

# Jacob Jolij

Jacob Jolij is a Dutch psychologist who has carried out experiments in presentiment and psychokinesis.

## Career

Jacob Jolij obtained an MSc in psychology from the University of Amsterdam in 2001, and a PhD from that same university in 2009 where he worked with neuroscientist Victor Lamme on the neural basis of conscious and unconscious visual perception. This was followed by an assistant professorship in cognitive psychology and neuroscience at Exeter University. In 2008 Jolij became assistant professor in cognitive psychology and neuroscience at the University of Groningen, where he taught two large courses in psychology and biopsychology.

The presence of EEG anomalies in his mainstream research encouraged Jolij to explore alternative psi-based explanations, where he was joined by his degree mentor Dick Bierman. In 2017 Jolij took up the position of research support leader, where he is responsible for the research and data infrastructure of the Faculty of Behavioural and Social Sciences.

Jolij maintains an active role in psi research and has written a book that explores consciousness from various perspectives, drawing on insights from parapsychology.<sup>[1]</sup>

## Belief, Perception and Cognition Laboratory

As director of the Belief, Perception and Cognition lab in Groningen, Jolij studied the role of belief in perception, using methods of cognitive neuroscience and experimental psychology. In 2011, a control test of EEG algorithms revealed unexpected effects in pre-stimulus baseline data that predicted subject's responses to future stimuli, a phenomenon which in parapsychology is termed 'presentiment. This became the main initial focus of Jolij's research program.

## Presentiment

In Jolij's presentiment research, subjects are presented with a series of ten static images in quick succession lasting 100 ms each (a tenth of a second). In the middle of the series a schematic face is flashed or left blank. A prediction of the upcoming stimulus (face or no face) is made by analyzing the pre-stimulus baseline region of the EEG, which reveals differences between the two categories. Jolij's group has consistently found a prediction accuracy in the 53-55% range, only marginally above the 50% chance level, but hugely significant statistically given the large number of trials. These studies are blended into mainstream psychology work, for example, the effect of coffee on perceptual accuracy. As such, they provide a potential template for psychology researchers to use, a means to add psi research into their programs without too much controversy.<sup>[2]</sup>

## Random Source

In presentiment research EEG and behavioural measures (subject image determinations) are recorded, because the EEG often presents a neural signature when the face is shown, compared to when the face is absent. Subjects whose EEG signature indicates an image are more likely to correctly identify the presence of an image, if one is actually present. Similarly, subjects whose EEG patterns suggest no face are less likely to claim there is a face, if no face is present (false call). True hits (when the subject determination of a face is in agreement with the presence of a face) and true

misses (when the subject determination of no face is in agreement with the actual absence of a face) are compared between random sources: in several experiments, remarkable differences in speed of identification and accuracy have been recorded, with superior performance found in relation to quantum-generated stimuli compared with pseudo-randomly generated stimuli. These findings have significant bearing on the role of consciousness on quantum collapse, favouring Wigner's interpretation that consciousness is a requisite for collapse.<sup>[3]</sup>

## **Randomness Project**

The Consciousness Causes Collapse Hypothesis (CCCH) affords a role of consciousness in quantum collapse during a physics measurement. To explore this further, Jolij and Dick Bierman established the Randomness Project, running several different experiments.<sup>[4]</sup>

### **Cue Biasing**

The effect of a cue on psychokinetic ability was explored in an explicit and implicit PK test.

### **Explicit Testing**

Eighty subjects took part in PK testing in which they were first exposed to a cue, either the word 'left' or 'right' displayed on a computer screen, and four seconds later presented with an arrow pointing either left or right. Each subject was instructed to use PK to match the arrow direction to the cue word. Half of the cue words and arrow directions were generated by a pseudo random number generator and the other half by a quantum random number generator. A significant effect - 1% above chance - was found for quantum RNG generated cue words and arrow directions ( $p = 0.05$ ) supporting the existence of an explicit PK effect. When a pseudo-RNG was used for cue words and a quantum RNG for arrow directions, no evidence for PK was found. Taken together, these results go against a simple explicit PK hypothesis.

### **Implicit Testing**

Implicit PK testing used the same RNG display set-up as explicit PK testing. Here, however, subjects were asked to try to detect the arrow direction (left or right) as quickly and accurately as possible and were simply informed that there is a weak association between cue word and arrow direction. The rationale behind the experiment is that cueing biases perception of the future arrow direction. Excess correlation between a subject's mental state and the quantum RNG output should lead to increased or decreased accuracy compared to a pseudo RNG. Results showed no cueing effect for quantum RNGs with no difference between congruent trials (word cue and arrow direction are the same) and incongruent trials (word cue and arrow direction are different). The pseudo RNG gave a strong conventional cueing effect with subjects more accurate at registering congruent arrow directions. The difference between pseudo and quantum RNGs was highly significant ( $p = 0.002$ ). Jolij concluded that 'there is excess correlation between the mental state of the observer and the outcome of quantum random process, but it is not something that can be used to explicitly or volitionally bias the outcome of a random process'.<sup>[5]</sup>

## **Coincidence Detection**

Jolij wanted to explore further the influence of mental state on random processes by testing if subjects perceived more meaning in randomly generated numbers compared to pseudo randomly generated numbers. A total of 710 subjects completed an online test where they rated a series of ten numbers for personal meaning, for example, similarity to birthdays, bank numbers and anniversaries. Quantum generated numbers were perceived as meaningful compared to pseudo

randomly generated numbers ( $p = 0.0015$ ). There were also significant physical correlations, for example local sidereal time and geomagnetic field strength, with quantum generated but not pseudo randomly generated numbers. This finding supports observational theories in which the state of the person's consciousness influences a quantum measurement.<sup>[6]</sup>

## Lowlands Experiment

Jolij and Bierman together with Iebele Abel investigated the behaviour of random number generators in the presence of thousands of revellers at the Lowlands Festival, the largest music festival in the Netherlands. Four random number generators ran continuously for the duration; two devices on the Lowlands site and a true RNG and pseudo RNG situated remotely at Groningen University. Both the remotely located RNGs performed within chance expectation. With regard to the RNGs situated at the festival, one malfunctioned but the other RNG displayed significant departures from chance that was not the result of an artifact. Only half the trials collected at the festival contributed to the anomalous group PK result. The remaining interspersed unobserved trials will be analysed later to determine the nature of the PK effect.

A field-like consciousness biases the unanalysed trials at the same time as the analysed trials, which will show up as a similar PK effect across both trial types. If there is a different effect size for analysed and unanalysed trials, this will support non-field PK theories such as observational theory or an analyser effect.<sup>[7]</sup>

## Boosting Psychokinesis

Inspired by the work of Morris Freedman,<sup>[8]</sup> who reported superior PK ability associated with frontal lobe lesions<sup>[9]</sup>, Jolij and Bierman artificially 'created' a similar brain environment using transcranial magnetic stimulation (TMS). In this experiment subjects attempted to bias the output of a RNG after undergoing TMS. Results revealed no impact of TMS on PK scoring, failing to replicate the work of Freedman.<sup>[10]</sup>

## Website

Jolij has a website, <https://jacob.jolij.com/>

Michael Duggan

## Literature

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## References

### Footnotes

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- 2.^ Jolij & Bierman (2017).
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- 5.^ Jolij (2019). [www.parapsych.org](http://www.parapsych.org) Video accessed (May 19<sup>th</sup> 2020)
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- 8.^ Freedman et al (2003).
- 9.^ Freedman et al (2018).
- 10.^ Bierman (May 2020): Personal communication.