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## **RESEARCHERS EXPLORE LEFT-HANDEDNESS**

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Associated Press

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Data collected in 2008 by the Illinois Research Consortium (IRC) estimates that 7 to 10 percent of the adult population is left-handed. This study also examined LRRTM1, the first gene linked to increased odds of left-handedness. Although little is known about LRRTM1, the research team suspects that it modifies the development of asymmetry in the human brain. Asymmetry is an important feature of the brain, with the left side usually controlling speech and language, and the right side controlling emotion. In left-handers this pattern is often reversed. An identical twin of a left-handed person has a 76 percent chance of being left-handed. These data suggest a possible genetic link to handedness.

### POSSIBLE EFFECTS ON HUMAN THINKING

A theory about how handedness affects thinking was developed from this study. According to this theory, right-handed people are thought to process information using a "linear sequential" method in which one thread must complete its processing before the next thread can be started. Left-handed persons are thought to process information using a "visual simultaneous" method in which several threads can be processed simultaneously.

Right-handed people process information using *analysis*, the method of solving a problem by breaking it down to its pieces and analyzing the pieces one at a time. By contrast, left-handed people process information using *synthesis*, which is the method of solving a problem by looking at the whole and trying to use pattern-matching to solve the problem.

Experiments on multi-tasking performance showed that when given two tasks to simultaneously complete, left-handers outperformed right-handers. However, when instructed to focus on one task at a time, right-handers completed the tasks more quickly, compared to left-handers.

### MEMORY DIFFERENCES

Experiments on the role of handedness on different types of memory yielded interesting findings. Episodic memory, the recall and recognition of events, uses different areas of the brain than non-

episodic memory (used in factual and implicit memory). Left-handers showed better episodic than non-episodic memory. This finding was reversed in right-handers.

### CONCLUDING REMARKS

Left-handed individuals show different styles of thinking which influence multitasking performance and memory. A result of these differing styles of processing is that right-handers perform better when they complete one task before starting the next. Left-handers, by contrast, are capable and comfortable switching between tasks. While left-handers showed more accurate memories of events, right-handers displayed better factual memory.

In short, the Illinois Research Consortium demonstrated that left- and right-handed individuals show interesting differences in task and memory performance.

More results from this study can be found online at <http://www.irc.org>