

1. Which of the following is not a main characteristic of perception?

- a) Cognitive penetrability
- b) Perceptual competencies emerge early in development
- c) Emergent properties
- d) Perceptual representations of external stimuli are not very detailed despite richness of experience

2. Jess values her shower time very much and does not like being interrupted unless it is an urgent phone call. Which of these statements correctly describes the previous sentence?

- a) More correct hits and less false alarms
- b) Less correct hits and more false alarms
- c) More false alarms and correct hits
- d) Less false alarms and correct hits

3. When presented with a series of moving dots, we may infer human qualities from it, such as gender, mood and age. This is known as:

- a) Emergent properties
- b) Perceptual attribution
- c) External attribution
- d) Organic properties

4. Rounded and less defined imagines are characteristic of:

- a) High spatial frequency
- b) Low spatial frequency
- c) High temporal frequency
- d) Low temporal frequency

5. Which option most strongly engages the parvocellular pathway?

- a) Driving
- b) Running
- c) Drawing
- d) Sleeping

6. Which is not true in central vs peripheral vision?

- a) Central vision has greater acuity
- b) As we move to peripheral vision only low spatial frequency is available
- c) Peripheral is more biased to respond to changing parts of a scene
- d) Peripheral retinal pathways diverge into a single ganglion cell

7. Stages of processing by the eye can be best described as:

- a) Light → pupil → retina → optic nerve
- b) Light → retina → pupil → photoreceptors → optic nerve
- c) Light → optic nerve → pupil → retina
- d) Light → pupil → optic nerve → retina

8. Which of the following is not true?

- a) On-receptive fields fire most strongly in response to an increase in light on the centre cell
- b) Off-receptive fields fire most strongly in response to an increase in light on the surrounds
- c) The spatial layout of receptive fields is eccentric
- d) On/off-receptive fields are most sensitive to differences in the intensity of light in the centre and surrounds

9. Choose the most accurate statement regarding Magno-ganglion cells.

- a) They have smaller cell bodies than Parvo-ganglion cells
- b) They have a slower conduction rate than Parvo-ganglion cells
- c) They represent mostly the central visual field
- d) They prefer transient stimulation (changes over time)

10. The horizontal distance between two parallel lines is known as ____ in linear perspective:

- a) Covariance
- b) Light scattering
- c) Convergence
- d) Horopter

11. The Reichardt Detector will fire when:

- a) Two photoreceptors fire simultaneously
- b) Two photoreceptors fire in succession
- c) The A photoreceptor alone fires
- d) The B photoreceptor fires first

12. Akinetopsia is a condition caused by damage to the:

- a) Inferior Temporal Cortex
- b) V4
- c) Orbitofrontal Cortex
- d) Medial Temporal Visual Area

13. An object slows down as:

- a) Temporal frequency decreases and spatial frequency increases
- b) Temporal frequency decreases and spatial frequency decreases
- c) Temporal frequency increases and spatial frequency increases
- d) Temporal frequency increases and spatial frequency decreases

14. Erin views gratings moving in one direction through an open circle, however, cannot see whether the grating slip itself is moving behind the circle in a vertical or horizontal direction. This situation refers to:

- a) Akinetopsia
- b) Perceptual Deafness
- c) The Correspondence Problem

d) The Aperture Problem

15. Pre-emptive signals that predict movement are from:

- a) Biological Motion
- b) Material Properties
- c) Corollary Discharges
- d) Optic Flow

16. Which photoreceptor type does not respond differentially to colour, leading to human trichromatic colour vision?

- a) L-Cone
- b) M-Cone
- c) S-Cone
- d) Rod

17. Individuals who cannot encode blue-yellow colour differences are missing:

- a) L-Cones
- b) M-Cones
- c) S-Cones
- d) Rods

18. Which of the following statements is false about congenital achromatopsia?

- a) The individual has missing cones
- b) The Inferior Temporal Cortex (ITC) is damaged
- c) The individual has normal functioning rods
- d) The individual can only perceive stimuli in shades of grey

19. Perceiving the same stimulus' surface with the same colour under varying lighting conditions is the phenomenon known as:

- a) Colour Constancy

- b) Super Colour Vision
- c) Tetrachromia
- d) Anomalous Colour Vision

20. Cerebral achromatopsia is NOT characterised by:

- a) Intact cone functioning
- b) Damage to the V4
- c) Perceiving colours as fuzzy, rather than vivid
- d) Having intact mental images of coloured stimuli

21. Modular organisation refers to how:

- a) Different visual areas are functionally specialised to process different attributes of a scene
- b) Parallel input signals are integrated in the cortex in a unified and coherent way
- c) Different processing channels parse incoming signals into parallel streams to provide a segregated but compact and efficient input to the brain
- d) Visual processing is hierarchically organised

22. Jessica identifies that the object on the tabletop is an orange. This is related to the:

- a) Dorsal pathway
- b) Ventral pathway
- c) a) and b)
- d) None of the above

23. Patients of integrative agnosia:

- a) Are able to perceive elements of an object but find it difficult to combine them into a perceptual whole
- b) Cannot identify individual elements of a whole
- c) Cannot identify faces including their own
- d) Are able to identify perceptual wholes but are unable to separate it into its basic elements

24. Which of the following did patient LM with akinetopsia not experience?

- a) No perception of motion or depth
- b) Fast targets appeared to jump rather than move
- c) Disturbance by visually cluttering moving scenes
- d) Uncanny ability to judge speed and direction of cars

25. What is true of neurons residing in anatomically later regions in the primary visual cortex?

- a) They respond primarily to simple visual features
- b) They only respond to spots of light, oriented edges and moving bars
- c) They respond to more complex and abstract stimulus properties
- d) They have progressively smaller receptive field sizes

26. Which of these is not a feature of figure-ground segregation?

- a) Contour Belongingness
- b) The figure is more noticeable and memorable
- c) Counter Surroundedness
- d) The contour separating figure from ground belongs to the figure

27. Proximity is:

- a) A Gestalt grouping rule stating that the tendency of two features to group together will increase as the similarity between them increases.
- b) A Gestalt grouping rule stating that the tendency of two features to group together will increase as the distance between them decreases
- c) A rule for figure-ground assignment stating that parallel contours are likely to belong to the same figure.
- d) A rule for figure-ground assignment stating that symmetrical regions are more likely to be seen as figure

28. In Sheppard's table illusion, the table appears to change size when rotated. This example provides the most evidence for which characteristic of perception?

- a) Emergent properties

- b) Proximal stimuli
- c) Change blindness
- d) Cognitive impenetrability

29. Contextual modulation shows that:

- a) Response to stimulation within the receptive field can be affected by what's happening outside the receptive field.
- b) Visual processing is a feed forward system
- c) Neuronal activity is rapidly routed to many visual areas and at multiple spatial scales
- d) Receptive fields in V1 specialise in conveying information of a low level nature

30. The transformation of physical energy into neural impulses is known as:

- a) Sensation
- b) Transduction
- c) Percept
- d) Parallel Processing

31. Patient PV, who is diagnosed with acquired associative prosopagnosia, can:

- a) Identify famous faces
- b) Recognise previously shown faces in memory tests
- c) Describe individual facial features
- d) Process a holistic representation of a face

32. Two behaviours, X and Y, are tested for a control group: a group with brain damage to area A (Group A) and a group with brain damage to area B (Group B). An example of double dissociation logic in this scenario would be:

- a) Control group performs X and Y normally, Group A performs X and Y normally, Group B performs X normally but Y impaired
- b) Control group performs X and Y normally, Group A performs Y normally but X impaired, Group B performs X and Y normally

- c) Control group performs X and Y normally, Group A performs X normally but Y impaired, Group B performs Y normally but X impaired
- d) Control group performs X and Y impaired, Group A performs X and Y enhanced, Group B performs X and Y enhanced

33. What type of stimulus relies most on part-based processing?

- a) Words
- b) Objects
- c) Faces
- d) All have equal dependance

34. Which area of the brain is responsible for the early perception of facial features?

- a) Inferior Occipital Gyri
- b) Lateral Fusiform Gyrus
- c) Superior Temporal Sulcus
- d) Prefrontal Cortex

35. An example of evidence which shows that face processing ability is separate from other cognitive traits (like object recognition). Such evidence includes that:

- a) Most people are face blind
- b) The correlation between face recognition and abstract art recognition is low
- c) The correlation between face recognition and emotion processing is high
- d) Face recognition completely relies on holistic processing, unlike objects or other stimuli

36. The FaceSpace Hypothesis states that:

- a) Faces can be best represented in a multi-dimensional space
- b) Faces can adequately be represented in a two-dimensional plane
- c) Faces take up a small proportion of physical matter, but large part of the visual world
- d) Faces are better recognised when spaced out from each other in a room

37. What is the benefit of Principal Component Analysis (PCA)?

- a) Face recognition
- b) Matching faces with labels
- c) Generating hybrid faces
- d) Detecting similar facial expressions/cues

38. Which of the following is not a true difference between Deep Neural Network (DNN) and Project Component Analysis (PCA)?

- a) DNN is better at face recognition than PCA
- b) DNN is supervised learning
- c) DNN is more sophisticated than PCA
- d) DNN is suited to being trained on smaller databases than PCA

39. Regarding the final layer of Deep Neural Network (DNN), which following statement is correct?

- a) All retinotopy is restored
- b) The processed image is flattened
- c) Images are separated from labels
- d) Images that are not faces are discarded

40. Which component is not necessary for Linear Discriminant Analysis?

- a) Labels for the image
- b) Multiple images of the same stimulus
- c) Many images of different stimuli
- d) A feature vector

41. Which of the following is not a characteristic of expertise?

- a) Experts must be superior to novices in the task
- b) Experts must perform the task consistently
- c) Experts' skills must be generalisable to other skills

d) Experts' skills must be completable on demand

42. Unlike experts, novices:

- a) Group information into meaningful chunks
- b) Process information by working backwards
- c) Have no innate talent to the given task of expertise
- d) Make faster decisions surrounding the task of expertise

43. Which of the following activities will most likely improve after years of practice?

- a) Painting
- b) Driving
- c) Showering
- d) Reading

44. What is the most effective way to remember this set of numbers: 238964891976

- a) Repeated rehearsal
- b) Verbal pronunciation
- c) Simultaneous forward-backward working strategies
- d) Meaningful chunking

45. Which of the following is not an aspect of purposeful practice?

- a) Feedback
- b) Going outside your comfort zone
- c) Well-designed specific goals
- d) Well-developed field of expertise

46. The lack of expertise amongst wine tasters can be best attributed to:

- a) Immense diversity of wines
- b) Wine industry being relatively new

- c) Lack of definition of superior performance in wine tasting
- d) Subjectivity

47. Which of the following occupations draws on a positive correlation with expertise and experience?

- a) Radiologist
- b) Surgeon
- c) Fingerprint examiner
- d) Doctor

48. Which of the following is not true in differences in performance between radiologists and medical students in assessing and providing a mammogram diagnosis?

- a) Radiologists are significantly more accurate
- b) Medical students use a working forward strategy
- c) Radiologists have more experience
- d) Medical students have more 'partially correct' diagnoses than radiologists

49. Which of the following is an argument for facial recognition expertise as the product of training and practice?

- a) Student controls perform most poorly
- b) Examiners have poorer accuracy at 2 seconds of exposure versus super recognisers, but demonstrate highest accuracy under no time pressure
- c) Super recognisers have higher accuracy than student controls
- d) B and C

50. Forensic examiners may adopt a more conservative approach to overall accuracy of facial comparison versus a psychologist in the legal justice system because they are more concerned about minimising false alarms. This is an example of how:

- a) The definition of superior performance can differ between contexts
- b) Different methodologies between professions result in differing accuracy
- c) Forensic examiners are less qualified than psychologists

d) All of the above

51. Which of the following is NOT a success from the behaviourist approach?

- a) Introspection therapies
- b) Falsifiability of theories
- c) Testability of theories
- d) Understanding stimulus-response contingencies

52. What is one way of empirically measuring cognition?

- a) Observing stimulus-response contingencies
- b) Watching an individual's posture during an interview
- c) Recording response times for the same activity under different conditions
- d) Recording responses from a rorschach test

53. Think about a guitar player. What level of analysis best characterises “music theory and knowing what pitches to play on the strings for the song”?

- a) Abstract computation
- b) Algorithm
- c) Implementation
- d) Propitiation

54. Which of the following are similar conceptually, but not perceptually?

- a) A DC comic book and a DC film
- b) A love song and a photograph of a couple
- c) A condom and a Calipso ice block
- d) A cello and a violin

55. Which process describes when an individual must determine whether stimulus X looks more like stimulus A or B?

- a) Reaction Time

- b) Confusability Process
- c) Forced Choice
- d) Likert Scale

56. If an image of a hedgehog falling and a human belly flopping off a cliff were compared, then poorly copied by an amateur drawer, why would they still look similar?

- a) Structural Alignment
- b) Asymmetric Knowledge
- c) Common and distinctive features
- d) Priming

57. Think of a traffic light. What is an example of a ‘match out of place’ between a normal traffic light and a modified one (described below in each option)?

- a) All three lights go red on the modified traffic light
- b) The red light is at the top, there are two blue lights below
- c) The red light is at the bottom, the amber at the top, the green in the middle
- d) The lights are not on at all

58. Which of the following is an invalid argument that uses deductive reasoning?

- a) Charles eats meat, therefore Charles is not a vegetarian
- b) Charles is a primary school student, therefore Charles is a minor
- c) Charles is a human, therefore Charles has drunk water
- d) Charles lives in Denmark, therefore Charles is Danish

59. Which of the following is an example of modus tollens?

- a) If I swear in class, I must speak English. I swore, thus, I can speak English.
- b) If I swear in class, I must speak English. I can speak English, thus, I swore in class.
- c) If I swear in class, I must speak English. I did not swear, thus, I cannot speak English
- d) If I swear in class, I must speak English. I cannot speak English, thus, I did not swear in class.

60. If we are told that eating oranges is good for your skin, alongside other foods like beef, chips and garlic, we are more likely to believe that eating fish is good for your skin. This form of inductive reasoning is:

- a) Premise monotonicity
- b) Premise diversity
- c) Premise-conclusion similarity
- d) Premise expiation

61. Which of the following describes epistemic closure?

- a) Shapes with closed lines are more convincing stimuli
- b) No current research proving the existence of aliens
- c) The full, mapped out representation of the brain
- d) The conclusion decided upon by a society

62. Rugby players become tougher from playing rugby. What evidence would weaken the argument that swimmers become tougher from swimming?

- a) Fencing makes people tougher
- b) Walking makes people tougher
- c) Martial arts, water polo and athletics make people tougher
- d) Soccer, AFL and basketball make people tougher

63. Beef goes well with noodles. What information would be most compelling to believe that chocolate goes well with noodles?

- a) Pork goes well with noodles
- b) Poison goes well with noodles
- c) Grapes go well with noodles
- d) Fish goes well with noodles

64. Which conditions are most effective for premise non-monotonicity?

- a) Having a random story and random experience

- b) Having a neutral story and random experience
- c) Having a neutral story and relevant experience
- d) Having a relevant story and relevant experience

65. Which of the following is an example of denying the antecedent?

- e) If Jake has a son, he must be a father. Jake has a son, so he is a father
- f) If Jake has a son, he must be a father. Jake is not a father, so he does not have a son
- g) If Jake has a son, he must be a father. Jake is a father, so he has a son
- h) If Jake has a son, he must be a father. Jake does not have a son, so he is not a father

Answers and Rationales

1. A: One of the main characteristics of perception is cognitive impenetrability - explicit knowledge of an image's structure does not influence its perceived properties i.e., when we recognise that something is an illusory stimulus but we are still unable to perceive it.
2. D: As Jess places greater importance on her shower time, you would expect her to have a lower sensitivity to noise, and thus is less likely to pick up her phone in general, resulting in less false alarms and correct hits in general.
3. A: When the whole is more than the sum of its parts; even simple forms of perceptual stimulation convey the wealth of information that we generate.
4. B: Spatial frequency is the rate of change over space. Thus images of low spatial frequency are rounded and less defined.
5. C: The parvocellular pathway consists of small cell bodies, focuses on the central visual field, has slow conduction rate and good colour sensitivity i.e., this pathway is predominant at noting small details.
6. D: Peripheral retinal pathways converge
7. A: Refer to lectures (Week 1)
8. C: The spatial layout of receptive fields is not eccentric; it is concentric.
9. D: Magno-ganglion cells have larger cell bodies, rapid conduction rate and represent the peripheral visual field, so D is the only accurate one
10. C: In linear perspective, convergence is the horizontal distance between two lines.
11. B: Two photoreceptors must fire, but one after the other, as the first photoreceptor fired (A) is delayed so that its signal may reach the Reichardt Detector at the same time that the signal from the second photoreceptor (B).
12. D: Akinetopsia is caused by damage to the Medial Temporal Visual Area, also called "MT" and "V5".
13. A: An object's speed increases as temporal frequency increases and spatial frequency decreases and vice versa.
14. D: Motion is ambiguous since only part of the stimulus is shown through an aperture (the circle) which is too small to show the whole grating moving behind.
15. C: Corollary discharges or efference copies predict what image will be present from motion.
16. D: Rods are bleached in all but dim lighting and do not respond differentially. Humans have four photoreceptor types in the retina and only L/M/S-Cones respond to colour in normal lighting conditions, leading to trichromatic vision.
17. C: Those with missing S-Cones cannot encode blue-yellow colour differences.
18. B: Those with congenital achromatopsia suffer from missing cones, not ITC damage.

19. A: Colour constancy is when a surface appears the same colour over multiple viewing or lighting conditions.
20. C: Individuals with cerebral achromatopsia experience the complete or partial loss of colour vision, most likely seeing shades of grey instead of normally perceived colours. A, B and D are characteristics of cerebral achromatopsia.
21. C: Refer to lecture (Week 2)
22. B: The ventral pathway relates to the recognition and discrimination of visual shapes and objects. This is in contrast to the dorsal pathway which focuses on motion of objects.
23. A: This is the definition of integrative agnosia.
24. D: A, B, C are all experiences of patient LM with akinetopsia. D is the only correct answer.
25. C: This is the most accurate answer; neurons in later regions respond to more than just simple visual features like spots of light, etc. and have progressively larger, not smaller, receptive field sizes.
26. C: C is made up, A,B,D are all real features of figure-ground segregation.
27. B: Refer to Motion Perception topic - low-level motion.
28. D: Cognitive impenetrability is correct because the physical layout of the table does not help us perceive that the tables are the same size. Emergent properties are the parts that when summed, make up a whole, and do not relate to Sheppard's table illusion. Proximal stimuli refers to the neural activity that results from sensory transduction of physical stimuli, which is very general and is not the most correct answer.
29. A: Refer to lecture (Week 3)
30. B: Transduction is the second stage of Perceptual Processing and is performed by sensory receptors.
31. C: Those with acquired associative prosopagnosia can recognise individual facial features, but not piece them together to perceive a holistic representation of the face.
32. C: Double dissociation logic is evidence that two processes/behaviours are independent based on their correlated neurobiological behaviour. Those with damage to one brain area should be impaired in one task but fine in another, and those with damage to another area should show the opposite.
33. A: Words require parts (i.e. single letters) to spell or read a word - omitting even one letter can completely change the perception of the word.
34. A: The inferior occipital gyri are responsible for processing early perception of facial features.
35. B: This is the only true statement and shows how face processing ability is distinct from other cognitive abilities, like recognising abstract art.
36. A: The FaceSpace Hypothesis states that faces can be best represented in a multi-dimensional space.

37. D: PCA helps us understand common representation, guided by all data provided, able to detect patterns in facial expressions and cues. However, it is not supervised (guided solely by the data) and can overlap in face recognition based on similarities, rendering it an inaccurate tool of face recognition.
38. D: DNN is suited to being trained on massive databases compared to PCA.
39. B: This is the only true statement.
40. D: A feature vector is part of the final layer of DNN, the output activity which predicts the actual label, once a stimulus and label have been trained extensively. This is related to the output activity rather than the supervised learning which occurs when pulling images of similar people together.
41. C: Expertise is domain specific, in which an expert is particularly good at a specific behaviour that does not generalise to behaviours, even if associated with a similar category.
42. B: Experts group information by working forwards, unlike novices who work backwards.
43. A: Painting will most likely improve over time (if practiced in the right way), since all the other activities have little room for improvement. They are tasks that will be performed in the same way for the remainder of one's life, not changing after multiple occurrences.
44. D: Meaningful chunks are the best way to encode this information - for example, identifying three different years from the set of the 12 digits.
45. D: Well-developed field of expertise was added (alongside a teacher) to the idea of deliberate practice, but is not considered in purposeful practice.
46. C: An important characteristic of expertise is that they show 'superior performance'. In wine tasting however, there is no clear definition of what constitutes 'superior performance'. As a result, the lack of objective measure of 'superior' wine tasting means wine tasters receive no quality feedback and thus do not have the capacity to engage in deliberate practice.
47. B: Surgeons because they receive immediate feedback.
48. B: Most medical students do NOT use a working forwards strategy - they use a working backwards strategy i.e., they are more likely to reach a solution and work backwards to see if it matches the current information they are given. In contrast, experts often use a working forward strategy, meaning they work from A to B, and assess information logically as they go.
49. B: The fact that examiners have highest accuracy under no time pressure, but show poorer accuracy than super recognisers at immediate exposure shows that their ability to detect faces is a trained and practiced skill.
50. A: As the legal system is more concerned about minimising wrongful convictions, the 'superior performance' of forensic examiners will be more conservative and be more willing to miss a correct rejection.

51. A: Introspection is one driving factor for why behaviourism was established to get rid of unobservable and non-scientific practices.
52. C: Examining how an individual performs the activity under different conditions shows how much cognitive processing/how much cognitive load individuals experienced when behaving.
53. B: This is the internal step of making music on the guitar (the processes before the physical entity). The abstract level would be the function of “making sound, pleasing to the ears” whilst the implementation level would be “strumming the strings, placing fingers in the right place for the sound to reverberate in the right ways”.
54. B: A love song and a photograph of a couple are similar in their romantic/erotic connotations, despite having no perceptual similarity.
55. C: Forced choice is correct. Likert scales typically use more than one category that an individual must choose from and a) and b) do not require a choice.
56. A: The underlying structure of the hedgehog and human are similar based on their actions - these similarities are enough for humans to perceive them as similar images.
57. C: This describes a match out of place as the shared feature (of similar colours) appears, but in different places to the original traffic light.
58. D: This conclusion may be true, but is not guaranteed by the premises. Charles may have been born elsewhere or have family of a different nationality, but only live in Denmark.
59. D: Modus Tollens is “the way that denies.” The minor premise (speaking English) asserts that the consequent of the major premise (swearing in class) is false.
60. B: The premises are diverse and dissimilar (being different types of foods), thus, another different food type is believable as good for one’s skin.
61. C: The representation of the brain is epistemically closed because it is a complete representation, encompassing all parts of the brain.
62. D: Precise non-monotonicity - these three sports all have teamwork and a ball in common with rugby, weakening the belief that swimming makes people tougher, since it does not share those qualities.
63. C: Precise monotonicity - this is another food, different from beef, which will strengthen the likelihood that another non-beef-related food like chocolate will go well with noodles.
64. D: With these two conditions, it is more plausible that the information came from a human, with relevant hints (rather than random data from the world) thus meaning/categorisation of information can be made, linking to precise non-monotonicity.

65. D: The minor premise asserts the antecedent of the major premise is false. Just because Jake does not have a son, it does not mean he is not a father (perhaps he has a daughter).