REG Mind-Matter Interaction:
Novel Data Analyses and Different Operator Intentions

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Indeterministic phenomena

Random Systems Studied

Mind-matter interaction

Results of 30 years of research at PEAR show that the effect is:

- Small, but statistically significant and replicable

- Relatively independent of the particular random device

- Independent of distance

- Independent of time

Jahn, Dunne (1997)

REG-1 – random event generator

1001111010010100010111100010101010

34 characters, 17 ones, 17 zeroes = 50/50

Our basic idea

Over 30 years, many independent variables have been studied.

But mainly one dependent variable was studied: the proportion of ones and zeroes.

What if we tried to look at other properties of the output?

REG-1 – random event generator

1010101010101010101010101010101010

34 characters, 17 ones, 17 zeroes = 50/50

But the series is highly regular, which is unlikely.

REG-1 – random event generator

1011101001**11**0100100001**11**000**11**00001

34 characters, 17 ones, 17 zeroes = 50/50

But the series contains four 111 sequences, which is unlikely.

10011110100101000101111000 10101010

10101010101010101010101010101010

**10111010011101001000011100011100001**

Experiment

- Feasibility study

- 6 volunteers in 12 sessions
- Tasks: influence the REG outcome in 5 different ways:
    - increase the amount of ones
    - increase the amount of zeros
    - increase the amount of „111" sequences
    - increase the regularity of alternation of 0s and 1s
    - „free ride" – an unspecified change

- duration: 30 seconds each – 100 000 digits
- grand reference: long term performance of the same REG unit

Methods

- each condition was evaluated separately through 6 different measures:
  - proportion of 1s
  - proportion of 0s
  - amount of „111" sequences
  - shannon entropy
  - digit clustering
  - Lempel-Ziv complexity

- 3 complexity measures introduced

- conservation laws in physics - fixed proportion of 1s - energy conservation

- altering digit order in time series - more subtle effect could be feasible without extra energy costs
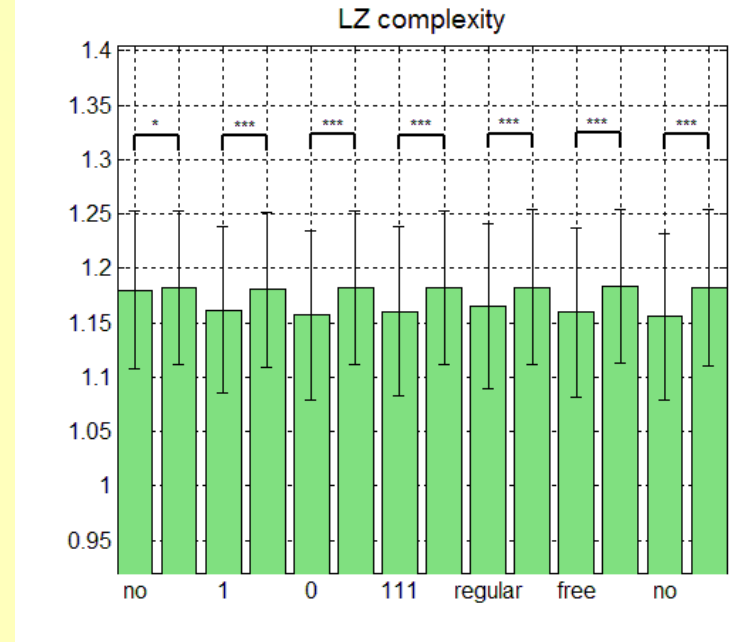
Results I
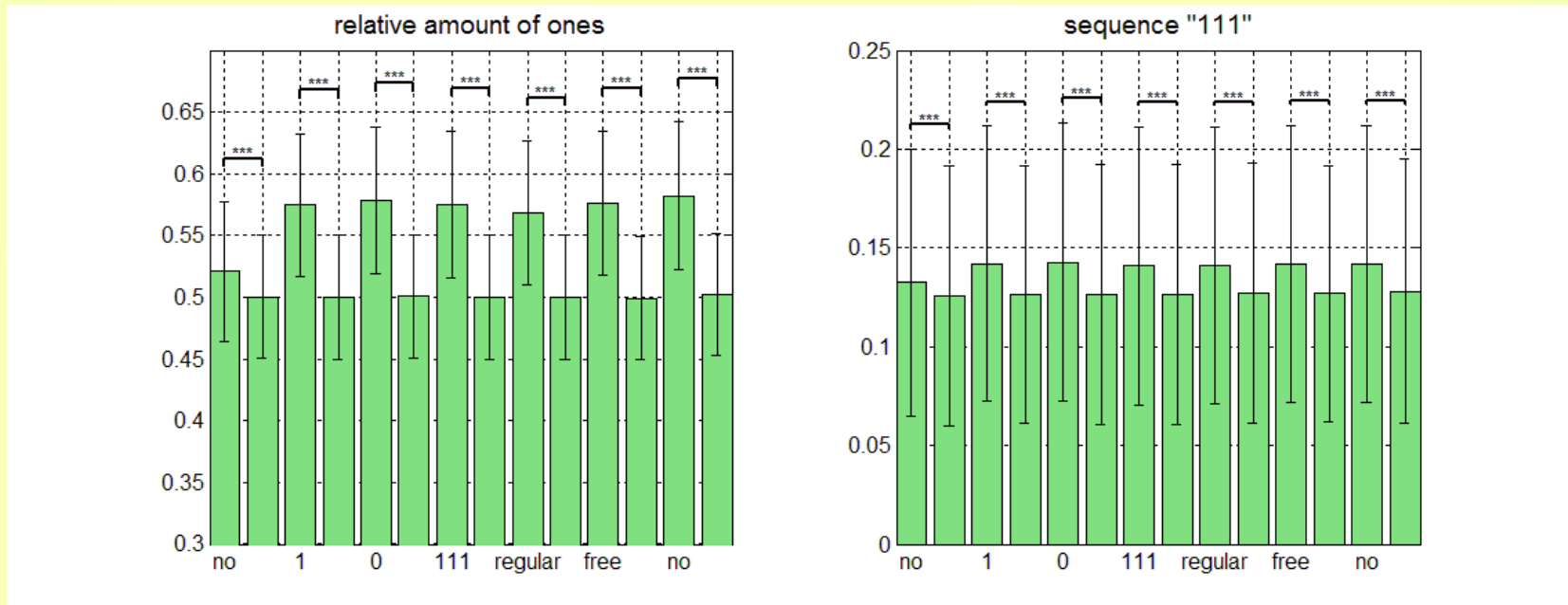
- partitioning into 100 digit windows, cumulative sample size = 1200
- in all 30 cases (6 measures x 5 different intention conditions) REG features were significantly altered in respect to the reference REG data (Wilcoxon rank sum test)
- increase of ones during all 5 intention tasks ($p = 0 - 10^{-105}$); however also in the case where the intention was to increase zeros
- amount of "111" sequences was increased ($p = 10^{-40} - 10^{-6}$)

Results II

LZ complexity

- Tested hypotheses for complexity measure:
- H1: can be influenced by intention
- H2: stronger effect than conventional measures
- H3: possible bipolar shift by direction of intention

- complexity measure was significantly decreased (p = 10^{-93} – 0.03)
- shift were not caused by increase of ones - correlation was missing (Pearson correlation coefficient 0.12)
- unspecificity: stable decrease during all conditions
- during the intention for regularity the measure remained the highest from all 5 conditions, whereas the ratio of 0s and 1s remained the most proportional

Results III

relative amount of ones, single trial
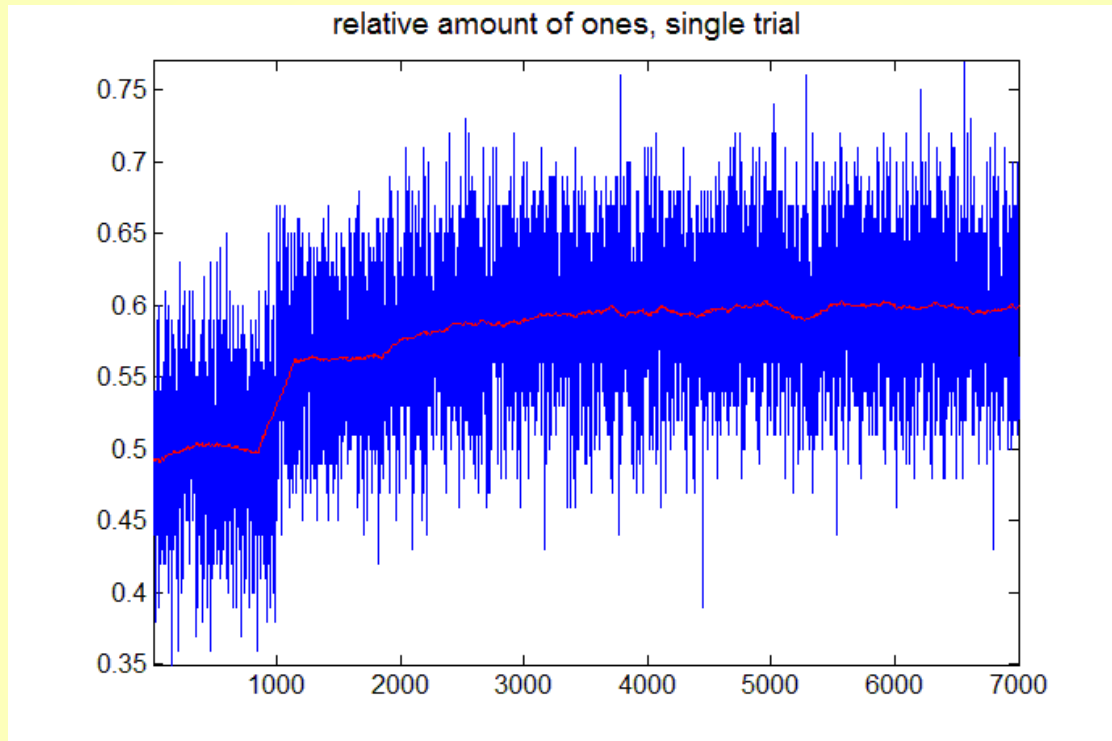
During time progression marks of:

- 🔴 accumulation
- 🔴 persistence
- 🔴 latency

were observed with respect to the proportion of 1s

Conclusions

- we designed experiment with new approaches for study of Mind-machine interaction
- implemented under Matlab environment

- feasible study demonstrated possible mind-matter connection

- in addition to the increase of conventional ratio of 1s and 0s,
  we demonstrated that complexity measures may performed significantly

- problem with replicability:
  operators tend to perform best over their first major experimental series, then
  decline in performance, and afterwards recover and stabilize
- the most sceptical participant scored very well
- appropriate training for strengthening of the specific intentions may enhance the outcome