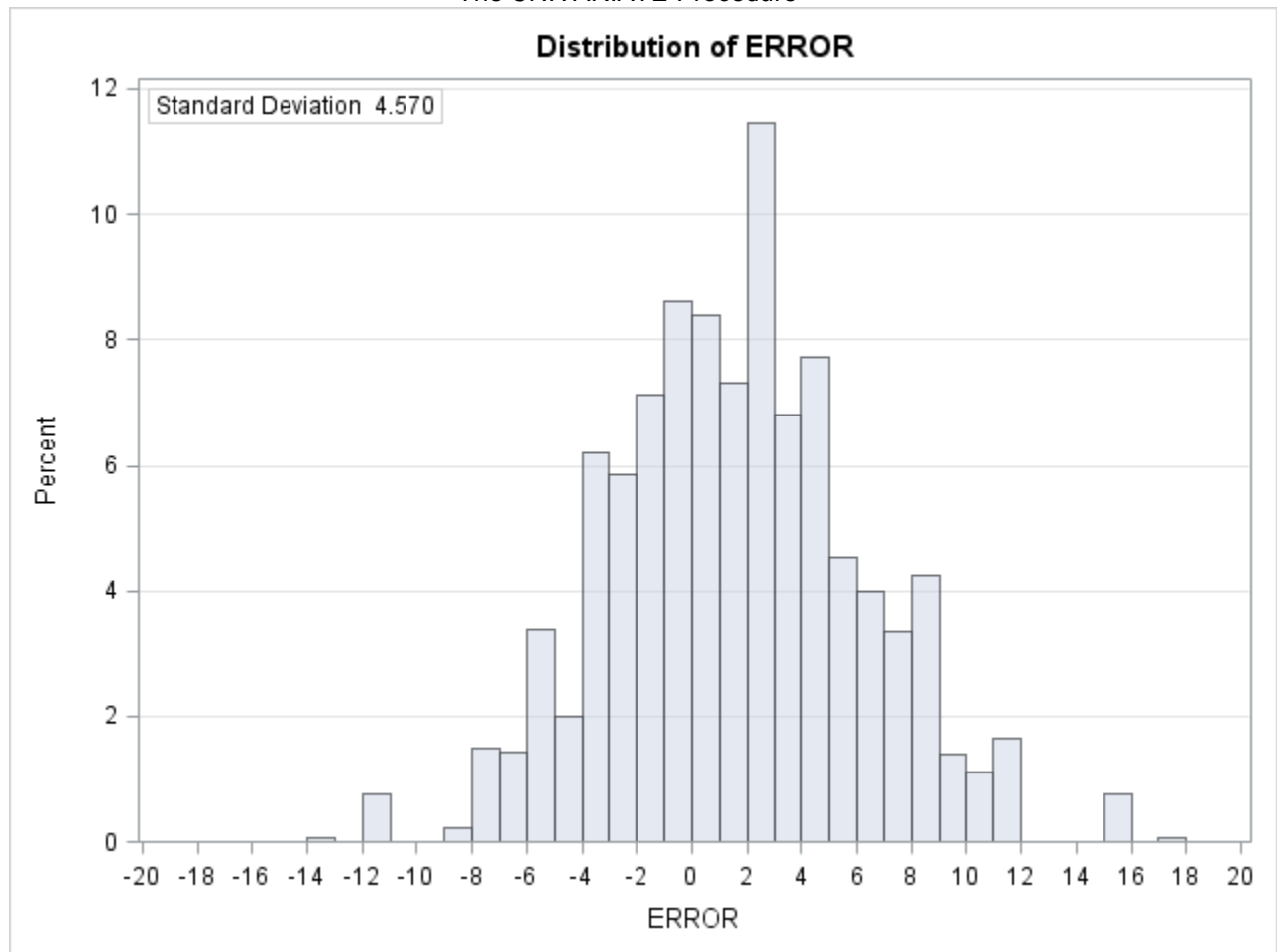


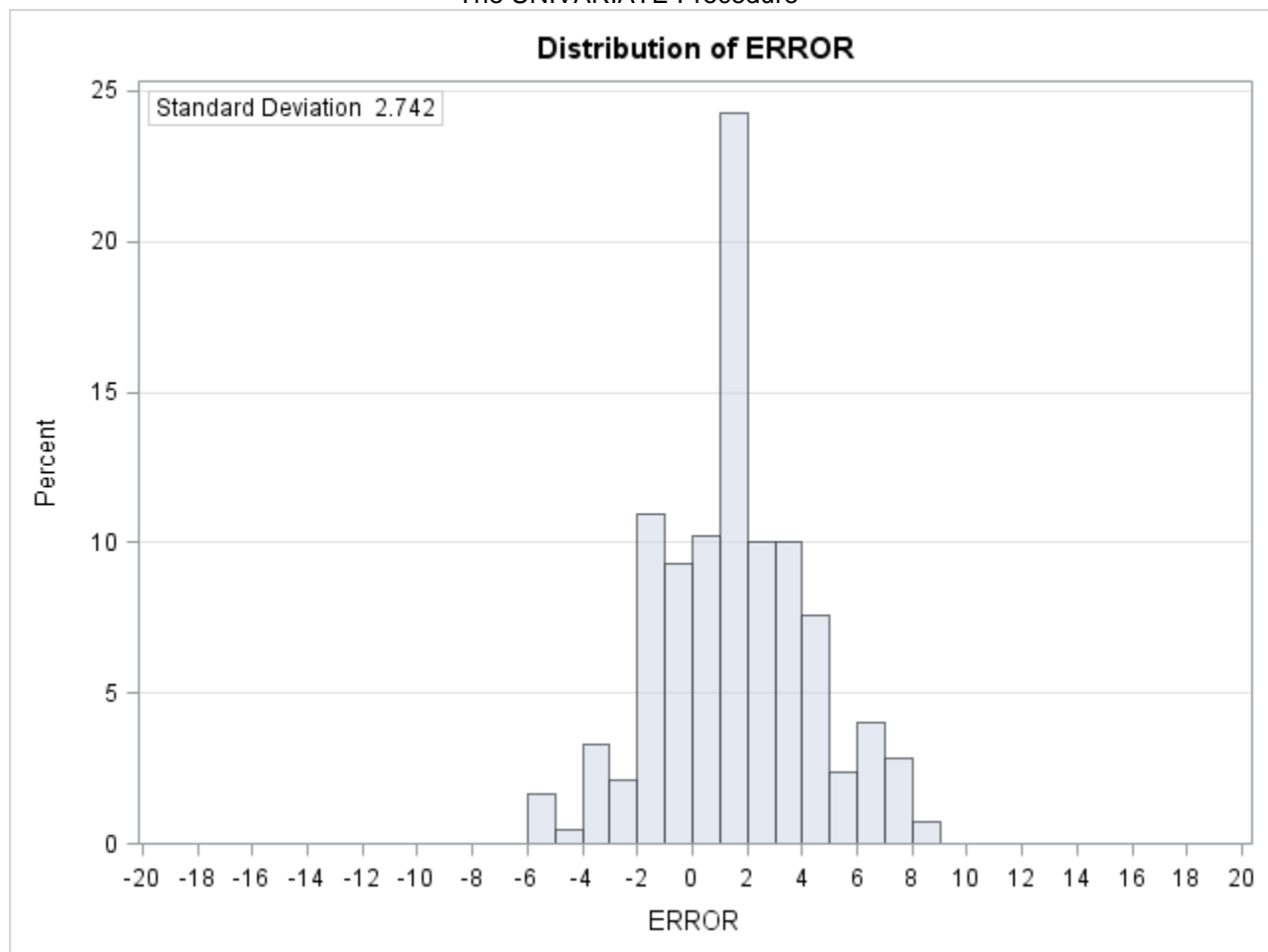
Distribution of error of every polling measurement in the data

The UNIVARIATE Procedure



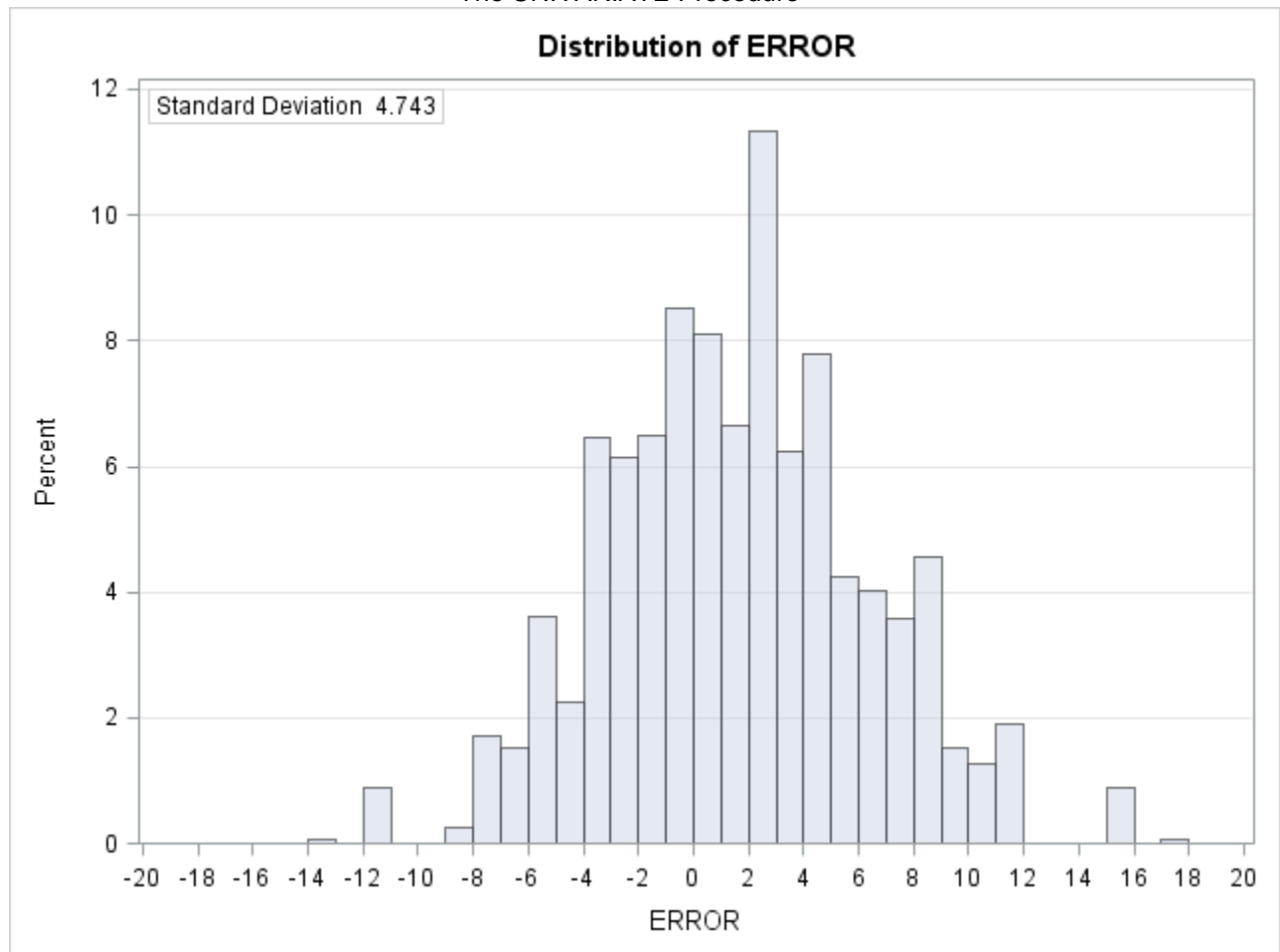
Distribution of error of polling measurements whose forecast_length is less than a week

The UNIVARIATE Procedure



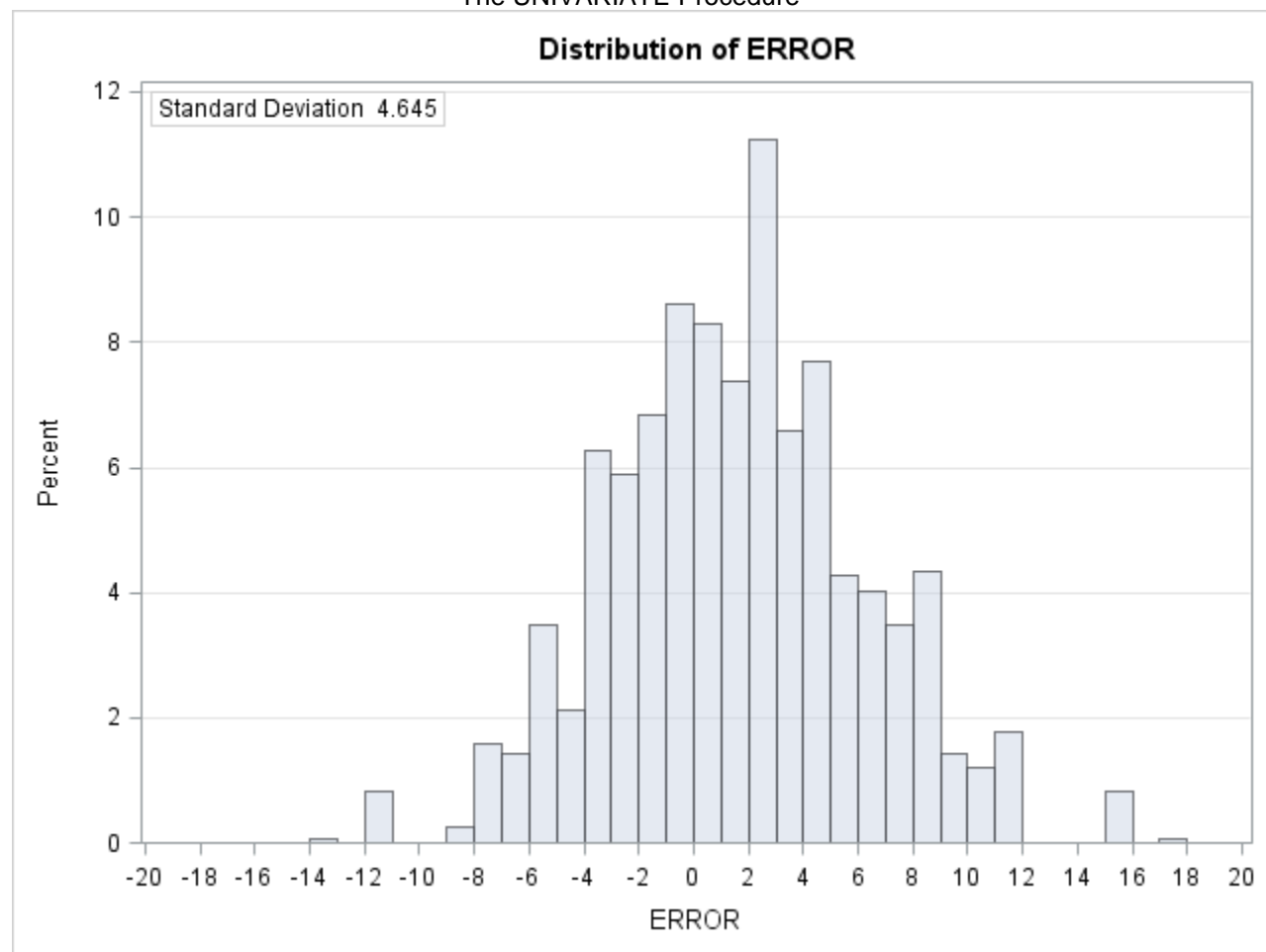
Distribution of error of polling measurements whose forecast_length is more than a month

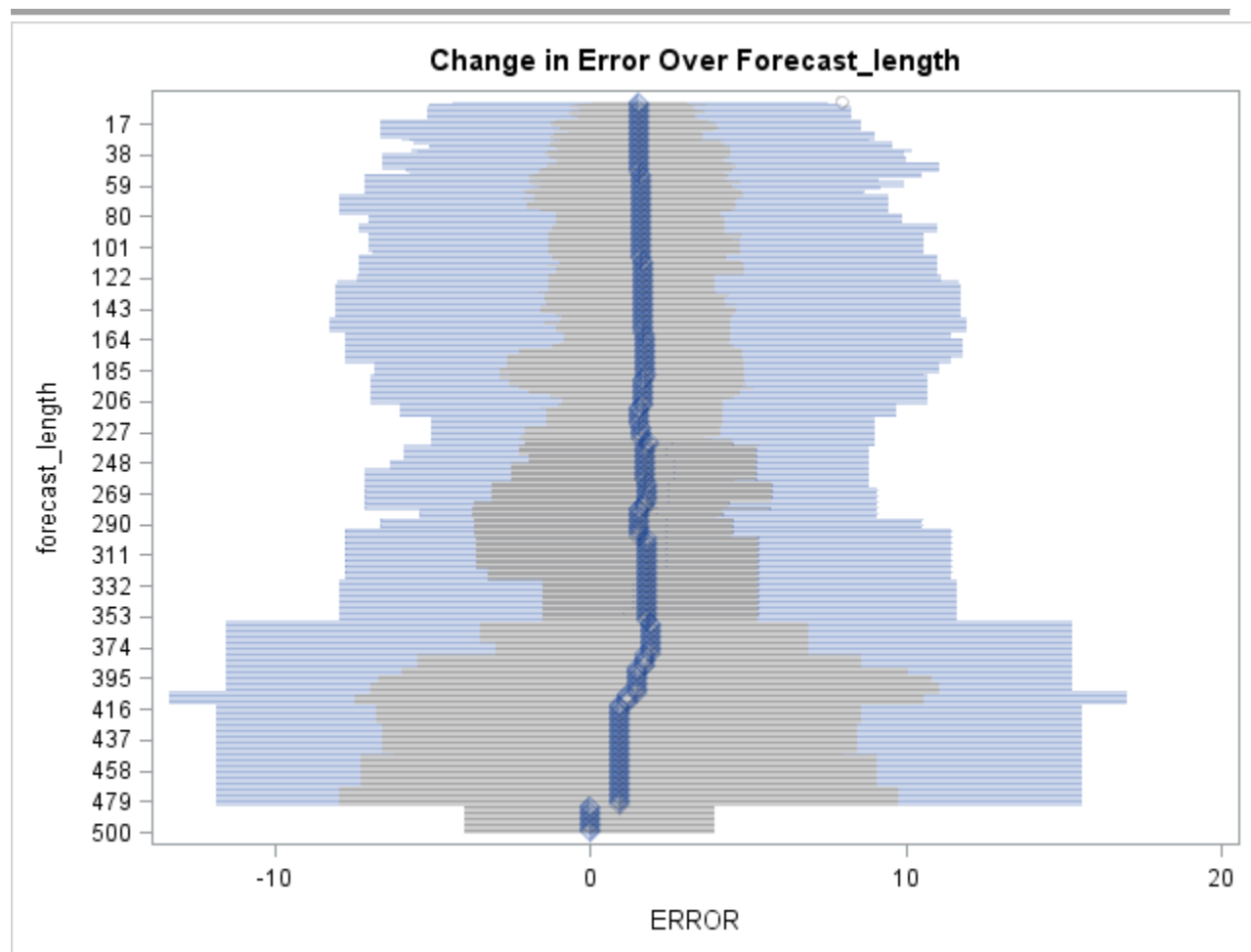
The UNIVARIATE Procedure

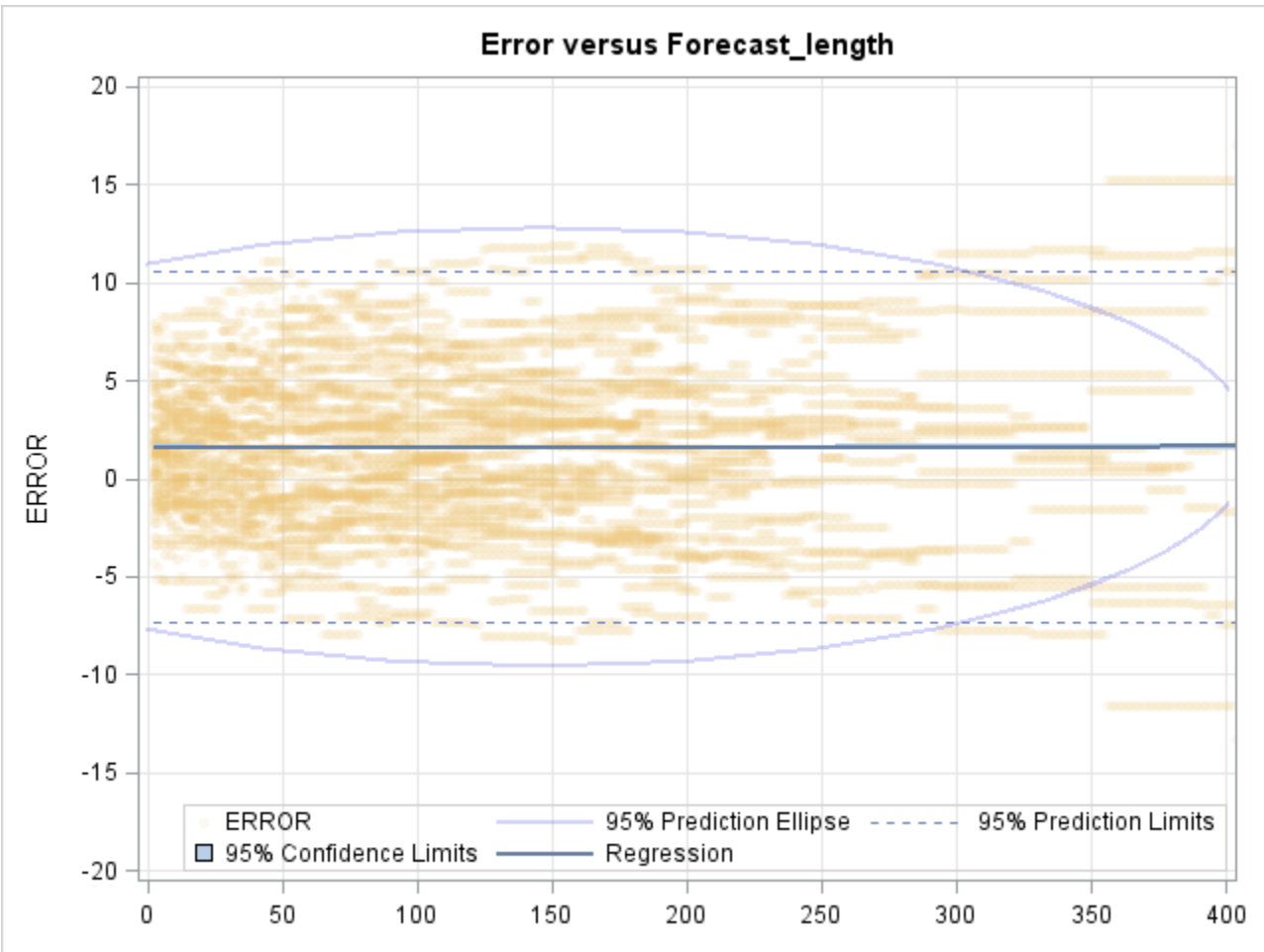


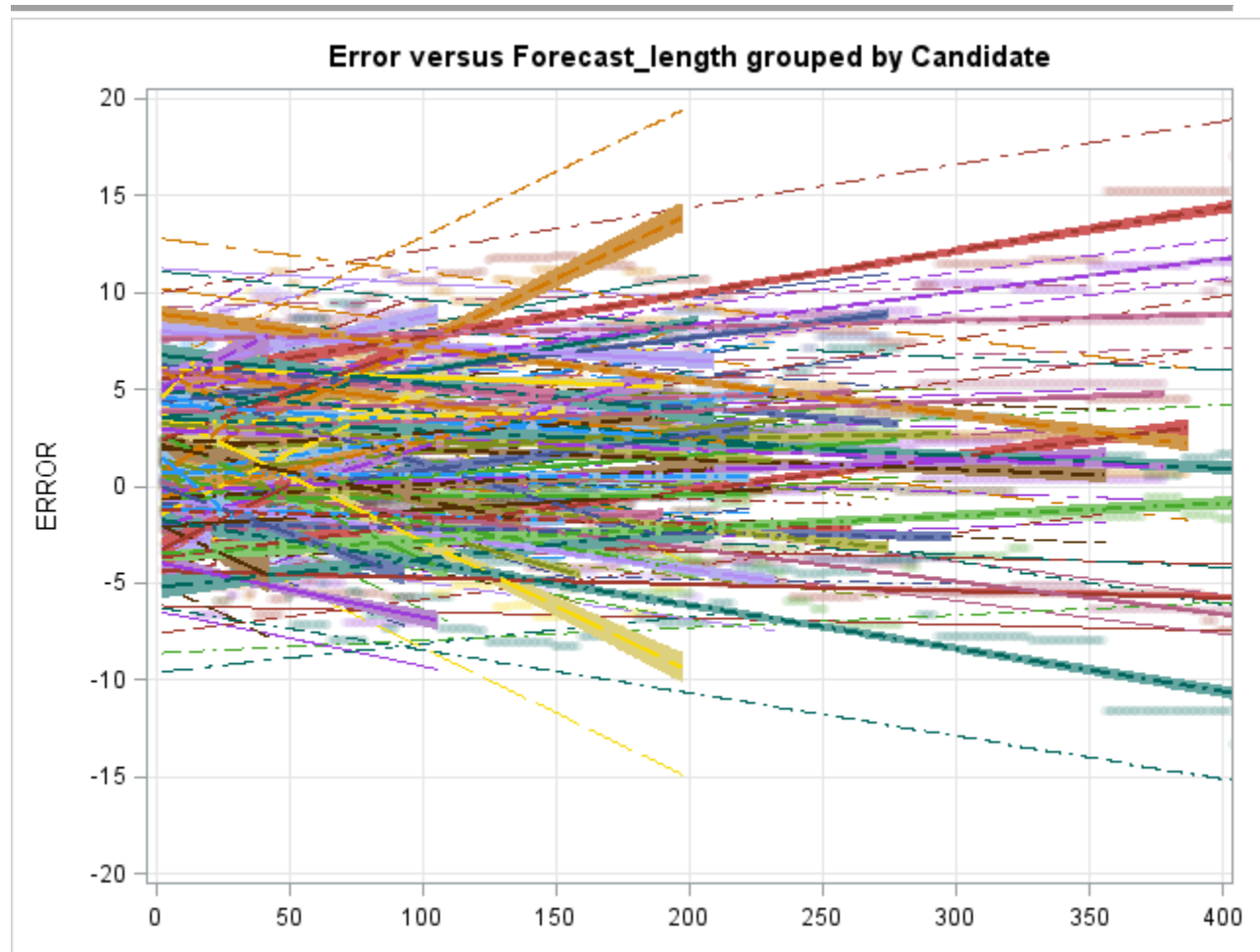
Distribution of error of polling measurements whose forecast_length is more than two weeks yet less than a month

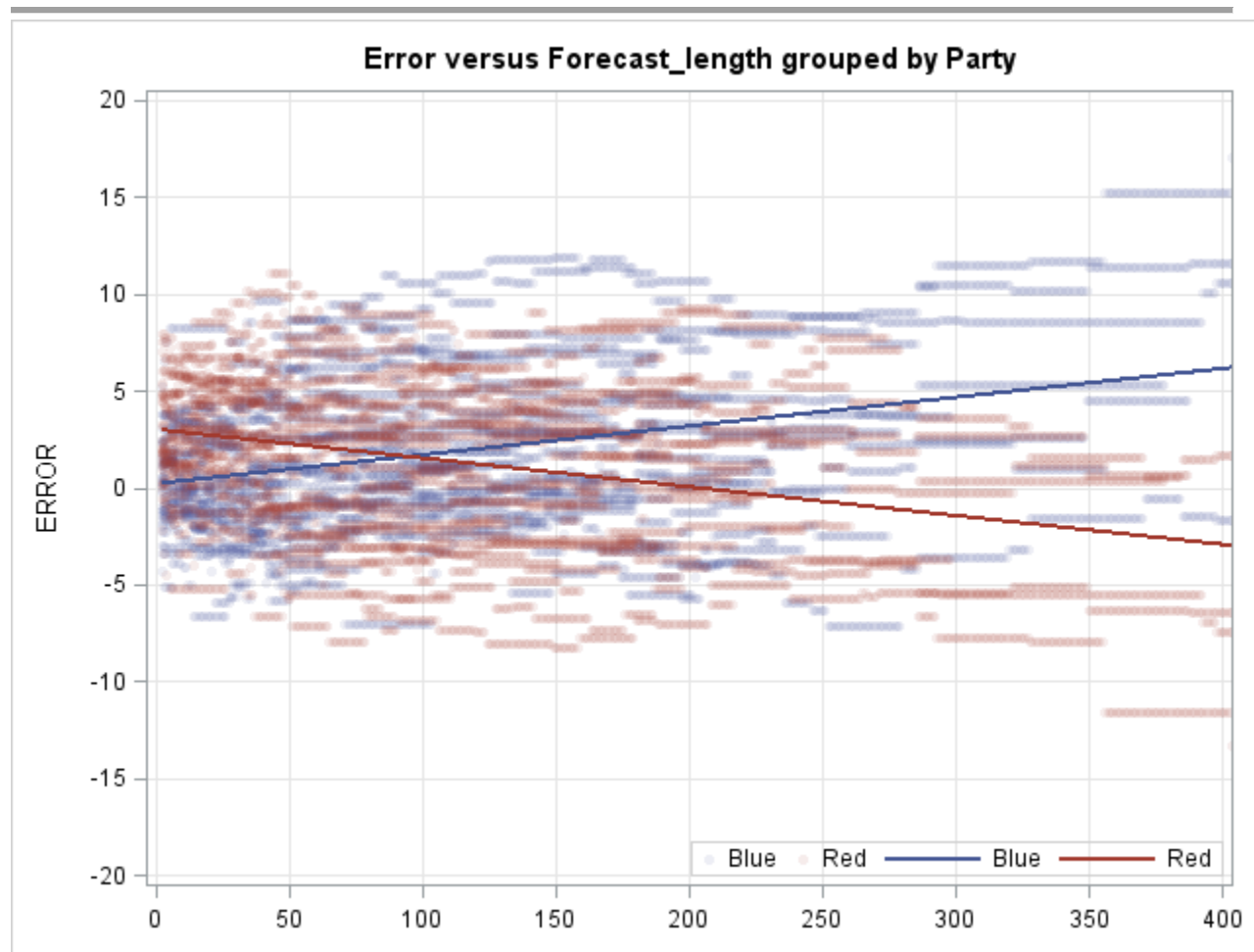
The UNIVARIATE Procedure

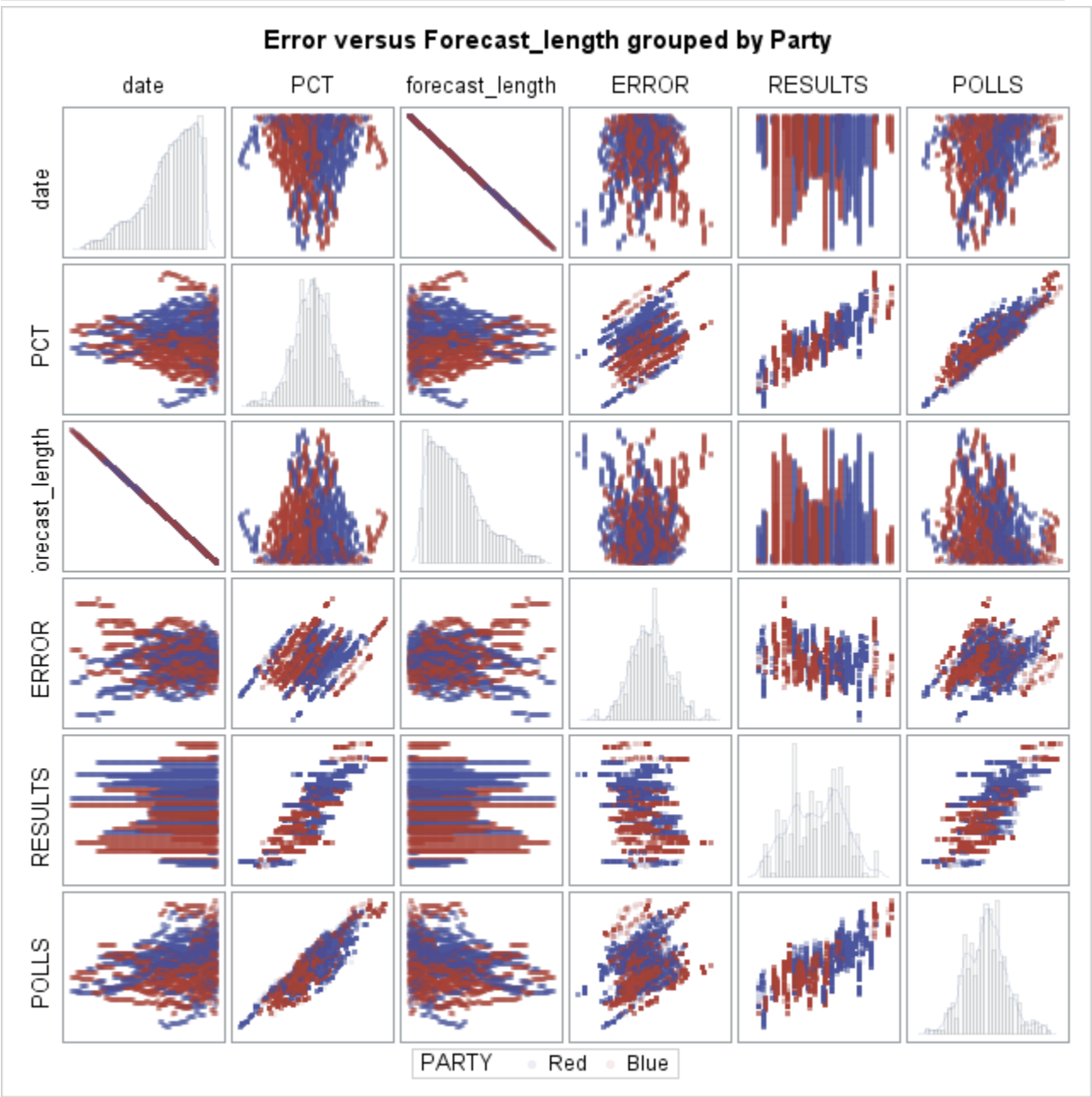












Analysis of Polling Data

The ANOVA Procedure

Class Level Information

Class	Levels	Values
Candidate	69	Angle_R Ayotte_R Barnes_D Barrett_ Beebe_D Bennet_D Bernero_ Blunt_R Boozman_ Boxer_D Brady_R Branstad Brewer_R Brown_D Buck_R Burr_R Carnahan Conway_D Corbett_ Culver_D Cuomo_D Deal_R Denish_D Feingold Fiorina_ Fisher_D Foley_R Glassman Goddard_ Granato_ Haley_R Hodes_D Isakson_ Johnson_ Keet_R Lee_R Lincoln_ Lynch_D Malloy_D Manchin_ Marshall Martinez McCain_R Melancon Mikulski Murray_D Onorato_ Paladino Paul_R Perry_R Portman_ Quinn_D Raese_R Reid_D Rossi_R Sandoval Schumer_ Sestak_D Sheheen_ Snyder_R Stephen_ Thurmond Toomey_R Townsend Vitter_R Walker_R Wargotz_ White_D Whitman_

Number of Observations Read 15158

Number of Observations Used 15158

Analysis of Polling Data

The ANOVA Procedure

Dependent Variable: ERROR

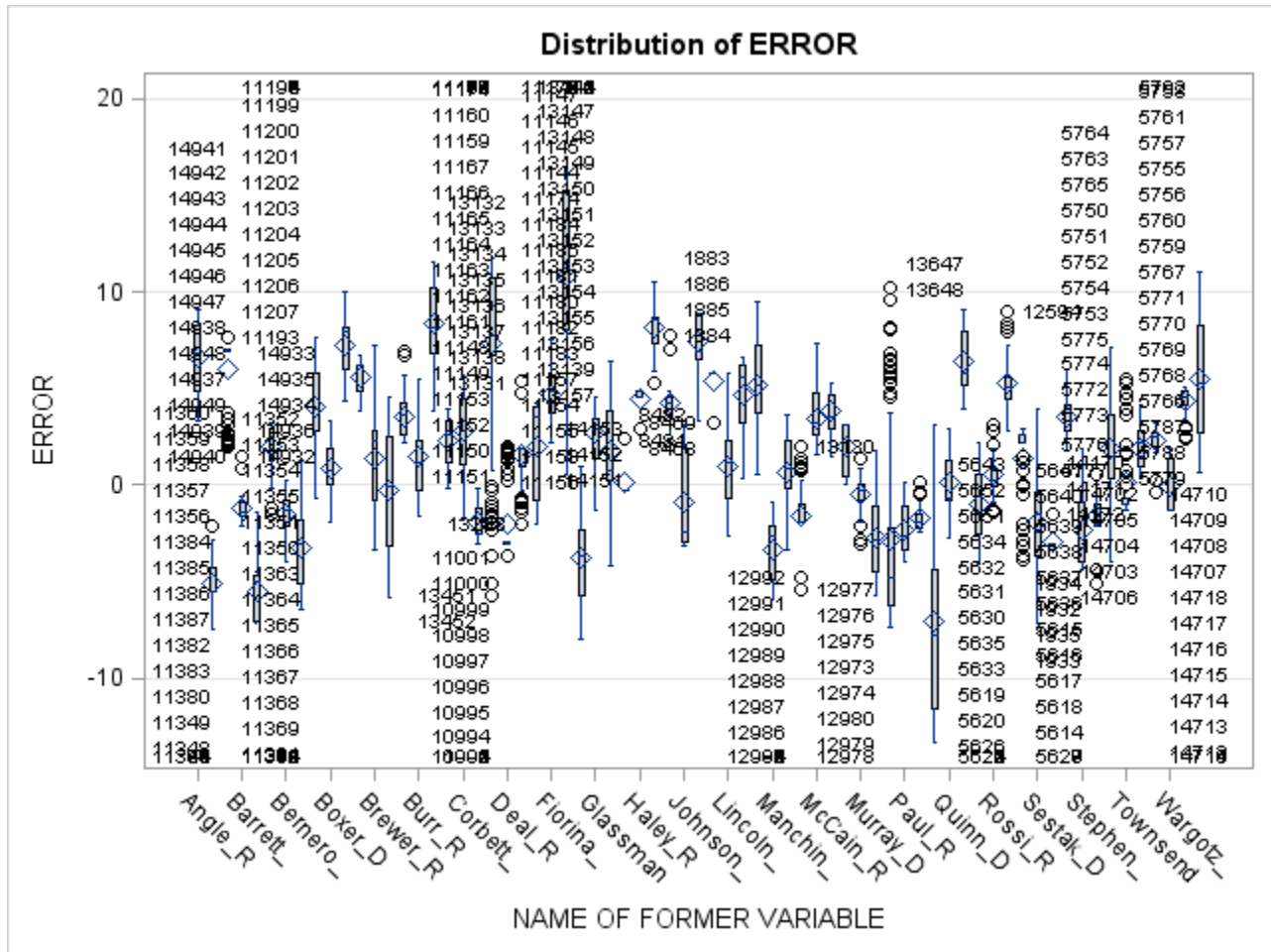
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	68	249115.2923	3663.4602	818.92	<.0001
Error	15089	67501.1174	4.4735		
Corrected Total	15157	316616.4097			

R-Square	Coeff Var	Root MSE	ERROR Mean
0.786805	131.0513	2.115072	1.613927

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Candidate	68	249115.2923	3663.4602	818.92	<.0001

Analysis of Polling Data

The ANOVA Procedure



Analysis of Polling Data

The ANOVA Procedure
Student-Newman-Keuls Test for ERROR

Note: This test controls the Type I experimentwise error rate under the complete null hypothesis but not under partial null hypotheses.

Alpha	0.05
Error Degrees of Freedom	15089
Error Mean Square	4.473532
Harmonic Mean of Cell Sizes	97.99829

Note: Cell sizes are not equal.

r t e r c f n e a r s	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6					
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	6	6												
r i t i c a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1								
	5	7	7	8	8	8	9	9	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
	9	0	7	2	6	9	1	3	5	7	8	0	1	2	3	4	5	5	6	6	7	7	8	8	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
	2	8	6	4	1	0	5	7	6	2	7	1	3	4	5	5	4	2	0	8	5	2	9	5	1	7	2	7	2	6	1	5	9	3	7	1	4	8	1	5	8	1	4	7	0	3	6	9	2	4	7	9	2	4	7	9	1	4	6	8	
a	2	2	3	3	1	9	9	3	0	6	6	1	4	8	3	1	3	8	9	6	8	6	2	4	4	1	5	8	8	7	4	9	3	5	6	6	5	2	9	4	9	2	5	7	8	8	7	5	3	0	7	3	8	3	8	2	5	8	1	3	5
	6	3	3	1	6	7	2	4	5	8	0	2	8	5	7	6	1	9	7	0	3	9	2	5	0	0	7	2	7	4	3	6	4	8	8	6	2	7	1	6	0	6	3	2	3	7	4	4	7	4	6	1	1	6	6	1	1	6	8	5	8

N	0	1	2	3	4	5	6	7	8	9
t	0	1	2	3	4	5	6	7	8	9
r	0	1	2	3	4	5	6	7	8	9
k	0	1	2	3	4	5	6	7	8	9
e	0	1	2	3	4	5	6	7	8	9
r	0	1	2	3	4	5	6	7	8	9
c	0	1	2	3	4	5	6	7	8	9
f	0	1	2	3	4	5	6	7	8	9
M	0	1	2	3	4	5	6	7	8	9
e	0	1	2	3	4	5	6	7	8	9
a	0	1	2	3	4	5	6	7	8	9
I	0	1	2	3	4	5	6	7	8	9
s	0	1	2	3	4	5	6	7	8	9

[illegible]

SNK Grouping	Mean	N	Candidate
A	10.8048	480	Fisher_D
B	8.3649	404	Carnahan
B			
B	8.2132	411	Hodes_D
C	7.3965	104	Keet_R
C			

Means with the same letter are not significantly different.

SNK Grouping	Mean	N	Candidate
C	7.3427	196	Cuomo_D
C			
C	7.2023	208	Brady_R
D	6.5934	273	Angle_R
D			
D	6.4286	41	Raese_R
D			
E	D	5.9807	202 Barnes_D
E			
E		5.6311	189 Branstad
E			
E		5.5171	386 Whitman_
E			
E	F	5.4376	13 Lee_R
E	F		
E	F G	5.2544	148 Sandoval
E	F G		
E	F G	5.2140	208 Malloy_D
	F G		
H	F G	4.6877	277 Fiorina_
H	F G		
H	F G	4.6436	92 Lynch_D
H	G		
H	G	4.4431	19 Haley_R
H			
H	I	4.3192	259 White_D
H	I		

Means with the same letter are not significantly different.

SNK Grouping		Mean	N	Candidate
H	I	4.2913	49	Isakson_
H	I			
H	I J	4.0830	221	Boozman_
H	I J			
H	I J	3.7976	377	Melancon
	I J			
K	I J	3.5071	152	Snyder_R
K	I J			
K	I J	3.4889	234	Buck_R
K	J			
K	J	3.3935	187	McCain_R
K				
K	L	2.7783	231	Corbett_
K	L			
K	L	2.7065	187	Glassman
	L			
M	L	2.2930	297	Conway_D
M	L			
M	L	2.2591	230	Walker_R
M	L			
M	L	2.0117	28	Mikulski
M	L			
M	L	2.0111	234	Bennet_D
M	L			
M	L	2.0101	108	Feingold
M	L			
M	L N	1.9024	377	Vitter_R

Means with the same letter are not significantly different.

SNK Grouping	Mean	N	Candidate
M L N			
M L N	1.8795	499	Toomey_R
M N			
M O N	1.7490	186	Goddard_
M O N			
M O N	1.6157	158	Denish_D
M O N			
M P O N	1.4501	355	Burr_R
M P O N			
M P O N	1.4162	136	Schumer_
M P O N			
M P O N	1.3510	186	Brewer_R
P O N			
Q P O N	1.0170	221	Lincoln_
Q P O			
Q P O R	0.9123	277	Boxer_D
Q P R			
Q P S R	0.6499	355	Marshall
Q S R			
Q T S R	0.5225	221	Rossi_R
Q T S R			
U Q T S R	0.1838	136	Townsend
U Q T S R			
U Q T S R	0.1624	13	Granato_
U T S R			
U T S R	0.0977	208	Quinn_D
U T S			

Means with the same letter are not significantly different.

SNK Grouping			Mean	N	Candidate
U	T	S	-0.1117	28	Wargotz_
U	T				
U	T	V	-0.3171	386	Brown_D
U		V			
U	W	V	-0.5225	221	Murray_D
	W	V			
	W	V	X	-0.9101	108 Johnson_
	W	V	X		
	W	Y	V	X	-0.9930 421 Reid_D
	W	Y		X	
	W	Y	Z	X	-1.1591 230 Barrett_
		Y	Z	X	
	A	Y	Z	X	-1.5071 152 Bernero_
	A	Y	Z	X	
	A	Y	Z	X	-1.5913 49 Thurmond
	A	Y	Z	X	
	A	Y	Z	X	-1.6157 158 Martinez
	A	Y	Z	X	
	A	Y	Z	X	-1.7192 259 Perry_R
	A	Y	Z		
	A	Y	Z		-1.8795 499 Sestak_D
	A		Z		
	A		Z		-1.9311 189 Culver_D
	A		Z		
	A		Z		-1.9807 202 Deal_R
	A				
	A	B			-2.2930 297 Paul_R

Means with the same letter are not significantly different.

SNK Grouping		Mean	N	Candidate
A	B			
A	B	-2.3436	92	Stephen_
	B			
C	B	-2.7783	231	Onorato_
C	B			
C	B	-2.8427	196	Paladino
C	B			
C	B D	-2.9431	19	Sheheen_
C	D			
C	D	-3.2649	404	Blunt_R
C	D			
C	D	-3.3286	41	Manchin_
	D			
	D	-3.7140	208	Foley_R
	E	-5.1132	411	Ayotte_R
	E			
	E	-5.4965	104	Beebe_D
	F	-7.1048	480	Portman_

Analysis of Polling Data

The ANOVA Procedure

Class Level Information

Class	Levels	Values
PARTY	2	Blue Red

Number of Observations Read 15158

Number of Observations Used 15158

Analysis of Polling Data

The ANOVA Procedure

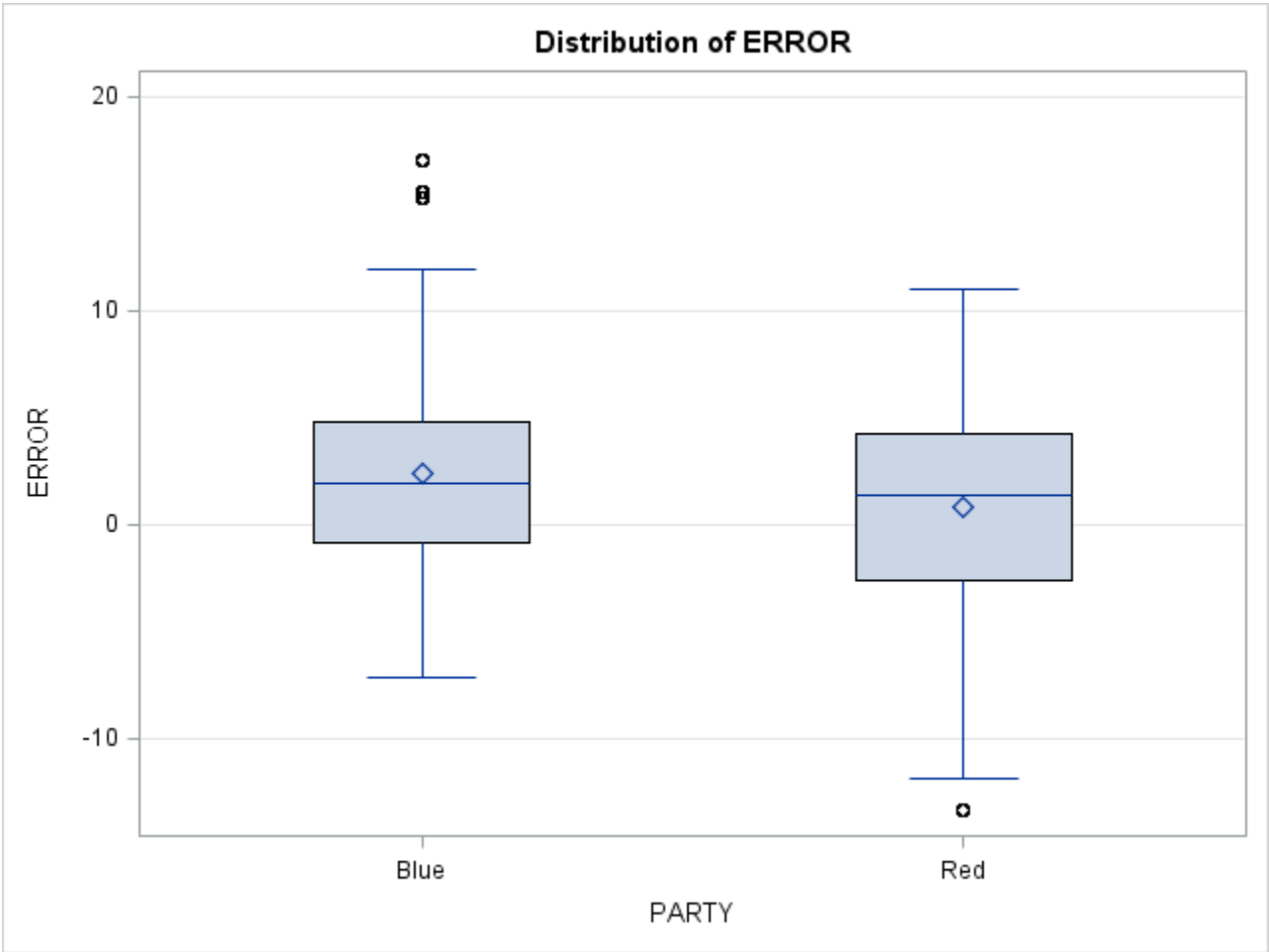
Dependent Variable: ERROR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	9234.3480	9234.3480	455.32	<.0001
Error	15156	307382.0618	20.2812		
Corrected Total	15157	316616.4097			

R-Square	Coeff Var	Root MSE	ERROR Mean
0.029166	279.0379	4.503467	1.613927

Source	DF	Anova SS	Mean Square	F Value	Pr > F
PARTY	1	9234.347969	9234.347969	455.32	<.0001

The ANOVA Procedure



Analysis of Polling Data

The ANOVA Procedure
Student-Newman-Keuls Test for ERROR

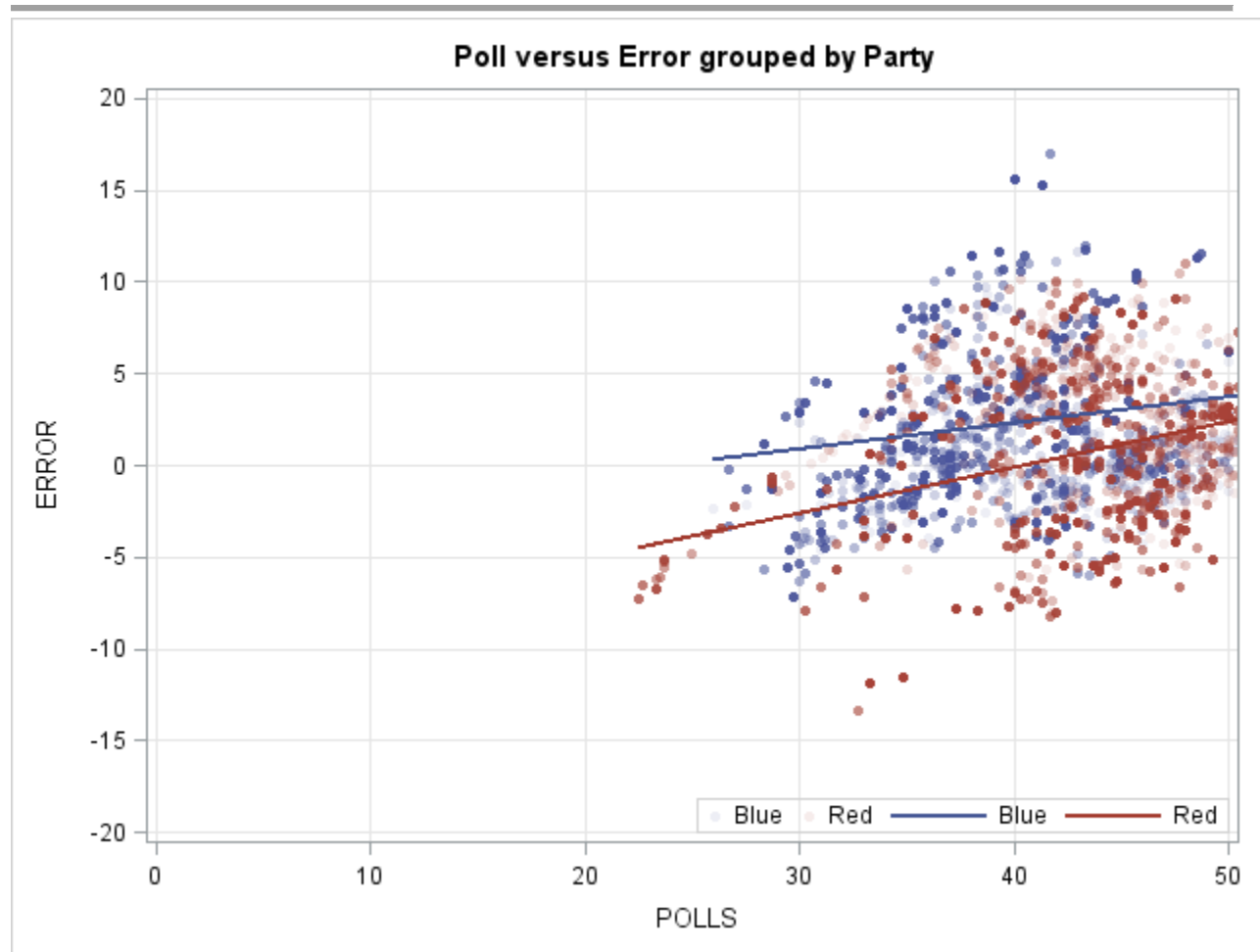
Note: This test controls the Type I experimentwise error rate under the complete null hypothesis but not under partial null hypotheses.

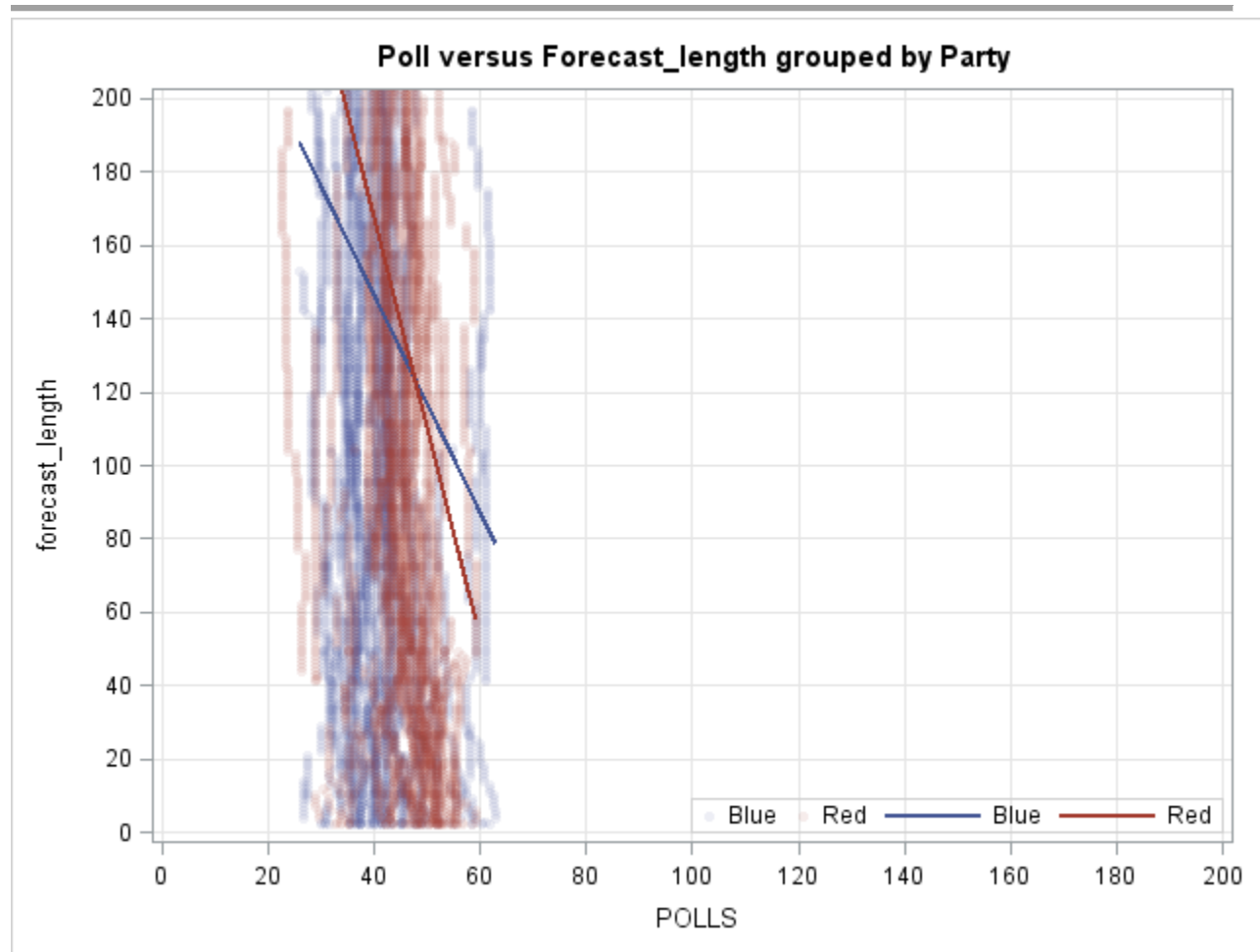
Alpha	0.05
Error Degrees of Freedom	15156
Error Mean Square	20.28121

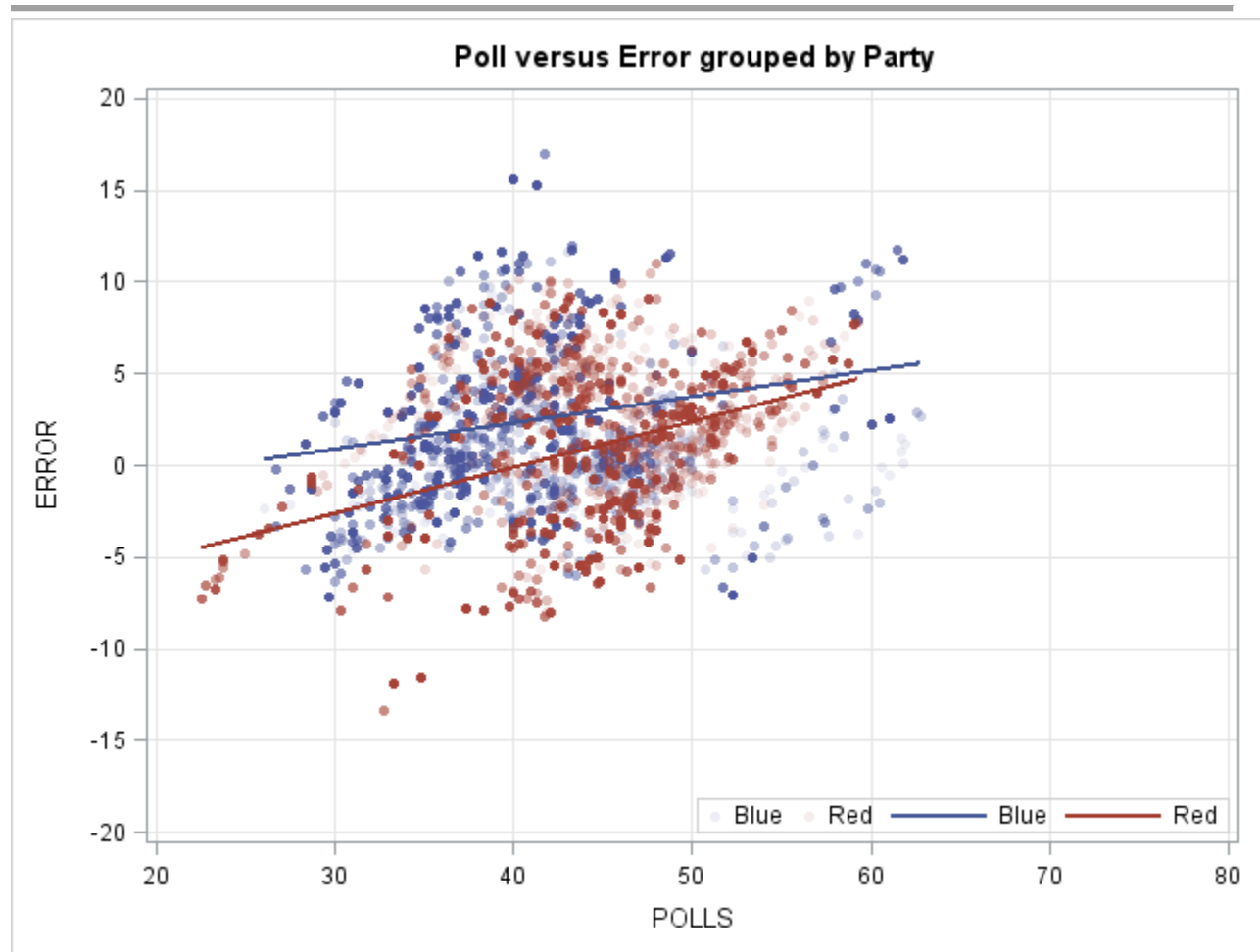
Number of Means	2
Critical Range	0.1433966

**Means with the same letter
are not significantly different.**

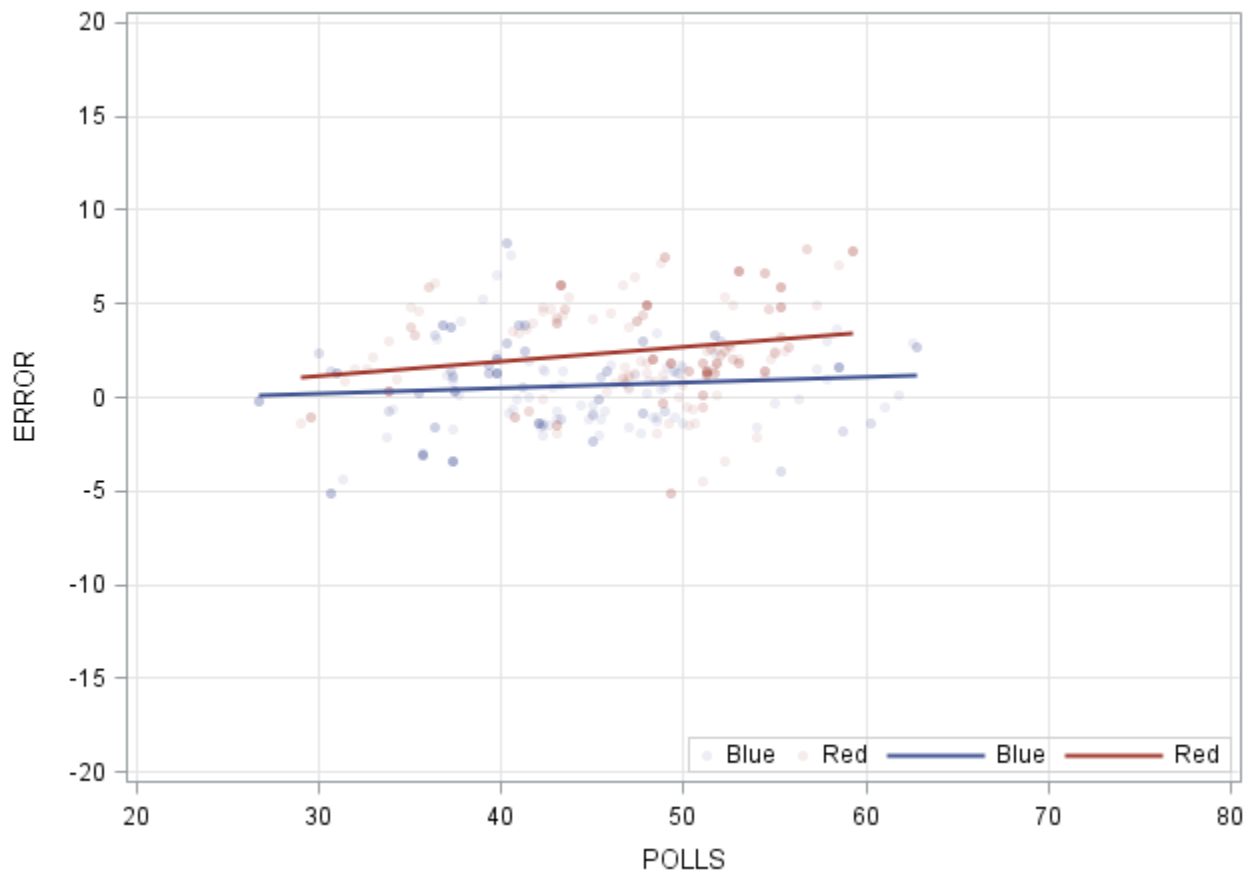
SNK Grouping	Mean	N	PARTY
A	2.39444	7579	Blue
B	0.83341	7579	Red

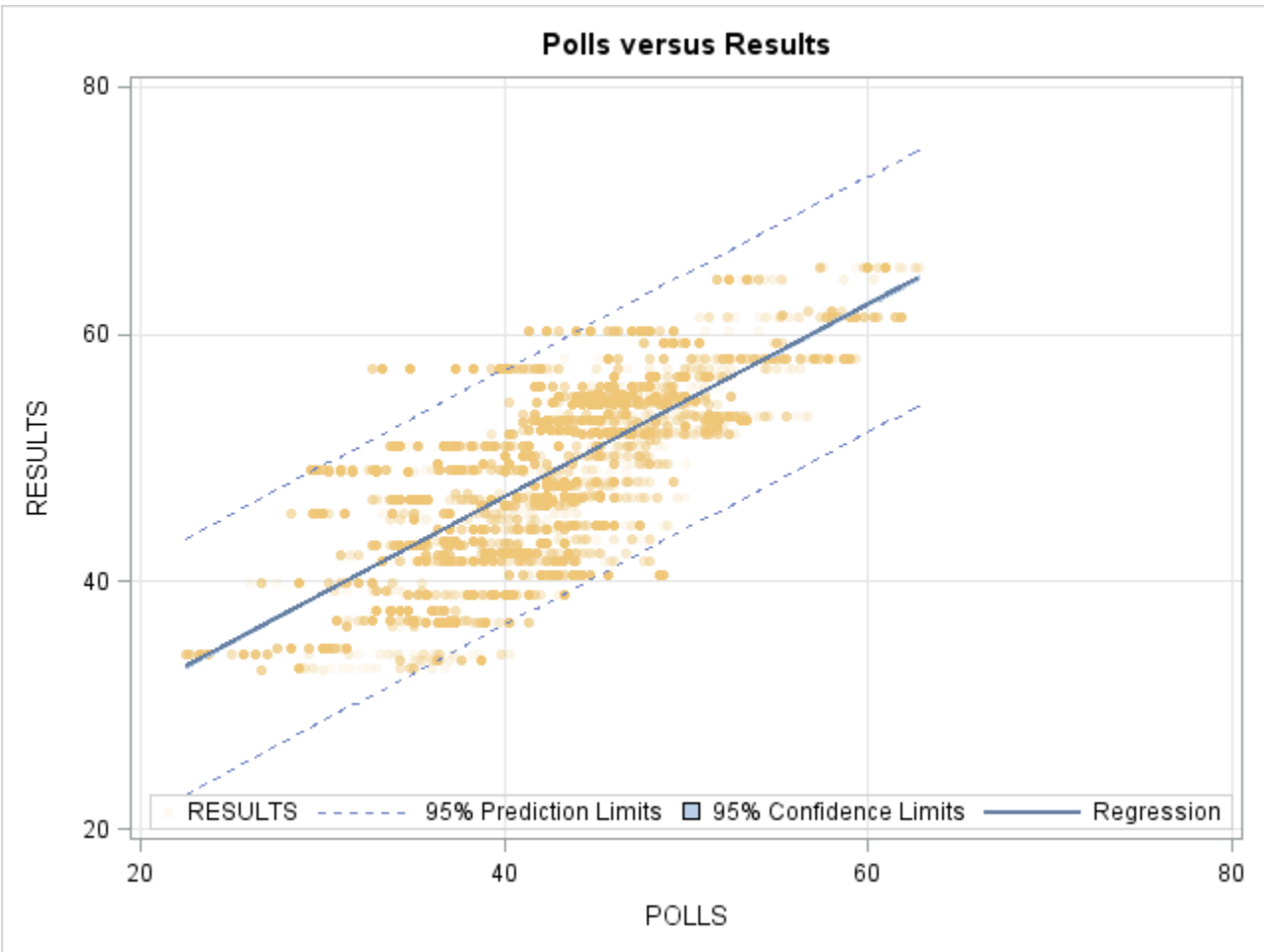


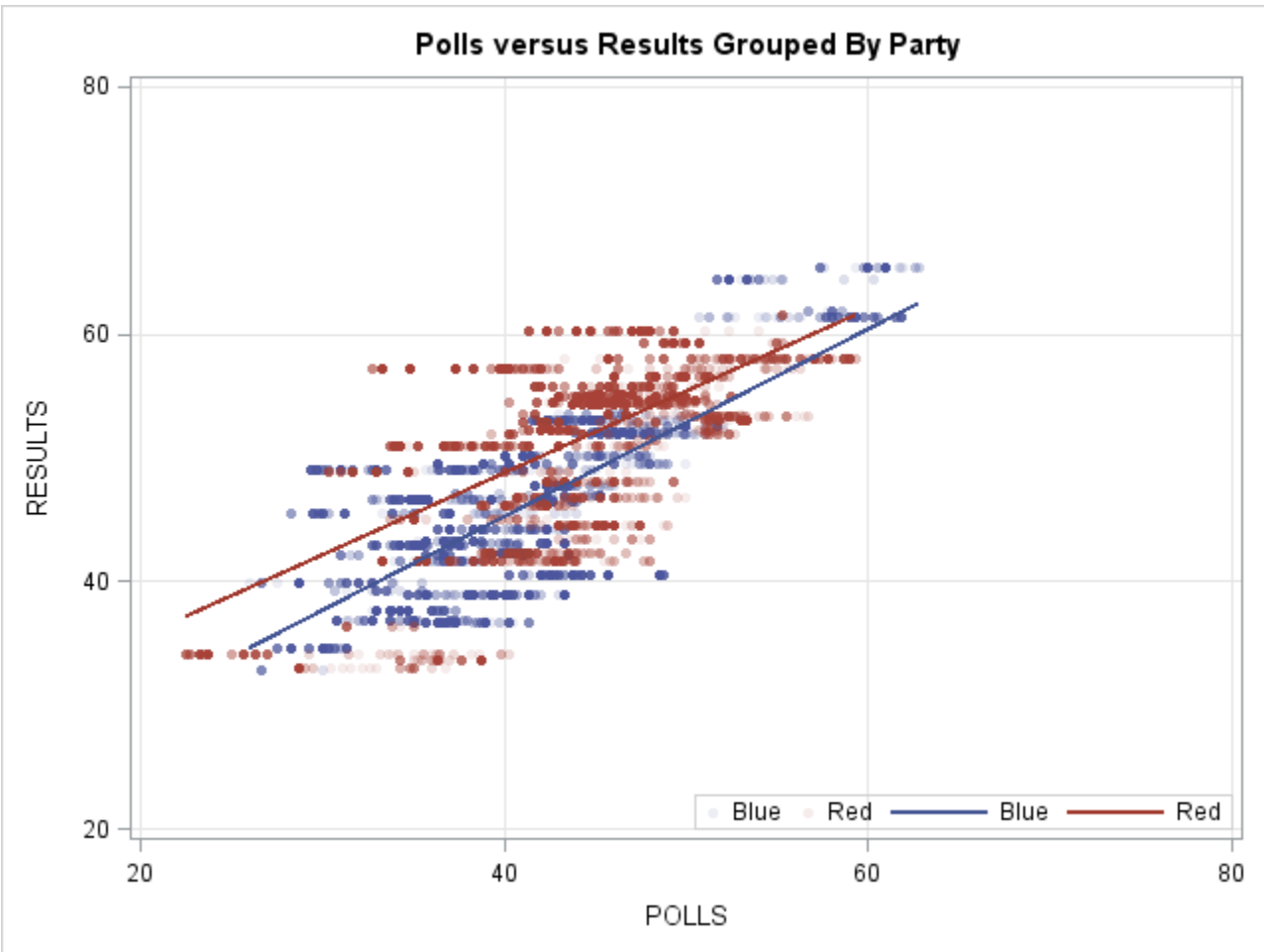




Polls within a week to election versus Error grouped by Party







Correlation between Polls and Results

The CORR Procedure

2 Variables: POLLS RESULTS

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
POLLS	15158	42.04863	6.78111	637373	22.50000	62.80000
RESULTS	15158	48.38607	7.46376	733436	32.80000	65.40000

Pearson Correlation Coefficients, N = 15158 Prob > |r| under H0: Rho=0

	POLLS	RESULTS
POLLS	1.00000	0.70820 <.0001
RESULTS	0.70820 <.0001	1.00000

Correlation between Polls and Results

The REG Procedure

Model: MODEL1

Dependent Variable: RESULTS

Number of Observations Read 15158

Number of Observations Used 15158

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	423486	423486	15250.0	<.0001
Error	15156	420875	27.76953		
Corrected Total	15157	844361			

Root MSE 5.26968 **R-Square** 0.5015

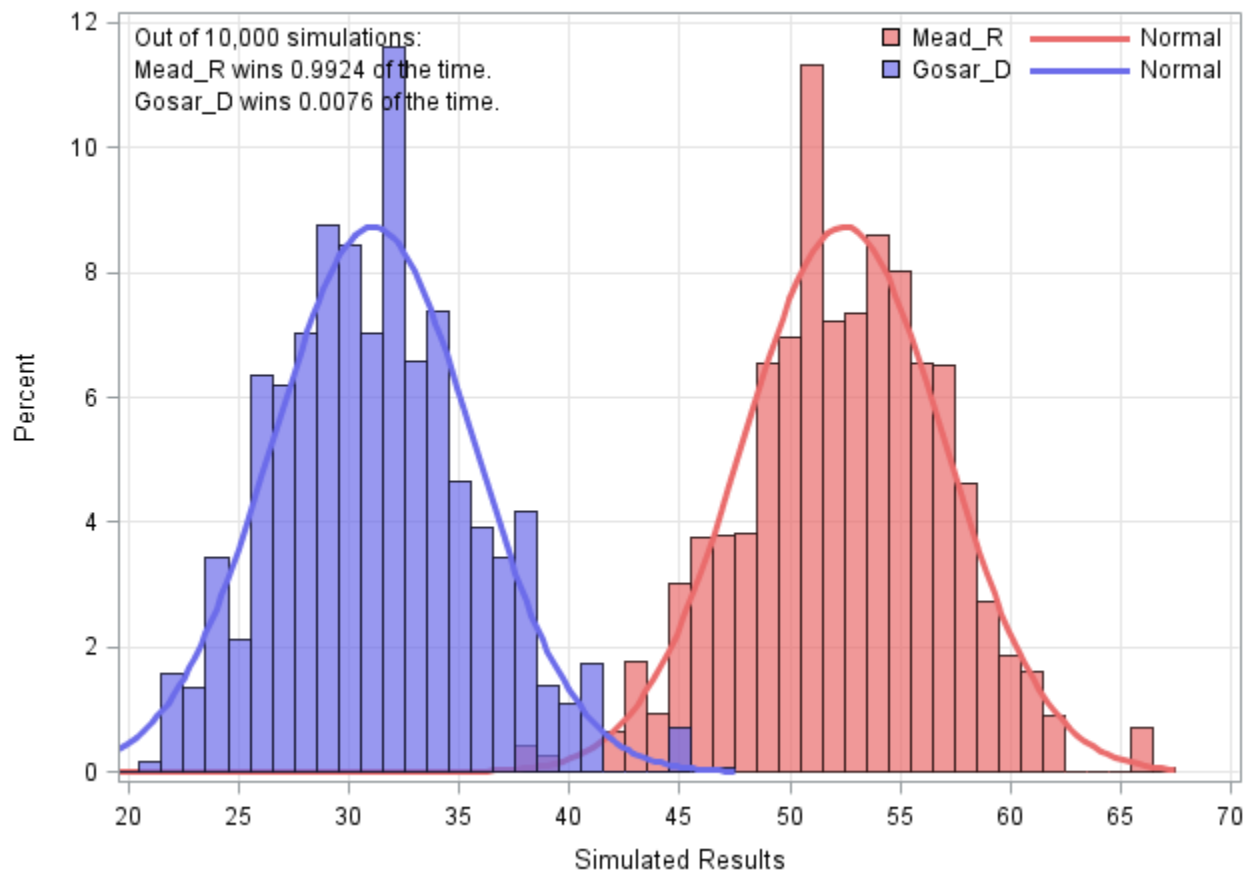
Dependent Mean 48.38607 **Adj R-Sq** 0.5015

Coeff Var 10.89090

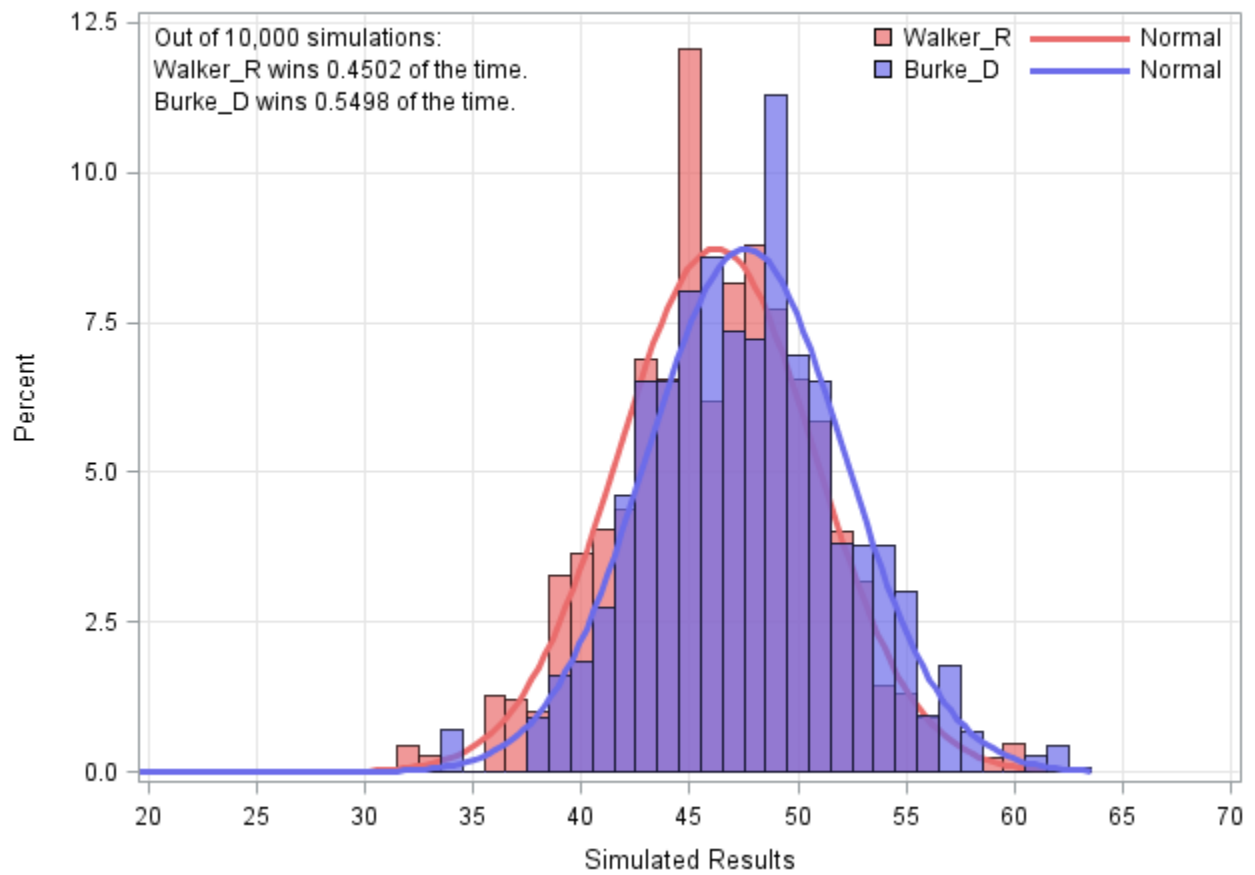
Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	15.60947	0.26885	58.06	<.0001
POLLS	1	0.77949	0.00631	123.49	<.0001

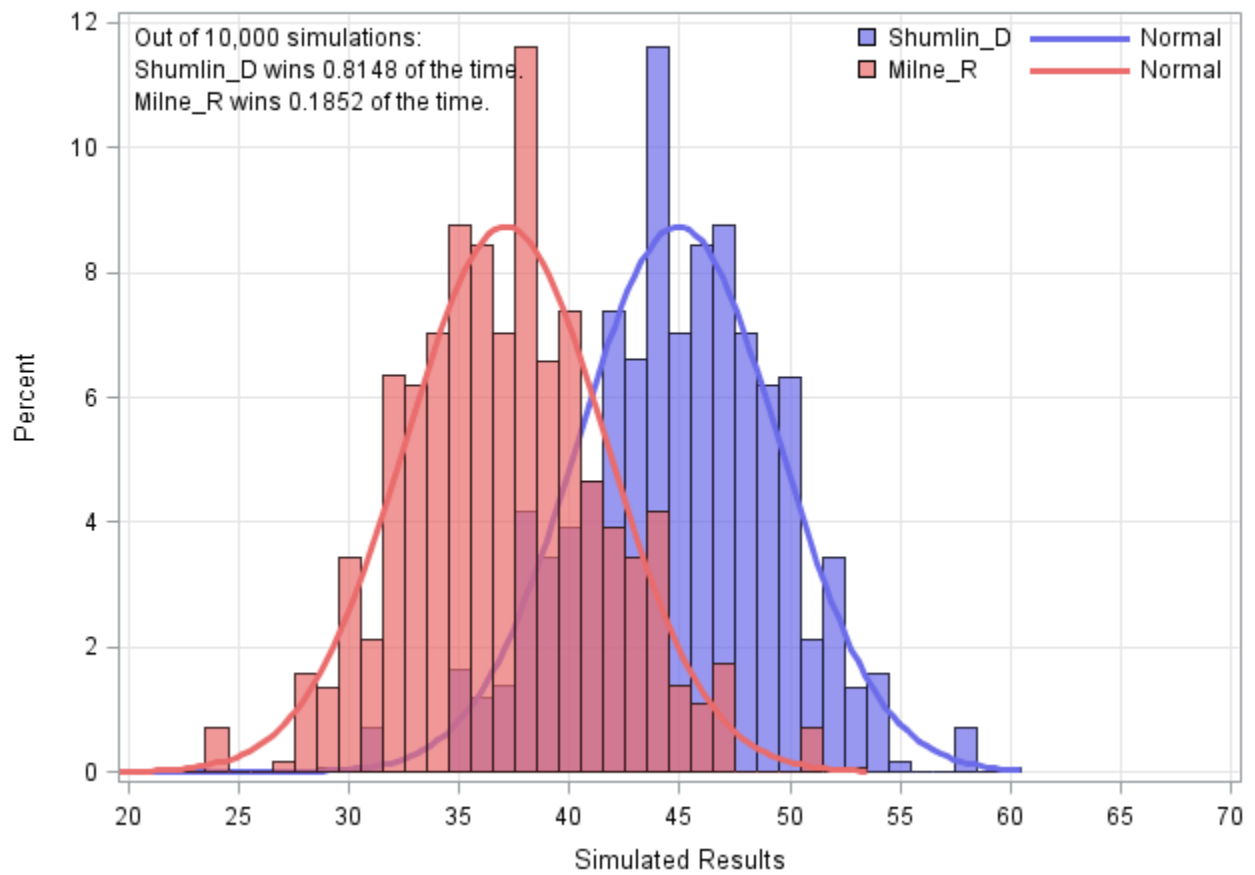
Bootstrap simulated race outcomes for Mead_R and Gosar_D



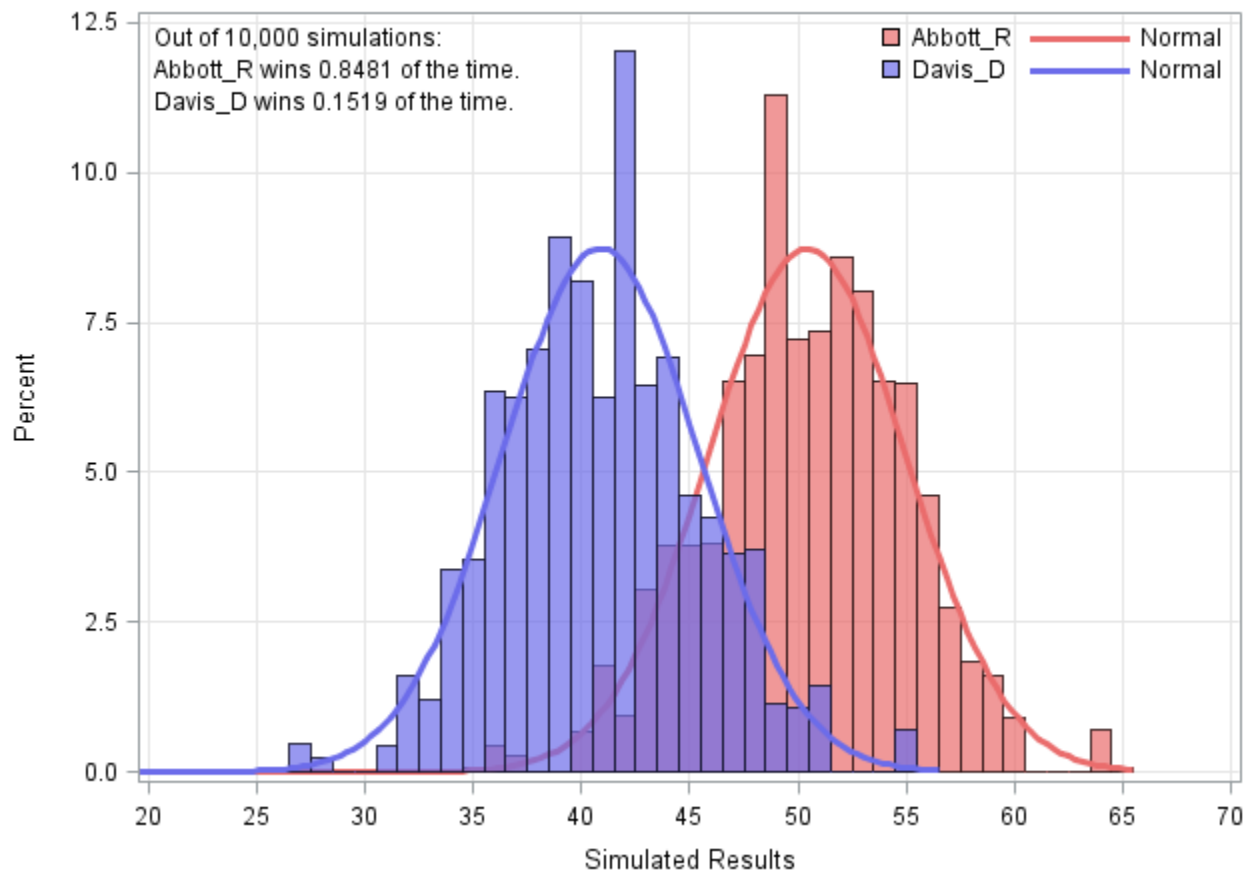
Bootstrap simulated race outcomes for Walker_R and Burke_D



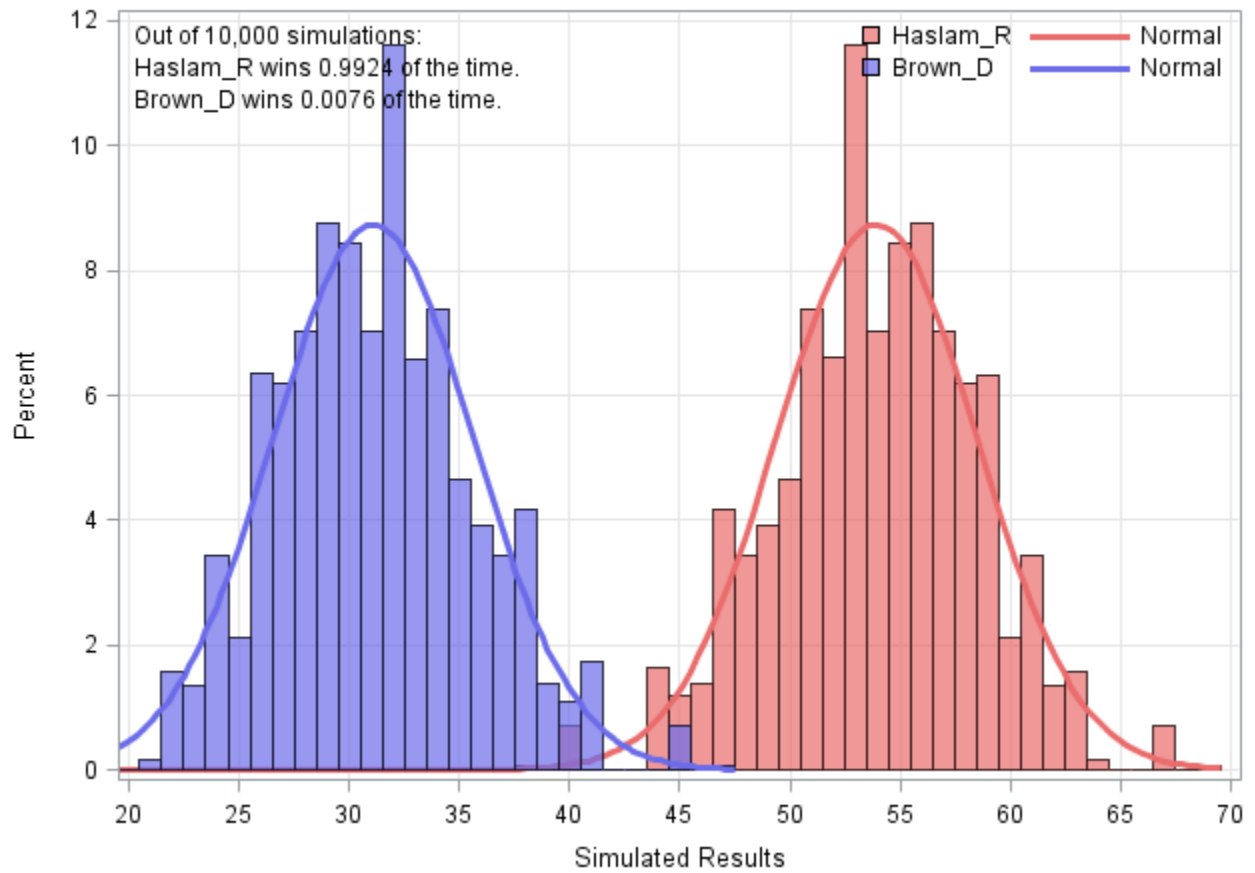
Bootstrap simulated race outcomes for Shumlin_D and Milne_R



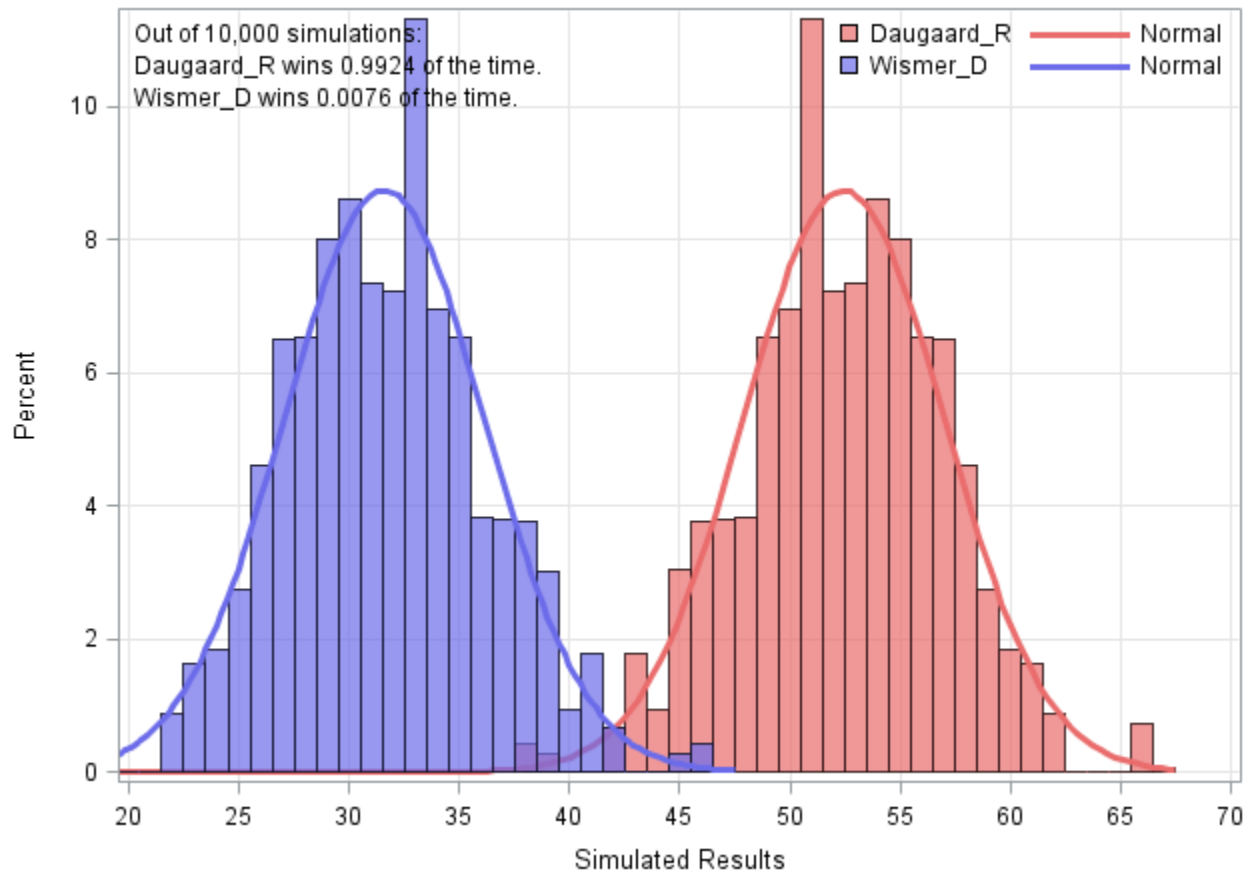
Bootstrap simulated race outcomes for Abbott_R and Davis_D



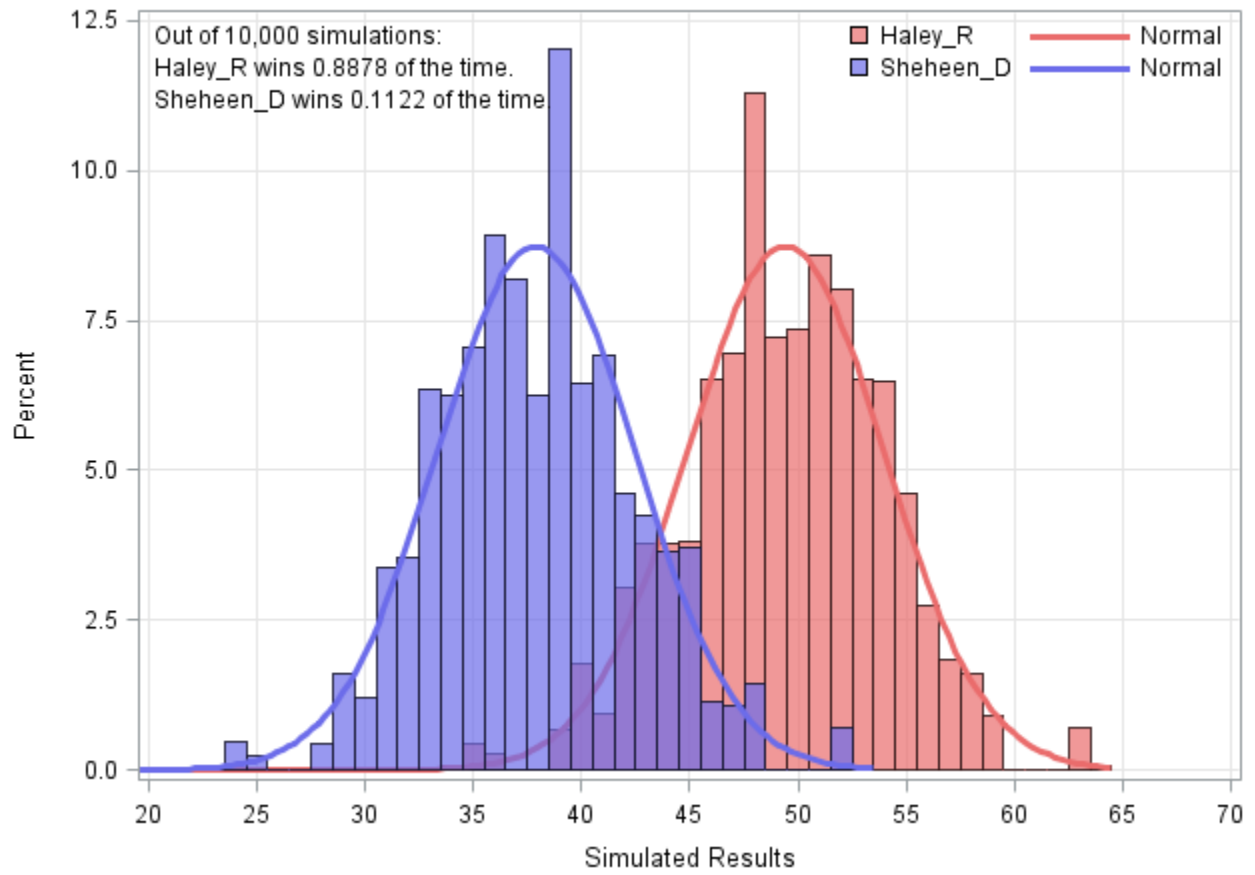
Bootstrap simulated race outcomes for Haslam_R and Brown_D



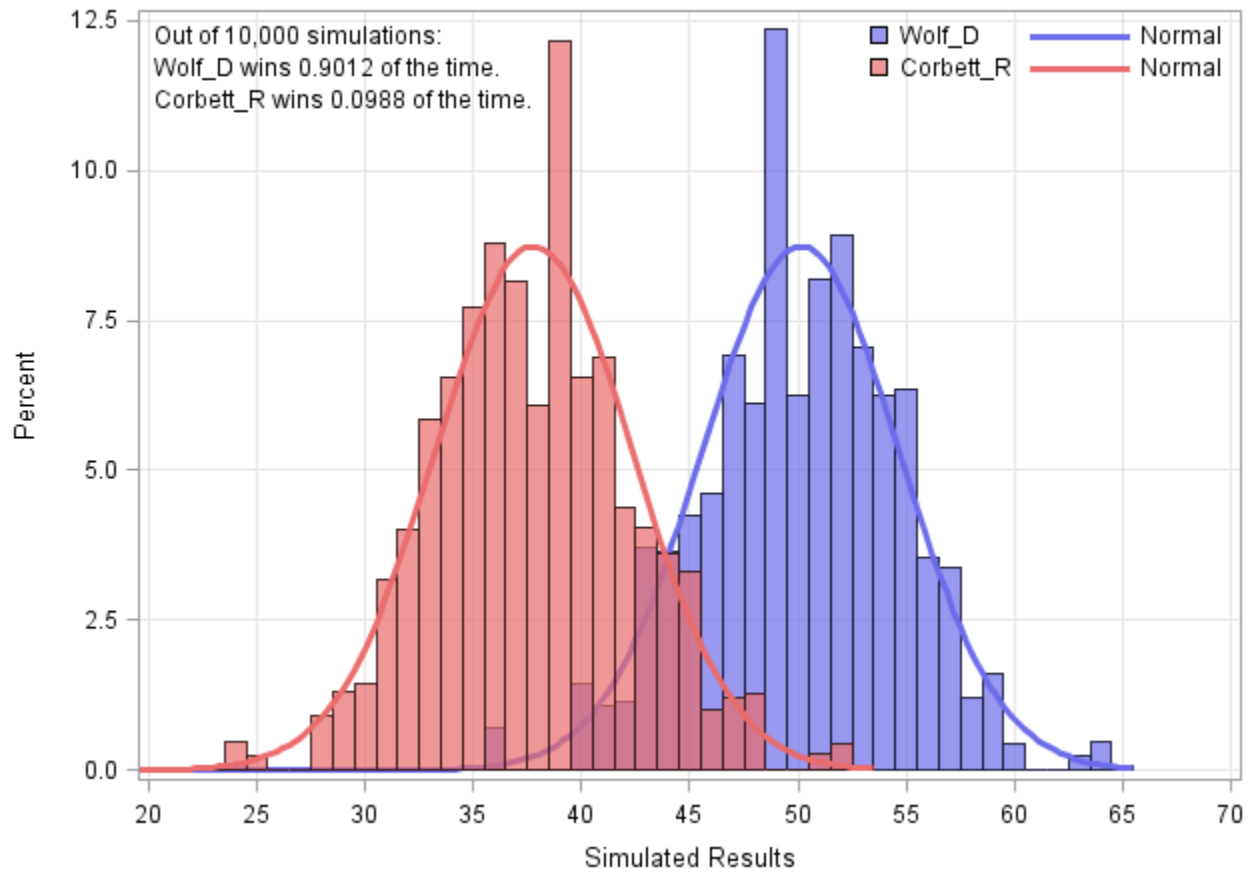
Bootstrap simulated race outcomes for Daugaard_R and Wismer_D



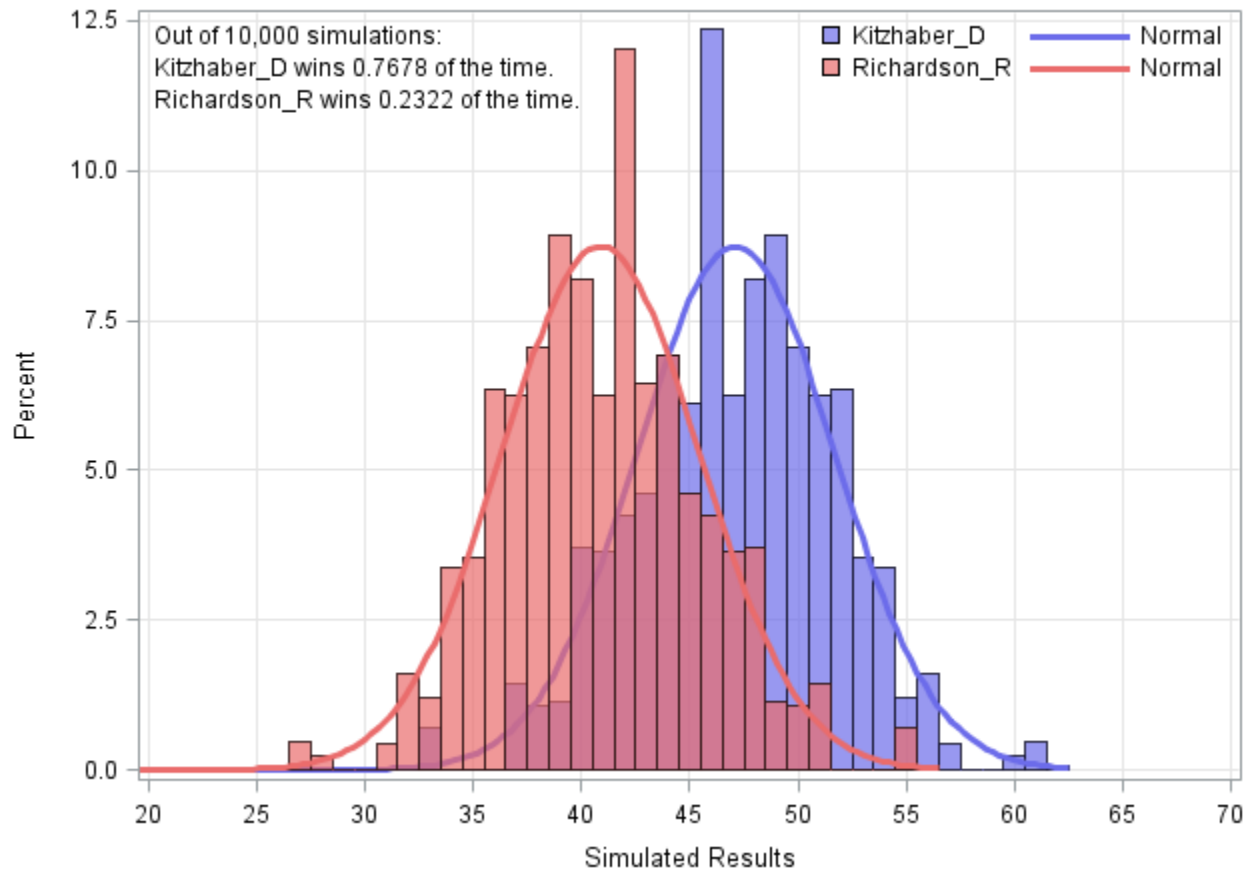
Bootstrap simulated race outcomes for Haley_R and Sheheen_D



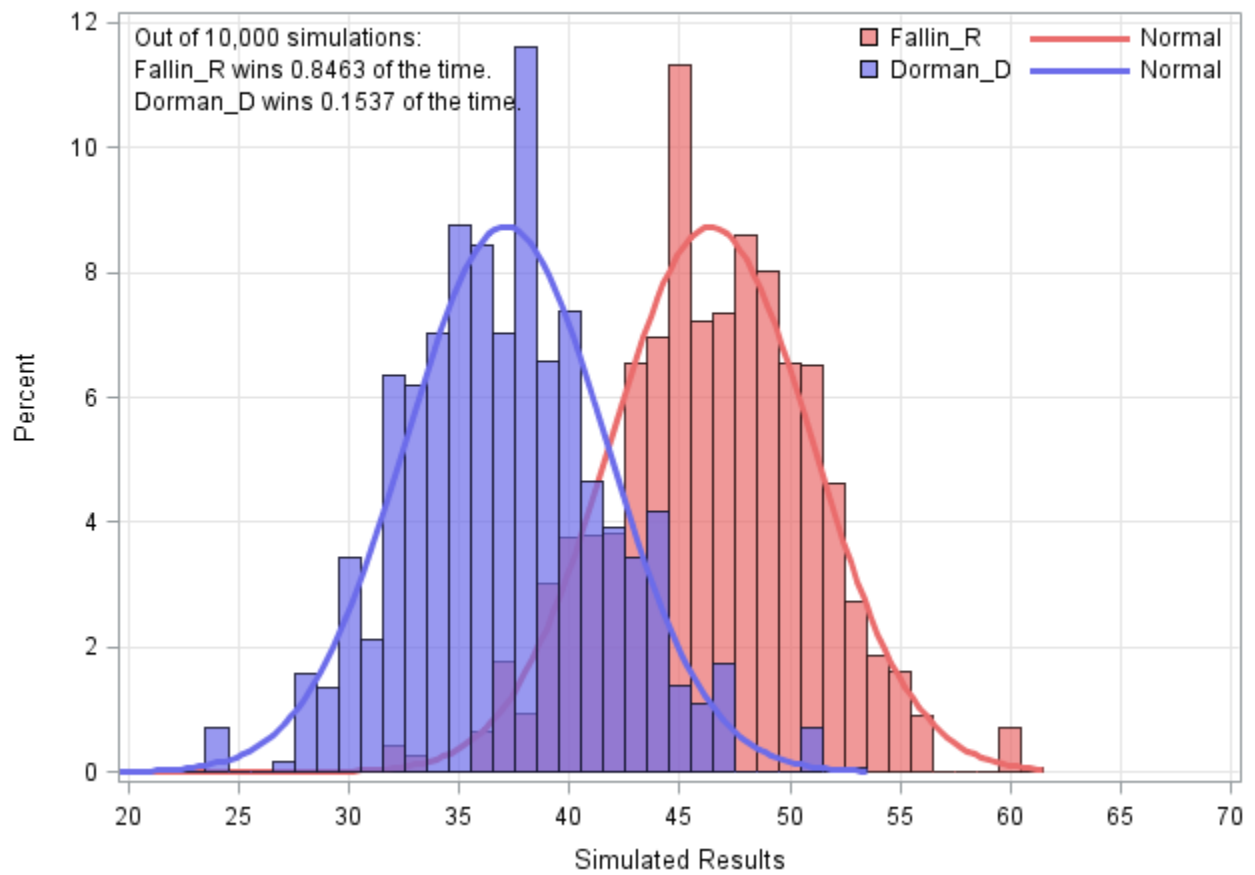
Bootstrap simulated race outcomes for Wolf_D and Corbett_R



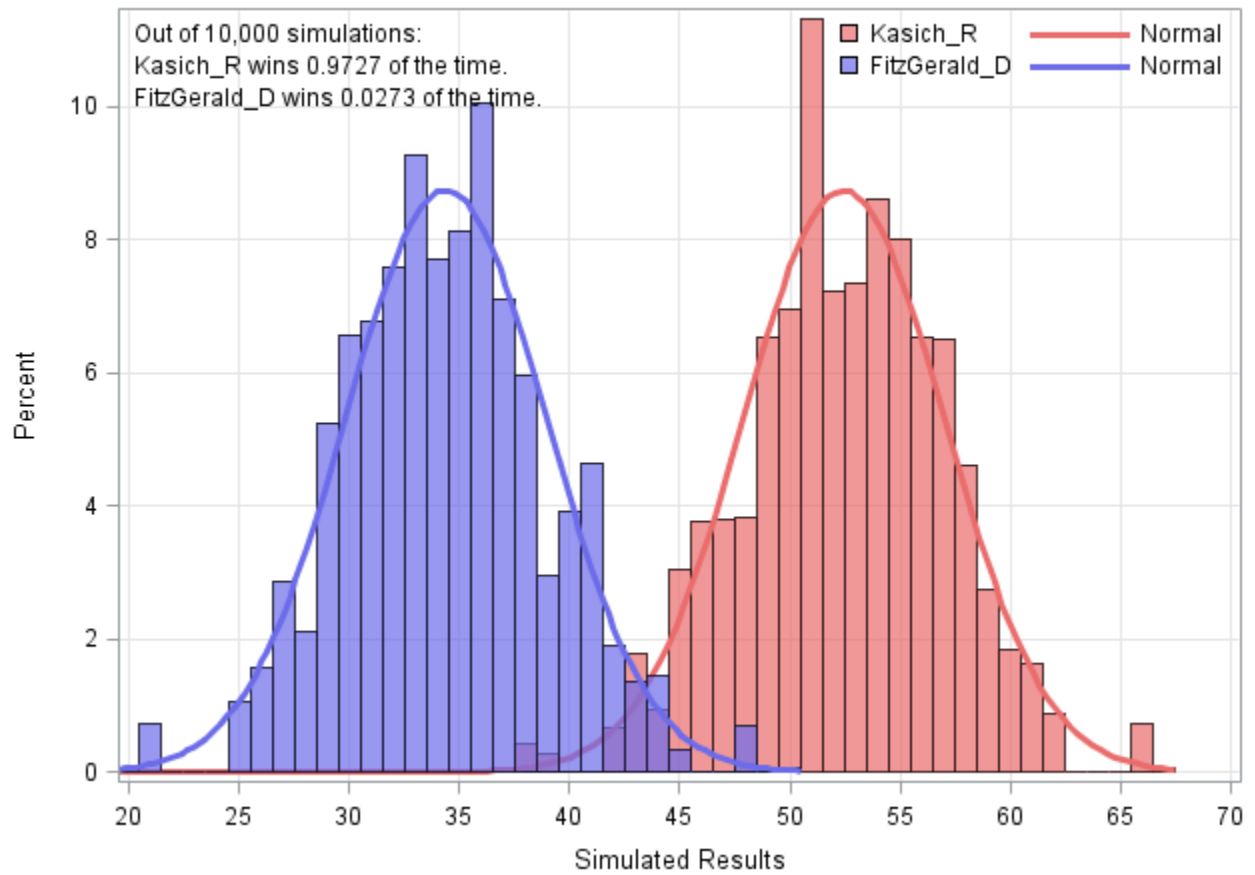
Bootstrap simulated race outcomes for Kitzhaber_D and Richardson_R



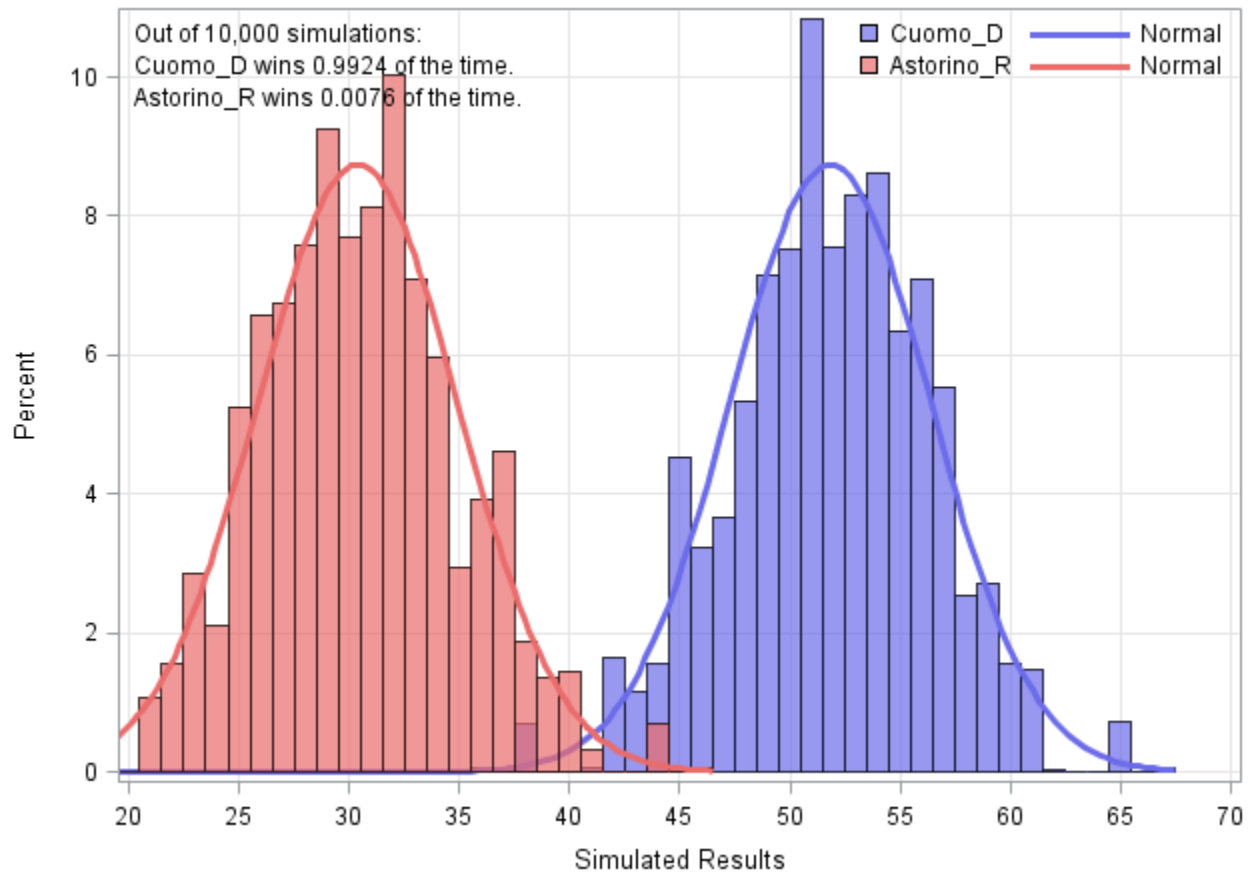
Bootstrap simulated race outcomes for Fallin_R and Dorman_D



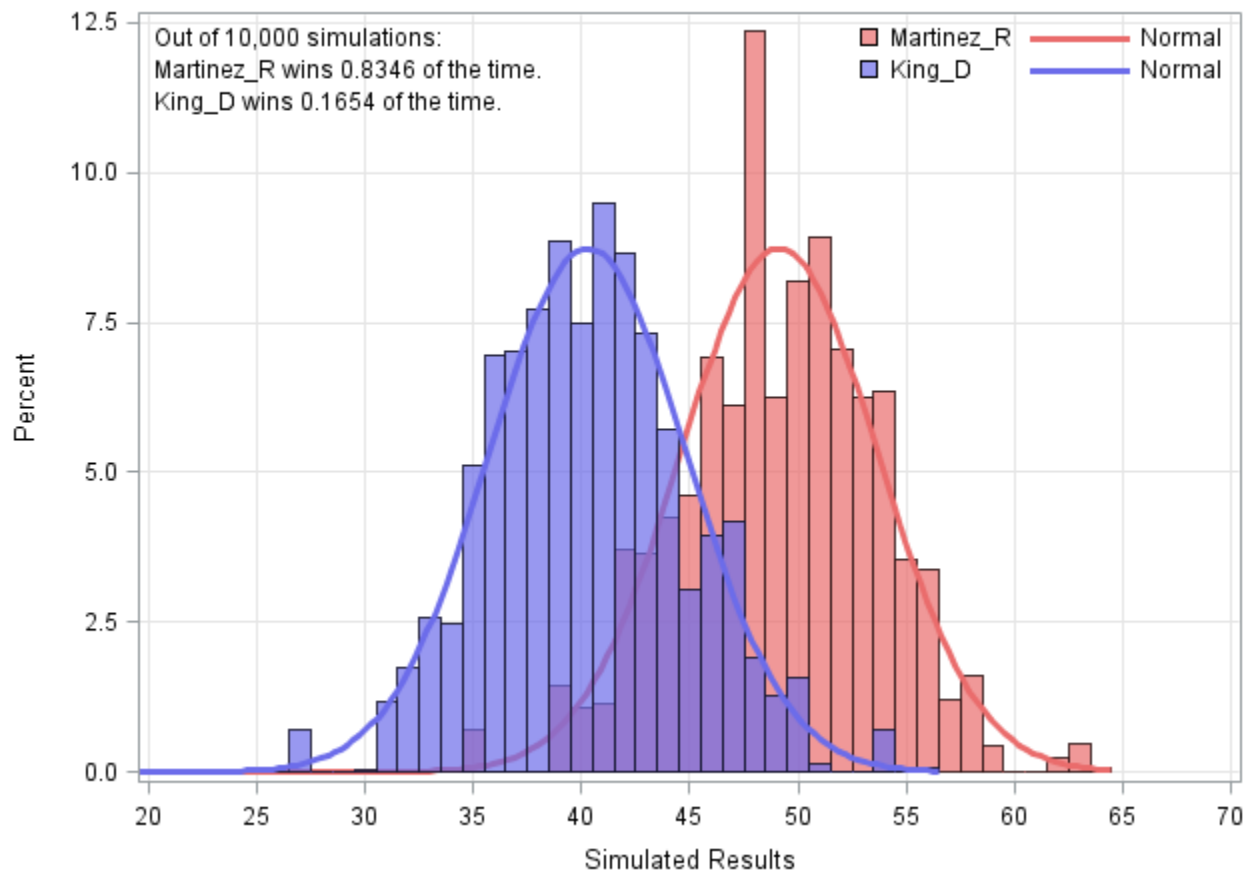
Bootstrap simulated race outcomes for Kasich_R and FitzGerald_D



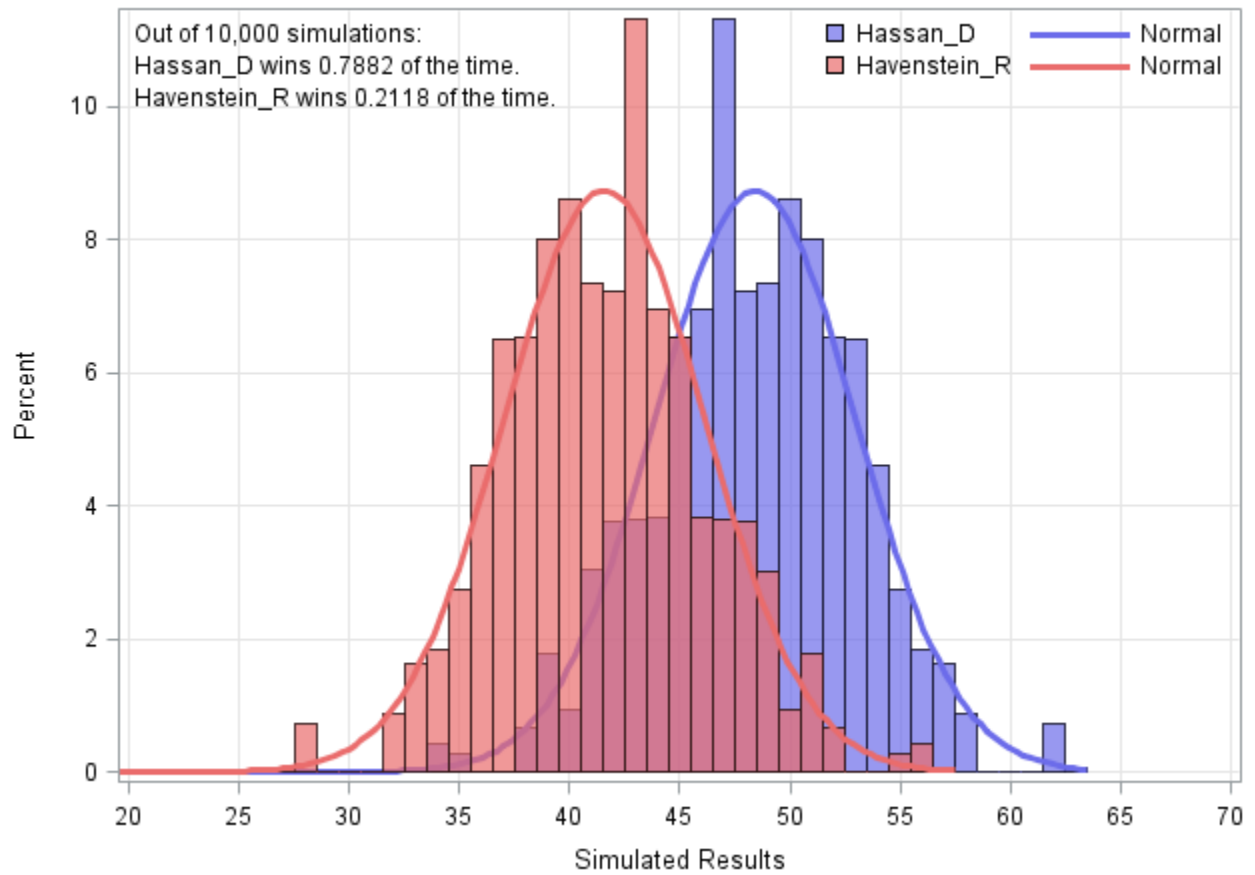
Bootstrap simulated race outcomes for Cuomo_D and Astorino_R



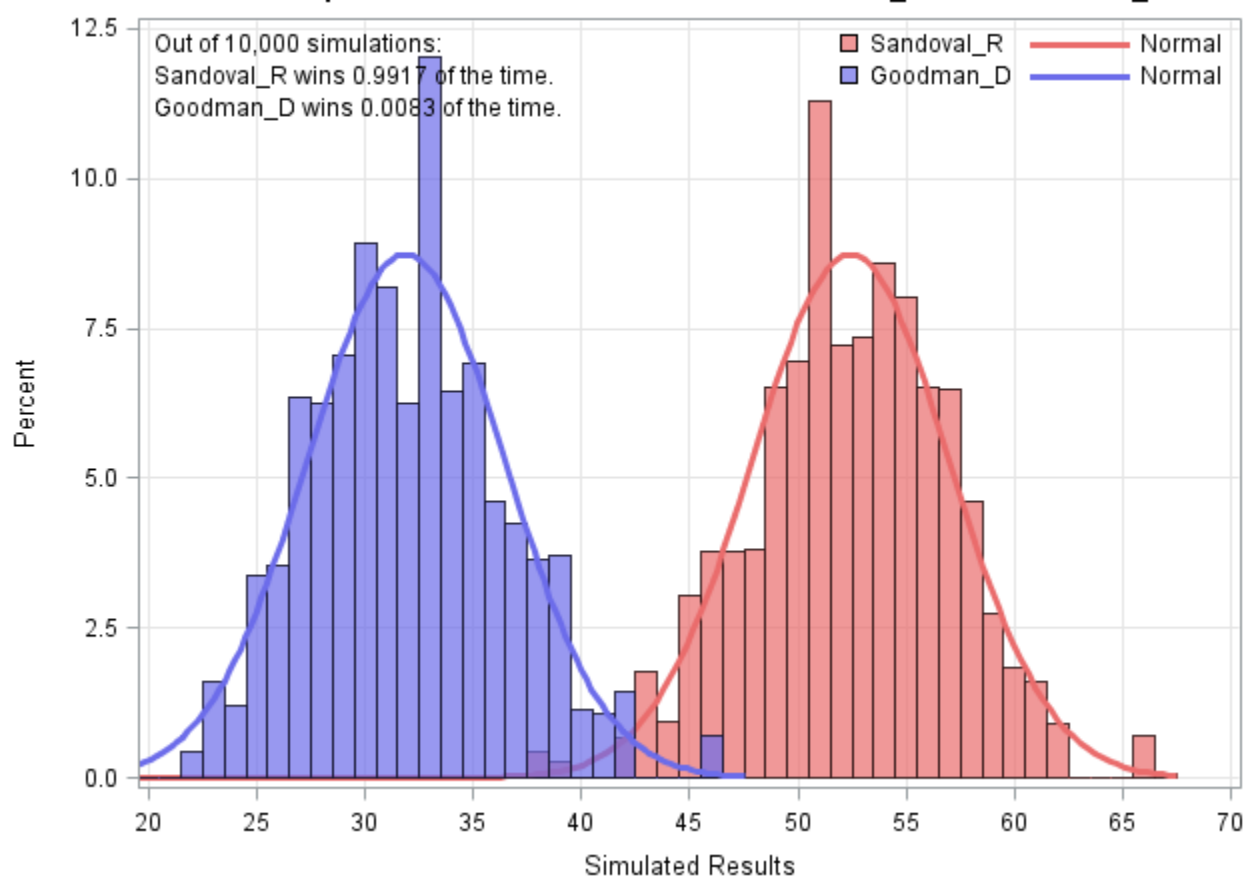
Bootstrap simulated race outcomes for Martinez_R and King_D



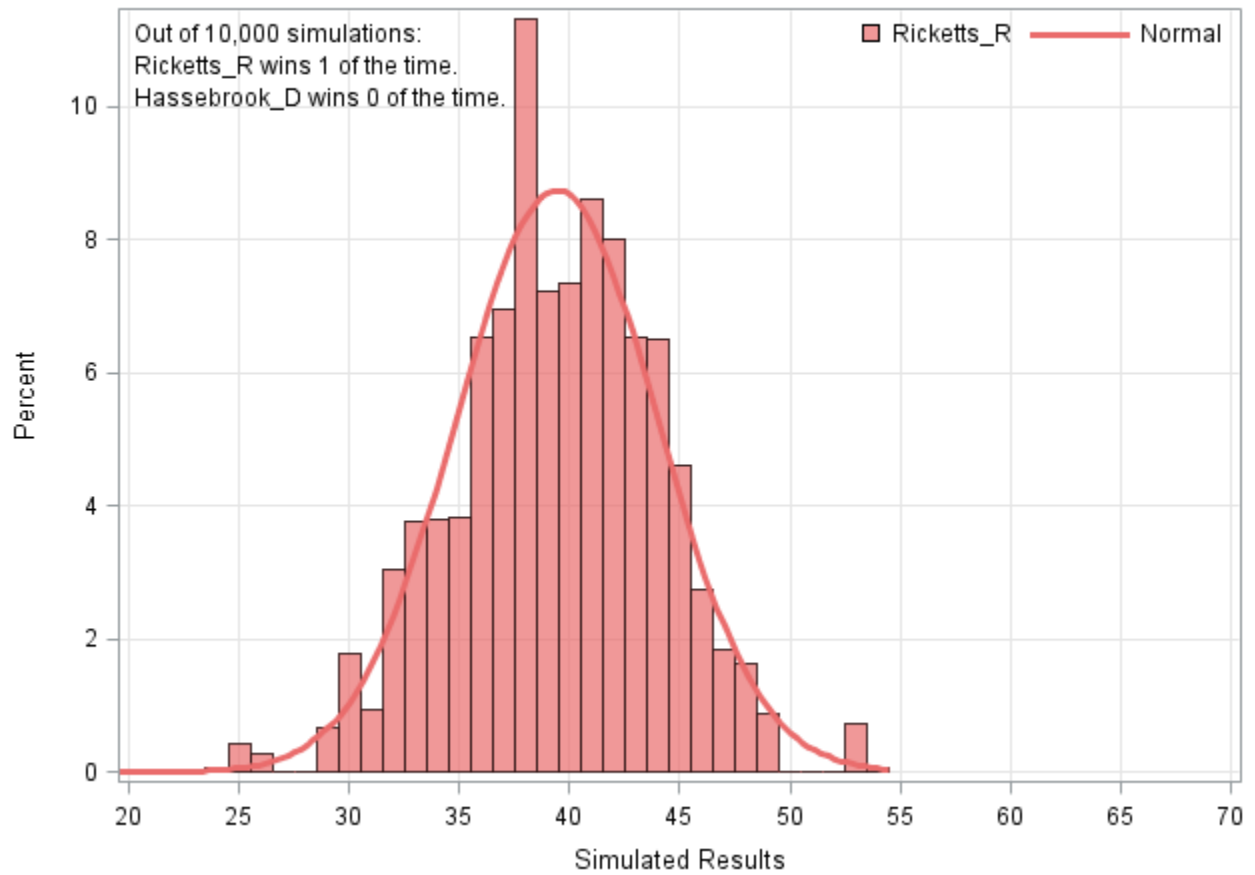
Bootstrap simulated race outcomes for Hassan_D and Havenstein_R



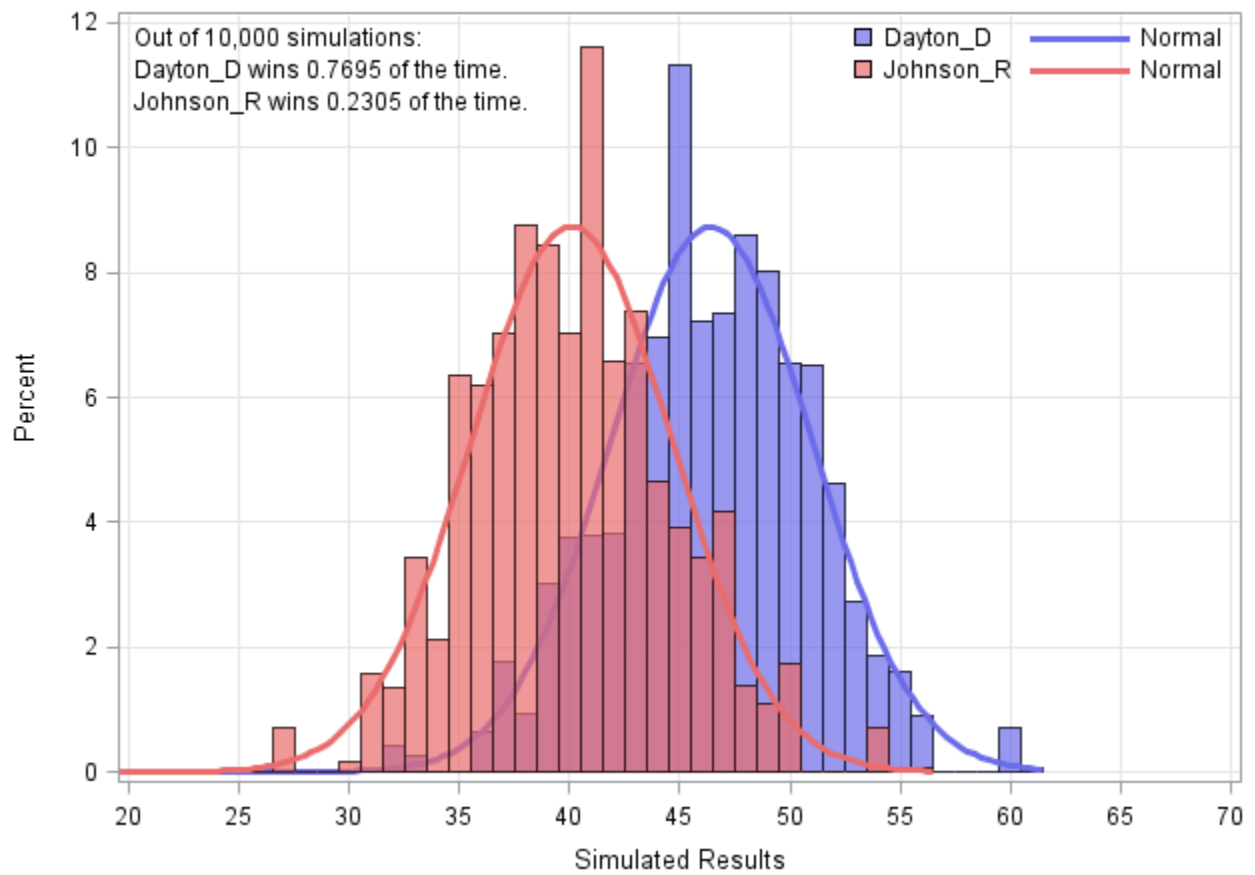
Bootstrap simulated race outcomes for Sandoval_R and Goodman_D



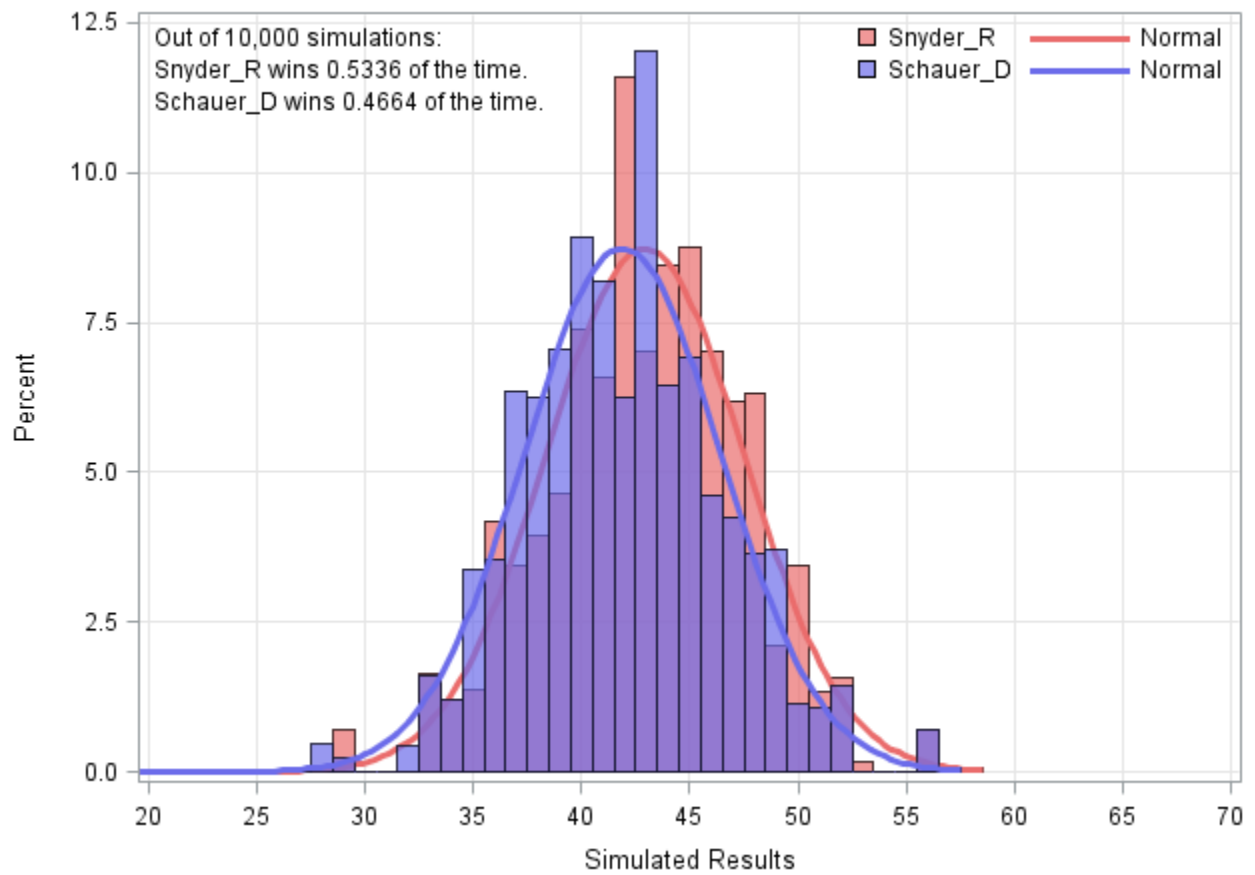
Bootstrap simulated race outcomes for Ricketts_R and Hassebrook_D



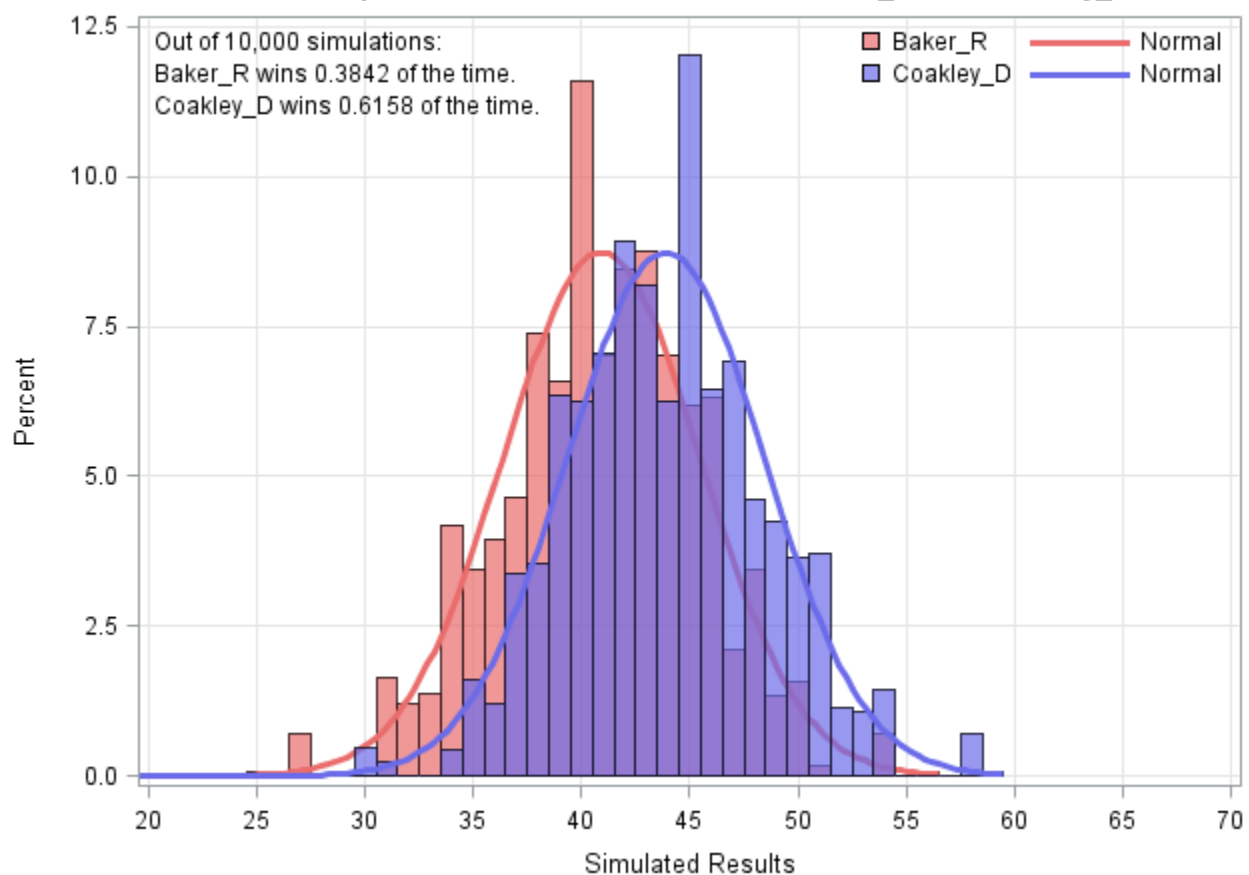
Bootstrap simulated race outcomes for Dayton_D and Johnson_R



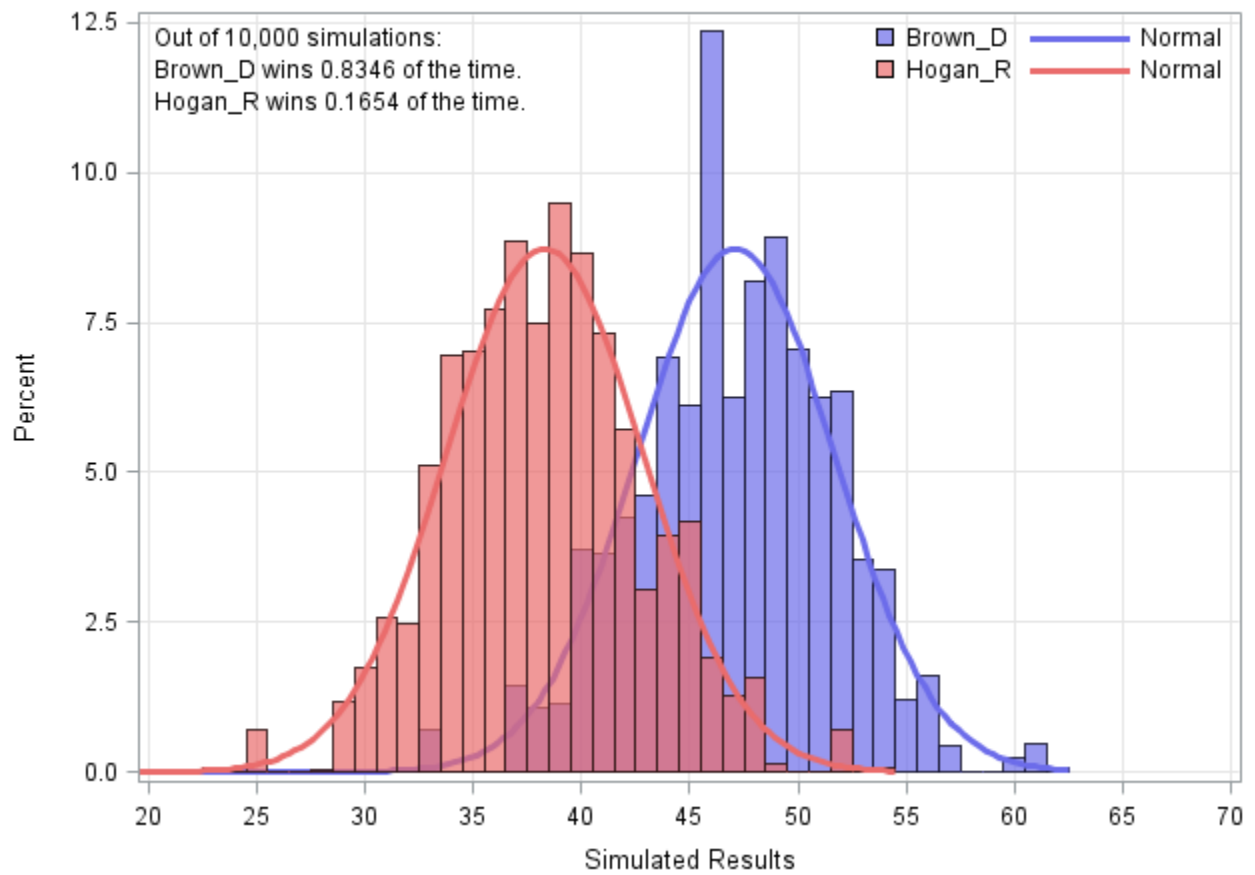
Bootstrap simulated race outcomes for Snyder_R and Schauer_D



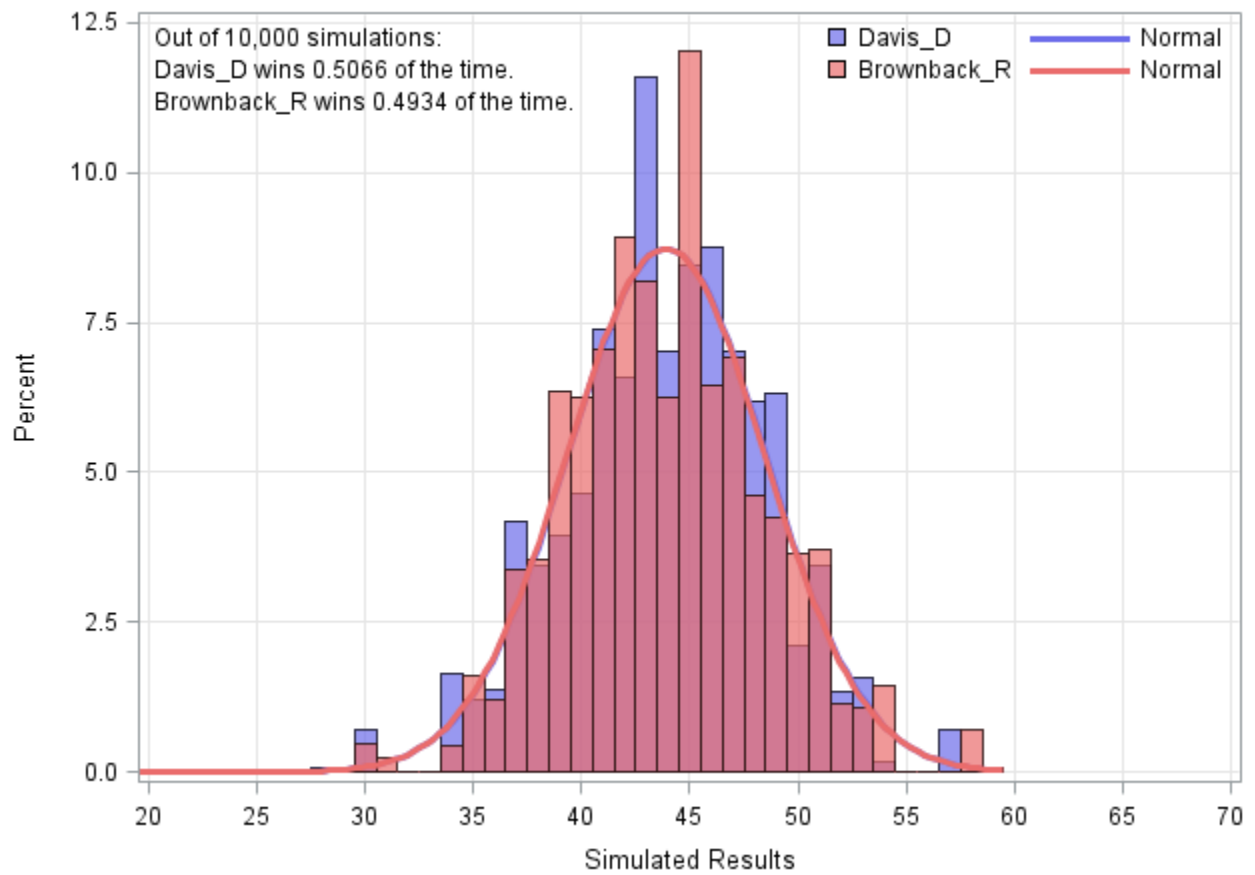
Bootstrap simulated race outcomes for Baker_R and Coakley_D



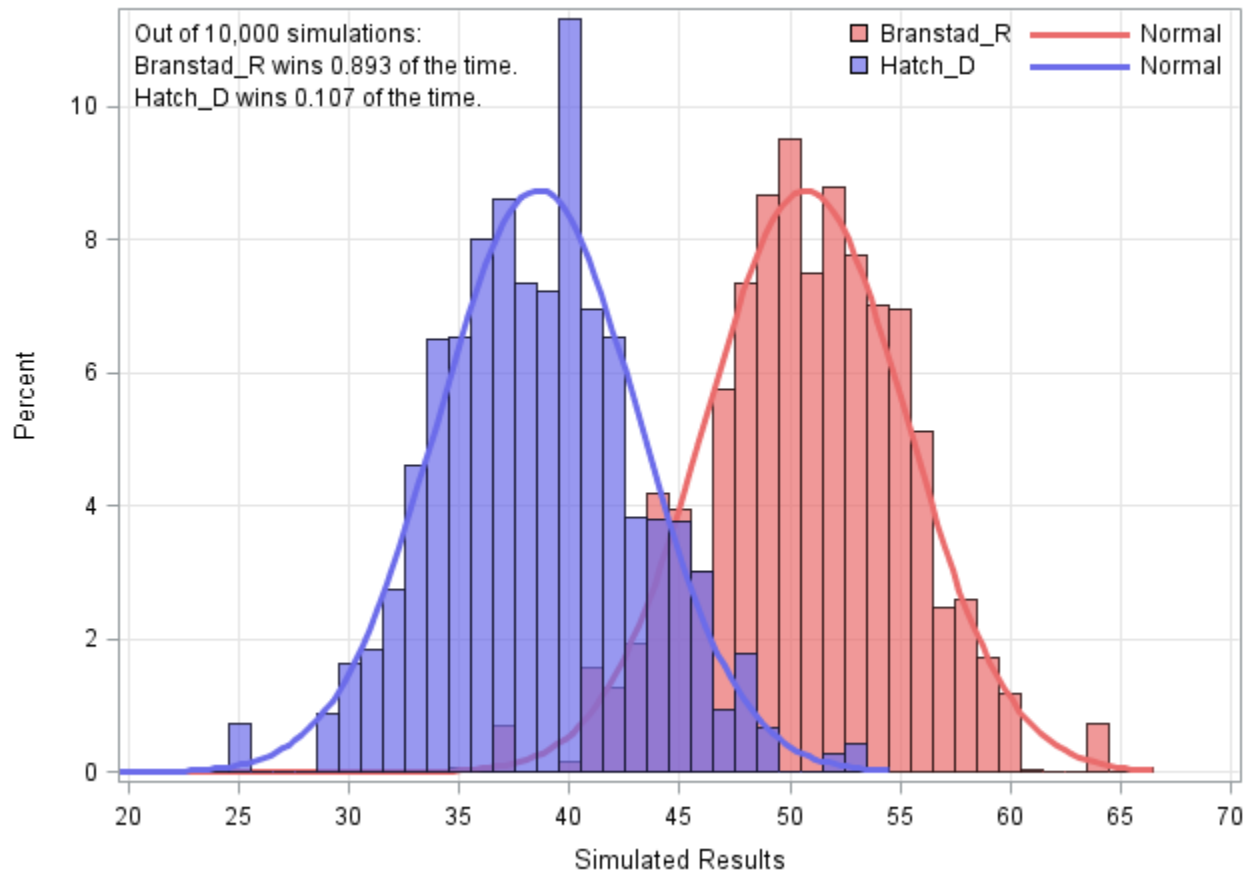
Bootstrap simulated race outcomes for Brown_D and Hogan_R



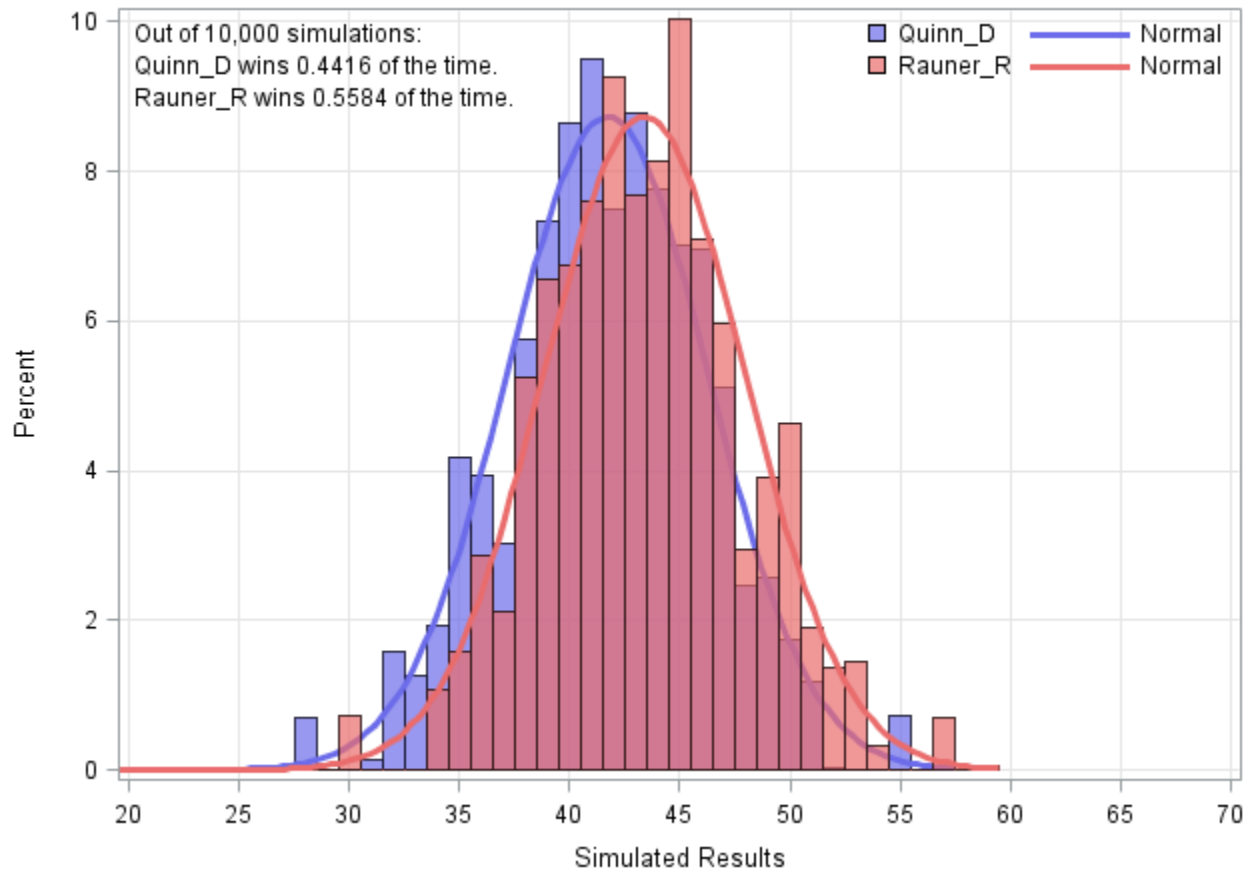
Bootstrap simulated race outcomes for Davis_D and Brownback_R



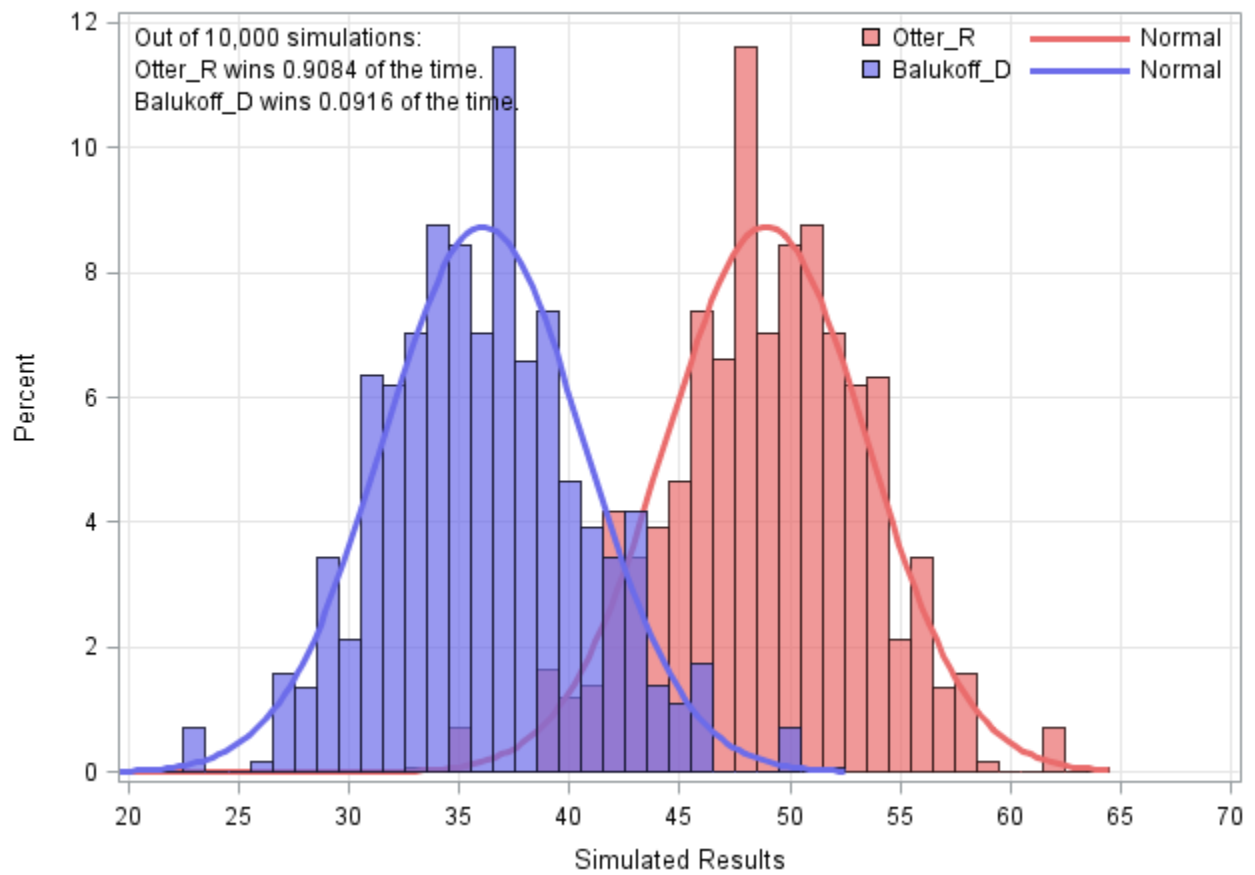
Bootstrap simulated race outcomes for Branstad_R and Hatch_D



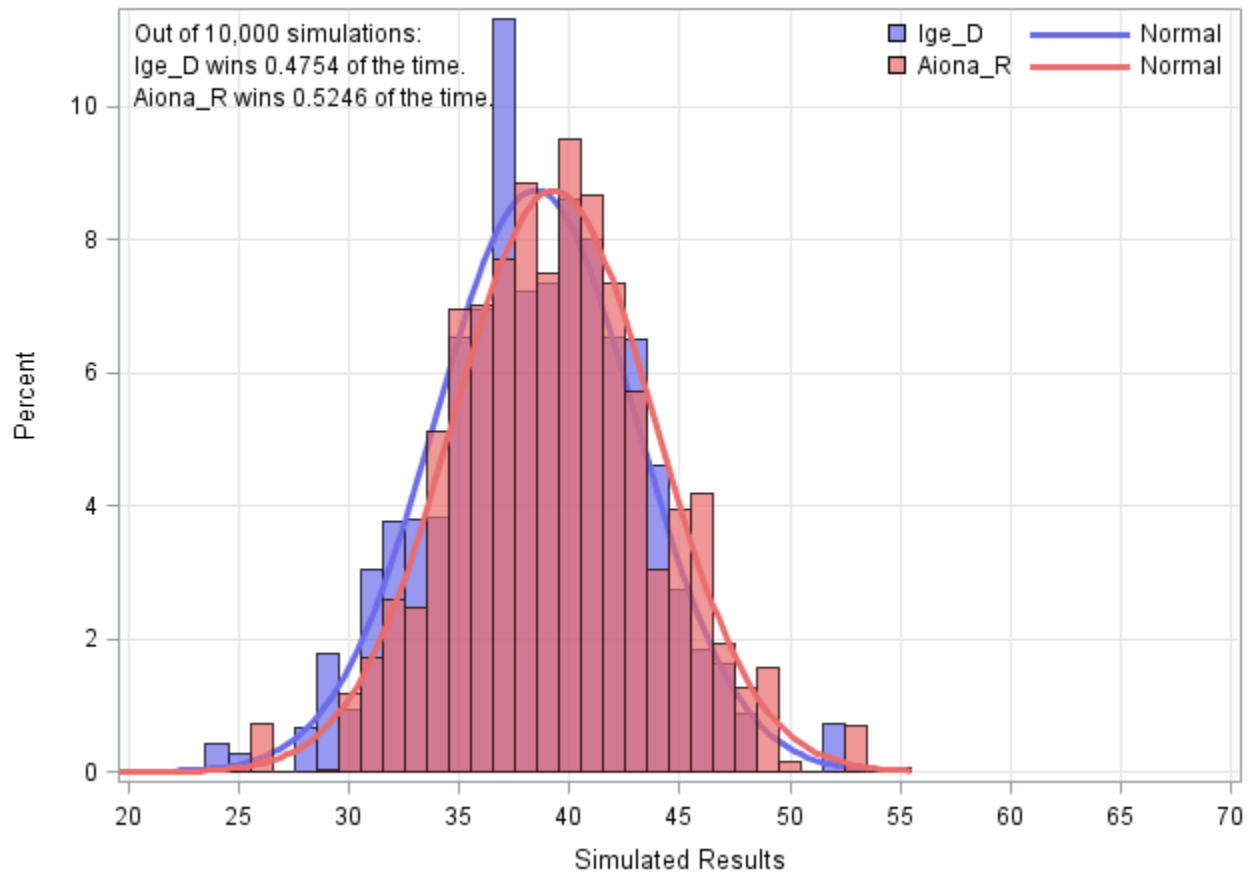
Bootstrap simulated race outcomes for Quinn_D and Rauner_R



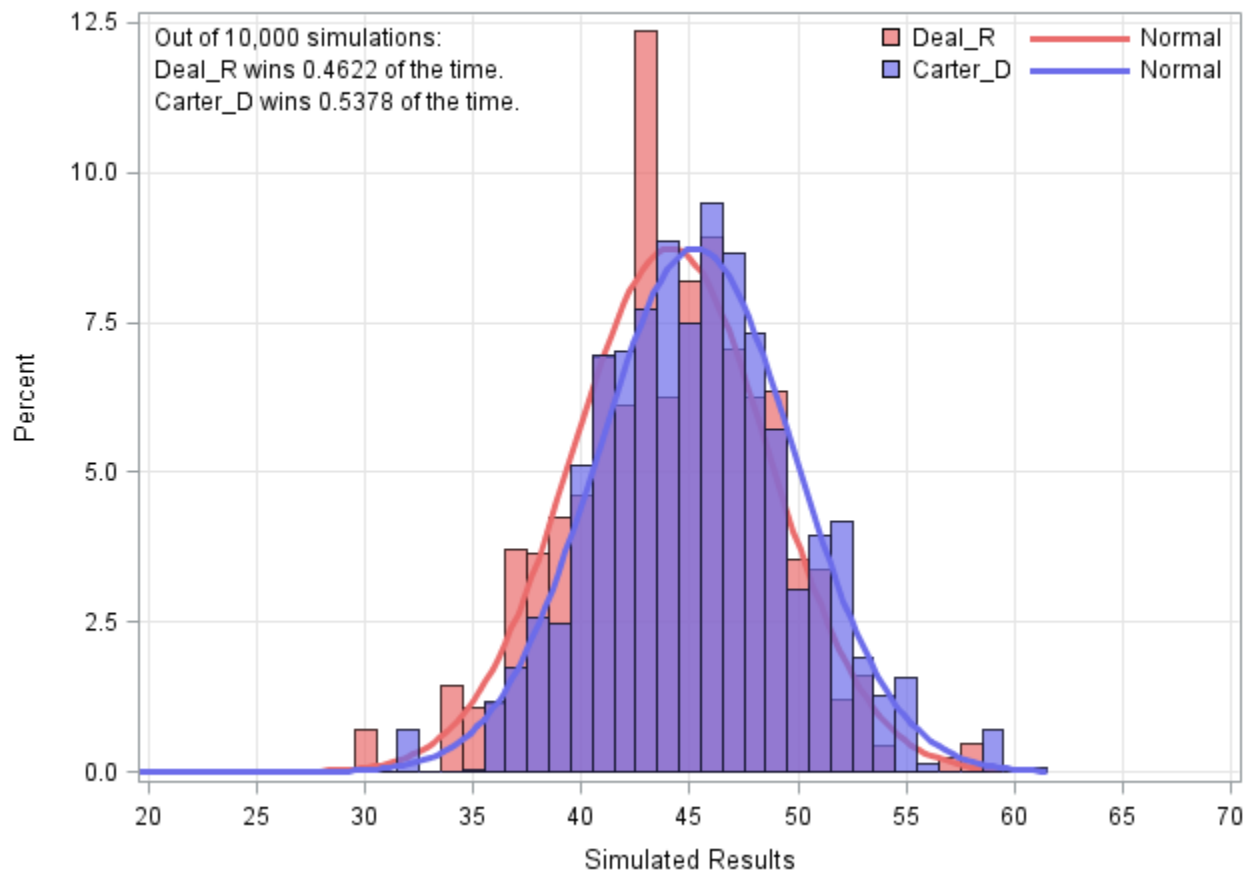
Bootstrap simulated race outcomes for Otter_R and Balukoff_D



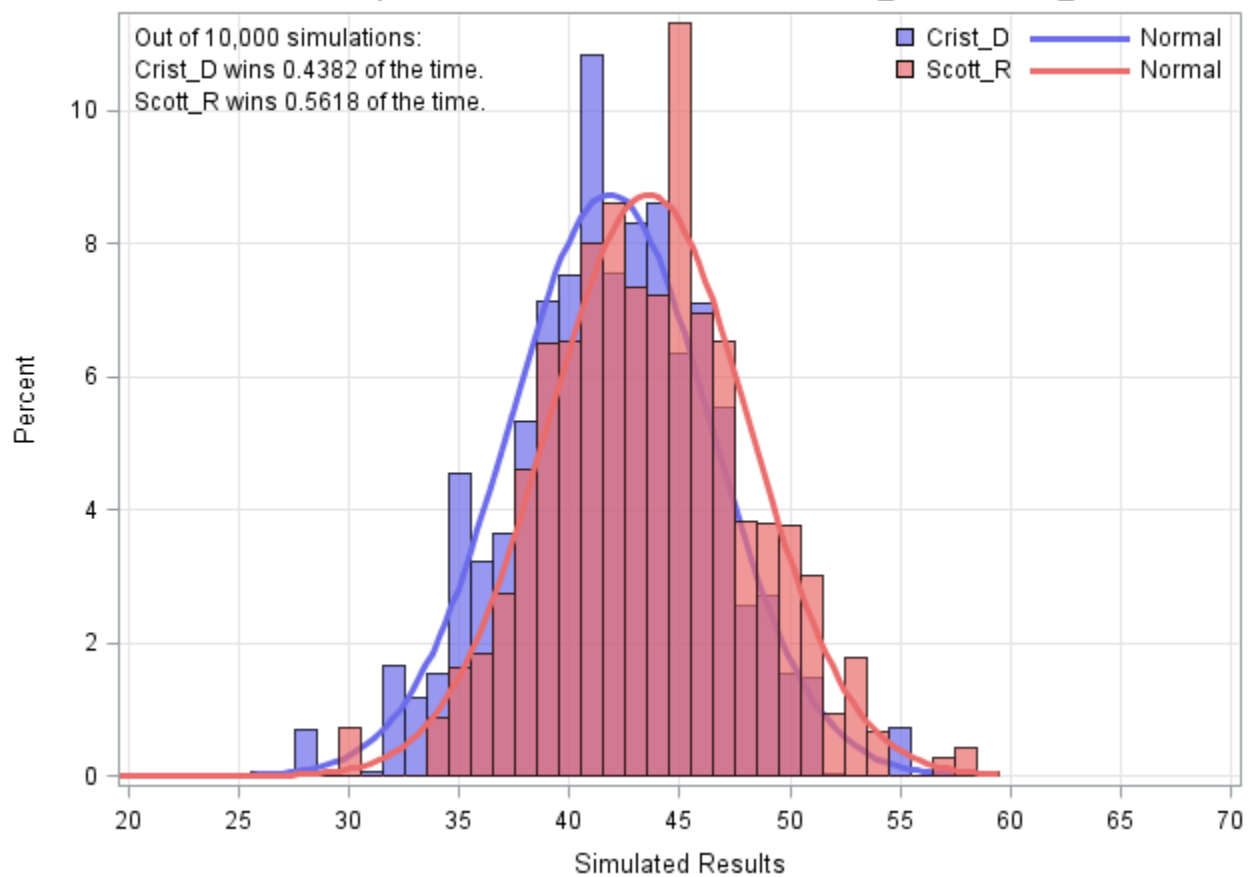
Bootstrap simulated race outcomes for Ige_D and Aiona_R



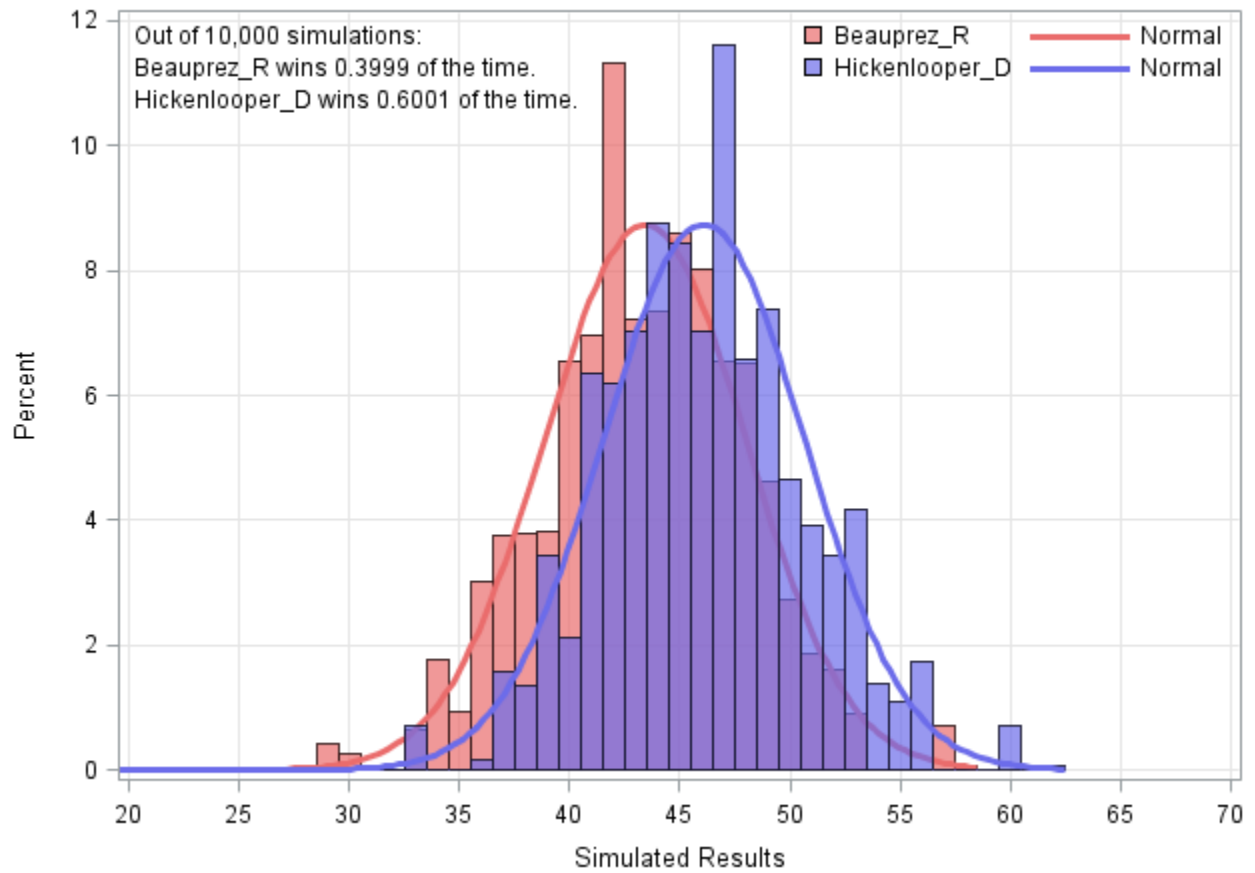
Bootstrap simulated race outcomes for Deal_R and Carter_D



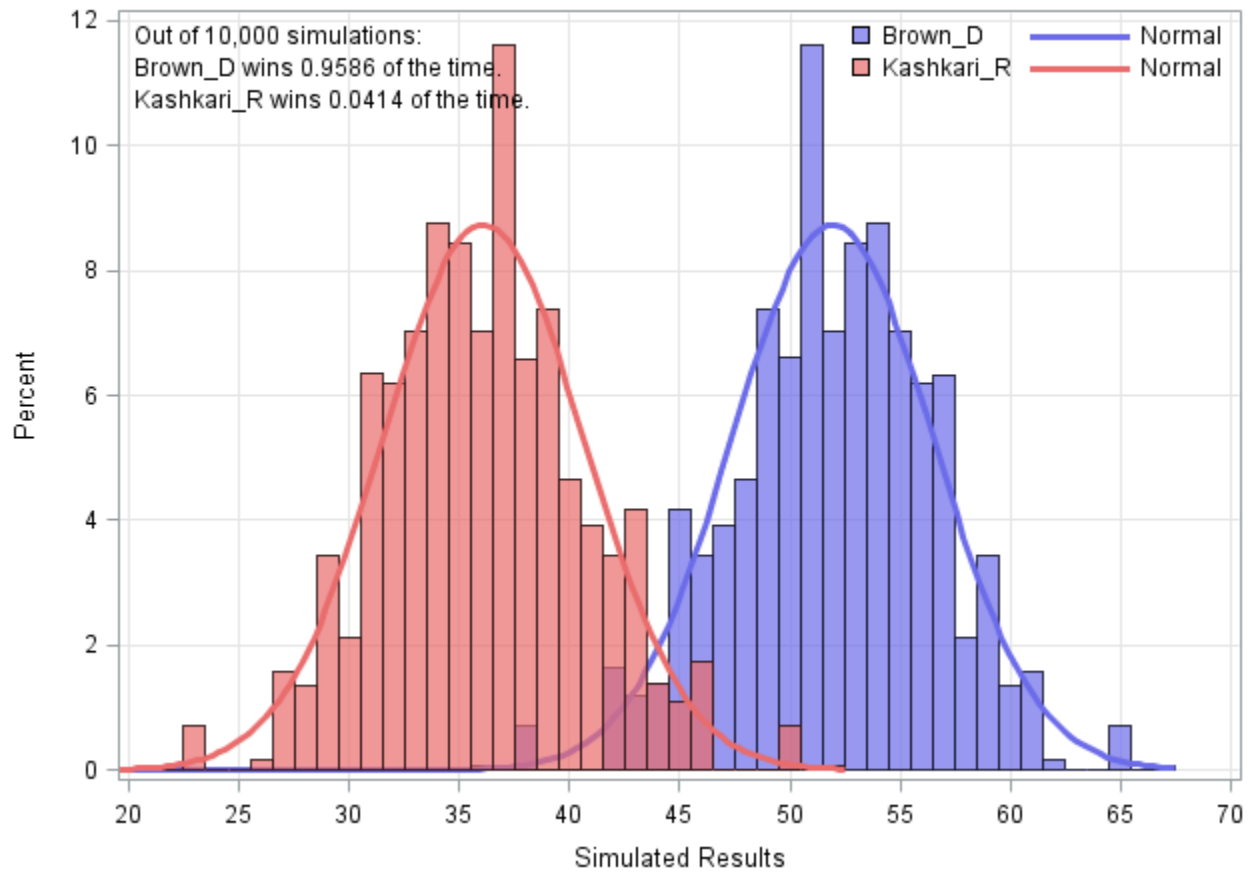
Bootstrap simulated race outcomes for Crist_D and Scott_R



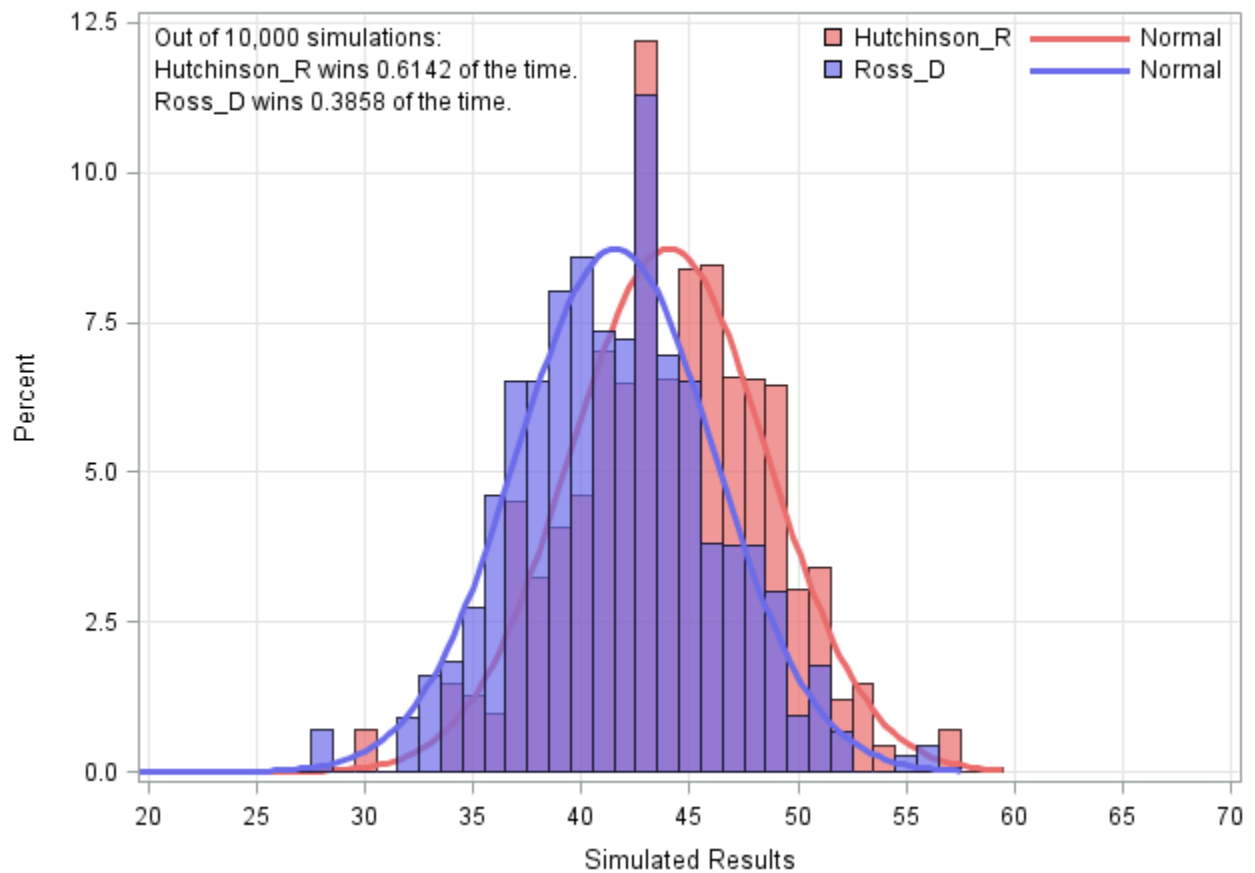
Bootstrap simulated race outcomes for Beauprez_R and Hickenlooper_D



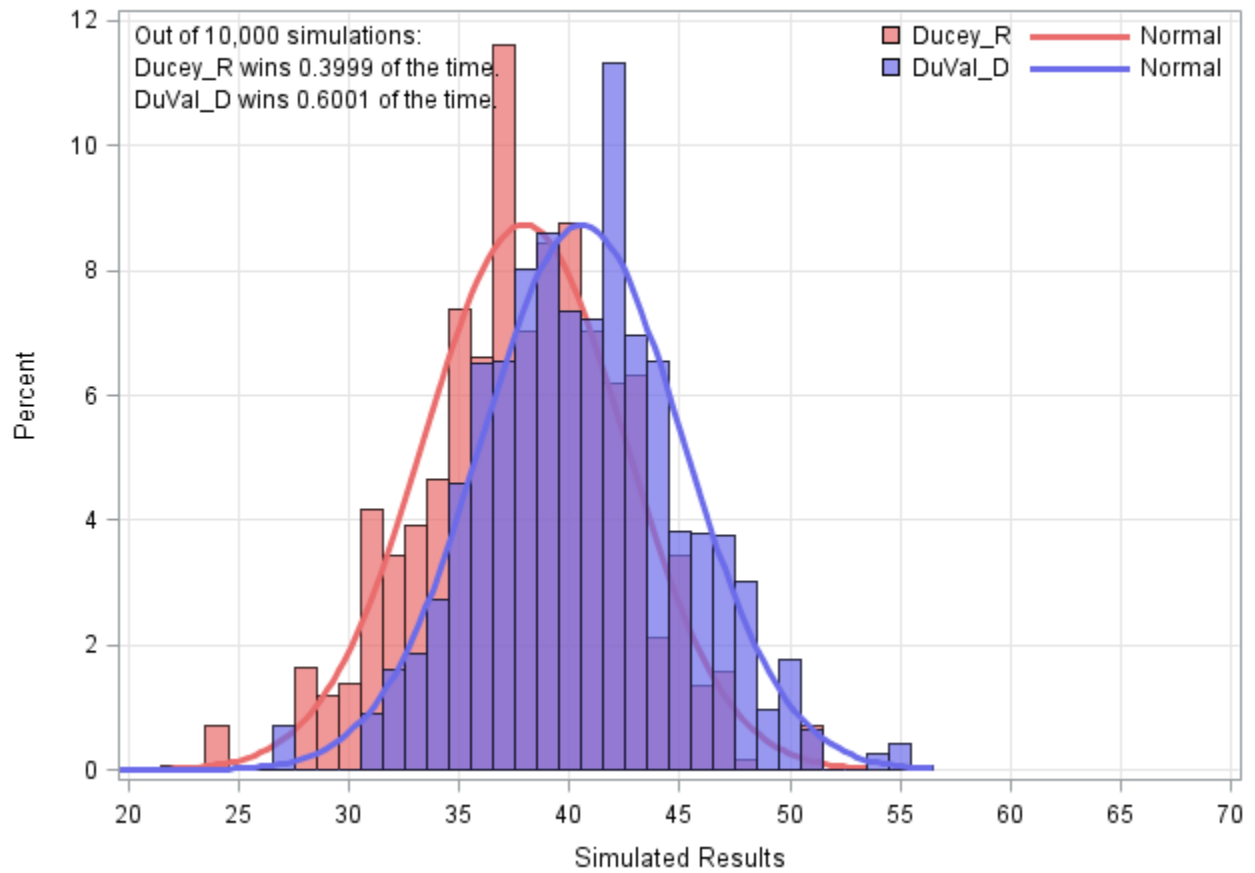
Bootstrap simulated race outcomes for Brown_D and Kashkari_R



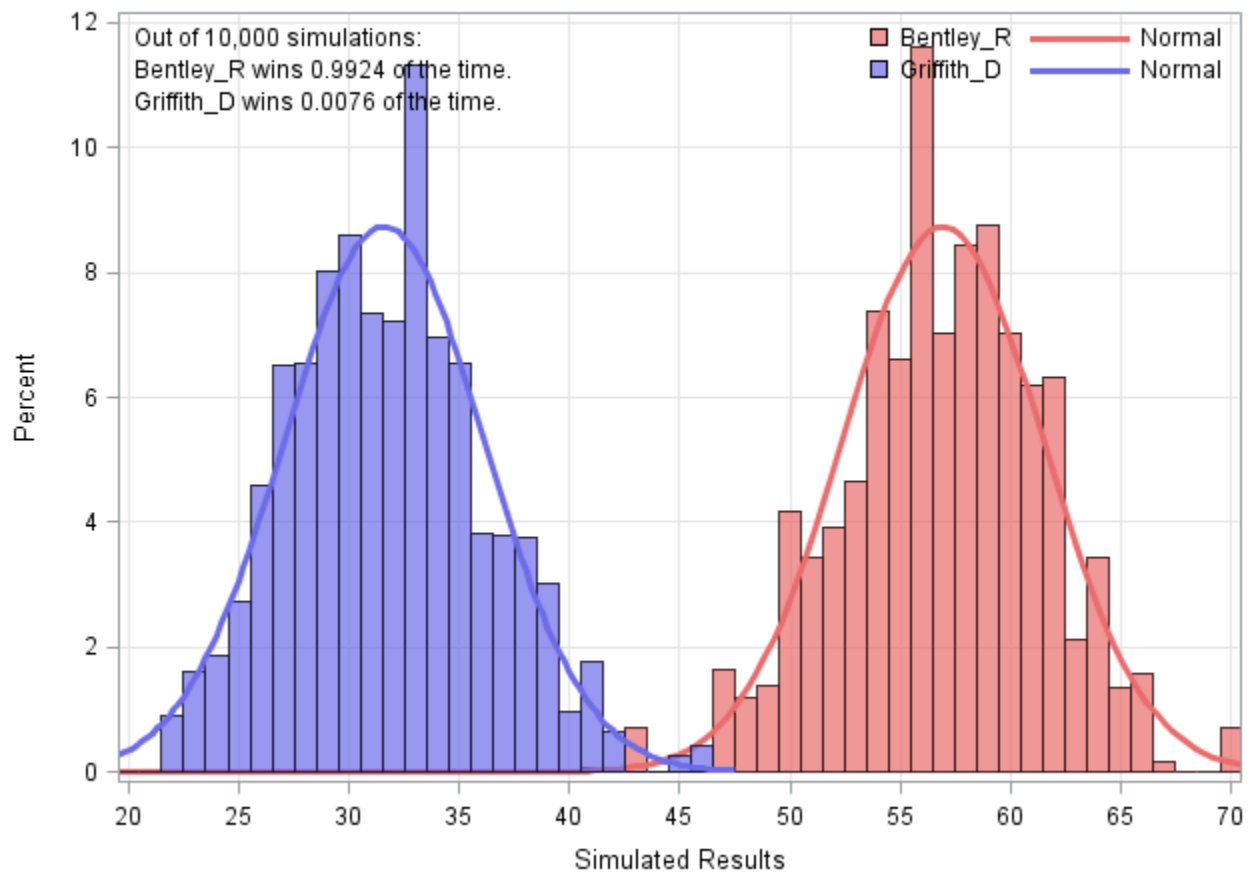
Bootstrap simulated race outcomes for Hutchinson_R and Ross_D



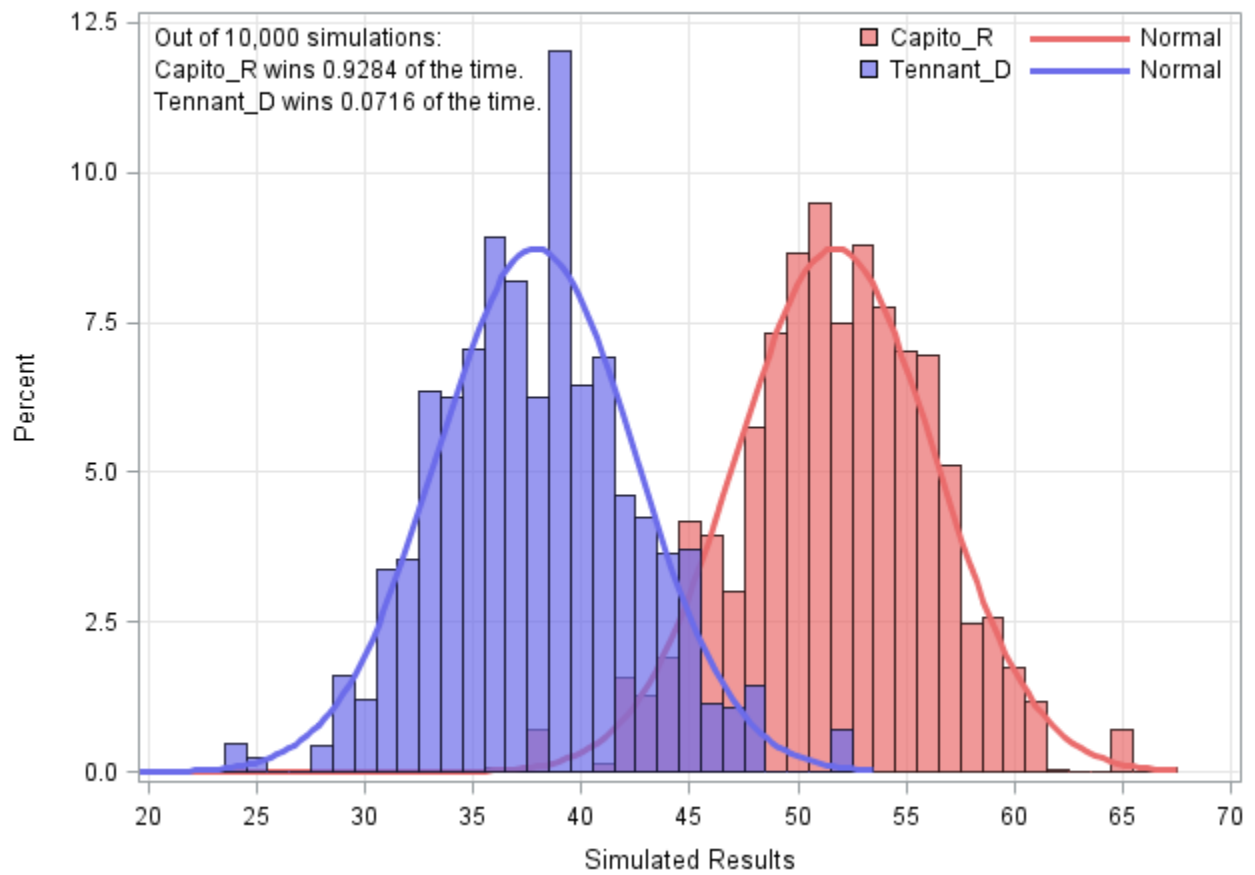
Bootstrap simulated race outcomes for Ducey_R and DuVal_D



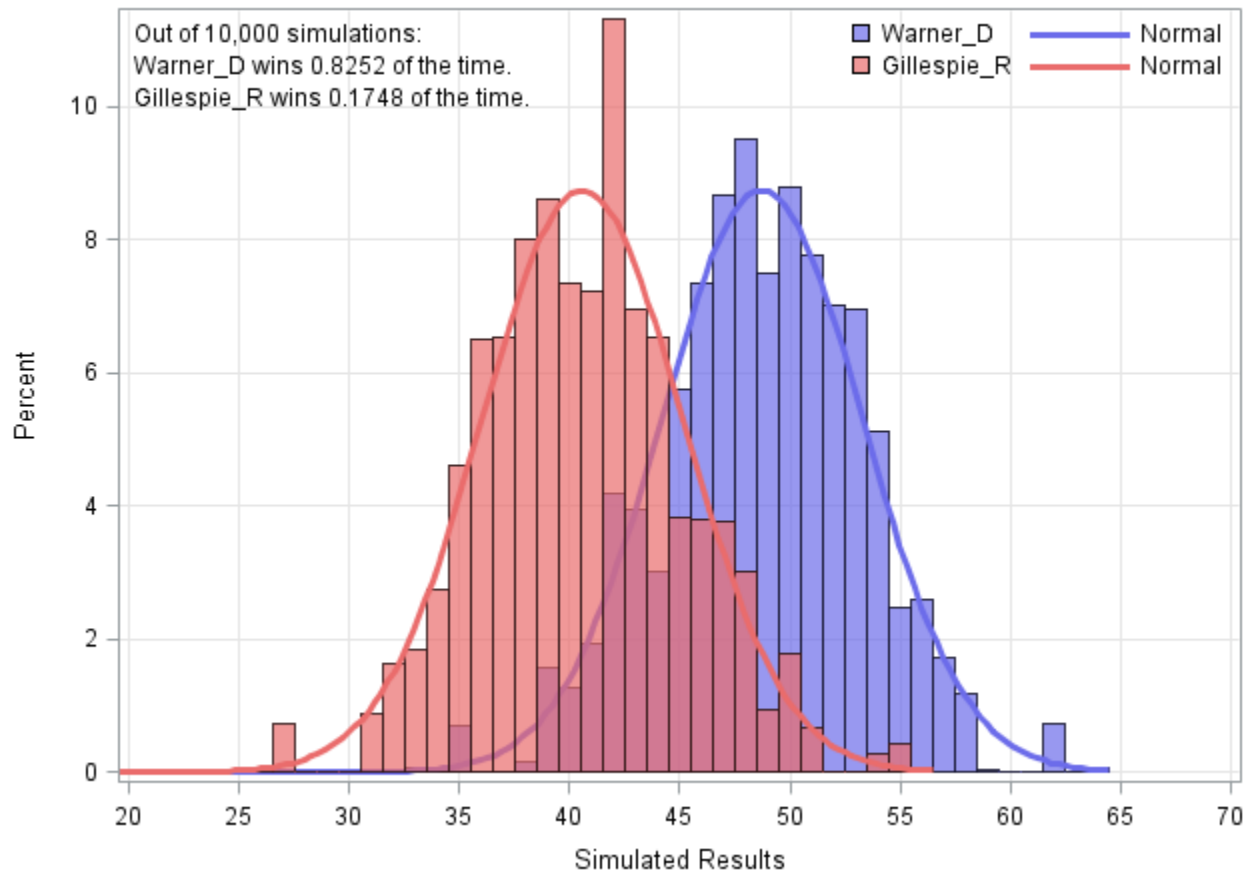
Bootstrap simulated race outcomes for Bentley_R and Griffith_D



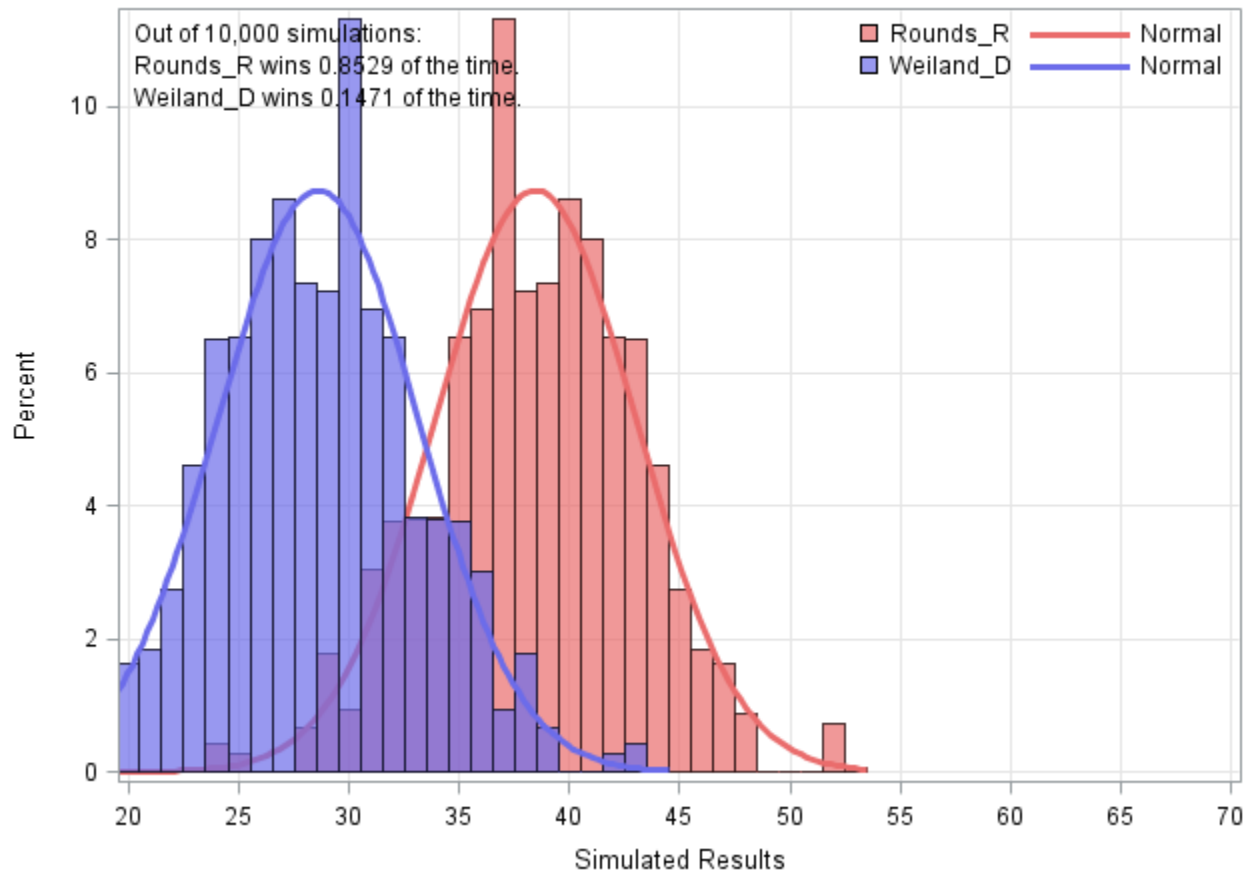
Bootstrap simulated race outcomes for Capito_R and Tennant_D



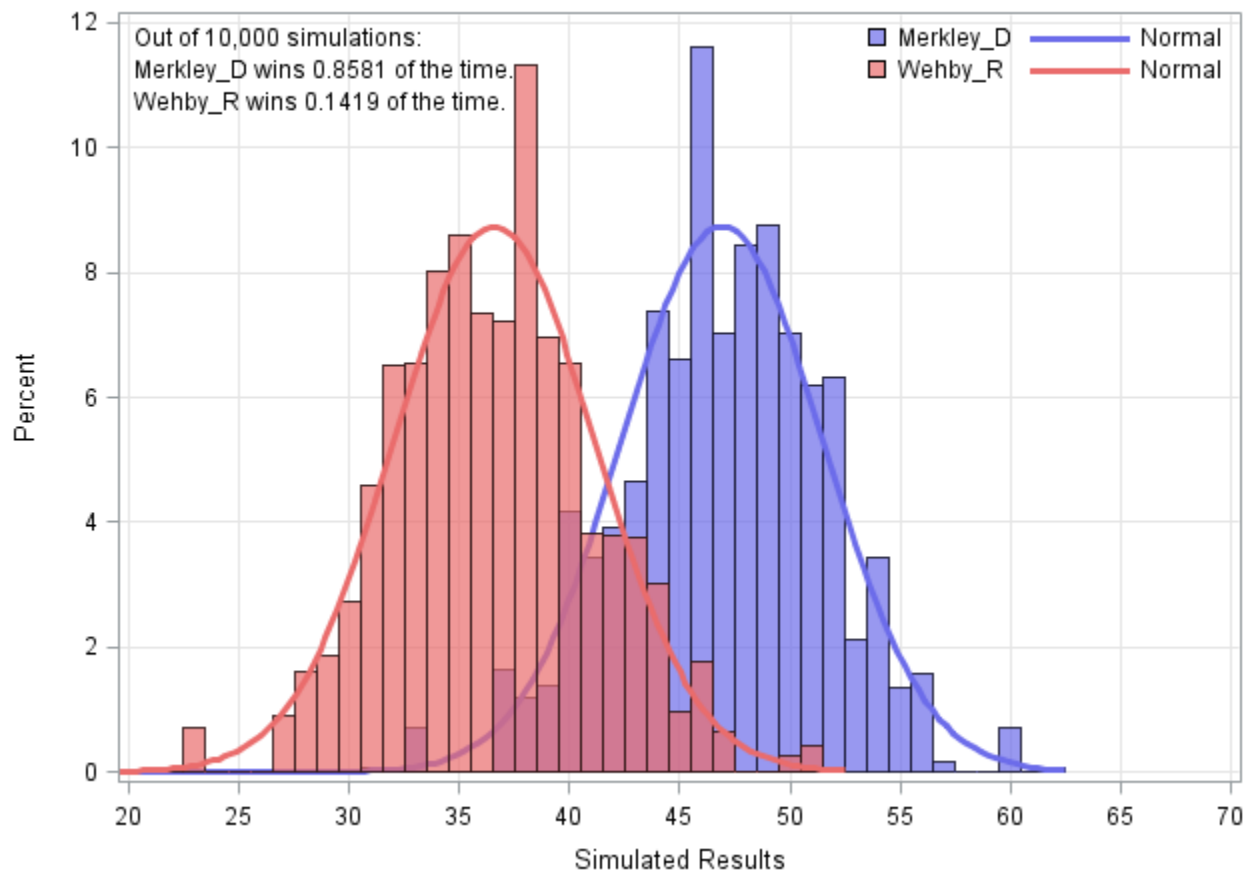
Bootstrap simulated race outcomes for Warner_D and Gillespie_R



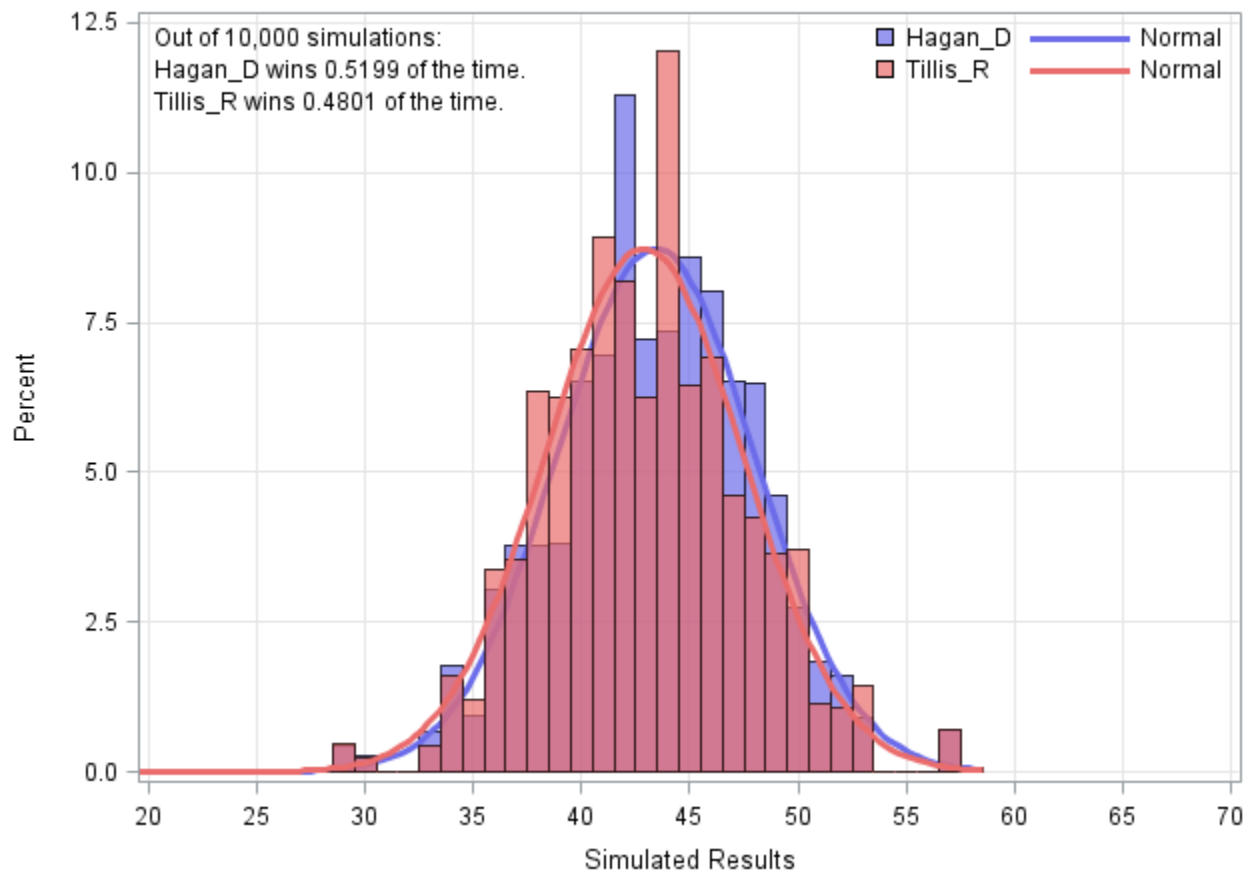
Bootstrap simulated race outcomes for Rounds_R and Weiland_D



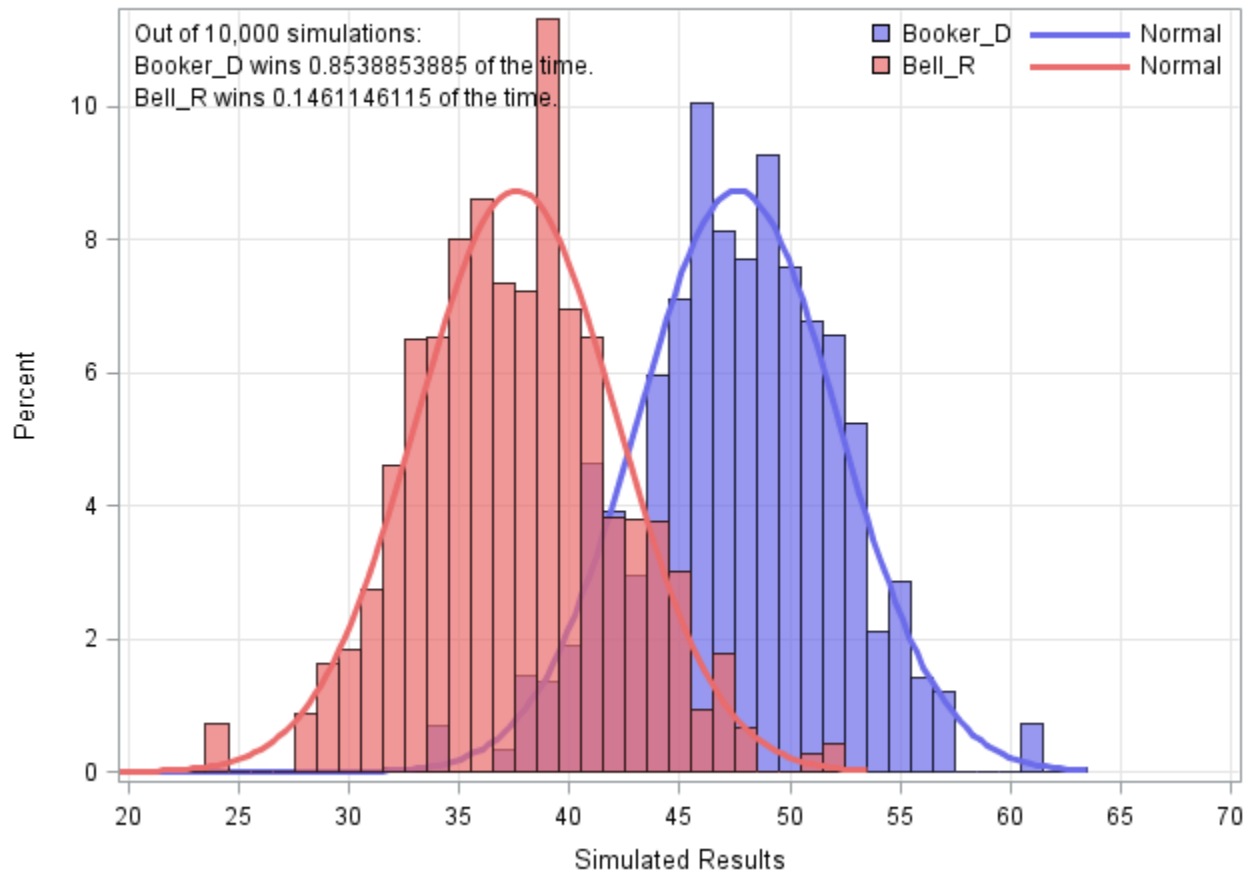
Bootstrap simulated race outcomes for Merkley_D and Wehby_R



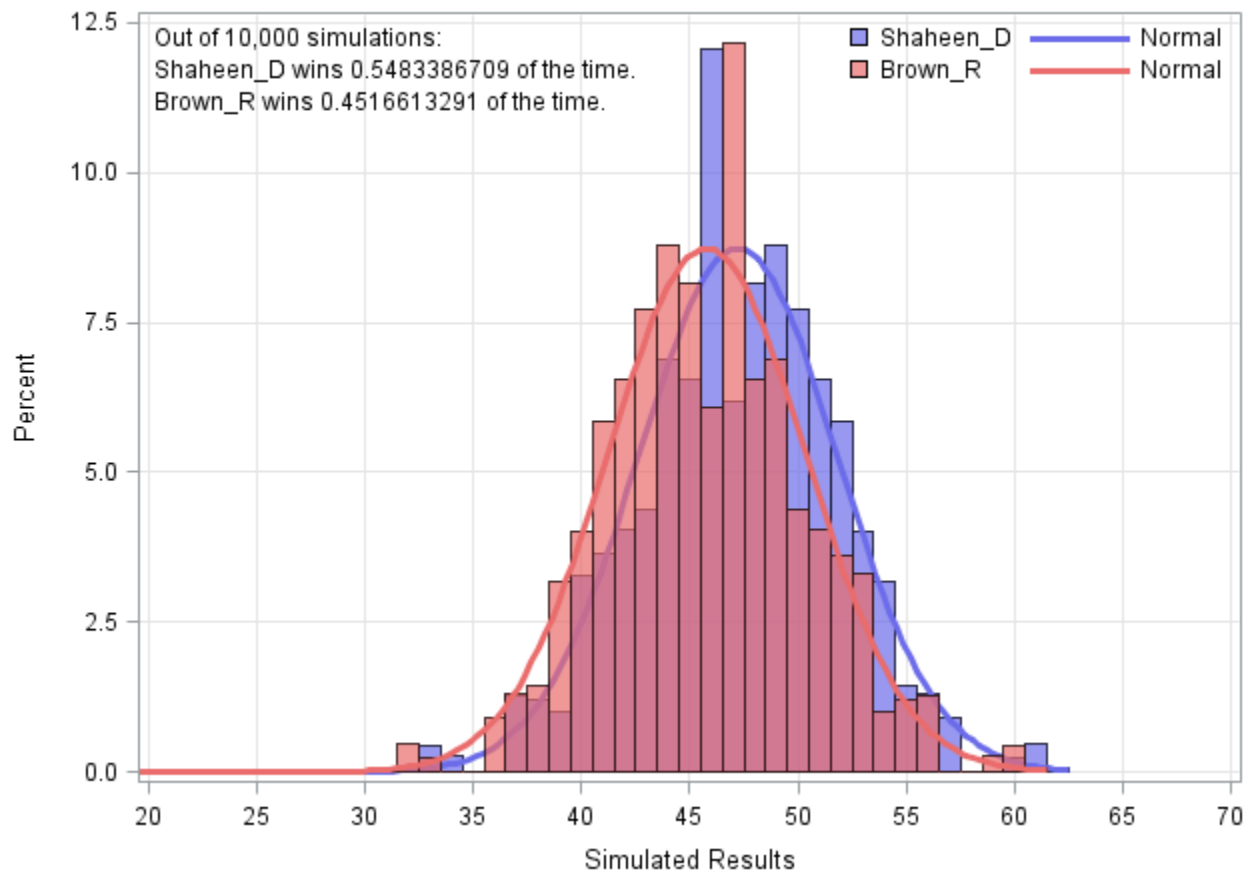
Bootstrap simulated race outcomes for Hagan_D and Tillis_R



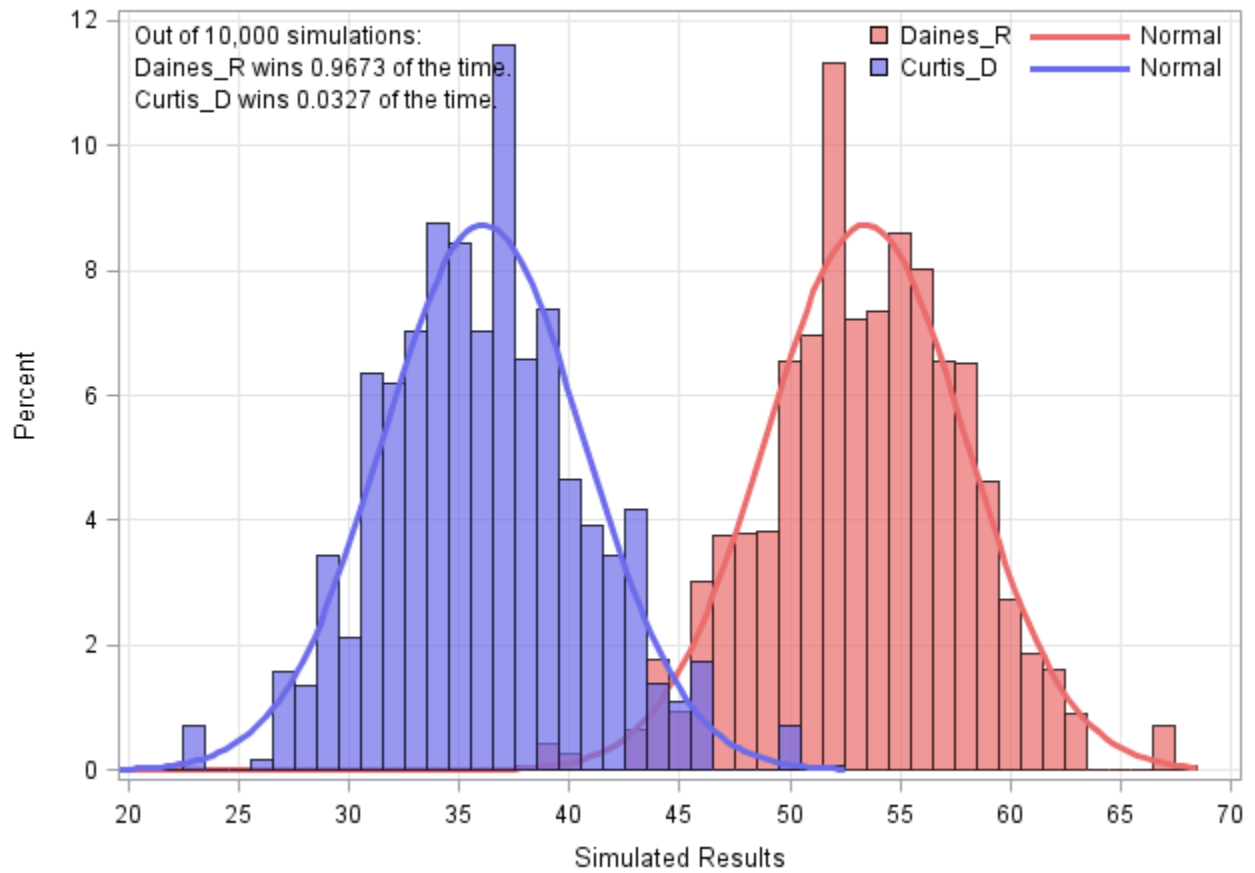
Bootstrap simulated race outcomes for Booker_D and Bell_R



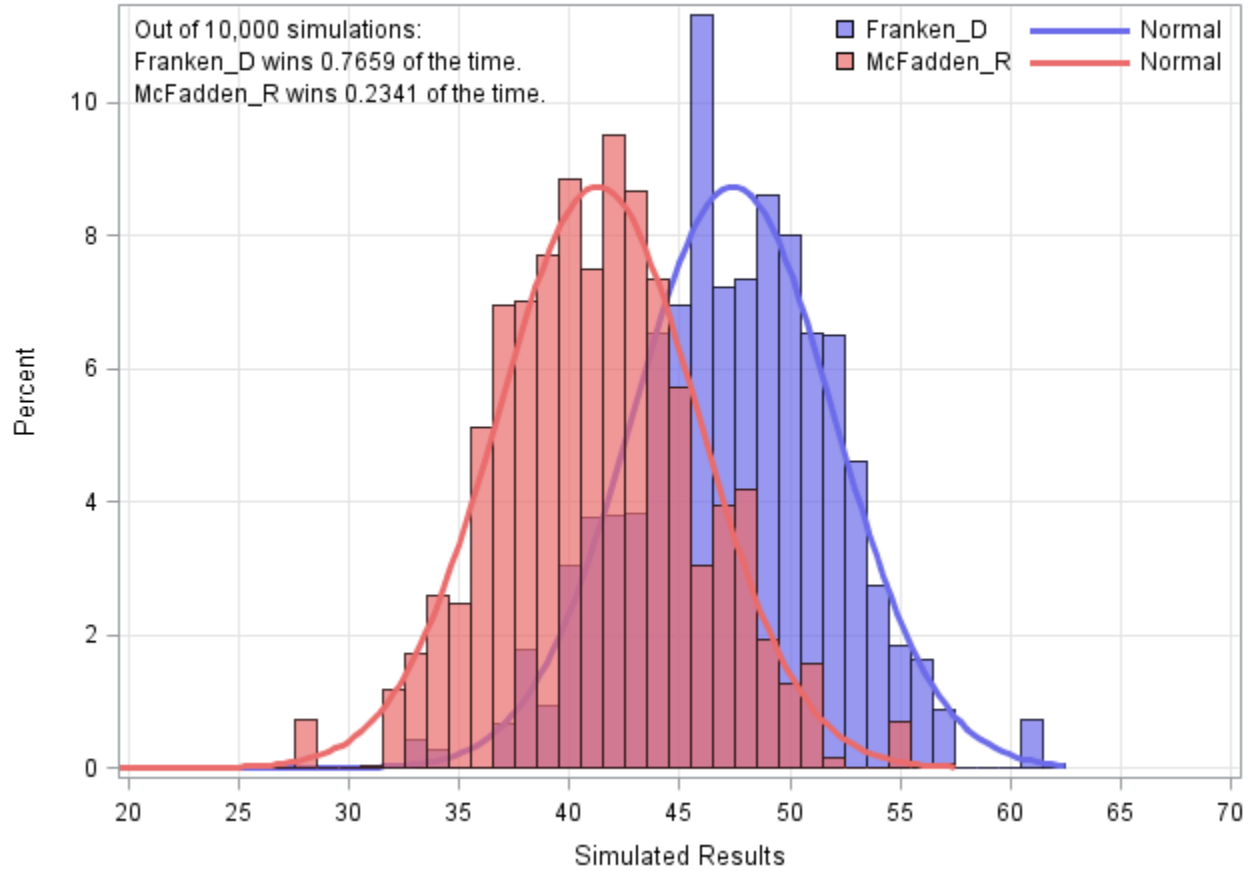
Bootstrap simulated race outcomes for Shaheen_D and Brown_R



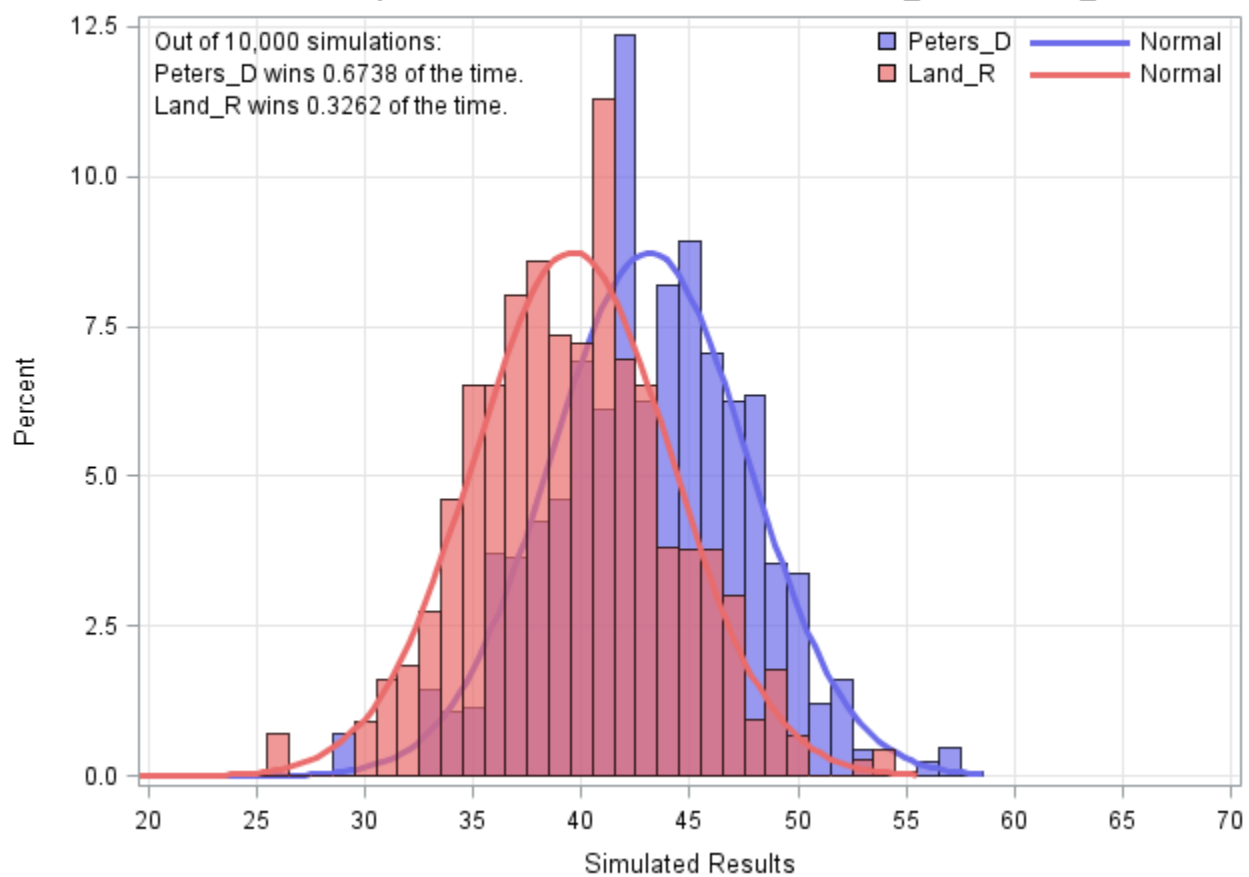
Bootstrap simulated race outcomes for Daines_R and Curtis_D



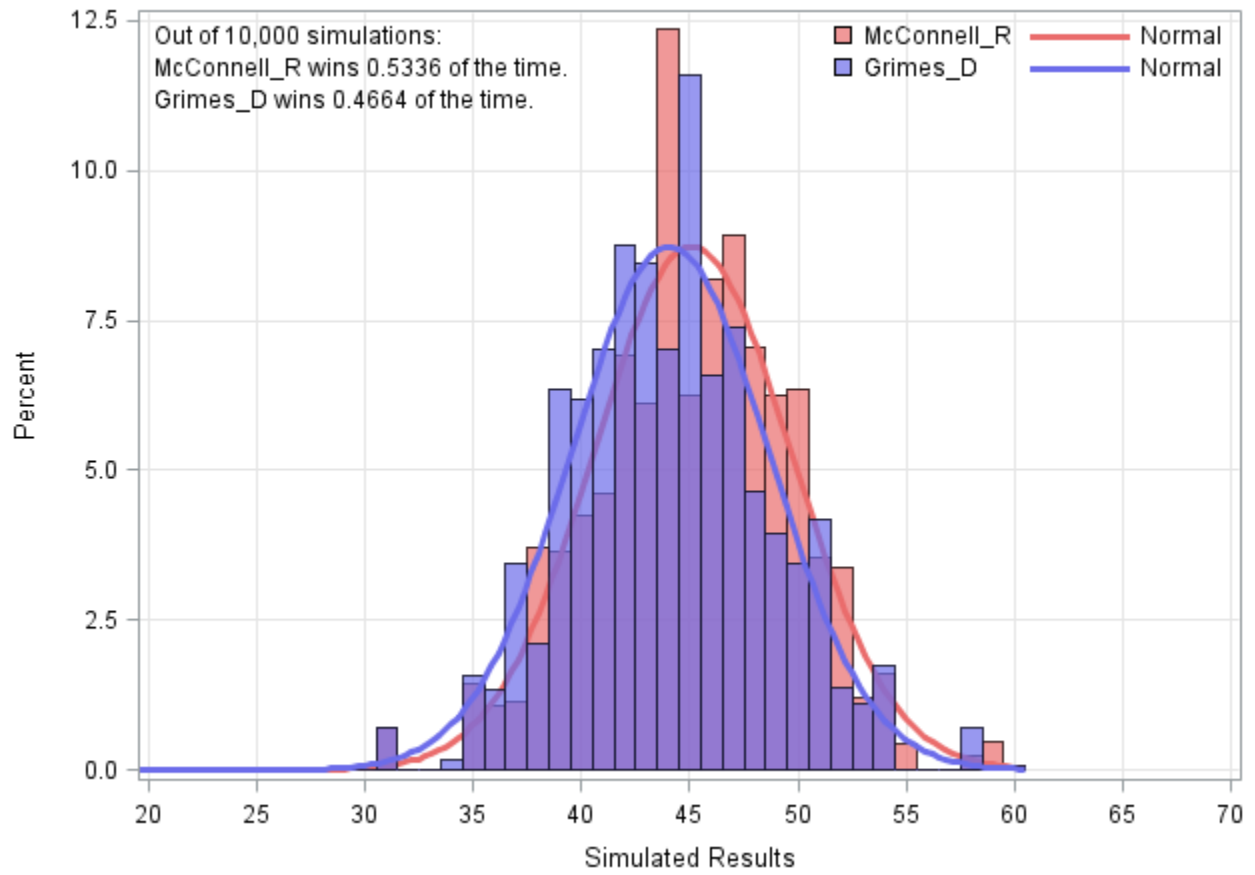
Bootstrap simulated race outcomes for Franken_D and McFadden_R



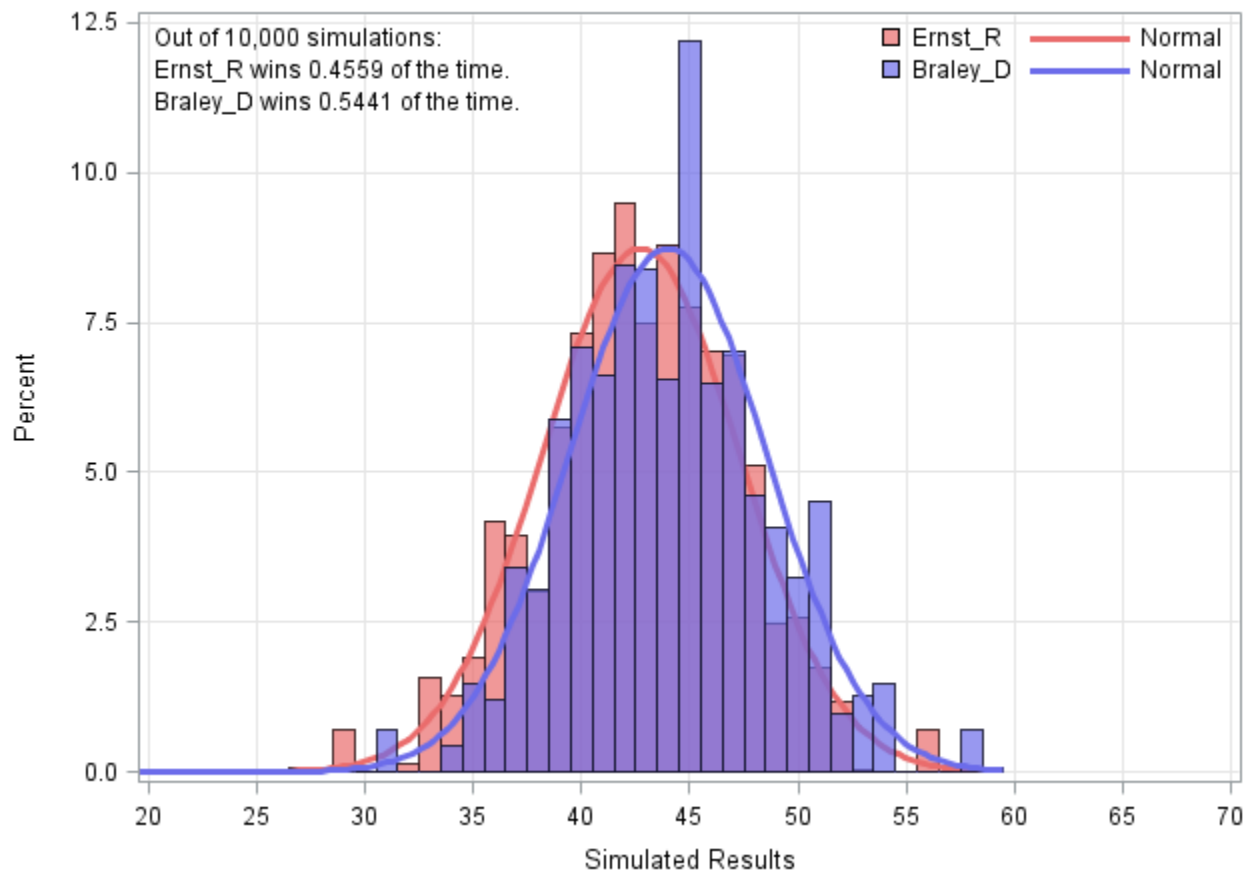
Bootstrap simulated race outcomes for Peters_D and Land_R



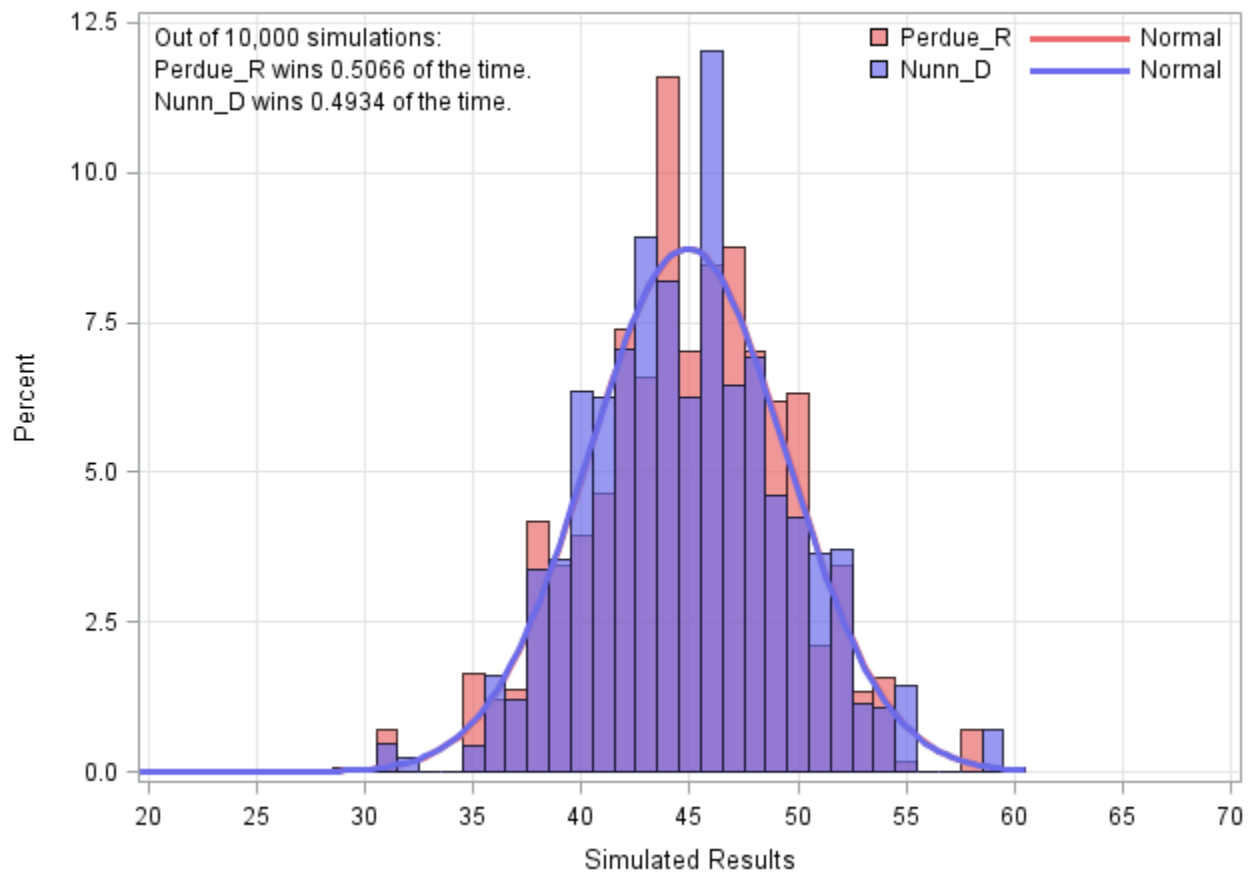
Bootstrap simulated race outcomes for McConnell_R and Grimes_D



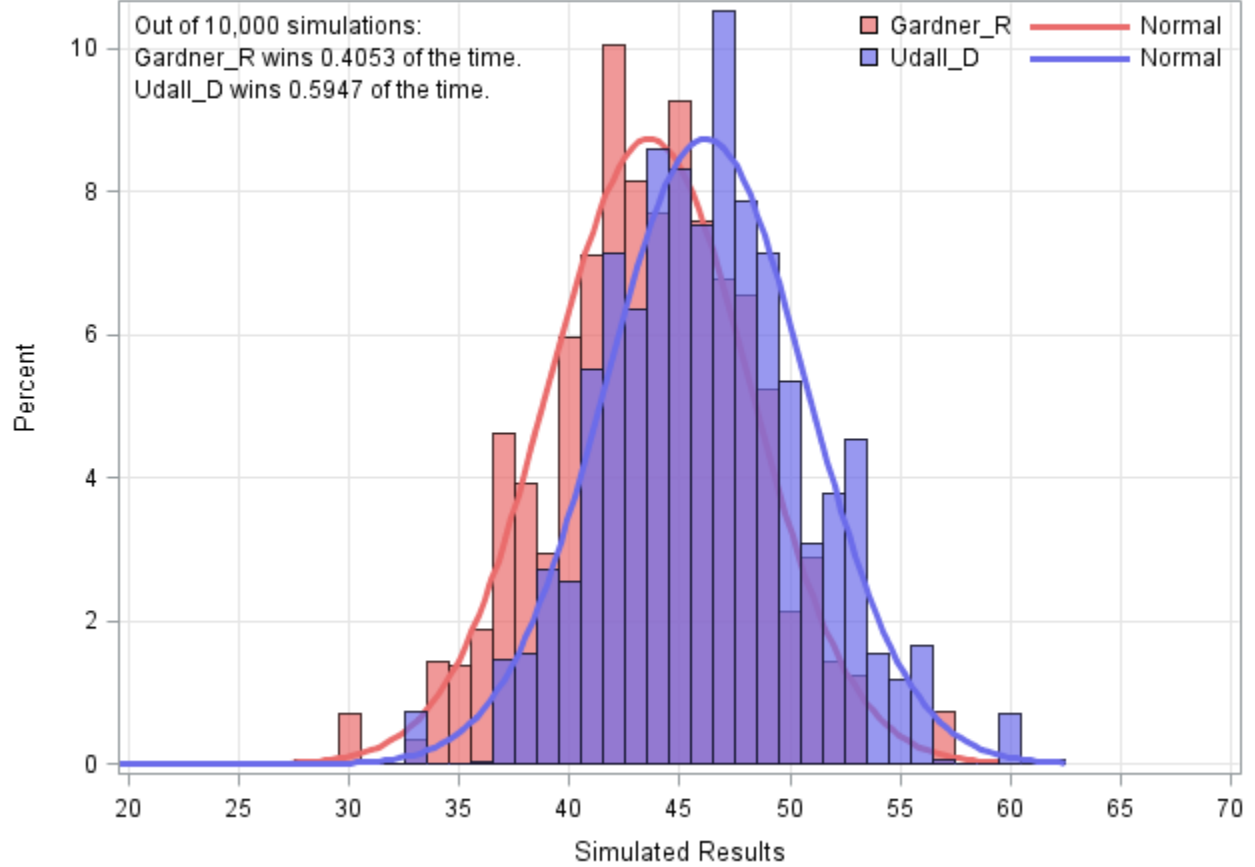
Bootstrap simulated race outcomes for Ernst_R and Braley_D



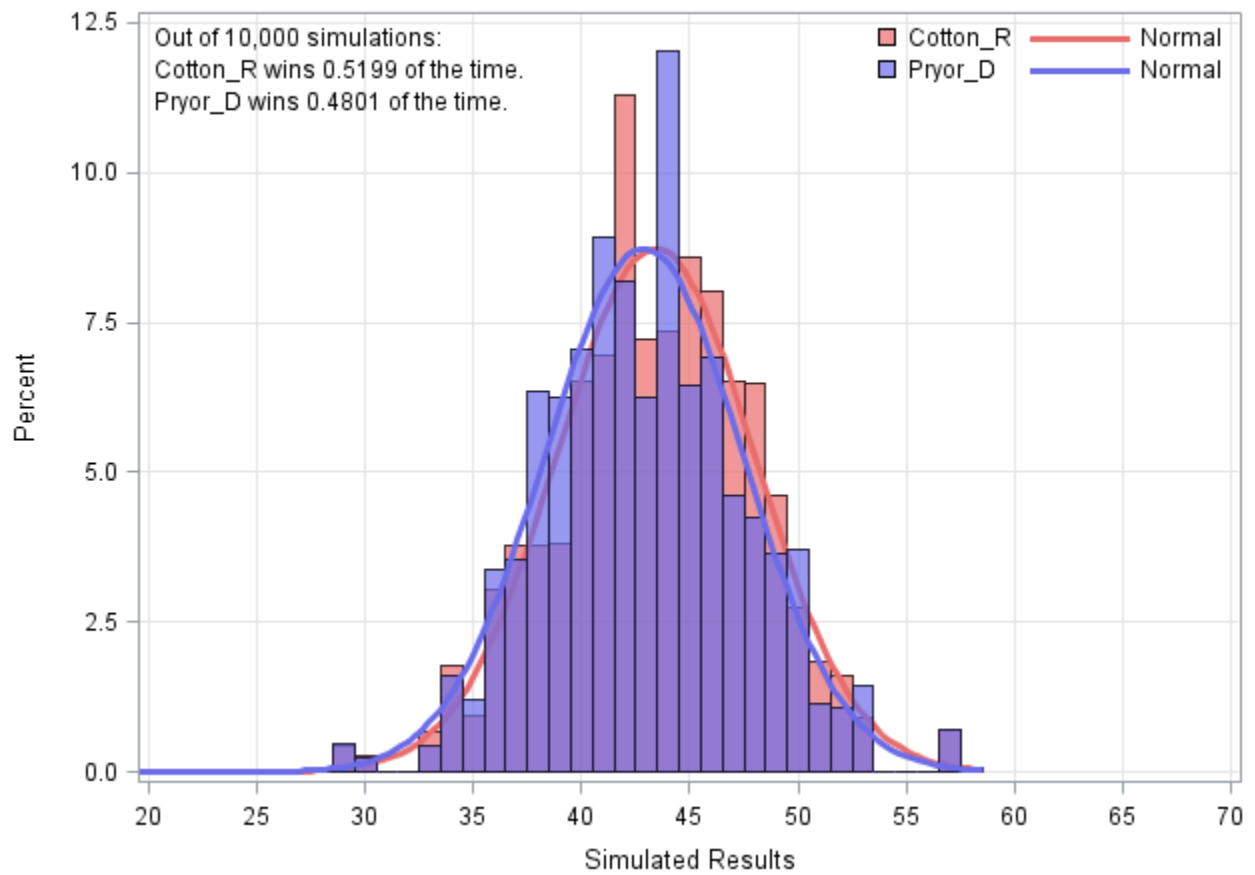
Bootstrap simulated race outcomes for Perdue_R and Nunn_D



Bootstrap simulated race outcomes for Gardner_R and Udall_D



Bootstrap simulated race outcomes for Cotton_R and Pryor_D



Bootstrap simulated race outcomes for Sullivan_R and Begich_D

