A Psychologist's Perspective on Pain

Dr. Jeremy Anderson

What *is* pain?

Common-sense view:

1. Physical tissue damage = Pain
2. One-to-one relationship, i.e., big damage = big pain, small damage = small pain

Problems with the common-sense view

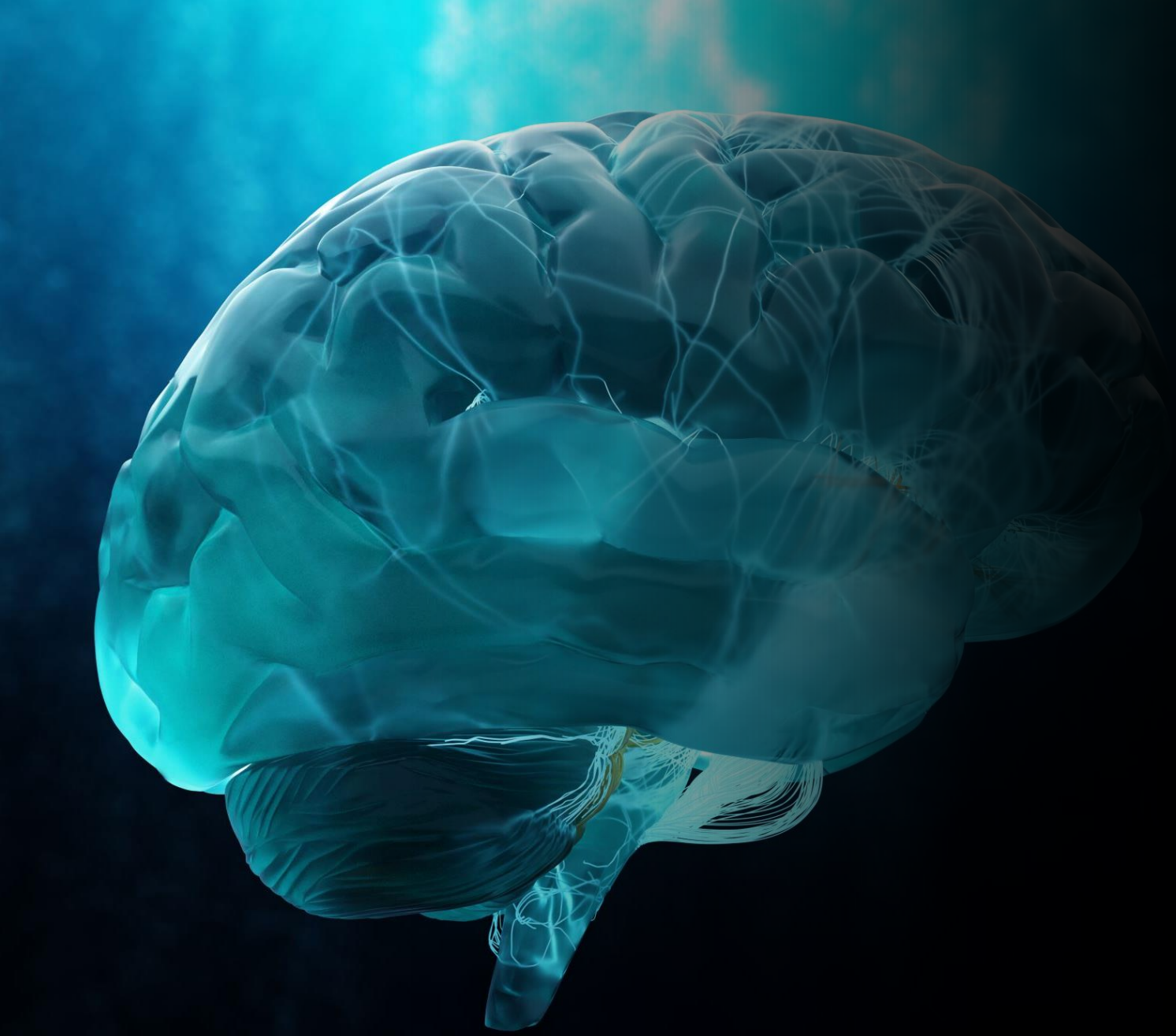

3
BAUER
MINNESOTA
3

Common sense model is too simple:

1. Can have injury without apparent pain
2. Can have pain without apparent injury (or associated body part!)

IASP Definition of Pain

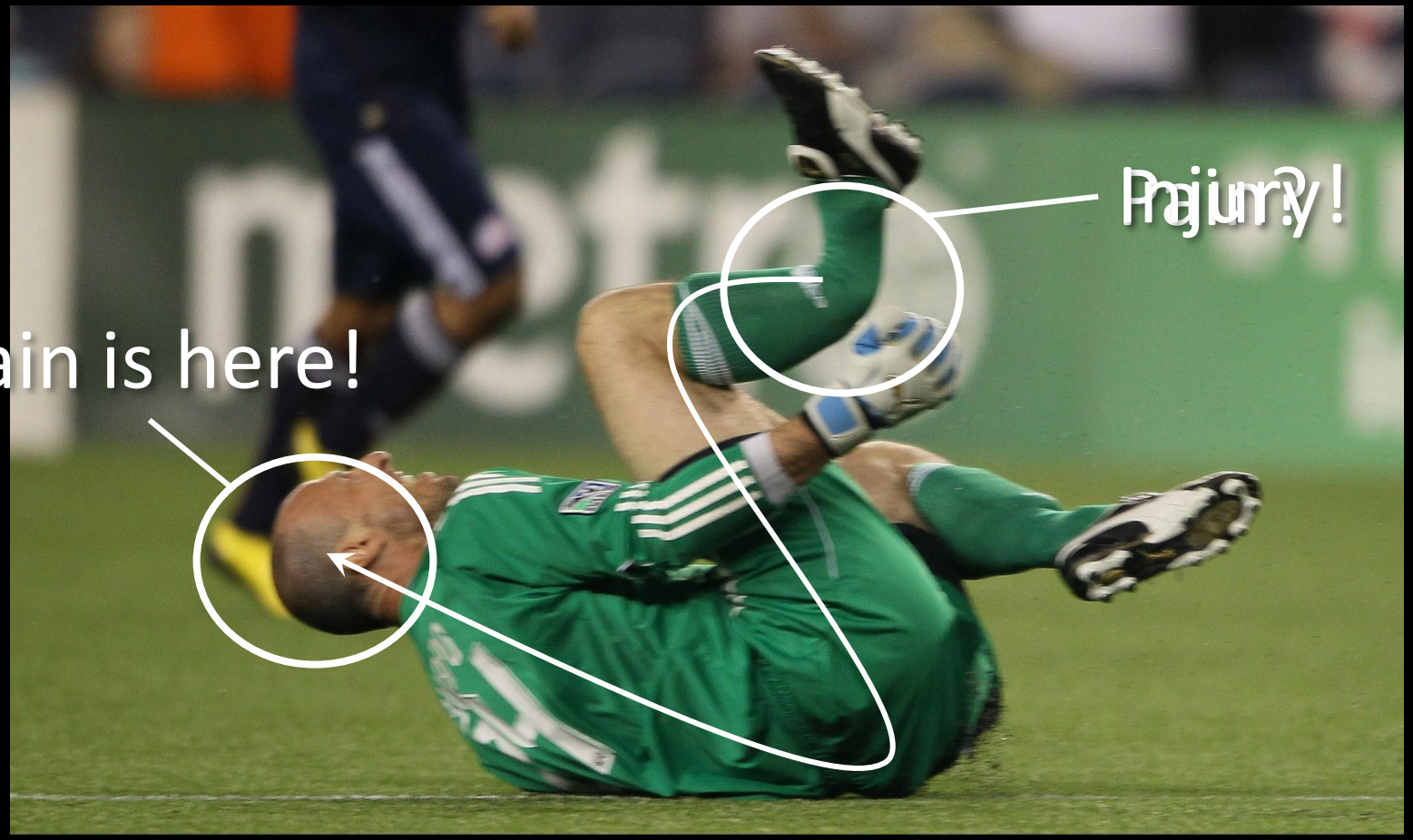
"An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage."

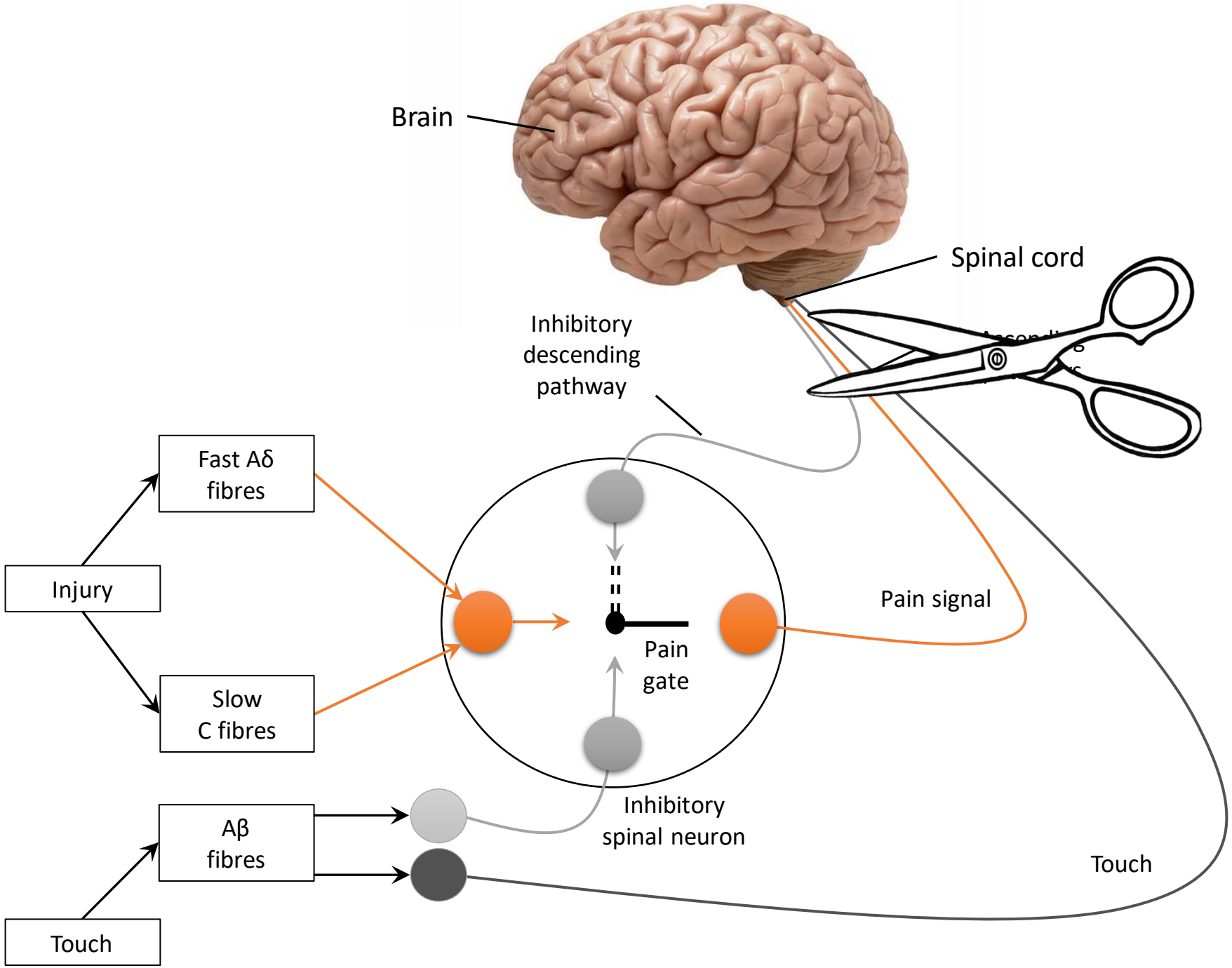


Key Points:

1. If it feels like pain, you've got it
2. Both sensation and emotion
3. Subjective experience (have to be conscious)
4. Consciousness is what the brain does

Where *is* pain?



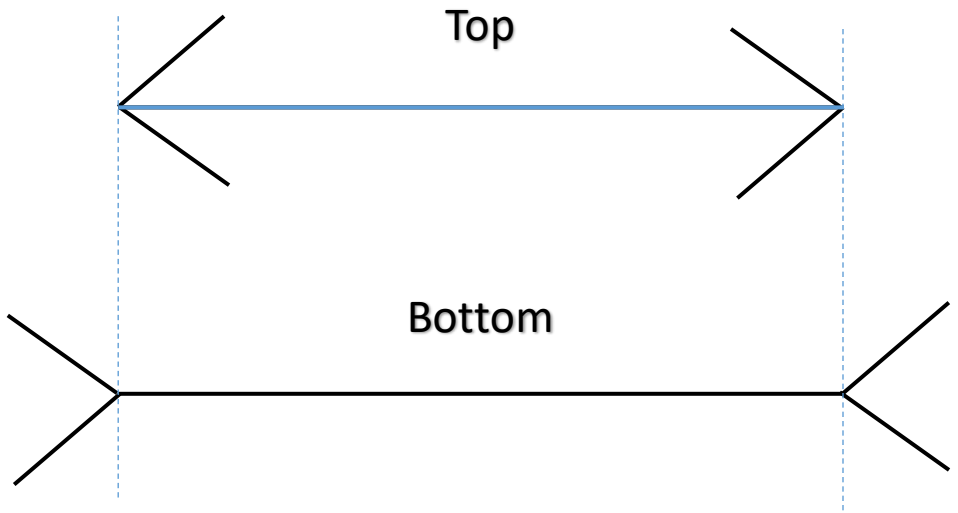

Brain
Spinal cord
Inhibitory
descending
pathway
Fast Aδ
fibres
Injury
Slow
C fibres
Pain
gate
Pain signal
Aβ
fibres
Touch
Inhibitory
spinal neuron
Touch

ALL PAIN is Brain

Common sense model is too simple:

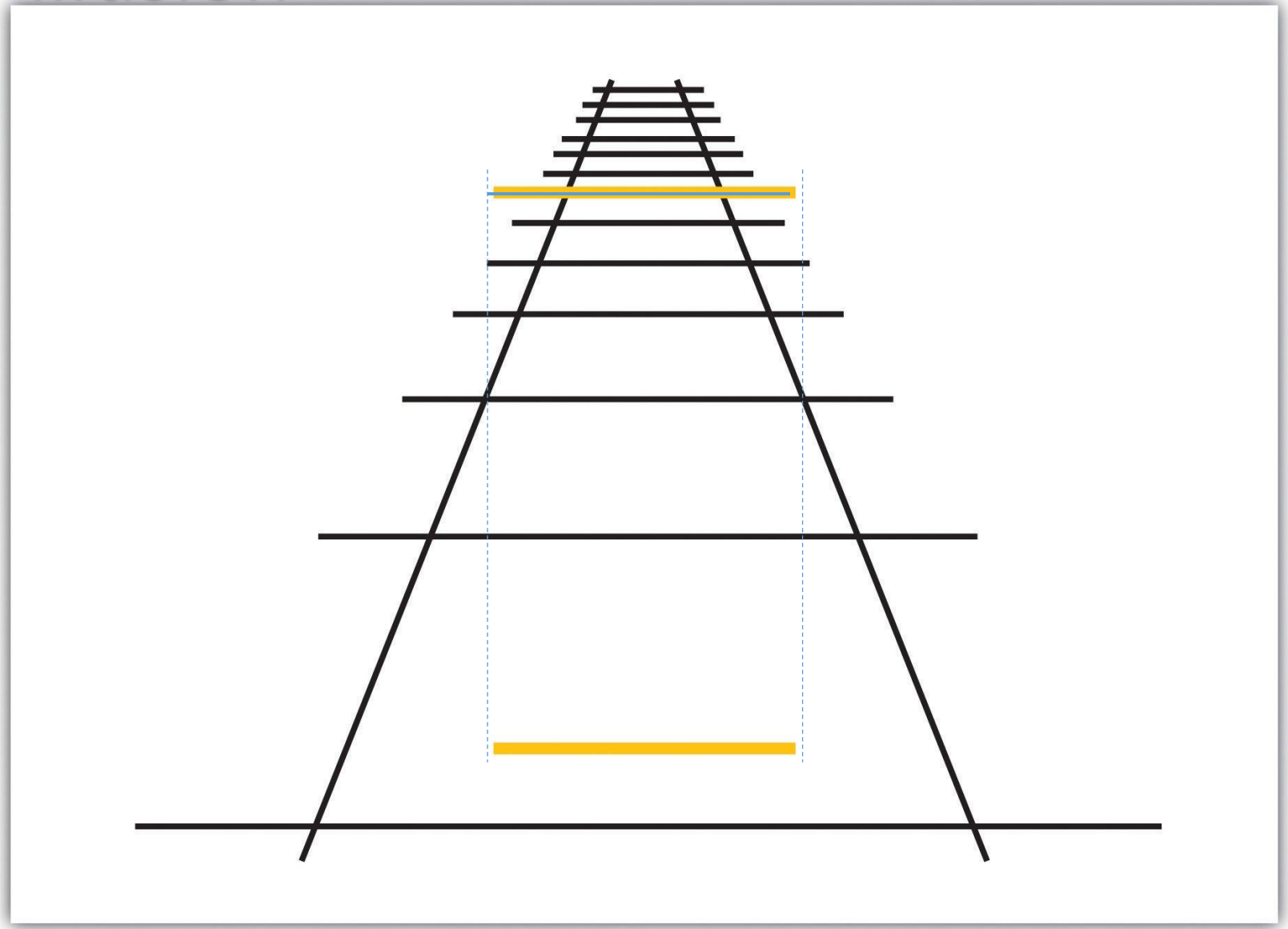
1. Can have injury without apparent pain
2. Can have pain without apparent injury (or associated body part!)
3. Attention seems to matter
4. Can be tricked

Müller-Lyer illusion

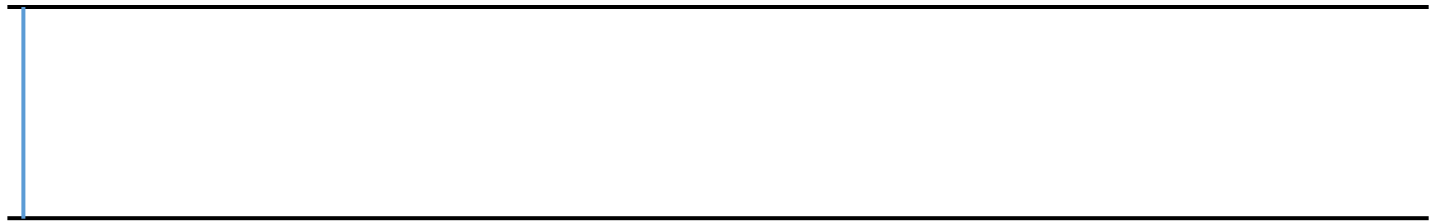


Which horizontal line appears longer?

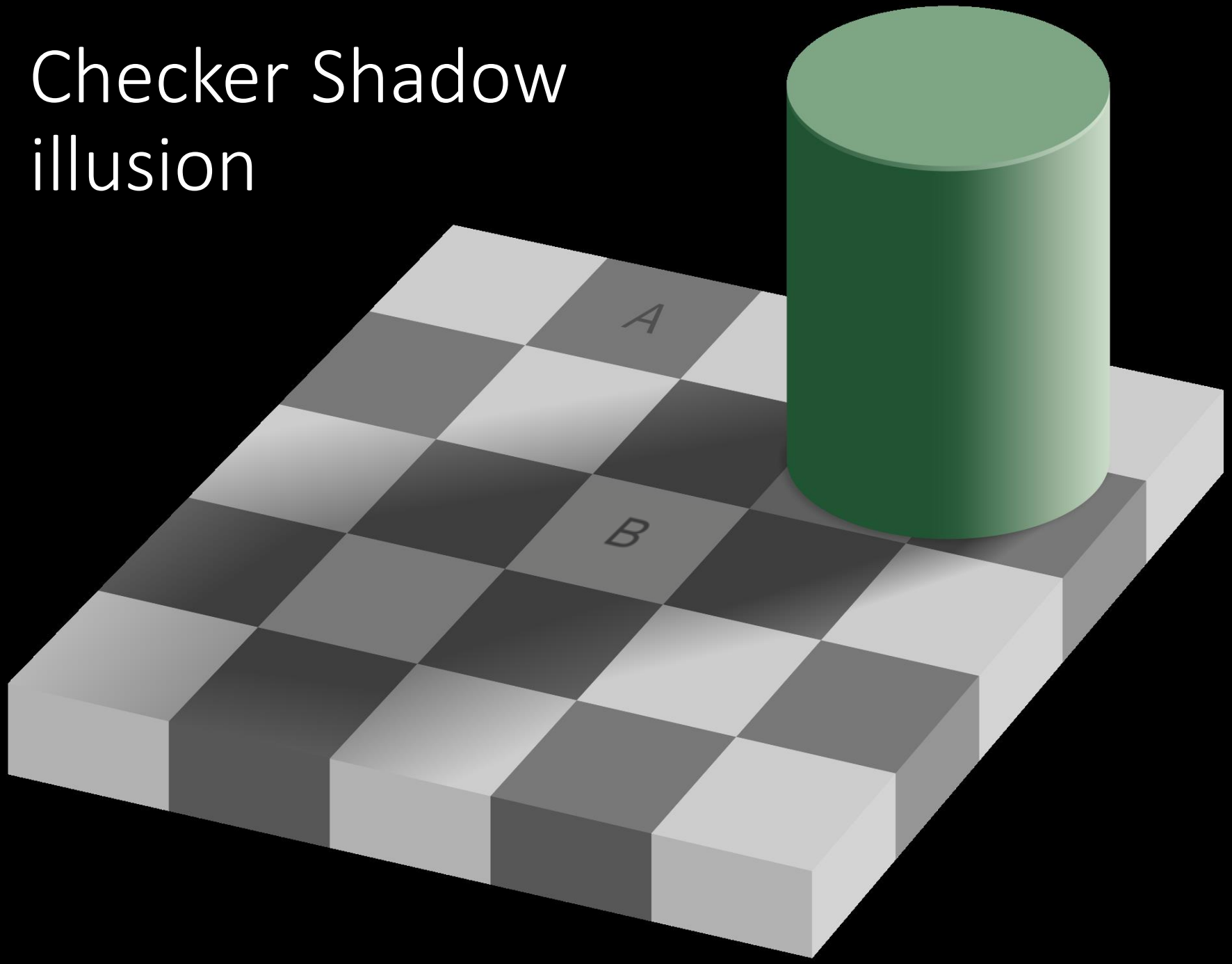
Ponzo illusion



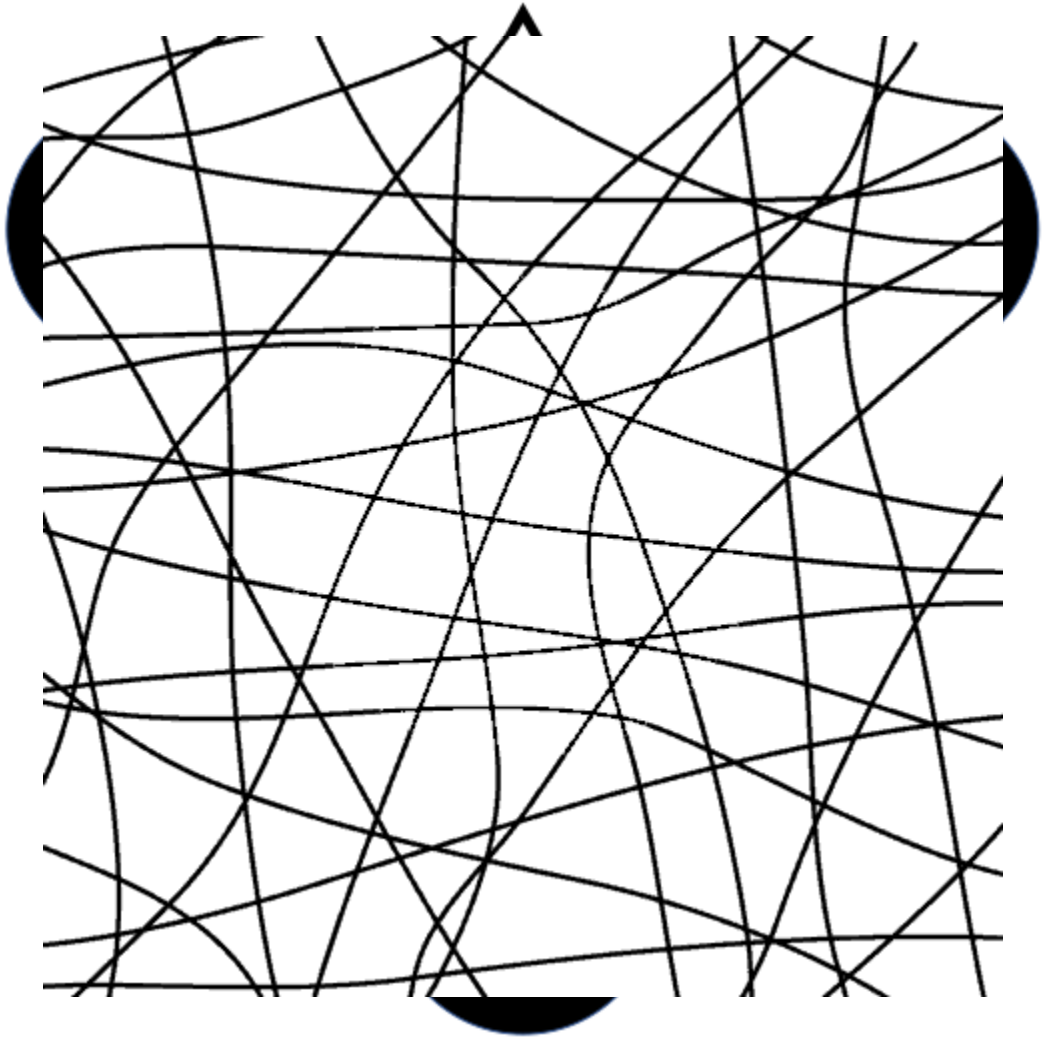
Zöllner Illusion



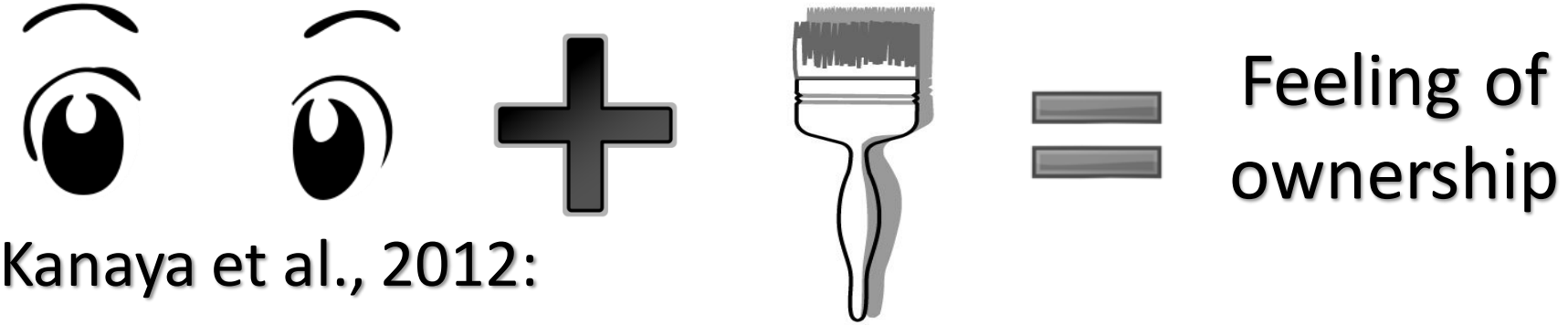
Checker Shadow illusion



Illusory Contours

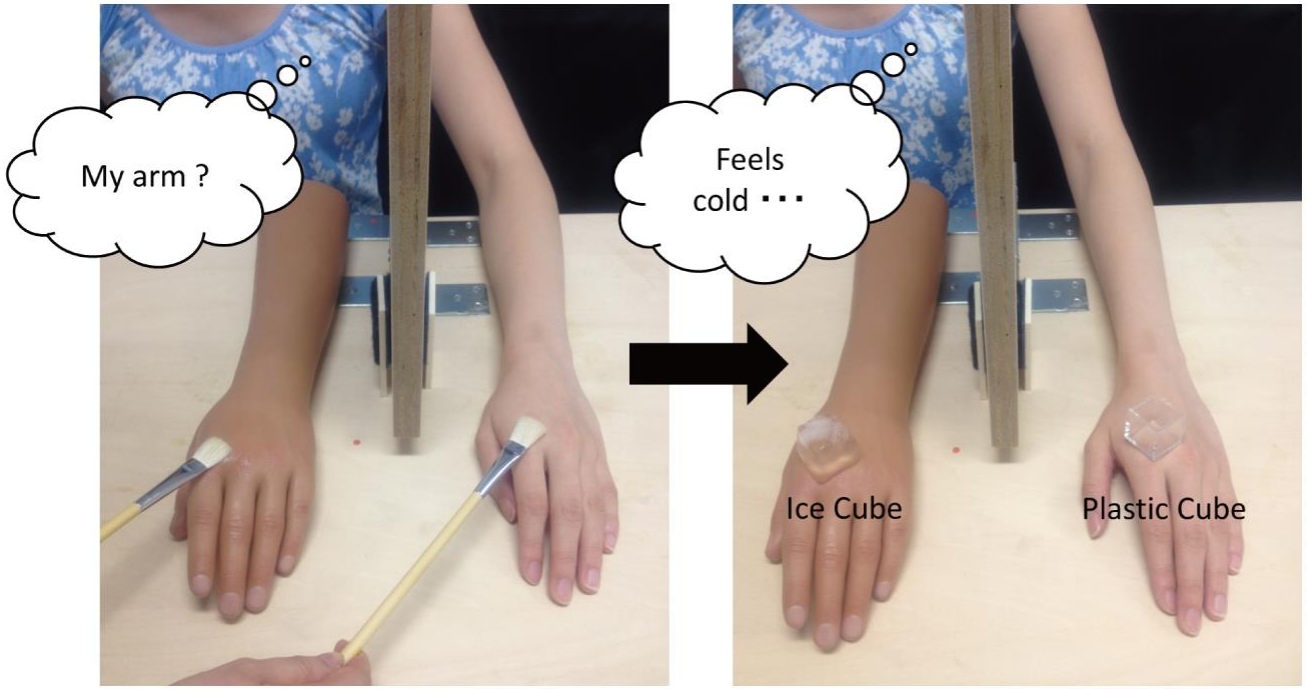


Rubber hand illusion:

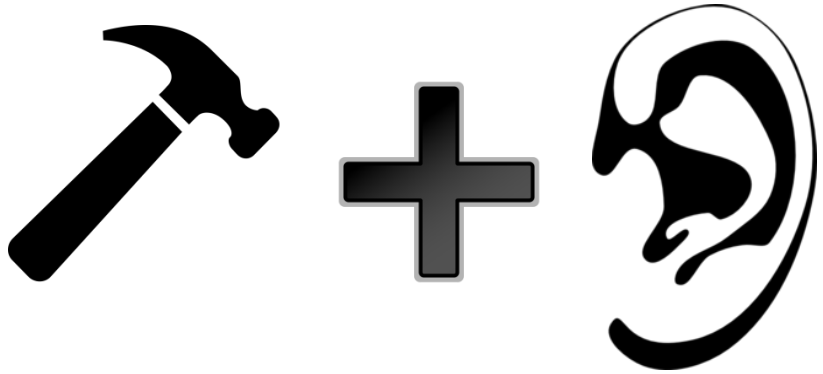


Feeling of ownership

Kanaya et al., 2012:



Senna et al., 2014:



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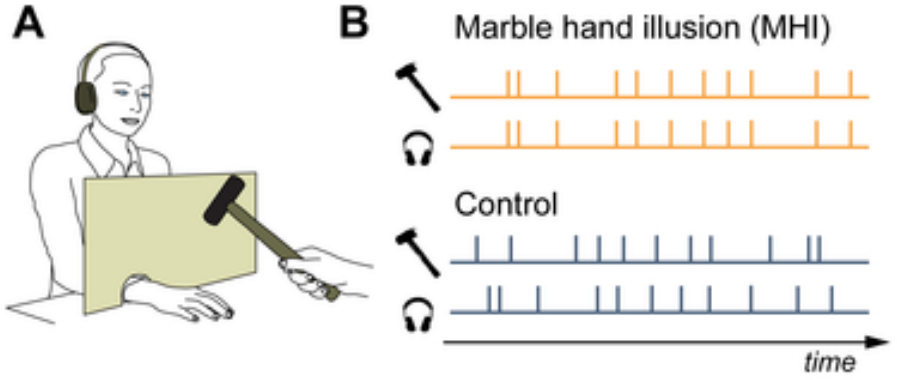
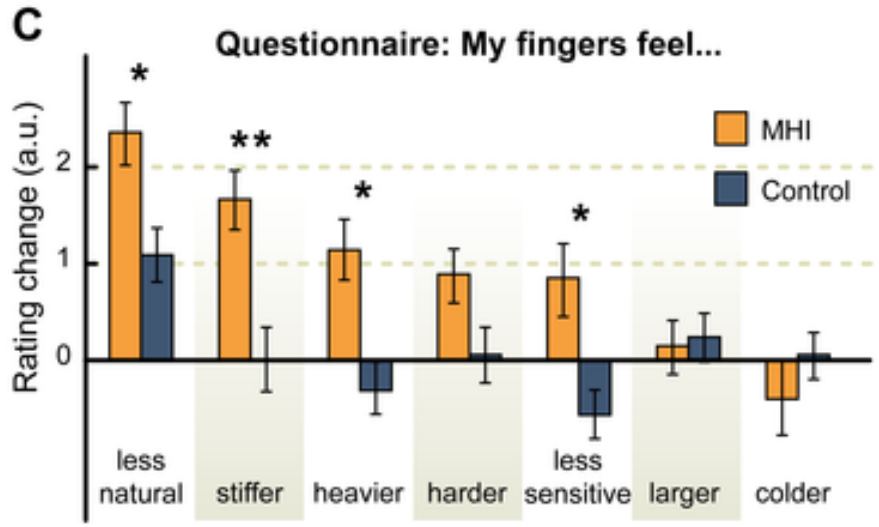
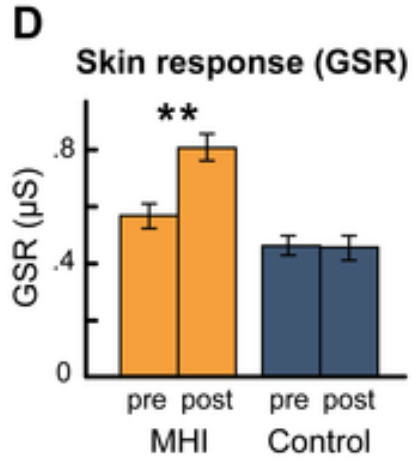
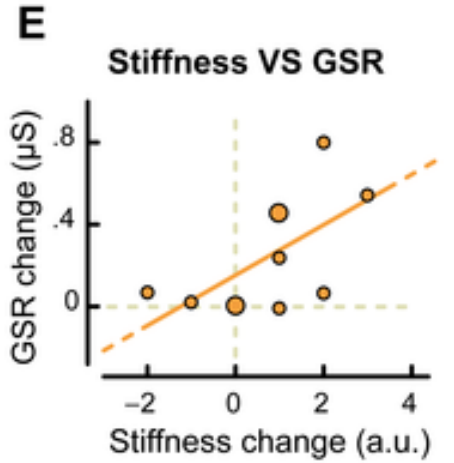
Sense of what you are made of

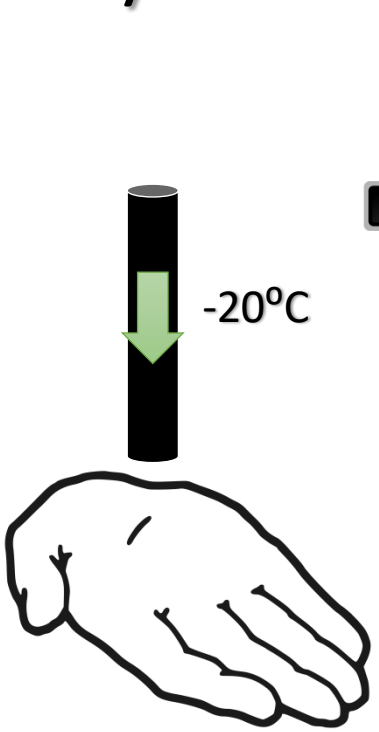








Moseley & Arntz, 2007:



+

=

Less Pain

or

+

=

More Pain

Thermal Grill illusion

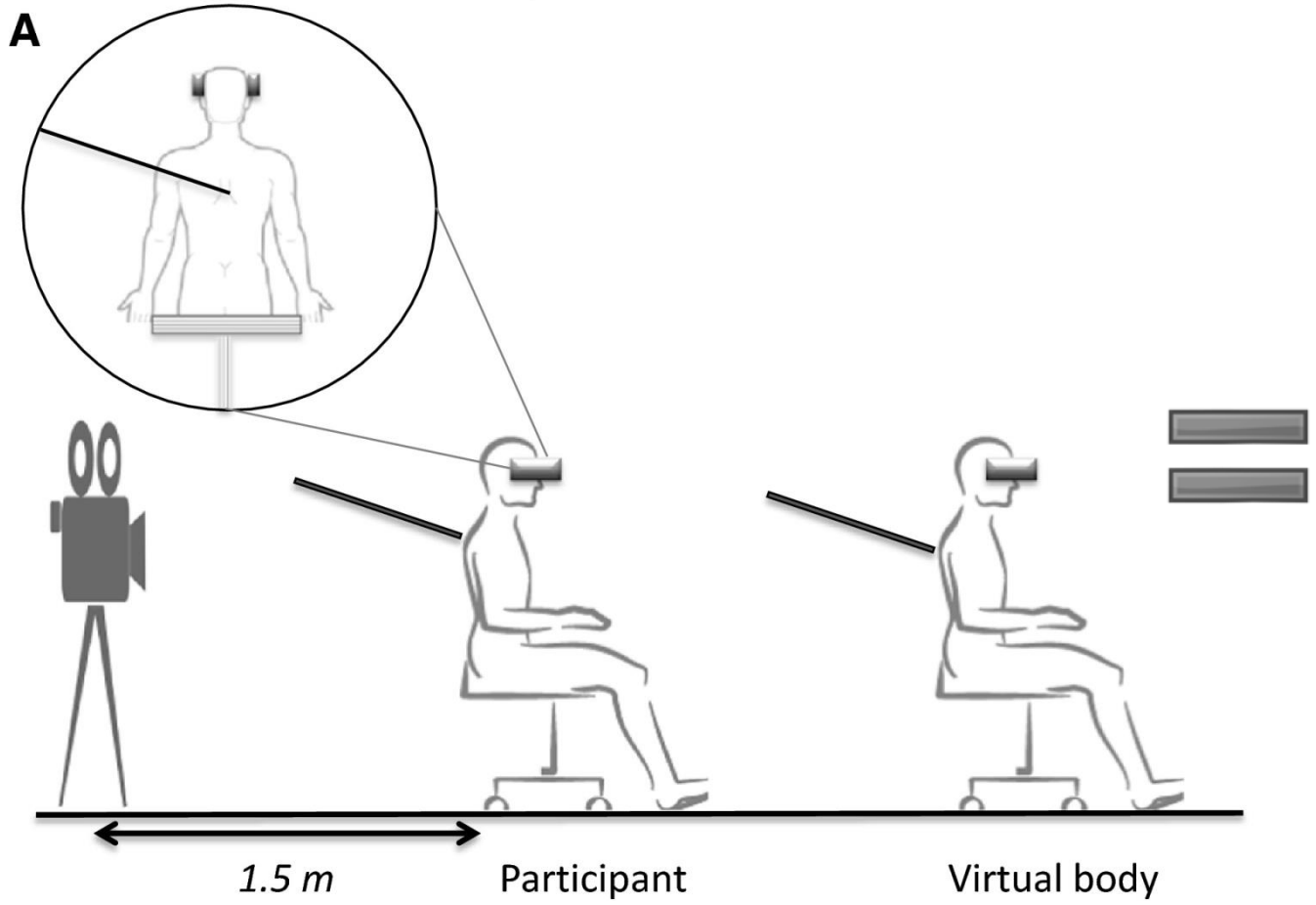

ARMY


News

Stanton et al., 2018:

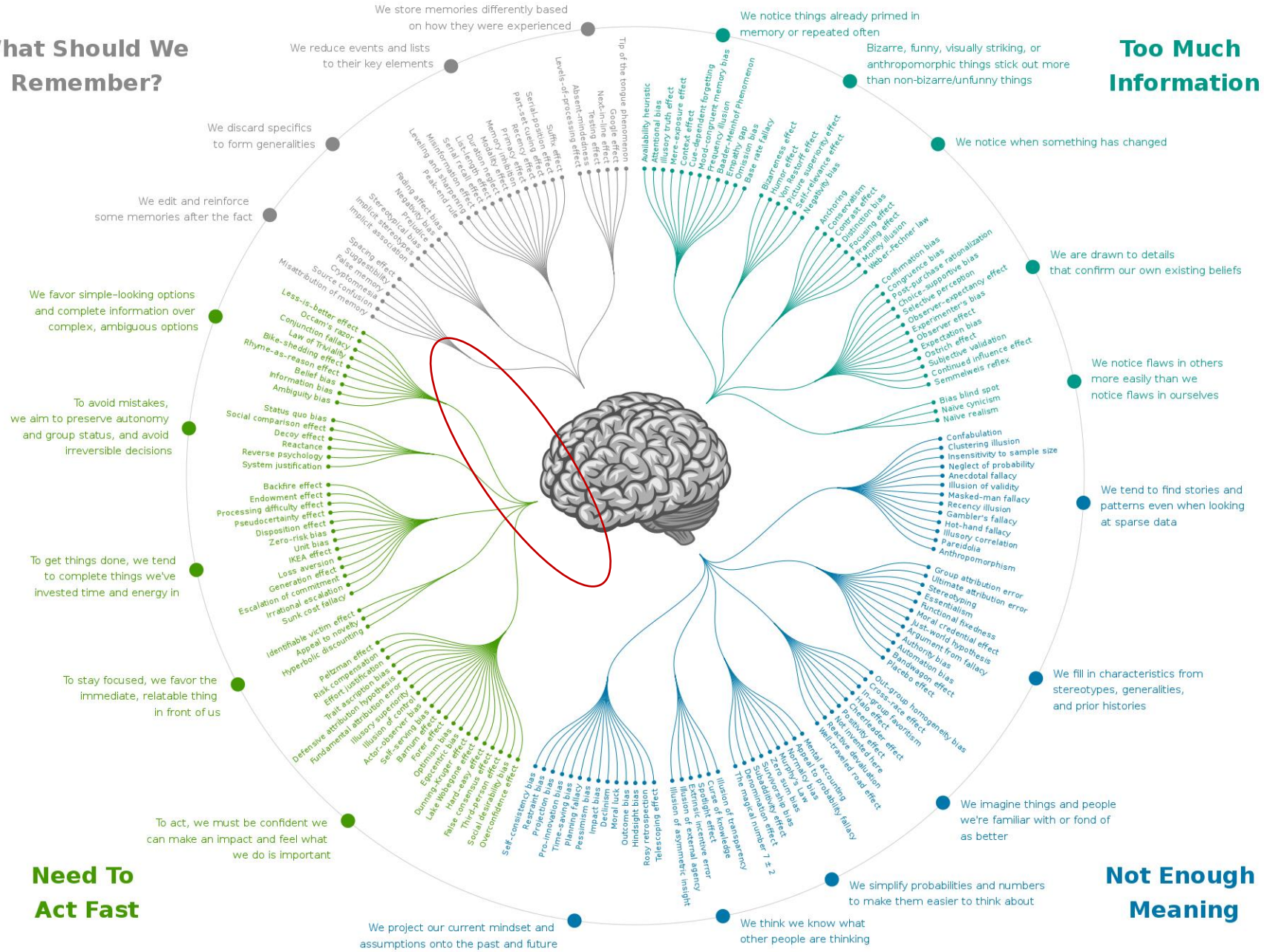
= Pain reduced 40%

Pamment & Aspell, 2017:



Pain reduced 37%

THE COGNITIVE BIAS CODEX



The Peak-End Rule

How you remember an event depends on:

- The peak—the maximum feeling, how much pain, cold, hot, happiness, boredom, etc.
- The end—how did the experience end? Things that end well are remembered more positively.

Applies to both positive and negative events

Duration (the length of the experience) doesn't matter.

Kahneman, Fredrickson, Schreiber & Redelmeier, 1993

Trial 1

One hand 14°C for 60 seconds

Painful

Trial 2

Other hand 14°C for 60 seconds

Painful

+

That hand 15°C 30 more seconds

Slightly less painful

Results

Participants said they would be more willing to repeat Trial 2 than Trial 1(!).

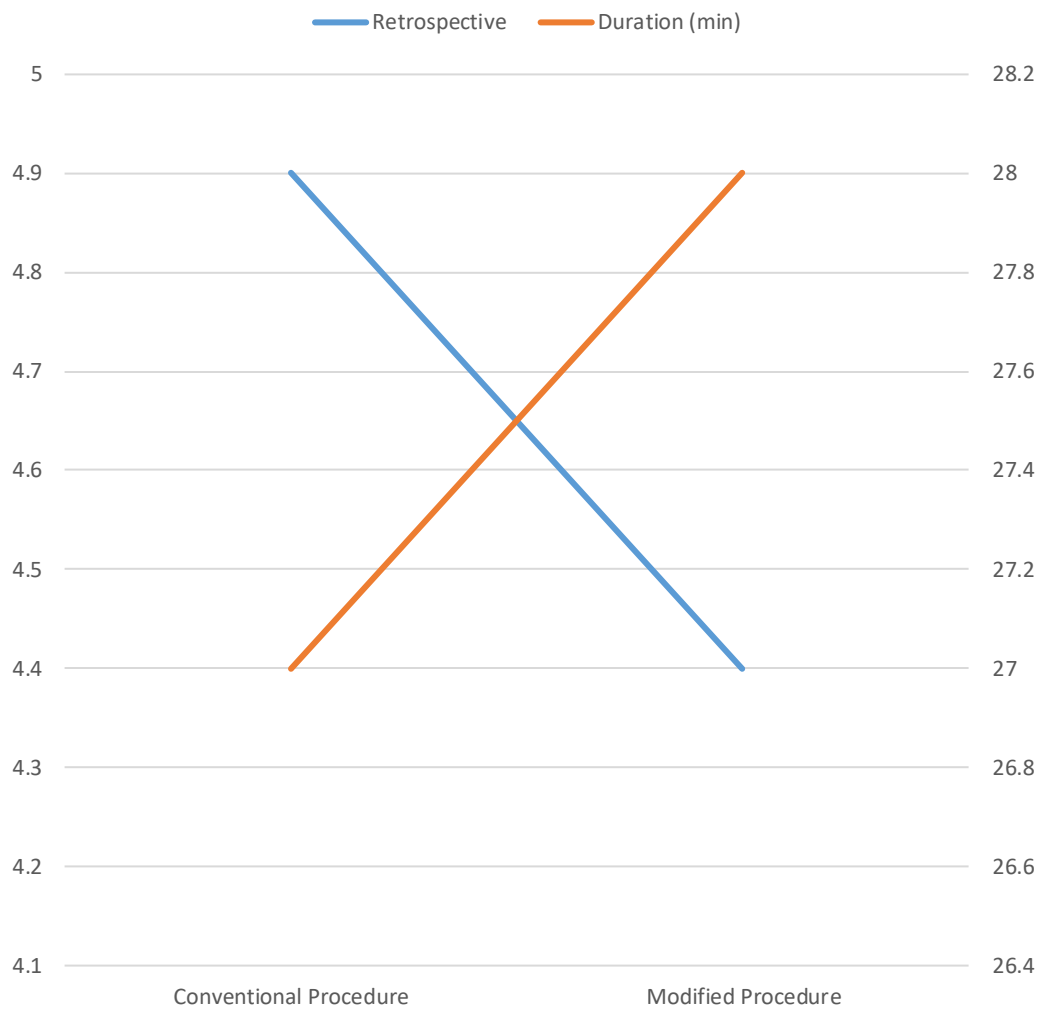
Trial 2 had all the pain of Trial 1, plus an additional 30 seconds of not-quite-as-bad pain

Peak pain was the same. But because Trial 2 ended better, it was remembered as being more pleasant (or less unpleasant).

Redelmeier, Katz, & Kahneman, 2003

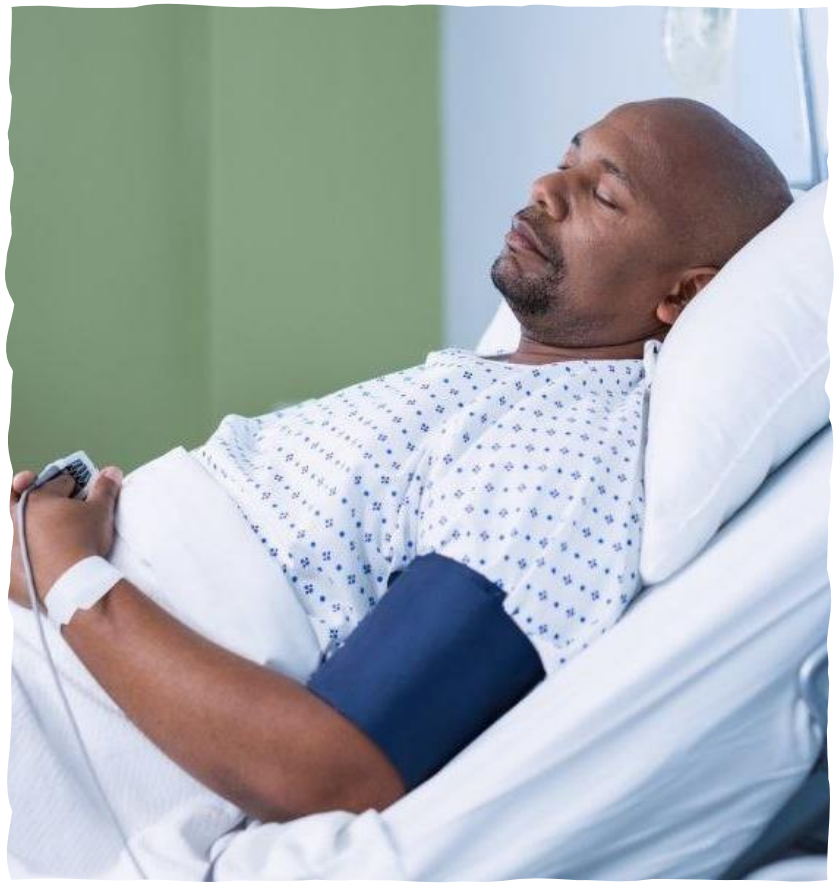
Group 1: Conventional Procedure	Group 2: Modified Procedure		
Normal Colonoscopy (painful)	Normal Colonoscopy (painful)	+	Probe left in 1-2 minutes extra (less painful)


Real-time Ratings
Average Pain
Peak Pain
Final Pain
Middle Pain
Initial Pain
0
1
2
3
4
5
6
7
8
9
Modified Procedure
Conventional Procedure


Retrospective
Duration (min)
5
4.9
4.8
4.7
4.6
4.5
4.4
4.3
4.2
4.1
28.2
28
27.8
27.6
27.4
27.2
27
26.8
26.6
26.4
Conventional Procedure
Modified Procedure

Patients in the prolonged discomfort group were far more likely to attend for repeat colonoscopy because a less painful end led them to remember the procedure more positively.

- What’s this got to do with sickle cell?



Our patients present in acute pain, e.g., A&E, daycare, inpatient admission

Or attend for procedures that are painful, e.g., femoral line insertion, port access, cannula insertion

When a patient presents with acute sickling, we can usually provide them opioid pain relief or some other procedure (e.g., RCE)

When this works, there's no problem—it ends well, the patient is relieved, they will remember the experience positively

But what about when things do *not* go well?

What if you cannot give them the opioids they want?

What if you give them opioids, but it doesn't work?

What if the patient does not want opioids, but also can't cope on their own?

Remember, pain is both a sensory and an *emotional* experience.

If the person cannot cope, they usually cannot cope *emotionally*

You may not be able to take away the sensation, but what might help the emotional part?

What do we do in all the other instances of pain in our lives?

"Brilliant, powerful, and provocative, *Against Empathy* is sure to be one of the most controversial books of our time."
—DANIEL GILBERT, author of *Stumbling on Happiness*

AGAINST EMPATHY

The Case for Rational Compassion

PAUL BLOOM

Author of *How Pleasure Works* and *Just Babies*

Some Ideas (maybe you're already doing these)

- Really listen.
- Help them stay calm.
- Ensure they are comfortable (as possible).
- Let them know you are there to do all you can.
- Reassure them you will keep them safe.
- They are not suffering alone. You're there.
- Your ideas?

Thank you for listening.