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TREATMENT
OF ANIMALS

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Lawrence S. Bacow
President
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Dear President Bacow, Drs. Daley and Corning, and Ms. Santos-Diaz:

Good morning. I'm writing as a neuroscientist and on behalf of People for the Ethical Treatment of Animals (PETA) regarding a series of maternal and sensory deprivation experiments being performed on infant rhesus macaques at a Harvard Medical School (HMS) laboratory. After reviewing the publications from this laboratory, I'm deeply concerned that the harm caused to the animals far outweighs any potential benefits to human or animal health—and I ask that approval to carry out these experiments be revoked.

The experiments in question, conducted by investigator Margaret Livingstone, involve removing infant monkeys from their mothers at birth and subjecting them to various sensory deprivation procedures, including binocular deprivation and monocular deprivation. In addition, the faces of individuals seen by the infants are obscured from their vision. In some experiments, newborn monkeys' eyes are sutured closed for their entire first year of life. In other experiments, monkeys are denied the opportunity to view the faces of conspecifics or even the laboratory workers feeding them.¹ In fact, these laboratory workers were required to wear welding masks during their limited interactions with the baby monkeys. Monkeys in this laboratory are subjected to multiple major life surgeries so that head posts can be affixed to their skulls² or eye coils³ and/or multiple intracranial electrode arrays can be implanted.⁴ For multiple experiments, their heads are immobilized using helmets, chin straps, and bite bars,⁵ and in some experiments the monkeys are killed and dissected.

Entities:

- PETA Asia
- PETA India
- PETA France
- PETA Australia
- PETA Germany
- PETA Switzerland
- PETA Netherlands
- PETA Foundation (U.K.)

It's well established that infant monkeys deprived of their mothers, whether they are raised by surrogates, by lab staff, or in peer groups, experience both immediate and long-term effects from this deprivation. Monkeys separated from their mothers exhibit excessive fearfulness and/or aggression,⁶ produce excess stress hormones,⁷ display abnormal reproductive behavior, and frequently rank at the bottom of the social dominance hierarchy.⁸ Maternally deprived macaques are more likely to engage in self-injurious behavior,⁹ exhibit motor stereotypies indicative of frustration and stress,¹⁰ experience abnormal sleep patterns,¹¹ and demonstrate increased startle and stress responses to threatening stimuli¹² and are more susceptible to infection.¹³

Additionally, maternal deprivation affects brain structure and function. Monkeys "hand-reared" in a laboratory exhibit altered serotonin pathway function^{14,15} and cerebral blood flow¹⁶ as well as altered levels of brain-derived neurotrophic factor and nerve growth factor critical for normal brain function.¹⁷ This method also has long-term effects on brain morphology,¹⁸ including in the cortical regions that Livingstone is studying.¹⁹ These substantive brain alterations not only reflect the atypical development that these animals are being forced to experience but also influence the generalizability of Livingstone's own neurological data. As the purported purpose of these experiments is to selectively study the impact of visual deprivation on these animals' cortical and visual processing development, ignoring the various neurological effects of the additional maternal deprivation is problematic and potentially misleading.

It's concerning that members of the HMS Institutional Animal Care and Use Committee (IACUC) approved these procedures, given the full extent of the harm being inflicted on these animals.

Publications from this laboratory don't provide any detailed descriptions of the various surgical procedures performed on the monkeys, nor do they indicate what, if any, type of pre-surgical analgesia, anesthesia, or post-operative pain medication or monitoring are provided.^{20,21,22,23} These same publications also omit whether these animals were deprived of food or water to ensure their cooperation on juice-rewarded behavior tests. Also absent is any detailed information about the specific "hand-rearing" procedures these monkeys experience, including whether a surrogate is provided, what types of enrichment these monkeys may or may not receive, or what socialization with peers they are allowed or disallowed. In fact, papers coming out of this laboratory are so lacking any methodological detail that it's hard not to assume some sort of deliberate obfuscation is taking place. Regardless, the experimenters in this laboratory do not appear interested in sharing the methodological details or full impact of their experiments with the scientific community.

It's deeply concerning that experiments that induce irreversible harm on infant primates are permitted at Harvard Medical School at all, let alone allowed to occur for several decades. We ask that members of the HMS IACUC re-review the procedures being followed in this laboratory and urge you to revoke permissions from Livingstone for her experimental protocols involving primate infants, given the short- and long-term damage that they are causing these monkeys and the probable deleterious effect on research data.

I would be happy to meet with you to discuss this important matter further.

Sincerely,



Katherine V. Roe, Ph.D.

Chief

Science Advancement and Outreach

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