I can Probably Guess if you are Afraid of Public Speaking (And Spiders). Exploring The Relationships between Fears and Personality Traits; Understanding One from the Other

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Abstract:*We explore the trends among 1010 young people (aged 15-30) in Bratislava, Slovakia. A survey was given to students to understand each individual's music and movie preferences, spending habits, health habits, phobias, and personality traits. We explore the relationship between the latter two topics; specifically, we ask the question, "are they related?" Through correlation analysis and data visualization, we found that phobias and personality traits were not only individually related, but they were also related to one another. For instance, someone who is afraid of spiders are more likely to be afraid of storms. Furthermore, we can predict an individual's personality traits based on his/her phobias. We discovered that forward thinkers tend to have a higher fear of public speaking and social butterflies tend to have lower fear of public speaking. If we have a good understanding of an individual's phobia, we might be able to guess his/her personality traits pretty accurately and vice versa; knowing one thing about a person is really knowing two. Apply this concept to real life and we have the ability to better understand the people with whom we interact.*

1. INTRODUCTION

There are two types of people in this world: those who are deathly afraid of spiders and those who aren't. Or those who would rather tightrope across 50 story buildings than give a speech in front of a few colleagues. You would think that you can think of fears independently, but our research shows that fears are related to one another. For instance, someone who is afraid of spiders are more likely to be afraid of storms as well. Furthermore, we can predict an individual's personality traits based on his/her phobias. For example, focusing just on one phobia, we made these hypotheses:

- Fear of Public Speaking and Social Butterfly will have a negative correlation

- Fear of Public Speaking and Self-Aware and Motivated will have a positive correlation

- Fear of Public Speaking and Think Before I Do will have a positive correlation

What we found was surprising: not only are fears and personality traits individually related, but they are related to one another as well. If we have a good understanding of an individual's phobia, we might be able to guess his/her personality traits pretty accurately; knowing one thing about a person is really knowing two. Apply this concept to real life and we have the ability to better understand the people with whom we interact
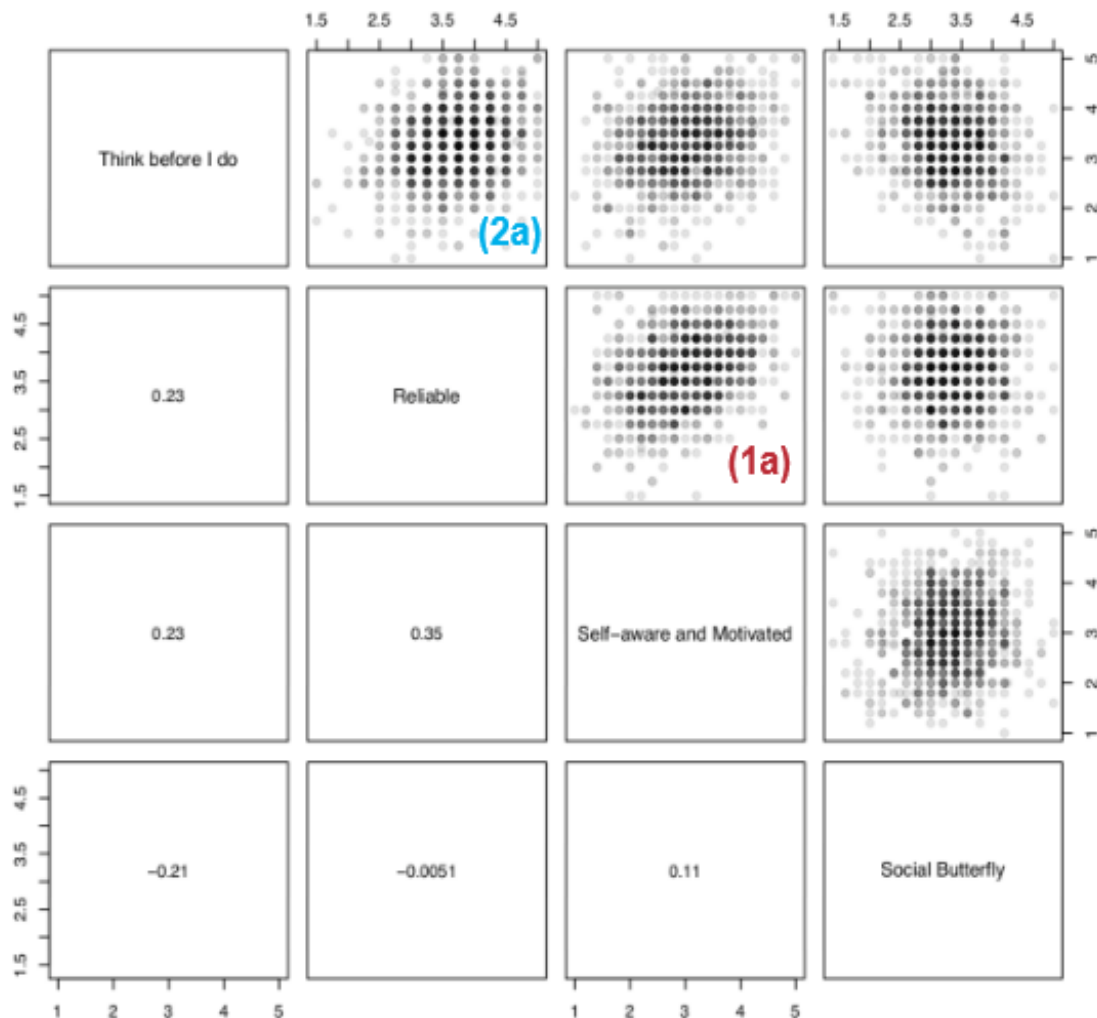
2. INTRODUCTION TO THE DATA

The data we researched comes from the students and the friends of the students of the Statistics Class at FSEV UK in Bratislava, Slovakia. The survey was originally given in the Slovak language then later translated into English and made accessible on Kaggle. With that said, all of the participants were of Slovakian nationality, specifically aged 15-30.

This data set was collected to explore the preferences, habits, opinions, and fears of young people; it detailed the stances of 1010 young people on their music and movie preferences, phobias, spending habits, health habits, and personality traits.

3. VARIABLES

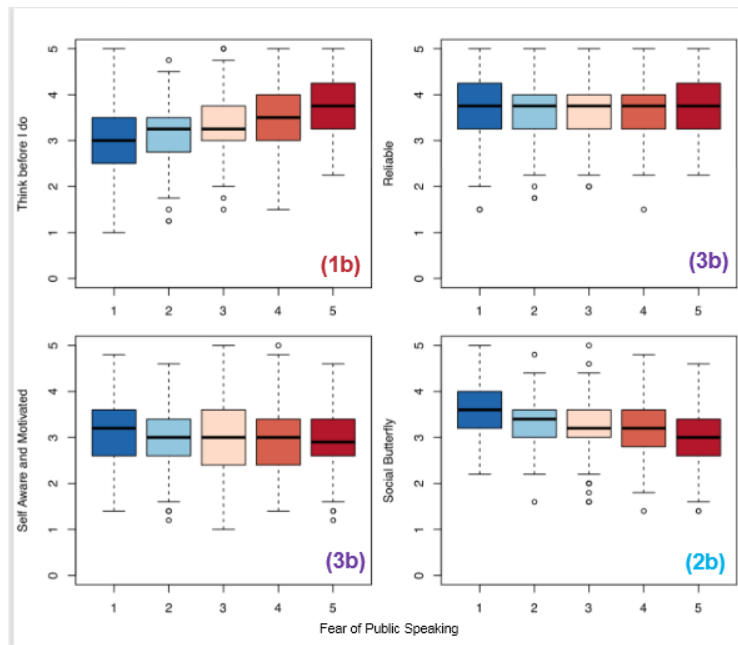| PHOBIAS	PERSONALITY TRAITS
• Animals: Snakes, Spiders, Rats, Dangerous Dogs • Nature: Storms, Darkness • Death: Ageing, Heights, Flying • Public Speaking	• Think Before I Do: thinking ahead, decision making, etc • Reliable: reliability, keeping promises, finding lost valuables, etc • Self-Aware and Motivated: prioritizing workload, writing notes, thinking ahead, etc • Social Butterfly: socializing, energy levels, personality, etc

(1a) Self Aware & Motivated is positively correlated to Reliable (0.35): Being reliable takes work and effort, i.e. motivation.

(2a) Think Before I do is positively correlated to Reliable (0.23) and Self Aware & Motivated (0.23) and negatively correlated to Social Butterfly (-0.21).

(3) An individual is either forward thinking and dependable or spontaneous and outgoing. Generally, a person cannot have the best of both worlds

(1b) People who have high fear of public speaking have higher forward thinking characteristics. In order to ease themselves from this fear, they think about, prepare, and plan the speech beforehand to gain more confidence in front of others.

(2b) People who are social butterflies have a lower fear of public speaking. Social butterflies thrive on the attention of others and are often outgoing and bold.
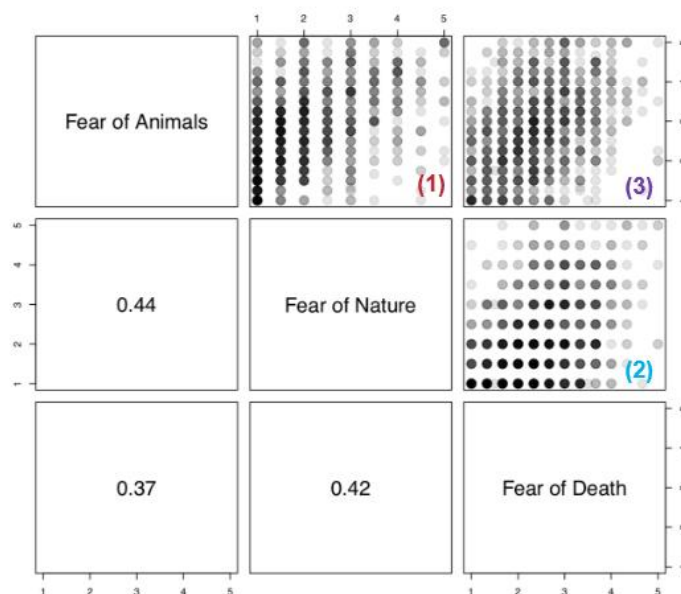
(3b) Fear of Public Speaking has no correlation with Self Aware & Motivated or Reliable.

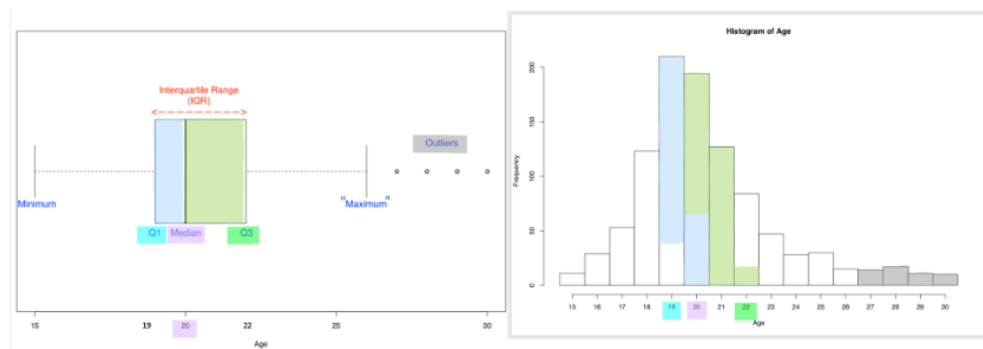## 4. ARE FEARS RELATED TO ONE ANOTHER?

(1) Fear of Animals and Fear of Nature have the strongest positive correlation (0.44): People are afraid of what they cannot control, which can be applied to both natural disasters and dangerous animals.

(2) Fear of Nature and Fear of Death have a positive correlation (0.42): Storms can cause irreversible damage, including the loss of life.

(3) Fear of Death and Fear of Animals have a positive correlation (0.37): This may be explained with evolutionary psychology; people with fear of animals may have been better adapted to survive in the wild.

5. HOW TO READ BOXPLOTS

- Median: the number where half are above and half are below: 20 in our data.
- First quartile (Q1; 25th percentile): 252 participants were below age 19.
- Third quartile (Q3; 75th percentile): 754 participants were below age 22.
- Interquartile Range (IQR): Q3 - Q1. 50% of the participants between the ages 19 and 22.
- "Minimum": Q1- 1.5xIQR and "Maximum": Q3+ 1.5xIQR with outliers outside this range.

6. GENERALIZABILITY

It is important to realize that our findings cannot be simply be generalized. The responses come from a very specific group of people: young Slovakians interested in statistics at FSEV UK. Furthermore, the method of data collection, convenience sampling, potentially leaves out large groups of the population.

The following groups are likely to be underrepresented

- Young people not in university
- Other university students
- Students in non-technical departments

Nevertheless, the data set shows some interesting trends regarding phobias and personality traits from young Slovakians attending FSEV UK.

7. CONCLUSION

An individual's personality traits and phobias are correlated, allowing us to predict his/her other phobias or traits by knowing just one or the other. However, these findings are limited:

- We only explored fear of public speaking with other personality traits in detail; other relationships are unknown.
- We created our own groupings (see variables section), which may have introduced some bias.
- All of our findings are associational, not causal.

REFERENCES

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[2] Sabo, Miroslav. 2016. "Young People Survey" Kaggle

[3] Galarnyk, Michael. 2018. "Understanding Boxplots" Towards Data Science