

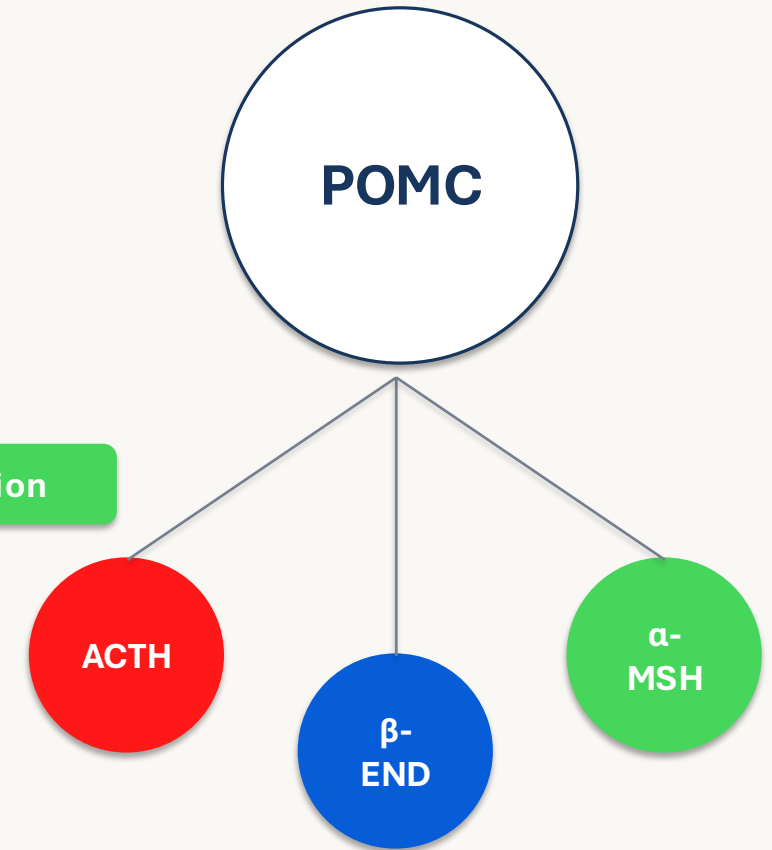
The Architecture of Affect

Threat, Opportunity, and Repair
Regulated by Three Neuropeptides of POMC

ACTH · Mobilization

β -endorphin · Conservation

α -MSH · Recalibration



Introduction to Meta-strophe Theory · Part One

Mitchell Slutzky, PhD
NPSA Barcelona · June 2026

If affect is central, what architecture regulates it?

The congress question becomes functional: how affect coordinates regulation across brain and body.

Functional architecture

What structure makes affect regulatory across substrates?

Brain–body communication

How is organismic state broadcast, compared, and updated?

Coordinated response

How are regulatory actions selected, fueled, and revised?

Clinical implications

How does this change diagnosis, treatment, and prognosis?

Solms and Friston place affect at the foundation of consciousness and press the question of functional organization.

This talk proposes one biological candidate: POMC-derived neuropeptides.

The pattern is fractal, occurring at all levels.

POMC is the vertebrate regulator.

But it is just one instantiation of a more fundamental process.

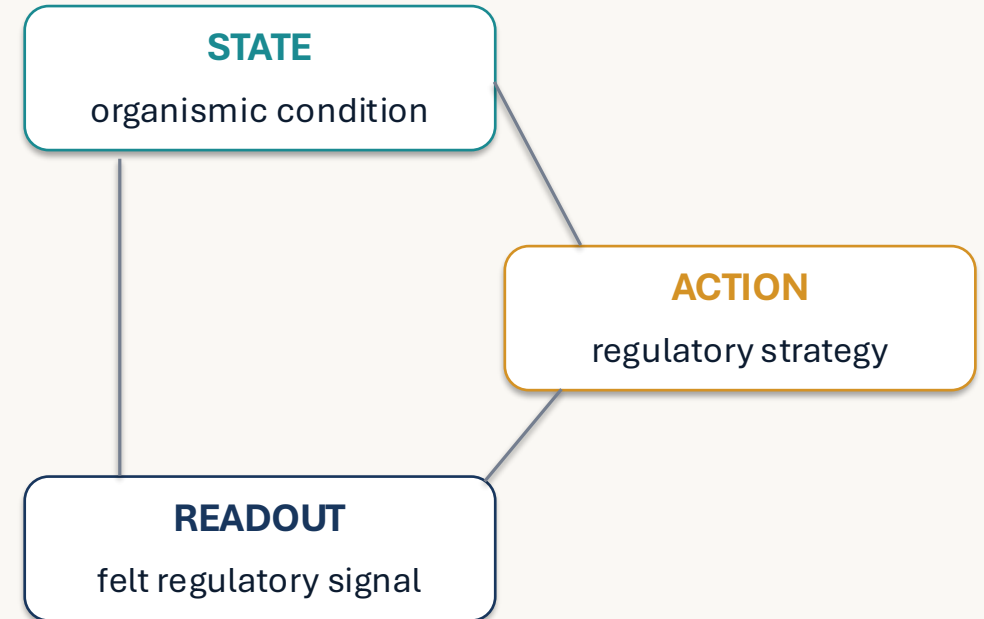
THE MISSING PIECES

Affect is the felt face of regulation

Not just a feeling added to physiology — a readout of regulatory action.

The organism has to register:

- 1 what state it is in
- 2 what response that state can support
- 3 whether supply can meet demand

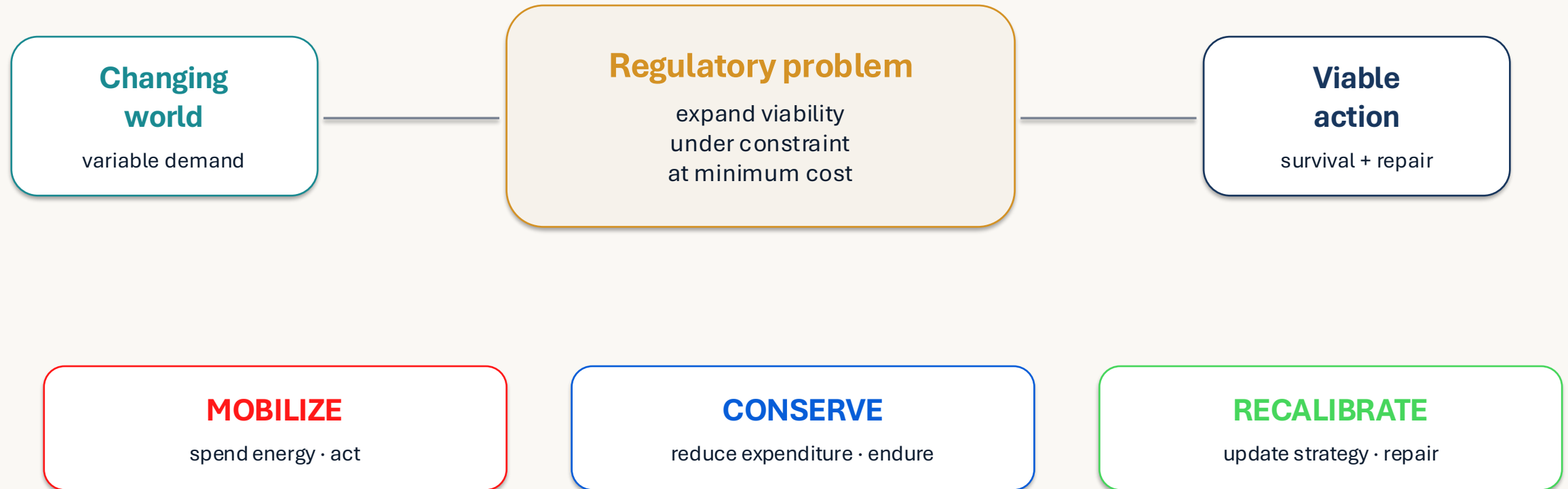


Affect closes the loop.

THE PROBLEM AS OLD AS LIFE

Maintain viability under constraint, at minimum cost

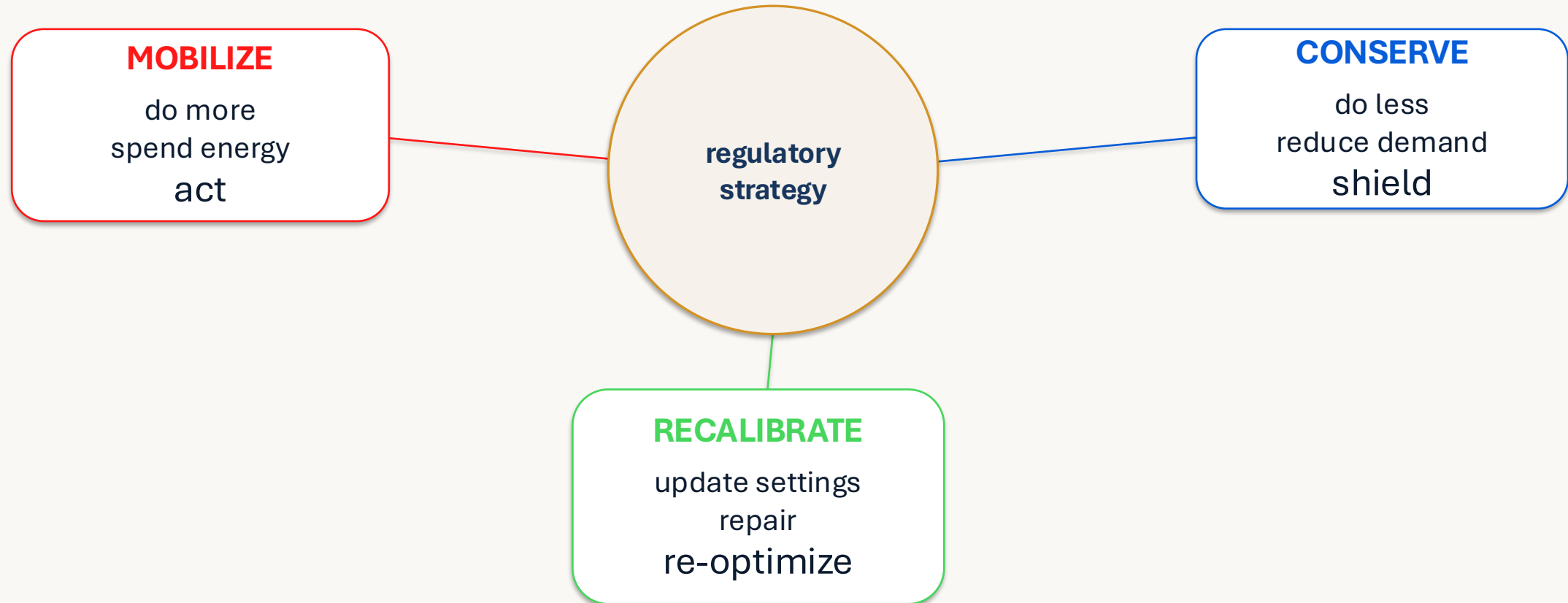
Before psychology or cognition, living systems face a thermoeconomic problem.



Every living system must choose how to spend, preserve, or reallocate scarce regulatory resources.

Mobilize, conserve, recalibrate

Recalibration is the costly strategy that allows adaptation to changed conditions rather than automated alternation.

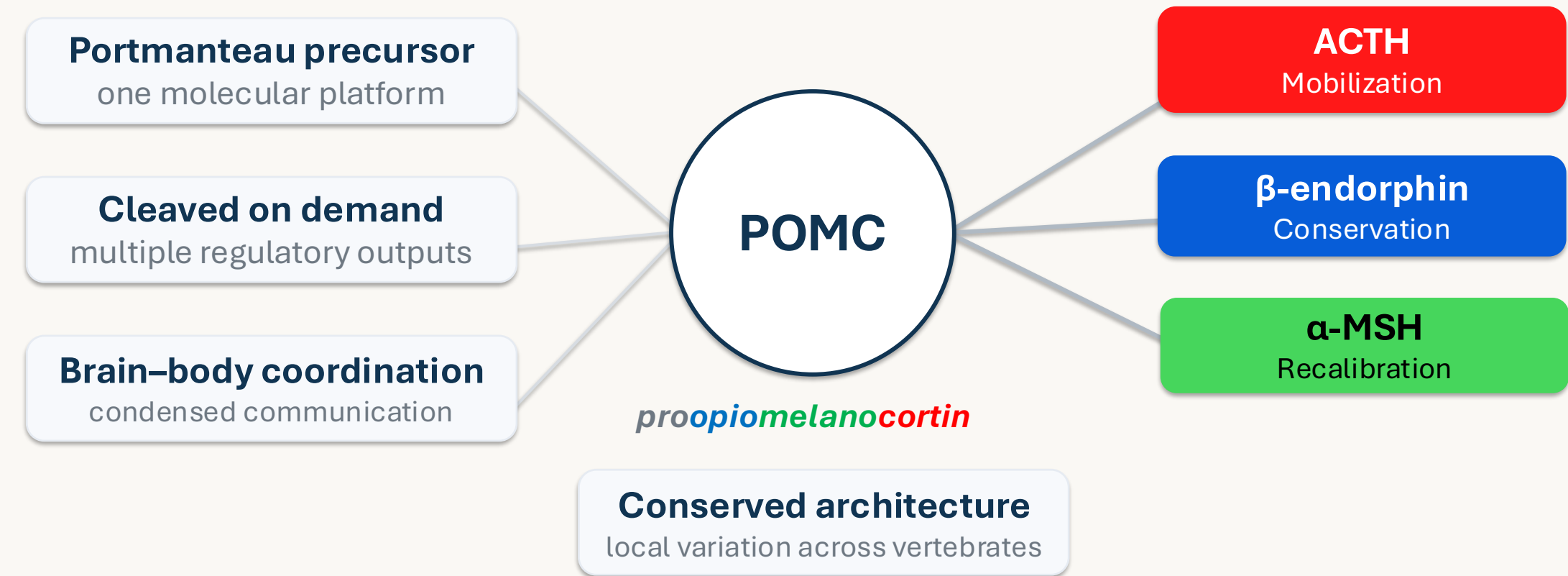


**Threats or predictable patterns trigger immediate automated responses: mobilize/conserve.
Genuine adaptation is slower but permits the third move: recalibration.**

THE BIOLOGICAL CANDIDATE

POMC is ancient, not cortical

A precursor molecule cleaved into regulatory peptides that coordinate brain and body.



**The candidate claim is not cortical localization.
It is a molecular-affective grammar capable of broadcasting state across the organism.**

One precursor, three regulatory economies



Three major regulators; three budgets; one condensed communication: affect state.

META-STROPHE THEORY

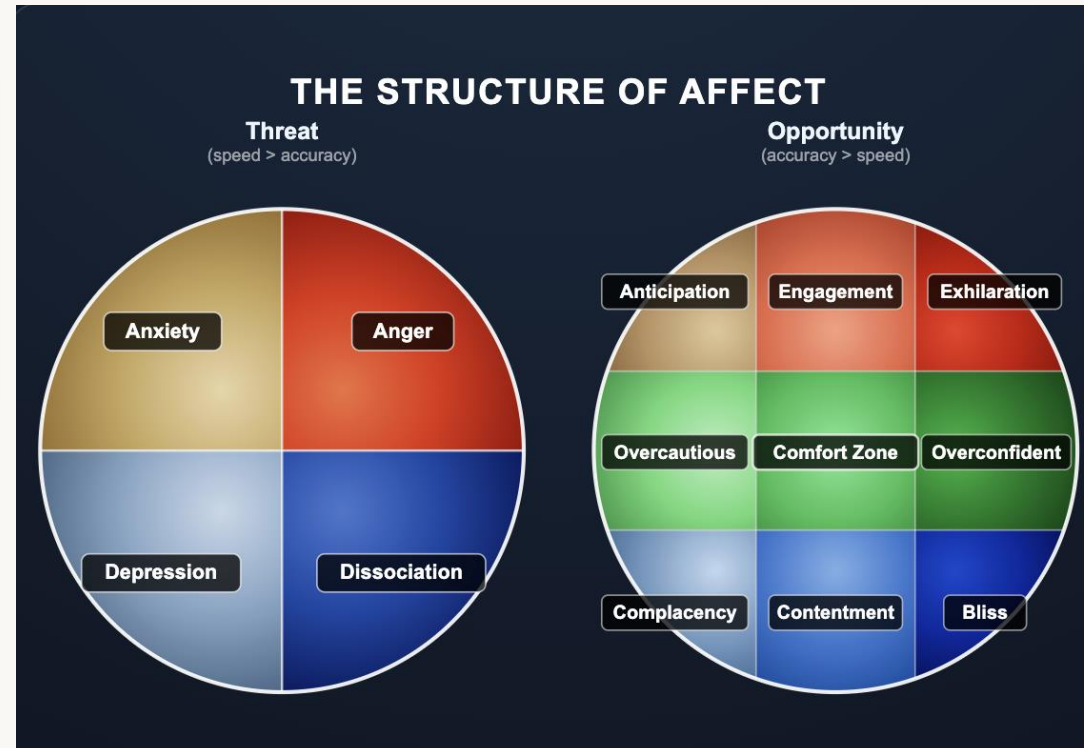
The geometry that emerges is a sphere

Catastrophe is the turn downward; Meta-strophe is the turn beyond.

Part One

the structure of affect

The larger theory asks
how organisms turn
beyond failed
regulation.



Meta-strophe

meta + strophē
“the turn beyond”

A map of the space
through which the turn
occurs.

Entering the regulatory map

If the live/local sphere works, this is where the deck gives way to the model.

Sphere sequence

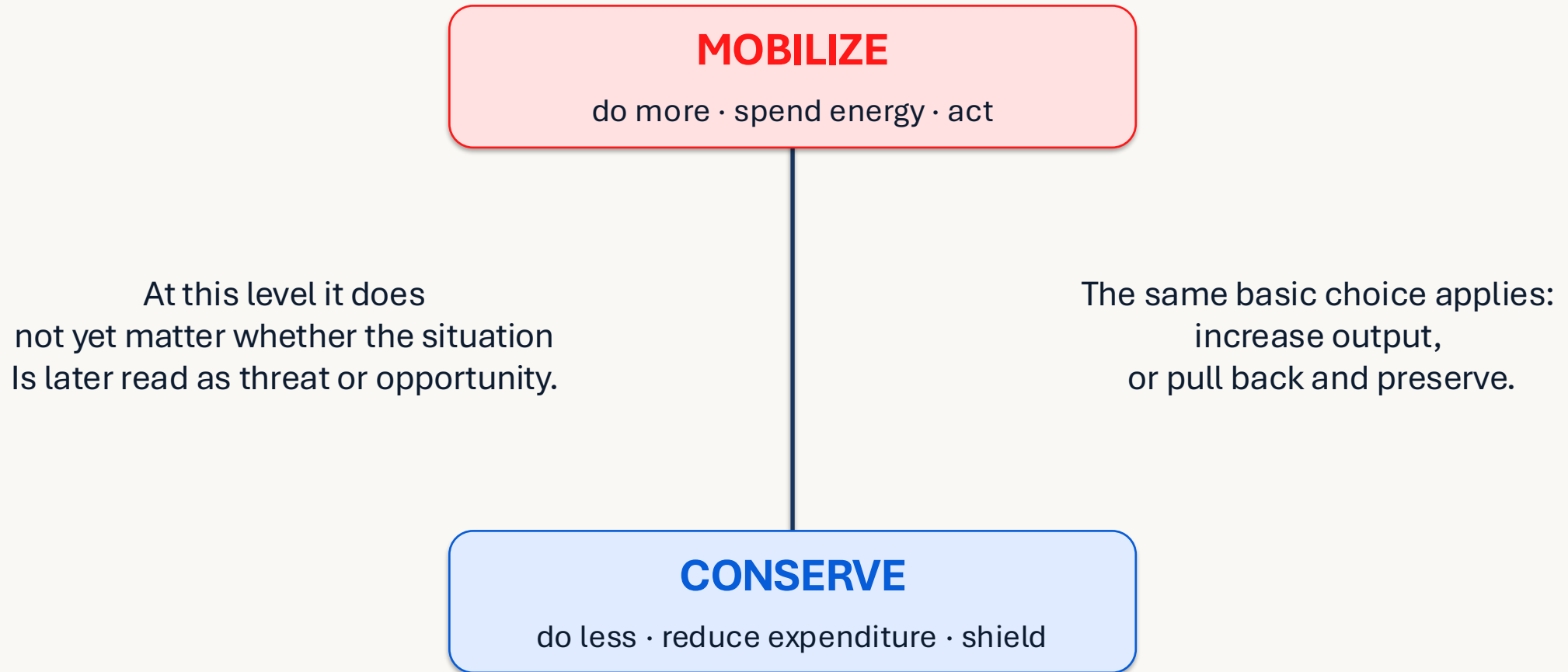
1. Demand axis
2. Threat face: demand $\times$ supply state
3. Four threat affects
4. Opportunity face: α -MSH and matched center
5. Clinical trajectories

Backup slides follow if AV fails.

BUILDING THE MAP

First: a single axis — demand

Before affect labels, the system must choose a regulatory strategy.



BUILDING THE MAP

Add supply: demand requires fuel

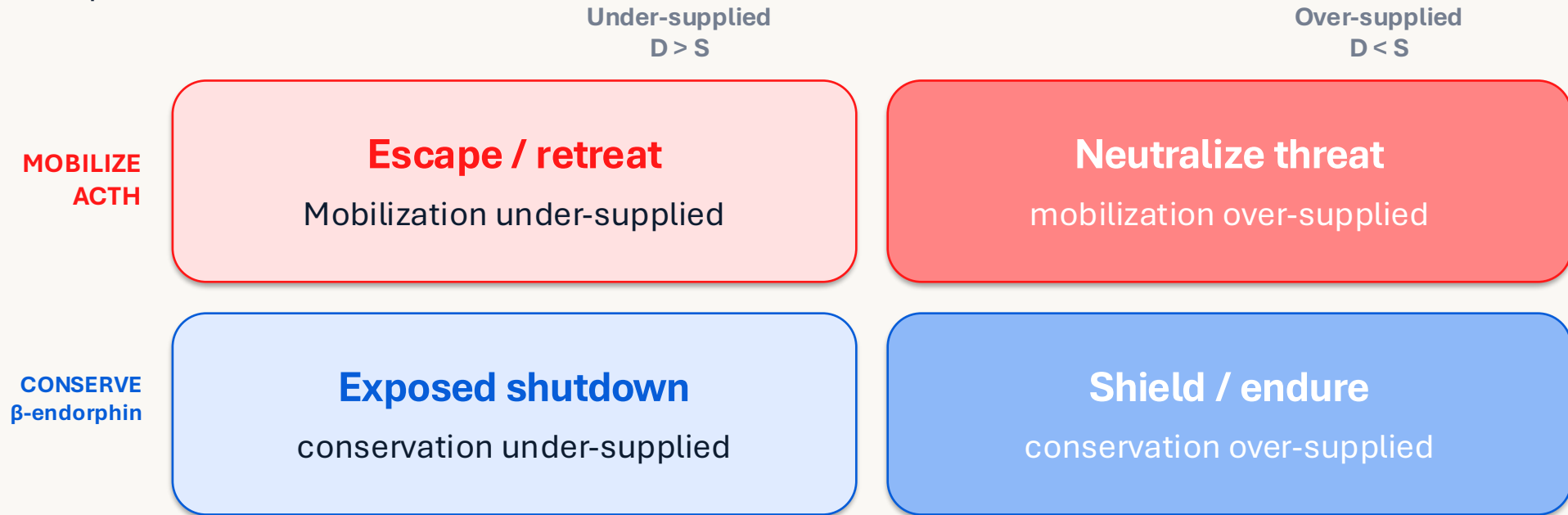
Supply means available regulatory fuel relative to the strategy the organism is trying to use.



Under- or over-supplied means low or high relative to the demand being made of that peptide system.

Four regulatory outcomes

Threat mode is biphasic: act now or shield now.



These are not categories imposed from outside.
They are configurations produced by demand interacting with peptide-specific supply.

Threat × demand × supply produces clinical states

The four basic threat states are regulatory-fuel states.

Anxiety

STATE: mobilization under-supplied
ADDRESS: $V- \mid D_M > S_{ACTH}$
activation without capacity

Anger / attack

STATE: mobilization over-supplied
ADDRESS: $V- \mid D_M < S_{ACTH}$
surplus force for boundary defense

Depression

STATE: conservation under-supplied
ADDRESS: $V- \mid D_C > S_{\beta\text{-endorphin}}$
shutdown while exposed

Dissociation

STATE: conservation over-supplied
ADDRESS: $V- \mid D_C < S_{\beta\text{-endorphin}}$
protective shielding / analgesia

Threat = one can act under threat, or one can shield. But one cannot recalibrate.

Valence sets the available strategy set

Determined upstream — a black box for this model. Output: threat or opportunity.

THREAT

two strategies available

ACTH
Mobilize

β -endorphin
Conserve

No recalibrative middle.
Act now or shield now.

OPPORTUNITY

three strategies available

ACTH
Mobilize

α -MSH
Recalibrate

β -END
Conserve

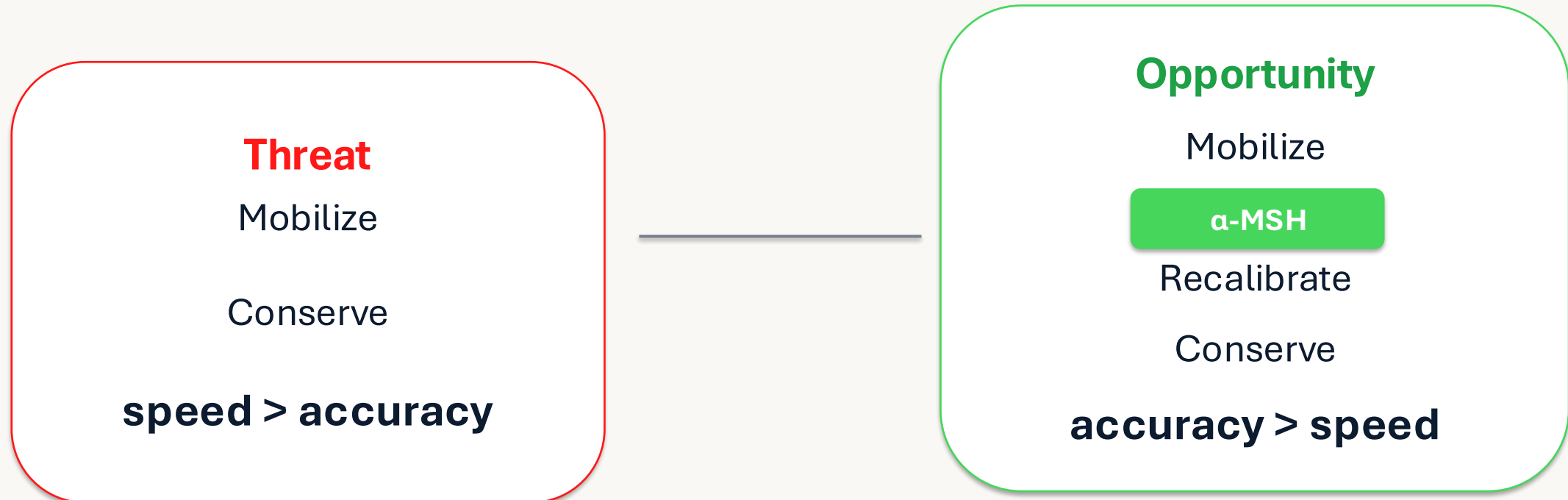
Recalibration available.
Update rather than merely react.

Same demand axis. Same supply-state logic. Different regime.

OPPORTUNITY FACE

α -MSH adds the third regime: recalibration

Opportunity does not mean “pleasant”; it means enough room to update rather than merely react.



three demands $\times$ three supply states = nine regions

α -MSH coordinates conditions under which old regulation can be revised safely.

OPPORTUNITY MAP

Comfort zone = maximum regulatory freedom

The ideal regulatory state is not affectless calm; it is flexible access to all three strategies.

	Under-supplied	Matched	Over-supplied
Mobilize / ACTH		Matched demand = supply	
Recalibrate / α-MSH	Overcautious recalibrates but won't commit	Comfort Zone accurate recalibration	Overconfident recalibrates but overshoots
Conserve / β-endorphin		Matched demand = supply	

All three fuels available
mobilize · conserve · recalibrate

Matched center
risk can be read accurately

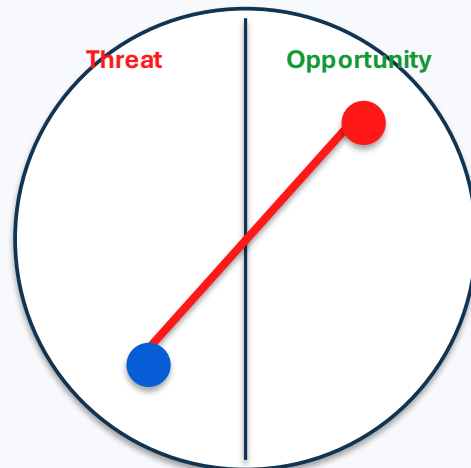
Regulatory freedom
update without collapsing into threat

CLINICAL RAMIFICATIONS

Clinical categories as trajectories

Repeated mismatches move the system through regulatory space; diagnosis describes the path, not a static box.

Bipolar disorder



Diagonal traversal

Exhilaration → depleted conservation / depression

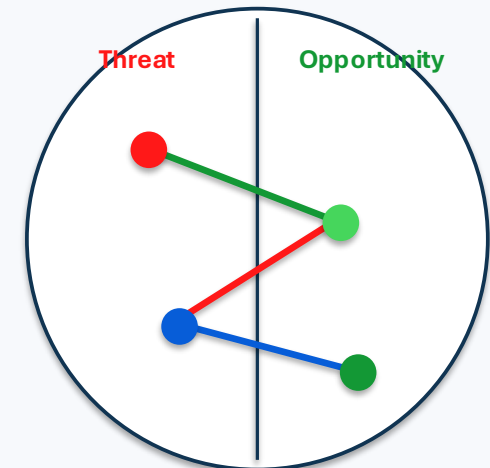
PTSD



Threat-lock

Cycling within threat; recalibration unavailable

Borderline organization



Cross-valence instability

Rapid shifts; difficulty stabilizing in matched recalibration

Treatment changes the path: reduce threat-lock, restore recalibration, and expand movement through affective space

LIVE DEMONSTRATION

RETURN TO PRESENTATION

If the live/local sphere works, this is where the deck gives way to the model.



From backup slides (if AV failed.)

EXTENSIONS AND CONVERGENCES

Four bridges, one proposed architecture

Each mapping is a bridge, not the full paper.

Freud

Pleasure Principle: biphasic discharge
Reality Principle: triphasic recalibration
Pre-Oedipal: Dyadic = Biphasic
Oedipal: Triadic = Triphasic
Nirvana Principle: zero-demand limit

Panksepp

primary emotional systems map to
regions on sphere
motivational vectors with
direction + intensity + resource signature

Polyvagal Theory

MT provides differentiated peptide-specific states
SNS = ACTH (fight diff from flight)
D-Vagal = B-end (depression diff from dissociation)
V-Vagal = α -MSH (also over or under risk-tolerant)
Accounts for positive emotions beyond safety

Friston / FEP

much overlap but separate derivation
perceptual inference: fast/cheap priors
active inference: costly updating-recalibration
MT proposes POMC as biological grammar
substrate-free functional architecture

The claim is structural convergence: prior models describe parts of a larger regulatory architecture.

PROGRAM AND FALSIFICATION

Three claims to test under pressure

If the trajectories do not fit the cases, the model should change.

- 1 Affective states are regulatory addresses:
valence, demand, and peptide-specific supply state.
- 2 Clinical categories are trajectories through the sphere,
not flat symptom clusters.
- 3 Treatment alters trajectories by restoring recalibration
and reducing threat-lock.

Parts Two and Three: viable range, recursive regulation, and consciousness.

Test this against your patients, animal models, and computational work.

I welcome feedback
Contact: mslutzky@gmail.com

Enter the sphere



meta-strophe.com

rotatable map
clickable regions
peptide references
clinical trajectories