

Adjs Soc-Phys Weighted/Normed: Graphs for Accuracy

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What's going on with those parts only in Valence task?

```
table(d$Group, d$Response)
```

```
## < table of extent 0 x 4 >
```

```
# Step 1: Summarize per ID.Ibex
```

```
ids_valence_only <- d %>%  
  group_by(ID.true) %>%  
  summarise(  
    has_valence = any(Task == "Valence"),  
    has_socphys = any(Task == "SocPhys"),  
    .groups = "drop"  
  ) %>%  
  filter(has_valence & !has_socphys) %>%  
  pull(ID.true)
```

```
d_bad <- d %>%  
  filter(ID.true %in% ids_valence_only)
```

```
print(unique(d_bad$Response))
```

```
## [1] "negative" "positive"
```

```
print(table(d$Response))
```

```
##  
## negative physical positive social  
## 1240 740 1160 1060
```

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

```
##  
## test_sp test_val  
## SocPhys 1800 0  
## Valence 0 2400
```

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

```
## [1] "sunny" "racist" "brotherly" "carefree" "floral"  
## [6] "infuriating" "blooming" "heartbroken" "moldy" "fluffy"  
## [11] "nutritious" "greedy" "easygoing" "dependable" "nauseous"  
## [16] "excruciating" "lifeless" "comatose" "stingy" "joyful"
```

```
## [21] "hateful"      "courageous"   "grumpy"       "obese"        "humiliating"
## [26] "decorative"   "rancid"       "smelly"       "seasick"      "oceanic"
## [31] "witty"        "newborn"      "selfless"     "homemade"     "itchy"
## [36] "dreaded"      "radiant"      "cheerful"     "hilarious"    "insulting"
```

Summary Stats

```
agr <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  group_by(Task) %>%
  summarize(MeanAccuracy = mean(Accuracy),
            SD = sd(Accuracy))
print(agr)
```

```
## # A tibble: 2 x 3
##   Task      MeanAccuracy    SD
##   <chr>          <dbl> <dbl>
## 1 SocPhys      0.827 0.379
## 2 Valence      0.939 0.239
```

```
d_test <- d %>%
  filter(!ID.true %in% ids_valence_only)
```

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

```
## [1] "sunny"      "racist"      "brotherly"   "carefree"    "floral"
## [6] "infuriating" "blooming"    "heartbroken" "moldy"       "fluffy"
## [11] "nutritious" "greedy"      "easygoing"   "dependable"  "nauseous"
## [16] "excruciating" "lifeless"    "comatose"    "stingy"      "joyful"
## [21] "hateful"     "courageous"  "grumpy"      "obese"       "humiliating"
## [26] "decorative"  "rancid"      "smelly"      "seasick"     "oceanic"
## [31] "witty"       "newborn"     "selfless"    "homemade"    "itchy"
## [36] "dreaded"     "radiant"     "cheerful"    "hilarious"   "insulting"
```

Graph Accuracy by Word

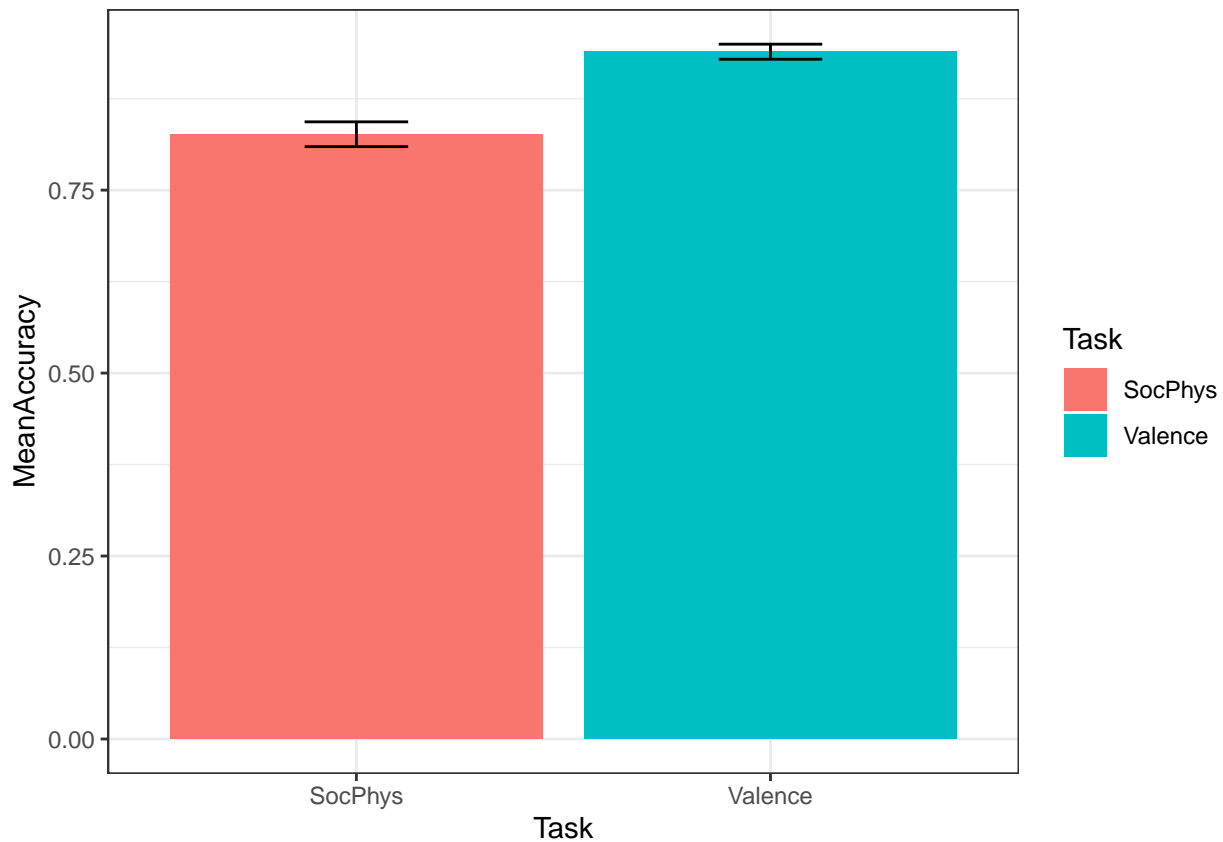
Values for valence/concreteness were gathered/normed first from Warriner et al and Brysbaert et al. From those studies, we can establish what an Accurate response is.

A response is accurate (coded as 1) if the participant response was consistent with the norming study; inaccurate (or 0) otherwise.

Overall Accuracy

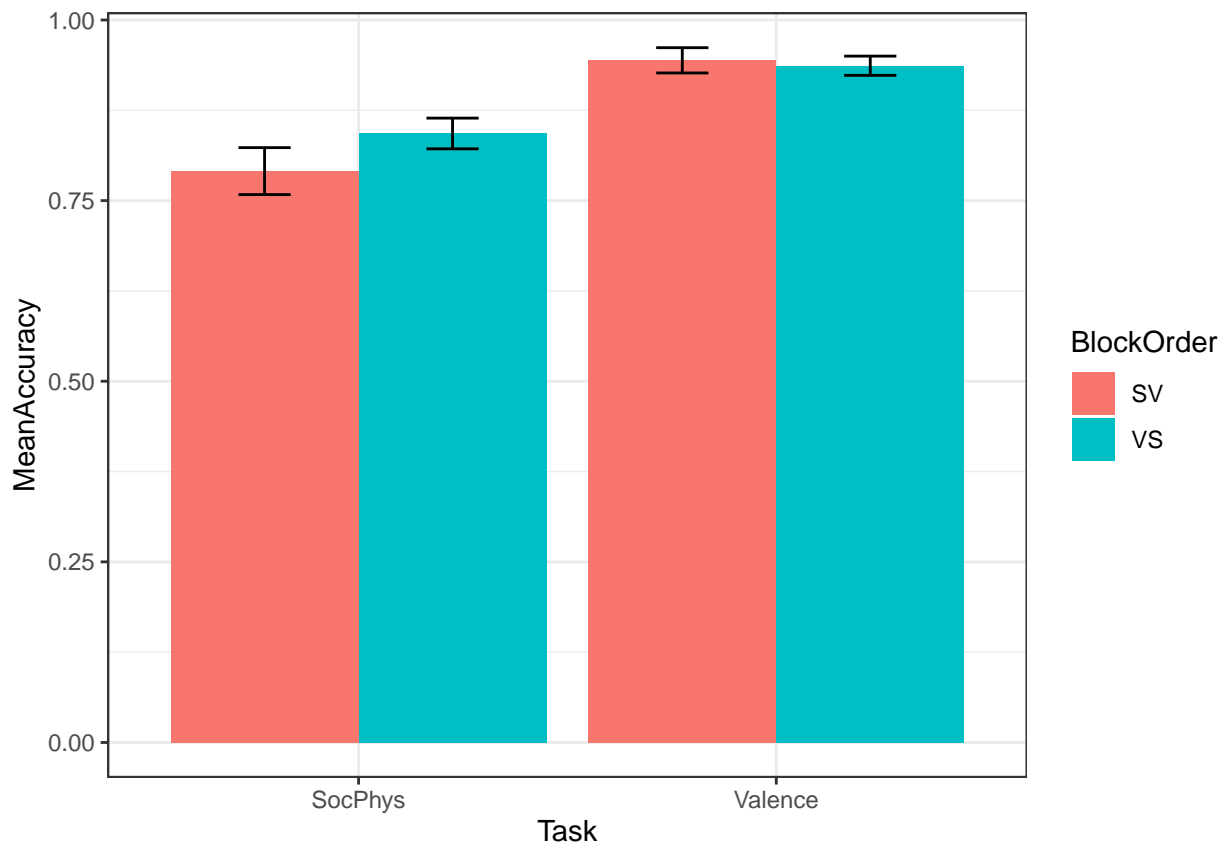
```
agr <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  group_by(Task) %>%
  reframe(MeanAccuracy = mean(Accuracy),
          CILow = ci.low(Accuracy),
          CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)
# View(agr)
```

```
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 %>%
  filter(!ID.true %in% ids_valence_only) %>%
  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 %>%
  filter(!ID.true %in% ids_valence_only) %>%
  group_by(Word, 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, alpha=Task)) +
#   geom_bar(position=dodge, stat="identity", alpha = 0.8) +
#   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))

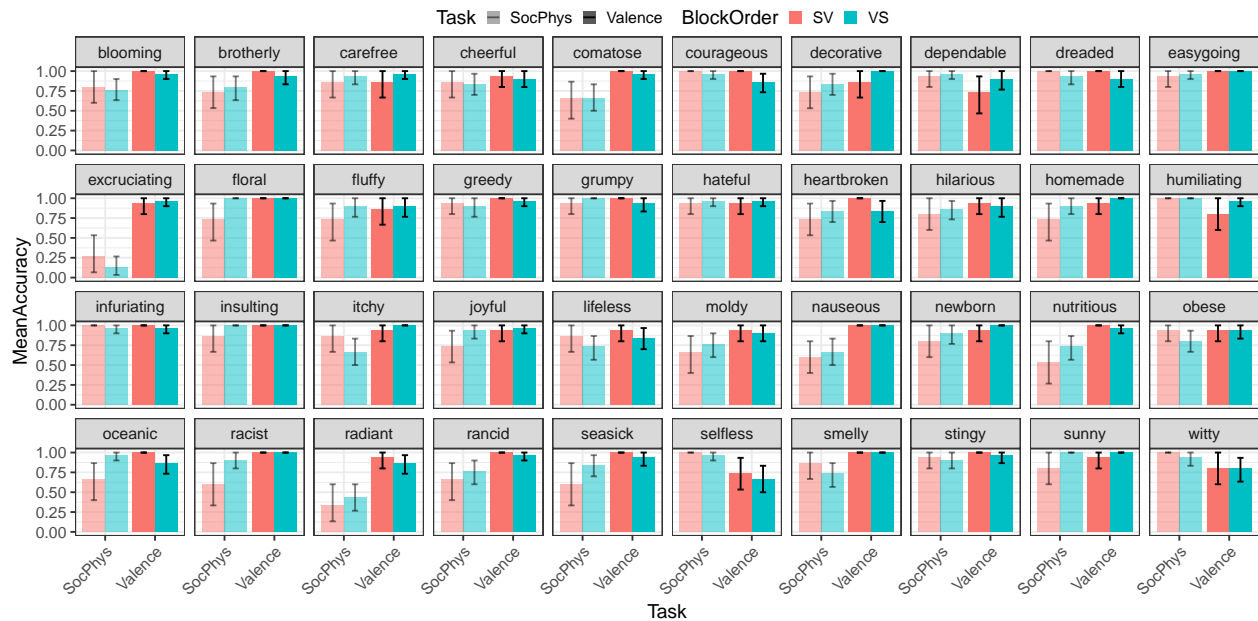
ggplot(agr, aes(x=Task, y=MeanAccuracy, alpha=Task, fill=BlockOrder)) +
  geom_bar(position="dodge", stat="identity") +
  geom_errorbar(aes(ymin=YMin, ymax=YMax), width=.25, position=position_dodge(0.9)) +
  facet_wrap(~Word, ncol=10) +
  xlab("Task") +
  ylab("MeanAccuracy") +
  # guides(fill=FALSE) +
```

```

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

```

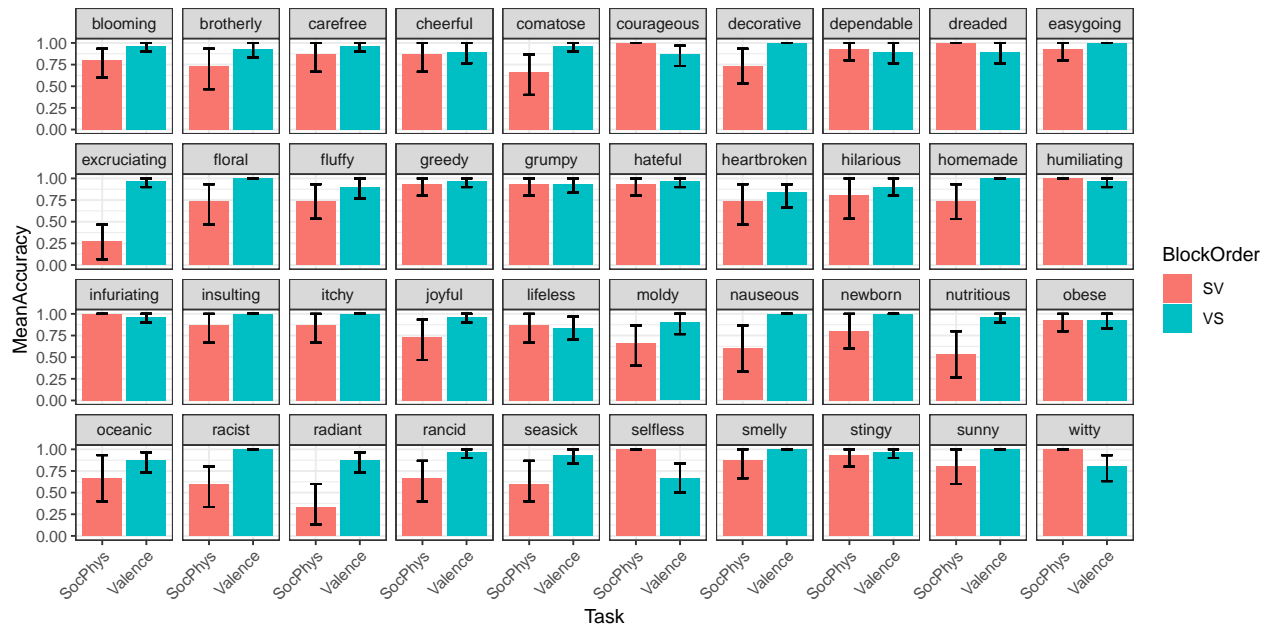
agr <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  group_by(Task,Word,BlockOrder) %>%
  filter((Task == "Valence" & (BlockOrder == "VS") |
         (Task == "SocPhys" & (BlockOrder == "SV"))) %>%
  mutate(MeanAccuracy = mean(Accuracy),
         CILow = ci.low(Accuracy),
         CIHigh = ci.high(Accuracy)) %>%
  mutate(YMin = MeanAccuracy - CILow,
         YMax = MeanAccuracy + CIHigh)

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

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))
```



```
m <- lmer(MeanAccuracy ~ BlockOrder + (1|Word), data = agr)
summary(m)
```

```
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: MeanAccuracy ~ BlockOrder + (1 | Word)
## Data: agr
##
## REML criterion at convergence: -3273.6
##
## Scaled residuals:
## Min 1Q Median 3Q Max
## -4.0177 -0.4951 -0.0108 0.5413 3.3515
##
## Random effects:
## Groups Name Variance Std.Dev.
## Word (Intercept) 0.004375 0.06615
## Residual 0.008787 0.09374
## Number of obs: 1800, groups: Word, 40
##
## Fixed effects:
## Estimate Std. Error df t value Pr(>|t|)
## (Intercept) 7.917e-01 1.114e-02 4.594e+01 71.08 <2e-16 ***
## BlockOrderVS 1.450e-01 4.687e-03 1.759e+03 30.94 <2e-16 ***
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
## (Intr)
## BlockOrdrVS -0.281
```

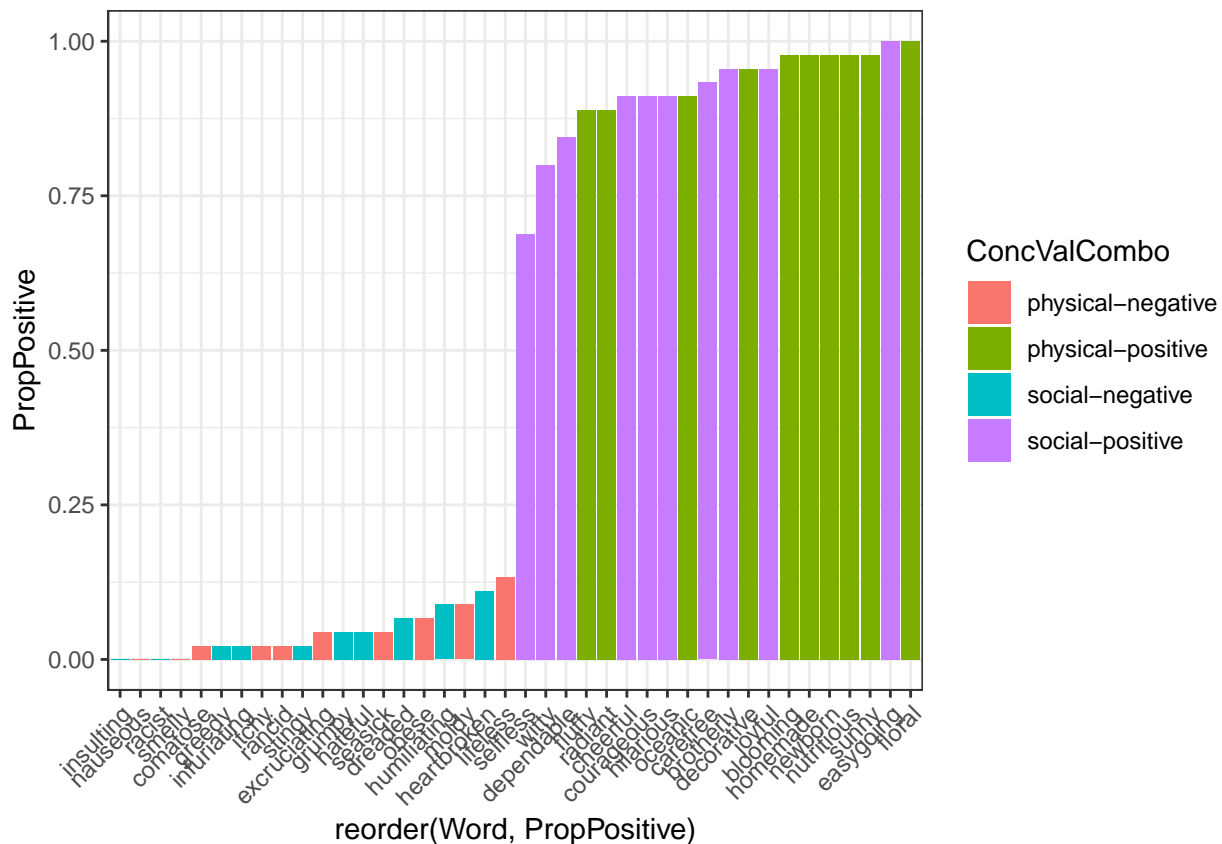
PropPositive and PropObjective

```
val <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  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")

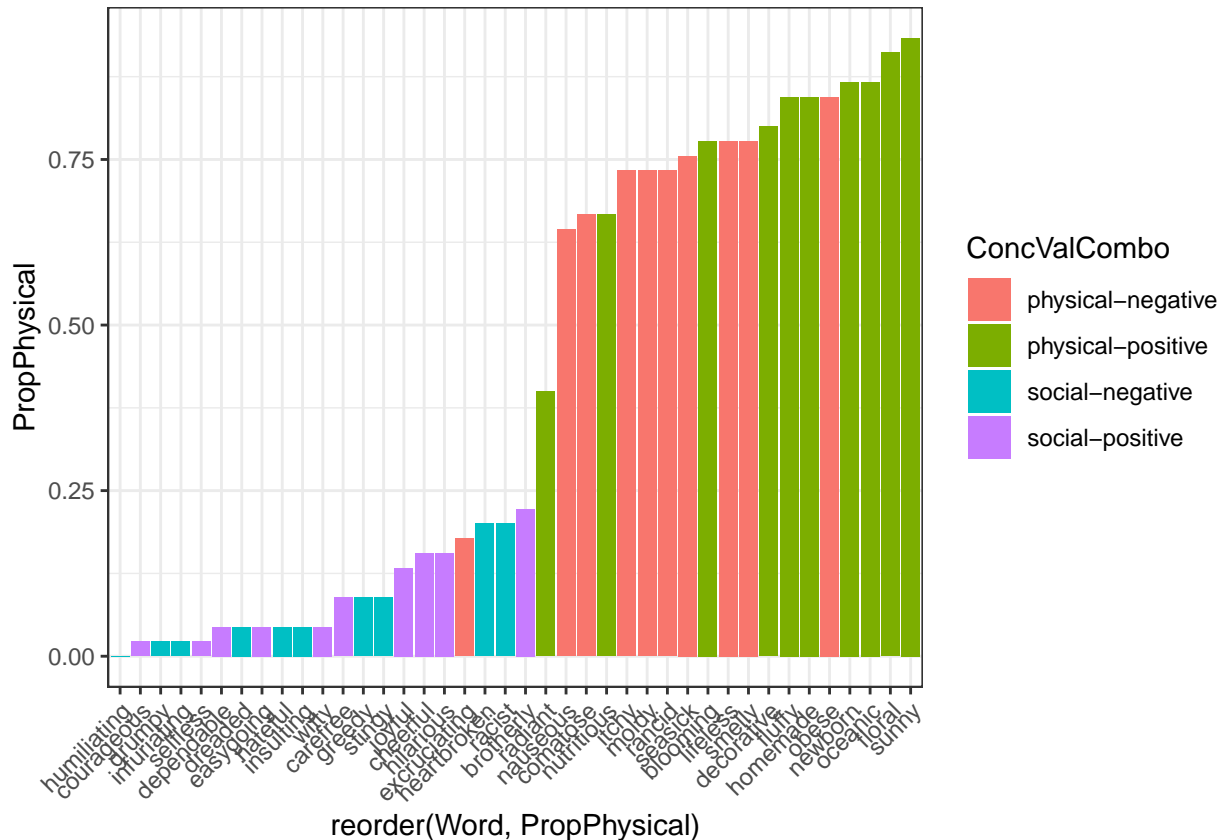
conc <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  filter(Task == "SocPhys") %>%
  # filter(Word %in% conc$Word) %>%
  group_by(Word, ConcValCombo) %>%
  mutate(Response.n = as.numeric(factor(Response, levels = c("social", "physical")) - 1) %>% # Conver
```

```
summarize(PropPhysical = 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,PropPhysical),y=PropPhysical,fill=ConcValCombo)) +
  geom_bar(position=dodge,stat="identity") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```



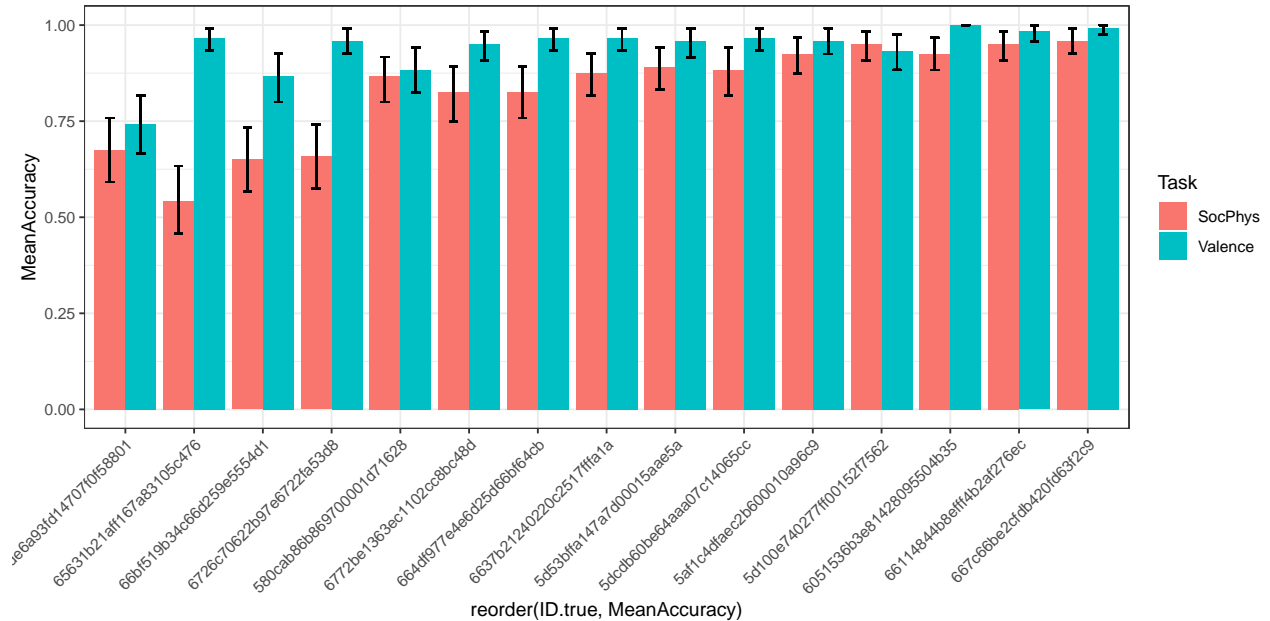
```
# guides(fill = "none")
```

Accuracy by Participant

```
agr <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  # 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))
```



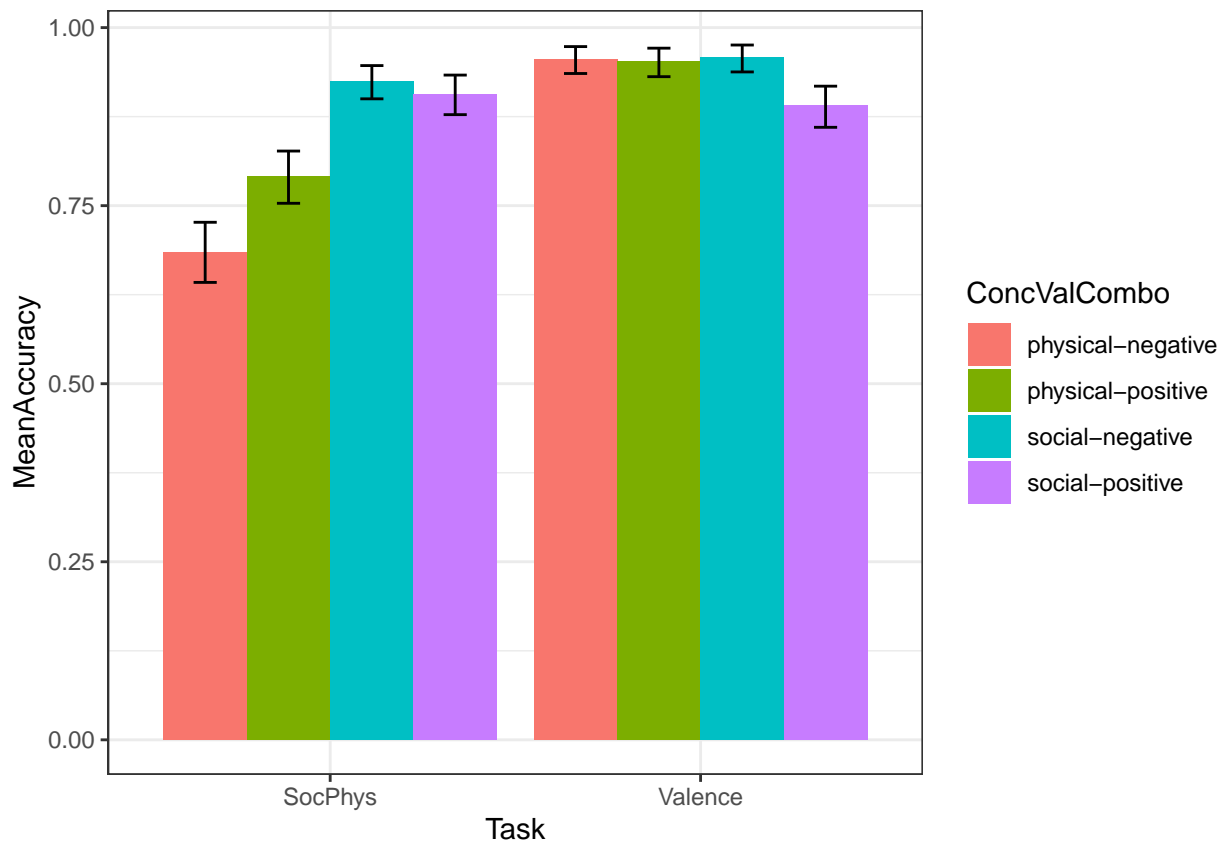
```
# guides(fill = "none")
```

Mean Accuracy by ConcValCombo

```
agr <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  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")
```

Remove participants who aren't accurate

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

```
## [1] 20
```

```
inacc.parts <- d %>%
  filter(!ID.true %in% ids_valence_only) %>%
  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] 4
```

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

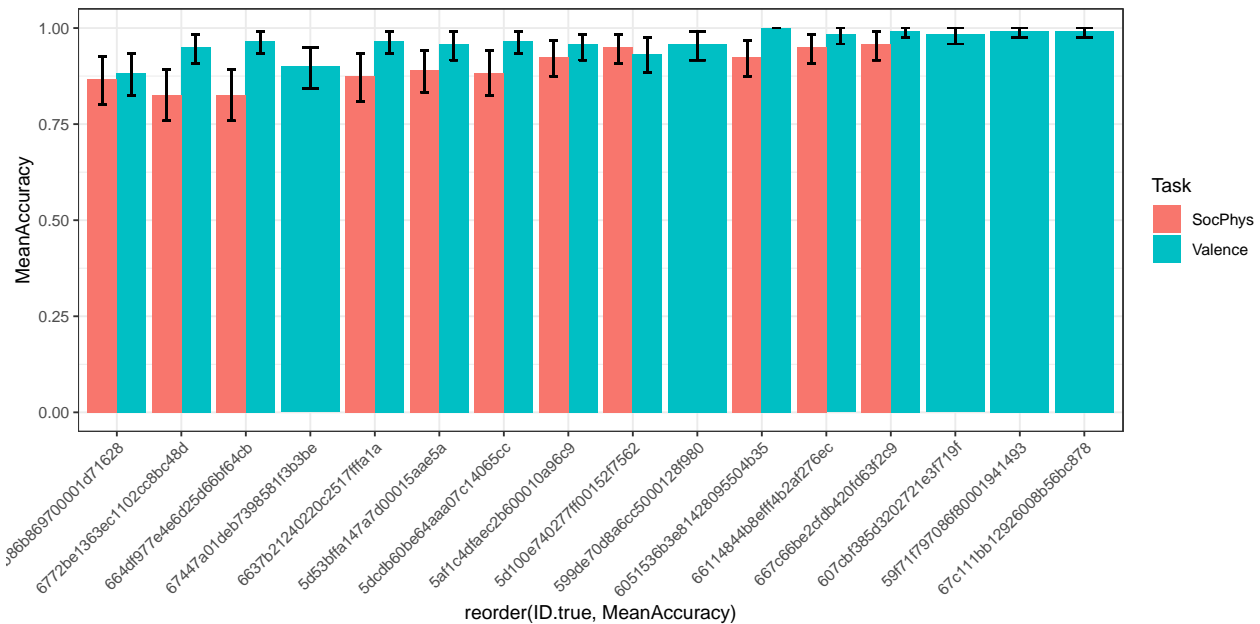
```
# Sanity check
length(unique(d.inaccurate.removed$ID.true))
```

```
## [1] 16
```

Accuracy by Participant

```
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))
```



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

Mean Accuracy by Word / Task

Looking at only the first block

```
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))

```

