

Contrasting turn gap w precision

Some recent studies have used a measure of response precision (the absolute amount of time elapsed between turns; Corps et al., 2018, 2019) to see how well individuals coordinate in production. We calculated this for our three experiments to contrast with turn gap (offset of prior turn minus onset of current turn).

While there are some numeric differences— means for precision are always larger than turn gap, and mean differences in precision are reduced for smaller values compared to larger ones because of the non-linear nature of the transformation—the same conclusions are drawn from both measures.

Experiment 1

```
## precision = abs value of turn gap
ds$precis <- abs(ds$b_offA)

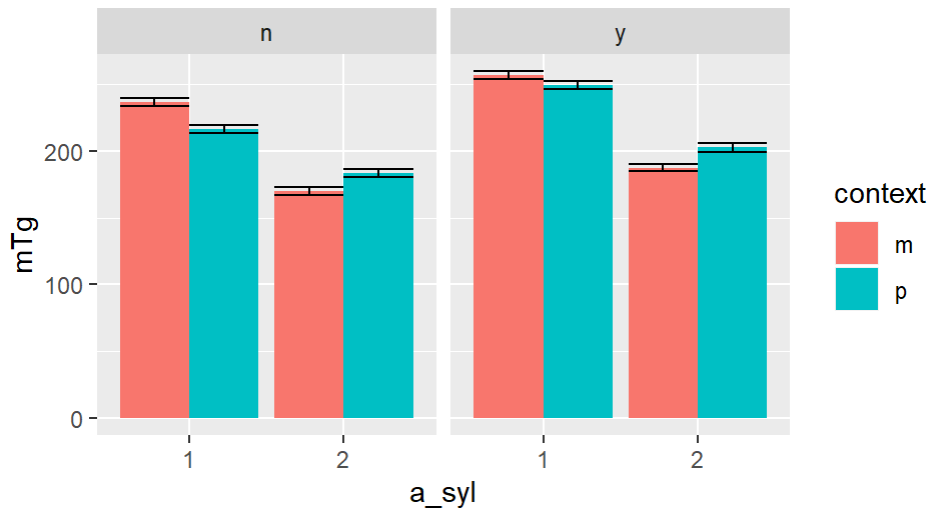
## tables
e1 <- ds %>% group_by(a_syl, occluded, context) %>% summarise(mTg = mean(b_offA), sdTg = sd(b_offA), mPre = mean(precis), sdPre = sd(precis), count=n())
e1$delta <- e1$mPre - e1$mTg

e1
```

```
## # A tibble: 8 x 9
## # Groups:   a_syl, occluded [?]
##   a_syl occluded context    mTg    sdTg    mPre    sdPre count delta
##   <fct> <fct>    <fct>    <dbl> <dbl> <dbl> <dbl> <int> <dbl>
## 1 1      n      m      237.  188.  248.  173.  3845  11.5
## 2 1      n      p      216.  192.  234.  170.  3774  17.9
## 3 1      y      m      256.  179.  262.  170.  3780   5.80
## 4 1      y      p      249.  185.  261.  168.  3852  11.6
## 5 2      n      m      170.  187.  199.  156.  3769  28.8
## 6 2      n      p      183.  191.  210.  160.  3841  27.0
## 7 2      y      m      187.  180.  207.  157.  3754  19.3
## 8 2      y      p      202.  189.  221.  168.  3786  18.3
```

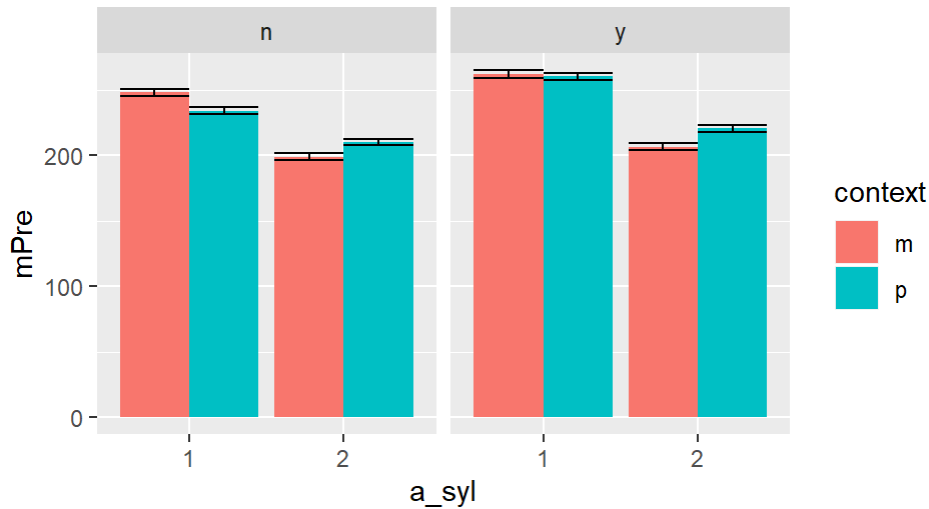
```
ggplot(e1, aes(x=a_syl, fill=context)) + facet_wrap(~occluded) + geom_bar(stat='identity', position='dodge', aes(y=mTg)) + geom_errorbar(position='dodge', aes(ymax=mTg + sdTg/sqrt(count), ymin=mTg - sdTg/sqrt(count)))+ ggtitle('E1 means by turn gap')
```

E1 means by turn gap



```
ggplot(e1,aes(x=a_syl,fill=context)) + facet_wrap(~occluded) + geom_bar(stat='identity', position='dodge',aes(y=mPre)) + geom_errorbar(position='dodge',aes(ymax=mPre + sdPre/sqrt(count), ymin=mPre - sdPre/sqrt(count)))+ ggtitle('E1 means by precision')
```

E1 means by precision



Experiment 2

```
## precision = abs value of turn gap
ds$precis <- abs(ds$b_offA)

## tables
e2 <- ds %>% group_by(a_syl,occluded,context) %>% summarise(mTg = mean(b_offA), sdTg = sd(b_offA), mPre = mean(precis), sdPre = sd(precis), count=n())
e2$delta <- e2$mPre - e2$mTg
```

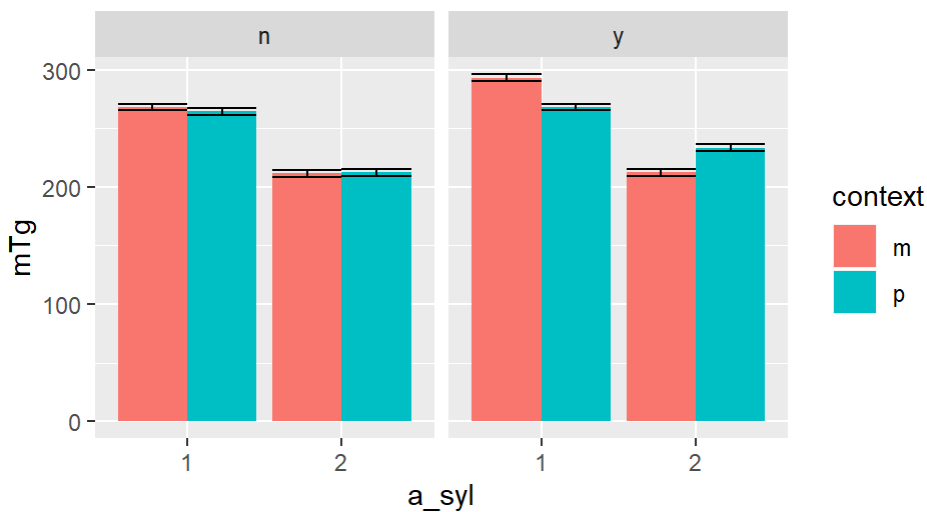
e2

```
## # A tibble: 8 x 9
## # Groups:   a_syl, occluded [?]
```

##	a_syl	occluded	context	mTg	sdTg	mPre	sdPre	count	delta
##	<fct>	<fct>	<fct>	<dbl>	<dbl>	<dbl>	<dbl>	<int>	<dbl>
## 1	1	n	m	268.	184.	272.	178.	4414	3.74
## 2	1	n	p	265.	187.	271.	177.	4377	6.56
## 3	1	y	m	293.	183.	295.	180.	4169	2.07
## 4	1	y	p	268.	176.	272.	170.	4137	3.68
## 5	2	n	m	212.	195.	229.	173.	4416	17.6
## 6	2	n	p	212.	183.	229.	162.	4473	16.6
## 7	2	y	m	212.	192.	233.	167.	4149	20.1
## 8	2	y	p	233.	186.	245.	171.	4136	11.1

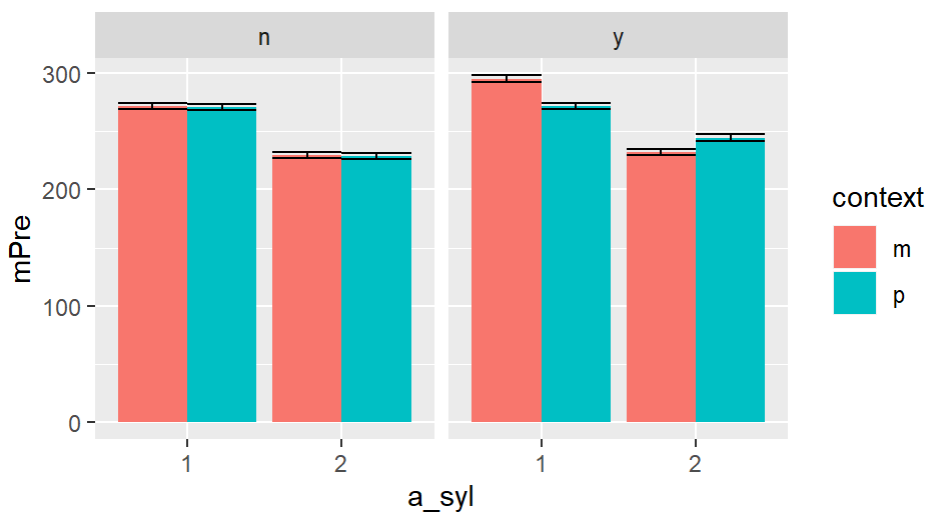
```
ggplot(e2,aes(x=a_syl,fill=context)) + facet_wrap(~occluded) + geom_bar(stat='identity', position='dodge',aes(y=mTg)) + geom_errorbar(position='dodge',aes(ymax=mTg + sdTg/sqrt(count), ymin=mTg - sdTg/sqrt(count)))+ ggtitle('E2 means by turn gap')
```

E2 means by turn gap



```
ggplot(e2,aes(x=a_syl,fill=context)) + facet_wrap(~occluded) + geom_bar(stat='identity', position='dodge',aes(y=mPre)) + geom_errorbar(position='dodge',aes(ymax=mPre + sdPre/sqrt(count), ymin=mPre - sdPre/sqrt(count)))+ ggtitle('E2 means by precision')
```

E2 means by precision



Experiment 3

```
## precision = abs value of turn gap
ds$precis <- abs(ds$b_offA)

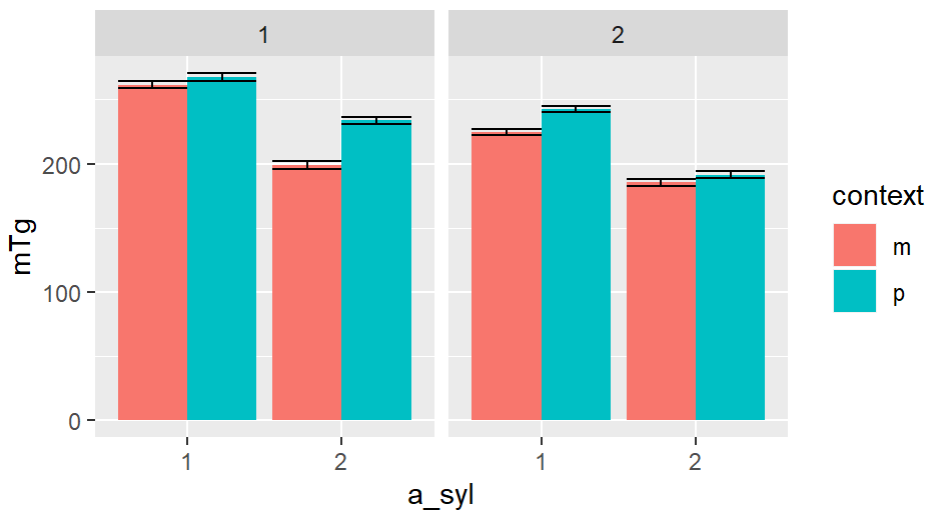
## tables
e3 <- ds %>% group_by(a_syl,a_words,context) %>% summarise(mTg = mean(b_offA), sdTg = sd(b_offA), mPre = mean(precis), sdPre = sd(precis),count=n())
e3$delta <- e3$mPre - e3$mTg

e3
```

```
## # A tibble: 8 x 9
## # Groups:   a_syl, a_words [?]
##   a_syl a_words context    mTg    sdTg    mPre sdPre count  delta
##   <fct> <fct>   <fct>   <dbl> <dbl> <dbl> <dbl> <int> <dbl>
## 1 1      1      m      262.  172.  262.  171.  3953  0.762
## 2 1      1      p      267.  183.  268.  181.  3911  0.836
## 3 1      2      m      225.  162.  234.  148.  4291  9.02
## 4 1      2      p      243.  142.  243.  141.  4130  0.693
## 5 2      1      m      199.  181.  215.  161.  3950 16.4
## 6 2      1      p      234.  185.  239.  179.  3871  5.21
## 7 2      2      m      185.  165.  202.  144.  4417 16.5
## 8 2      2      p      191.  165.  201.  153.  4250  9.82
```

```
ggplot(e3,aes(x=a_syl,fill=context)) + facet_wrap(~a_words) + geom_bar(stat='identity', position='dodge',aes(y=mTg)) + geom_errorbar(position='dodge',aes(ymax=mTg + sdTg/sqrt(count), ymin=mTg - sdTg/sqrt(count)))+ ggtitle('E3 means by turn gap')
```

E3 means by turn gap



```
ggplot(e3,aes(x=a_syl,fill=context)) + facet_wrap(~a_words) + geom_bar(stat='identity', position='dodge',aes(y=mPre)) + geom_errorbar(position='dodge',aes(ymax=mPre + sdPre/sqrt(count), ymin=mPre - sdPre/sqrt(count)))+ ggtitle('E3 means by precision')
```

E3 means by precision

