

Syntactic: Graphs for Accuracy

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Graph Accuracy by Word

Summary Stats

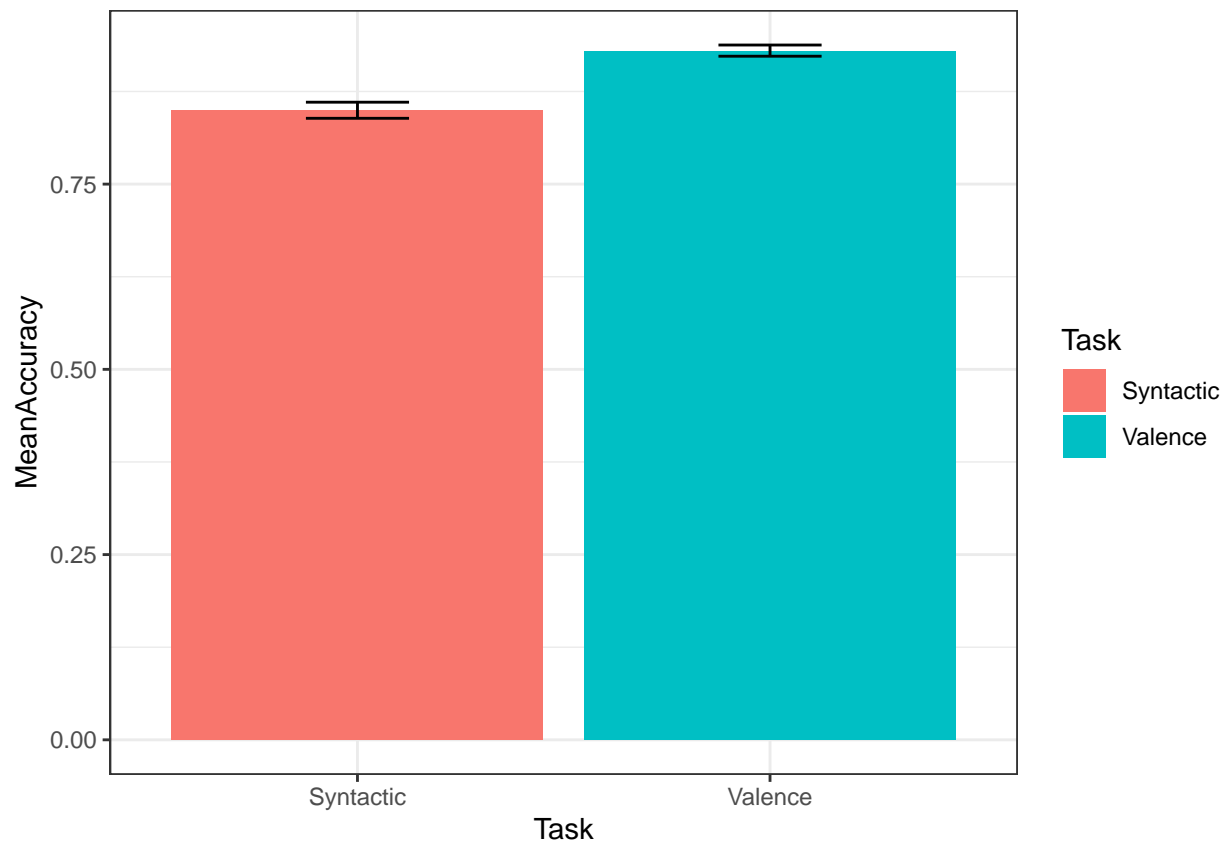
```
agr <- d %>%
  group_by(Task) %>%
  summarize(MeanAccuracy = mean(Accuracy),
            SD = sd(Accuracy))
print(agr)
```

```
## # A tibble: 2 x 3
##   Task      MeanAccuracy    SD
##   <chr>          <dbl> <dbl>
## 1 Syntactic      0.850 0.357
## 2 Valence        0.930 0.255
```

Overall Accuracy

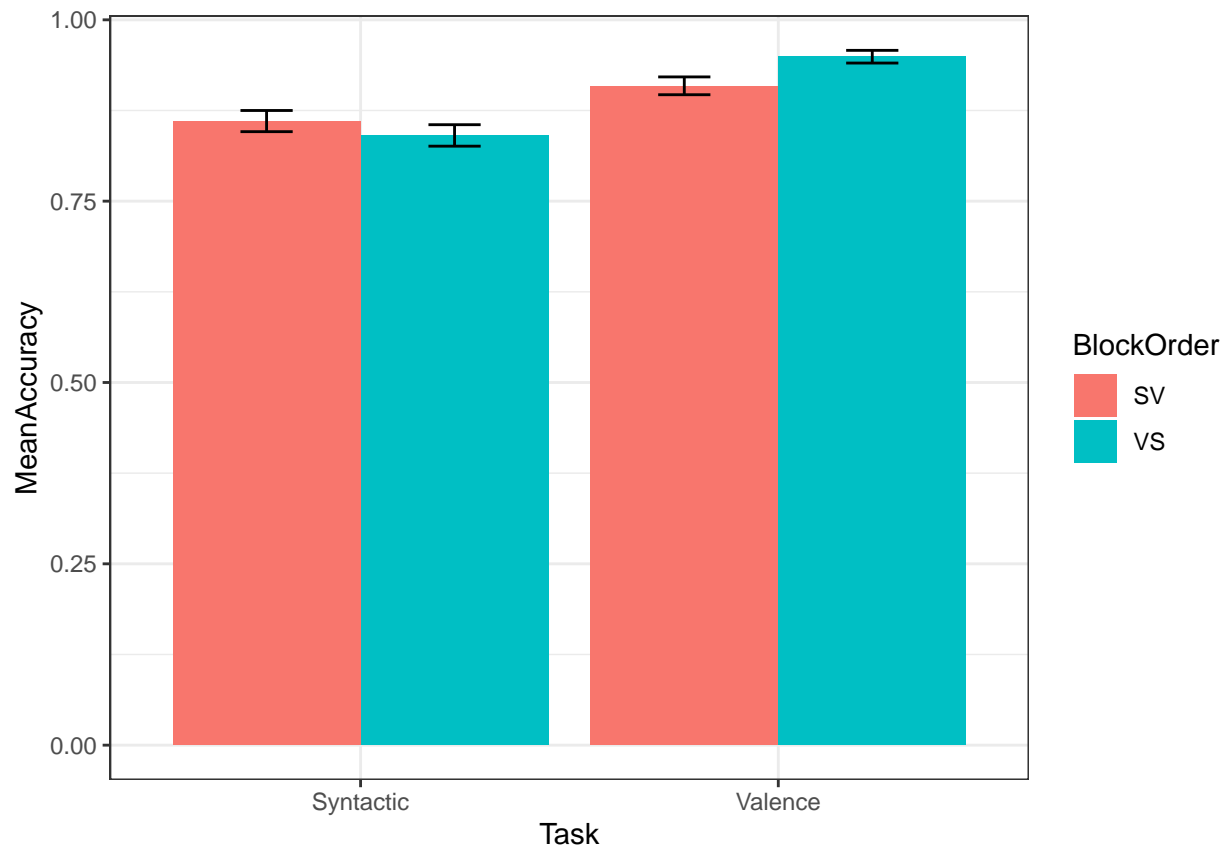
```
agr <- d %>%
  group_by(Task) %>%
  reframe(MeanAccuracy = mean(Accuracy),
          CILow = ci.low(Accuracy),
          CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)
# View(agr)

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=Task, y=MeanAccuracy, fill=Task)) +
  geom_bar(position=dodge, stat="identity") +
  geom_errorbar(aes(ymin=YMin, ymax=YMax), width=.25, position=position_dodge(0.9))
```



```
agr <- d %>%
  group_by(Task, BlockOrder) %>%
  reframe(MeanAccuracy = mean(Accuracy),
          CILow = ci.low(Accuracy),
          CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)
# View(agr)

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=Task, y=MeanAccuracy, fill=BlockOrder)) +
  geom_bar(position=dodge, stat="identity") +
  geom_errorbar(aes(ymin=YMin, ymax=YMax), width=.25, position=position_dodge(0.9))
```



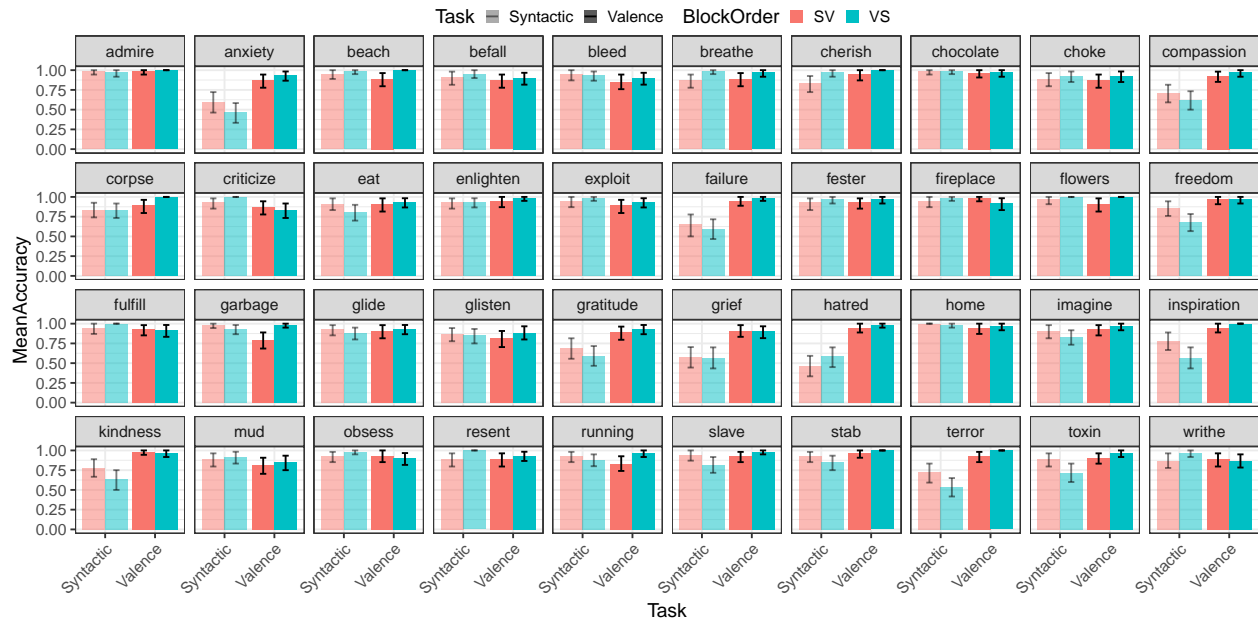
Mean Accuracy by Word / Task

```
agr <- d %>%
  group_by(Word, Task, BlockOrder) %>%
  reframe(MeanAccuracy = mean(Accuracy),
          CILow = ci.low(Accuracy),
          CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

ggplot(agr, aes(x=Task, y=MeanAccuracy, alpha=Task, fill=BlockOrder)) +
  geom_bar(position="dodge", stat="identity") +
  geom_errorbar(aes(ymin=YMin, ymax=YMax), width=.25, position=position_dodge(0.9)) +
  facet_wrap(~Word, ncol=10) +
  xlab("Task") +
  ylab("MeanAccuracy") +
  # guides(fill=FALSE) +
  # guides(alpha=guide_legend(title="Task")) +
  theme(legend.key.size = unit(0.3, "cm"),
        legend.position = "top", # c(.5,1)
        legend.direction = "horizontal",
        legend.margin=margin(0,0,0,0),
        legend.box.margin=margin(0,0,-5,-5), legend.spacing.y = unit(0.001, 'cm')) +
  # scale_fill_manual(values=cbPalette) +
  # scale_color_manual(values=cbPalette) +
  scale_alpha_discrete(range = c(.5,1)) +
```

```
theme(axis.text.x = element_text(angle = 45, hjust = 1))
```

```
## Warning: Using alpha for a discrete variable is not advised.
```



Looking at only the first block

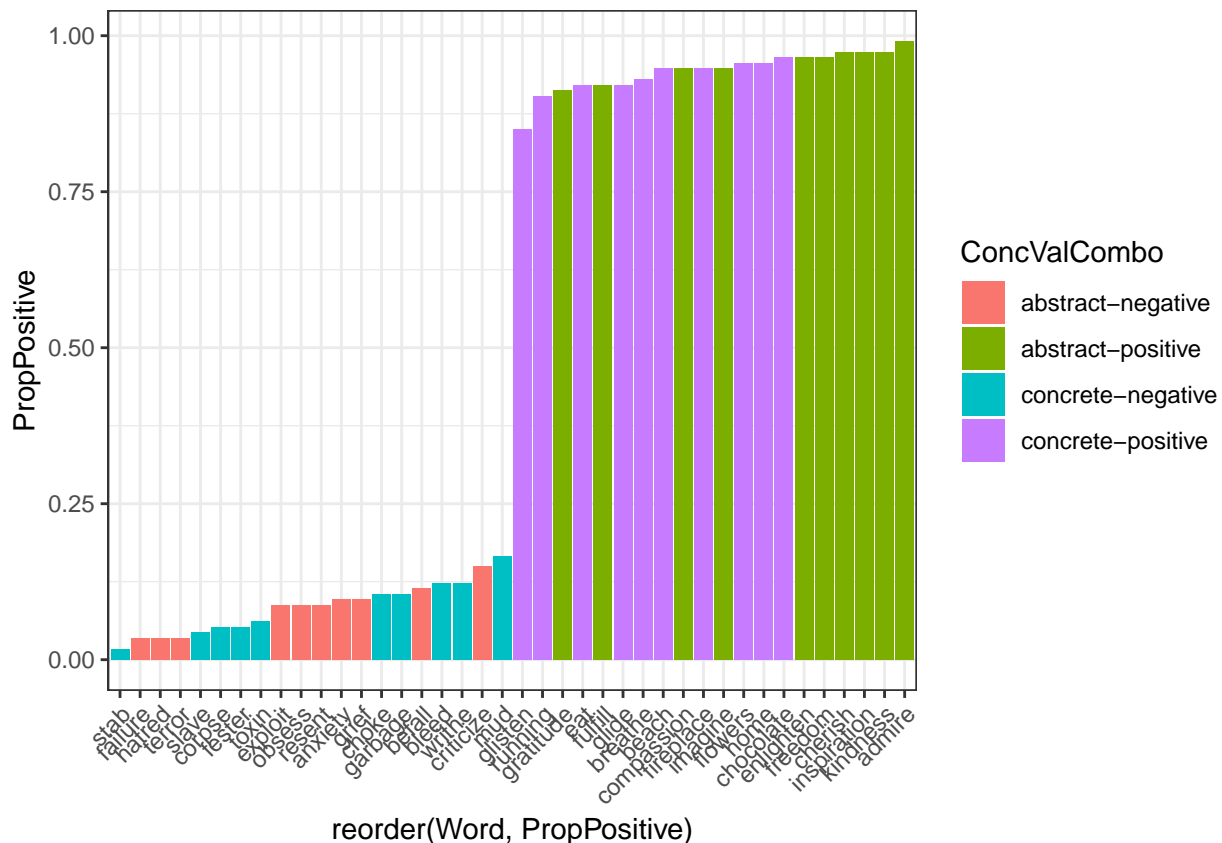
PropPositive and PropConcrete

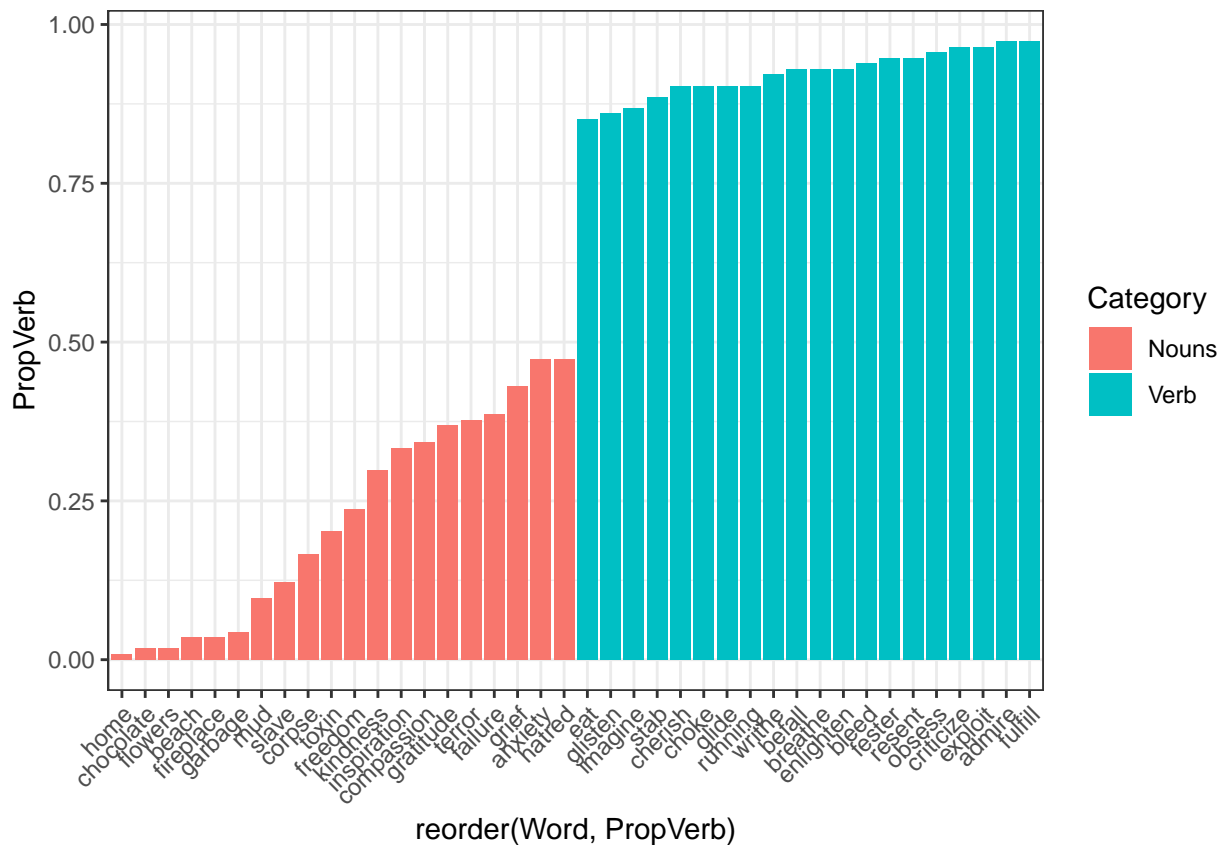
```
val <- d %>%
  filter(Task == "Valence") %>%
  # filter(Word %in% conc$Word) %>%
  group_by(Word, ConcValCombo) %>%
  mutate(Response.n = as.numeric(factor(Response, levels = c("negative", "positive")) - 1) %>% # Conv
  summarize(PropPositive = mean(Response.n))
```

```
## `summarise()` has grouped output by 'Word'. You can override using the
## `.groups` argument.
```

```
# filter(PropPositive > .1 | PropPositive < .9)

dodge = position_dodge(.9)
ggplot(data=val, aes(x=reorder(Word, PropPositive), y=PropPositive, fill=ConcValCombo)) +
  geom_bar(position=dodge, stat="identity") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```



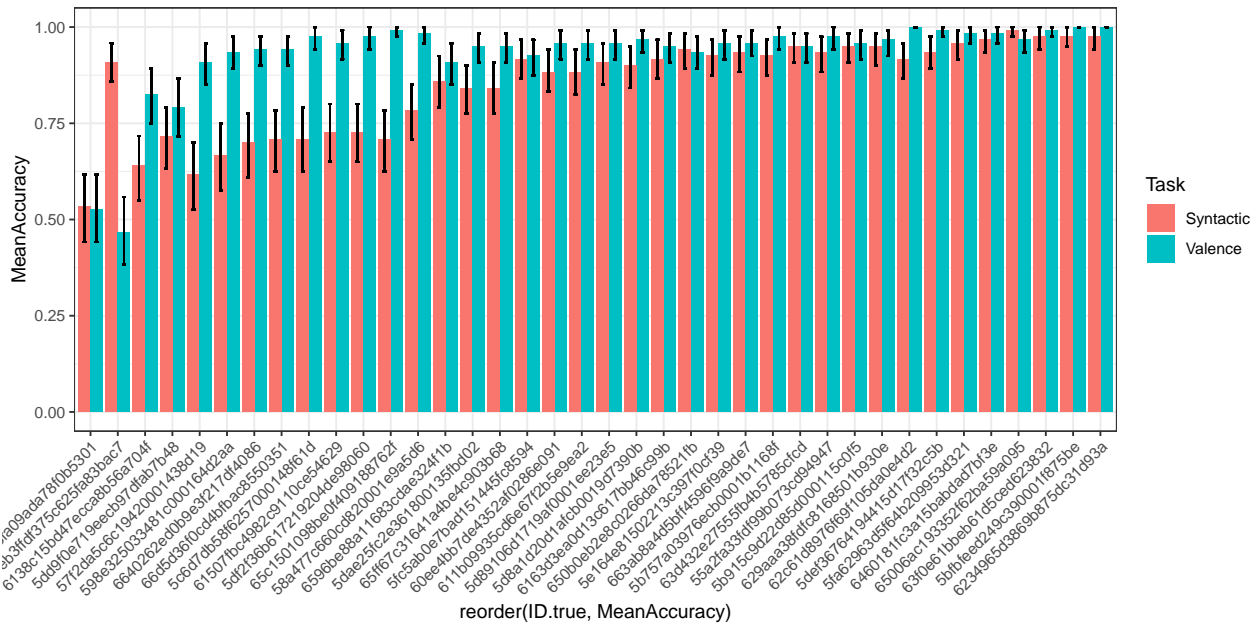


```
# guides(fill = "none")
```

Accuracy by Participant

```
agr <- d %>%
  # filter(PennElementType == "Selector") %>%
  select(ID.true, Task, Accuracy) %>%
  group_by(ID.true, Task) %>%
  mutate(MeanAccuracy = mean(Accuracy),
         CILow = ci.low(Accuracy),
         CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=reorder(ID.true, MeanAccuracy), y=MeanAccuracy, fill=Task)) +
  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 = 45, hjust = 1))
```



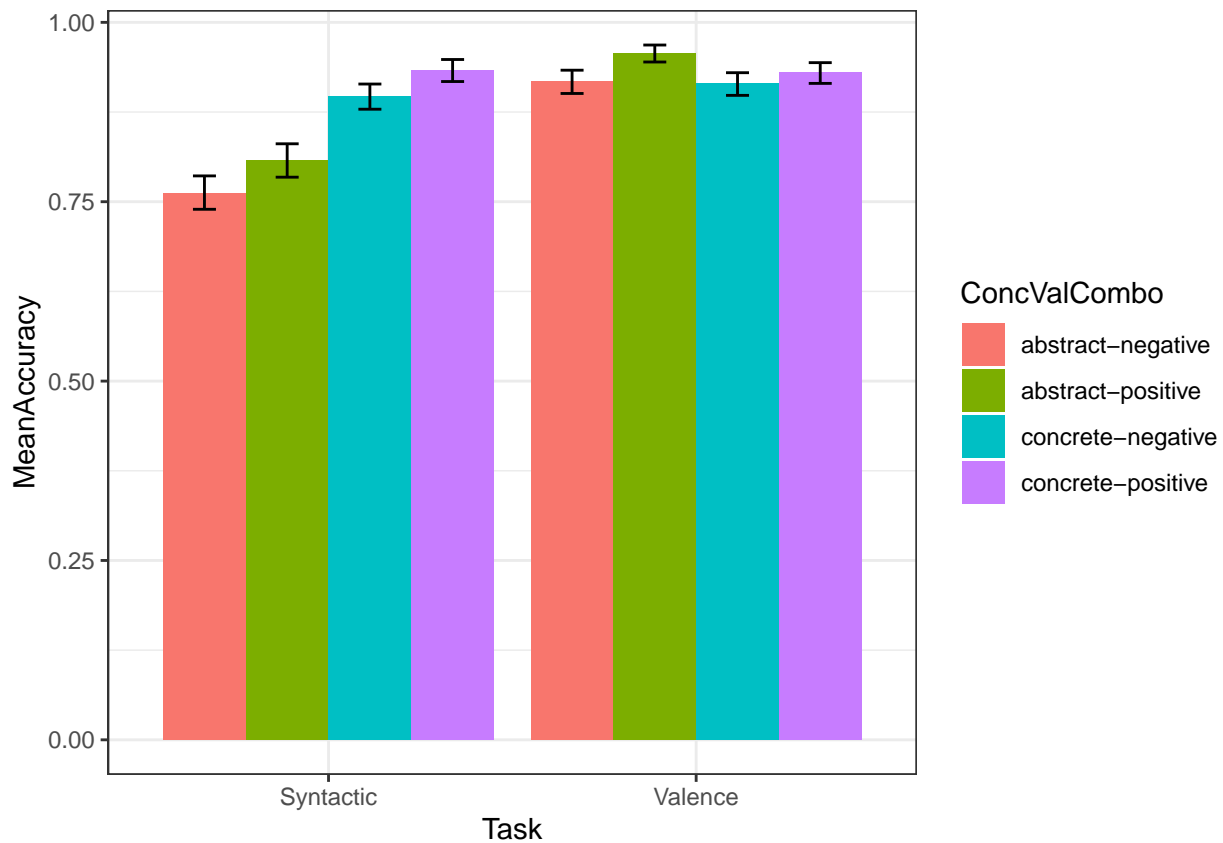
```
# guides(fill = "none")
```

Mean Accuracy by ConcValCombo

```
agr <- d %>%
  group_by(Task, ConcValCombo) %>%
  summarize(MeanAccuracy = mean(Accuracy),
            CILow = ci.low(Accuracy),
            CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

## `summarise()` has grouped output by 'Task'. You can override using the
## `.groups` argument.

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=Task, y=MeanAccuracy, fill=ConcValCombo)) +
  geom_bar(position=dodge, stat="identity") +
  # facet_wrap(~Task) +
  geom_errorbar(aes(ymin=YMin, ymax=YMax), width=.25, position=position_dodge(0.9))
```



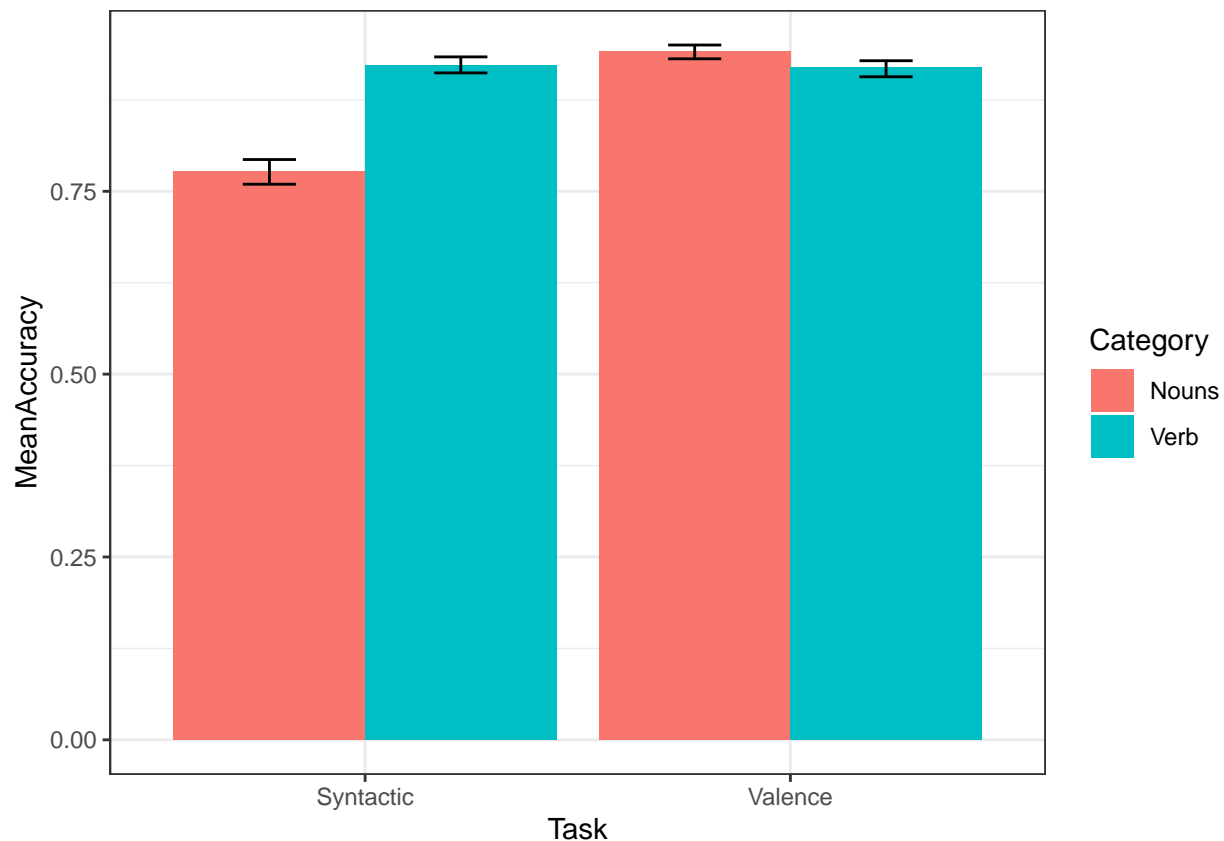
```
# theme(axis.text.x = element_text(angle = 45, hjust = 1))
# guides(fill = "none")
```

Mean Accuracy by Category

```
agr <- d %>%
  group_by(Task,Category) %>%
  summarize(MeanAccuracy = mean(Accuracy),
            CILow = ci.low(Accuracy),
            CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

## `summarise()` has grouped output by 'Task'. You can override using the
## `.groups` argument.

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=Task,y=MeanAccuracy,fill=Category)) +
  geom_bar(position=dodge,stat="identity") +
  # facet_wrap(~Task) +
  geom_errorbar(aes(ymin=YMin,ymax=YMax),width=.25,position=position_dodge(0.9))
```

```
# theme(axis.text.x = element_text(angle = 45, hjust = 1))
# guides(fill = "none")
```

Remove participants who aren't accurate

```
length(unique(d$ID.true))
```

```
## [1] 38
```

```
inacc.parts <- d %>%
  group_by(ID.true, Task) %>%
  summarise(MeanAccuracy = mean(Accuracy)) %>%
  filter(MeanAccuracy < .75)
```

```
## `summarise()` has grouped output by 'ID.true'. You can override using the
## `.groups` argument.
```

```
# How many participants have Accuracy < .75?
length(unique(inacc.parts$ID.true))
```

```
## [1] 12
```

```
d.inaccurate.removed <- d %>%
  anti_join(inacc.parts, by = "ID.true")

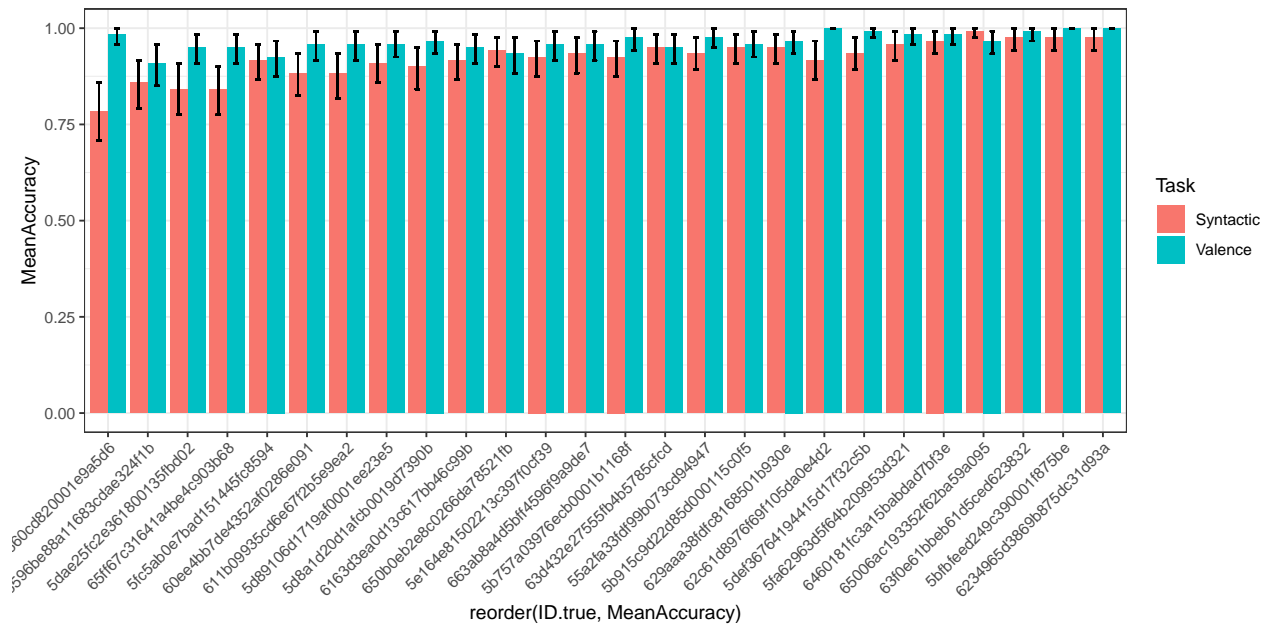
# Sanity check
length(unique(d.inaccurate.removed$ID.true))
```

```
## [1] 26
```

Accuracy by Participant

```
agr <- d.inaccurate.removed %>%
  select(ID.true, Task, Accuracy) %>%
  group_by(ID.true, Task) %>%
  mutate(MeanAccuracy = mean(Accuracy),
         CILow = ci.low(Accuracy),
         CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=reorder(ID.true, MeanAccuracy), y=MeanAccuracy, fill=Task)) +
  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 = 45, hjust = 1))
```



```
# guides(fill = "none")
```

Mean Accuracy by Word / Task

```
agr <- d.inaccurate.removed %>%
  group_by(Task, Word, BlockOrder) %>%
  mutate(MeanAccuracy = mean(Accuracy),
         CILow = ci.low(Accuracy),
         CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

ggplot(agr, aes(x=Task, y=MeanAccuracy, alpha=Task, fill=BlockOrder)) +
  geom_bar(position="dodge", stat="identity") +
```

```

geom_errorbar(aes(ymin=YMin,ymax=YMax),width=.25,position=position_dodge(0.9)) +
facet_wrap(~Word, ncol=10) +
xlab("Task") +
ylab("MeanAccuracy") +
# guides(fill=FALSE) +
# guides(alpha=guide_legend(title="Task")) +
theme(legend.key.size = unit(0.3, "cm"),
      legend.position = "top", # c(.5,1)
      legend.direction = "horizontal",
      legend.margin=margin(0,0,0,0),
      legend.box.margin=margin(0,0,-5,-5),legend.spacing.y = unit(0.001, 'cm')) +
# scale_fill_manual(values=cbPalette) +
# scale_color_manual(values=cbPalette) +
scale_alpha_discrete(range = c(.5,1)) +
theme(axis.text.x = element_text(angle = 45, hjust = 1))

```

Warning: Using alpha for a discrete variable is not advised.

