

## Echoidentification: using reflected sound to identify objects and their characteristics

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### ABSTRACT

People who are blind and visually impaired use a wide variety of sensory information to understand the world around them. Hearing is a particularly useful sense because of the range. Many persons who are blind or visually impaired use some form of echolocation to monitor the space around them. The sound of a cane tip reflected off a wall is a common way to keep a straight path without trailing.

Orientation and Mobility specialists teach clients to make a crisp clicking sound, and attend to the reflections of that sound. Students with varying levels of hearing have demonstrated the ability to discern a difference in sound to identify the presence of an object. Clients can be trained to go beyond just locating the objects reflecting sound. The relative sound and distance to the object, its overall shape, as well as its hardness can be discerned. This process of identifying the properties of an object may be referred to as echoidentification. This skill is very useful in identifying where doorways are while walking along a city block. The leafiness of a bush sounds different than the wood of a bench.

A demonstration of echoidentification will be part of this presentation.

Keywords: Reflected Sound, Echolocation, Echoidentification

### 1. INTRODUCTION

What do you know about Echolocation?

Misconceptions

New Name

#### 1.1 Echoidentification Umbrella

Human echolocation

Human sonar/biosonar

Active echolocation/sonar

Location of objects

Finding acoustic gaps/openings

Material properties

#### 1.2 Who Can Echoidentify?

Everyone

Blind

Sighted

No need to have perfect or binaural hearing

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### 1.3 What can be detected?

Size and Distance  
Shapes  
Material Properties

### 1.4 What is the Area that can be detected by clients who are new to echoidentification, after initial instruction in using clicking to identify the presence of an object?

Study to be completed during Summer 2019  
Results and their implication will be reported at ICA

### 1.5 Teaching Echoidentification

The click  
Introduction and shaping of skills  
Active and passive

### 1.6 References

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## 2. CONCLUSIONS

Orientation and Mobility Specialists are encourage to teach echoidentification  
Expand the language and build nomenclature for these techniques and experiences.  
Include in scope of practice for all O&M professionals

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(An outline of this work is submitted in place of a paper at the request of the ICA conference planners. New research in this area is underway and previous work has been presented and published.)