

# A 'sheep-goat effect' in repetition avoidance: extra- sensory perception as an eff...

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Previous research has shown that there is a difference between people who believe in extra-sensory perception (ESP) and people who do not in tasks that include probability judgement, illusion of control and repetition avoidance. An experiment by Brugger et al (1990) has shown that belief in extra-sensory perception has influence on people's generation of random number sequences in that people who believe in ESP (sheep) are more likely to avoid repetitions than strong disbelievers in ESP (goats). The experiment asked subjects to generate a sequence of random dice throws and make this indistinguishable from that of a real dice as possible. The following experiment is a replication of Brugger's (1990) repetition avoidance study. It was hypothesized that sheep will be more likely to avoid repetitions than goats. The results of this study show that there was no significant difference in the number of repetitions between sheep and goats in repetition avoidance.

$t(84) = 0.11, p > 0.05$ . This result contradicted and failed to replicate Brugger's (1990) finding and it was concluded that belief or disbelief in ESP did not affect avoidance of repetitions. Introduction Many studies have been carried out on the subject of repetition avoidance. Experiments have shown that people find it difficult to generate true random sequences even when instructed to do so.

The most frequent problem with generating these random numbers is avoidance of repetitions. One of the most frequently studied variables, which may affect repetition avoidance is the belief in extra-sensory perception (ESP). ESP covers a wide range of beliefs, the most common of these are the paranormal and psychic experiences. There are many reasons for belief in <https://assignbuster.com/a-sheepgoat-effect-in-repetition-avoidance-extrasensory-perception-as-an-effect-of-subjective-probability/>

ESP, the majority of people who believe state that this is because they have had first hand experience of something happening to them. This could be due to coincidences which have happened to a person e.

g. they dream that someone is going to have a plane crash and the next day someone in their family gets involved in a plane crash, the person then states that they had a premonition about this and their belief in ESP is increased. Other typical reasons for people's belief in ESP tend to be due to poor judgement in probability. An example of this would be to ask a question such as ' how many people would have to be at a party to have a 50: 50 chance that two of them share the same birthday' (ignoring year) Kahneman (1982) found that most people are surprised to learn that the correct answer is 23. To further test people's appreciation of probability Brugger (1990) conducted a study to test people's ability to generate random sequences.

Subjects were asked to imagine rolling a dice and respond with a number from one to six, this was repeated sixty-six times at a rate of one response per second. The subjects were asked to make the responses indistinguishable from that of a real dice. They were also asked to rate their belief in ESP on a scale of one to six where one is strong belief in ESP and six is a strong disbelief in ESP. People who believe in ESP are commonly referred to as sheep and disbelievers as goats. The average number of repetitions in this sequence would be expected to total 10. 8 for 66 throws of the dice.

It was found that people who were rated as sheep (an ESP rating of 1 or 2) showed significantly less repetitions than goats (an ESP rating of 5 or 6). The mean number for sheep was 5. 2, the mean for goats was 7. 4 and the mean

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for people who were rated indifferent (an ESP of 3 or 4) was 5.9. Brugger (1990) then designed an experiment to look for differences in repetition avoidance between sheep and goats in a context not involving ESP.

He showed his subjects pairs of dice in six different sequences, one sequence always contained more repetitions than the other. The subjects were then asked which sequence was most likely to occur first or if they were both as likely to occur as each other. The mathematical probability of either occurring was the same. It was found that sheep were significantly less likely to answer correctly than goats. The mean number of correct answers for sheep was 2.

2, for goats was 3.9 and for indifferent was 2.8. In none of the six pairs did sheep perform better than goats. Brugger (1990) found that subjects who were rated as sheep avoided repetitions significantly more than subjects who were goats.

This was true for both repetition avoidance and appreciation of randomness. He concluded that sheep have a more biased internal representation of randomness than goats, and this may explain why sheep are more likely to try and find an explanation for coincidences that occur in everyday life. The results were different from Blackmore and Troscianko (1985) who first described the sheep-goat effect. They also found that people generally underestimated the number of repetitions in a random sequence, and that sheep made more errors in probability tasks than goats, but contrary to Brugger's findings that there was no significant difference between sheep and goats in repetition avoidance. Other studies that examine the sheep-

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goat effect have studied illusion of control. Since sheep are more prone to believe that things do not occur by chance it was hypothesised that sheep will be more likely to believe that they can exert some kind of control over a task including illusionary control than goats.

In a study by Blackmore and Troscianko (1985) subjects were asked to try and make a computer generated coin fall as either heads or tails. Real control was only made possible on one out of the two trials. The results showed that sheep were more likely to believe that they had exerted more control than goats. The subjects were then asked to estimate how many they had managed to get correct and it was found that sheep estimated that they had got fewer correct than they actually had. They were then asked to estimate how many they would get correct due to chance i.

e. with their eyes shut, this showed that sheep drastically underestimated the level of chance performance whereas goats did not. This made it appear to the sheep that their performance was better than chance even though it was not. Sheep seem to perceive themselves as more successful in tasks that involve the illusion of control. Brugger (1990) also looked at the illusion of control and devised a test to see if sheep did believe they could influence a random event. He asked subjects to assess whether it was more likely that you could throw ten dice and get ten sixes or throw one dice ten times and get ten sixes.

The probability of these things happening is mathematically the same. It was found that sheep thought that the second of the two was more likely as it allowed control. The above research points to there being a difference

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between believers and disbelievers in ESP and indicates that sheep are more likely to underestimate the chance factor when asked to perform a task such as replicating a random dice roll or perceiving control on a chance coin toss. This experiment will concentrate on one aspect of the research and replicate Brugger's repetition avoidance study with the aim of finding a difference between believers in ESP and disbelievers in ESP. The independent variable will be whether the subjects classes themselves as a sheep or as a goat and the dependent variable will be the number of repetitions made in a string of sixty-six numbers.

It is expected that sheep will be more likely to avoid repetitions than goats. This is because believers in ESP are more likely to look for an explanation for coincidences that occur in everyday life.