

Flynn Cowie

Advised by Dr. Lynn

(Bruggen, 2010)



Coping Through Unpredictability:

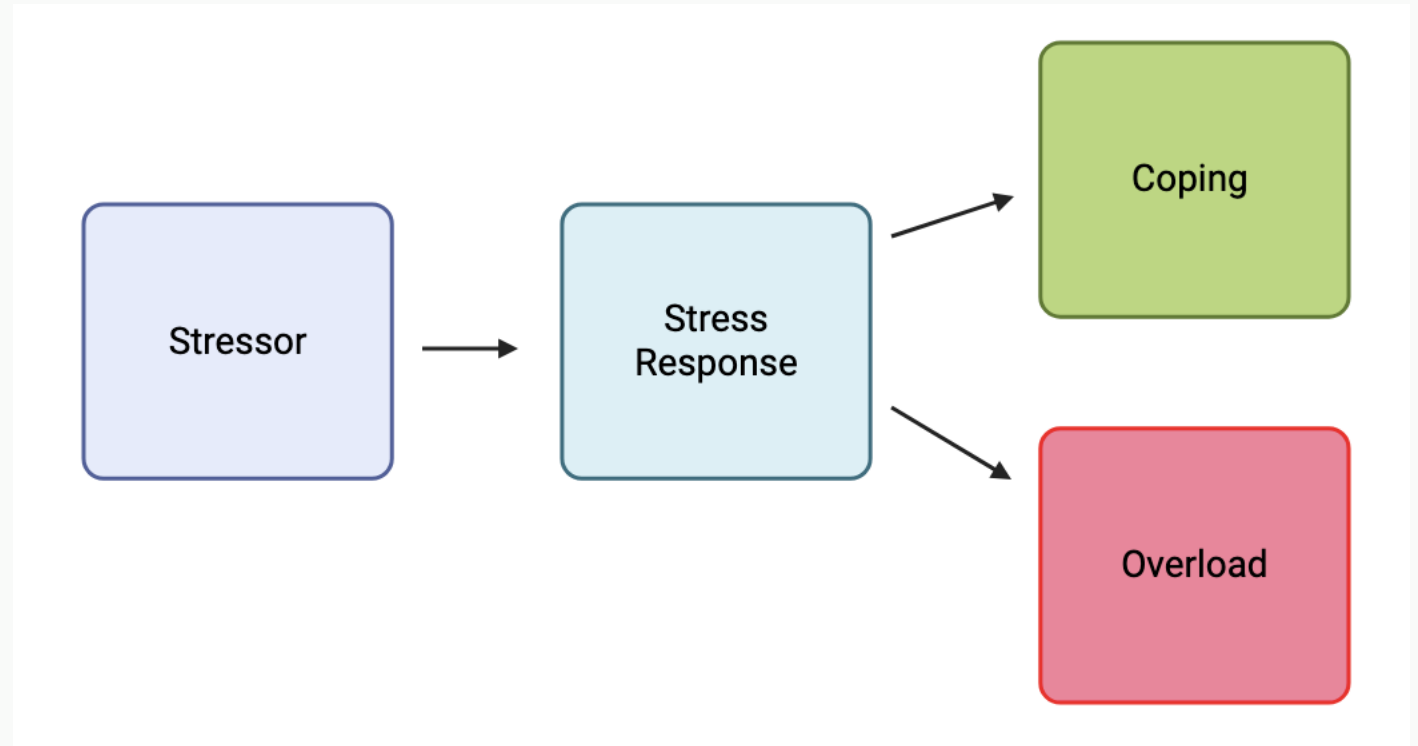
Physiological,
Morphological, and
Behavioral
Consequences of
Unpredictable Feeding
in Zebra Finches
(*Taeniopygia guttata*)

MYTH

~~STRESS IS~~
~~FLAT OUT~~
~~HARMFUL.~~

The stress response helps organisms cope with and overcome challenges

Repeated stress can become costly



COPING AND OVERLOAD

COPING

- Challenge is managed

Costs may occur; however,
core functions are preserved

OVERLOAD

- Cost exceeds
capacity to cope

Core functions begin to
break down

THE STRESS RESPONSE PREPARES FOR CHALLENGE

- Cortisol
- Corticosterone

Presence of
Stressor



(Nemti, 2011)

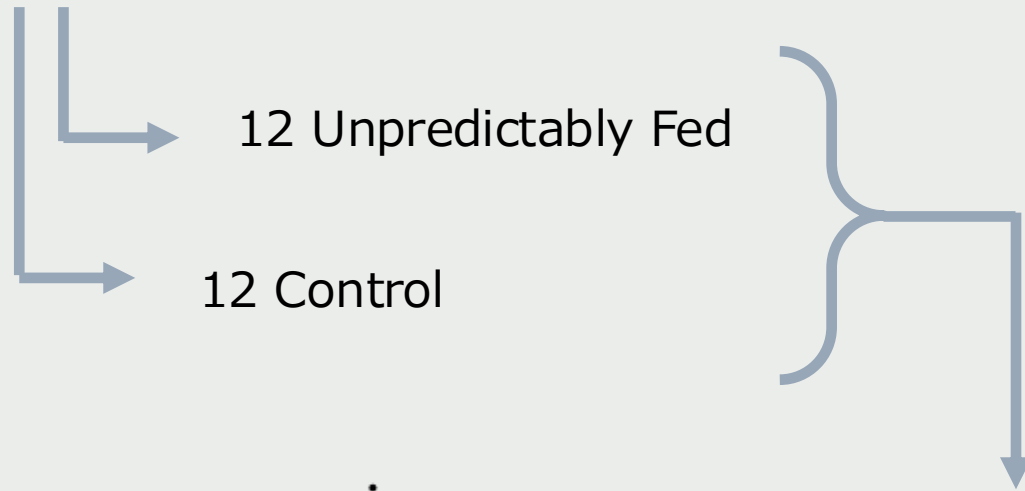
CONCEPTUAL APPLICATION

Overload or
Coping: Examples
of Response to
Food Uncertainty
in Zebra Finch

RESEARCH QUESTION

*Under moderate,
unpredictable feeding, will
zebra finches cope or move
toward overload?*

24 male finches



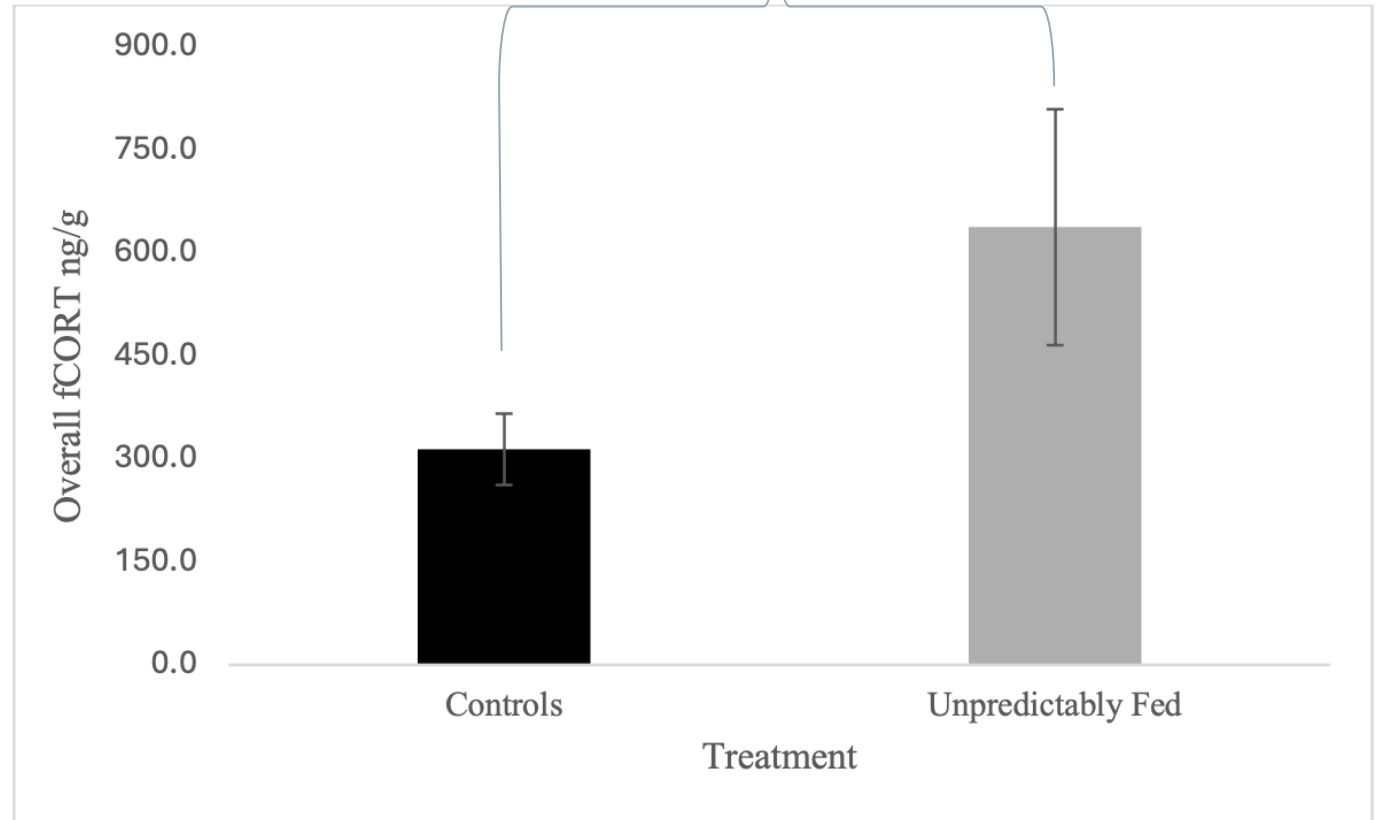
Outcomes Measured

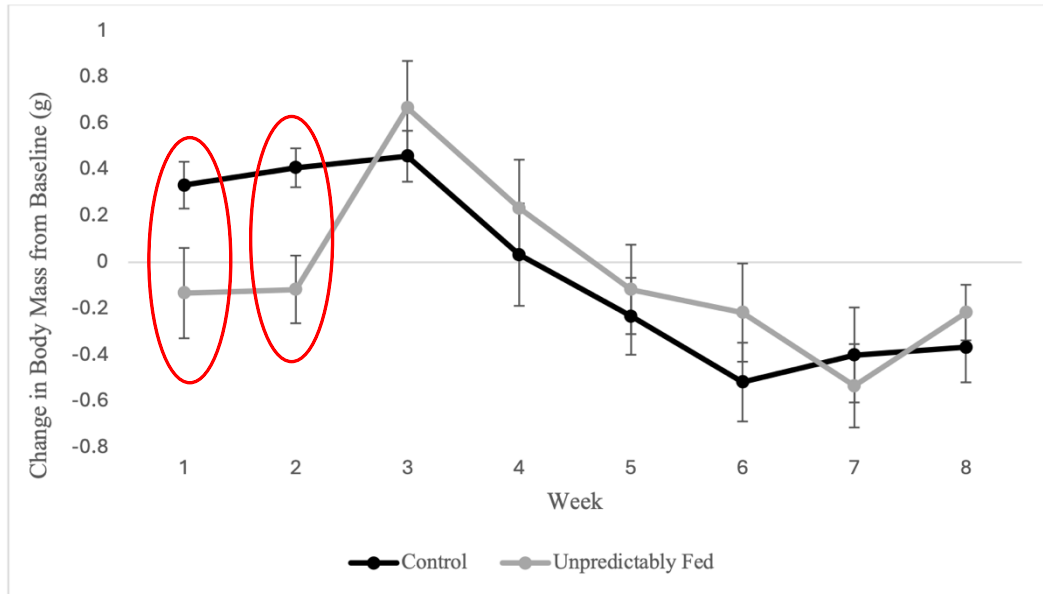
1. Body mass
2. Feather Growth
3. Feather CORT
4. Courtship Behaviors

STUDY DESIGN

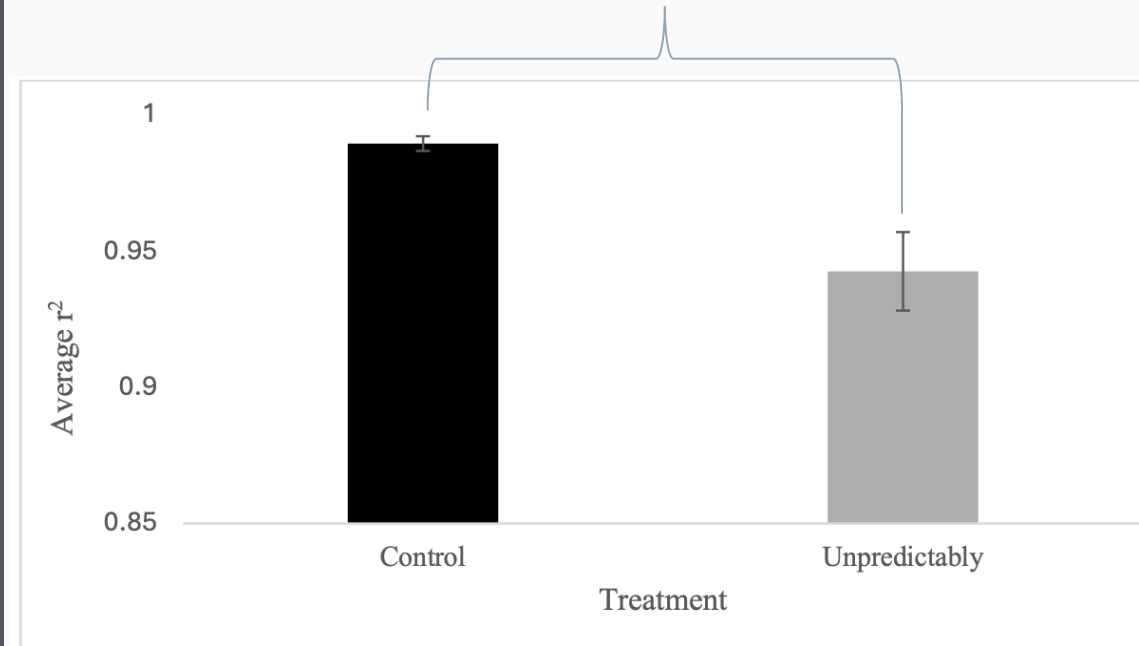
**THE STRESS
RESPONSE
WAS
ACTIVATED**

* Significant Difference *





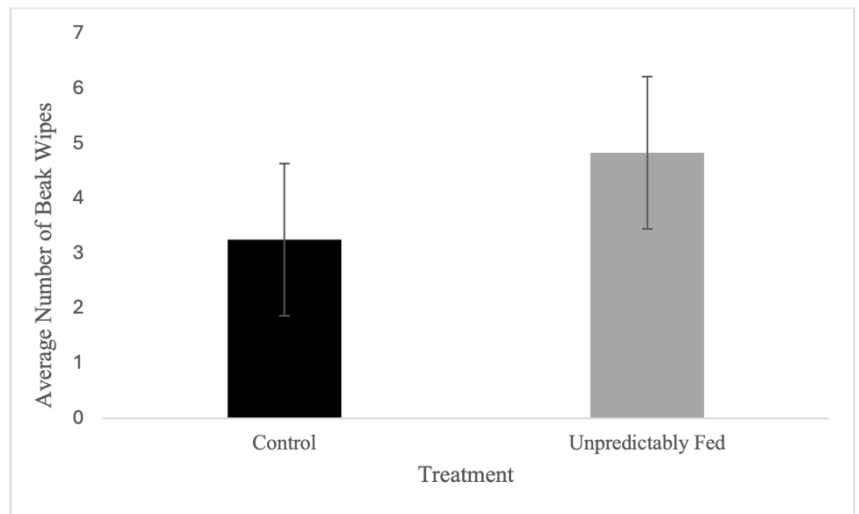
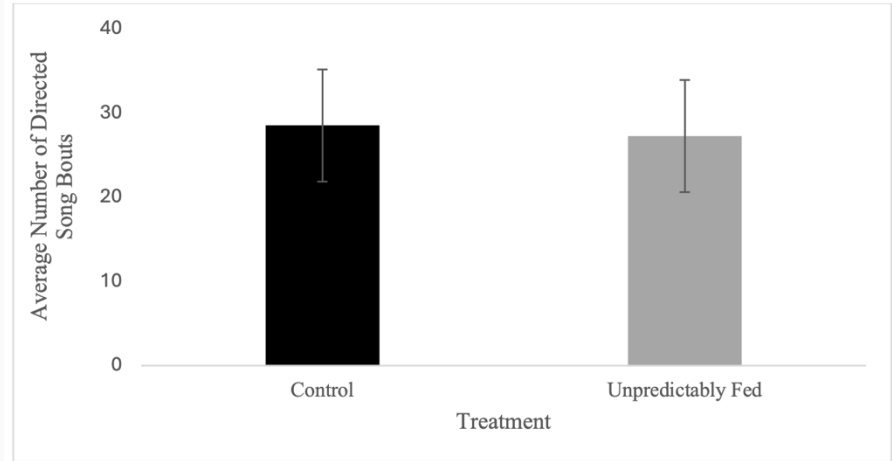
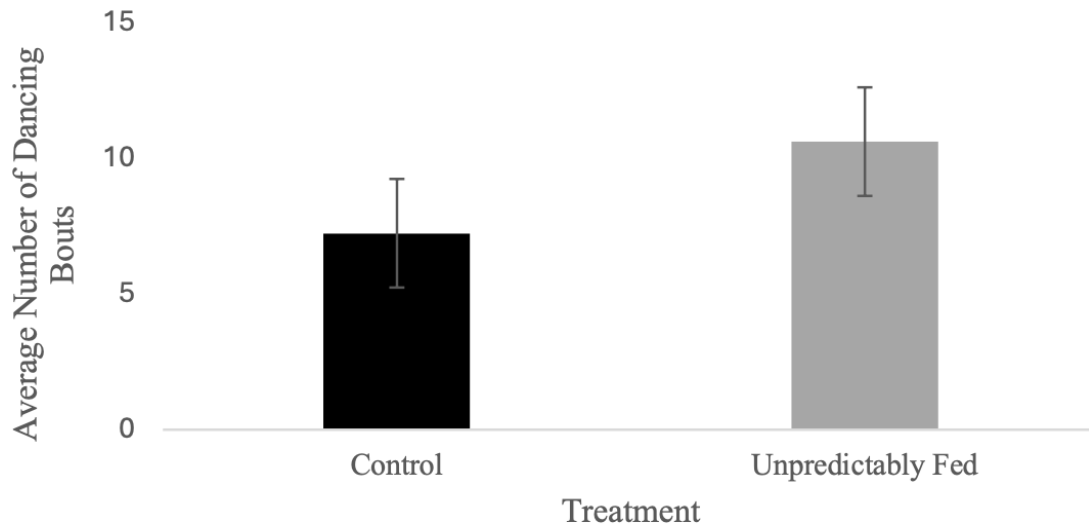
* Significant Difference *



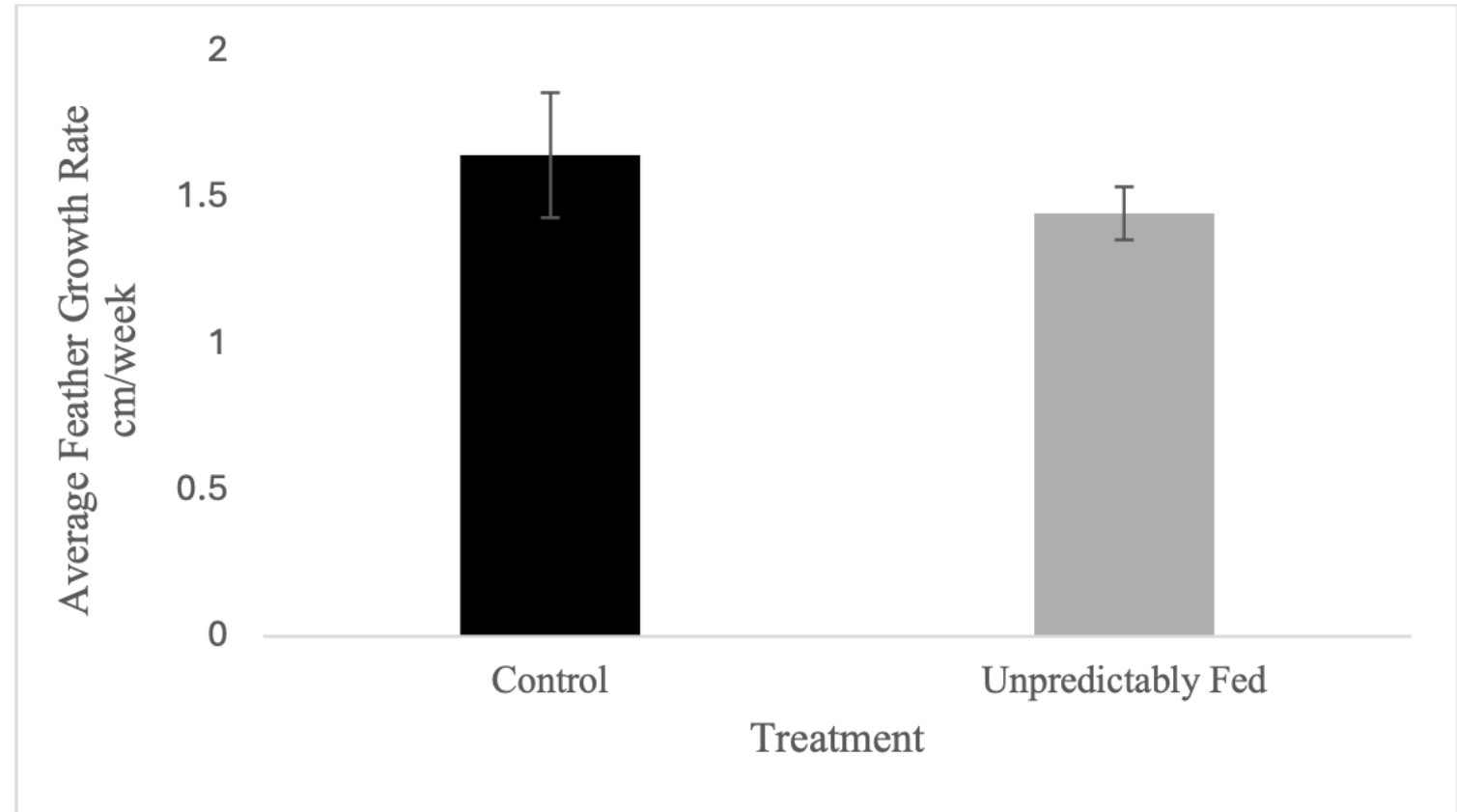
THE COST OF UNPREDICTABILITY

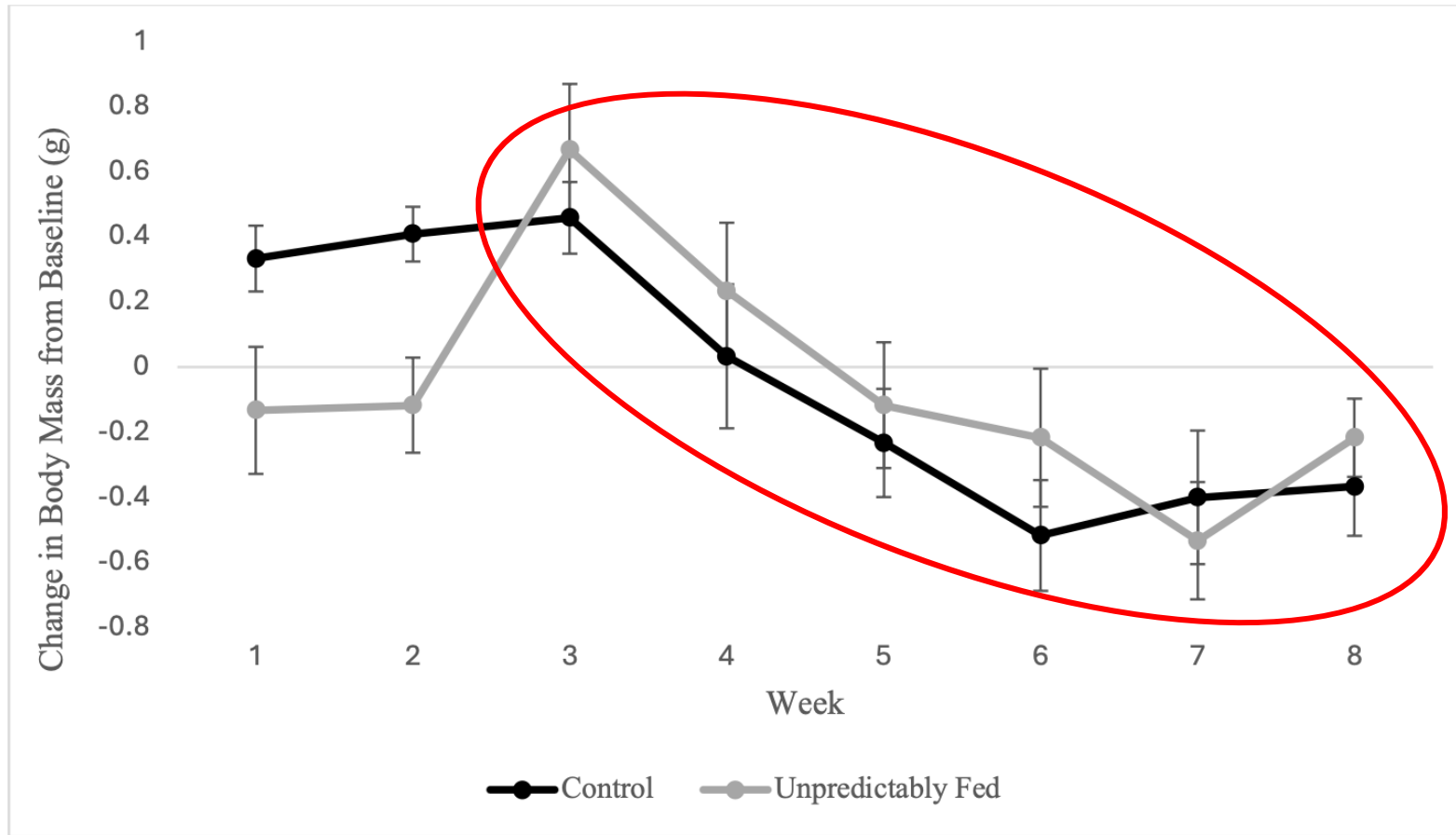
**CORE FUNCTIONS
WERE PRESERVED**

COURTSHIP BEHAVIORS WERE PRESERVED



**RATE OF
FEATHER
GROWTH
WAS
PRESERVED**





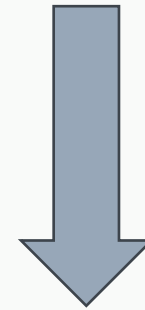
**BODY MASS
WAS
PRESERVED**

KEY



TAKEAWAY

Moderate unpredictability elicited a stress response and was costly, but not necessarily damaging...



Finches **COPED with Unpredictability**

Thank You!

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