Can there be a coherent paradigm to explain students’ strategies & engagement with mathematical proving & proof?

Celia Hoyles
London Knowledge Lab, Institute of Education,
University of London, U.K

My aim in this talk will be to test the explanatory power of the various paradigms submitted by the participants of the conference. As a catalyst for debate, I will present some findings from a range of research projects we have conducted in England (work undertaken with Lulu Healy and Dietmar Küchemann). I have chosen these findings according to two criteria: first, that I believe we have sufficient evidence to consider them to be robust, at least as far as the situation in England is concerned; and second, they are surprising if viewed through the lens of one paradigm, while maybe not when considered within an alternative paradigm.

For each example, I will come up with a conjecture ‘to explain’ the result, with the purpose of generating disagreement and discussion among the group.