There is an extensive body of research examining belief in the paranormal, particularly among student populations. Most studies are correlational, taking a measure of paranormal belief and one or more further measures relating to personality, beliefs, reasoning skills or cognitive abilities. Many studies have demonstrated links between paranormal beliefs and magical ideation, schizotypy, fantasy-proneness, thinking style, magical thinking about food and health, and attitudes to complementary and alternative medicine.

Little research has looked at how these beliefs change over time and what the mechanisms of belief-change might be. Looking at whether paranormal beliefs change over time as a result of instruction on critical thinking and parapsychology provides an opportunity to examine not only the relationship between paranormal belief and other beliefs, but also to determine whether there is a generalised belief-change across domains or whether change in paranormal belief occurs independently of other beliefs. If the latter is found to be true, this would suggest that reasoning is domain-specific and that what may look like analytical reasoning is actually heuristic processing in which the heuristics have been modified as a result of the instruction.

**Project Aims**

- To evaluate the parapsychology module as a ‘critical thinking’ intervention.
- To explore the link between paranormal beliefs and other types of magical thinking (e.g. CAM).

**Method**

A battery of questionnaires was administered to two groups of participants (students taking the parapsychology module and students not taking the parapsychology module) both before (Time 1) and after (Time 2) the module was taught. These measures are existing, validated questionnaires and include:

- The Magical Ideation Scale (Ekblad and Chapman, 1983).
- The Rational–Experiential Inventory (Pacini & Epstein, 1999).
- The Schizotypal Personality Questionnaire-Brief (SPQ-B) (Raine & Benishay, 1995).
- The Revised Paranormal Belief Scale (RPBS) (Tobacyk, 1988).
- Attitudes toward CAM (Saher & Lindeman, 2005; Aarnio & Lindeman, 2004).

We predict that for the experimental group (those studying parapsychology) there will be a decrease in paranormal beliefs and an accompanying increase in critical thinking skills. There are two reasons for this: First, this will be due to the content of the module, in which claims for the paranormal are critically examined. Second, the students will be implicitly taught evaluative and critical thinking skills. If ‘critical thinking’ is domain-general, we would also expect to see a reduction in other types of magical thinking.

**Preliminary Results**

- To date, we only have data from 20 participants. A preliminary analysis shows an effect of time on critical thinking ($R_1$, $18 = 15.20, p = 0.001$); participants scored higher on the Cornell Critical Thinking Test at Time 2 than at Time 1. This was true for both parapsychology and non-parapsychology students (see Figure 1).
- Although students studying parapsychology appear to perform more poorly than those not studying parapsychology, this was non-significant ($R_1$, $18 = 3.52, p = 0.08$).

**Ongoing Work**

In order to explore the link between paranormal beliefs and other types of magical thinking, we need a much greater sample. We are currently developing an online version of the study in order to gain access to a wider pool of potential participants. Once we have responses from several hundred participants, we will be able to examine the relationships between the different measures.

**References**