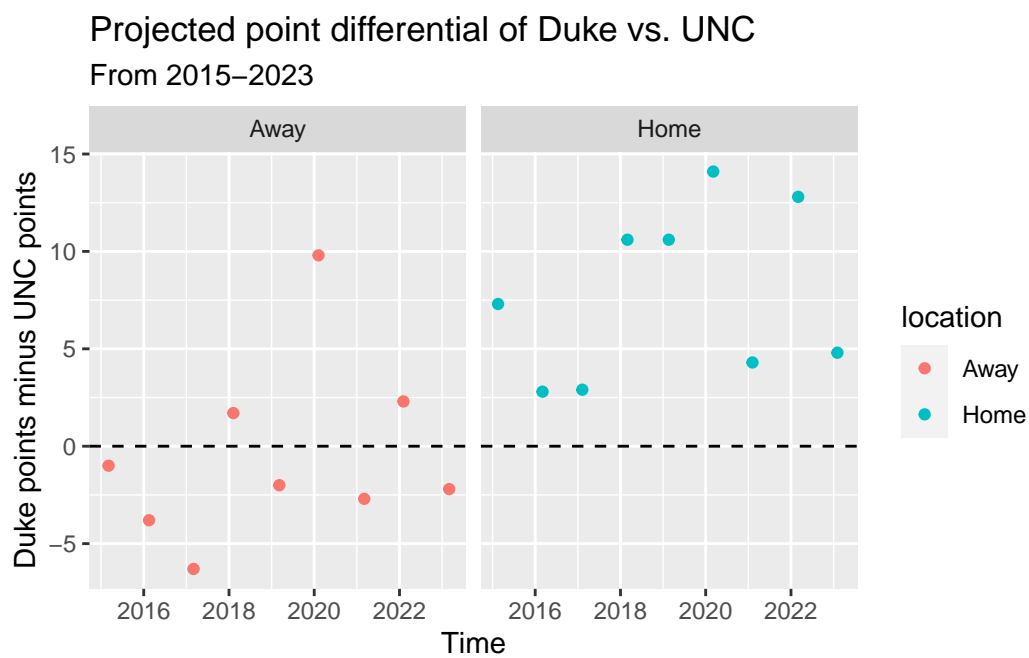


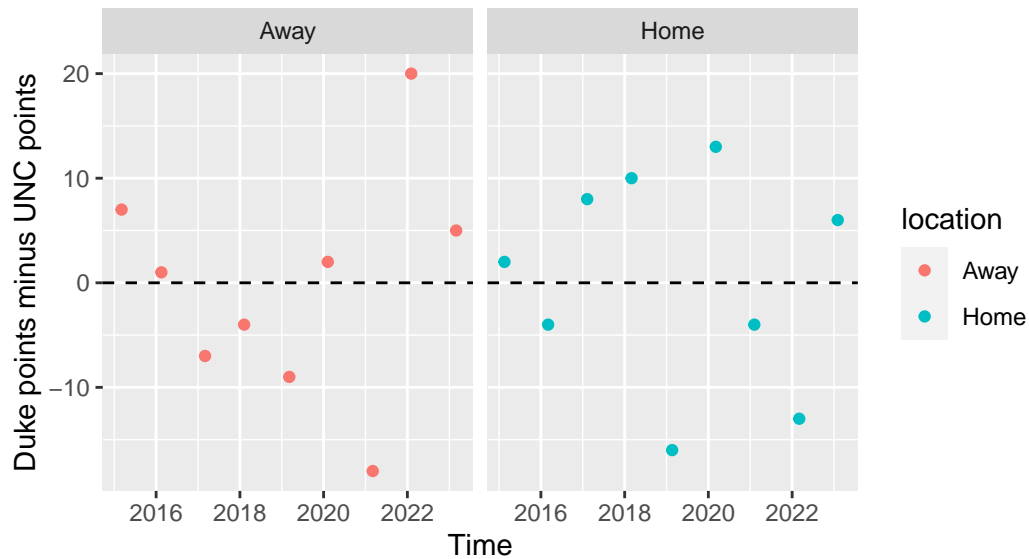
Predicting the Duke vs. UNC game on Feb. 3, 2023 using modeling

Dom Fenoglio, The Duke Chronicle



Actual point differential of Duke vs. UNC

From 2015–2023



```
real_results <- real_results %>%
  mutate(bin_win = as.factor(if_else(diff > 0, 1,0)))

full_predictions <- full_predictions %>%
  mutate(bin_win = as.factor(if_else(diff > 0, 1,0)))

filtered_predictions <- full_predictions %>%
  filter(team == "Duke")

confusionMatrix(data=filtered_predictions$bin_win, reference = real_results$bin_win, posit
```

Warning in confusionMatrix.default(data = filtered_predictions\$bin_win, :
Levels are not in the same order for reference and data. Refactoring data to
match.

Confusion Matrix and Statistics

	Reference	
Prediction	0	1
0	3	3
1	5	7

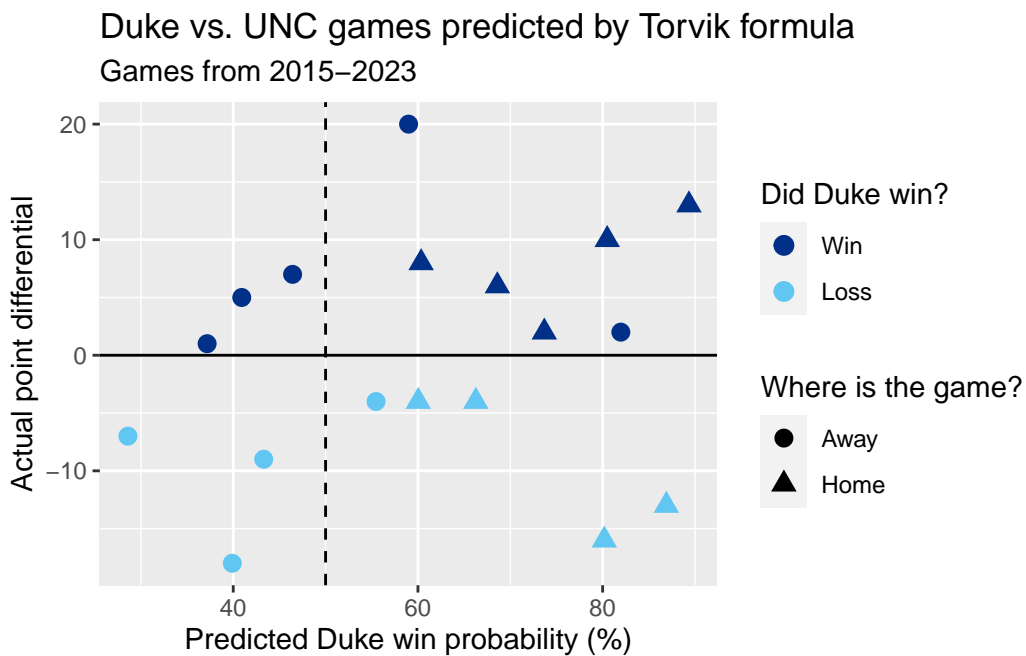
Accuracy : 0.5556
 95% CI : (0.3076, 0.7847)
 No Information Rate : 0.5556
 P-Value [Acc > NIR] : 0.5966

Kappa : 0.0769

McNemar's Test P-Value : 0.7237

Sensitivity : 0.7000
 Specificity : 0.3750
 Pos Pred Value : 0.5833
 Neg Pred Value : 0.5000
 Prevalence : 0.5556
 Detection Rate : 0.3889
 Detection Prevalence : 0.6667
 Balanced Accuracy : 0.5375

'Positive' Class : 1



```
both_teams <- full_join(duke_final,unc_final)
```

```

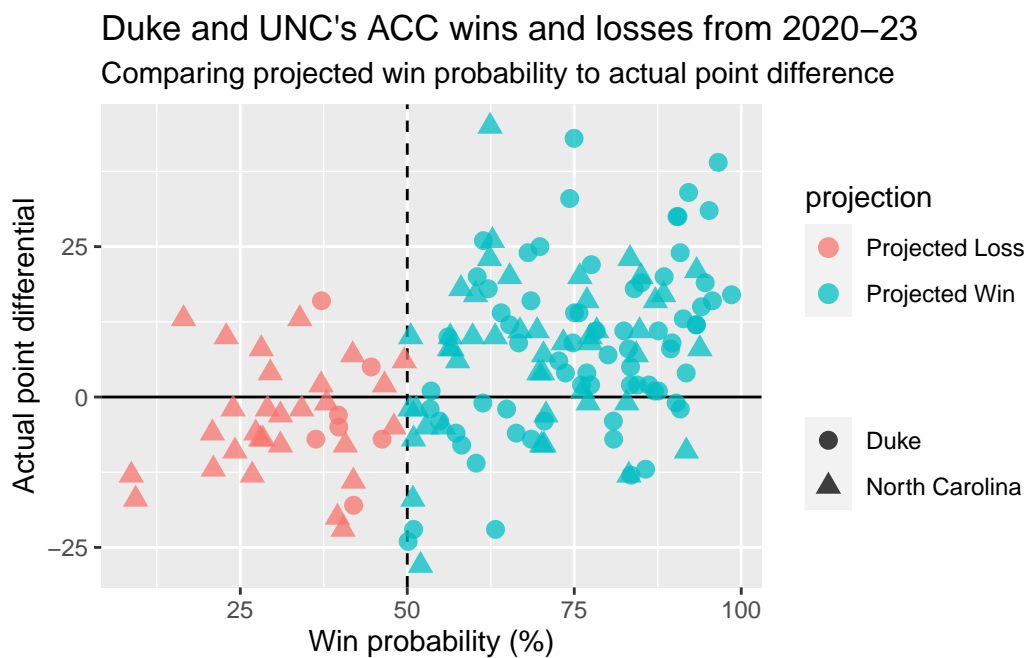
Joining with `by = join_by(date, team.x, opp.x, game_location, tempo.x, ppp,
pts, win_per, did_win, simulate_date, year.x, type, team.y, conf, opp.y,
opp_conf, loc, result, pts_scored, pts_allowed, adj_o, adj_d, off_ppp, off_efg,
off_to, off_or, off_ftr, def_ppp, def_efg, def_to, def_or, def_ftr, game_score,
season, tempo.y, game_id, coach, opp_coach, year.y, diff, projection)`

```

```

both_teams %>%
  ggplot(aes(x = win_per, y = diff, color = projection, shape = team.x)) +
  #facet_wrap(~year.y) +
  geom_hline(yintercept = 0, linetype = 1) +
  geom_vline(xintercept = 50, linetype = 2) +
  geom_point(size = 3, alpha = 0.75) +
  #geom_rect(xmin = 45, xmax = 55, ymin = -1000, ymax = 1000, alpha = 0, color = "White", l
  labs(title = "Duke and UNC's ACC wins and losses from 2020-23",
       subtitle = "Comparing projected win probability to actual point difference",
       shape = "",
       x = "Win probability (%)",
       y = "Actual point differential")

```



```

conf_mat_data_combo <- both_teams %>%
  filter(projection != "Too close to call") %>%
  mutate(projection_bin = fct_relevel(as.factor(if_else(projection == "Projected Win", 1,
    result_bin = fct_relevel(as.factor(if_else(result == "W", 1, 0))), "1")
conf_matrix_combo <- confusionMatrix(data=conf_mat_data_combo$projection_bin, reference =

```

Warning in confusionMatrix.default(data = conf_mat_data_combo\$projection_bin, :
Levels are not in the same order for reference and data. Refactoring data to
match.

```
conf_matrix_combo
```

Confusion Matrix and Statistics

	Reference	
Prediction	0	1
0	25	11
1	33	85

Accuracy : 0.7143
 95% CI : (0.636, 0.7841)
 No Information Rate : 0.6234
 P-Value [Acc > NIR] : 0.011316

Kappa : 0.3421

Mcnemar's Test P-Value : 0.001546

Sensitivity : 0.8854
 Specificity : 0.4310
 Pos Pred Value : 0.7203
 Neg Pred Value : 0.6944
 Prevalence : 0.6234
 Detection Rate : 0.5519
 Detection Prevalence : 0.7662
 Balanced Accuracy : 0.6582

'Positive' Class : 1