Understanding Pain and Suffering

Health Psychology (CMED2006)

LKS Faculty of Medicine
University of Hong Kong

Learning Objectives

At the end of the lecture, student should be able to

- Distinguish between sensation and perception
- Outline the gate theory of pain
- Explain how pain experience of patients might differ
- Suggest ways to help patients cope with pain and suffering

Part 1
What is Pain

Definition of Pain

"Physical or bodily suffering; a continuous, strongly unpleasant or agonizing sensation in the body, such as arises from illness, injury, harmful physical contact, etc."

"The state or condition of consciousness arising from mental or physical suffering (opposed to pleasure); distress"

Pain and Disease

Pain is prevalent in people (& patients)

Acute pain like those resulted from common illnesses, injuries and trauma

Chronic pain like back pain, headaches, joint pain and nerve pain

Adaptive Value of Pain

Pain – even more so than negative emotions
like sadness and disgust – are not something we want to have

However, it has adaptive value because it help us avoid
or get away from danger, and therefore help us survive

Acute Pain

Short impact on mental health

Caused by injury & tissue damage

Respond to pain control technique

Improved by rest

Chronic Pain

Longer & larger impact on mental health

Might persist even when injury is healed

Respond less well to pain control

Not improved by rest

Cancer Pain

Many patients with cancer have little or no pain

Severity might be comparable to non-malignant pain, but is associated with more perceived disability and less activity

Underreporting and Dissatisfaction

Iceberg phenomenon

Women, obese people, and older people are more likely to report

Women, obese people, and older people are
also more likely to be dissatisfied with treatment

Part 2
Perception versus Sensation

How Many Senses?

How many senses do we have?

Sensation as detection of aspects of the environment

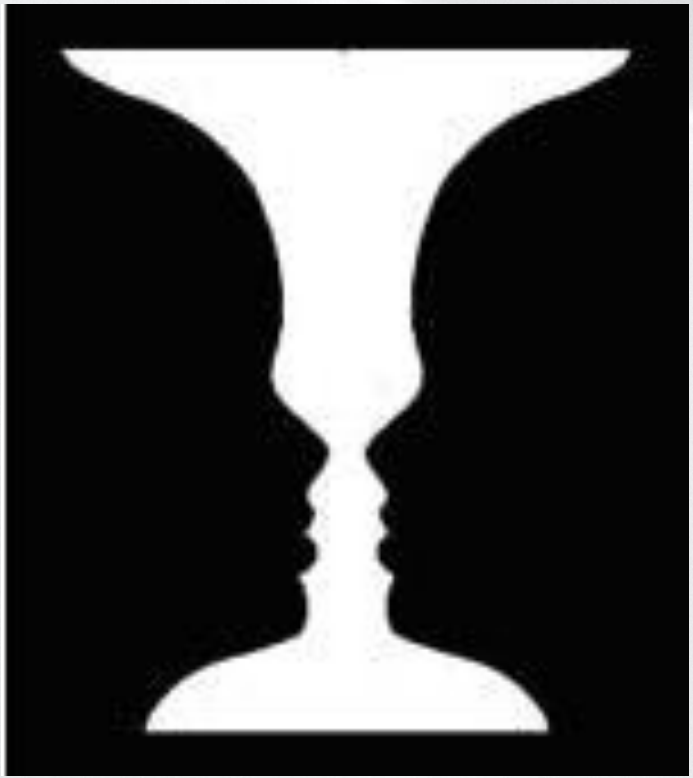
E.g. Vision is our eyes (a sensory organ)
turning light into information

Ambiguous Data

Ambiguous Data

Ambiguous Data

Figure—Ground



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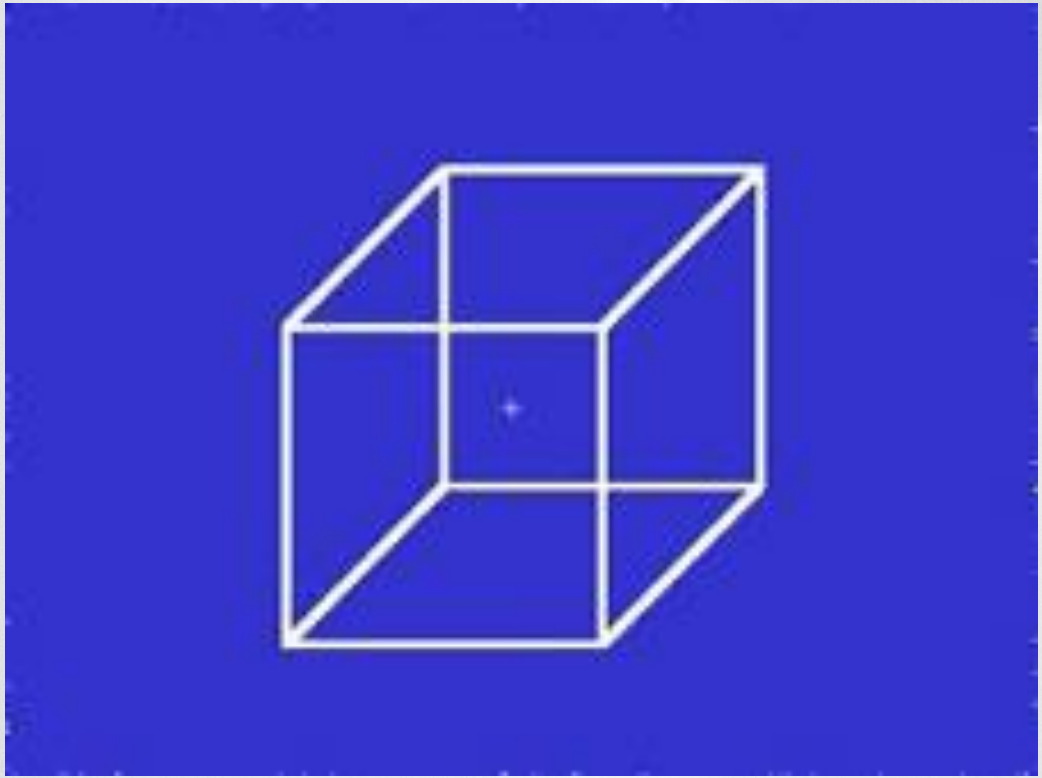

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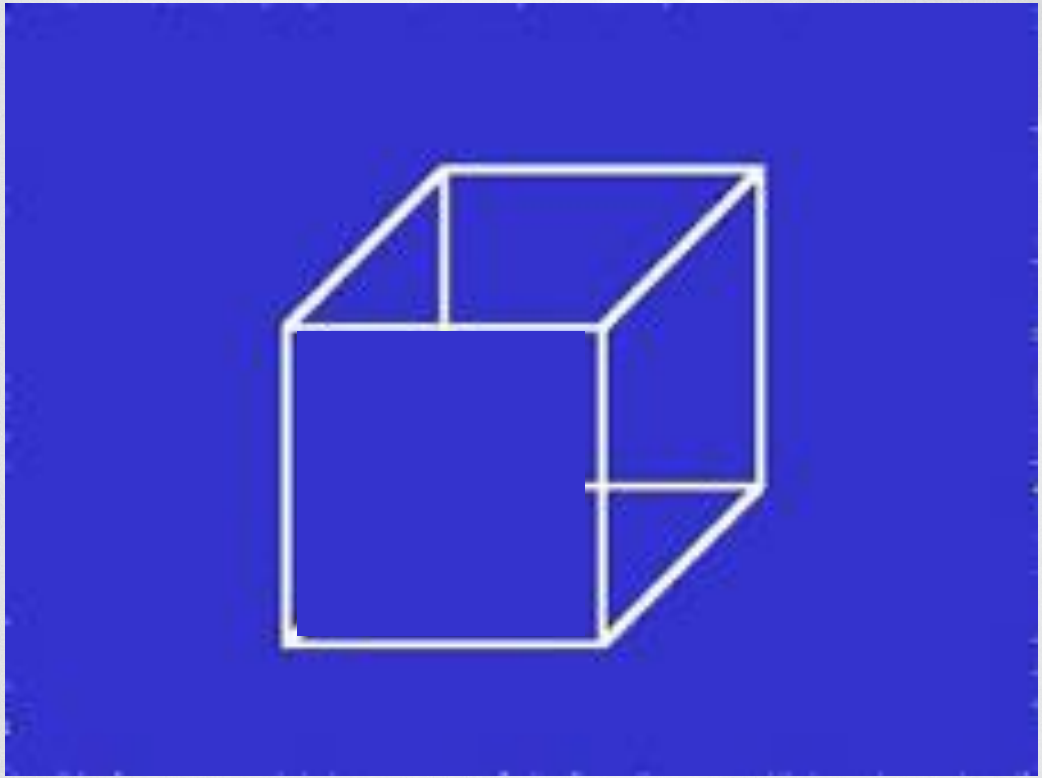

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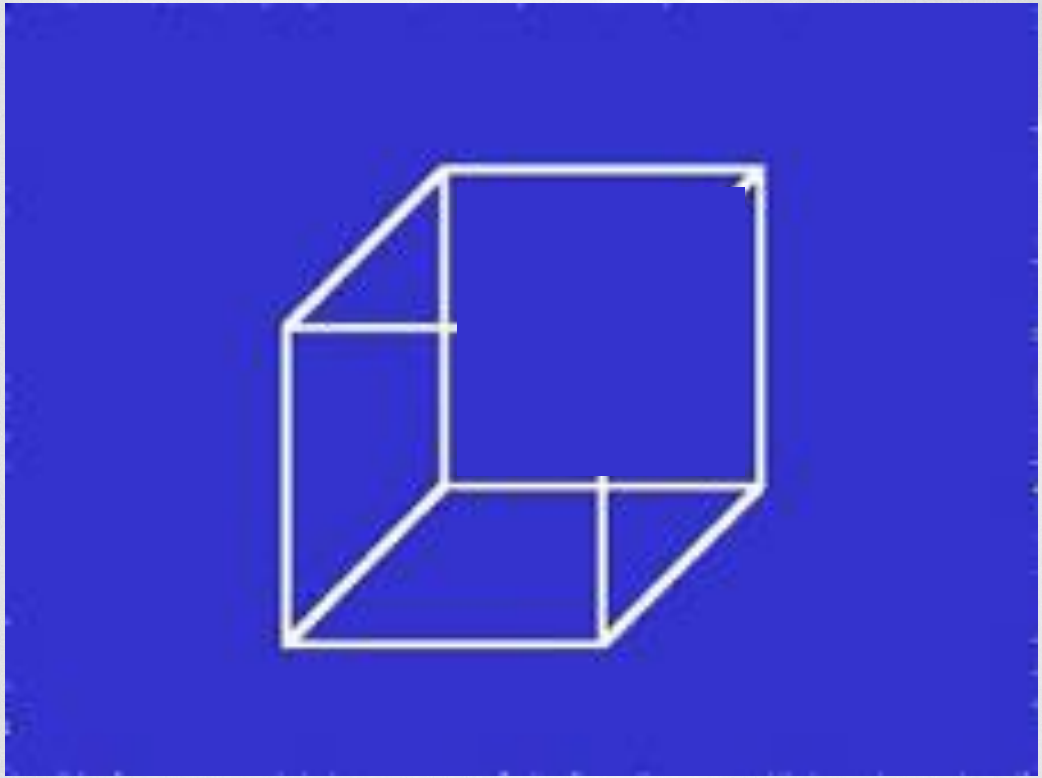

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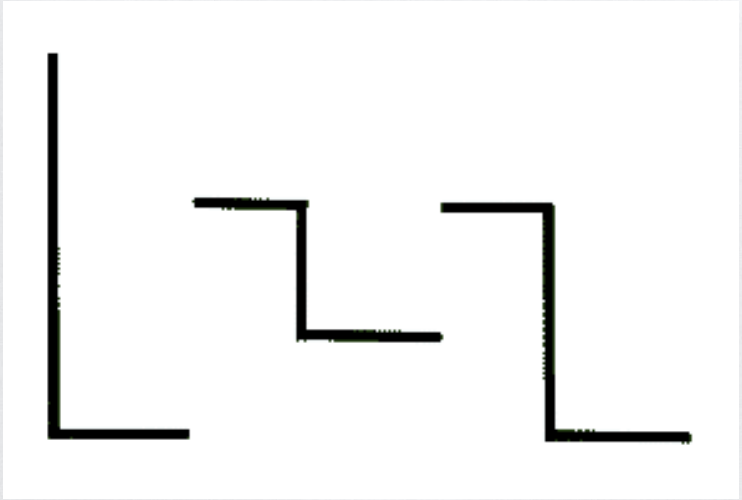

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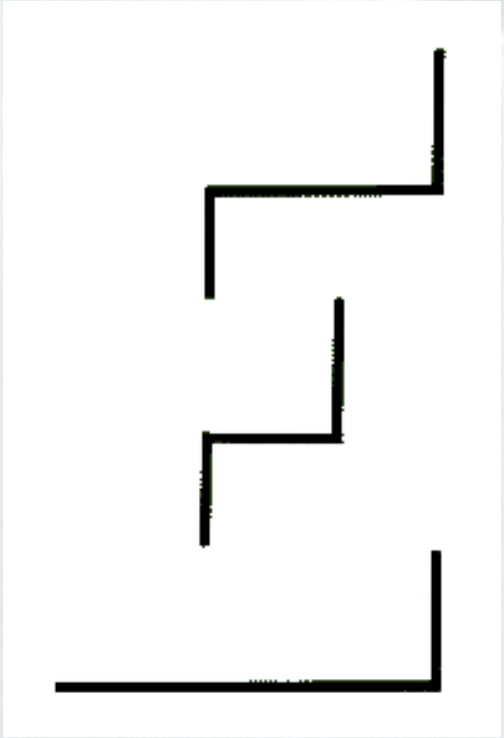

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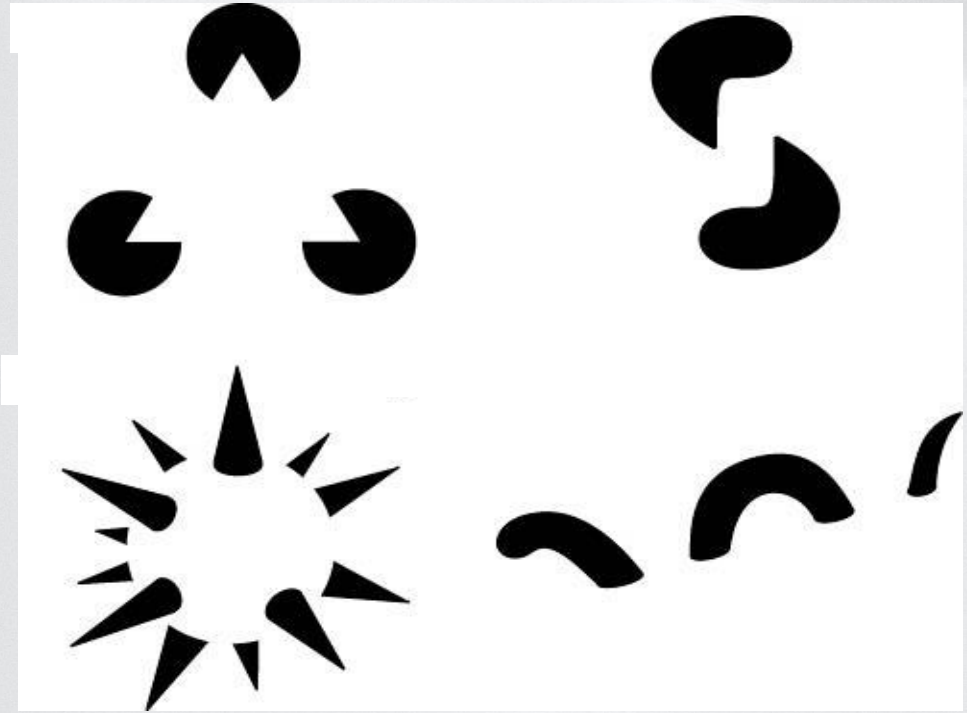

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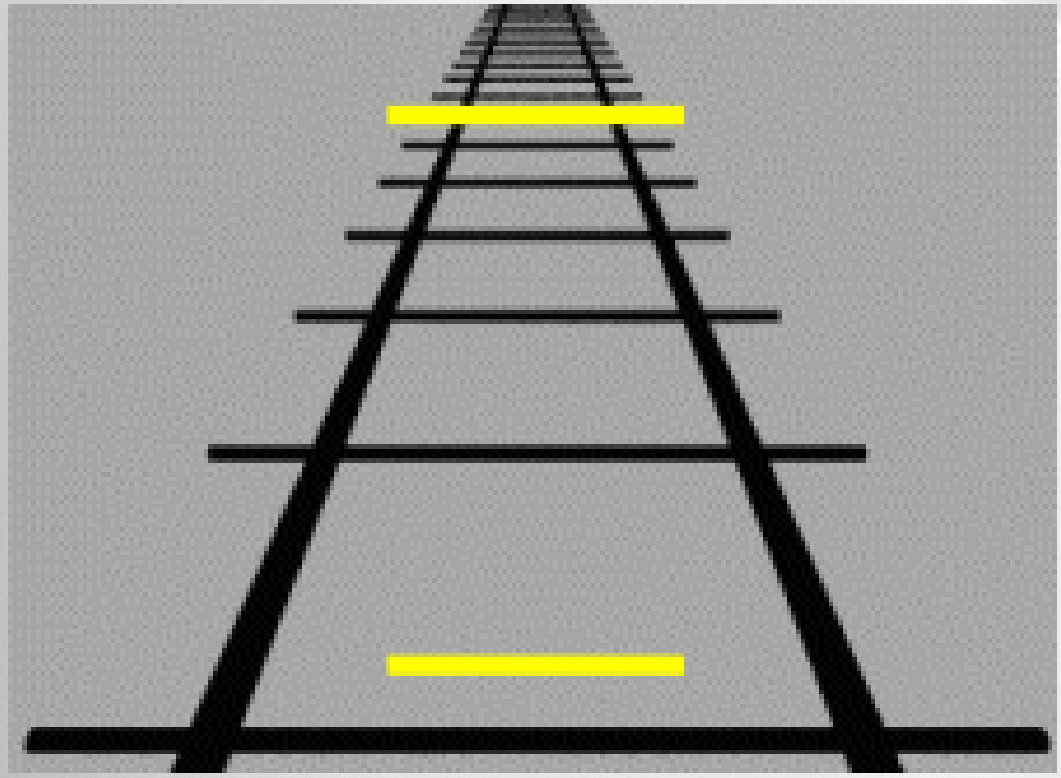

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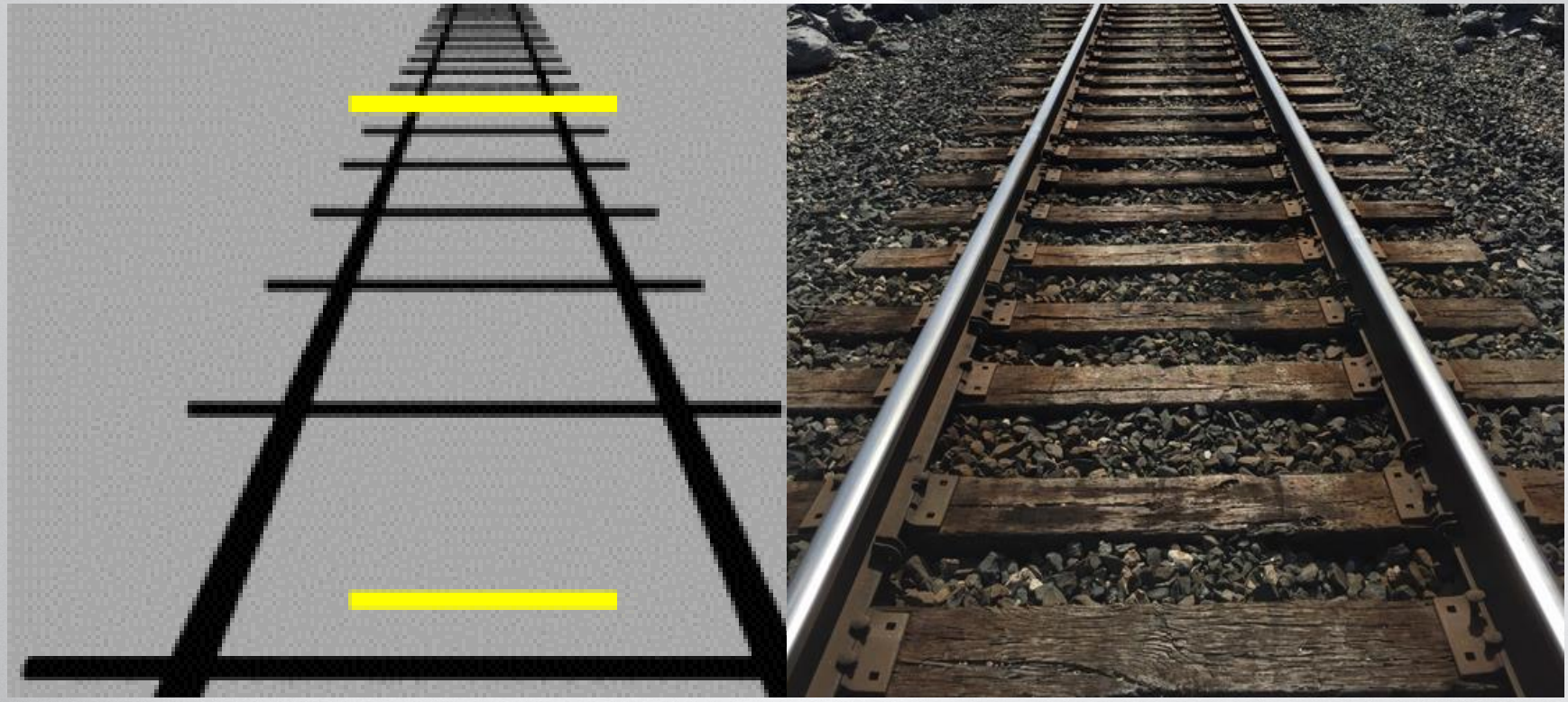
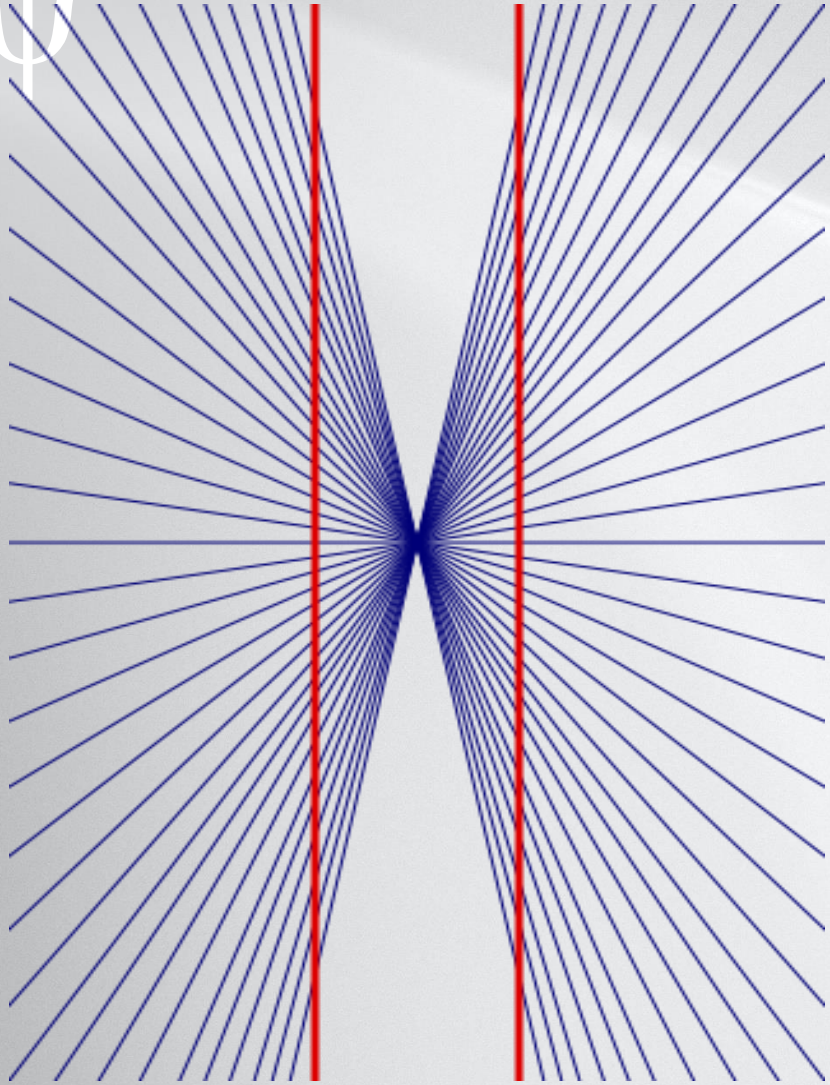
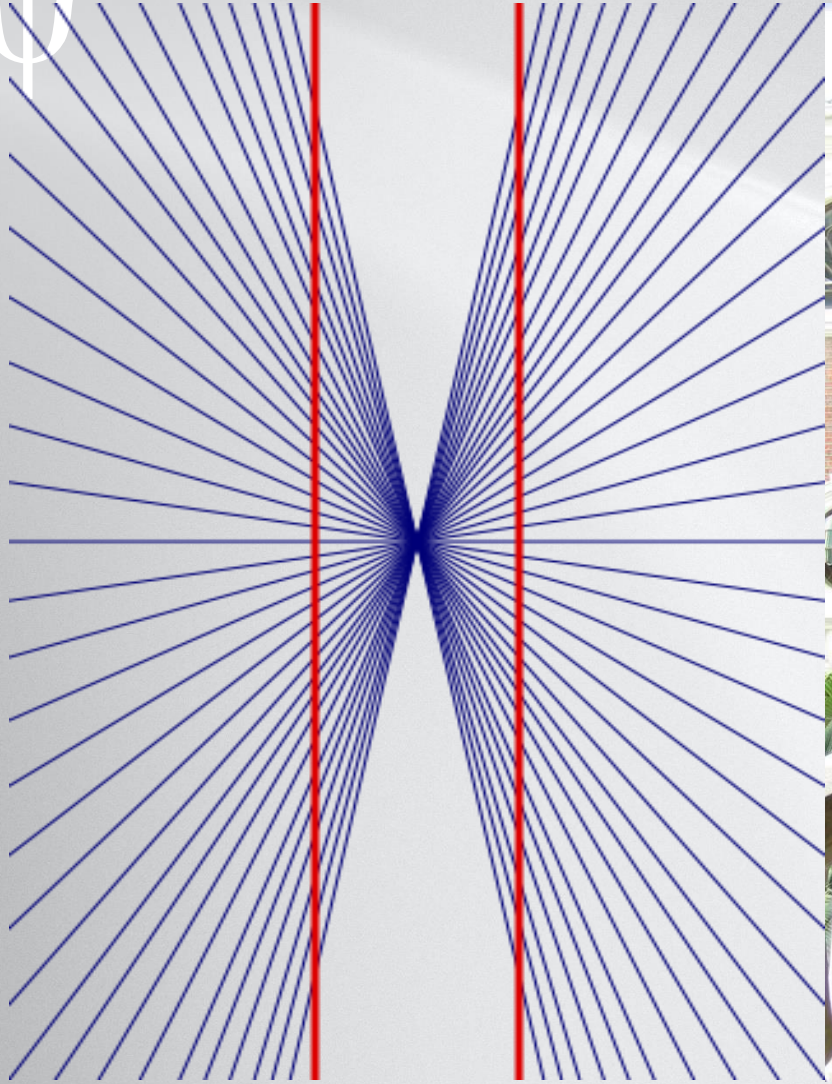




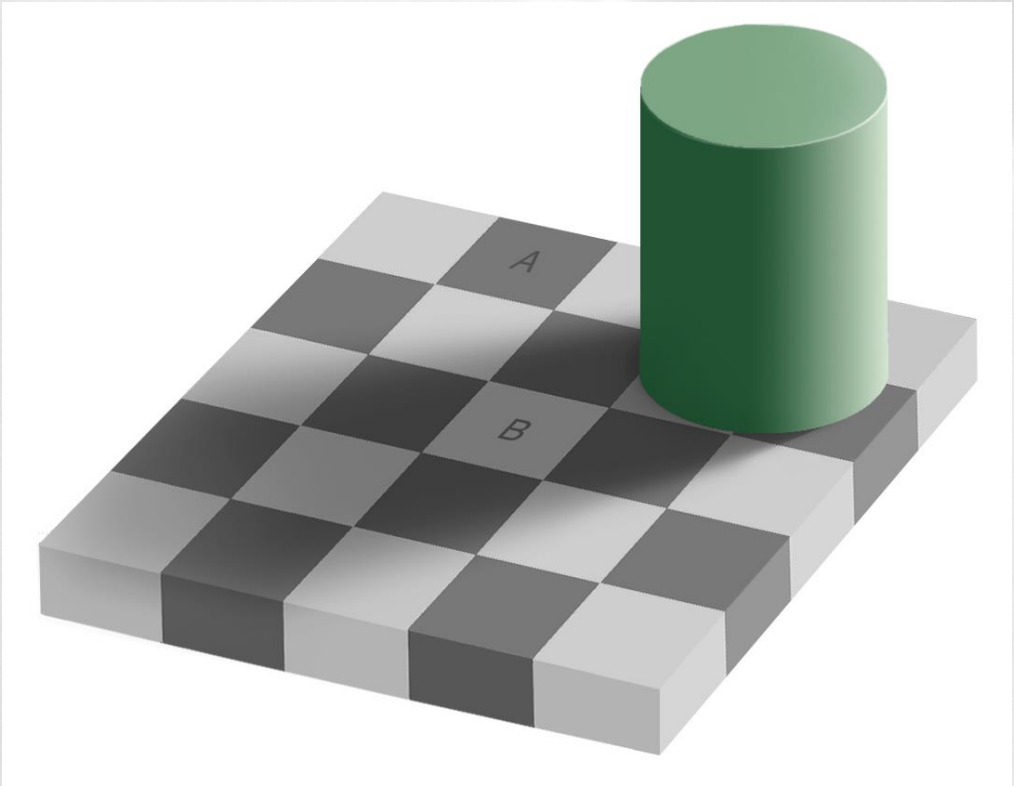


Invisible

Invisible

Invisible

Cylinder & Chessboard



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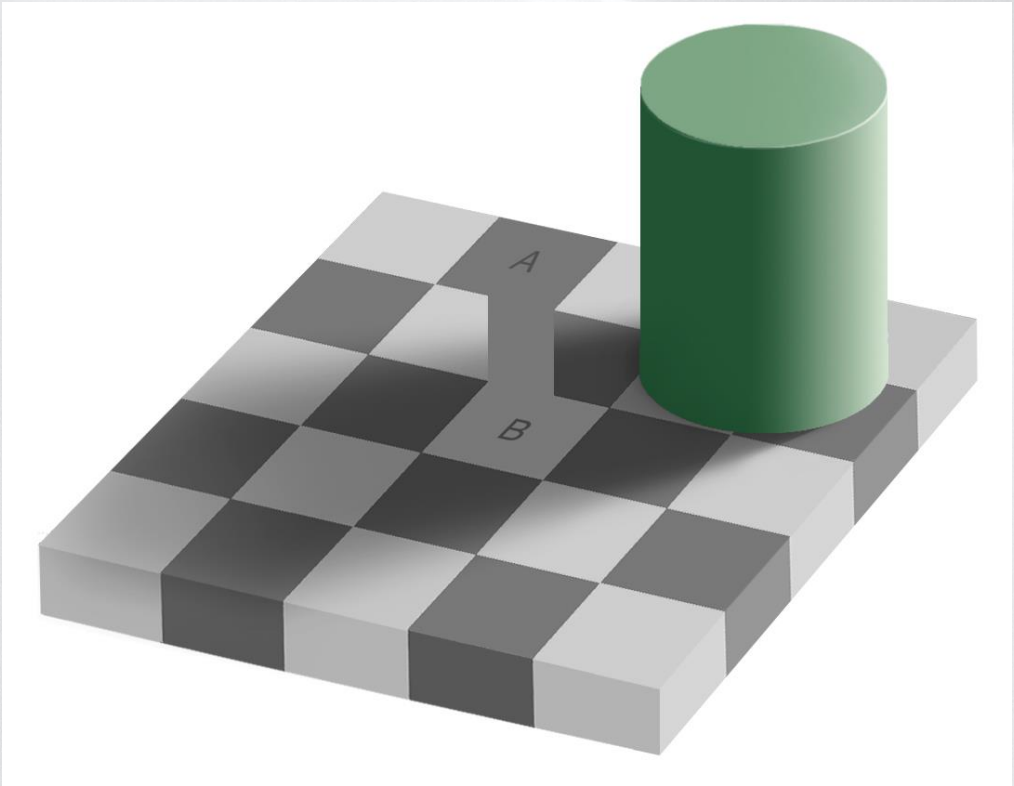

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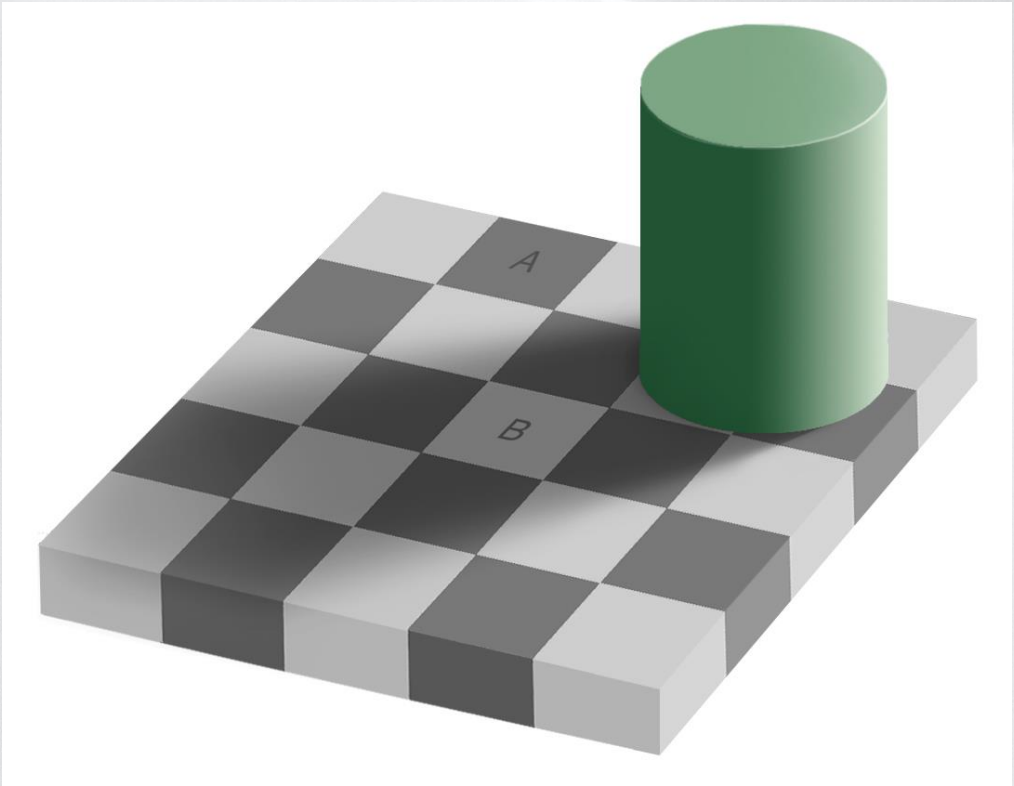


Part 3
Perception, not just Sensation

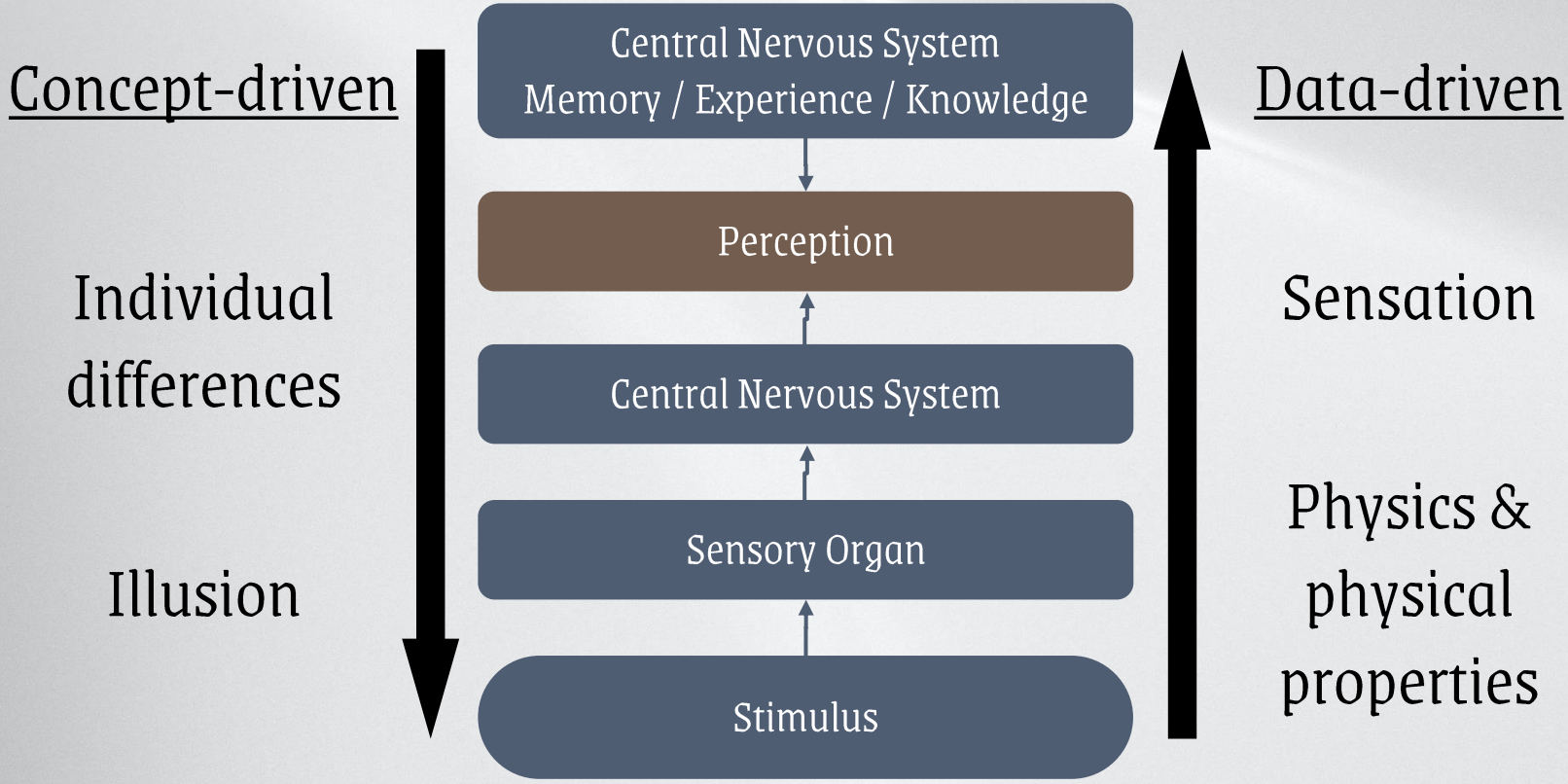
Perception

We interpret our sensory data and ascribe meaning ➔ perception

Especially when sensory data is lacking or conflicting

Not just vision, but other senses as well

Top-Down & Bottom-Up Processes



Tool 51: Perception (instead of Sensation)

Behaviour can be driven by what we perceive – and the fact that people perceive more than (or different to) what is objectively out there can be explained by the fact that perception involves the ascription of mean to sensation information

We can also change perception by changing what one knows or expects

Pain Sensation versus Pain Perception

Given that perception ≠ sensation,

pain perception ≠ pain sensation

Influences from experience, expectation and knowledge → ascription of meaning (severity of problem ≠ amount of pain)

Individual differences (Top-down + Bottom-up processes)

Four Components of Pain

Sensory features

Cognitive features

Affective / motivational features

Behavioural features

Sensory features

Pain receptor (nociceptor)

Pain pathway

Personal private sensation

Cognitive Features

Expectation and social environment

(e.g. wartime injuries versus peacetime injuries)

Placebo Effect –

A person might get better (e.g., relief from pain, symptoms, or total recovery from an illness) because they think that they are receiving an effective treatment

Affective / Motivational Features

Pain experience influenced by affective (mood) state – e.g., people who are happy feel less pain

Pain experience influenced by anxiety level

Pain stimulates avoidance

Behavioural Features

Pain expression (e.g. crying, moaning, complaining)

Physical & cognitive behaviour

Help seeking behaviour

Tool 52: Four Components of Pain

Behaviour can be explained and predicted by the motivational and behavioural features of pain; and the amount of pain we perceive can in turn be explained and predicted by examining the sensory, cognitive, and affective features of pain

Tool 53: Placebo Effect

The fact that a person's pain, symptoms, or indeed illness is relieved or cured can be totally or partially explained by the fact that they believe that they have received an effective treatment

This can be the explanation for a lot of seemingly "effective" treatments – as well as a tool to enhance the effectiveness of actually effective medical treatments

Part 4
Gate Control Theory of Pain

Gate Control Theory of Pain

A theory about how sensory pathway for pain result in or not result in our perception of pain

A gate along the pathway between our pain receptors and our somatosensory cortex of the brain

Factors that Open the Gate

Emotional factors: anxiety, worry, tension, depression

Physical factors:

extent and type of injury, inappropriate activity level

Cognitive & behavioural factors: focusing on the pain, boredom

Factors that Close the Gate

Emotional factors: happiness, optimism

Physical factors:

medication, counter-simulation (e.g. heat or massage)

Cognitive & behavioural factors: concentration (on other things) & distractions, reactions of others

Tool 54: Gate Control Theory of Pain

The amount of pain (and thus the associated behaviour) can be explained and predicted by whether the “gate” of pain is opened or closed – which is in turn determined by various emotional, physical, cognitive, and behavioural factors

We can also implement things that close the gate (or prevent the gate from opening)

Part 5
Brief Overview of Pain Assessment and Pain Management

Describe & Explain

Please write down one experience of pain you personally have the past year (cf. induced by cold pressor test)

What is the nature of the pain? E.g. headache, stomach pain, injury, menstrual cramp, etc.

Is it the first time you have this kind of pain? What is the mechanism behind it?

Describe and Explain

How severe was the pain?

How long did it last? Do you know why it ended?

Did you do anything in response to the pain?

Did it reduce your pain? What is the mechanism behind that?

Pain Assessment

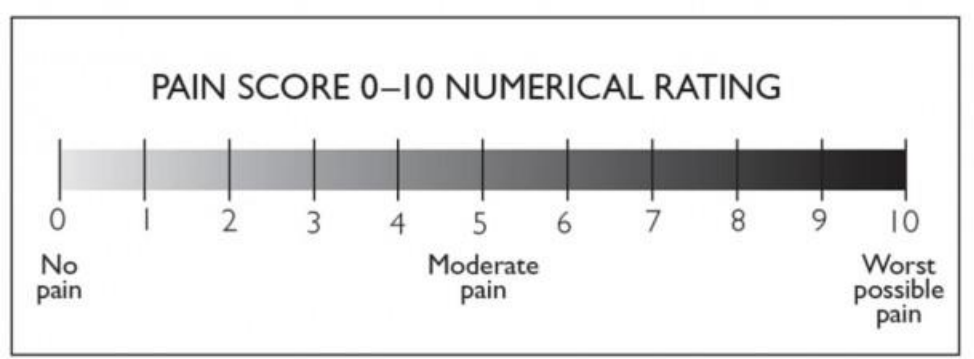
Given the private and subjective nature of perception,

it is difficult to accurate assessment all aspects of it

→ self-assessment is usually the way to go for pain

Pain Assessment Scale

"From 0 to 10, how would you rate your pain?"



PQRST pain assessment mnemonic

Provoking factors

Quality (characteristic)

Region (legion)

Severity

Temporal

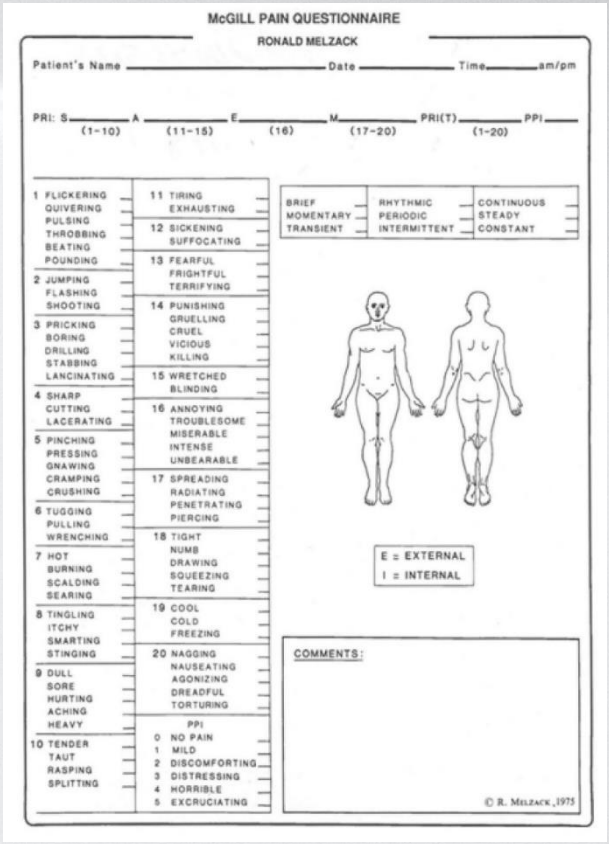
Pain Assessment for Diagnostic Purposes

SOCRATES

- Site
- Onset
- Character
- Radiation
- Association
- Time course
- Exacerbating & relieving factors
- Severity

More elaborate tools to describe & assess

McGill Pain Questionnaire (MPQ) assess things like whether the pain is Throbbing, shooting, stabbing, sharp, cramping, gnawing, hot/burning, aching, heavy, tender, splitting, tiring/exhausting, sickening, fearful, punishing/cruel; no pain, mild, discomforting, distressing, horrible, excruciating



McGILL PAIN QUESTIONNAIRE

RONALD MELZACK

Patient's Name _____ Date _____ Time _____ am/pm

PRI: S _____ A _____ E _____ M _____ PRI(T) _____ PPI _____
(1-10) (11-15) (16) (17-20) (1-20)

1 FLICKERING QUIVERING PULSING THROBBING BEATING POUNDING	11 TIRING EXHAUSTING	BRIEF MOMENTARY TRANSIENT	RHYTHMIC PERIODIC INTERMITTENT	CONTINUOUS STEADY CONSTANT
2 JUMPING FLASHING SHOOTING	12 SICKENING SUFFOCATING			
3 PRICKING BORING DRILLING STABBING LANCINATING	13 FEARFUL FRIGHTFUL TERRIFYING			
4 SHARP CUTTING LACERATING	14 PUNISHING GRUELLING CRUEL VICIOUS KILLING			
5 PINCHING PRESSING GNAWING CRAMPING CRUSHING	15 WRETCHED BLINDING			
6 TUGGING PULLING WRENCHING	16 ANNOYING TROUBLESOME MISERABLE INTENSE UNBEARABLE			
7 HOT BURNING SCALDING SEARING	17 SPREADING RADIATING PENETRATING PIERCING			
8 TINGLING ITCHY SMARTING STINGING	18 TIGHT NUMB DRAWING SQUEEZING TEARING			
9 DULL SORE HURTING ACHING HEAVY	19 COOL COLD FREEZING			
10 TENDER TAUT RASPING SPLITTING	20 NAGGING NAUSEATING AGONIZING DREADFUL TORTURING			
	PPI 0 NO PAIN 1 MILD 2 DISCOMFORTING 3 DISTRESSING 4 HORRIBLE 5 EXCRUCIATING			

E = EXTERNAL
I = INTERNAL

COMMENTS:

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Pain Assessment

After the pain (or the experience of pain) is more fully described, we can then try to explain it (through the 4 components, the gate theory of pain, and the underlying pathology)

Pain assessment using validated tools can help us provide better pain management to patients, as well as help with diagnosis and monitoring of the patient's situation

Need for Management

Badly controlled chronic pain
is associated with poor quality of life
and request for assisted suicide

Tendency for healthcare professionals
to under-assess patient's pain and
underestimate patient's reported pain

Pain for Patients & Providers

For patient, pain is the problem

For healthcare professionals,
the underlying pathology is the problem –
pain is just a by-product

Barriers to Pain Management

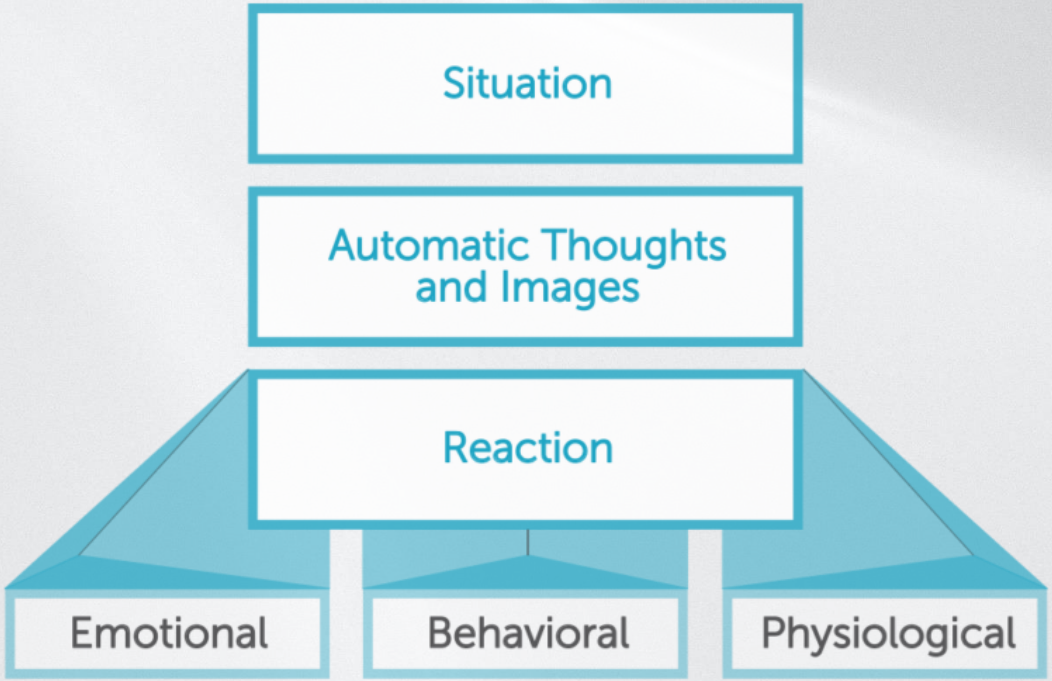
Patients seldom tell nurses about their pain

Doctors, nurses and patients
are often anxious about narcotic prescription

Significant delays between request
and administration of pain medication

Cognitive-Behavioural Therapy (CBT)

CBT is currently the dominant approach in mental health and psychotherapy – and the same approach can be applied to pain



Cognitive-Behavioural Approach to Pain

Cognitive restructuring & Problem solving

Relaxation skills (deep breathing, meditation, distraction, imagery, etc.)

Pacing (break up activity in smaller chunks)

Cognitive-Behavioural Approach to Pain

Behavioural activation (increase physical activity, increase enjoyable activity, reduce avoidance)

Psychoeducation (about etiology and treatment)

Hypnosis (alteration in perception etc.)

Cognitive-Behavioural Approach to Pain

Supportive psychotherapy (encouragement and motivational interviewing)

Relapse prevention strategies

Biofeedback (awareness of physiology)

Other Aspects of Pain Management

Avoid behaviours that cause pain

Peer support – involvement of family and friends

Drugs – maybe reduce dosage over time

Pain Management

A person's experience with pain can be explained by how their pain is managed (by themselves, healthcare professionals, and the healthcare system in general) – especially in terms of the shortfall and limitations of pain management

Part 6
Mental Pain & Suffering

Pain in the sense of Suffering

Pain can also be defined as “The state or condition of consciousness arising from mental or physical suffering.”

Mental suffering occurs in all people
and not only people with illness

There are many causes of mental suffering

Duḥkha（苦）

生苦	Suffering of being born
老苦	Suffering of getting old
病苦	Suffering of getting ill
死苦	Suffering of dying
愛別離苦	Suffering of being separated from those we love
怨憎會苦	Suffering of hating others
求不得苦	Suffering of not getting what we want
五陰熾盛苦	Suffering caused by our mind & body

Management of Mental Suffering

Drugs can affect the physiological aspects of mental suffering

Cognition (how one sees the world and sees oneself)
can affect mental suffering,
and in turn also affect the physiological aspects

Management of Mental Suffering

Some aspects of mental suffering is existential,
and therefore cannot be solved or dealt with by “treatment”

On the other hand, positive emotion and meaning
can still occur regardless of mental suffering
(see section on Positive Psychology)

Philosophies and Religions

The world of philosophy and religion gives us a few ways to overcome or manage mental suffering

Either acceptance, avoidance, or actual solution to existence

Tool 55: Mental Suffering

Mental suffering (and its associated behaviours)
can be divided into (and explained by)
different categories – and can exist even
if there is nothing obviously wrong with the person

Part 7
Explaining and Suggesting Behaviours

Scenario 1

Rachel, 7, just bumped her head by accident.

She started to cry and told her mother that she was in pain.

As a result, her mother gave her a lollipop to eat.

After she finished half of the lollipop, Rachel stopped crying.

Scenario 2

Steve and Stephen, 10, are classmates.
They both just received the influenza vaccination at school.
Steve reported that the injection itself hurt a lot,
and he continues to feel pain for the rest of the day.
Stephen, on the other hand, reported that
the injection itself did not hurt much,
and he also does not feel any pain afterwards.

Scenario 3

Tim, 15, was injured in a football game. He was dribbling the ball when an opponent's tackle hit his right shin. His shin was bleeding, and he grimaced a lot while resting by the football field. When his friends asked him whether he was in pain, he said "a little bit".

When he arrived at the sick bay, he told the nurse that he is in a lot of pain. The nurse examined his wound and told him that no bone seemed to be broken, and gave him some paracetamol. After 15 minutes of rest, Tim reported that his pain was reduced.

Part 8
Behavioural Change

Case 12

Canice, 75, is suffering from rheumatoid arthritis (RA, which is a chronic inflammatory disorder typically affecting one's joints). He is currently taking disease-modifying antirheumatic drugs (DMARDs), meaning his disease is well controlled. However, he complains of intermittent joint-pain (according to Canice, pain often occurs when the weather is windy or humid). And when he is in pain, the only thing that he can do is to stay at home. His doctor prescribed some paracetamol to him and told him to take them if the pain is too much. However, he hears from some friends suffering from RA that they have access to NSAIDs (Nonsteroidal anti-inflammatory drugs). On the other hand, he worries about side effects of NSAIDs like heart problems and kidney damage.

Case 12 Focus

Analyze Canice's pain experience

(Four components; bio-psycho-social aspects)

Suggest general approach to Canice's pain problem

Conclusion

Pain can be divided into physical suffering (a continuous, strongly unpleasant or agonizing sensation in the body, such as arises from illness, injury, harmful physical contact, etc.) and mental suffering – the latter is no less common than the former

Pain manifests differently in different people, and should also be managed different – from emotional, behavioural, and physiological levels to spiritual and philosophical levels

Reading / References

- Taylor, SE & Stanton, AL (2021) Health Psychology (11th ed.). Chapter 10: The Management of Pain and Discomfort. McGraw-Hill.

~ End of lecture ~