

# Explanations for creativity

Shashank Sahu, Roll No. 10671  
Cognitive Science, (SE367)  
Mentor: Prof. Amitabh Mukherjee

## Abstract

Stochastic component of Blind variation model of Creativity takes the assumption that there is a mechanism or mechanisms in our brain which help up behave randomly. Bain's paper (2007) highlights that there should be the same mechanism or mechanisms for random behaviour of a person and act of generating novel ideas. Bains gives following two arguments to support his view points.

1. Creativity and RNG ability of an individual are sensitive to mental disorder.
2. Creativity and RNG ability of an individual is not significantly sensitive to mild intoxication.

He has conducted other experiments also with language and RNG behaviour of a person to complete his argument.

In this project, I am doing experimental verification of random behaviour of a person and his ability of creation of novel ideas.

## Objectives

Objective of this experiment is to support one component of Campbell's (1960) BVSR Model of creativity by finding the correlation between a person random motor behaviour and his creativity. Random motor behaviour can be tested using The Mittenecker Pointing Test; and to measure person's creativity The Torrance Test is conducted. The Mittenecker Pointing Test gives 9 parameters to do analysis of random behaviour. In this project, I have used following four parameters as a measure of randomness.

Symbol redundancy: It measures the variation of relative frequency of chosen keys.

Context redundancy: It measures the extent to which responses are continually influences by previously chosen alternative.

Median of repetition gap distribution (MdG): If we define gap as the length between the stroke of a key and the next stroke of the same key, then median of the frequency distribution of repetition distances is called MdG.

Lateral preference: It refers to the difference of frequency of pressing the key in the left side to the right side divided by sum of aforementioned frequencies.

Above parameters except Lateral preference would be plotted against creativity score.

## Methods

To find the correlation between creativity index and randomness, I have performed following two experiments.

### A. The Torrance Test of Creativity

- TTCT Verbal
- Product improvement
- Just suppose
- Unusual uses
- TTCT Figural
- Picture construction
- Picture completion

### B. The Mittenecker Pointing Test

## Graph/image title

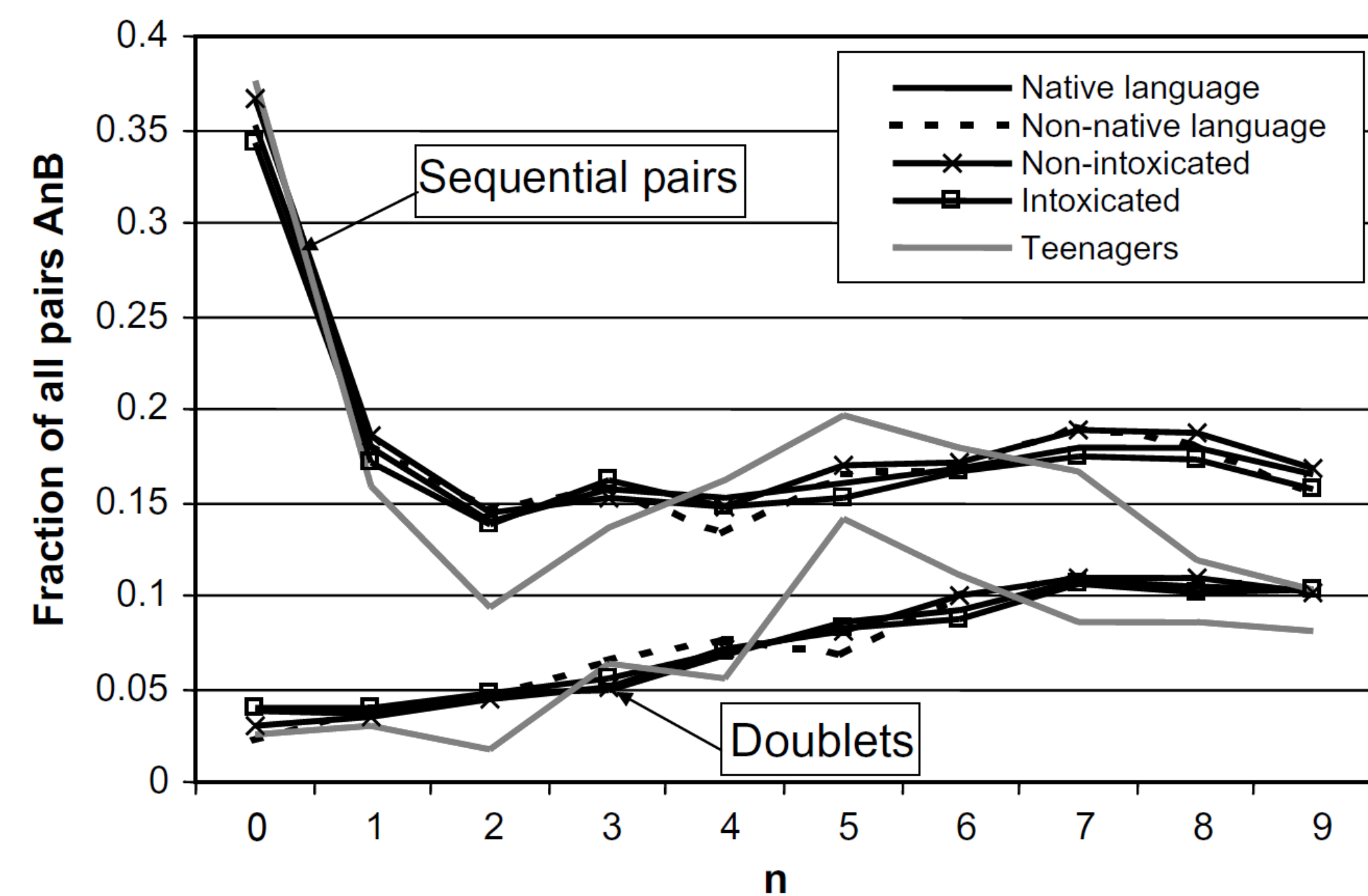


Figure 1. Effects of language and beer on randomness

Plot of the doublets or Sequential pairs with natural number dictated. Flatness of the graph means that randomness is preserved.

## Results

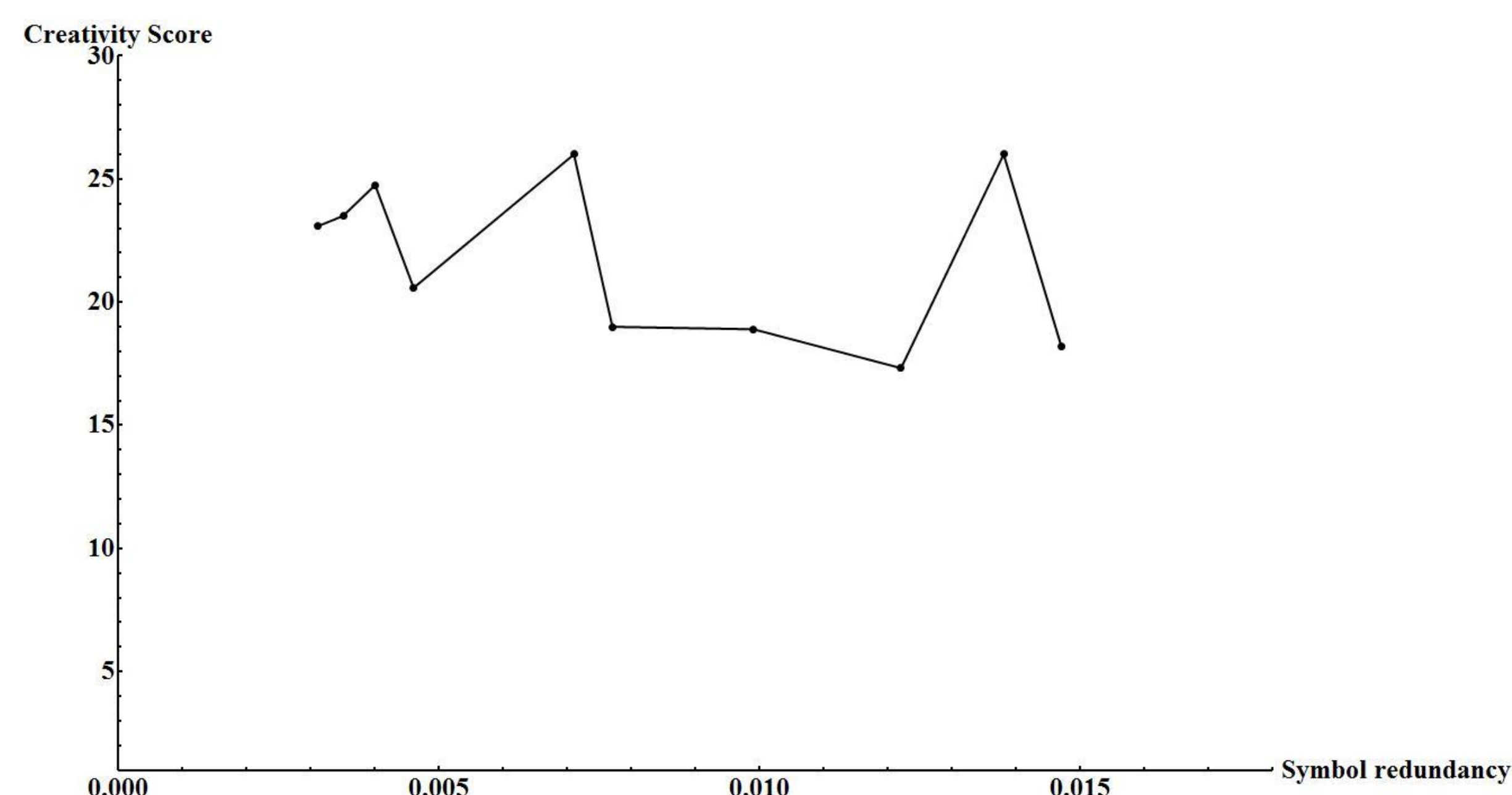


Figure 2. Plot for Symbol Redundancy (a parameter for measuring randomness) vs. Creativity Score

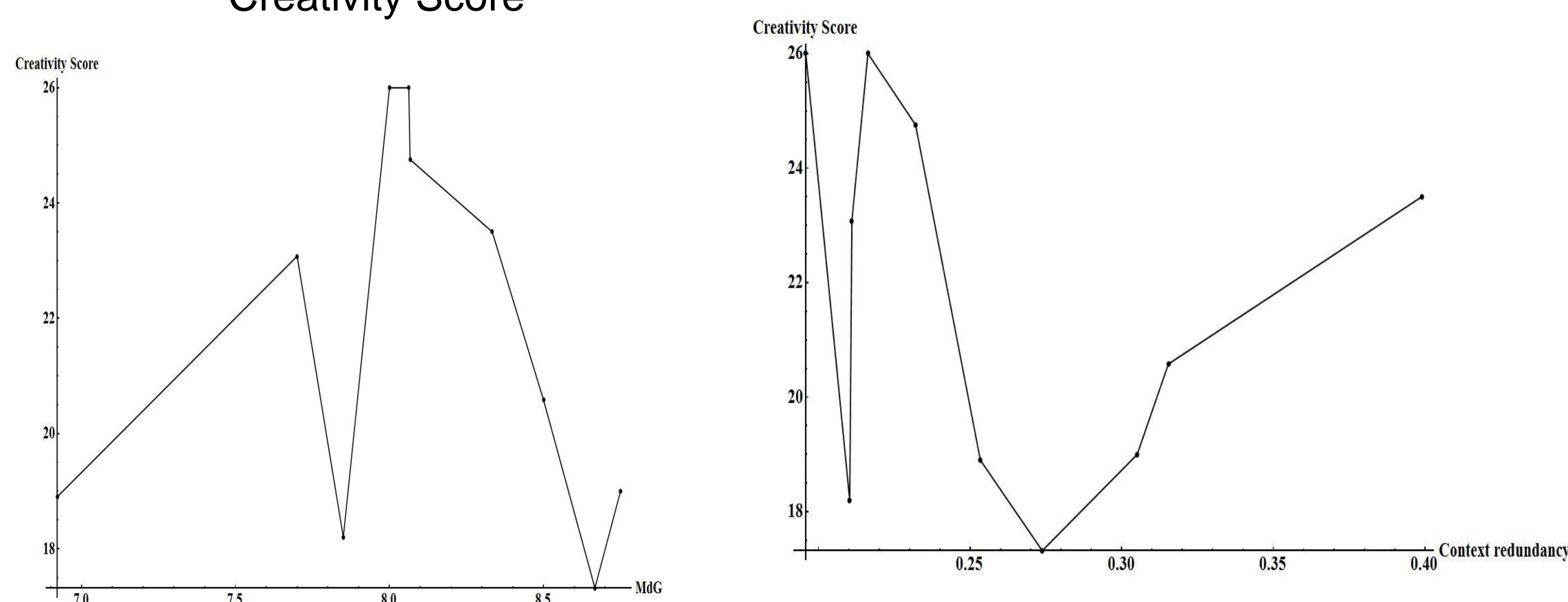


Figure 3, 4. Plot for Context Redundancy or MdG vs. Creativity Score

## Conclusion

CQ decreases with as symbol redundancy increases.

Context redundancy and MdG does not have predictable relation with CQ.

## References

- Bains, W. (2008). Random number generation and creativity. Medical hypotheses
- G Schuler, E Mittenecker, I Papousek. (2010). A computer program for testing and analyzing random generation behavior in normal and clinical samples: The Mittenecker Pointing Test. Behavior research methods
- Snyder, Allan, et al. "The creativity quotient: an objective scoring of ideational fluency." Creativity Research Journal 16.4 (2004): 415-419.
- Simonton, Dean Keith. "Creativity as blind variation and selective retention: Is the creative process Darwinian?." Psychological Inquiry 10.4 (1999): 309-328