Notice of the Final Oral Examination
for the Degree of Master of Science

of

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BSc (University of Victoria, 2014)

“Navigational Cognition: What you do and What you Show isn’t Always All you Know”

Department of Psychology

Thursday, December 15, 2016
10:00AM
David Turpin Building
Room A137

Supervisory Committee:
Dr. Ronald Skelton, Department of Psychology, University of Victoria (Supervisor)
Dr. Elizabeth Brimacombe, Department of Psychology, UVic (Member)

External Examiner:
Dr. Joana Gil-Mohapel, Island Medical Program, UVic

Chair of Oral Examination:
Prof. Esther Sangster-Gormley, School of Nursing, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies
Abstract

In the study of navigation, frequently it is assumed that navigation is accomplished using either an allocentric strategy based on a cognitive map, or an egocentric strategy based on stimulus response associations. Further, it is frequently assumed that individual navigators, or even entire genders, are only capable of navigating by one strategy or the other. The present study investigated whether individuals or genders were limited to a particular navigational strategy and whether both strategies might be learned or used at the same time. In the present study, undergraduate students were tested in a virtual Morris water maze that was modified to allow successful and efficient navigation using either an allocentric or an egocentric strategy. Learning trials on which the participants had to learn the location of the platform were alternated with probe trials on which participants would show which strategy they were using. At the end of testing, participants were given a series of tests to determine what knowledge they had acquired and which strategies they were capable of using. Results indicated that: a) most people preferred to navigate egocentrically in this maze, but some preferred to navigate allocentrically, b) people tended to use an egocentrically strategy first, but it was not a necessary step to learning to navigate allocentrically, c) people were better at their preferred strategy, d) people learned information about their non-preferred strategy, and d) those who preferred to navigate egocentrically could nevertheless learn to navigate allocentrically. Surprisingly, all of these results were true for both men and women, although women tended to prefer egocentric navigation at a higher rate than men, and men outperformed women when forced to navigate allocentrically. These results suggest it may be too simple to think of navigators as being capable of only a single navigational strategy or of learning only one strategy at a time.