Modern studies, including those of Cognitive Systems bases many conclusions on the patterns seen in experiments and trials, however there is a possibility that these apparent patterns are the result of chance. Some hypothetical examples of this chance can be seen in studying fMRI correlations, AI design testing, and designing language systems based on our current knowledge of cognition.

Much of what we know about the brain depends on fMRI (functional magnetic resonance imaging), the results of which may show correlations between brain activity and stimulus. However since this requires the use of an MRI machine, for which the number of participants that can be studied is limited. Compared to other areas of study the numbers are small, and therefore the patterns seen, that neuroscientists correlate, may actually be the result of chance.

Most artificial intelligence systems are designed based on hypotheses concerning intelligent, and/or cognitive systems. However since most of these systems are based on hypotheses, there are some potential discrepancies between the AI system and what it is based on. Therefore it is possible that though the AI systems function similarly to their design base this may be entirely by chance.

Lastly, I will discuss how chance may influence our understanding and design of human language systems. Similar to our understanding of brain function, the correlations of what we currently understand about human language processing may be entirely based on chance. This is supported, in part, as the majority of current linguistics is also a relatively new area of study. It is also similar to AI design as the language system design is based on hypotheses. Therefore while potentially unlikely, the fact that they do as expected may be chance, rather than design.

Chance can be particularly common when a hypothesis or idea is new, and becomes less likely when something has been tested many times with the same result. As Cognitive Systems is a relatively young discipline there is more possibility for patterns to be the result of chance, thus it is important for us to keep this in mind when evaluating conclusions.