A Clinician's Guide to the Jungle of Psychological Therapies for Pain

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The Problem

There are ***many*** psychological pain treamtents, including, among others…

The Problem

Cognitive-Behavioral Therapy, Motivational Interviewing, Acceptance and Commitment Therapy, Behavioral Treatment, Graded Exposure In Vivo, Cognitive Restructuring, Operant Treatment, Cognitive Therapy, Relaxation Training, Self-Hypnosis Training, Pain Coping Skills Training, Mindfulness Meditation Training, Biofeedback, Progressive Muscle Relaxation, Autogenic Training…

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→ *Many interventions, little cohesion*

Goal

To help clinicians understand this complexity by giving it some order

Overview

- Describe existing psychosocial pain treatments and the theories that explain their effects

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- Present an overarching conceptual framework for organizing these treatments

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- Present an overarching conceptual framework for organizing these treatments
- Discuss clinical and theoretical implications of the framework

The treatments

- Hypnosis
- Operant Treatment
- Mindfulness Meditation Training
- Cognitive Therapy
- Cognitive Behavioral Therapy (CBT)
- Acceptance-Based CBT

Hypnosis

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  - *Δ*s sensory experience (decreased pain)
  - *Δ*s cognitive content (adaptive thoughts)
  - *Δ*s cognitive processes (not bothered)
  - *Δ*s behavior (increased activity)
  - Post-hypnotic suggestions

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  - *Δ*s behavior (increased activity)
  - Post-hypnotic suggestions
- Practice

Hypnosis: Evidence

> 20 controlled trials

Review (e.g., Dillworth & Jensen, in press; Jensen & Patterson, 2005; Montgomery et al., 2001; Patterson & Jensen, 2003) conclusions consistent:

→ *Hypnosis is more effective than standard care, and as or more effective than other pain treatments, including physical therapy and medication management.*

Hypnosis: Evidence

Kirsch, Montgomery, & Sapirstein, 1995

- Meta-analysis of 18 studies comparing CBT alone to CBT+hypnosis
- Adding hypnosis enhanced treatment outcome
- Effects particularly pronounced for treatments of obesity

Hypnosis: State Theory

- Hypnotic inductions → brain state changes

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- Hypnotic inductions → brain state changes
- Hypnotic states ↑ responsivity to suggestions
- Not everyone can achieve required brain state (hypnotizability varies)
- Some people achieve state easily and without formal inductions
- The key mechanisms are physiological changes (e.g., more theta, reduction or disruption in frontal activity) that increase flexibility and neuroplasticity

Hypnosis: Sociocognitive Models

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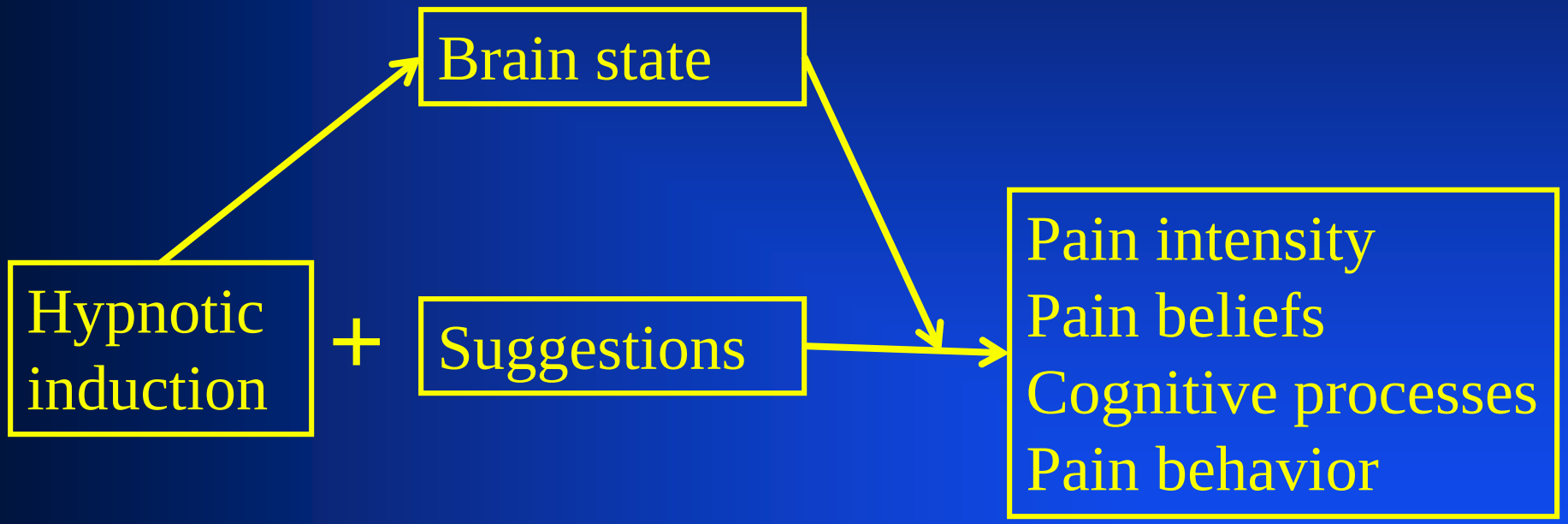
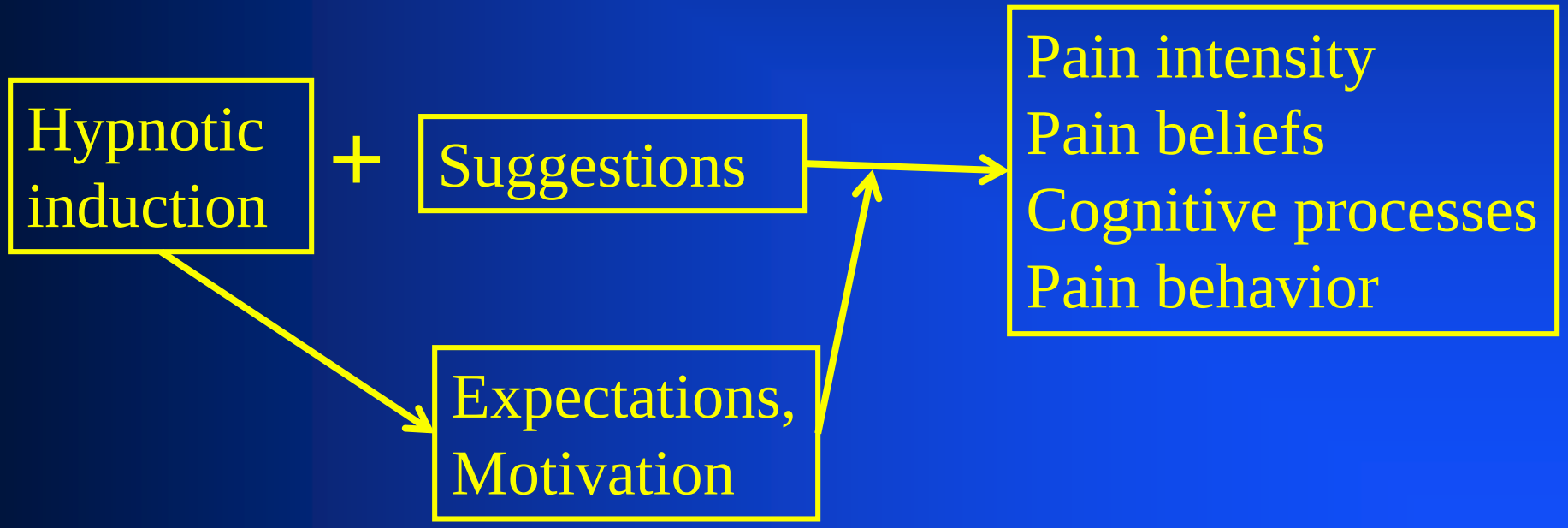
Hypnosis: Sociocognitive Models

- Hypnosis is provided in a social and cultural context
- Hypnotic rituals elicit expectations and beliefs
- Patient expectations and beliefs drive *all* behavior, including response to suggestions

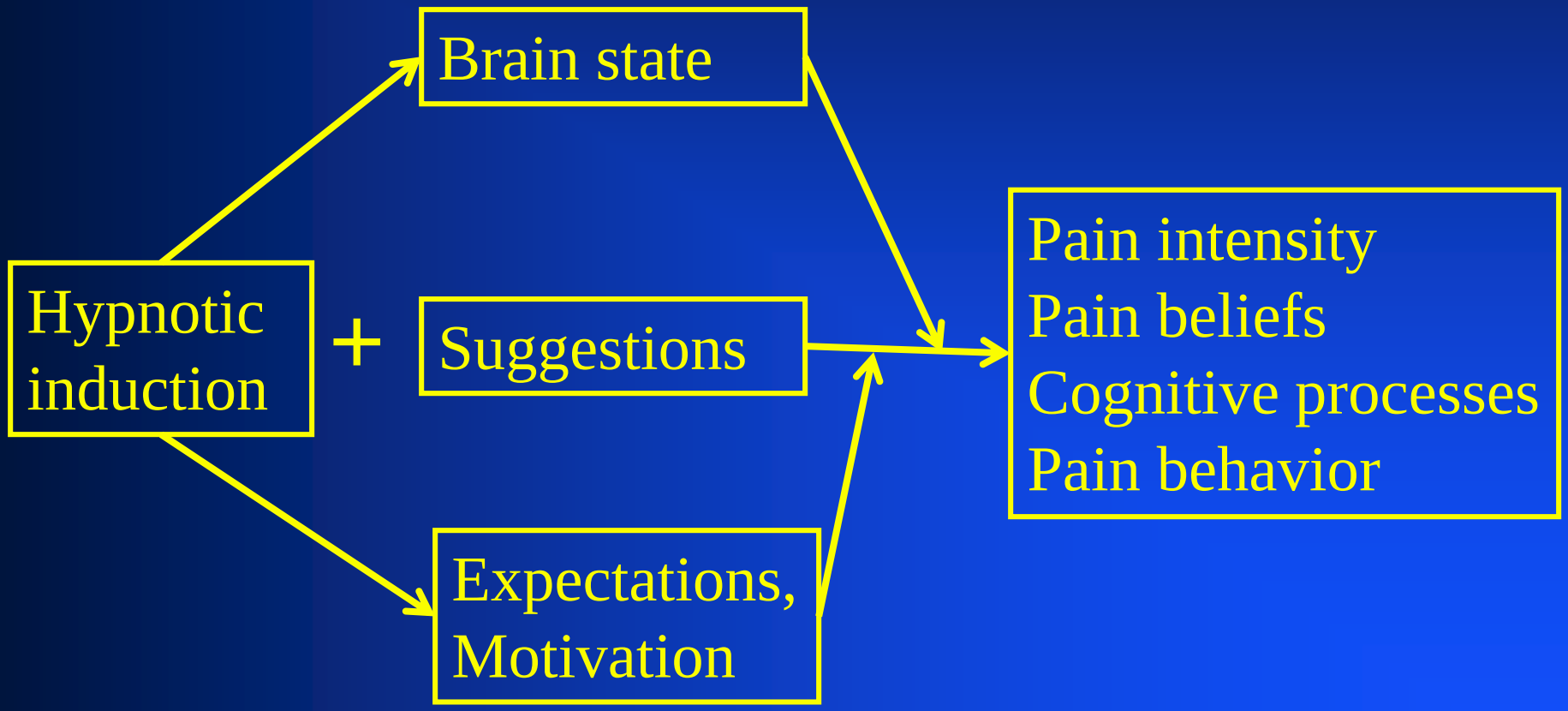
Hypnosis: Model



Hypnosis: Model



Hypnosis: Model



Operant Treatment: Theory

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- All behavior is sensitive to the environmental responses to that behavior.
- Behaviors followed by reinforcers increase in frequency.
- Behaviors that are ignored or are followed by punishers decrease in frequency.

Operant treatment

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Operant treatment

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Operant treatment

- AKA "Behavioral treatment"
- Alter environmental responses to pain and well behaviors,
- So that pain behaviors are ignored,
- And well behaviors are reinforced

Operant treatment: Evidence

- Many studies support the basic principals of OT (e.g., Flor et al., 2002; Jolliffe & Nicholas, 2004; Schwartz et al., 2005)
- Pain treatments based on operant theory are effective (Eccleston et al., 2009)

Operant Treatment: Model

Mindfulness Meditation Training

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- Emphasizes *acceptance* of all experience, including pain
- Original treatment included Hatha Yoga training (with awareness)

Mindfulness Meditation: Evidence

- Research supports the efficacy of Mindfulness Mediation Training for reducing pain and increasing well-being (Grossman et al., 2004, 2007)

Mindfulness: Theory

- Mediation practice focusing on acceptance
  - leads to giving up of struggle against pain

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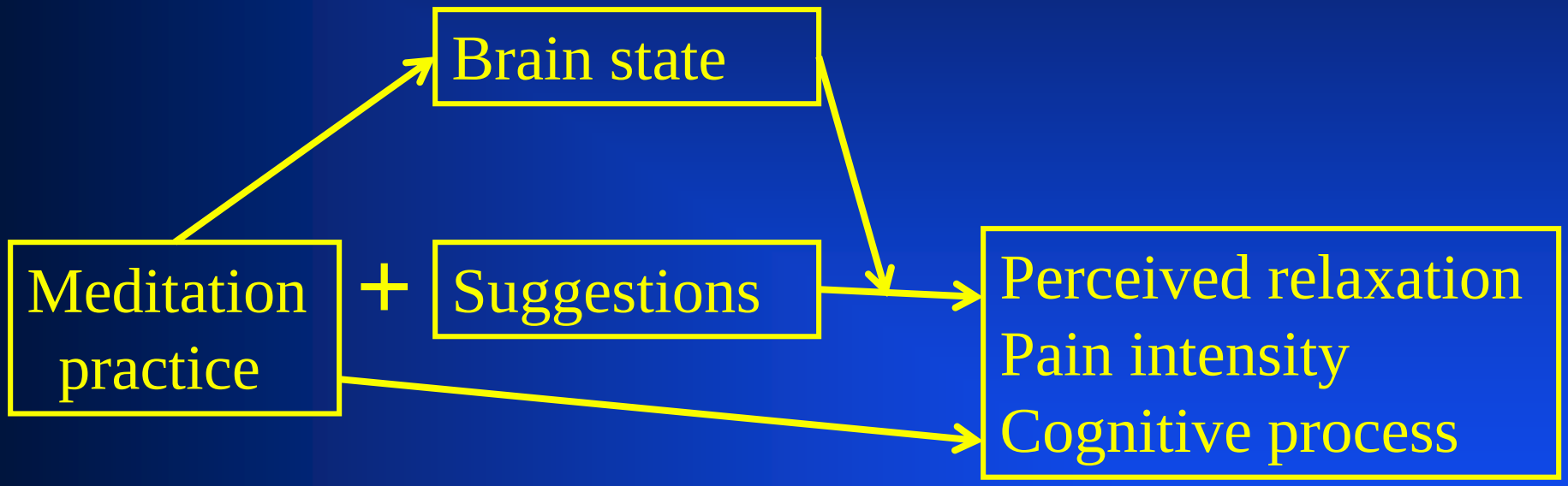
- Mediation practice focusing on acceptance leads to giving up of struggle against pain
- Meditation state also associated with feelings of well-being, inconsistent with pain and distress
- Also, mindfulness procedures very similar to hypnotic inductions…
- *Perhaps mechanisms of mindfulness also similar to those of hypnosis*

Mindfulness: Model



Cognitive Therapy

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- Also known as Cognitive Restructuring.
- Based on the idea that what people think influences emotional reactions and how people choose to cope with pain.
- Mood and coping behavior can then influence focus on and experience of pain.
- Changing from maladaptive to adaptive ones, then, improves pain as well as psychological and physical functioning.

Cognitive Therapy

With Cognitive Therapy, you teach patients to:

1. *Identify*,
2. *Stop*, and
3. *Replace* negative thoughts with adaptive ones.

Cognitive Therapy: Evidence

- Evidence supports the efficacy of cognitive therapy in individuals with chronic pain

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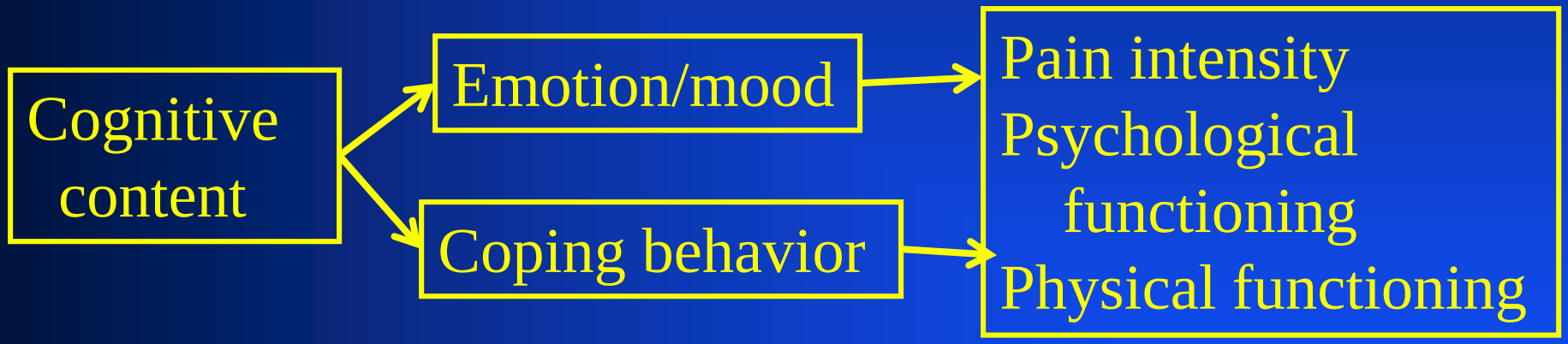
Evidence supports the efficacy of cognitive therapy in individuals with chronic pain

CT reduces pain intensity and catastrophizing cognitions, and improves psychological functioning (Ehde & Jensen, 2004; Thorn et al., 2007).

Cognitive Therapy: Model



Cognitive Behavior Therapy

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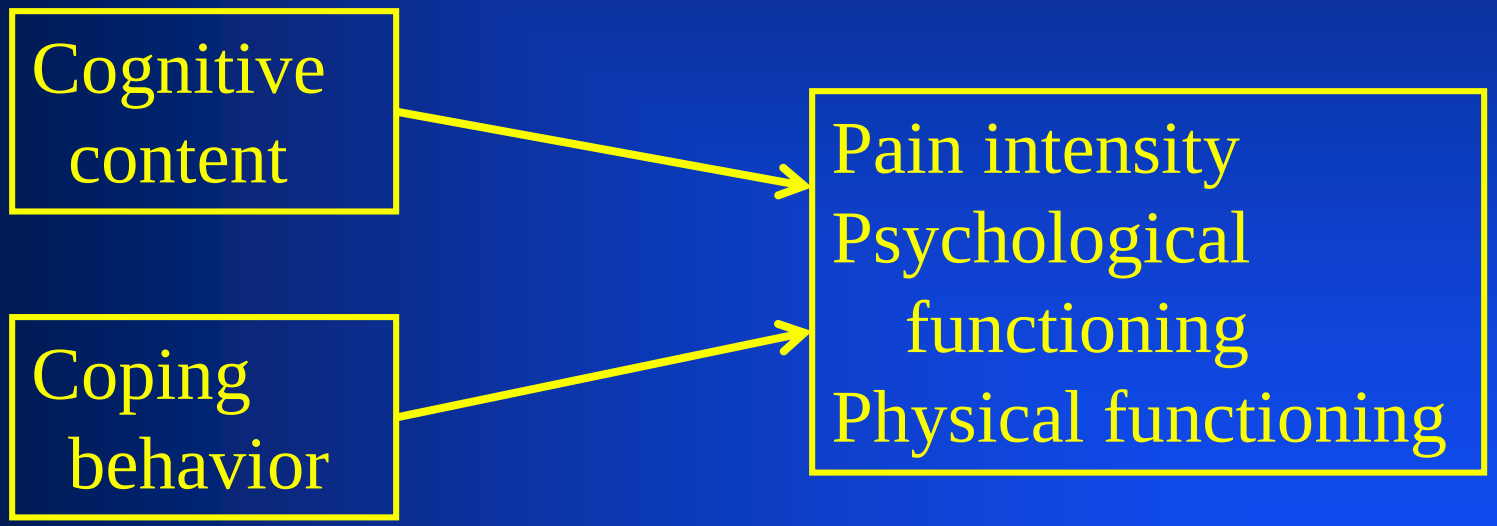
- Other components teach specific pain coping skills (task persistence, assertiveness training, operant therapy, relaxation training, spouse training)
- Goal: Help patients create an environment and develop skills to improve pain and functioning
- Examples including Stress Inoculation Training (Turk et al., 1985) and Pain Coping Skills Training (Keefe & Somers, 2010)

CBT: Evidence

A great deal of evidence supports the efficacy of various CBT interventions for reducing pain intensity and improving psychological and physical functioning (Eccleston et al., 2009; Keefe & Somers, 2010).

CBT: Model


Cognitive content
Coping behavior
Pain intensity
Psychological functioning
Physical functioning

Acceptance-Based CBT

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- Strong focus on values-based action and encouragement of approach coping (rather than avoidance coping)

Acceptance-Based CBT

Goal: Help patients let go of struggle against pain, and move towards achieving most valued life goals.

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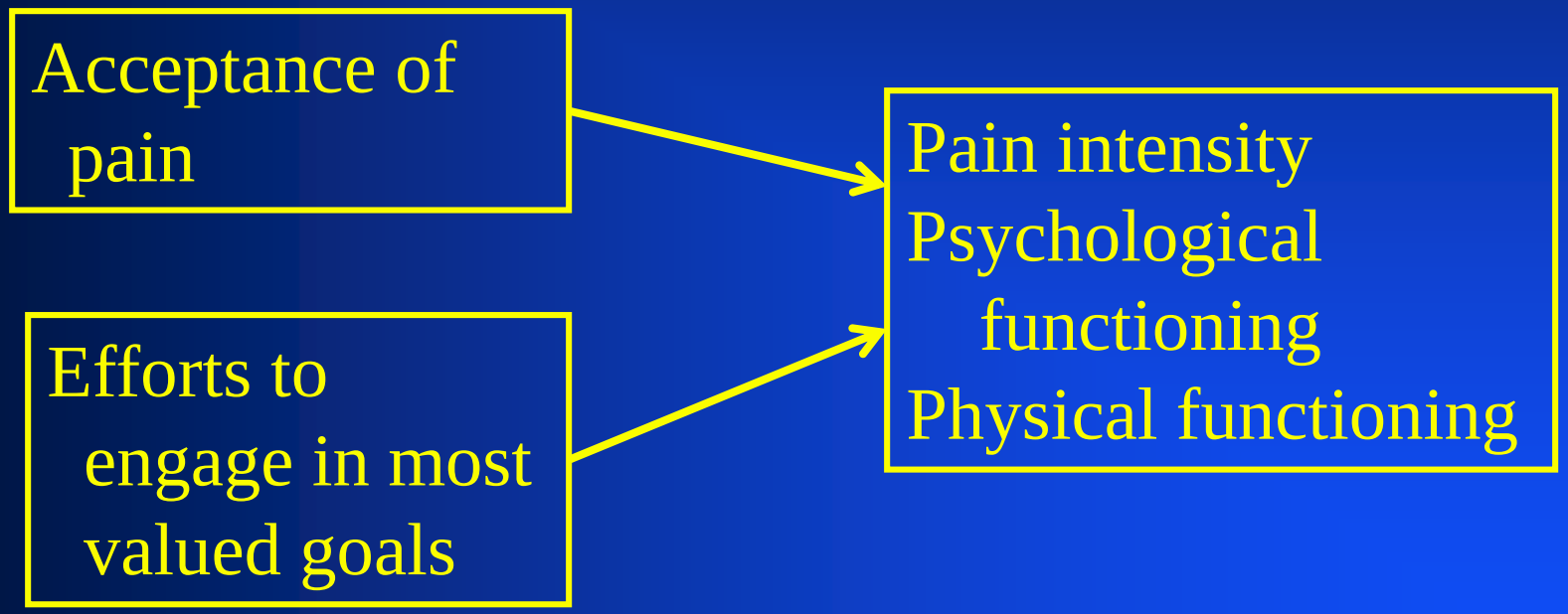
- Goal: Help patients let go of struggle against pain, and move towards achieving most valued life goals.
- Acceptance and Commitment Therapy (Dahl, 2005), Contextual Behavioral Therapy (McCracken, 2005), and Mindfulness-Based Cognitive Therapy (Zautra et al., 2008) primary examples.

Acceptance-Based CBT: Evidence

- Growing body of promising evidence (e.g., Pull, 2009).
- Zautra et al. (2008) found that MB-CBT intervention was more effective for reducing distress in depressed patients than in non-depressed patients; CBT worked in all patients .

Acceptance-Based CBT: Model



Current State of the Science

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- Multiple treatments

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- Multiple treatments
- Multiple models

Current State of the Science

Multiple treatments

Multiple models

Leading to confusion:

1. Limited understanding, and
2. Limited outcomes

Current State of the Science

Multiple treatments
Multiple models
Leading to confusion:
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→ *There is a need for a framework for organizing psychosocial treatments, and understanding their effects…*

Proposed overarching model

Five key psychosocial factors:

1. Environmental Factors
2. Brain States
3. Cognitive Content
4. Cognitive Process
5. Patient Behavior

Proposed overarching model

Five key psychosocial factors:

1. Environmental Factors
2. Brain States
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Impacting three key outcomes:

1. Pain intensity
2. Psychological Functioning
3. Physical Functioning

Environmental Factors

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Particularly important to operant models, but also a part of CBT and hypnosis.

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Includes:

1. Suggestions
2. Social reinforcement
3. Social support

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Influences cognitive content, cognitive processes, and coping behavior, as well as pain, mood, and functioning.

Brain States

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- Important to hypnosis, but may also play a role in Mindfulness Meditation (and Acceptance-Based CBT), and Relaxation Training.
- Involves reduction in executive functions, leading to dissociation.
- Involves increases in responsivity to suggestions, so may enhance efficacy of verbal-based treatments (e.g., CT and CBT).

Brain States

- Important to hypnosis, but may also play a role in Mindfulness Meditation (and Acceptance-Based CBT), and Relaxation Training.
- Involves reduction in executive functions, leading to dissociation.
- Involves increases in responsivity to suggestions, so may enhance efficacy of verbal-based treatments (e.g., CT and CBT).
- Understudied and underexplored.

Cognitive Content

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Central to Cognitive Therapy and CBT.

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Cognitive content can be adaptive or maladaptive.

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Cognitive content can be adaptive or maladaptive.

Adaptive cognition content examples: control beliefs, self-efficacy beliefs.

Maladaptive cognition content examples: disability beliefs, harm beliefs, medication beliefs, medical cure beliefs.

Cognitive Process

Cognitive Process

- Central to Mindfulness and Acceptance-Based CBT, but also a part of CBT

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- Cognitive process can be adaptive or maladaptive
- Adaptive cognition process examples: ignoring pain, focusing on adaptive beliefs
- Maladaptive cognition process example: focusing or ruminating about maladaptive beliefs (aka catastrophizing)

Behavior

Behavior

Domain is central to Operant Treatment and CBT, but also a part of Acceptance-Based CBT.

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Behavior

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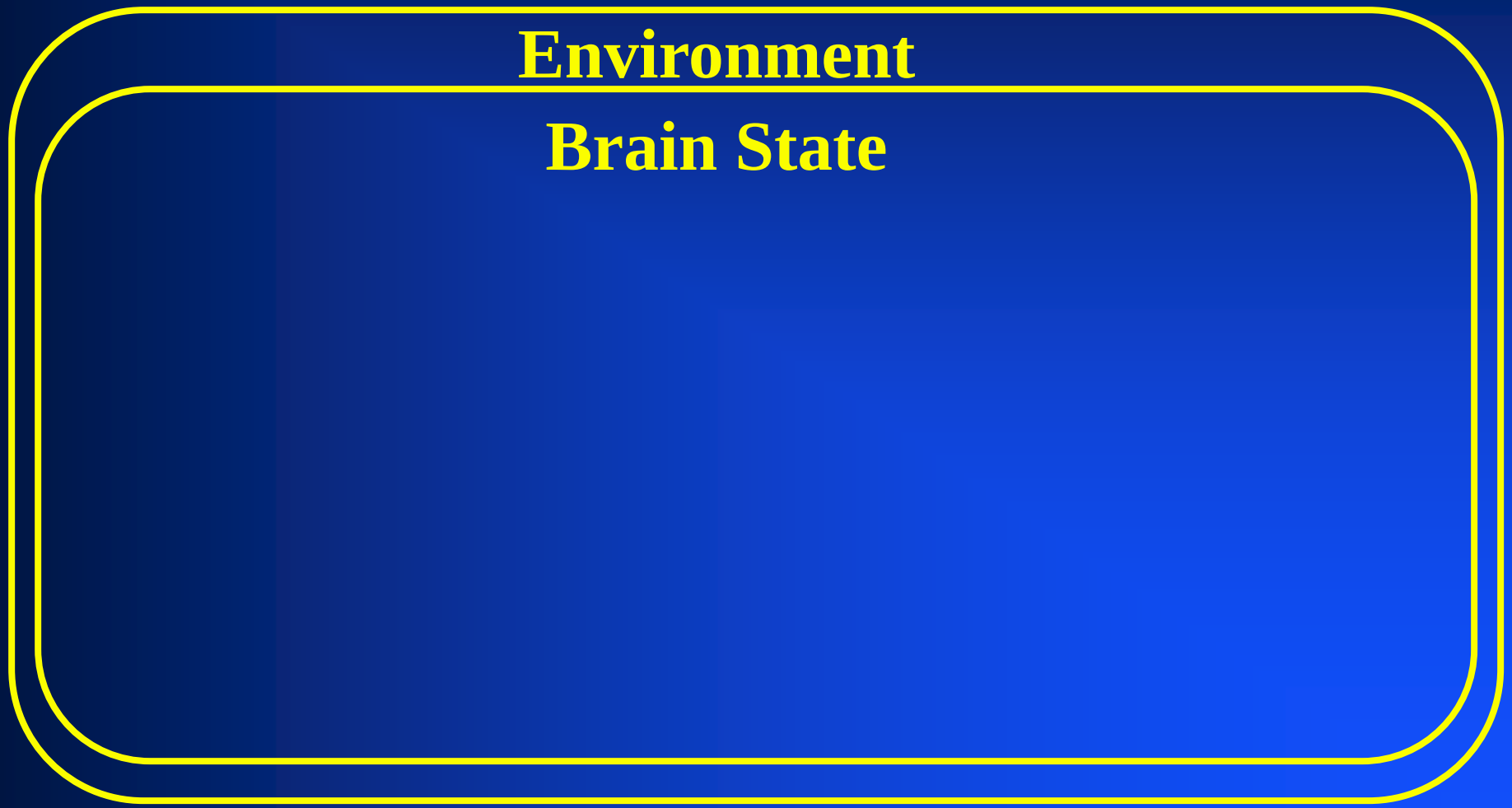
- Behavior can be adaptive or maladaptive
- Adaptive behavior examples: task persistence, pacing
- Maladaptive behavior examples: resting, guarding, asking for assistance, Dr. shopping, taking analgesic medications

Comprehensive model

Environment

Comprehensive model



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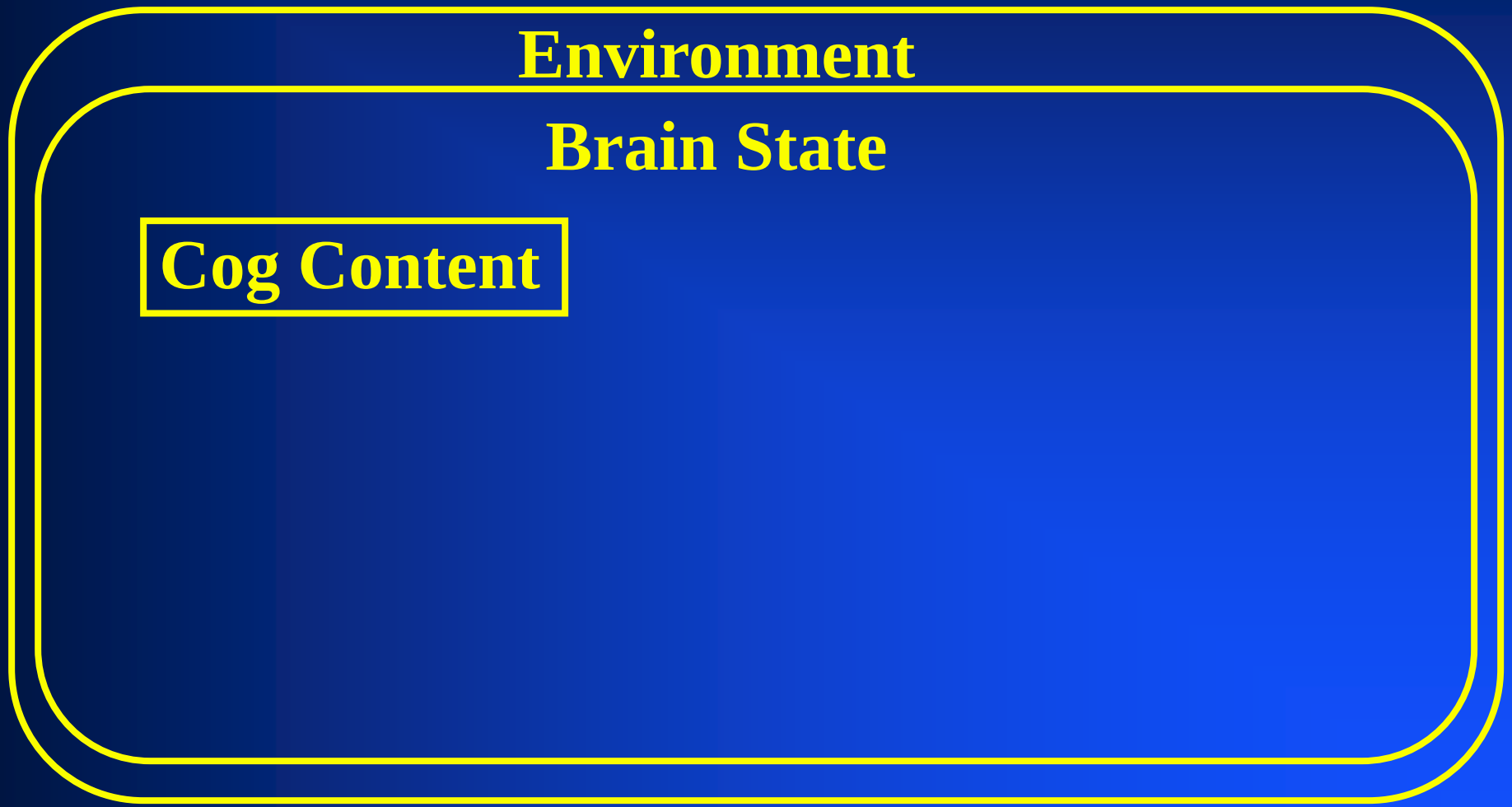

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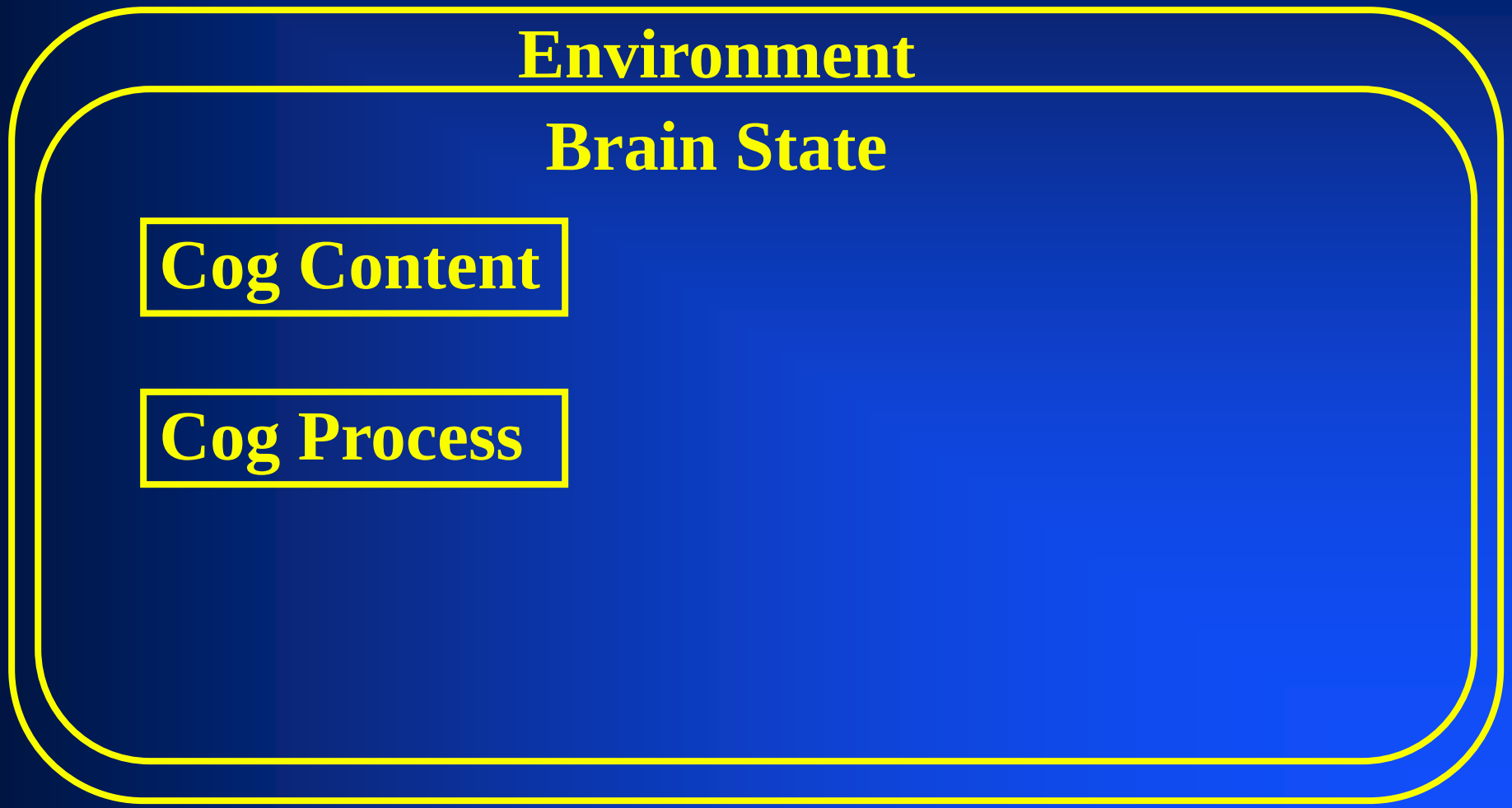

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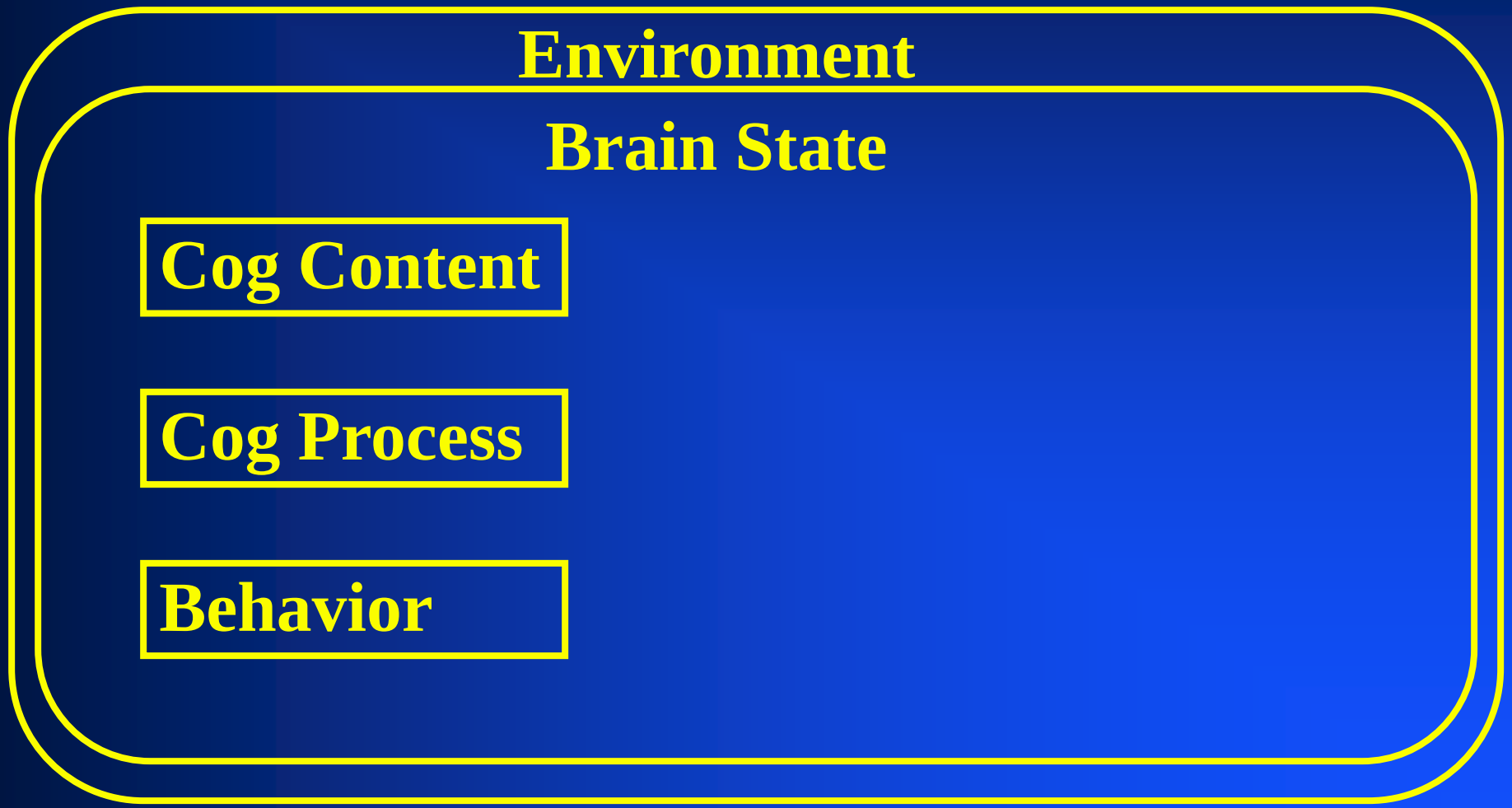

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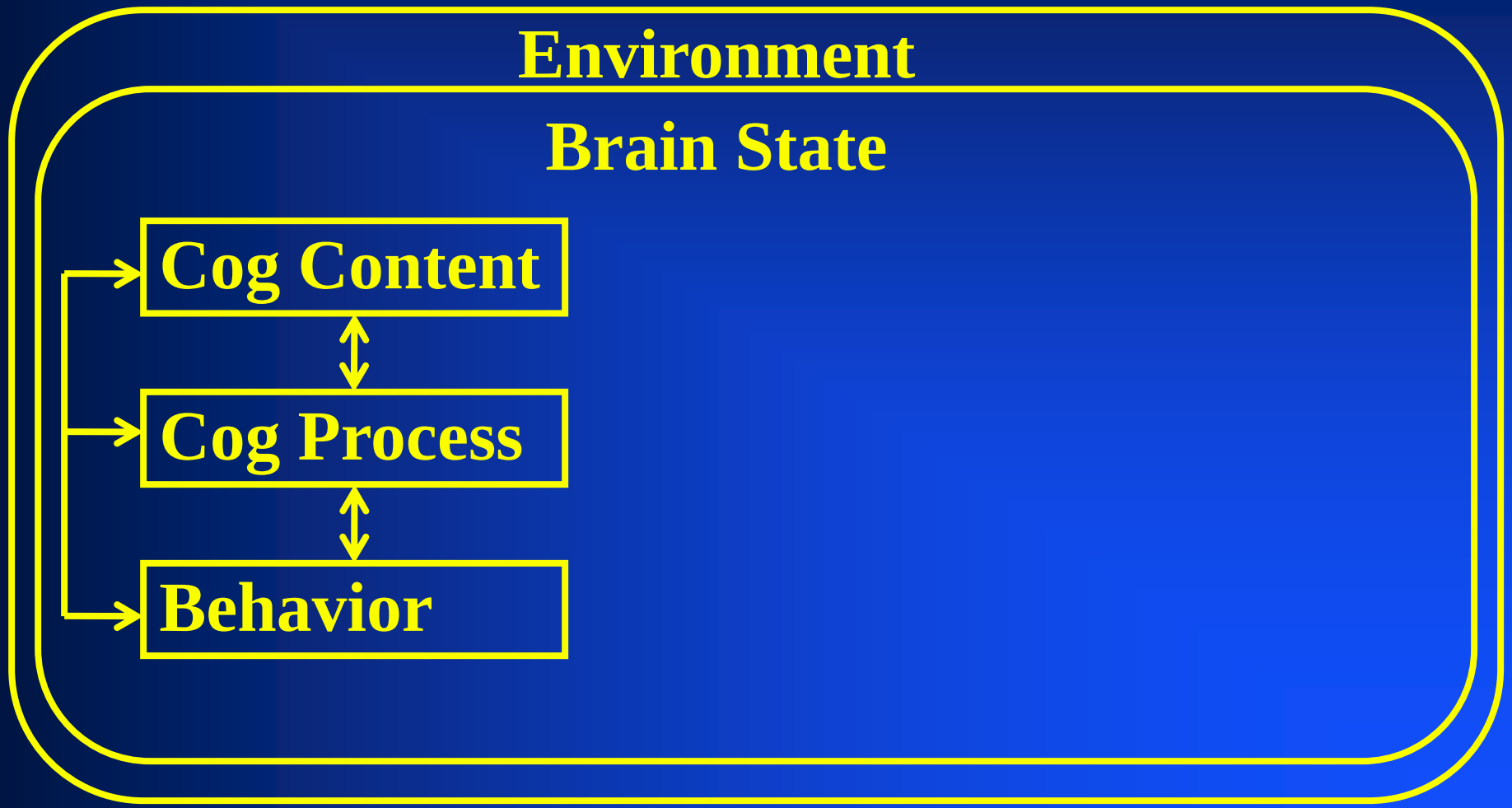

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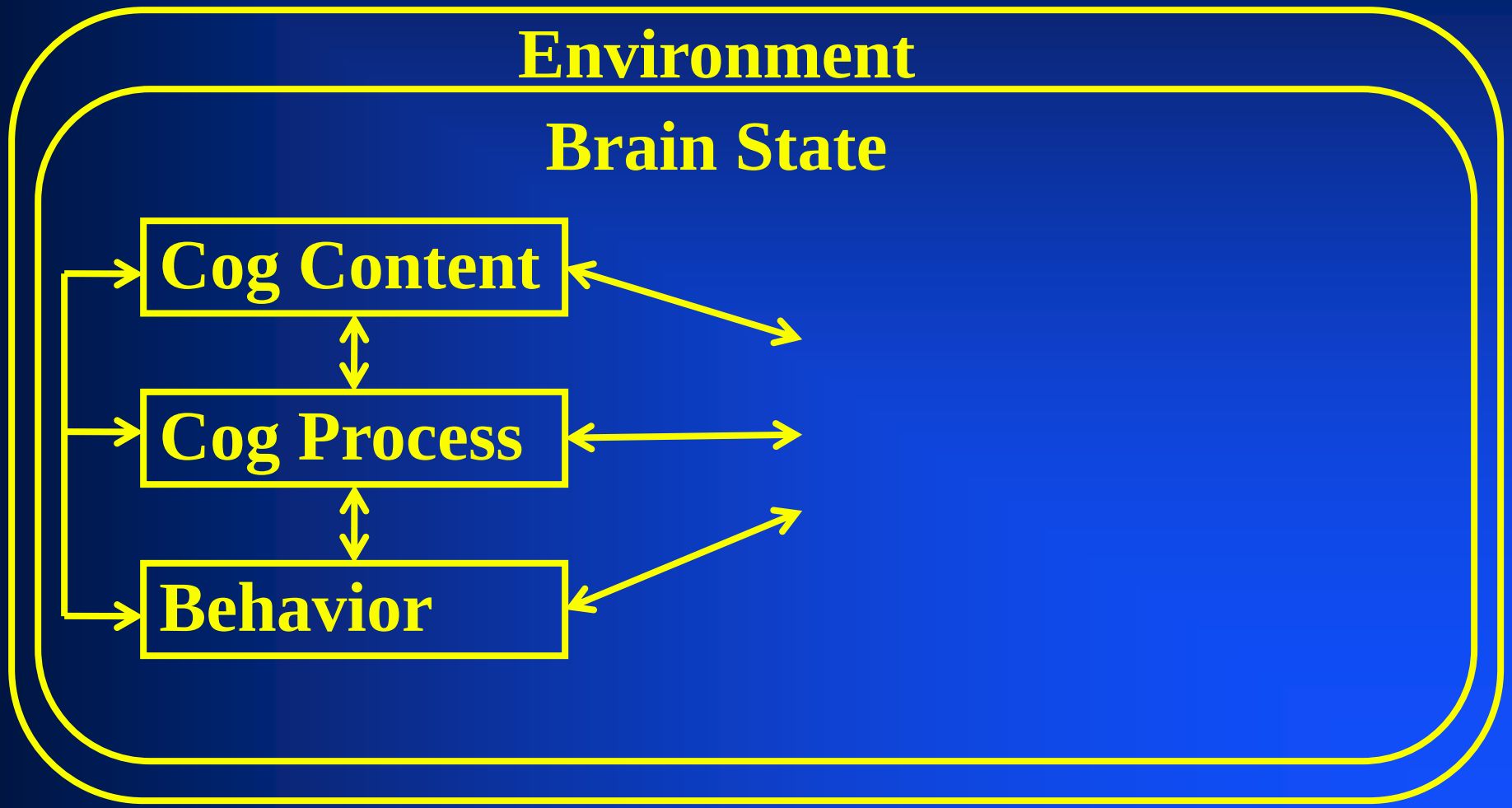

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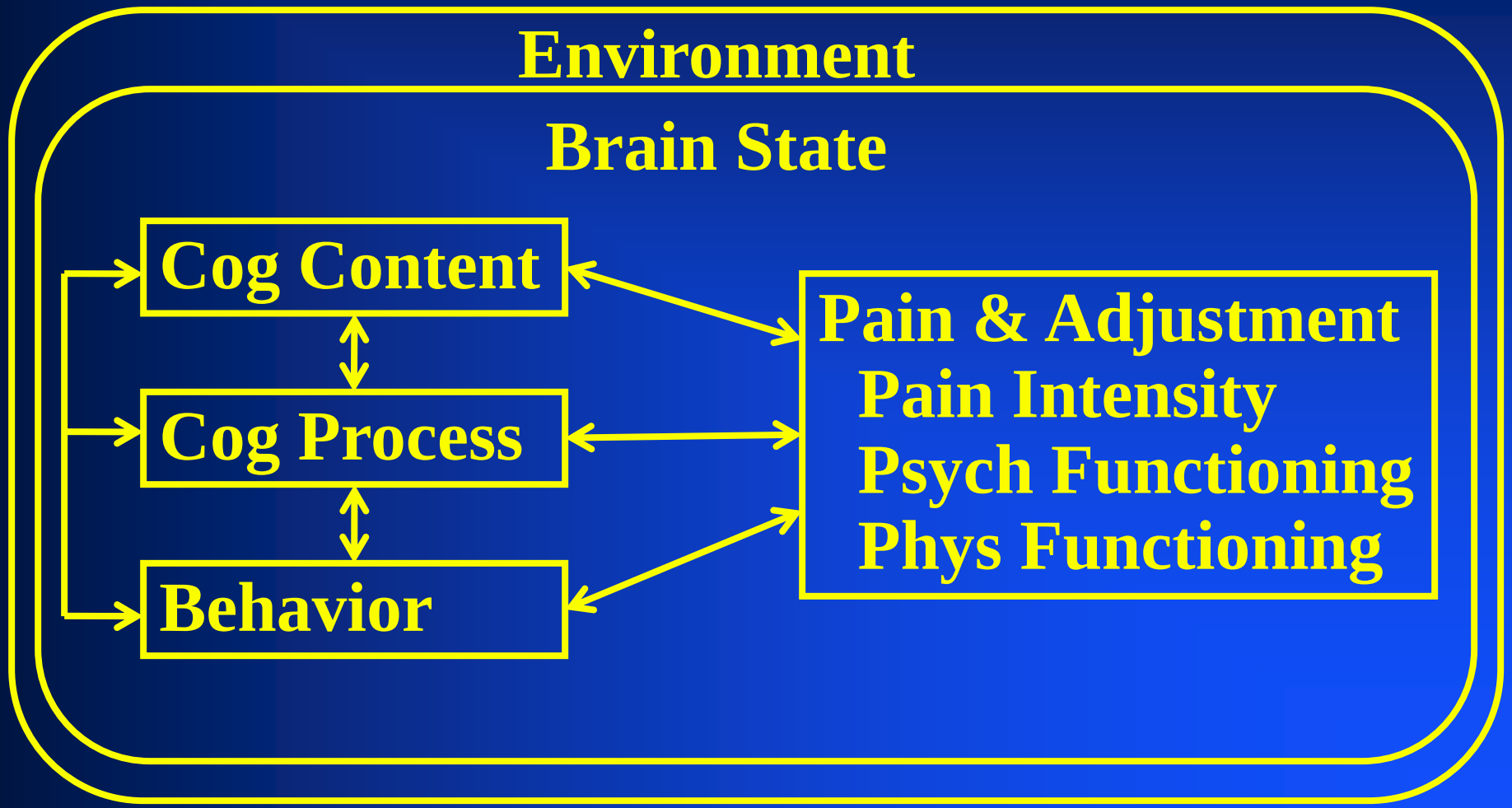
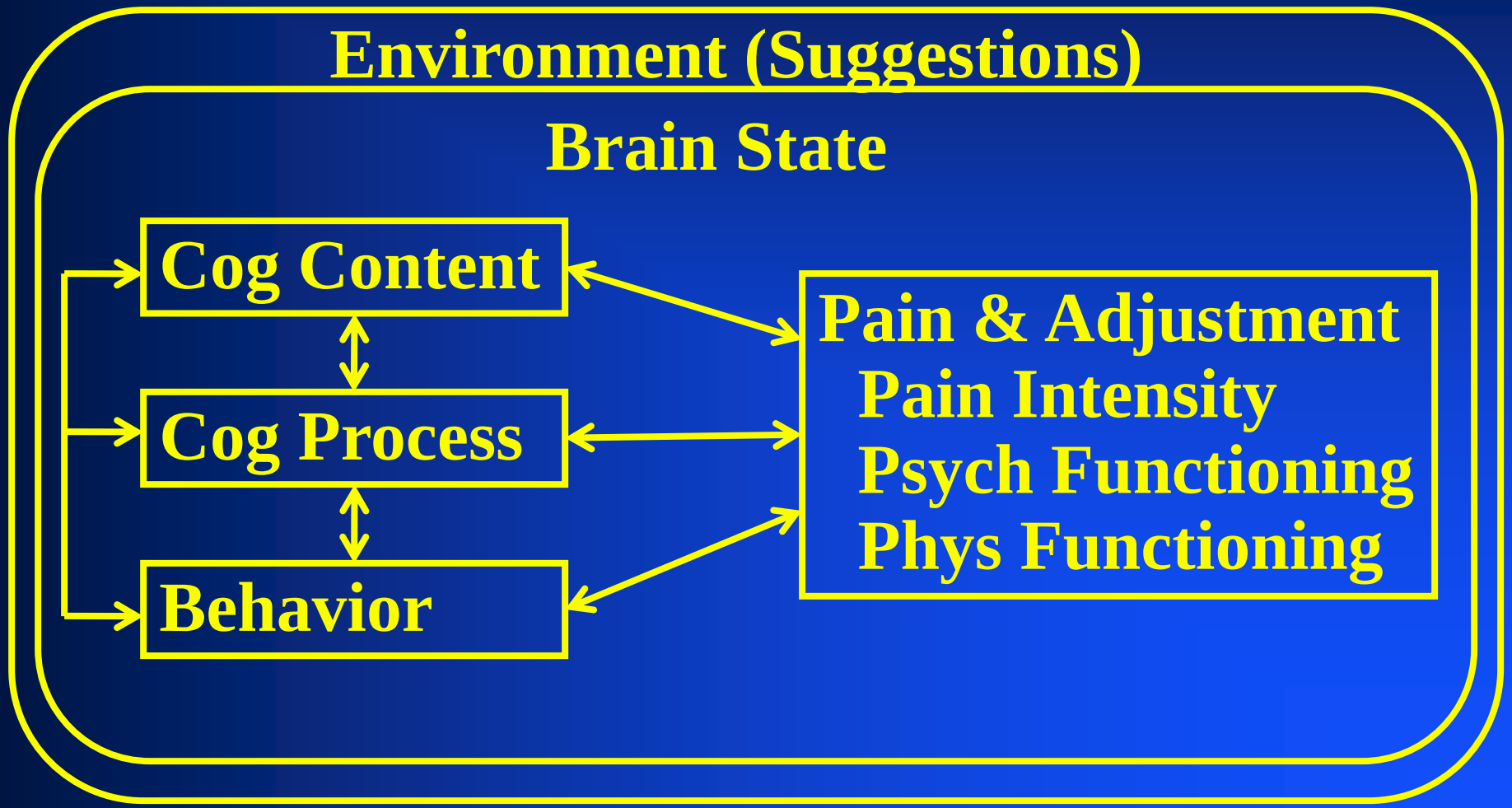


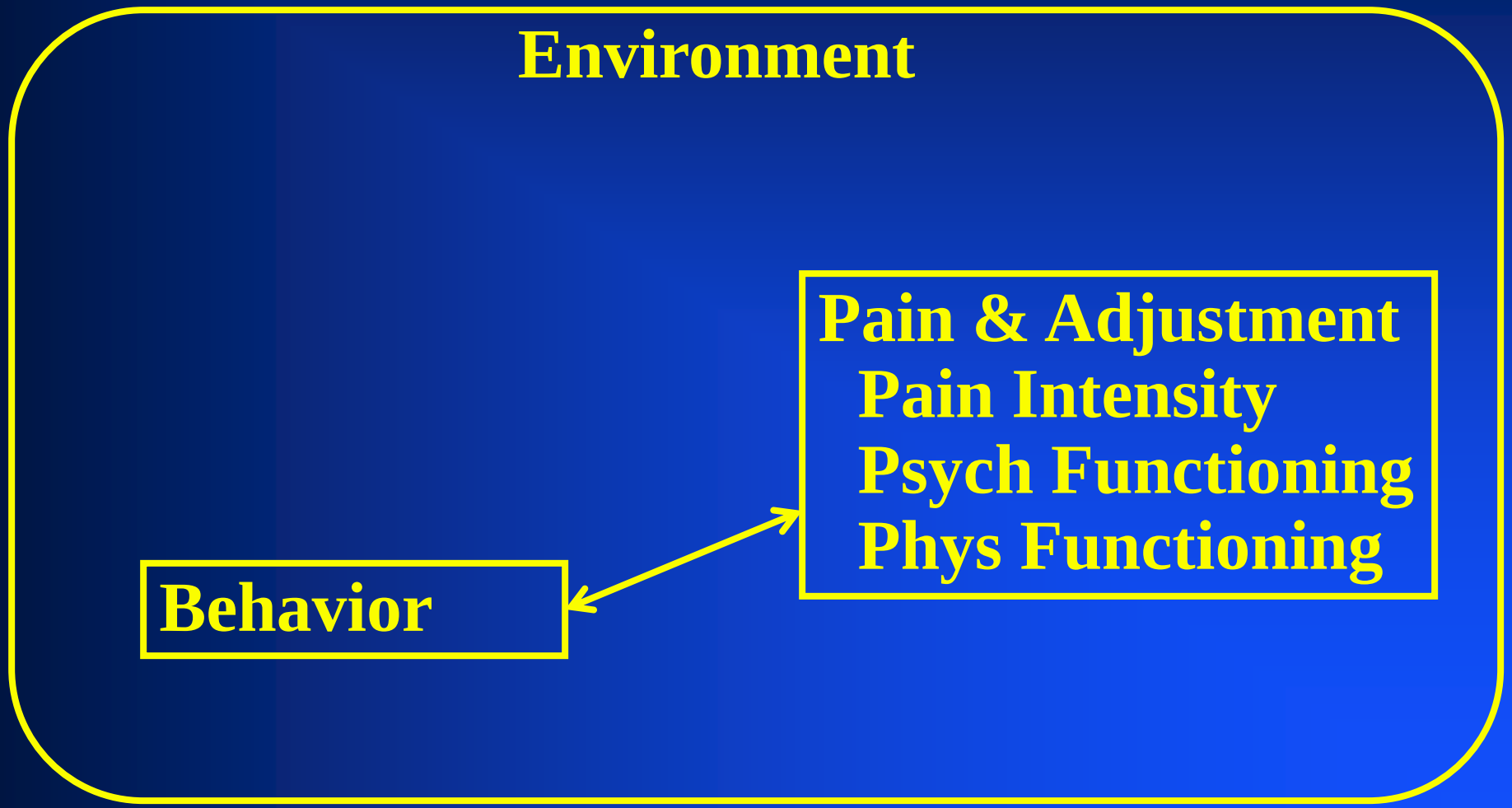
Basic Tenants

1. Environmental factors influence cogntive content, cognitive process, and patient behavior.
2. Certain brain states enhance the impact of psychosocial treatments on cognitive content, cognitive process, and patient behavior.
3. Cognitive content, cognitive process, and patient behavior influence each other, and influence pain and functioning.

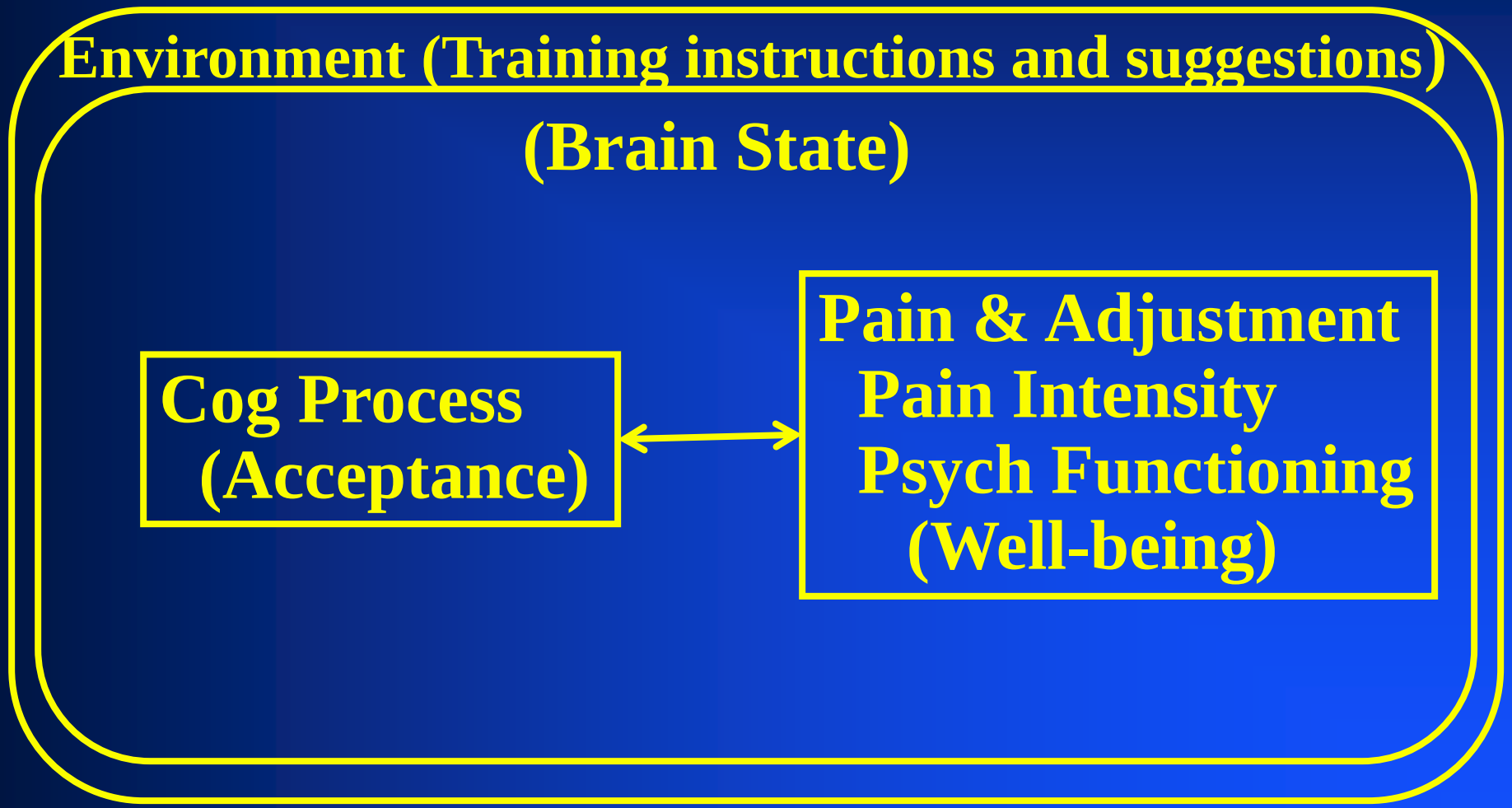
Hypnosis


Environment (Suggestions)
Brain State
Cog Content
Cog Process
Behavior
Pain & Adjustment
Pain Intensity
Psych Functioning
Phys Functioning

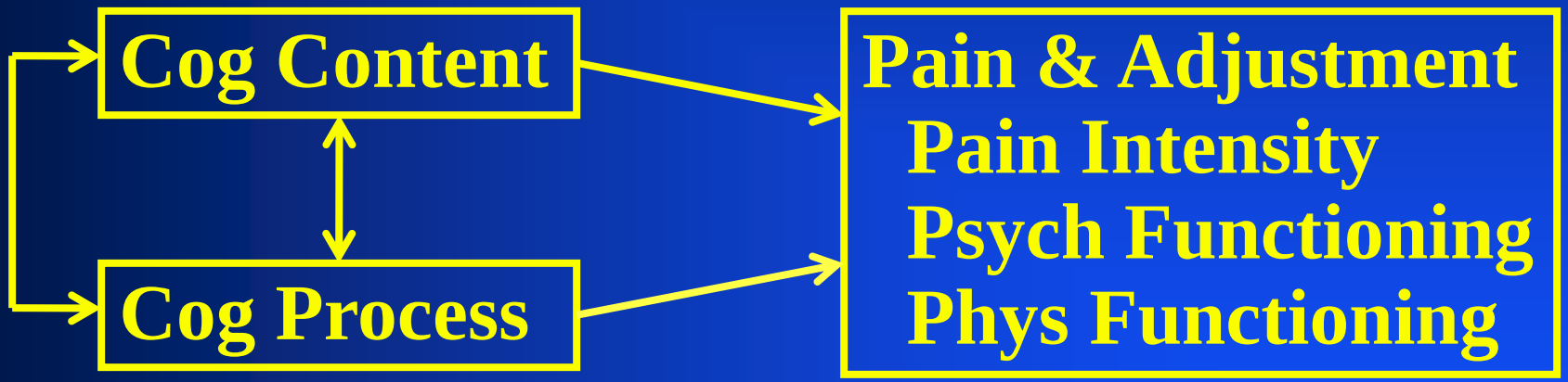
Operant Treatment



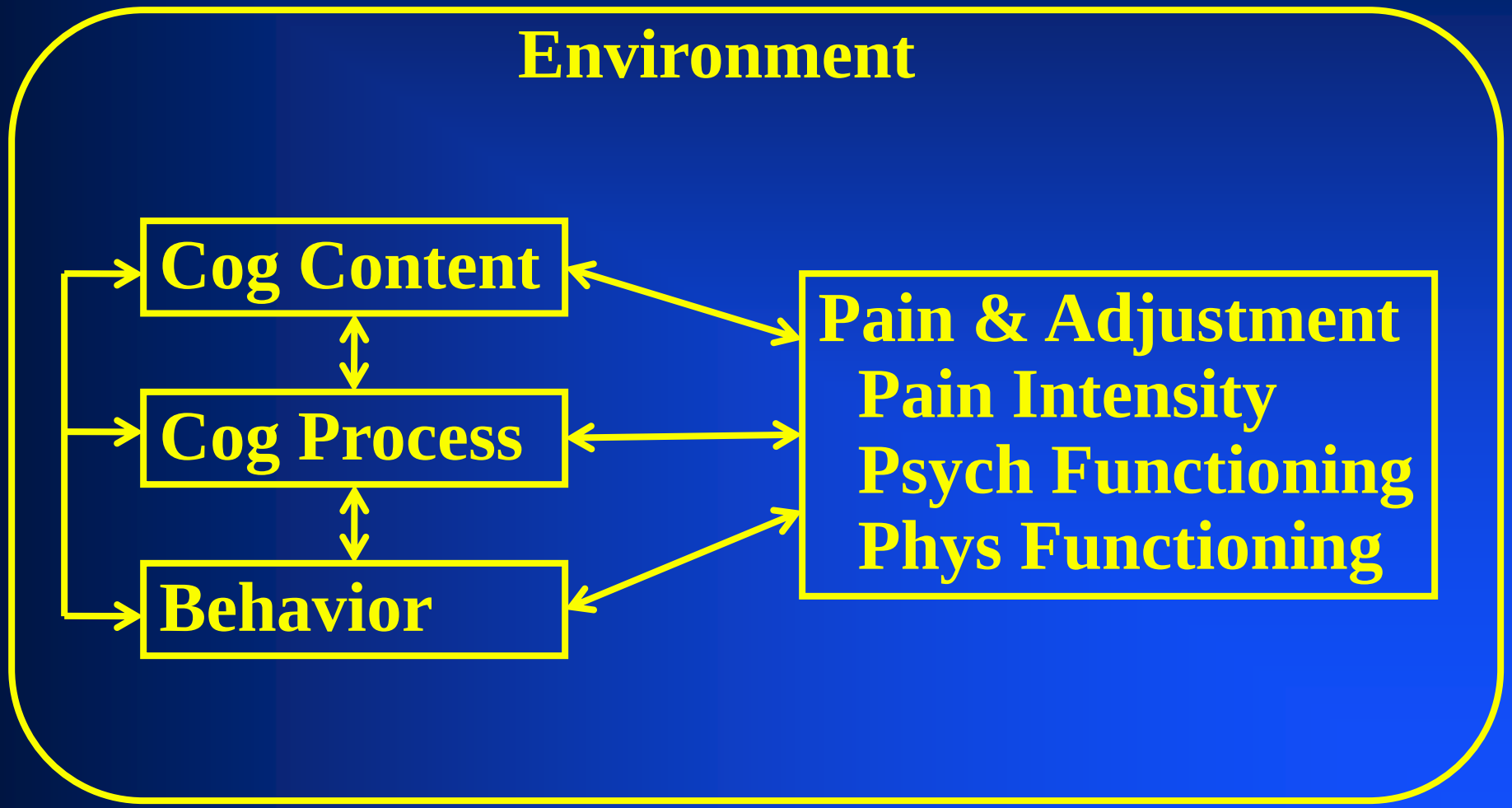
Mindfulness Meditation



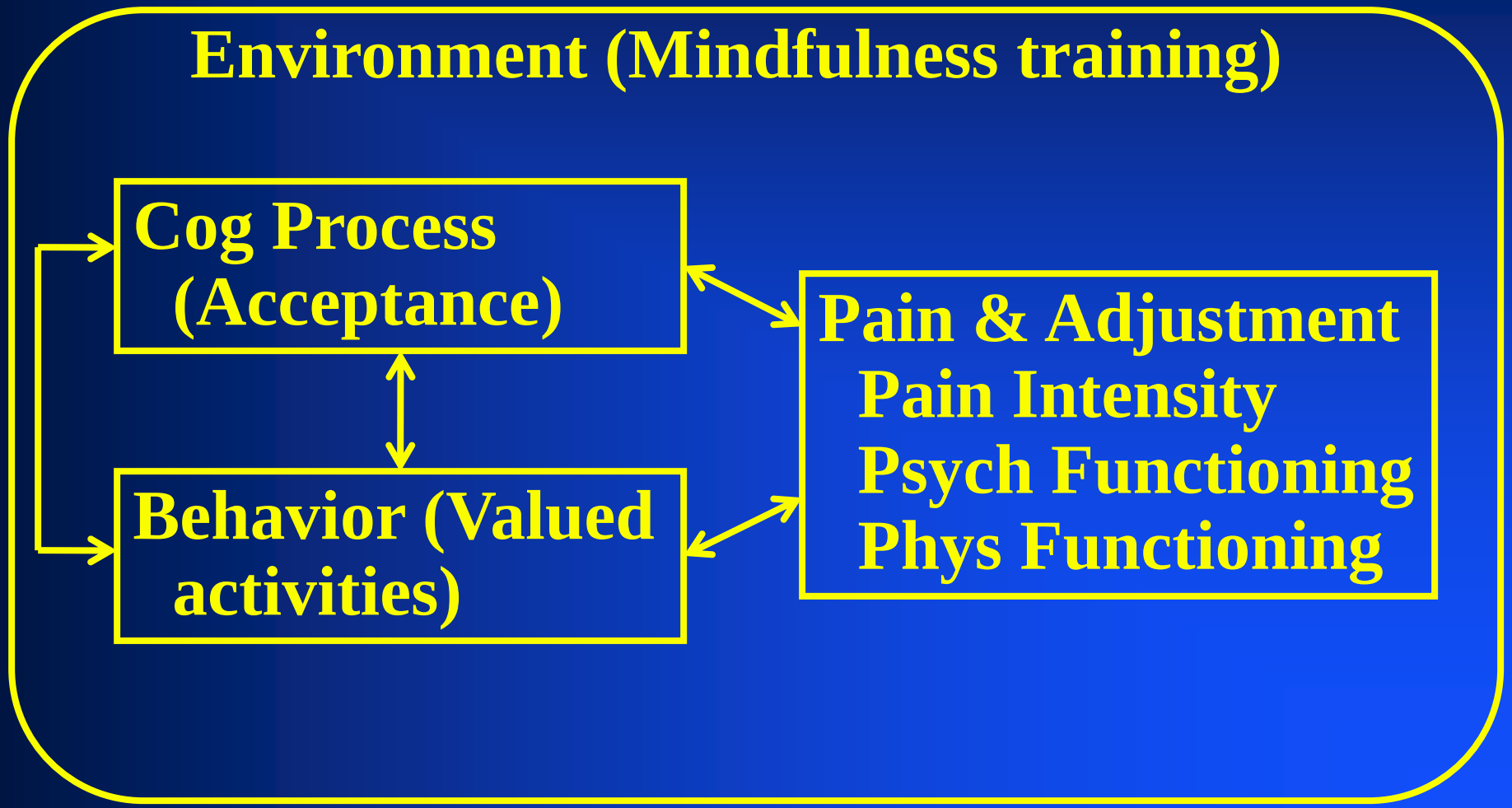
Cognitive Therapy



Cognitive Behavioral Therapy



Acceptance-Based CBT



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- Anything that alters cognitive content, cognitive processes, or behavior can influence pain, psychological functioning, and physical functioning.
- All psychosocial treatments may be effective because they alter one or more of these key variables either directly, or via environmental and brain state changes.
- It may be difficult to demonstrate superiority of one treatment over another.

Clinical Implications

- Which psychosocial intervention is most effective?

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Answer: None! All are limited.

Clinical Implications

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Answer: None! All are limited.

→ Instead of using only one treatment or model, clinicians should "step back" and assesses all domains; then use and combine treatments to address the factors most important for any one particular patient.

Clinical Implications

(Perhaps) clinicians should become experts in all treatment modalities.

Summary

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Many psychosocial treatments exist.

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- Many psychosocial treatments exist.
- While there is overlap between many treatments, each treatment is unique.

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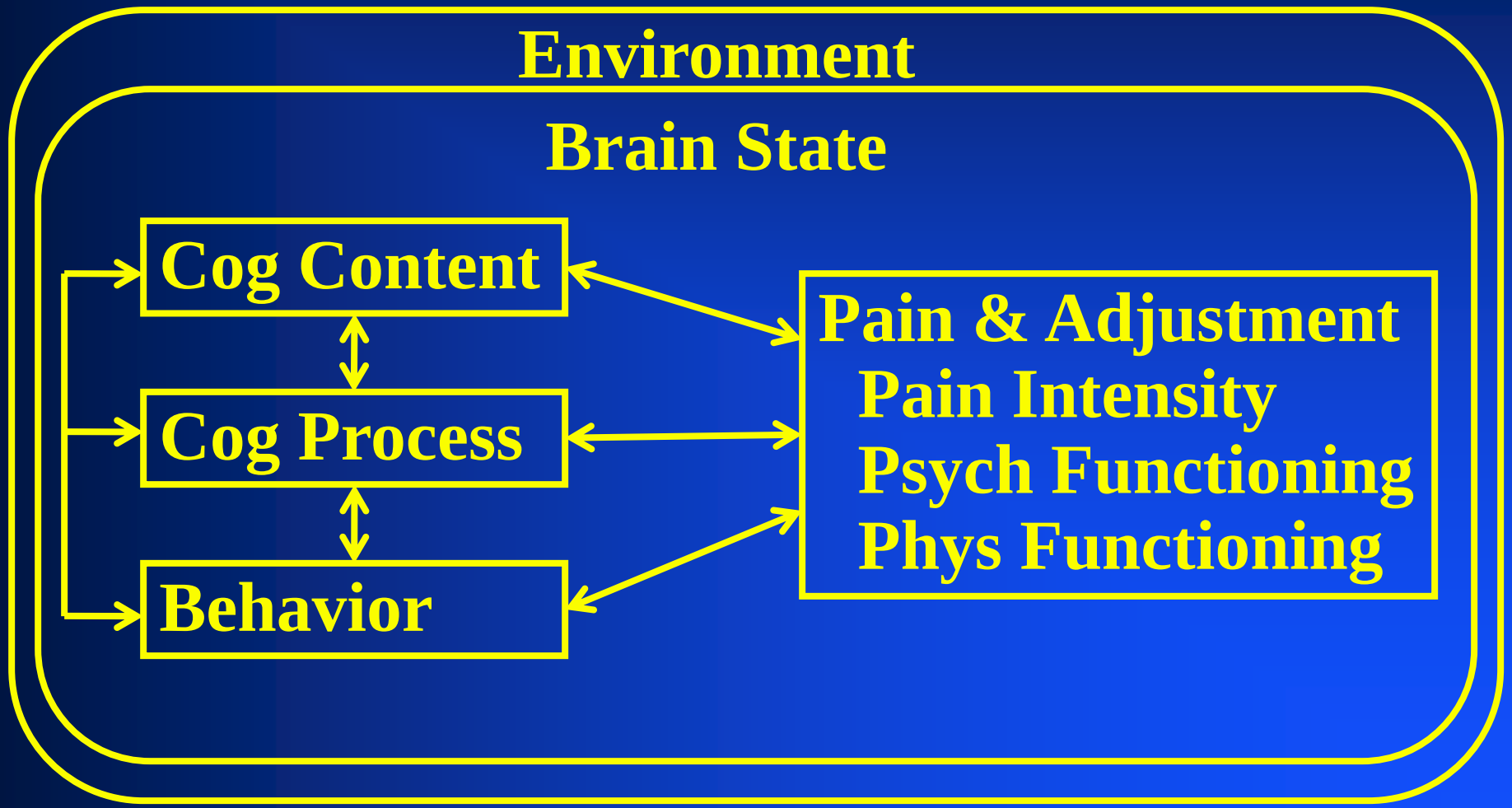
- While there is overlap between many treatments, each treatment is unique.
- An overarching model describing the effects of all treatments appears possible.

Comprehensive model



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The most effective clinician may be one who is able to use all interventions….

And select the one(s) that target the factor(s) that play the largest role in any one particular patient's pain and disability.

Thank You!