

Dan Turetsky

2012 • Postdoctoral Fellow, Marsden-funded Research Programme



Dan Turetsky studies logic, one kind of critical thinking. He had never heard of the subject until he started at university, but after enjoying an introductory course in his first year, he just carried on.

Dan studied first in Philadelphia and then completed his PhD in Wisconsin, US. He came to New Zealand in 2012 as part of a Marsden-funded research programme, working with Noam Greenberg and Rod Downey. “I’m very lucky to be working with them, they are world-class mathematicians – it’s awesome, says Dan.

“Logic as a subject is quite removed from real life, but maths has a history of being developed before it is needed. For example, all the mathematics that Einstein needed to describe his theory of relativity was developed long before it was used. Although we can’t see an application for what we are doing yet, we are watching with interest.

Randomness is part of the study of logic. “Random numbers have no pattern to them at all, so a sequence of numerals must have a lot of repeated strings of 0s and 1s in it. You have to have the strings so that the chances of following a 1 with another 1 are the same overall as following it with a zero. If numbers are truly random you will not be able to make money betting on them.”

“Humans do a very bad job at producing random numbers since we inevitably include patterns. Nature too tends to produce patterns rather than behaving randomly. At the moment though, some people are generating randomness by photographing a lava lamp at regular intervals.”

While in New Zealand, Dan is continuing his study of martial arts. He has joined a local medieval martial arts group and is using authentic training methods to develop skills in the use of the German long sword.