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## **A Possible Age-Related Neurological Mechanism in the Formation of Problem-Solving Set**

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## A POSSIBLE AGE-RELATED NEUROLOGICAL MECHANISM IN THE FORMATION OF PROBLEM-SOLVING SET

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One problem-solving set study by Ransopher and Thompson (1991) showed no main effect or marked difference of responses with age. However, these results are not surprising because the research design perhaps facilitated responses. The current study investigates problem-solving set using scrambled words or anagrams, and mean latency to solutions of the target anagrams will be the dependent variable. Two outcomes are possible. The inhibition-deficit view (Hasher and Zachs, 1988) suggests that older people may be less susceptible to the effects of problem-solving set because they would be less likely to be focused on just one solution set. Dempster (1992) suggests that these inhibitory processes are associated with the frontal lobes, which function less effectively as people age. Alternatively, the perseverative characteristics--abnormal repetition of a specific behavior (Stuss and Benson, 1984) seen in frontal lobe damaged patients (Delis, Squire, Bihrlle, and Massman, 1992) may indicate that the lessened activity of the frontal lobes with age will cause the older people to be more susceptible to problem-solving set, since they will not be able to get out of the initial problem-solving set solutions to solve new problems.

This study attempts to determine which hypothesis is more accurate. Sixty undergraduates and 60 older people (over the age of 55) are tested on a completely randomized list of 150 anagrams, which are in sets of 6, 9, 12, and 15. Target anagrams that require a different solution are presented after each set and the latency is measured for these anagrams. Undergraduates are expected to form set, shown by progressively longer reaction times to target anagrams as the sets grow larger. No increase in reaction time to the targets is expected in older people if problem-solving set is not formed. However, if perseveration occurs in the older people, their reaction times to the targets are expected to be even longer than the undergraduates, especially as the set sizes become larger.