TOUCHING THE TIGER

INTRODUCTION

IMPORTANT NOTE:

The material in this website is based on research by Dr. James W. Prescott, PhD. It is rather technical at times, but is well worth reading. No animals have ever been harmed or subjected to stress at Tiger Touch. Our research is strictly on ways to make the lives of the cats happier, healthier, and longer. If you have questions, Email me at magescribe@comcast.net and I will do my best to reply quickly. -- John Burkitt, Educational Director

SAVING THE GREEN JEWEL:

The Earth is home to millions of different animals and plants. From orbit, astronauts can see the lush green color of life covering the land masses. The world looks much the same from space as it did a thousand years ago, but the view from down here is a lot less hopeful. Many of the Earth's living things, from the tiny to the tremendous, are threatened with extinction by man. Loss of forests and pollution of the environment are destroying the natural habitats they need to survive.

As natural habitats continue to shrink and the impact of human activity has continued to grow, attempts have been made to prevent animals from becoming extinct through keeping and raising them in captivity. But to be successful, there has to be more in it for the animals than food, water, and a place to live. This paper is about what extra steps we need to do take to save big cats like the tiger, lion, and jaguar, though it also be about many other types of animals such as the chimpanzee or wolf.

THERE ARE NO QUICK FIXES:

Some people have tried to help big cats survive by replacing a bit of their natural habitat with a specially built "unnatural habitats" in Zoos around the world. It was hoped that cats could breed there in safety and rebuild endangered species' populations to a less threatening state. Their success has been very limited, even though food, water, and a safe place to live had been provided. Because zoos cannot provide all the elements found in a species natural habitat, they interfere with successful pairing and raising of young. Very often, the newborn animal has to be taken from its natural mother to protect it from harm. Zoo mothers are likely to give very poor parental care or none at all. This sort of breeding, which emphasizes the physical needs and neglects the emotional needs, is no way to save a species. In the following pages we'll look at some of what we've learned about parental care, then we will recommend some ways to improve the life of animals raised in captivity and help endangered species survive.

THE PRICE OF ISOLATION

NATURE HATES A VACUUM:

The worst type of maternal care is none at all. In primate laboratories where newborns are separated from their mothers at birth, there is minimal physical body contact with human attendants or other young primates. The young are left to feed themselves from a bottle. These terrible conditions result in many kinds of emotional and social problems such as depression and toe sucking as infants, self-mutilation during adolescence and adulthood, and adults who are excessively violent, with poor pairing and maternal skills. Such mother-deprived infants grow up unable to give normal maternal care to their own infants. Life threatening abuse and neglect of offspring often make it impossible to leave young with abnormal mothers.

ISOLATION AND "S-SAD SYNDROME":

Infants raised in isolation suffer from social deprivation and sensory deprivation. Work done in the early 1960s claimed that social deprivation--the lack of companionship--was responsible for the majority of damage to isolated infants. Dr. James W. Prescott, whose work made this article possible, strongly disagreed. He knew of a great many laboratory observations that pointed to the other conclusion: a lack of touch and movement during infancy results disturbed social, pairing, and parental behaviors in adulthood. Prescott referred to this pattern of illness as S-SAD Syndrome (short for "Somato - Sensory Affectional Deprivation Syndrome").

The most important work that supports Dr. Prescott's ideas was done by Dr. William Mason and Dr. Gershon Berkson. These researchers raided infant monkeys in single cages but within sight and hearing of other infant monkeys. These monkeys could socialize with other animals in the room in every way but body touch and movement. If social deprivation had been the major problem with isolated infants, they should have been free from S-SAD symptoms. This was not the case.

They raised another group of monkeys with a surrogate mother to cling to, similar to having a teddy bear as a companion. It didn't look very motherly--a Clorox bottle with a fur rug wrapped around it, with a pie pan bolted on the bottom of the bottle that the infant monkey could sit on. The monkeys clung to it they way they would have held to their mother (right). Half of the surrogate mothers were made so they could not be moved about. The other half were made so they could be swung from side to side, or raised and lowered by levers. So half of the monkeys were moved about by their surrogate mothers, and the other half were not.

As you might imagine, the monkeys raised with the swinging surrogates had been exposed to touch and movement and did not develop S-SAD Syndrome. The monkeys raised with the non-moving surrogates had some of the behavioral disorders such as thumb sucking, but did not develop the full S-SAD Syndrome because they had something soft to touch and cuddle.

THE POWER OF TOUCH

TOUCH AND THE BRAIN:

Dr. Prescott needed to find out why movement and touch were so important to infant development, so he looked at the three areas of the brain that were affected the most by touch and movement. The Cerebellum, Limbic System, and Prefrontal Cortex all show clear signs of abnormality in S-SAD victims.

THE CEREBELLUM:

The cerebellum (ser-uh-BELL-um) is a mysterious part of the brain. For a long time it had been known to control sophisticated movement skills such as walking, hitting a baseball or riding a bicycle. It does this by coordinating many different parts of the brain that are involved with sensation and movement, making complex tasks child's play. In a way it is the coach that makes everything involved in movement behave like team players. But it is also deeply tied in to the other parts of the brain where emotions are processed. In the past few years, research has shown the cerebellum to have a coordinating effect on conscious thoughts and emotions. These two peach-sized lobes look--and act--like a miniature brain. In fact the Latin word "cerebellum" actually means "small brain."

THE LIMBIC SYSTEM:

The limbic system (LIMM-bik) is a deep part of the brain where the deep emotions are centered. It is called a "system" because it is actually made up of a number of different centers controlling pleasure, rage, fear, and other emotional reactions. Gentle touch stimulates the pleasure centers in normal individuals. Eating sweets and learning new items of interest also has a mild stimulating effect--a person can actually "hunger" for knowledge. Hopefully this page reaches your limbic system rather than your sleep centers!

THE PREFRONTAL CORTEX:

The prefrontal cortex (PRE-front-al COR-tex) is the most highly evolved part of the brain. It is "working memory" that allows you to keep several different things on your mind at once. If you kept repeating a phone number of a wrecker service to yourself while running to the nearest payphone, feeling in your pocket for change for the phone, and remembering the name of the intersection where your car was stalled, that activity would take place in the prefrontal cortex. This area of the brain, sometimes called the "Frontal Lobes," is very important in good social skills, allowing you to have good relationships with others. It is responsible for shaping your emotions, organizing thoughts, controlling impulses, your attention span, and problem solving. Damage to this area causes a severe mental illness called schizophrenia.

SEROTONIN IS THE KEY:

While he was working at the National Institutes of Health, Dr. Prescott sponsored a number of studies to show the effects of isolation rearing on the brain of monkeys that could explain violent and abnormal behavior patterns. Laboratory work finally proved that the limbic system and cerebellum were damaged by isolation rearing.

It had been known for some time that unusually low levels of a brain-produced chemical called serotonin (serr-oh-TONE-in) would cause violent or suicidal behavior. Early researchers blamed the low levels of serotonin on inheritance, for lack of a better explanation. Yet serotonin is produced in parts of the brain now known to be damaged by isolation rearing. Dr. Prescott came to the firm conclusion that isolation, not inheritance, set the stage for emotional illness.

THE FINAL PIECE OF THE PUZZLE:

The final step on the path to emotional maturity does not involve brain chemistry. Parents serve as a role model to their offspring. When infants are put together without an adult, a practice called, "peer rearing," they do not master the social skills of adulthood. They do not know good pairing and parenting behavior. Peer rearing has been used in many breeding facilities as a substitute for adult care giving, but it results in animals that over-react to stress and do not make good parents.

A NOTE OF HOPE

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The novelist Robert O'Brien once said, "You can unlock any door if you only have the key." While the number of stimuli a young cat raised in the wild would encounter would be immense, the number that are vital to the cat's health and wellbeing are relatively few, and it is possible for a human foster parent to give a tiger, lion, or bobcat a good start in life. If the composition of formula milk supplies the necessary nutrients for proper brain chemistry development, and touch and movement are applied with as much attention to quantity as there is to quality, the lives of captive newborns can not only be saved but made far better.

RECOMMENDATIONS:

With these precautions in mind, the following recommendations are suggested for the human rearing of large Felines where they are separated from their mothers at birth and hand-reared.

1. Maintain extended body contact between the mother and her newborn until the infant can move about on its own or begins to explore its environment. Newborn and infant large cats should be carried in a sling, pouch or knapsack continuously on the body of the human surrogate mother including co-sleeping with it at night. Every effort should be made to have as much skin to skin contact so that the smell and taste of the surrogate mothers body (through licking behaviors of the newborn cat) are also encoded in the developing brain of the newborn cat.

2. Since large felines are born in litters (large groups of offspring), it is important to provide-- as much as possible--something close to the normal social group experience of litter mates so that the basic sensations of being with its own species become encoded in the developing brain of the growing cub. This kind of learning may be necessary for later adult socialization with members of its own species. Human hand-rearing of newborn large felines should include at least two cubs who are carried together in the same pouch with the human surrogate mother.

3. The lack of the mother's natural milk can prevent normal physiological health, brain development and behavior. Every effort must be made to obtain natural milk from a domestic animal that could serve as a best-substitute for large feline milk. Goat milk is one possibility, which can be fortified with nutrients specific to large feline milk.

4. During early development, the infants should be exposed to adult members of their own species. If this is not done, the young may not develop the social skills necessary for proper pairing behavior. If hand-reared adults cannot breed successfully, raising large cats in captivity to preserve endangered species would not be a workable solution.

5. Work needs to be done in this area. Several on-going test projects with different species of large cat should be started right away, since so many species are threatened with extinction. Special attention must be given to how we choose human workers who would make successful mother surrogates.

6. Special consideration should be given to optimizing the development of the brain serotonin system in large feline newborn/cubs by supplementing their biological formula milk with tryptophan. Similar considerations should be given to optimizing their brain dopamine and oxytocin systems which are important in pleasure bonding and pairing behaviors.

GLOSSARY OF TERMS

Maternal Care - Care given to an infant by its mother or someone acting as a caretaker.

Surrogate Mother - Anything that takes on some of the role of a real mother. The cloth-covered "mother" in Mason and Berkson's experiments was a source of warmth and softness which could hold a baby bottle.

S-SAD Syndrome - Problems caused by a lack of touch and movement during infancy. They range from fear of social interaction and odd, repeating behaviors like head-banging, to violent outbursts and the inability to pair or to raise offspring. The whole name is "Somato - Sensory Affectional Deprivation Syndrome" which literally means "symptoms caused by a lack of loving touch."

Cerebellum - Part of the brain responsible for coordination, making other parts work together for good physical and emotional control.

Limbic System - The center of emotion. When directly stimulated with low electric current, it causes unexplained outbursts of rage, joy, laughter, or sadness, depending on where it is touched.

Prefrontal Cortex (or Frontal Lobes) - The brain's working memory. The center of concentration, problem solving, critical thinking and thinking ahead.

Schizophrenia - A mental illness resulting in disorganized thinking, sometimes accompanied by hallucinations. People with schizophrenia often suffer terrifying symptoms such as hearing internal voices not heard by others, or believing that other people are reading their minds, controlling their thoughts, or plotting to harm them.

Serotonin - A brain chemical responsible for a feeling of well-being, needed in order to properly experience pleasure.

Dopamine - A brain chemical found in the Prefrontal Cortex which is necessary for normal thinking and emotional states.

Oxytocin - A neurotransmitter necessary for experiencing certain kinds of pleasure.