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Jim Stowell
Illinois Wesleyan University

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SYSTEMATIC AND RANDOM INFORMATION LOSS DURING INTERHEMISPHERIC TRANSFER

Jim Stowell, Dept. of Biology, Beckman Institute*

Studies of cerebral assymetry indicate that the memory characteristics of the two hemispheres vary depending on the type of information to be remembered. These findings indicate that the hemispheres encode information in fundamentally different ways. In addition, it appears that these differences lead to an information loss when material is transferred from one hemisphere to the other. Numerous studies indicate that when subjects are given simple recognition of decision-making tasks, performance is better when the stimulus and probe are presented to the same hemisphere as compared to the cross hemisphere condition. These results demonstrate an information loss but the type of loss is unclear.

This information loss could be either systematic or random in nature. If information loss is systematic, the same piece of information is lost during each colossal transfer. This kind of information loss is analogous to when a document is translated from one language to another and "something is lost in the translation". Increasing the number of transfers will not recover the lost information. In contrast, random information loss involves a different piece of information each time. For example, if 10% of the information is lost randomly during each transfer then probabilistically only 1% of the information would be lost after two transfers. Thus, increasing the number of transfers would improve performance by allowing for recovery of lost material.

This study was done with left-handers and right-handers separately. The data seems to suggest that in right-handers, information loss is random. Left-handers, in contrast, appear to be characterized by a systematic information loss. This seems to be consistent with data from studies of cerebral assymetry.