

Handedness Encyclopedia Article

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Handedness

Handedness refers to the predilection of either the right or left hand as the dominant hand for the performance of tasks such as writing.

A preference for the right or left hand is not restricted to humans. Handedness is evident in other mammals, birds and amphibia. In humans, about 95% of the population is right-handed, with only five percent being left-handed. A very small percent of people are ambidextrous, having no preference for performing tasks with either hand. Social pressure to conform to the norm can drive some left-handed people to adopt the predominant use of their right hand.

The preference for a dominant right or left hand appears to be linked to an asymmetry in the **brain**. It is known that in right handed people, the left somatomotor cortex of the right side of the brain is about seven percent larger than the corresponding right cortex of the same side of the brain. Whether this difference causes the handedness or is a by-product of the preferential use of one hand is difficult to discern as yet. However, there is more firm evidence of a link between hand preference and speech. Thirty percent of left-handed people have their speech center in the right hemisphere of the brain, while only five percent of right-handed people do. Moreover, in other species, the asymmetry of body function is under tight genetic control.

Whatever the basis of handedness, the preference is often established in humans prior to birth. After birth and as development proceeds, handedness is associated with an asymmetry of one side of the body relative to the other side. This asymmetry is particularly marked in right-handed people, where the limbs on the right side of the body are larger than those on the left side. This size asymmetry extends to the brain. Researchers now suggest that asymmetries in left-handed people arise by different developmental rules compared to these more marked asymmetries of right-handed people.

Evidence compiled during the 1990s indicates that the preference for the left hand may be genetically determined, rather than due to environmental factors or social pressure to conform to the right-handed majority. While the prevalence of left-handedness in the entire population is about five percent, this percentage is markedly higher in families where one parent, particularly the mother, is left-handed. As yet, however, there is no clear explanation of how genetic factors might influence the choice of preferred hand.