Nouns Conc-Abs: Graphs for Accuracy

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```
table(d$Task,d$Label)
```

```
##
##            test_conc test_val
##    Concrete      4920        0
##    Valence          0     4920
```

```
print(unique(d$Word))
```

```
##  [1] "resentment"  "chocolate"   "sunshine"    "grief"       "garbage"
##  [6] "failure"     "gratitude"   "hug"         "lonliness"   "fireplace"
## [11] "envy"        "love"        "rust"        "smoke"       "vomit"
## [16] "mold"        "freedom"     "filth"       "rot"         "kindness"
## [21] "rain"        "laughter"    "home"        "peace"       "flowers"
## [26] "mud"         "guilt"       "injury"      "regret"      "beach"
## [31] "stench"      "shame"       "compassion"  "despair"     "hope"
## [36] "joy"         "inspiration" "happiness"   "anxiety"     "music"
```

```
table(d$Key_value_F)
```

```
##
## abstract concrete negative positive
##     2520     2400     2520     2400
```

```
print(unique(d$Word))
```

```
##  [1] "resentment"  "chocolate"   "sunshine"    "grief"       "garbage"
##  [6] "failure"     "gratitude"   "hug"         "lonliness"   "fireplace"
## [11] "envy"        "love"        "rust"        "smoke"       "vomit"
## [16] "mold"        "freedom"     "filth"       "rot"         "kindness"
## [21] "rain"        "laughter"    "home"        "peace"       "flowers"
## [26] "mud"         "guilt"       "injury"      "regret"      "beach"
## [31] "stench"      "shame"       "compassion"  "despair"     "hope"
## [36] "joy"         "inspiration" "happiness"   "anxiety"     "music"
```

Summary Stats

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

```
## # A tibble: 2 x 3
##   Task     MeanAccuracy     SD
```
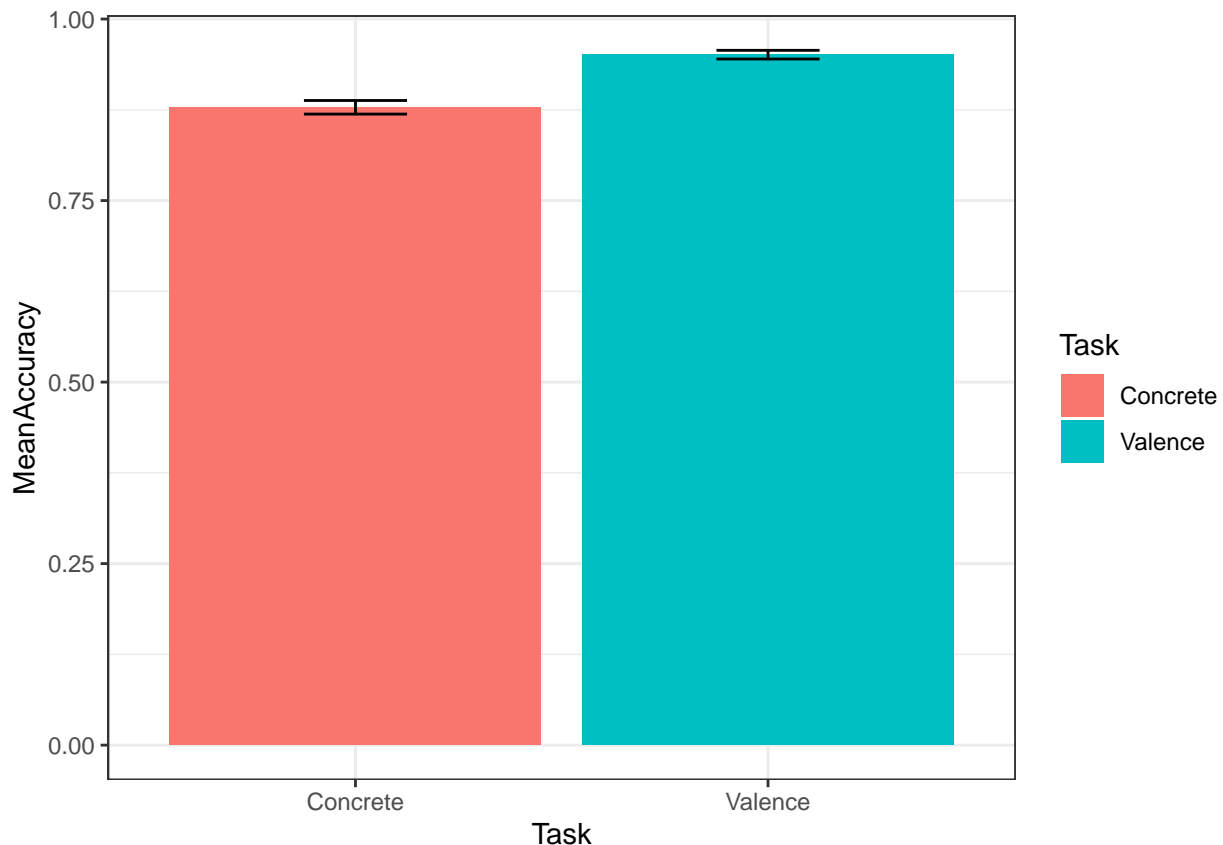
```
##   <chr>          <dbl> <dbl>
## 1 Concrete        0.878 0.327
## 2 Valence         0.951 0.216
```

Graph Accuracy by Word

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))
```
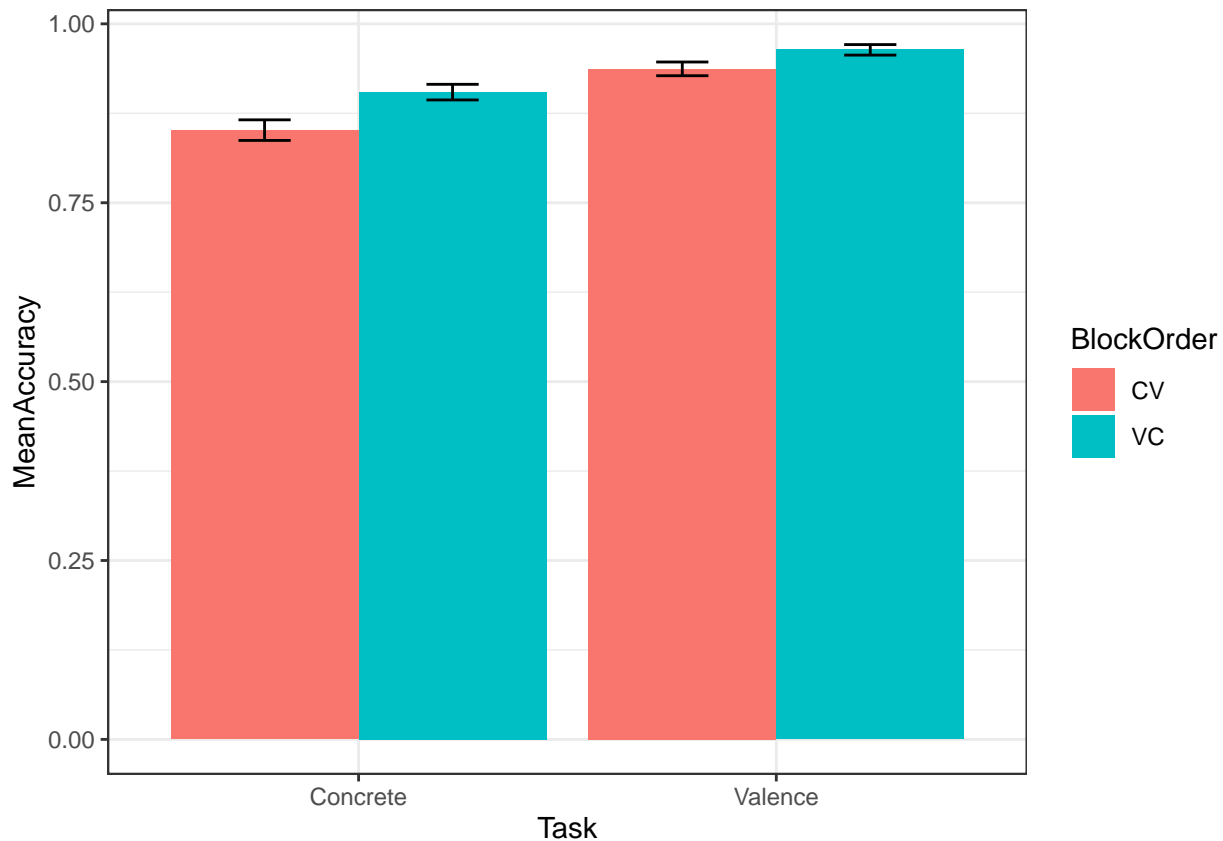


```
agr <- d %>%
  group_by(Task,BlockOrder) %>%
  reframe(MeanAccuracy = mean(Accuracy),
          CILow = ci.low(Accuracy),
```

```
          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

Looking at only the first block
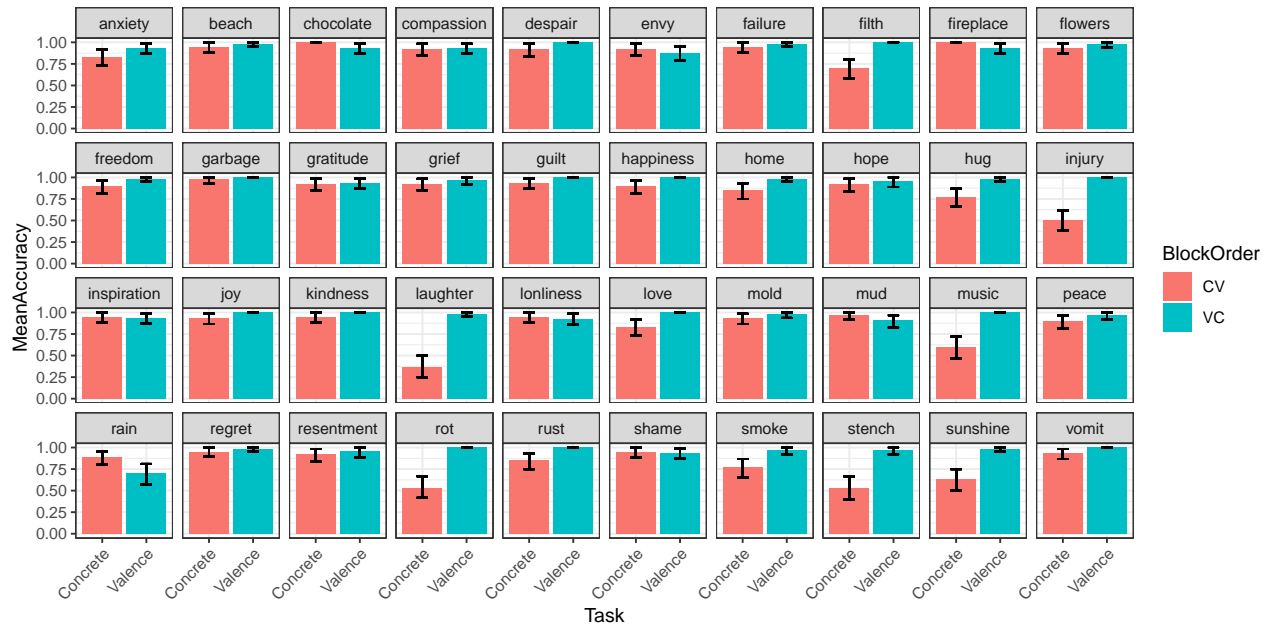
```
agr <- d %>%
  group_by(Task,Word,BlockOrder) %>%
  filter((Task == "Valence") & (BlockOrder == "VC") |
           (Task == "Concrete") & (BlockOrder == "CV")) %>%
  mutate(MeanAccuracy = mean(Accuracy),
         CILow = ci.low(Accuracy),
         CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

agrr <- agr %>%
  group_by(Word,Task) %>%
  select(Word,Task,MeanAccuracy) %>%
```

```
  unique()

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=Task,y=MeanAccuracy,fill=BlockOrder)) +
  geom_bar(position=dodge,stat="identity") +
  facet_wrap(~Word,ncol=10) +
  geom_errorbar(aes(ymin=YMin,ymax=YMax),width=.25,position=position_dodge(0.9)) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```
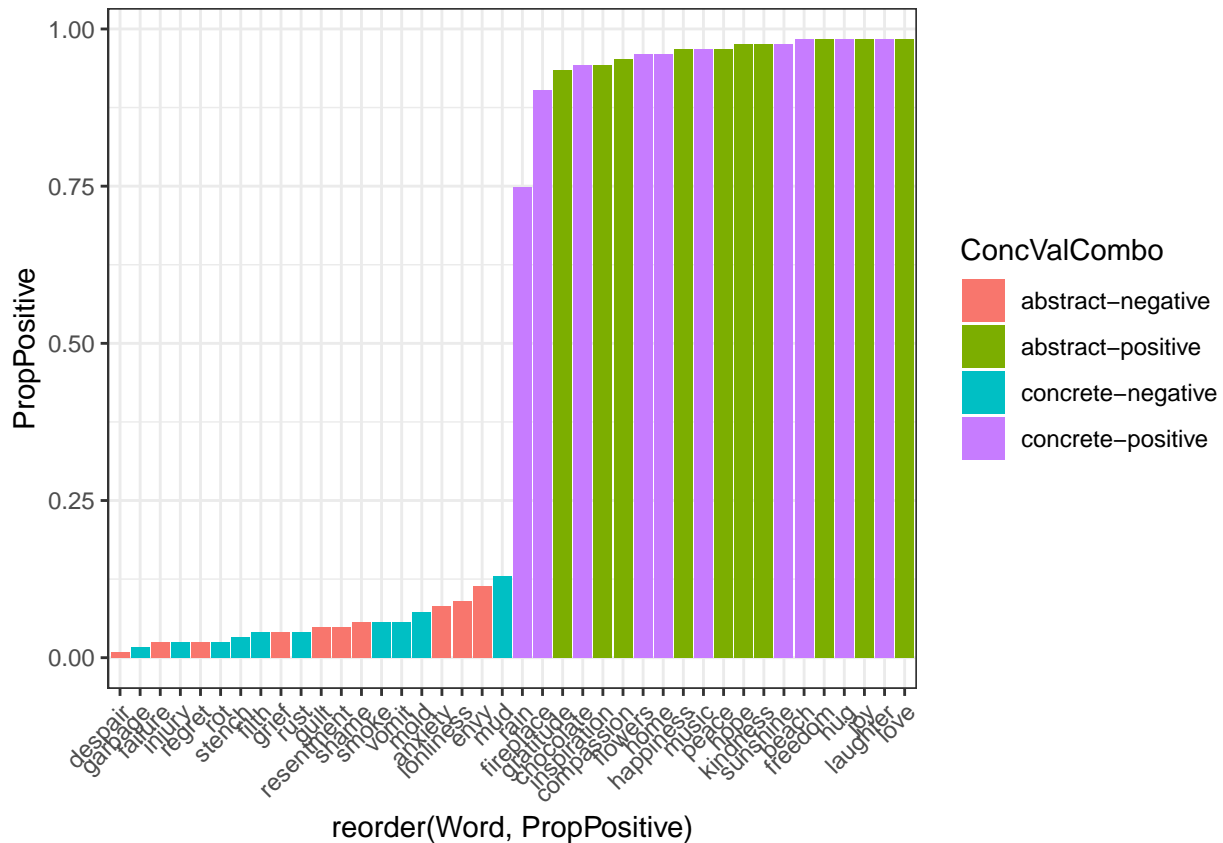

PropPositive and PropConcrete

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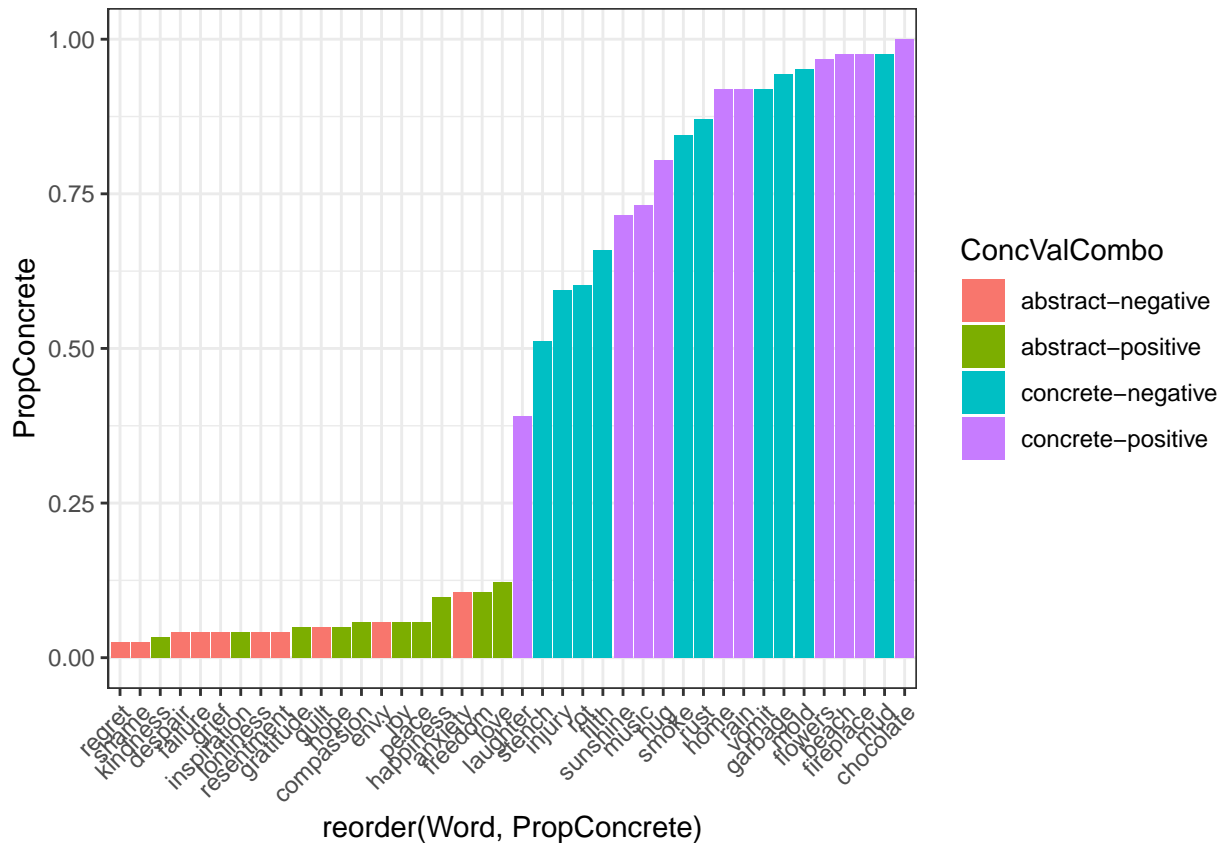
```
  # guides(fill = "none")
```

```
conc <- d %>%
  filter(Task == "Concrete") %>%
  # filter(Word %in% conc$Word) %>%
  group_by(Word,ConcValCombo) %>%
  mutate(Response.n = as.numeric(factor(Response, levels = c("abstract", "concrete"))) - 1) %>%  # Conv
  summarize(PropConcrete = 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=conc, aes(x=reorder(Word,PropConcrete),y=PropConcrete,fill=ConcValCombo)) +
  geom_bar(position=dodge,stat="identity") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```
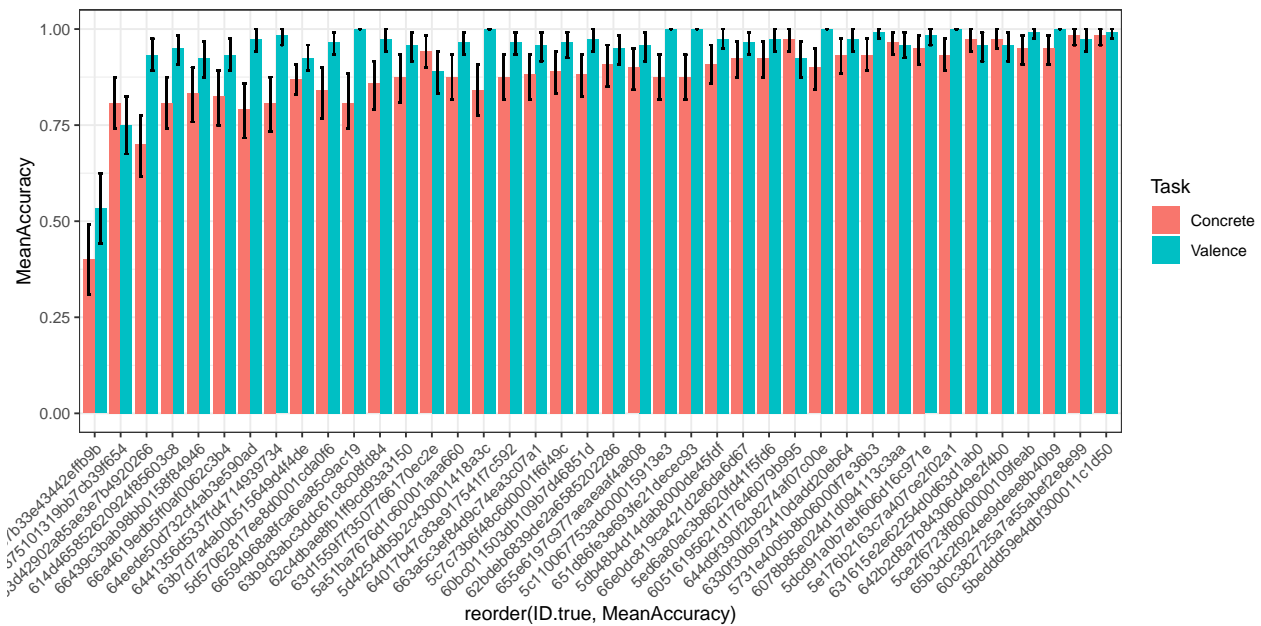
Accuracy by Participant

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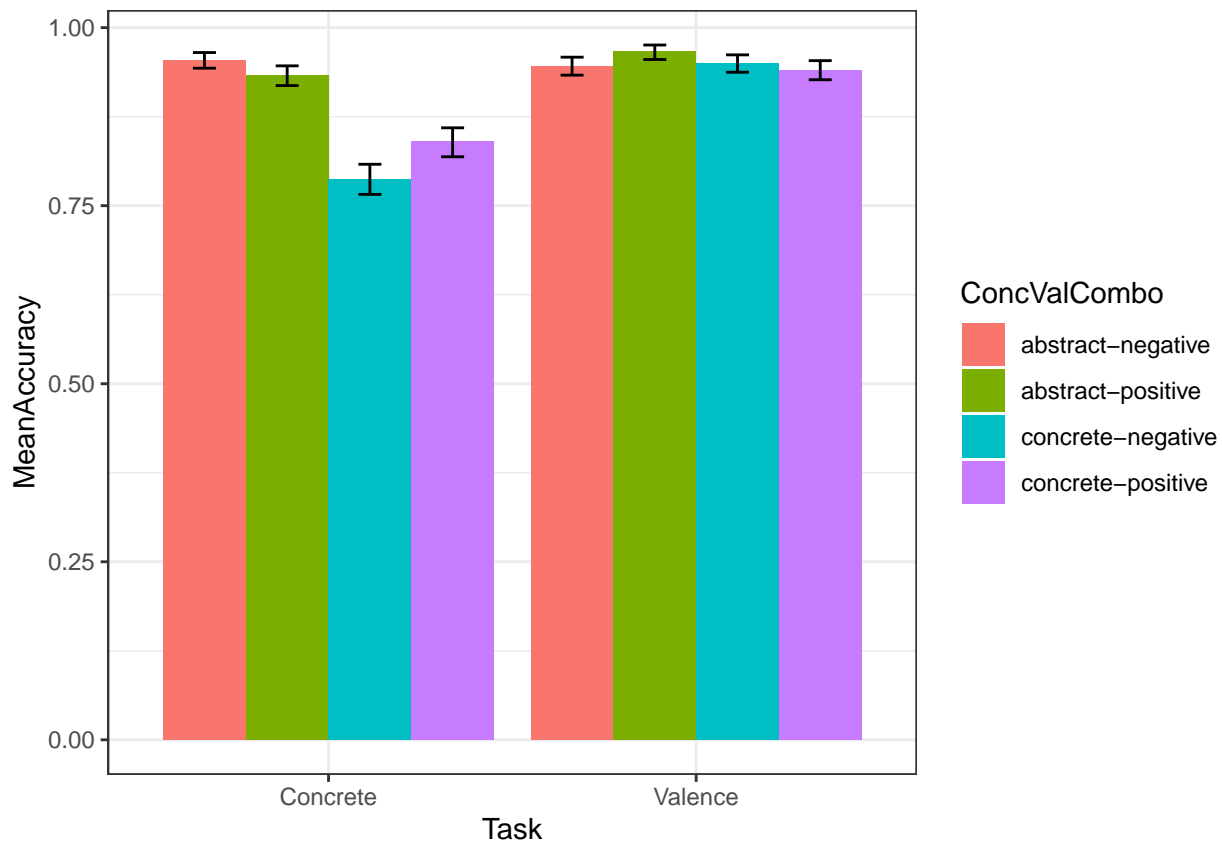
```
# guides(fill = "none")
```

Mean Accuracy by ConcValCombo

```r
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.
```

```r
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")
```

Remove participants who aren't accurate

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

```
## [1] 40
```

```
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] 2
```

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

# Sanity check
length(unique(d.inaccurate.removed$ID.true))
```
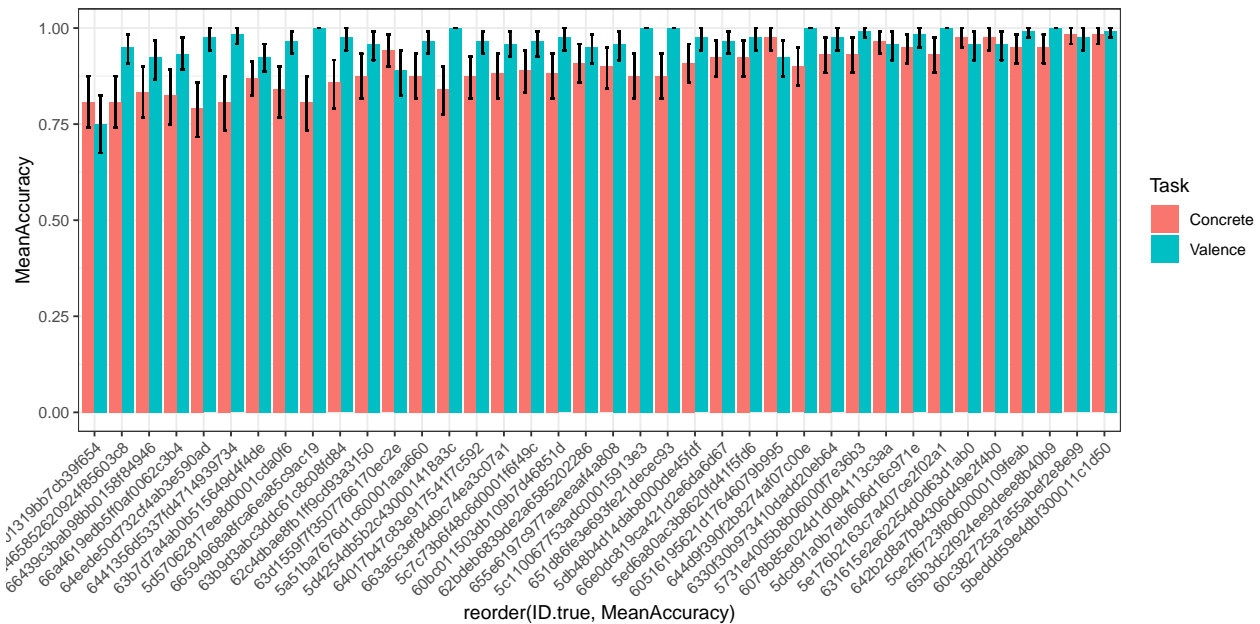
```
## [1] 38
```

Accuracy by Participant

```r
agr <- d.inaccurate.removed %>%
  # 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))
```



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

Mean Accuracy by Word / Task

Looking at only the first block

```r
agr <- d.inaccurate.removed %>%
  group_by(Task,Word,BlockOrder) %>%
  # filter((Task == "Valence") & (BlockOrder == "VC") |
  #         (Task == "Concrete") & (BlockOrder == "CV")) %>%
  mutate(MeanAccuracy = mean(Accuracy),
         CILow = ci.low(Accuracy),
         CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
```

```
          YMax = MeanAccuracy + CIHigh)

agrr <- agr %>%
  group_by(Word,Task) %>%
  select(Word,Task,MeanAccuracy) %>%
  unique()

dodge = position_dodge(.9)
ggplot(data=agr, aes(x=Task,y=MeanAccuracy,fill=BlockOrder)) +
  geom_bar(position=dodge,stat="identity") +
  facet_wrap(~Word,ncol=10) +
  geom_errorbar(aes(ymin=YMin,ymax=YMax),width=.25,position=position_dodge(0.9)) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```