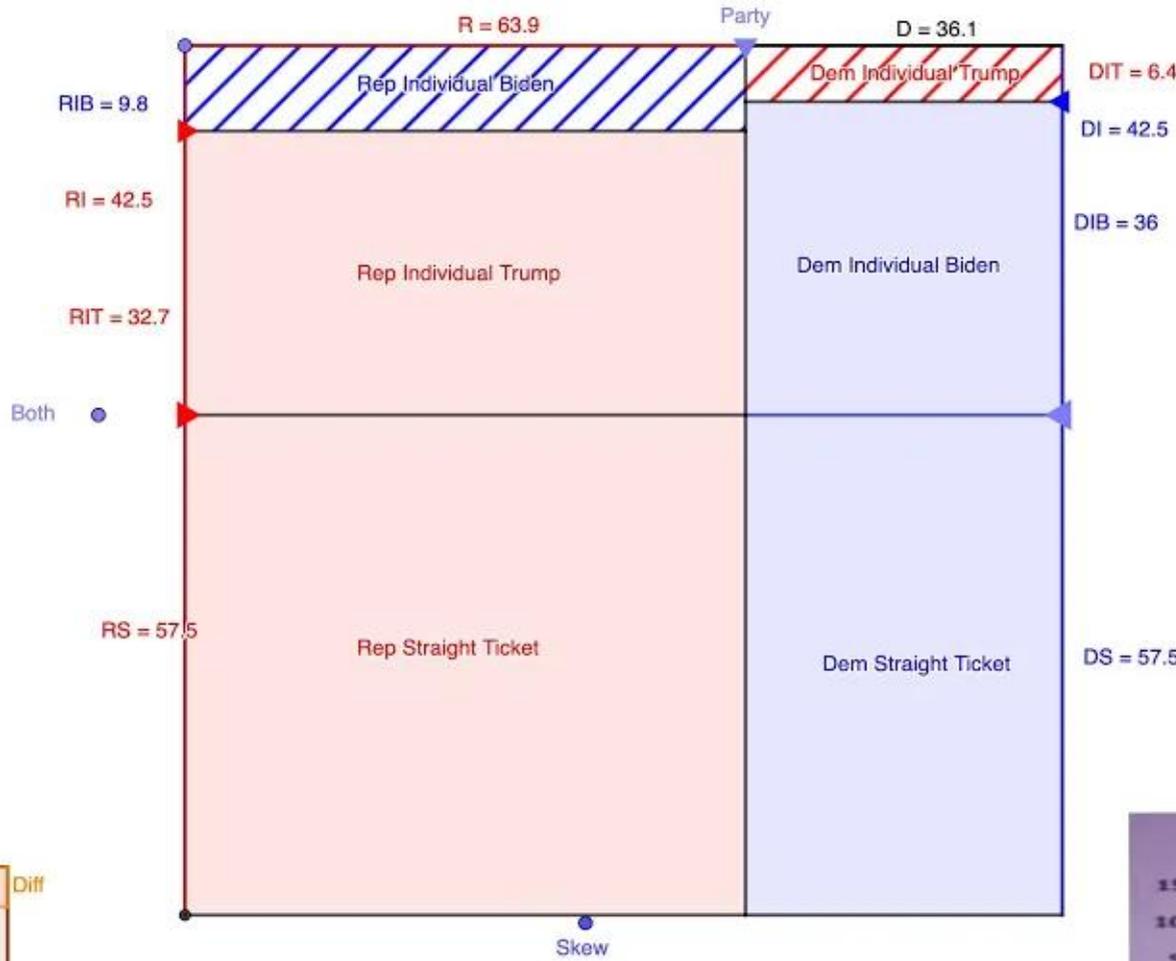# Comparison of % of straight ticket votes vs. % of individual votes. Ayyadurai metric

R = 63.9 | Party | D = 36.1

RIB = 9.8

Rep Individual Biden

Dem Individual Trump

DIT = 6.4

DI = 42.5

RI = 42.5

Rep Individual Trump

Dem Individual Biden

DIB = 36

RIT = 32.7

Both

RS = 57.5

Rep Straight Ticket

Dem Straight Ticket

DS = 57.5

Skew

Diff

I%   S%

R Individual % = 54.6%
R Straight % = 63.9%
Difference = -9.3%

Trump Total Vote % = 59.9

Clear Trace

Diff

Trump Individual Votes % Relative to Republican
Party % Each Precinct- Kent County, Michigan

Straight Republican
Party Score

Republican % Each Precinct
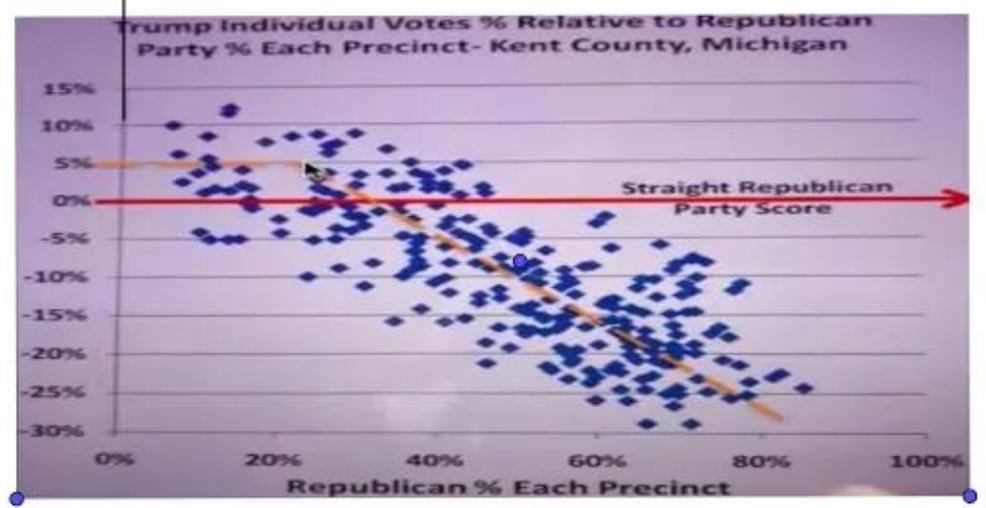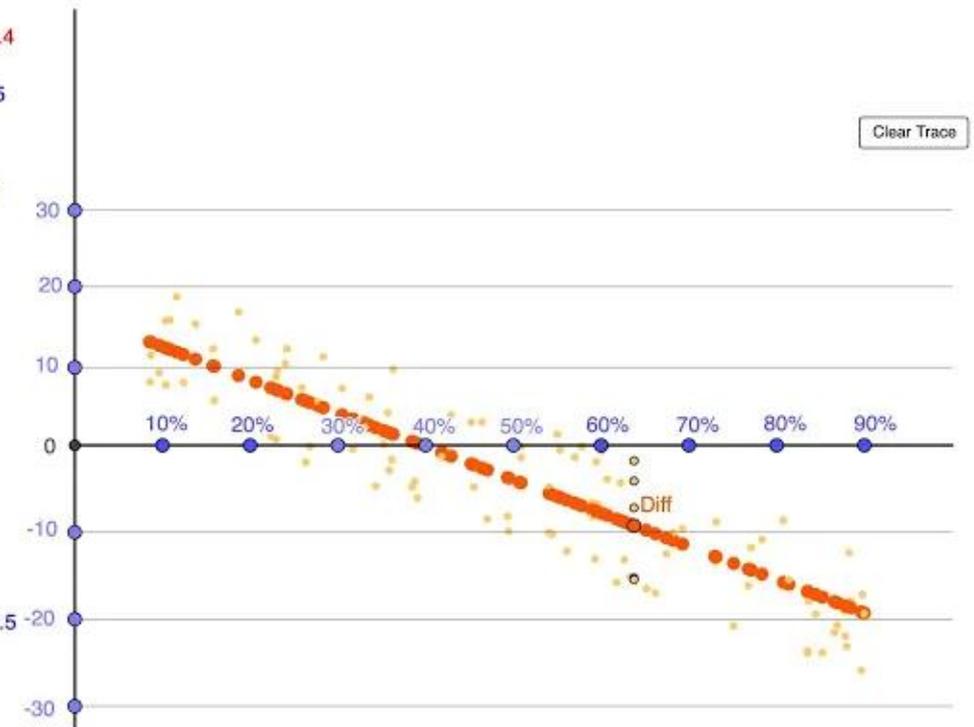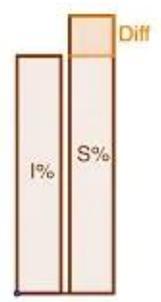
1
00:00:04,230 --> 00:00:01,589
so there's a video going around by a

2
00:00:07,190 --> 00:00:04,240
doctor shiva ayadarya

3
00:00:08,070 --> 00:00:07,200
and uh in it he puts up this graph here

4
00:00:10,230 --> 00:00:08,080
and it's a

5
00:00:11,270 --> 00:00:10,240
as a metric of something that he plots

6
00:00:14,150 --> 00:00:11,280
based on

7
00:00:15,350 --> 00:00:14,160
the votes in kent county michigan and is

8
00:00:18,870 --> 00:00:15,360
confused as to why

9
00:00:20,390 --> 00:00:18,880
this line slopes down so what i did is i

10
00:00:24,470 --> 00:00:20,400
set up a kind of a

11
00:00:26,310 --> 00:00:24,480
simulation of of voting possibilities

12
00:00:28,150 --> 00:00:26,320
to explain why that happens and as you

13
00:00:30,950 --> 00:00:28,160

can see i've kind of duplicated

14
00:00:32,229 --> 00:00:30,960
the line sloping down here now he has

15
00:00:33,910 --> 00:00:32,239
this other thing here where he says the

16
00:00:34,790 --> 00:00:33,920
line kinks off to the side but really

17
00:00:37,670 --> 00:00:34,800
that's just a

18
00:00:38,790 --> 00:00:37,680
a very arbitrary way of drawing a line

19
00:00:39,750 --> 00:00:38,800
through here you could very easily just

20
00:00:42,549 --> 00:00:39,760
draw a straight line

21
00:00:43,190 --> 00:00:42,559
through the entire thing as i have here

22
00:00:45,670 --> 00:00:43,200
uh so

23
00:00:47,190 --> 00:00:45,680
what's actually going on here well i set

24
00:00:49,350 --> 00:00:47,200
up this simulator so

25
00:00:50,470 --> 00:00:49,360
this square here represents all of the

26
00:00:52,150 --> 00:00:50,480
voters on

27
00:00:53,830 --> 00:00:52,160
one side there's the people who normally

28
00:00:55,270 --> 00:00:53,840
vote republican on the other side

29
00:00:56,229 --> 00:00:55,280
there's the people who normally vote

30
00:00:59,590 --> 00:00:56,239
democrat

31
00:01:01,510 --> 00:00:59,600
and we can move uh between the two

32
00:01:03,510 --> 00:01:01,520
so we can kind of simulate different

33
00:01:05,590 --> 00:01:03,520
precincts where for example the

34
00:01:06,230 --> 00:01:05,600
republican vote is very low like over

35
00:01:09,590 --> 00:01:06,240
here

36
00:01:10,070 --> 00:01:09,600
very low and the republican vote is very

37
00:01:11,670 --> 00:01:10,080
high

38
00:01:13,190 --> 00:01:11,680

and that gives you this this graph of

39
00:01:14,950 --> 00:01:13,200
different precincts throughout

40
00:01:16,870 --> 00:01:14,960
michigan some of them are more democrats

41
00:01:20,870 --> 00:01:16,880
some of them are more republican

42
00:01:22,070 --> 00:01:20,880
uh in kent county so what's actually

43
00:01:24,230 --> 00:01:22,080
what is this graph what is it

44
00:01:25,590 --> 00:01:24,240
representing well it's a little

45
00:01:27,590 --> 00:01:25,600
a little confusing based on his

46
00:01:28,310 --> 00:01:27,600
description but i eventually figured it

47
00:01:31,830 --> 00:01:28,320
out

48
00:01:33,749 --> 00:01:31,840
he's taking on the x-axis here

49
00:01:34,950 --> 00:01:33,759
what he calls the straight republican

50
00:01:38,310 --> 00:01:34,960
party score

51
00:01:40,630 --> 00:01:38,320
which is the percentage of people who

52
00:01:41,590 --> 00:01:40,640
just voted for republican straight

53
00:01:43,429 --> 00:01:41,600
ticket

54
00:01:45,190 --> 00:01:43,439
divided by the total number of people

55
00:01:46,870 --> 00:01:45,200
who voted for straight tickets which is

56
00:01:48,310 --> 00:01:46,880
the republican straight ticket plus the

57
00:01:49,749 --> 00:01:48,320
democrat straight ticket

58
00:01:51,429 --> 00:01:49,759
and we're ignoring all of the parties

59
00:01:53,670 --> 00:01:51,439
for now because they're pretty small

60
00:01:55,510 --> 00:01:53,680
in this analysis so it's essentially

61
00:01:57,270 --> 00:01:55,520
this rectangle here divided by this

62
00:01:59,350 --> 00:01:57,280
larger rectangle the red plus blue

63
00:02:02,870 --> 00:01:59,360

rectangle

64
00:02:06,389 --> 00:02:02,880
uh then against that is plotting

65
00:02:09,749 --> 00:02:06,399
uh the difference between that and

66
00:02:10,389 --> 00:02:09,759
the same thing for individual voters

67
00:02:13,110 --> 00:02:10,399
people who

68
00:02:15,510 --> 00:02:13,120
chose to vote for individual parties in

69
00:02:18,550 --> 00:02:15,520
each race so they could vote say

70
00:02:20,470 --> 00:02:18,560
for one party for the senate and another

71
00:02:23,910 --> 00:02:20,480
party for the president

72
00:02:25,990 --> 00:02:23,920
so it's the ratio of this rectangle here

73
00:02:28,309 --> 00:02:26,000
the republican individual

74
00:02:29,589 --> 00:02:28,319
uh trump voters uh the trump the

75
00:02:31,750 --> 00:02:29,599
individual trump voters to the

76
00:02:34,949 --> 00:02:31,760
individual biden voters

77
00:02:36,390 --> 00:02:34,959
uh over here so is this rectangle

78
00:02:37,589 --> 00:02:36,400
divided by this rectangle but it's not

79
00:02:39,350 --> 00:02:37,599
just plotting these two it's plotting

80
00:02:41,110 --> 00:02:39,360
the difference between them

81
00:02:42,790 --> 00:02:41,120
so we can see if i put that back and

82
00:02:44,710 --> 00:02:42,800
move from left to right

83
00:02:46,710 --> 00:02:44,720
we have this difference here between the

84
00:02:47,589 --> 00:02:46,720
two and you can see it's plotted over

85
00:02:51,190 --> 00:02:47,599
here

86
00:02:53,110 --> 00:02:51,200
now i had area's key mistake is that

87
00:02:54,869 --> 00:02:53,120
he assumed that all people who were

88
00:02:56,309 --> 00:02:54,879

republicans would vote for trump because

89
00:02:59,270 --> 00:02:56,319
republicans all love trump

90
00:03:00,869 --> 00:02:59,280
so much of course this isn't true if it

91
00:03:02,710 --> 00:03:00,879
was true you get what he

92
00:03:04,070 --> 00:03:02,720
says he should expect which is a flat

93
00:03:07,110 --> 00:03:04,080
line centered around zero

94
00:03:08,869 --> 00:03:07,120
because the the proportions of these two

95
00:03:10,550 --> 00:03:08,879
things never actually changes it's

96
00:03:12,149 --> 00:03:10,560
always the exact same proportions this

97
00:03:13,190 --> 00:03:12,159
to this and this to this exact same

98
00:03:14,710 --> 00:03:13,200
proportions

99
00:03:17,270 --> 00:03:14,720
of course if you add something into the

100
00:03:19,430 --> 00:03:17,280
mix like uh republicans who vote for

101
00:03:20,309 --> 00:03:19,440
biden republican individual voters vote

102
00:03:22,790 --> 00:03:20,319
for biden

103
00:03:23,589 --> 00:03:22,800
and democrat individual voters who vote

104
00:03:26,710 --> 00:03:23,599
for trump

105
00:03:28,550 --> 00:03:26,720
and this changes things now if we

106
00:03:32,070 --> 00:03:28,560
go through the various proportions

107
00:03:33,589 --> 00:03:32,080
you'll see we get a sloped line

108
00:03:35,910 --> 00:03:33,599
and it's always going to slow down it

109
00:03:38,710 --> 00:03:35,920
doesn't actually matter

110
00:03:39,509 --> 00:03:38,720
whether you've got like all republicans

111
00:03:41,350 --> 00:03:39,519
or

112
00:03:43,110 --> 00:03:41,360
all democrats switching it's always

113
00:03:46,149 --> 00:03:43,120

going to slow down

114
00:03:48,869 --> 00:03:46,159
the reason is because that this ratio

115
00:03:49,830 --> 00:03:48,879
here always goes from zero to one

116
00:03:52,949 --> 00:03:49,840
whereas uh

117
00:03:53,910 --> 00:03:52,959
this one goes from different values but

118
00:03:55,750 --> 00:03:53,920
the point is

119
00:03:57,190 --> 00:03:55,760
that if you introduce something like

120
00:03:58,949 --> 00:03:57,200
this which is an expected thing we

121
00:04:01,030 --> 00:03:58,959
expect people to do this you get this

122
00:04:02,070 --> 00:04:01,040
slope would this downward sloping line

123
00:04:04,229 --> 00:04:02,080
and you can see

124
00:04:05,270 --> 00:04:04,239
this downward sloping line is similar to

125
00:04:07,350 --> 00:04:05,280
what we get in

126
00:04:09,429 --> 00:04:07,360
in this graph and you can adjust the

127
00:04:11,990 --> 00:04:09,439
amounts of people i think perhaps

128
00:04:13,750 --> 00:04:12,000
more republicans would actually vote for

129
00:04:14,550 --> 00:04:13,760
biden than democrats would vote for

130
00:04:16,629 --> 00:04:14,560
trump

131
00:04:19,670 --> 00:04:16,639
and that changes the graph to be more

132
00:04:21,030 --> 00:04:19,680
like the one we see in the picture here

133
00:04:22,790 --> 00:04:21,040
of course it's more complicated than

134
00:04:23,189 --> 00:04:22,800
this this is a fairly straight linear

135
00:04:26,790 --> 00:04:23,199
thing

136
00:04:28,550 --> 00:04:26,800
the proportion of people who vote

137
00:04:29,189 --> 00:04:28,560
republican straight tickets might not be

138
00:04:32,230 --> 00:04:29,199

the same

139
00:04:35,670 --> 00:04:32,240
as the democrats they might be more

140
00:04:38,870 --> 00:04:35,680
or it could be the other way around

141
00:04:41,990 --> 00:04:38,880
or it could be in fact that

142
00:04:43,990 --> 00:04:42,000
it's skewed so that the more people vote

143
00:04:47,030 --> 00:04:44,000
republican the more likely

144
00:04:48,790 --> 00:04:47,040
they are to vote a straight ticket and

145
00:04:49,510 --> 00:04:48,800
vice versa so it could end up something

146
00:04:50,870 --> 00:04:49,520
a bit more

147
00:04:53,909 --> 00:04:50,880
like this which is even more of a

148
00:04:57,510 --> 00:04:55,270
so i think this kind of illustrates a

149
00:05:00,310 --> 00:04:57,520
couple of things uh first of all

150
00:05:01,590 --> 00:05:00,320
you know this graph here the fact that

151
00:05:02,629 --> 00:05:01,600
he's confused about how he could be

152
00:05:04,390 --> 00:05:02,639
sloped down

153
00:05:06,310 --> 00:05:04,400
is he actually confused or is it a bit

154
00:05:08,150 --> 00:05:06,320
misleading i don't know i

155
00:05:09,590 --> 00:05:08,160
tend to assume that he's just a bit

156
00:05:12,950 --> 00:05:09,600
confused

157
00:05:14,710 --> 00:05:12,960
but perhaps he has a preference

158
00:05:17,270 --> 00:05:14,720
to express here and he's expressing it

159
00:05:17,749 --> 00:05:17,280
by maybe deliberately misleading i don't

160
00:05:20,790 --> 00:05:17,759
know

161
00:05:21,990 --> 00:05:20,800
it's just a speculation on my part and

162
00:05:23,990 --> 00:05:22,000
the other point is that it's

163
00:05:25,670 --> 00:05:24,000

it's actually quite complicated uh it

164
00:05:28,310 --> 00:05:25,680
was kind of difficult at first uh

165
00:05:30,230 --> 00:05:28,320
to follow his explanation of where these

166
00:05:32,150 --> 00:05:30,240
numbers actually came from

167
00:05:33,909 --> 00:05:32,160
and it took me a while to replicate the

168
00:05:35,749 --> 00:05:33,919
graph which i i did eventually replicate

169
00:05:37,350 --> 00:05:35,759
the exact same graph here's is my

170
00:05:41,350 --> 00:05:37,360
version of it it's basically the

171
00:05:43,029 --> 00:05:41,360
the same one uh and it's not intuitively

172
00:05:43,830 --> 00:05:43,039
obvious as to why the line would slope

173
00:05:46,550 --> 00:05:43,840
down i thought

174
00:05:47,830 --> 00:05:46,560
initially that if we had the these

175
00:05:49,590 --> 00:05:47,840
flipped around then it would the line

176
00:05:51,350 --> 00:05:49,600
would go up but of course that doesn't

177
00:05:53,270 --> 00:05:51,360
doesn't actually happen the line goes

178
00:05:54,390 --> 00:05:53,280
down no matter which way around you have

179
00:05:57,029 --> 00:05:54,400
it so it's actually

180
00:05:57,670 --> 00:05:57,039
an unintuitive metric and it's also kind

181
00:05:59,189 --> 00:05:57,680
of um

182
00:06:00,230 --> 00:05:59,199
in some ways kind of a pointless metric

183
00:06:01,830 --> 00:06:00,240
because it doesn't really tell you

184
00:06:03,189 --> 00:06:01,840
anything because there's so many other

185
00:06:06,390 --> 00:06:03,199
variables like

186
00:06:08,469 --> 00:06:06,400
how does the split between uh

187
00:06:10,550 --> 00:06:08,479
split ticket voters people who vote one

188
00:06:11,670 --> 00:06:10,560

party for one one season one for another

189
00:06:14,390 --> 00:06:11,680
how does that vary

190
00:06:15,749 --> 00:06:14,400
based on the percentage of people uh

191
00:06:18,950 --> 00:06:15,759
voting one way or the other

192
00:06:21,749 --> 00:06:18,960
i have it skewing here uh for the

193
00:06:22,070 --> 00:06:21,759
the amount of straight versus individual

194
00:06:24,790 --> 00:06:22,080
but

195
00:06:25,749 --> 00:06:24,800
you know that that too is uh is unknown

196
00:06:28,629 --> 00:06:25,759
as to how much

197
00:06:29,590 --> 00:06:28,639
that's an actual factor uh but it didn't

198
00:06:32,309 --> 00:06:29,600
really take very much

199
00:06:32,870 --> 00:06:32,319
for to replicate the the results as we

200
00:06:36,150 --> 00:06:32,880
uh

201
00:06:39,270 --> 00:06:36,160
we see them more or less the same here

202
00:06:39,749 --> 00:06:39,280
as they are in the graph below so there

203
00:06:41,749 --> 00:06:39,759
you go

204
00:06:44,150 --> 00:06:41,759
there's there's no real significance to

205
00:06:47,430 --> 00:06:44,160
this other than showing that some people