Notes and Comment

No sex preference and questionable body-orientation preference in huddling behavior of rat pups

FRED STOLLNITZ

National Science Foundation, Washington, D.C.

Developmental psychobiology is a field that has seen markedly increased research activity during the last decade. One exciting result of this activity, and a spur to further research, has been the discovery of many previously unsuspected capabilities of young organisms. As important as it is to continue on the trail of such discoveries, researchers in this field, as in all others, must remain alert to the conceptual and methodological pitfalls in their path. Furthermore, because of the inherent difficulties in working with infant animals, the methods used in such studies must be designed and reported with great care. The purpose of this note is to remind researchers of these fundamental points and, in this framework, to call into question the conclusions drawn by Deni, Martin, Makin, Longo, and Andres (1981).

In a litter of three male and three female pups, each pup has two littermates of the same sex and three of the opposite sex. Hence, it would not be surprising if huddling contacts were distributed between same-sex and opposite-sex littermates approximately in the ratio 2:3. Such data, reported by Deni et al. (1981), should be interpreted as evidence for lack of sex preference in huddling.

Deni et al. also reported that head-to-head orientation of huddling contacts occurred significantly more frequently than head-to-body orientation. Interpretation of this finding is difficult without more information about how the litter was placed in the observation cage. We are told only that "Just prior to each session, the pups were separated from the dam and were labeled by painting the top of their heads with white typing correction fluid using a dot pattern code (one to six dots, 3 mm in diameter). The litter was then placed in the observation cage and was positioned under the video camera" (Deni et al., 1981, p. 369). One may suppose that the labeling would be easier if the pup were held by the person doing the

labeling. If the same person labeled each pup in the litter, it would not be surprising if each pup were placed in the same orientation after being labeled unless the person attempted to vary the orientation. As no such attempt was reported, the much more frequent occurrence of head-to-head contacts may have resulted from the behavior of the experimenter rather than that of the rat pups. Data on the orientation of huddling contacts at different times during the observation session might provide evidence for or against this possibility.

If rat pups do, in fact, prefer to huddle with their heads touching, it may indeed be because the head region is most sensitive to tactile stimulation, as Deni et al. suggest. But thermal stimulation is important in controlling the huddling behavior of rat pups (Alberts, 1978), and thermal sensitivity may also develop in a cephalocaudal direction. Furthermore, the odors or tastes of food or saliva may influence the orientation of huddling contacts, as chemosensory control of behavior has been found to be important in investigations of such phenomena as nipple attachment (Blass, Teicher, Cramer, Bruno, & Hall, 1977), mouth-licking (Block, Volpe, & Hayes, 1981), and learning (Johanson & Hall, 1979) by rodent pups.

Finally, the importance of chemosensory control suggests the possibility that the head-to-head orientation observed by Deni et al. resulted from attraction to the odor of correction fluid on the pups' heads, avoidance of the odor of the experimenter on their bodies, or both.

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Correspondence may be addressed to the author at the National Science Foundation, Washington, D.C. 20550.

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