Portfolio 5

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Exercise 3

The group diagnosed with schizophrenia were generally higher pitch compared to the control group. For minimum pitch a difference of 18.22; difference in mean pitch of 13.88; difference of median pitch of 11.87; difference of maximum pitch of 8.12.
These are all showing the same phenomenon: Higher pitch in control group. This can all be summed up through the *mean.*

Another interesting predictor is that of *range.* The pitch range in the schizophrenia group was generally lower than that of the control group (range is lower by 10.39 compared to the control group. This is to say that the schizophrenic group was generally more monotone than the control group.

Differences between the two groups was also found in standard deviation of pitch, interquartile range and median absolute deviation - however, these we did not find meaningful to interpret.
No significant difference between the groups was found for coefficients of variance.

Acoustic feature	**Difference in pitch (control-diagnosed)**	**P-value**
Mean	13.879	<2e-16
Standard deviation	-2.569	0.0452
Minimum	18.217	<2e-16
Maximum	8.176	0.0401
Median	11.865	<2e-16
Iqr	-5.929	0.0109
Mad	-4.6538	8e-11
Coefficient variance	-4.769e-02	1.35e-12
Range	-10.386	0.00887

Exercise 3a

We investigated study as a predictor of mean and range, since these were the two most interesting acoustic features. We created two models:

Model 1: Study as a predictor
Only study 2 had a significant effect on mean ($p<0.0239$). No effect was found on range.

Model 2: Study as an interaction effect with diagnosis
We found a significant interaction effect for study and diagnosis on both mean ($p<0.0045$) and range ($p<0.000232$). We can, therefore, infer that diagnosis has a different effect on mean and range depending on the study.

Code:
https://github.com/sebsebar/Alouishes/blob/master/A3_P1_SchizophreniaVoice.Rmd