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SPATIAL MAPPING IN WILD WHITE-FACED CAPUCHIN MONKEYS (*CEBUS CAPUCINUS*)

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This study explores patterns of spatial memory and ranging in wild white-faced capuchin monkeys inhabiting La Suerte Biological Station, northeastern Costa Rica. We examined whether capuchin travel pattern to reach feeding/resting trees was most consistent with a coordinate-based or a route-based spatial representation. Based on behavioral data collected during eight months in 2006, we calculated the circuity index (CI=distance traveled/straight-line distance) to determine the degree to which capuchins used direct and novel routes of travel to reach trees (coordinate-based travel) or whether travel was oriented to a set of nodes (switch points/landmarks) and commonly used route segments (route-based travel). When traveling between feeding/resting trees (mean straight-line distance=111±81 m), capuchins traveled 42% farther than the most direct route (CI=1.42). At half the distance (55±5 m) CI was 1.14. When in the immediate vicinity of the target (30 m), CI was 1.06. Fifty three nodes and 79 route segments were identified. Route segments used by the capuchins varied monthly, whereas the number of reused nodes was more consistent across months. When traveling to major feeding/resting trees (n=9 trees), the capuchins passed through the top five nodes 82.6% of the time. The re-use of nodes and travel paths, as well as a relatively high circuity index is consistent with a route-based mental representation in large-scale space. Supported by grants and graduate fellowships from Fulbright-OAS, National Science Foundation (BCS#0612771), Graduate College-UIUC, Anthropology-UIUC, Beckman Foundation/Beckman Institute for the Advanced Science and Technology-UIUC (twice), American Society of Primatologists, Idea Wild, Tinker Foundation/CLACS-UIUC, and American Philosophical Society.

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