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Final Project Summary

For my final project, I researched the lion's mane and how it developed as a sexually selected trait. I wanted to discover why, of all the big cats, do only lions have manes? Does it have to do with the climate they live in? Is it due to female choice, male competition, or both? Once I figured out the topic I wanted to delve into, I decided to make a chapbook out of the information I gathered. A chapbook is a small, self-published collection of work, composed usually of either short stories or poems. Since I focus primarily on poetry, I decided to go with this course of action when creating the collection.

From my findings I discovered that the male lions' mane serves as an indicator to female lions about the fitness of potential mates. Mane color, length, and thickness portray the testosterone levels, diet, overall health, and even age of males. From an experiment done by researchers at the University of Minnesota it was concluded that darker and lengthier manes occur when a lion is in better health and has higher testosterone levels. The researches then placed dummy lions with varying mane lengths and colors in proximity to single lions in the wild in order to see which mane types females were more attracted to. They found that overall females were more attracted to males with the darkest manes, although length and fullness had little effect on their preference [4].

There is no doubt that the mane is a sexually selected trait as it only occurs in males and has some drawbacks that determine it was not naturally selected. Male lions suffer from higher body temperatures, decreased appetite, and lower sperm counts in warmer climates [6]. However, males with fuller and darker manes tend to have larger harems and thus more offspring than those with lesser manes.

I decided to use various methods while creating my poems, though all of them relate directly to one source from the bibliography. Each poem is written using the exact language from one specific source, which is indicated by the Roman numeral before its title. The first poem in the collection, *The Process*, has the roman numerals I and II before its title, meaning that all of the language used was taken directly from the first two sources in my annotated bibliography. For this poem I decided to go with a collage, meaning that I picked out whole words and phrases and from the sources and mixed them together into the final piece. The first source for this poem was *Sexual Selection: Harem Size and the Variance in Male Reproductive Success* by Michael J. Wade and Stephen M. Shuster and which discusses male lions' reproductive fitness and how this correlates to the size of their harem, if they have one. The other source was a National Geographic article titled *Female Lions Prefer Dark-Maned Males, Study Find* which gives a brief overview of an experiment done by researches from the University of Minnesota. *The Climate*, *The Lion's Mane*, and *Fully Maned* were also collaged from different sources.

The second poem in the collection, *Sexual Temperature*, was drawn from an article called *Sexual Selection, Temperature, and the Lion's Mane* which was written by the researchers from the University of Minnesota, Peyton M. West and Craig Packer. This poem, instead of being collaged, was done in the style of erasure. This means that all of the language used is in the same order it appeared in the original article, only with things taken out between the phrases. The pieces under *A Bearded Beast* were also done in this fashion.

However, the final poem in the collection, *The Lioness*, was not drawn directly from any of the sources but instead is drawn from what I have learned from all of them collectively and elements we have discussed over the course of the semester.

I attempted to make my poems sonically interesting while retaining some of the information that articles gave me. At times, however, I found myself focusing more on the way the words worked together to make interesting statements than necessarily sticking to the proper conclusions drawn from research.

Annotated Bibliography

1. Wade, Michael J., and Stephen M. Shuster. "Sexual Selection: Harem Size and the Variance in Male Reproductive Success." *The American Naturalist* 164.4 (2004): E83-89. Print.

Wade and Shuster examine male lions' reproductive fitness in terms of sexual selection as opposed to those of natural selection. Although it does not directly discuss the lion's mane and its role in sexual selection, it discusses other factors that relate to sexual selection as well as reproductive competition. Lastly, it examines harem size, which is directly related to the male lion's reproductive fitness. I partially used words from this article when composing *The Process*.

2. "Female Lions Prefer Dark-Maned Males, Study Finds." National Geographic. National Geographic Society, n.d. Web. 20 Nov. 2012.

<http://news.nationalgeographic.com/news/2002/08/0822_020822_TVlion.html>.

This article reflects on and summarizes the experiments done by West and Packer did using dummy lions to test female preference towards manes and male avoidance. The language was adopted in the poem *The Process*.

3. West, Peyton M., and Craig Packer. "Sexual Selection, Temperature, and the Lion's Mane." *SCIENCE* 297 (2002): 1339-343. Print.

West and Packer examines the lion's mane as a sexually selected trait and what drawbacks that might have. It is found that male lions suffer in warmer climates due to these manes. The language was used to create the poem entitled *Sexual Temperature*.

4. West, Peyton M. "The Lion's Mane." *American Scientist* 93 (2005): 226-35. Print

This article is a primary source detailing the experiments done by the researches at the University of Minnesota which resulted in the now accepted conclusion that mane color and length reflect the health and status of a male lion, and thus females look for mates on these factors. The experiments found that darker and lengthier manes are indicators that the individual has higher testosterone levels, is at a prime age, and has overall good health. I used the language of this article to compose the poem entitled *Sexual Temperature*.

5. Blanchard, Caroline. "Of Lion Manes and Human Beards: Some Unusual Effects of the Interaction between Aggression and Sociality." *Frontiers in Behavioral Neuroscience* 3 (2010). Print.

Blanchard examines whether manes developed because of male competition or female choice. The article gives detailed information of the structure of lion social systems and compares it to that of the Asian and Tsavo maneless lions. Its language was adopted to write *The Bearded Beast*.

6. Patterson, B. D., R. W. Kays, S. M. Kasiki, and V. M. Sebestyan. "DEVELOPMENTAL EFFECTS OF CLIMATE ON THE LION'S MANE (PANTHERA LEO)." *Journal of Mammalogy* 87.2 (2006): 193-200. Print.

This article details an experiment done by a group of researches on captive lions. They studied the mane variations and its relationship to family history, climate, and reproductive fitness. Its language was used to produce the poem *The Climate*.

7. Kays, Roland W., and Bruce D. Patterson. "Mane Variation in African Lions and Its Social Correlates." *Canadian Journal of Zoology* 80.3 (2002): 471-78. Print.

Kays and Patterson give a detailed look at the physical aspects of lions' manes and how they vary. It compares that of the common African lion with the Tsavo lion which has significantly less mane hair. It was used for the piece *Fully Maned*.

THE MEANING OF THE MANE



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I & II. The Process

The iconic lion, a mystery because every offspring has a mean male fitness. Strong sexual selection and female-biased sex ratios want the darkest, most decadent manes. The color, the length, the harem size is a woolen scarf around the neck. West loaded dummies and planted furry mannequins clumped around mating males. Females aggregated around long-haired brunettes of a single season. Some individuals express good or bad genes. Some individuals die. Harem-holding males cluster across the dinner bell of the African Savannah. Females produce more daughters, an indicator of sexual selection's potential strength.

III. Sexual Temperature

The mane of the African lion is a sexually selected change

Influencing the mane are

puberty and darkness, hot climates

Sensitive, ambient males kill

unweaned cubs and evict opportunities

synchronized by the takeover, and occasionally the coalition.

The claws and teeth, lethal in female aggression can freely weaken testosterone.

Castration prevents mane growth and better overall nutrition.

Manes were darker in cooler males but females prefer superior males. Belly size and the average temperature model stimulate sexual females, they generally became less cautious.

Mammals grow longer & denser

The coat color by the woodlands

The lake planes have the darkest manes

Male lions more sensitive between females

General thermoregulatory costs are thicker

Blonde hairs: poor fighting ability and short term health .

An entire pride capture giraffe, Cape buffalo and

these species are well nourished.

Records reveal females mostly mated with the darkest coalition.

IV. The Lion's Mane

Royalty, a shield, quality with consequences

The most admired, striking, best studied

Charles Darwin knew almost nothing.

Females want ornamented, dark mane

large mane, social-carnivores, frequent

lethal, other parts of the body

A lion's knowledge: compete intensely

for mates, monopolize females, sire

more offspring.

25% of cub deaths, infanticidal newcomers

help feed the pride.

Large and slow, Charles Darwin proposed that

male lions had manes. A buffalo, a big pride

death among cubs for females. In sexual-selection

terms, hair is related to the underlying

condition.

Growth & pigmentation are testosterone,

aggression & might.

mane-as-a-shield is impossible

V. A Bearded Beast

A. Lions are a story. First, the cat is a truly separate species as it is freely its wild (*Panthera leo*). While the cave paintings had no manes modern lions appear to have a single rose in Africa, and spread through lion cats 15,000 years ago. Food abundance factors in the cave lion living with the unusual characteristic (the male lion's mane). The classic relationship between fighting the injured animal and protecting the group from attack is a particularly important consideration for love. The male cohorts on each side of the battle of nature documentaries fighting videos, continuity, in nonenclosed natural habitats were certainly selected for dramatic impact. The animals' actual behaviors were fleeing. Even the pursuer, a young cub, attacked and ultimately killed an adult male, reminiscent of defensive domestic cats.

- B. This male lions' manes has recently been challenged by finding females measuring dummy lions with characteristics of Kenya delineated by the mane; face; trunk; and legs. They found that wounds were excluding the females and each body part are easy to reconcile with three direct observations of lions killing lions: bites to the nape of the neck, a bite to the lower back, severing the vertebral column. A fourth example, the victim still alive, multiple deep wounds, including a broken sagittal crest, and a penetrating wound to the chest, tatters of his mane scattered. These examples indicate that bites to the head and nape are especially lethal.
- C. Adult male with one half of his beard removed.

VI. The Climate

mammalian ecology individuals and
plasticity, history body weight fecundity
environmentally induced, manes are costly
heat exchange attract females
 intrasexual success
in northern Tanzania
free-living essentially, elevations higher

 manes with written instructions

American lions housing hybrid lives
in Des Moines, in Dallas, in St. Louis
in Oakland in life-histories depicted online
RESULTS in Kenya say the only carnivore
is striking in sexual dimorphism and in January
only 2 were younger than seven, manes larger
than typical. Subtle differences seldom maned
but in captivity the ribs and belly
 stronger wooly coats of lions
social VS ecological cost in sex roles, in systems
in density, in feeding the female lion dependent
on androgens
 attraction, sex, temperature

VII. Fully Maned

Forehead
Shoulder
Upper neck
Throat
Elbow tuft
Belly fur
Dorsal crest
Sideburns
Chest tuft

The Lioness

She wants sexy sons so she asks for
 sexy dads. She got jealous
 of the lady over there

 A single lady lion's got an awful lot to fight
She's looking for a man with a great head of hair:
 long, mysterious, and dark.

Not long ago all her babies died

 A single lady lion's got an awful lot to fight
And her lover too, was taken from the night
She'd picked the wrong man, but she'll pick different now.
She's looking for a man with a wreath around his neck
 carry up round his head
and down across his chest and all around his back
hair, the darkest black

 A single lady lion is always one to share
 with her sisters or a cousin, too
they keep it proud in the pride and if a man deserves their time
he better be willing to fight
cause a lady gets to choose
so a man gets to lose
if his mane doesn't look quite right