For me, it was love at first sight. As soon as I saw [Pascal Boyer](#)'s [Religion Explained](#) at the new-books-shelf of a suburban Maryland Barnes & Nobles on a rainy Saturday morning in 2001, I was smitten. My wife complained that I became physically incapable of looking away from the pages of the book until I finished it 12 hours later! For the first time in my life, I found an explanation of a religious phenomenon that sounded something like science and it was based on cognitive science (the area of my graduate training)! I was utterly fascinated by the twin notions that (1) most of the religious concepts around the world are minimally counterintuitive, and (2) that minimally counter-intuitive concepts are more memorable than other types of concepts. However, it also left me with a nagging question that was to haunt me for months and become the primary driver of my research for the next few years. What I wondered was why do we have a memory architecture that preferentially processes minimally counter-intuitive concepts? What evolutionary benefits could an agent gain by filling its head up with knowledge of non-existent entities and events such as a flying cow?

I went back to my favorite cognitive science writers Roger Schank and Herbert Simon to see if they had anything to say about this. I found part of the answer in Schank's writings who talks about benefits that a learning agent can achieve by focusing its attention on those objects or entities that violate its expectations which it derives from its existing mental structure. Schank calls expectation violations as learning opportunites and argues that an eager learning agent should take advantage of these learning opportunities. This helped explain as to why minimally counterintuitive concepts are better remembered than ordinary intuitive concepts but not why even more expectation violating maximally counterintuitive concepts are less well remembered. To find an answer to that puzzle, I had to step outside my traditional readings to psycholinguistic literature. In particular, I found [Walter Kinstch](#)'s book, titled [Comprehension](#), very helpful where he talks about the findings that when people read a story to understand it, they are primarily looking to answer the question as to why the author included this piece of information in this text? If, given a reader's world knowledge, this postdiction effort is successful then the concept that prompted this elaboration becomes richly connected with the story's theme and hence becomes more memorable. I thought that this can explain low recall for maximmaly counter-intuitive concepts if we assume that most readers succeed in their postdiction effort for minimally counter-intuitive concepts but not for maximally counter-intuitive concepts. Since readers are unable to connect the presence of maximally counter-intuitive concepts to the story theme, the maximally counter-intuitive concepts are not remembered so well! This made sense to me but I thought that there had to be some way to test this model. This made me read even further afar from my comfort zone into the area of human experimentation to learn about how to design experiments with human subjects and run them.

More about that in my next blog entry!