

## Social Attachment in Giraffe: Response to Social Separation

Loraine R. Tarou,\* Meredith J. Bashaw, and Terry L. Maple

*TECHlab, Zoo Atlanta and School of Psychology, Georgia Institute of Technology,  
Atlanta, Georgia*

Attachment relationships between animals are often studied by separating a pair of individuals and recording their subsequent behavior. Studies of non-human primates have shown that separation results in changes that are indicative of both psychological and physiological stress. Similar results have been found in several non-primate species with differing social structures. This study examined the behavior of two female giraffe at Zoo Atlanta after the removal of the resident male. Data were collected on the giraffe before and after separation, using an instantaneous scan sampling technique to record levels of activity, social behaviors, solitary behaviors, proximity, and habitat utilization. After the removal of the resident male, both giraffe exhibited increased levels of activity, stereotypical behavior, contact behavior (particularly neck-rubbing), and decreased habitat utilization. These results are similar to those found in earlier primate separation studies, supporting the hypothesis that complex social structure is not necessary for the formation of social attachments. Because social separation is often accompanied by behavioral and physiological indications of stress, an understanding of the variables involved in a species' response to separation is vital to the promotion of the psychological and physical well-being of captive animals. *Zoo Biol* 19:41–51, 2000. © 2000 Wiley-Liss, Inc.

**Key words:** psychological well-being; behavioral measurements of stress; stereotypes; social separation; behavioral management

### INTRODUCTION

One of the most common ways to measure the nature and strength of the level of attachment between two animals is to separate the animals and examine their behavior. Social separation is operationally defined as "the restriction of access to an individual (or individuals) with whom a subject had previously established a social relationship, however loosely defined" [Mineka and Suomi, 1978]. The majority of studies examining the behavioral effect of social separation involved the use of non-

\*Correspondence to: Loraine R. Tarou, TECHlab, Zoo Atlanta, 800 Cherokee Ave. SE, Atlanta, GA 30315. E-mail: ltarou@mindspring.com

Received for publication March 27, 1999; Accepted February 4, 2000.

