

Explanations for Creativity

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8 APRIL, 2013

Theoretical
Background

- Define creativity or discovery
- Model of creativity
 - Campbell's (1960) BVSR Model

My focus

- Supporting the Hypothesis

Experiments

- The Mittenecker Pointing Test (MPT)
- The Torrance Test of Creativity (TTCT)

Expected result

- From MPT
- From TTCT

Creativity

REQUIRES

Novelty
Utility
[should be non obvious]

Campbell's (1960) BVSR Model

Blind variation and selective retention (BVSR) Model

- The most fundamental principle underlying Darwinian evolution
- Describes change in evolutionary system in general
- Generalization of Karl Popper's Philosophy of Science
- Mechanism also explains Creativity

Blind Variation (BV)

- Intended BV
 - Systematic BV : Radar Sweep
 - BACON Rediscovered Kepler's Third Law!
 - Stochastic BV
 - Infinite Monkey theorem
- Implied BV



Blind Variation and Selective Retention (BVSR)

RNG is correlated with elements of the creation of spontaneous actions in the brain.

HYPOTHESIS

In support of this hypothesis

Creativity and RNG both are

- sensitive to Mental disorder
- not significantly sensitive to mild intoxication

My Experiments

THE TORRANCE TEST OF CREATIVITY (TTCT)

TTCT Figural

- ask-and-guess,
- product improvement,
- unusual uses,
- unusual questions,
- just suppose

TTCT Verbal

- picture construction,
- picture completion, and
- repeated figures of lines or circles.

THE MITTENECKER POINTING TEST (MPT)

Diagnostic tool for identification of

- Clinically relevant impairments of Executive functions
- Cognitive function in healthy individuals

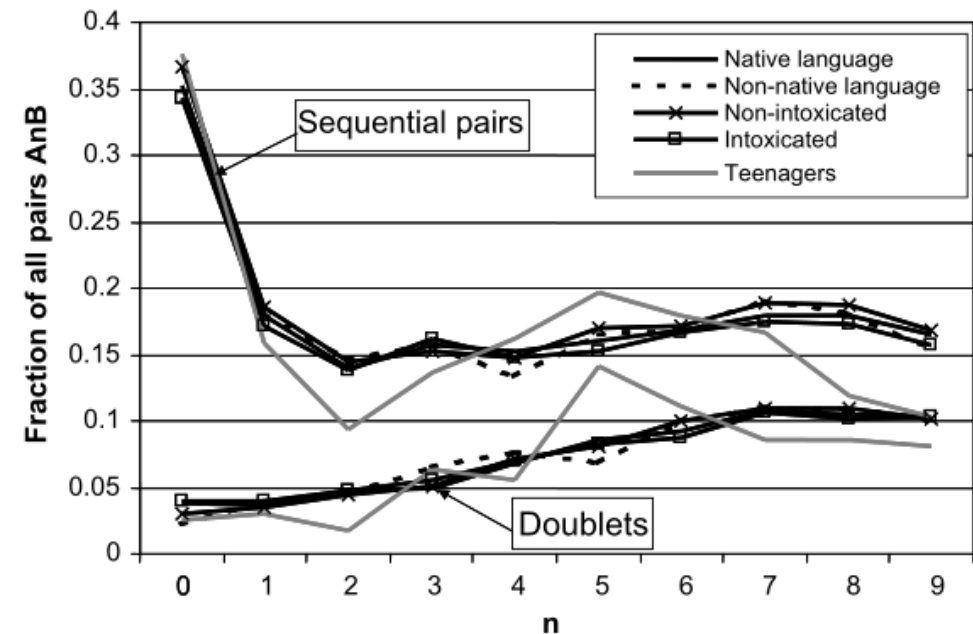
My Aim

IS TO LOOK FOR CORRELATION BETWEEN RNG BEHAVIOUR AND
CREATIVITY INDEX

Results

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

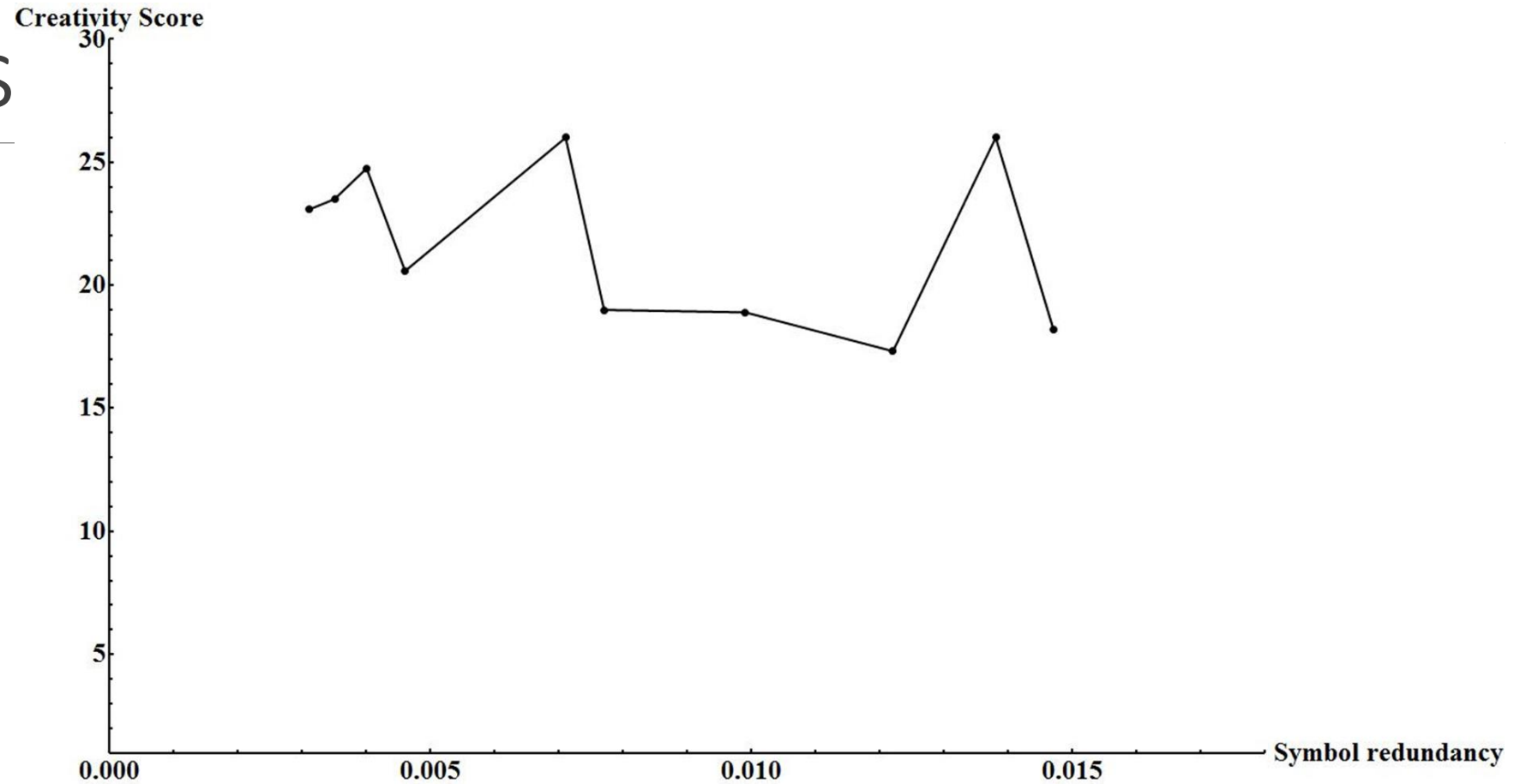


Figure 2. Plot for Symbol Redundancy (a parameter for measuring randomness) vs. Creativity Score

Results

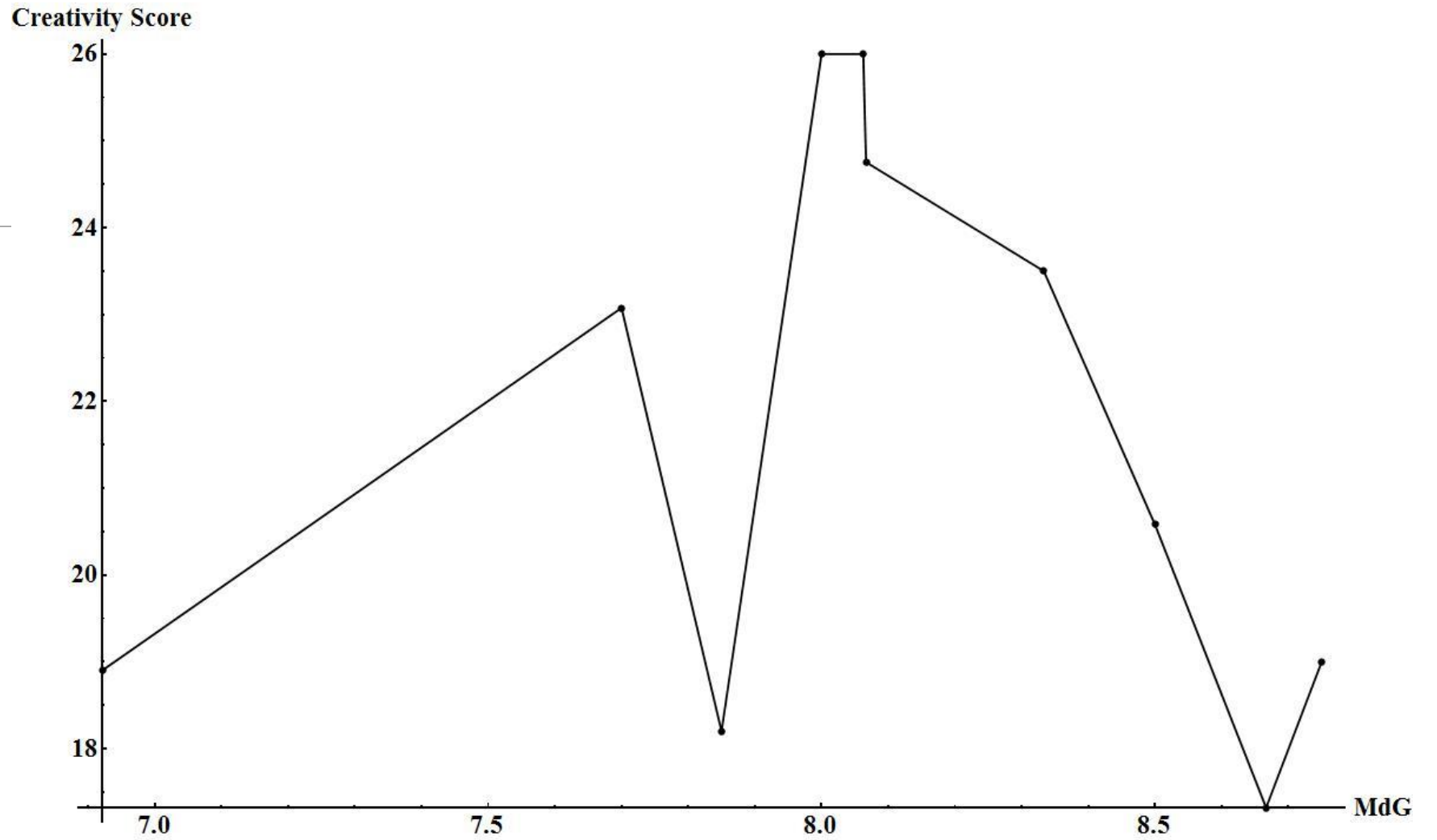


Figure 3. Plot for MdG vs. Creativity Score

Results

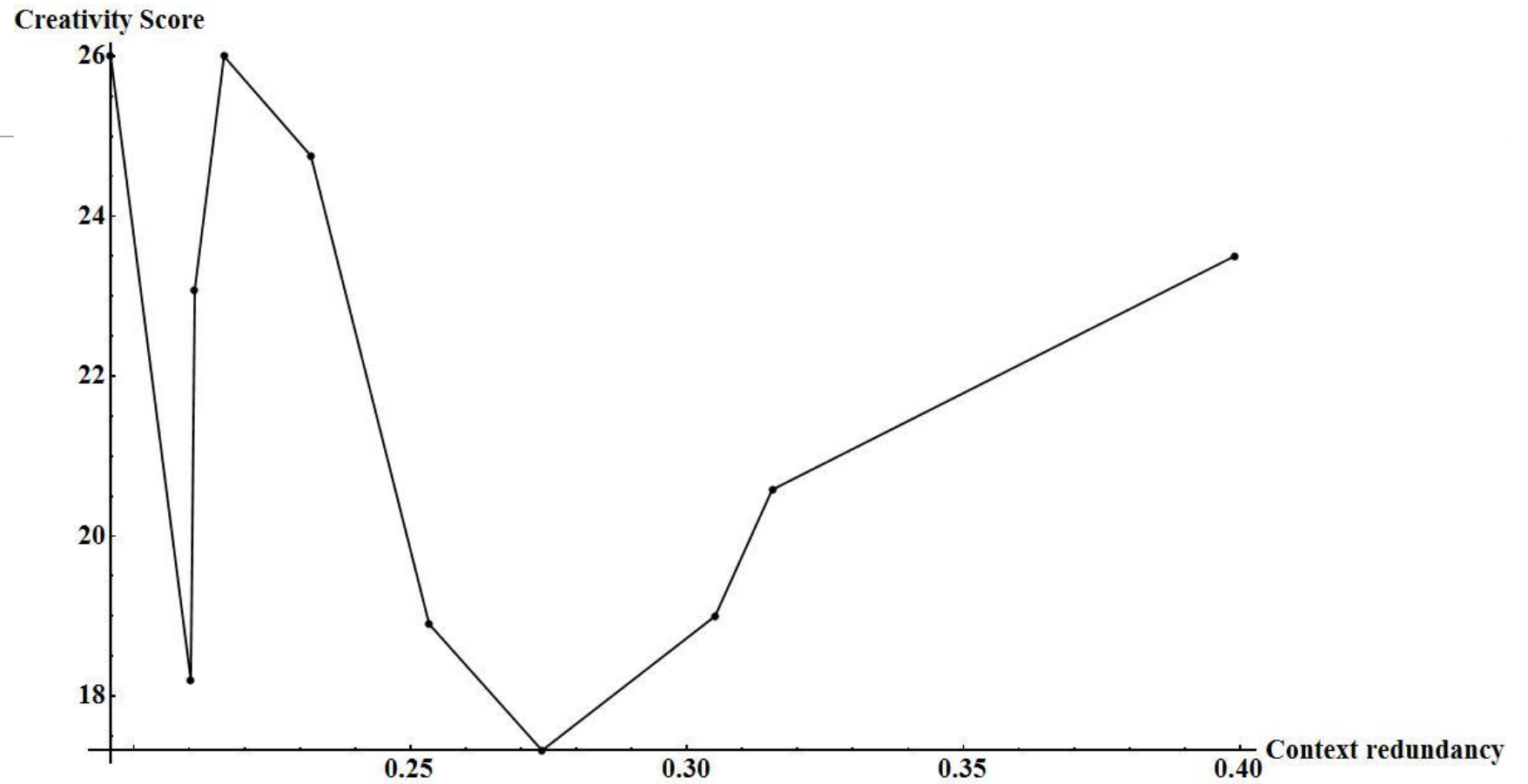


Figure 4. Plot for Context Redundancy vs. Creativity Score

Conclusions

CQ decreases with as symbol redundancy increases.

Context redundancy and Median of repetition gap distribution (MdG) does not have predictable relation with CQ.

Thank you

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Extra Slides

The Mittenecker Pointing Test (MPT)

Symbol redundancy

Context redundancy

Coefficient of constraint

Frequency distribution of repetition distances

Median of repetition gap distribution(MdG)

Response rate

Lateral preference

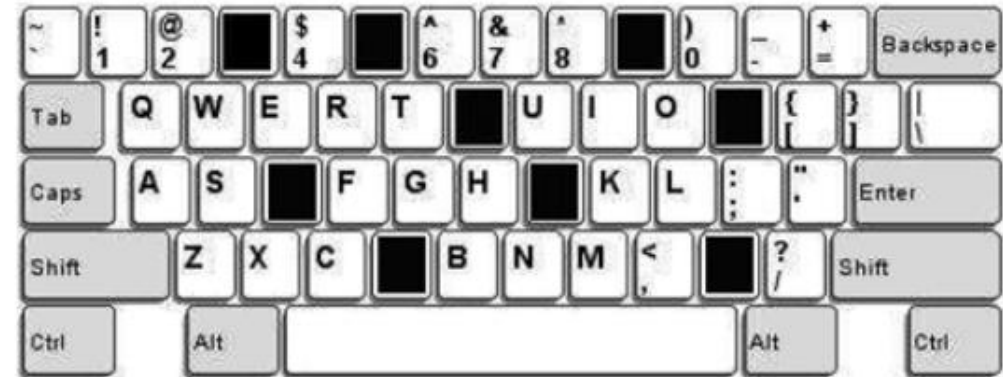


Figure 1. Spatial configuration of keys used in the Mittenecker Pointing Test.

The Torrance Test of Creativity (TTCT)

$$CQ \cong \text{Log}[2, \sum_i (1 + u_i)]$$

u_i is the number of uses offered in i^{th} category

The Torrance Test of Creativity (TTCT)

What are the maximum number of unusual uses of paper weight? You have 3 minutes.

1. Shatter the paper weight and spread it on floor, useful to track someone by his foot print
2. Put it inside fish tank to fool fish
3. As a top
4. Hit it on your bones to make them strong
5. Challenge somebody to put it in mouth (knowing that it will never come out)
6. Break it use it as a two paper weight
7. Hit on someone's head to damage his skull

The Torrance Test of Creativity (TTCT)

8. Start a competition of blowing it and getting it as far as possible
9. Check your strength of lungs by moving it by blowing
10. A very easy distraction, if it falls
11. To scare insects on your table by making sound by it
12. Paint it and decorate it as a fruit, everyone will think what this fruit is doing here
13. Paint it and ask someone is it a rock or glass
14. Smashed paper weight can be very useful to hurt bare feet thieves in room

The Torrance Test of Creativity (TTCT)

15. Smashed paper weight can be very useful to hurt by blowing it in their eyes
16. Tie it at the end of your shirt, it will be a deadly weapon
17. Use it as pendulum
18. spin it very fast, you can use it as a gyroscope (to find the direction)
19. To make beats by hitting it on table
20. Use it as a hammer to smash other objects
21. Put it on your head and meditate