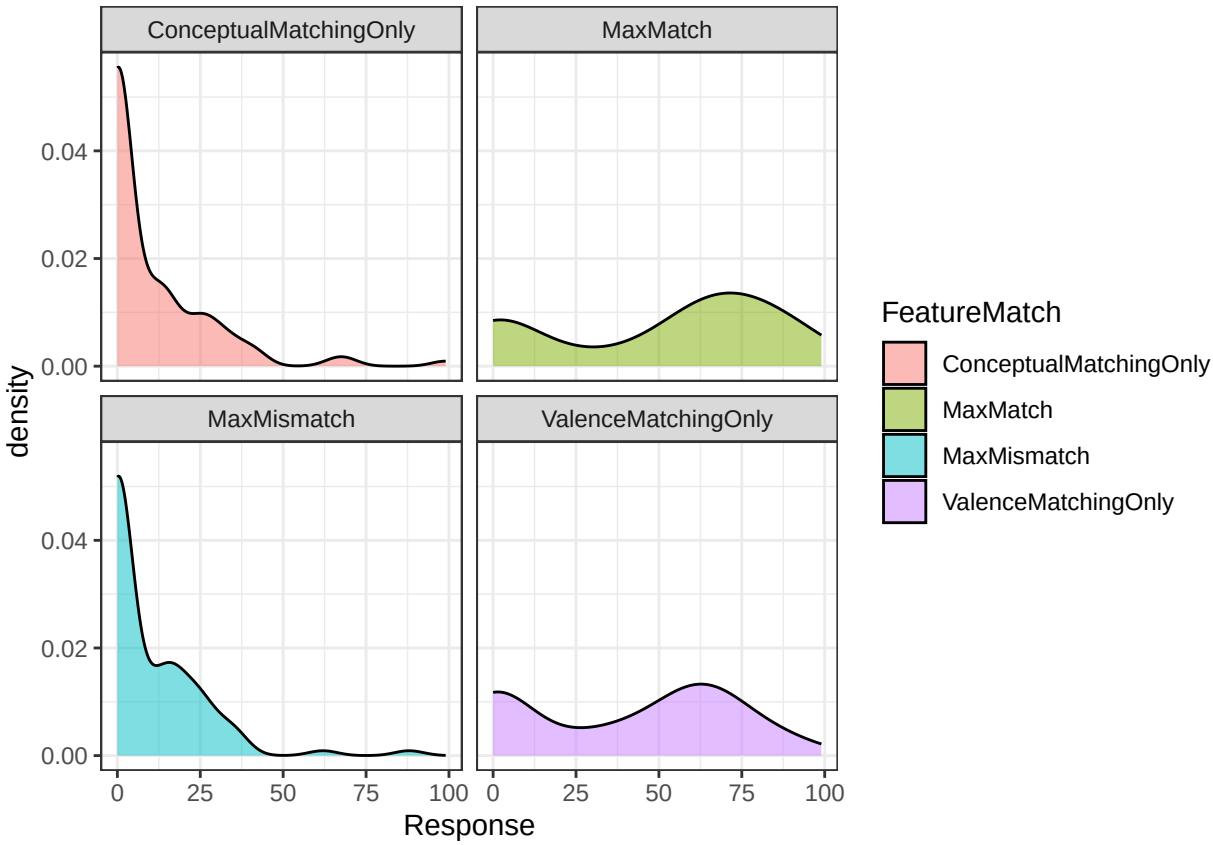
```
agr <- d %>%
  group_by(FeatureMatch) %>%
  summarize(MeanPropSimilar = mean(Response),
            SD = sd(Response))
print(agr)
```

```
## # A tibble: 5 x 3
##   FeatureMatch           MeanPropSimilar    SD
##   <chr>                            <dbl> <dbl>
## 1 ConceptualMatchingOnly           10.3   16.9
## 2 MaxMatch                         50.9   34.0
## 3 MaxMismatch                       9.71  14.5
## 4 SelfPair                         98.8    1.7
## 5 ValenceMatchingOnly              39.8   31.4
```

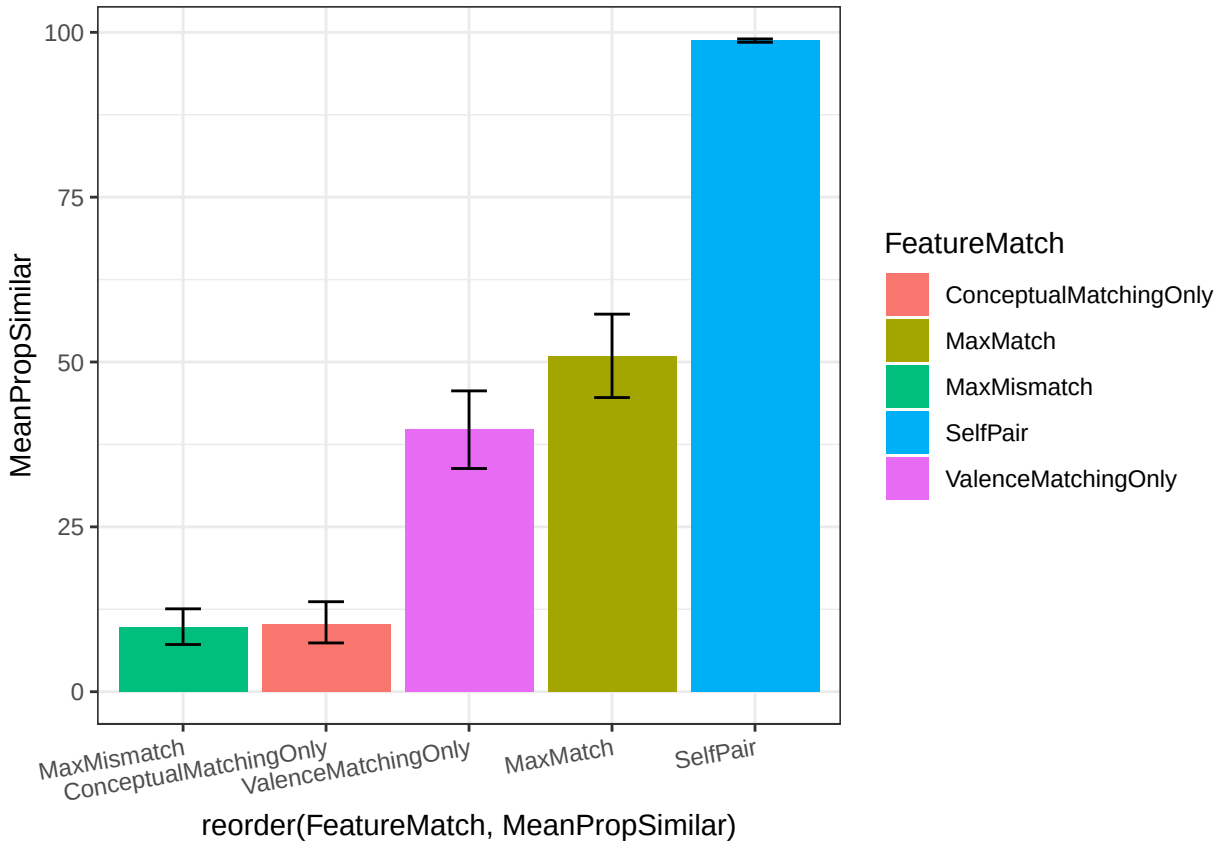
```
agr <- d %>%
  filter(!FeatureMatch == "SelfPair")

ggplot(agr, aes(Response,fill=FeatureMatch)) +
  geom_density(alpha = .5)
```




```
  # facet_wrap(~FeatureMatch)

ggplot(agr, aes(Response,fill=FeatureMatch)) +
  geom_density(alpha = .5) +
  facet_wrap(~FeatureMatch)
```

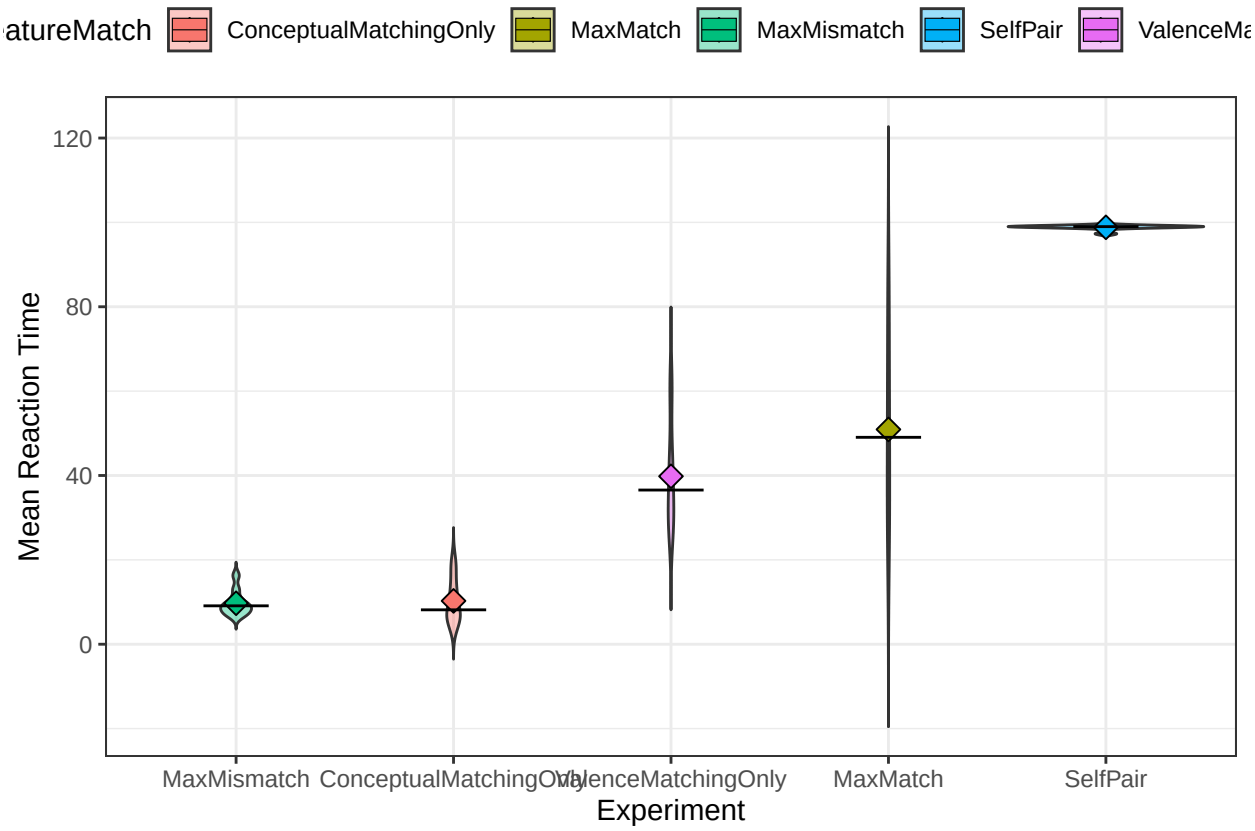



```
agr <- d %>%
  group_by(FeatureMatch) %>%
  reframe(MeanPropSimilar = mean(Response),
          CILow = ci.low(Response),
          CIHigh = ci.high(Response)) %>%
  mutate(YMin = MeanPropSimilar - CILow,
         YMax = MeanPropSimilar + CIHigh)
# View(agr)

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=reorder(FeatureMatch,MeanPropSimilar),y=MeanPropSimilar, fill=FeatureMatch)) +
  geom_bar(position=dodge,stat="identity") +
  geom_errorbar(aes(ymin=YMin,ymax=YMax),width=.25,position=position_dodge(0.9)) +
  theme(axis.text.x = element_text(angle = 10, hjust = 1))
```

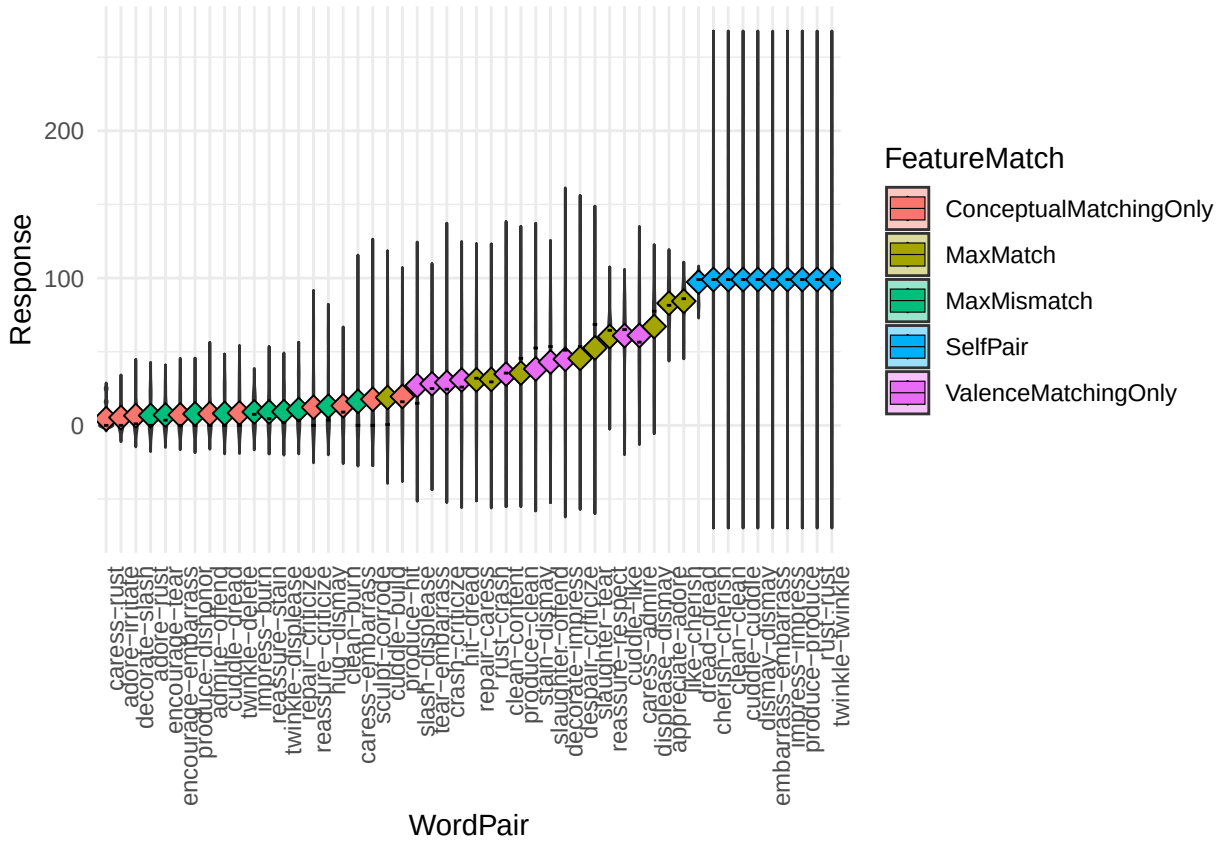



```
agr <- d %>%
  group_by(WordPair,FeatureMatch) %>%
  reframe(MeanPropSimilar = mean(Response),
          CILow = ci.low(Response),
          CIHigh = ci.high(Response)) %>%
  mutate(YMin = MeanPropSimilar - CILow,
         YMax = MeanPropSimilar + CIHigh)
# Set dodge width to match violin grouping
dodge_width <- 0.9

ggplot(agr, aes(x = reorder(FeatureMatch,MeanPropSimilar), y = MeanPropSimilar, fill = FeatureMatch)) +
  geom_violin(trim = FALSE, alpha = 0.4, position = position_dodge(width = dodge_width)) +

  # Add mean point with matching dodge
  stat_summary(fun = mean,
               geom = "point",
               shape = 23,
               size = 3,
               position = position_dodge(width = dodge_width)) +

  stat_summary(fun = median,
               geom = "crossbar",
               width = 0.3,
               linewidth = 0.2,
               position = position_dodge(width = dodge_width)) +

  labs(y = "Mean Reaction Time", x = "Experiment") +
```

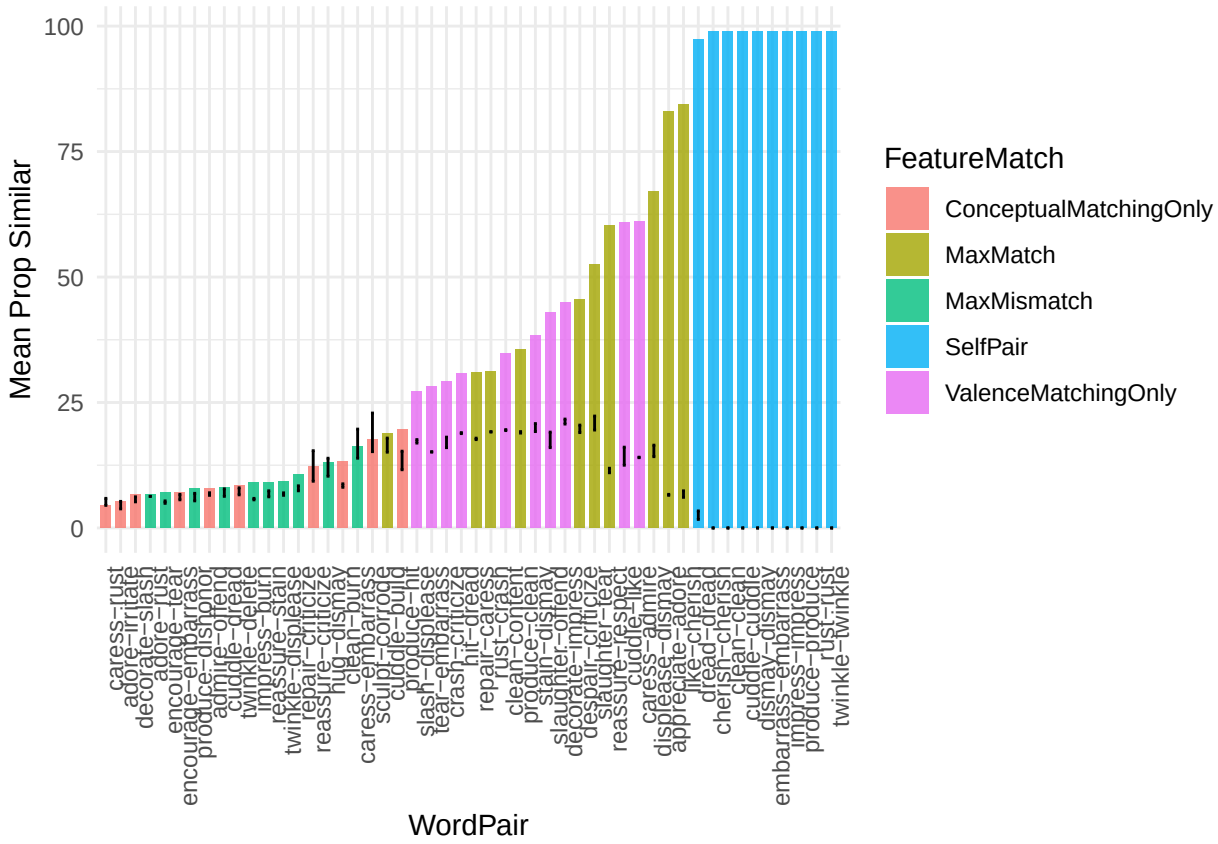
```
  theme(text = element_text(family = "Helvetica")) +
  # theme(axis.text.x = element_text(angle = 10, hjust = 1))
  theme(
    legend.position = "top",
    legend.direction = "horizontal"
    # axis.text.x = element_text(angle = 10, hjust = .5, margin = margin(t = 10)),
    # plot.margin = margin(10, 20, 20, 10)  # top, right, bottom, left (in pts)

  )
```



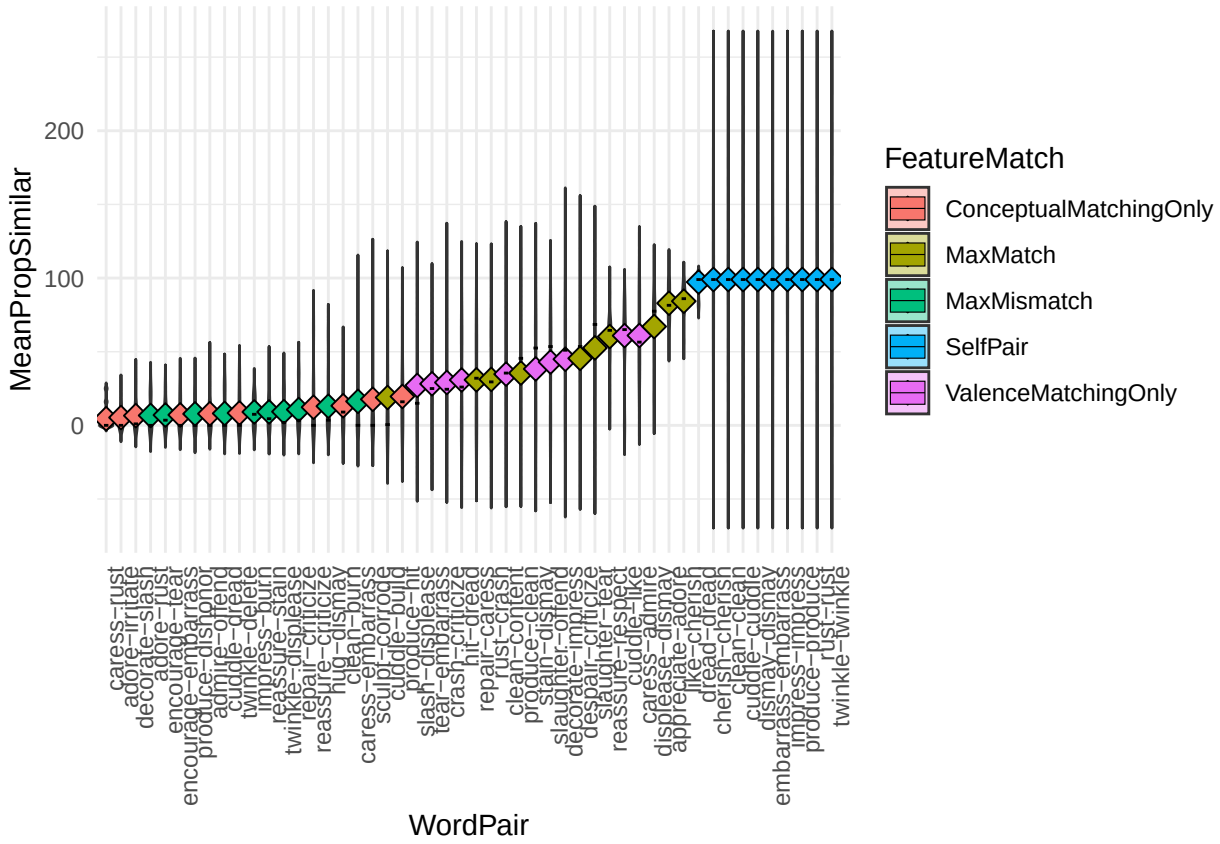

```
ggplot(d, aes(x = reorder(WordPair,Response), y = Response, fill = FeatureMatch)) +
  geom_violin(trim = FALSE, position = position_dodge(width = dodge_width), alpha = 0.4) +
  stat_summary(fun = mean, geom = "point", shape = 23, size = 3,
               position = position_dodge(width = dodge_width)) +
  stat_summary(fun = median, geom = "crossbar", width = 0.3, linewidth = 0.2,
               position = position_dodge(width = dodge_width)) +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
  labs(y = "Response", x = "WordPair")
```




```r
agr <- d %>%
  group_by(WordPair,FeatureMatch) %>%
  reframe(MeanPropSimilar = mean(Response),
          CILow = ci.low(Response),
          CIHigh = ci.high(Response)) %>%
  mutate(YMin = MeanPropSimilar - CILow,
         YMax = MeanPropSimilar + CIHigh)


ggplot(agr, aes(x = reorder(WordPair, MeanPropSimilar), y = MeanPropSimilar, fill = FeatureMatch)) +
  geom_col(position = position_dodge(width = dodge_width), width = 0.7, alpha = 0.8) +
  geom_errorbar(aes(ymin = CILow, ymax = CIHigh),
                width = 0.2, position = position_dodge(width = dodge_width)) +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
  labs(y = "Mean Prop Similar", x = "WordPair")
```

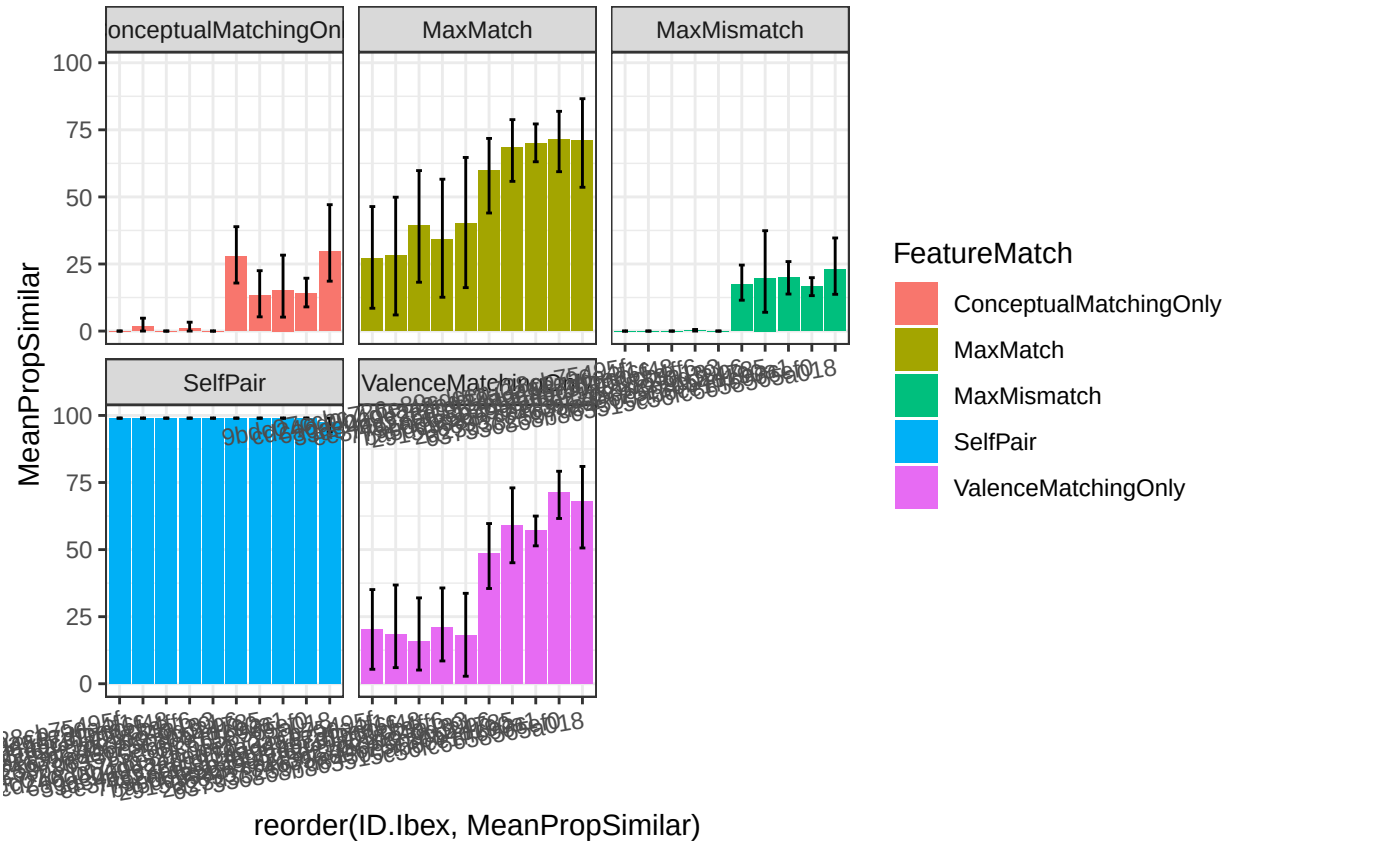



```r
agr <- d %>%
  group_by(ID.Ibex, WordPair, FeatureMatch) %>%
  summarise(
    MeanPropSimilar = mean(Response),
    SE = sd(Response) / sqrt(n()),
    .groups = "drop"
  ) %>%
  mutate(
    CILow = MeanPropSimilar - 1.96 * SE,
    CIHigh = MeanPropSimilar + 1.96 * SE
  )

ggplot(agr, aes(x = reorder(WordPair,MeanPropSimilar), y = MeanPropSimilar, fill = FeatureMatch)) +
  geom_violin(trim = FALSE, position = position_dodge(width = dodge_width), alpha = 0.4) +
  stat_summary(fun = mean, geom = "point", shape = 23, size = 3,
               position = position_dodge(width = dodge_width)) +
  stat_summary(fun = median, geom = "crossbar", width = 0.3, linewidth = 0.2,
               position = position_dodge(width = dodge_width)) +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 90, hjust = 1)) +
  labs(y = "MeanPropSimilar", x = "WordPair")
```



by-participant

```
agr <- d %>%
  group_by(ID.Ibex,FeatureMatch) %>%
  reframe(MeanPropSimilar = mean(Response),
          CILow = ci.low(Response),
          CIHigh = ci.high(Response)) %>%
  mutate(YMin = MeanPropSimilar - CILow,
         YMax = MeanPropSimilar + CIHigh)
# View(agr)

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=reorder(ID.Ibex,MeanPropSimilar),y=MeanPropSimilar, fill=FeatureMatch)) +
  geom_bar(position=dodge,stat="identity") +
  geom_errorbar(aes(ymin=YMin,ymax=YMax),width=.25,position=position_dodge(0.9)) +
  facet_wrap(~FeatureMatch) +
  theme(axis.text.x = element_text(angle = 10, hjust = 1))
```




```
agr <- d %>%
  group_by(ID.Ibex,WordPair,FeatureMatch) %>%
  reframe(MeanPropSimilar = mean(Response),
          CILow = ci.low(Response),
          CIHigh = ci.high(Response)) %>%
  mutate(YMin = MeanPropSimilar - CILow,
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dodge = position_dodge(.9)
ggplot(data=agr, aes(x=reorder(ID.Ibex,MeanPropSimilar),y=MeanPropSimilar, fill=FeatureMatch)) +
  geom_bar(position=dodge,stat="identity") +
  geom_errorbar(aes(ymin=YMin,ymax=YMax),width=.25,position=position_dodge(0.9)) +
  facet_wrap(~WordPair) +
  theme(axis.text.x = element_text(angle = 90, hjust = 1))
```

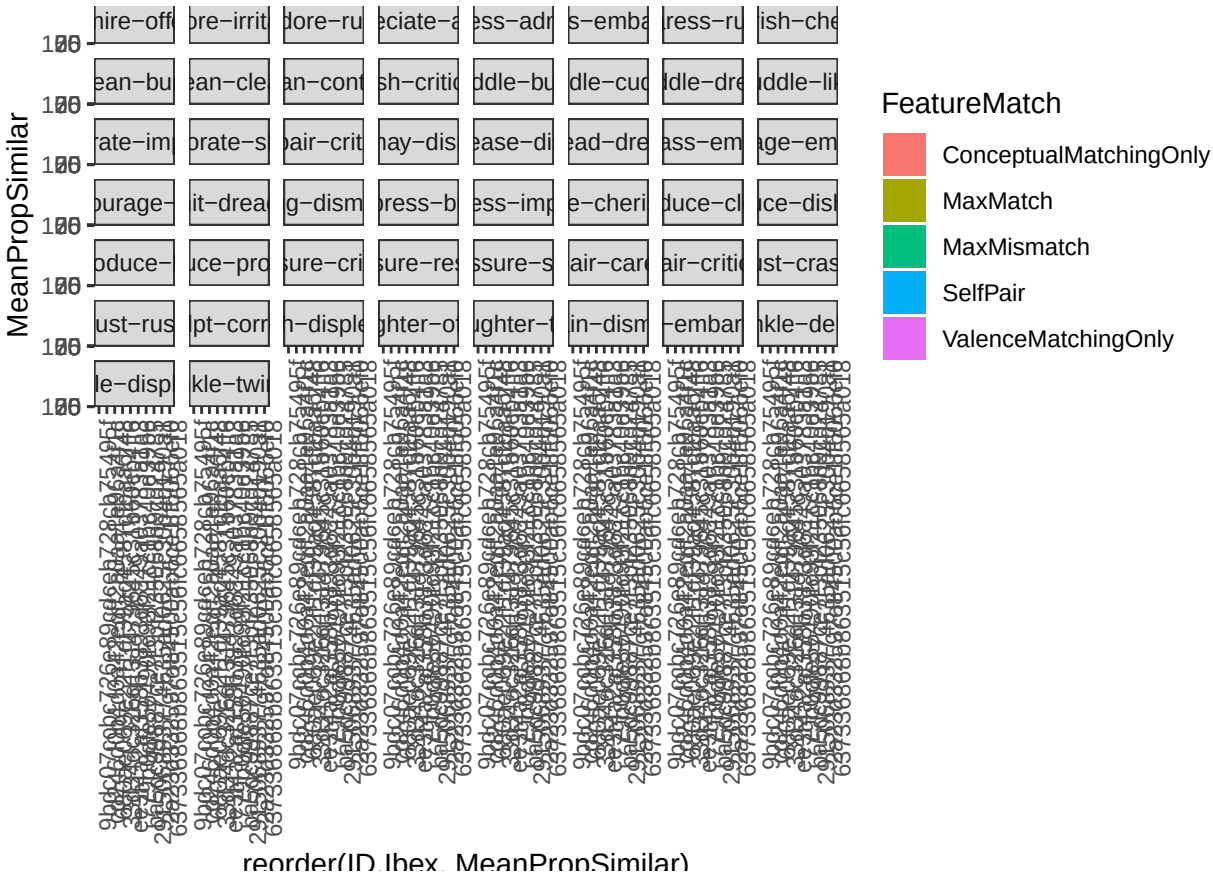
MeanPropSimilar
reorder(ID.Ibex, MeanPropSimilar)
FeatureMatch
ConceptualMatchingOnly
MaxMatch
MaxMismatch
SelfPair
ValenceMatchingOnly