SYMPOSIUM SCHERER

## Wayfinding tasks in visually impaired people: the role of tactile maps

Pierluigi Caddeo • Ferdinando Fornara •

Anna Maria Nenci • Amelia Piroddi

**Keywords** Cognitive mapping • Wayfinding • Blindness

Wayfinding is one aspect of cognitive mapping that includes all aspects of encoding, processing and retrieving information about the environment (Golledge, 1999; Kitchin & Blades, 1991; Blades et al., 2002). Such ability refers to the cognitive patterns of learning a route and retracing it from the memory. Orienting oneself in a new environment and moving efficiently and independently are difficult tasks which depend upon a series of processes of high cognitive complexity (Espinosa et al.,1998). These tasks are even more complicated in the case of blind and visually impaired people, thus the abilities of both travelling independently and interacting with the outer world are the greatest challenges for this specific population (Golledge, 1993).

Several studies (e.g. Loomis et al., 1995; Passini & Proulx, 1988; Klazky, 2000) found that there is no significant difference between sighted and blind people in spatial competence and spatial tasks. Other studies (e.g. Ochaita & Huertas, 1993; Jacobson et al., 1998; Golledge et al., 2000) confirmed that people who are visually impaired can learn routes successfully.

In order to gain, store, and recover spatial information,

visually impaired people make use of tactile cues as well as auditory or olfactory cues. Some researches (Jacobson, 1992; Espinosa et al., 1998) verified the importance of tactile maps for helping blind and visually impaired people to form impressions of the their surrounding space.

Blades et al. (2002) found that the performance of visually impaired people can be enhanced by the strategies used for learning a new route, e.g. modelling a map of the route itself.

The main aim of the present study is to assess the usefulness of tactile maps for visually impaired people. In other words, it is expected that individuals who have the possibility of employing a tactile map of a novel route show a greater learning outcome than individuals who have not.

20 visually impaired adults performed a task which consisted in learning a new route in a urban place and subsequently to reproduce a map of it. Participants were split in two groups of equal number, i.e. those learning by direct experience vs. those learning by a tactile map.

On the whole, results confirm the importance of tactile maps for visually impaired people's successful interaction with the environment.

P. Caddeo (⊠) University of Rome "I

University of Rome "La Sapienza", Rome, Italy e-mail: pierluigi.caddeo@uniroma1.it

F. Fornara • A. Piroddi Department of Psychology, University of Cagliari, Italy