

COGNITIVE CONTROL AND AUDITORY ATTENTION IN BLINDS AND NORMAL SIGHTED ADULTS: A STUDY OF DICHOTIC LISTENING

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This study was conducted to compare degree of cognitive control and auditory attention between normal sighted and congenitally blind adults. Age of subjects recruited ranged from 17 years old to 23 years old. There were 18 subjects in normal sighted group (mean age= 20.3 years; standard deviation= 1.97 years) and 15 subjects in blind group (mean age= 20.1 years; standard deviation= 1.71 years). Dichotic test that used non-sensed CV with inter-aural intensity difference ranging from -20 dB to 20 dB was used. It was administered in 3 different conditions, which were non-forced (NF), forced-right (FR) and forced-left (FL). Results showed that right ear advantage (REA) can be manipulated by auditory attention (top-down) and IID (bottom-up) ($p < 0.05$). REA magnitude increases with increasing of IID. Stimulus with higher intensity had greater chance of being processed than the other ear. FR condition yielded the greatest REA magnitude across IID, followed by NF and FL. Auditory attention facilitates the reports of stimulus from attended ear and suppresses intrusion from the non-attended ear. There is no significant difference of auditory attention between normal sighted and blind group ($p > 0.05$). Results suggested that blinds have better cognitive control than normal sighted subjects. In FL condition, normal sighted group started to show significant REA ($p < 0.05$) at IID level of +15 dB in favor of right ear but blind group failed to show any significant REA ($p < 0.05$) within the IID range tested. Blind is much better in facilitating reports from left ear while suppressing the intrusion from right ear than normal sighted group under FL condition. This could be attributed to enhancement of auditory skills in blinds through brain reorganization due to the long-termed blindness.

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