Assessing the prevalence and characteristics of hair-plucking behaviour in captive western lowland gorillas (Gorilla gorilla gorilla)

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Abstract

Non-human primates occasionally exhibit behaviours thought to occur only in captivity that are considered abnormal. In particular, hair-plucking behaviour occurs across many species of mammals and birds. This study was the first to assess the phenomenology, demography and aetiology of this behaviour in captive gorillas across the Association of Zoos and Aquariums (AZA) population. A survey was sent to 52 AZA institutions housing western lowland gorillas. Hair-plucking behaviour occurred in 15% of the surveyed population with 62% of institutions housing a hair plucker. Individuals were most likely to self-pluck using their fingers. Individuals that were exposed as youngsters to a hair-plucking group member were significantly more likely to develop the behaviour themselves. There was also a trend toward solitary individuals being more likely to perform this behaviour. Future research needs include identifying hormonal correlates to this behaviour, understanding its relationship to acute or chronic stressors, and examining what causes this behaviour to fluctuate in frequency once it has developed.

Keywords: abnormal behaviour, animal welfare, self-directed behaviour, survey, trichotillomania, western lowland gorilla

Introduction

Non-human primates occasionally exhibit behaviours thought to occur only in captivity that are considered abnormal. An abnormal behaviour can be characterised as a species-atypical behaviour that either does not occur in the wild or occurs at a much higher frequency in captivity (Erwin & Deni 1979; Walsh et al 1982). These can include locomotor or whole body movements, such as pacing or repetitive somersaulting (Bellanca & Crockett 2002; Lutz et al 2003). They also can include behaviours that are related to feeding, such as regurgitation and reingestion and coprophagy (Akers & Schildkraut 1985; Gould & Bres 1986). Primates may also exhibit abnormal behaviours reflecting deprivation or deprived early experiences, which may include behaviours such as self-clasping, rocking and other self-stimulatory behaviours (Meder 1989; Lutz et al 2003). An abnormal behaviour may become especially problematic if it causes injury to the animal.

Many species of mammals and birds, including humans (American Psychiatric Association 1994), pigtail macaques (Macaca nemestrina) (Boccia & Hijazi 1998), chimpanzees (Pan troglodytes) (Fritz et al 1992; Nash et al 1999), laboratory mice (Mus musculus) (Garner et al 2004), rabbits (Oryctolagus cuniculus) (Gunn & Morton 1995), parrots (numerous Psittacine species) (Moon-Fanelli et al 2005), sheep (Ovis aries) (Reinhardt 2005) and gorillas (Gorilla gorilla) (Hill 2004; Hosey & Skyner 2007; Pizzutto 2007) habitually pick their own hair or feathers. ‘Hair-plucking behaviour’ occurs in captive western lowland gorillas (Gorilla gorilla gorilla) and is defined as recurrent hair pulling that may result in hair loss. This behaviour may be further characterised as the pattern of pulling hair from one’s own coat or from conspecifics which may or may not be followed by ‘trichophagia’ or the subsequent ingestion of hair. Hair-plucking behaviour has not been reported in wild gorillas to date and there have only been three studies on hair plucking in captive gorillas. One showed that it was relatively infrequent (occurring in 5% of gorillas) among a captive population in the UK (Hosey & Skyner 2007). The other two studies focused on treating hair-plucking behaviour and found it could be reduced both by increased foraging opportunities (Hill 2004) and keeper interaction (Pizzutto 2007). However, no specific study has explicitly described the characteristics and mechanisms of this behaviour or examined what variables might correlate with this behaviour in gorillas. Trichotillomania, or hair plucking in humans, has the following diagnostic criteria:

- recurrent hair pulling resulting in untreatable hair loss, a feeling of tension which is relieved upon pulling, no apparent explanation provided by another disorder and that it is associated with distress and hinders a person’s normal routine (American Psychiatric Association 1994).