Multiple Category Use in Spatial Memory: Issues of Category Salience

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In the most general sense, categories help people manage an unlimited amount of available information. When learning an environment, people hierarchically organize spatial information, grouped by spatial categories (e.g., McNamara, 1986; Stevens & Coup, 1978). Further, non-spatial information appears to be associated with its respective location in memory, whereby non-spatial information primes locations (McNamara, Halpin, & Hardy, 1992). What happens when the non-spatial information can be categorized separately from the locations?

Our previous work (Maddox, et al., 2002) examined use of the non-spatial category of race in a map learning task. We proposed two ways that non-spatial category information might be used. The *Selective Category Application Theory* suggests that people use category information only when it is functional or salient. The *Generalized Category Application Theory* proposes that people use category information when available, regardless of applicability or salience. Our previous findings support selective application, driven by both function and salience. Distance estimations showed influences of both spatial and social category information, whereby the spatial category had functional relevance and the social (race) category may have been particularly salient for our college-aged population. Matching of spatial to non-spatial information showed influences of only the social category, which had functional relevance and high salience for the task. The present restudy examined spatial and social categorization in map learning, using a social category with less salience than race—political affiliation.

Experiment

Participants learned a fictitious map. Accompanying each location was a non-spatial description including the name of an individual and their political affiliation. After studying the map, participants completed two memory tasks: distance estimations and matching of person to location. The memory tasks allowed assessment of the influence of both spatial and social category information.

Results

Unlike our previous work with the salient category of race, the less-salient political affiliation category did not influence matching of person to location. However, like our previous findings distance estimations showed influences of both the spatial and the social category information.
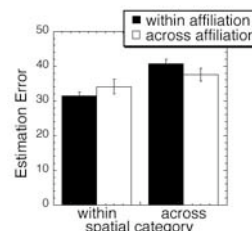

Figure 1: Distance estimation error as a function of spatial and social category information.

Conclusions

Taken together with our previous work, this study shows that the salience of non-spatial category information has a marked effect on its use in a spatial context. However, salience alone does not predict category use, particularly when considering the degree to which category information is explicitly applied to a task.

References

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