

# Is the Female Brain Really Behind?

The male brain is usually touted as being better than the female brain because of spatial reasoning.

*Spatial reasoning* is the mental skill of being able to visualize spatial patterns, such as shapes, design elements, facts or numbers, and manipulate their features such as, rotating direction, design and function as part of multi-step problem solving. The applications are commonly associated with the areas of engineering, science, mathematics, architecture, art and chess. (It's also that part of an IQ test with all those graphic formations and obtuse questions.)

This male brain processing skill of **spatial reasoning is linked to navigation skills as well**. The theory is that male brains may have acquired this skill as part of their distant travels and reliance on the use of both the geometric clues of sunlight, shadows, shapes, angles and landmarks.

To test this theory, The University of Ulm in Germany conducted **a study whereby both male and female subjects were placed in a 3-dimensional, virtual reality maze**. The male participants were not quite 1 minute faster than the female participants. What was of interest was not so much the time difference but the different results in brain imagining between the two.



Complex Maze Pattern

**Men** working their way through the maze were **using the left hippocampus** part of their brain. This is a memory region that also regulates physical spatial memory and therefore would be a resource in problem solving.

By comparison, **women** in the maze were using a completely different area of their brain – **the right parietal lobe and the prefrontal cortex**. Both areas are linked to reasoning and identification. The use of the prefrontal cortex suggests women are mentally relying on landmarks and pictured objects.

The overall sense by researches is that **both the male and female brain may operate on different neural pathways, but they are similar in being able to accomplish analogous functions**.

**One of the things I find interesting in terms of spatial reasoning is complex patterns of design elements.**

While men may have more experience in 3-dimensional manipulation, **women have extensive experience when it comes to complex pattern design**. Examples that come to mind include elaborately designed rug weaving, patterned loom weaving, knitting, beading and quilting.

As the male brain developed the memory skills of spatial reasoning that served in navigation so the female brain developed spatial reasoning skills for design patterns and images that had to be created and held in memory long before

pattern notations were written down.

**I'm calling this one a draw!**

by Joyce Hansen