fugitive cartographic literature

Interesting articles about cartographic information often appear in unexpected outlets. The goal of this section is to bring those publications to the attention of our readership. We invite synopses of papers appearing in journals other than those devoted to cartography, geography, and map librianship.

Blaut, J.M. (1987). Notes toward a theory of mapping behavior. *Children's Environmental Quarterly,* 4:4 (Winter), pp. 27–34.
reviewed by Jeffrey C. Patton, University of North Carolina at Greensboro

Blaut begins by stating that the process of mapping is "**a normal activity in human beings of all ages and all cultures, akin to language behavior and perhaps equally primitive and basic**". Blaut and others have long held that mapping behavior is analogous to linguistic behavior in both development and practice. This paper explores the evidence for and the implications of this position.

As a starting point for theorizing about mapping behavior Blaut differentiates between macroenvironmental behavior (place behavior) and microenvironmental behavior (behavior directed at individuals or objects). He makes the argument that the human sensory and motor modalities function differently in each case. Exteroceptor are more critical in place behavior while proprioceptors are more important in microenvironmental situations. For example in understanding and remembering objects the hands and manipulation are used while comprehension of a larger environment may require the use of feet and walking. In speaking of mapping behavior Blaut deals specifically with macroenvironmental behavior. He points out that the comprehension and organization of macroenvironments relies on the development of cognitive maps and that *learning* of "**place**" by either adults or children requires a communication system be utilized. As ordinary language is insufficient to meet the needs of communicating macroenvironmental information, mapping evolved in all cultures.

For the reasons given above Blaut hypothesizes the following:

1. Mapping is a limited and specialized linguistic form.

2. Mapping emerged from the same root process as natural language.

3. Mapping and maps are older than written language.

4. Mapping abilities emerges naturally in young children independent of training.

5. Mapping is a cultural universal.

To support these hypotheses Blaut presents evidence that mapping behavior is homologous to ordinary written language, having both syntax (a set of ordering rules) and is semiotic. While he freely admits that maps may be limited as a language form in terms of what they can easily communicate, mapping is clearly a language.

Evidence of early mapping behavior in children is well documented with several examples presented detailing how toy play may mimic the macroenvironmental world and "**accustom**" children to a map-like (rotated and reduced) perspective of the world. The successful interpretation and use of black and white vertical aerial photographs by five year old children is given as evidence of the development of sophisticated cognitive maps.

Archeological and anthropological finds are reported which indicate that mapping is indeed very old in human culture. The oldest known map from Catal Huyuk is over 8000 years old while the oldest written language appears to be only 6000 years old (those languages utilizing an alphabet are significantly younger). Blaut suggests that this is the case because mapping behavior "**buds off**" from basic linguistic behavior at a much lower level than writing and that written language may be a derivative of mapping.

In concluding Blaut makes several suggestions for map learning and reading:

1. Map skills can be taught at school entering age or before.

2. Natural mapping in young children employs a downward eye-in-the-sky perspective. This can be developed by placing large maps on the floor or even incorporating maps into the flooring.

3. Contrary to some structuralist views young children can gain the most from and enjoy complicated maps the most. He explains that this may be due to the fact that children are more sophisticated map readers than previously thought or simply that more complicated maps are more exciting even if they are not fully understood.

4. As mapping has common roots with written language this link should be utilized to promote not only better mapping skills but also reading and writing skills.

Blaut's rather informal paper makes a compelling case that mapping behavior is a fundamental activity of all human beings and of all cultures. It has important ramifications for anyone interested in natural language, map design for children, or geographic education.