An Elephant in My Mirror: A Psychological Perspective on the Role of Attachment in Captive Settings Among Elephants

Lokesh Coomar
The Kerulos Center
&
University of South Florida
Science has now established that all vertebrates—elephants and humans included—share the same brain structures and processes that govern neuropsychology, cognition, emotions and consciousness.

This has led to the founding of the new field of **trans-species psychology**.

A common form of brain, mind, and behavior holds for all vertebrates, including humans.

Bradshaw 2005; 2009
Based on this scientific understanding, psychological concepts and methods to evaluate human well-being have been applied to other species, including elephants, specifically to address trauma recovery in elephants subjected to chronic or acute stress.

Bradshaw 2009, Bradshaw & Schore 2007
A core concept is that psychological well-being in all species is highly dependent on relationships and their quality.

Life for social brained species such as humans, elephants, parrots, and other altricial animals happens in a matrix of relationships.

Elephants, being highly sensitive mentally and emotionally with a rich social culture and are, like humans, shaped by relational quality.

Bowlby, 1969; Bradshaw et al 2005; Bradshaw 2009; Dunbar 1998; Moss 1988; Schore 2003; Sukumar 2003
Because humans now dominate free-ranging and captive wildlife environments, how humans perceive and behave towards animals has a significant impact on animal wellbeing.
The nature and quality of elephant – human relationships critically influence elephants well-being in captivity.
Through the lens of attachment theory and traumatology, we explore elephant trauma and the nature and efficacy of these relationships as they pertain to captive elephant well-being.

Bradshaw & Schore 2007; Bradshaw 2009
Attachment is the bond formed between an infant and her/his primary caregiver. It is the main mechanism responsible for shaping emotions and stress regulation.

Bowlby 1969; Schore 2002
Psychosocial development pathways -the quality and nature of relationships an infant experiences-group into two main Attachment Styles:

• Secure
• Insecure

Bowlby 1969, 1978; Schore 2003
Secure Attachment

Relationship

Developmental bonding: Healthy, pro-social, empathetic emotional communication

Leading to:
• Balance between auto- and interactive strategies to self-regulate stress
• An ability to have intimate relationships
• An ability to trust and be empathetic

Bowlby 1969; Ogden et al 2006
Historic patterns of elephant development promote secure attachment.

- Pro-social values
- Empathetic
- Lifelong bonds
- Multi-dimensional
- Stable
Traditional Free-ranging Elephant Attachment: *Collective, interdependent*

Bradshaw et al 2005; Bradshaw and Schore 2007; de Silva et al 2011; de Silva and Wittemyer 2012; Lee 1987; Moss and Poole 1983; Vidya and Sukumar 2005)
## Human-Elephant Cultural Comparison

<table>
<thead>
<tr>
<th></th>
<th>Elephant Families</th>
<th>Indian Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social status determination</td>
<td>Generational status and age within the extended family.</td>
<td>Generational status and age within the extended family.</td>
</tr>
<tr>
<td>Social networking</td>
<td>Multi-tiered network of mother-offspring units forming family units, which form kinship groups.</td>
<td>Small, urban, nuclear family units with a large network of extended families.</td>
</tr>
<tr>
<td>Mother-offspring bond</td>
<td>Mother-calf bond is very strong.</td>
<td>Bond between mother and child is very strong.</td>
</tr>
<tr>
<td>Child-rearing</td>
<td>All females take part in child-rearing. Calves are under constant care and supervision.</td>
<td>Children should be in constant care of their mothers or family.</td>
</tr>
<tr>
<td>Functional dynamics</td>
<td>All members work synergistically for the betterment of the family unit. All members receive the same care.</td>
<td>All extended family members cared for, even childless members of previous generations looked after in old age.</td>
</tr>
</tbody>
</table>

Elephants societies have sustained systemic trauma at multiple scales.
This has occurred over hundreds to thousands of years worldwide.
Origin of African Elephants Imported into North American Facilities

Total: 167 Elephants

Adopted from Koehl 1995; Olson 2011
Origin of Asian Elephants Imported into North American Facilities

Total: 182 Elephants

Adopted from Keele 2010; Koehl 1995
Year of Importation of Elephants into North America

Total: 349 Elephants

Year

Adopted from Keele 2010; Koehl 1995; Olson 2011
Prior to arrival into a captive setting, an elephant may have already witnessed several traumatic events:

- Witness the killing of their family
- Premature weaning
- Developmental context non-normative and abusive, biophysical deprivation (e.g. “breaking” in Asian elephants)
- Loss of second phase of socialization

Bradshaw et al 2005, Bradshaw 2009
Currently, there are approximately 600 elephants living in North American facilities.

Bradshaw 2007
Elephants in captivity undergo further relational trauma because they are unable to form secure attachments: lasting, consistent, pro-social relationships.
Elephants live in isolation and/or subjected to series of relational disruptions

Transfers per elephant:
Median = 3.4 per annum
Maximum = 11 per annum

Adopted from Keele 2010; Koehl 1995; Olson 2011
Elephant “management” methods in zoos and circuses are generally based on domination and abuse, e.g. use of ankus and other methods of control.
Insecure Attachment

Relationship: Domination, control, and abuse

Leading to:
• Stress dysregulation
• Depression/hyper-aggression
• Asociality
• Other trauma related psychological disorders
Epidemic Post-traumatic Stress Disorder (PTSD) and Complex PTSD: Elephants conform to PTSD Diagnosis

*APA Diagnostic and Statistical Manual of Mental Disorders, 2002*

1. Exposure of self or witness to others to death or threat of death
2. Experiences flashbacks.
3. Avoidance of stimuli associated with the trauma, including:
   - Avoiding, activities, people, places, and thoughts that have possible association to the trauma.
   - Inability to recall an important aspect of the traumatic event.
   - Detachment
4. Symptoms that were not present prior to the traumatic event.
   - Insomnia
   - Hyper-aggression
   - Hyper-vigilance/hyper-arousal
   - Abnormal startle response

Herman 1992; Bradshaw et al 2005; Bradshaw & Schore 2007; Bradshaw 2009;
Case Study 1: Zoo

- Located in the United States
- Protected contact method used
- Capture creates multiple trauma

Caregiver/Keeper Relational style: Insecure Attachment
<table>
<thead>
<tr>
<th>Elephant</th>
<th>E1</th>
<th>E2</th>
<th>E3</th>
<th>E4</th>
<th>E5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental Context</td>
<td>Wild/Captive, Unstable</td>
<td>Wild/Captive, Unstable</td>
<td>Wild/Captive, Unstable</td>
<td>Wild/Captive, Unstable</td>
<td>Captive-born and reared</td>
</tr>
<tr>
<td>Early Socialization</td>
<td></td>
<td>Mother-offspring/ Family/Kinship group</td>
<td></td>
<td></td>
<td>Mother and human caregivers</td>
</tr>
<tr>
<td>Juvenile Socialization</td>
<td>Cull orphan before adolescent socialization</td>
<td></td>
<td>Captured before adolescent socialization</td>
<td></td>
<td>Lives with other elephants, but are in separate stalls at night</td>
</tr>
<tr>
<td>Preferred Adult Socialization</td>
<td>Conspecific; Primary human caregiver</td>
<td>Conspecific; Caregivers who are familiar.</td>
<td>Conspecific; All human caregivers</td>
<td>Conspecific (not to adult males); aggressive toward new and female caregivers</td>
<td>NA</td>
</tr>
<tr>
<td>Issues/behavioral Disorders</td>
<td>Insecure, non-aggressive, sometimes fearful</td>
<td>Can be hyper-aggressive</td>
<td>Can be hyper-aggressive</td>
<td>Insecure, aggressive, sometimes fearful</td>
<td>Non-aggressive, able to regulate stress</td>
</tr>
<tr>
<td>Socialization Preferences</td>
<td>Prefers conspecifics; can socialize with humans</td>
<td></td>
<td></td>
<td>Socializes poorly conspecifically and does not like all humans.</td>
<td>Socializes adequately both conspecifically and with humans</td>
</tr>
</tbody>
</table>

Adopted from Bradshaw et al 2009
Case Study 2: Sanctuary

- Located in Kenya
- Free-ranging elephant society structure and processes emulated
- Typically single trauma event (orphaning)

Caregiver Relational style: (Collective interdependent)
Secure Attachment

Bradshaw 2004; Bradshaw 2009
## Post-Trauma Attachment Style: Secure

<table>
<thead>
<tr>
<th>Elephant</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
<th>L7</th>
<th>L8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental Context</td>
<td>Wild/ free-ranging conspecific</td>
<td>Partial wild/ free-ranging conspecific with some human contact</td>
<td>Constant human care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early Socialization</td>
<td>Mother-offspring/ Family/Kinship group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juvenile Socialization</td>
<td>Conspecific, roams in family groups with other ex-orphans</td>
<td>Well-adjusted, capable of handling change and stress</td>
<td>Not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issues/behavioral Disorders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Moderate well-adjusted, capable of handling most change and stress</td>
</tr>
<tr>
<td>Social Preference</td>
<td>Prefers conspecifics, but readily socializes with both humans and elephants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Socializes with other elephants but remains with primary human caregiver due to age</td>
</tr>
<tr>
<td>Current Status</td>
<td>Well-adjusted; matriarch to a herd of ex-orphans; gave birth to a calf</td>
<td>Well-adjusted; part of a herd of older orphans; allomother to her matriarch’s calf</td>
<td>Well-adjusted; part of a herd of older orphans with some human contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Still under human care due to age.</td>
</tr>
</tbody>
</table>

Adopted from Bradshaw et al 2009
Conclusions
Elephants in captivity are subjected to multiple relational disruptions that correlate with diminished health and multiple psychological disorders.
Non-sanctuary Attachment Style

Insecure attachment undermines well-being and exacerbates trauma
Because stress and trauma transmit across generations, captive breeding under these conditions predicted to perpetuate psychological dysfunction and other trauma-related ailments including immune compromise and disease susceptibility.

Meaney 2001; Bradshaw & Schore 2007; Bradshaw 2009; Bradshaw & Engebretson 2012
Captive breeding is contraindicated under these conditions

Meaney 2001; Bradshaw & Schore 2007; Bradshaw 2009; Bradshaw & Engebretson 2012