Event Memory
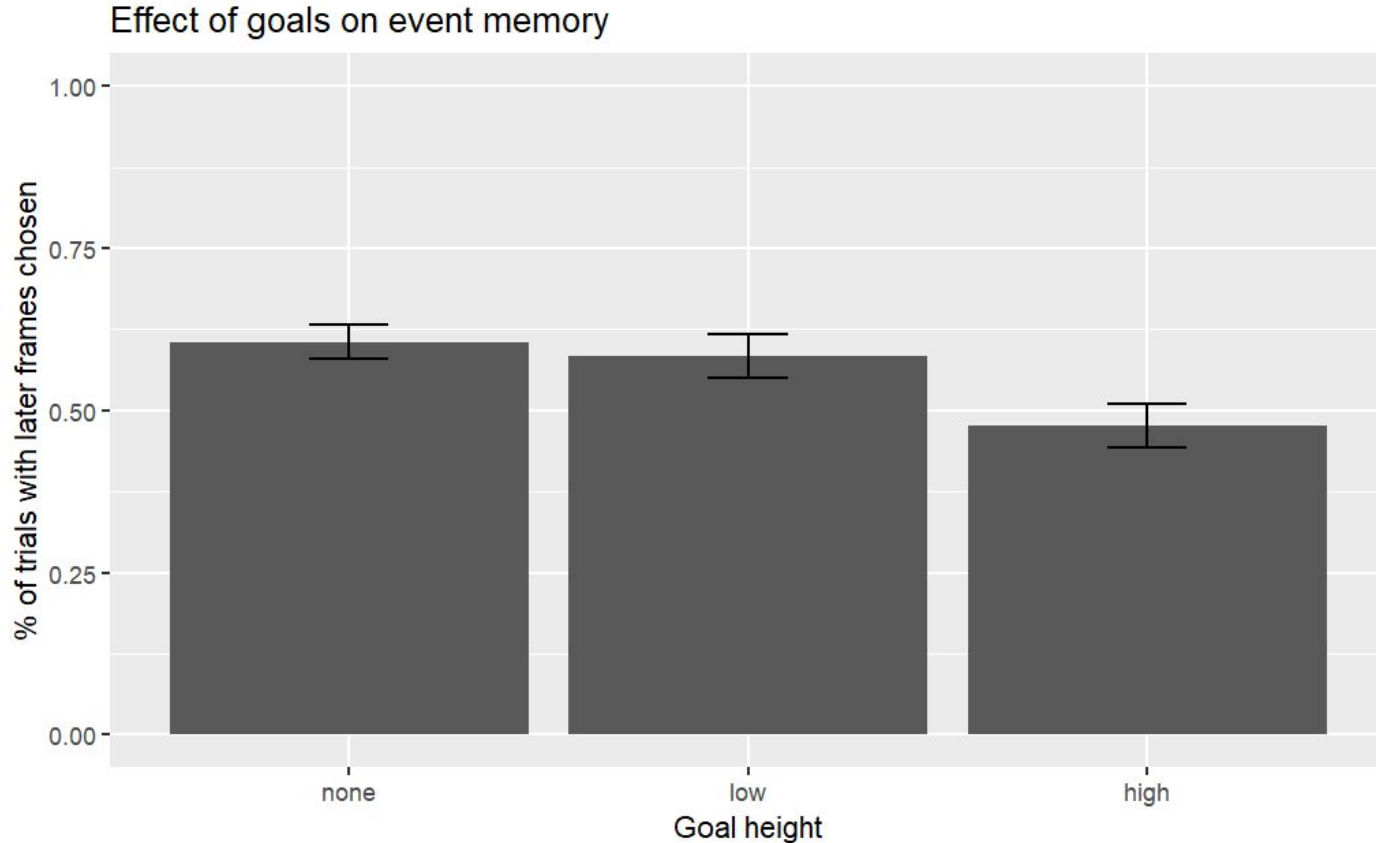
(July Prolific Data)

Review of SONA data: No goal condition (N = 24), Goal (N = 29)


Effect of goals on event memory

Broken down by progression
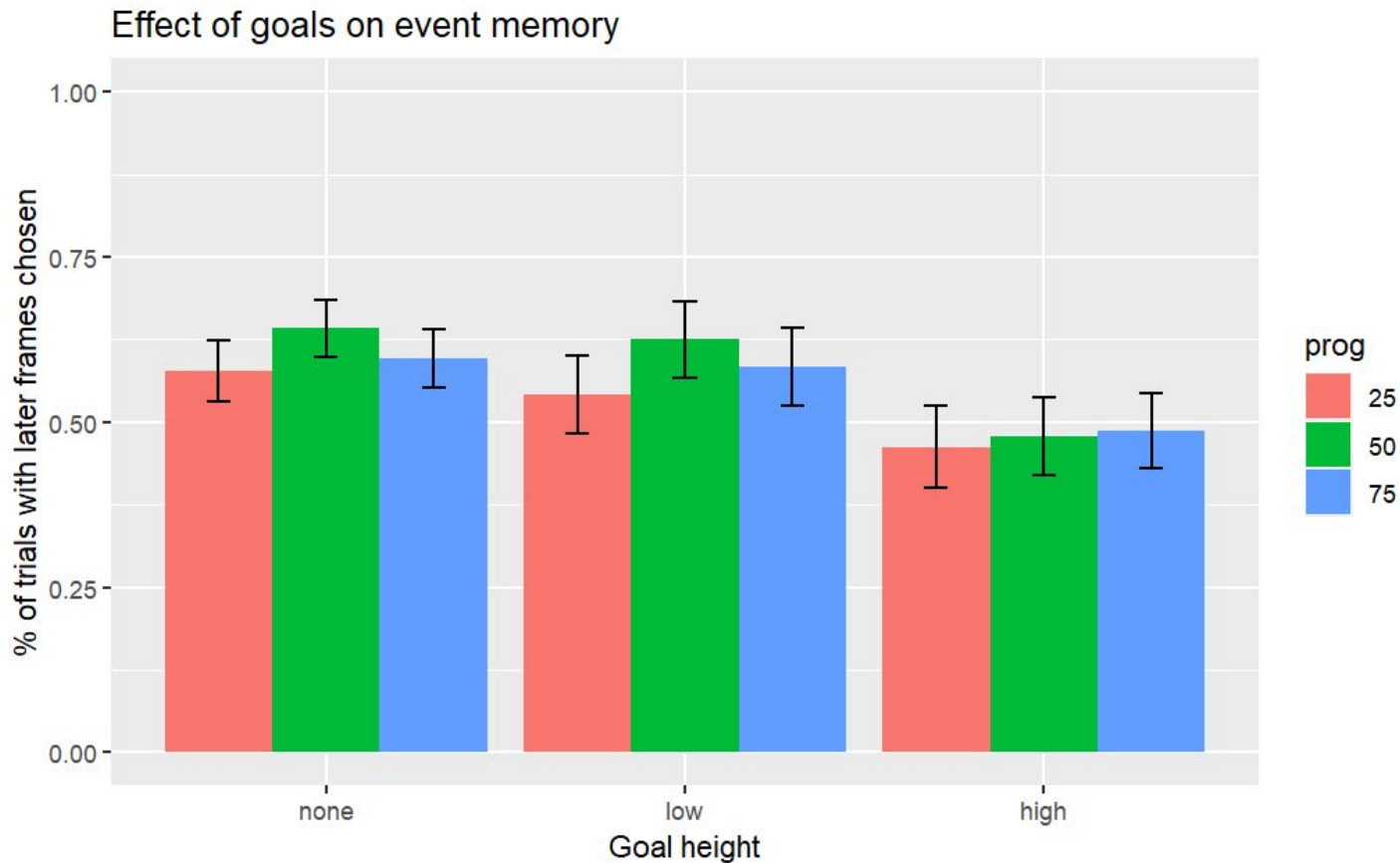
General observations

- Baseline effect of representational momentum is seen in nogoal condition and matched in the low goal condition.
- The effect is smaller in magnitude in the high goal condition, and not different from chance
- However, there was an issue with the partitioning of conditions-- high/low goal items were run within subjects, but the no goal items were run completely separately.
- So we held on to the no goal data and turned to Prolific to run the the high and low goal conditions separately.

Prolific Data

Effect of goals on event memory

Broken down by progression

Effect of goals on event memory
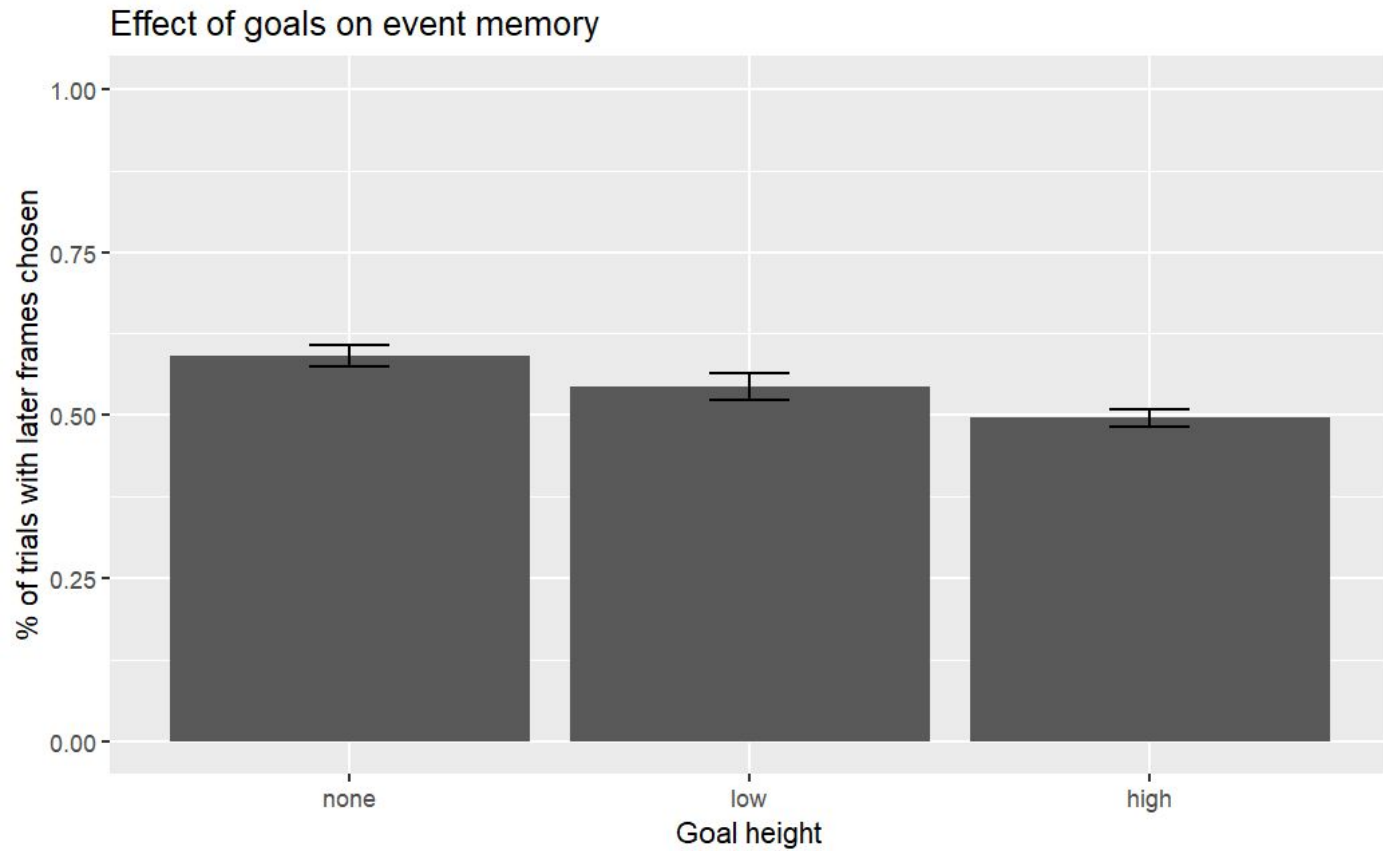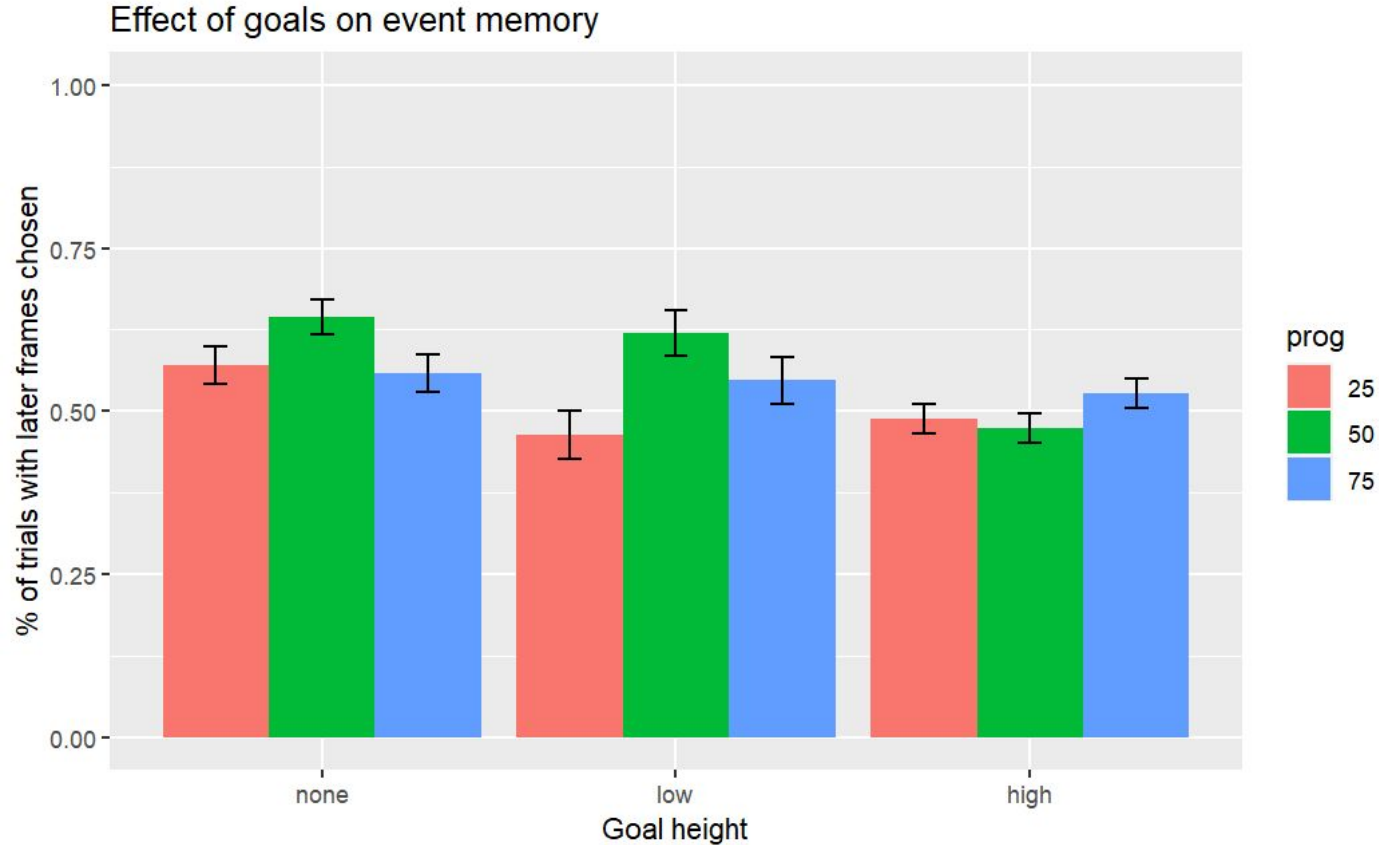
Comments

This solidifies trends seen in the initial SONA study

- There is a baseline effect of representational momentum in the no goal condition. (Significantly different from chance, and from the high goal condition)
- Visually, the low goal condition seems to separate itself from no goals, creating a 3 part distribution
- But neither the high nor low goal condition is significantly different from chance (t-test p-values greater than 0.1)

This and the previous study showed images that were 10% completion away (typically 2 frames)
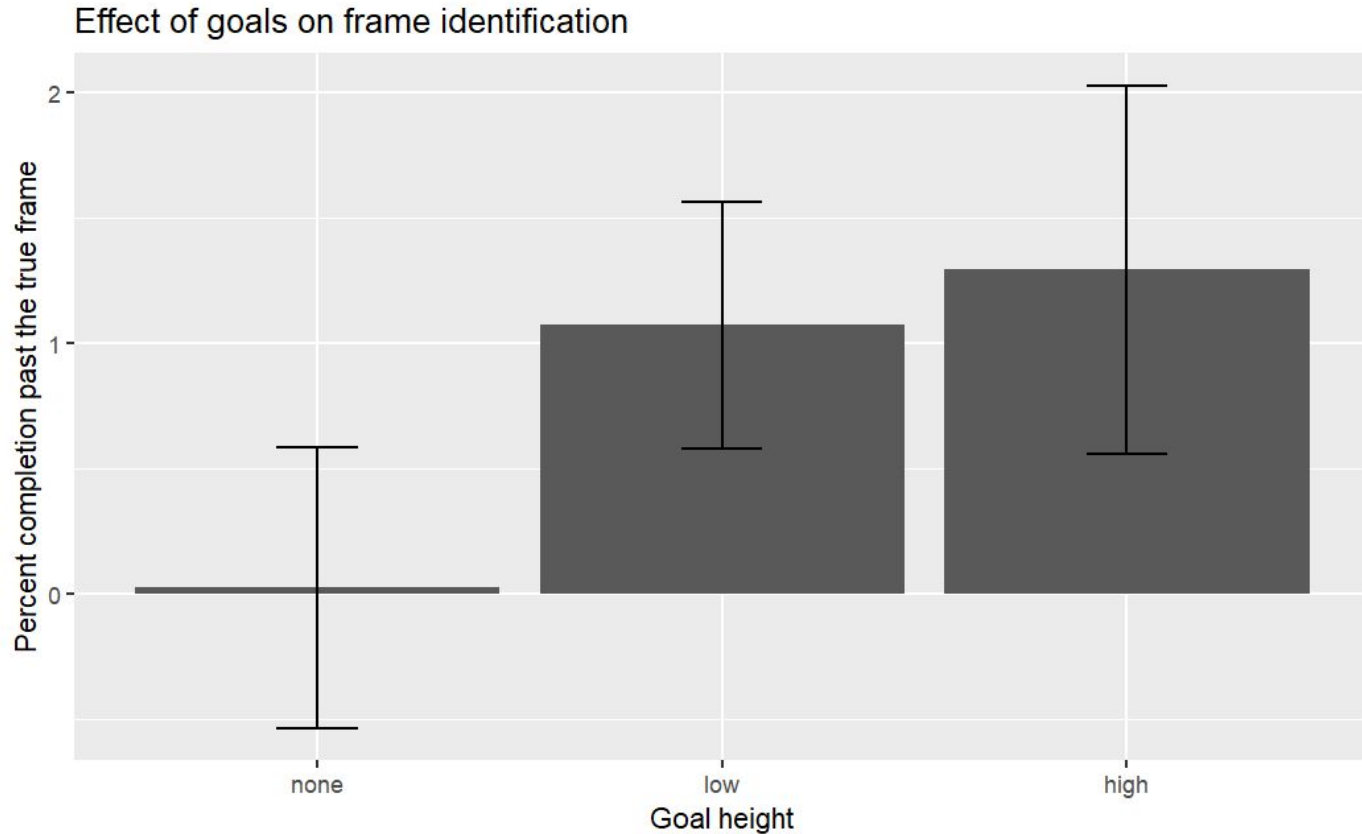
Stats

Pairwise comparison of 3 conditions (none, low, high):

```
      none    low

low   0.3374 -

high 0.0042 0.3374
```

t-test of high and low conditions: `t = -1.3828, df = 57.611, p-value = 0.1721`

t-test against chance: none (`p = 0.0001747`), low (`p = 0.144`), high (`p = 0.8261`)

Experiment 2 (30 people in each condition)

Effect of goals on frame identification

Comments

In this experiment, the true answer was available to the participants, and we see that without goals participants don't show an overall error in either direction. Not that they were all picking correctly, it was just balanced (see scatterplot in slide 12)

A t-test shows nogoal mean is not different from 0 (p=0.97), lowgoal mean is close to different (p= 0.076), and highgoal mean is significantly different (0.035)

Evaluating by observation (rather than by participant average) shows similar t-test results: With the hypothesis that the mean is different from 0, we have nogoal (p = 0.96), lowgoal (p = 0.0297), highgoal (0.079).

Neither of these approaches shows a difference between high and low goal conditions.

Effect of goals on frame identification (separated by video cutoff point)
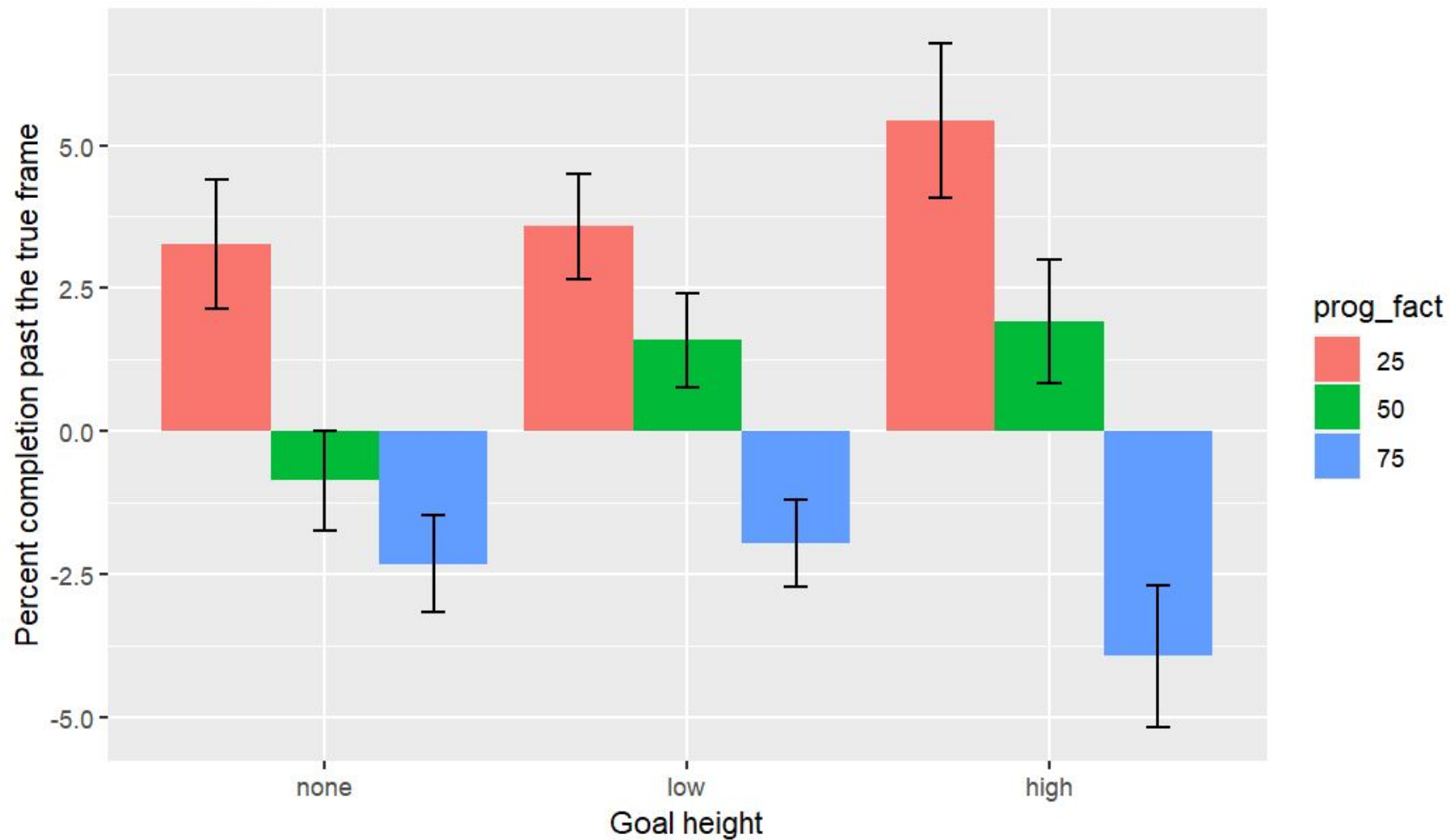
Linear regression model

Predicting progression error with fixed effect of goal type and cutoff progression, and a random effect of item and participant.

```
Fixed effects:

                Estimate Std. Error        df t value Pr(>|t|)

(Intercept)      3.0673      0.8895   71.7566   3.448 0.000948 ***

goallow          1.0483      0.7936   83.9986   1.321 0.190120

goalhigh         1.1656      0.8617   84.0373   1.353 0.179773

prog_fact50     -2.6935      0.8036 1477.4281  -3.352 0.000824 ***

prog_fact75     -6.4361      0.8077 1479.9511  -7.969 3.18e-15 ***
```
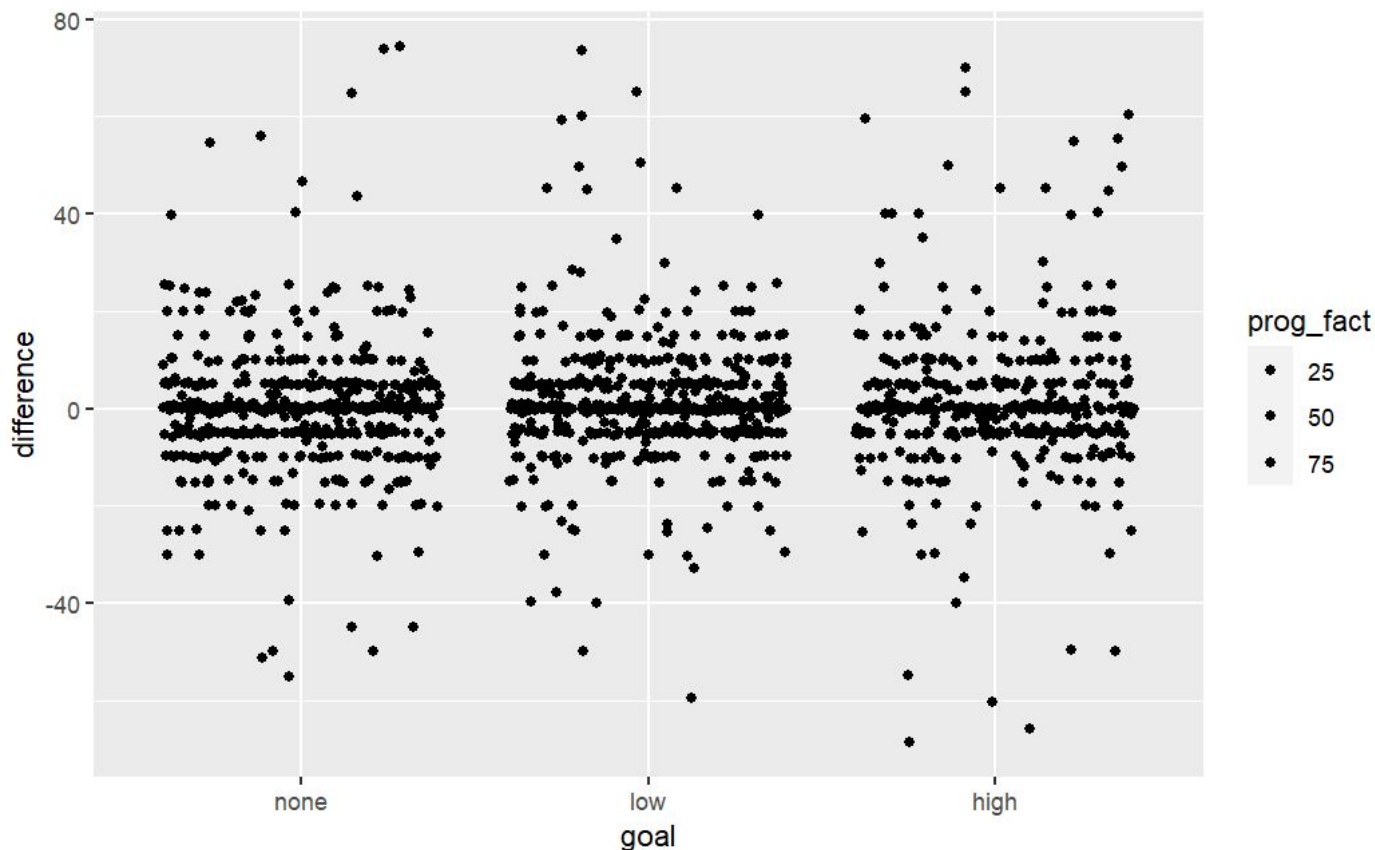
```
Random effects:

 Groups    Name           Variance Std.Dev.

 IP         (Intercept)    0.6842   0.8272

 item       (Intercept)    4.4180   2.1019

 Residual                165.8426 12.8780

Number of obs: 1566, groups:  IP, 87; item, 18
```

Spread of frame difference between estimated and true

There are some really high levels of frame identification error-- nearing an 80% progression difference?

Comments

Reaction Time: The significant effect of progression makes me wonder how quickly these responses were given. In this experiment, the starting location of the slider was randomized, and movement of the slider before proceeding was not enforced. What would be an appropriate reaction time to filter for in order to exclude responses where the slider was not moved?

Since the effect of goal in Exp 2 is not significant, it is hard to draw concrete conclusions. But taken together with Experiment 1, these results paint an interesting picture of the effect of goals, particularly contrasting their effect in a forced error versus correct identification task.