

VARIETIES OF NAVIGATIONAL EFFECTS CAUSED BY SOUND CONTENTS:

-A study on the independent travel of visually impaired persons
in a cold and snow region, Part3-

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This paper studied the effect of sound cues on the navigational walking of visual impaired persons. Three loudspeakers, directed towards the ground, were placed at a height of 3m with 10m interval. We selected birds' tweet and a creek sound for experimental stimuli, and used them individually or mixed during three different conditions.

Our results show that both sound stimuli can guide the visually impaired to walk straight, but the deviation of subjects' paths were smaller and more consistent when the creek sound was used. Unlike conventional intermittent birds' tweet, the continuous nature of the creek sound seems to create a "sound route" more effectively. Subjects tend to use each type of sound cue separately: birds' tweet is used to check for the direction while a creek sound for the localization. Moreover, subjects were able to pick up the timbre change caused by coloration as well as volume change of the continuous sound as clues to walk within the sound route, while it is hard to pick them up from the intermittent sound. Subjects could more accurately sense the distance and orientation of the loudspeakers with a creek sound, which help them realize their current location in the experimental course.