Exam 1

- Will not test on:
  - Material from 10/4 class (Chapter 7)
    - That material will be tested on Exam 2
  - Details of topographic mapping in Fig. 3.33
  - The retinal wiring as shown in Fig. 4.31
  - pp. 234-235 (technical details of sleep)
- More guidance on 10/4
  - Details of short-answer questions

Divided attention: Cell phones

(Hyman et al., 2010, Applied Cognitive Psychology)

People who’d crossed a public area were asked if they’d seen anything unusual.

Results

<table>
<thead>
<tr>
<th></th>
<th>On cell phone</th>
<th>Alone</th>
<th>Listening to music</th>
<th>Member of a pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent identifying “clown”</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>60</td>
</tr>
</tbody>
</table>

Sensemaking

- The (human) brain seems to have a sense-making process
  - Gazzaniga’s “interpreter” (Severed corpus callosum)
  - The “synthesis” in the activation-synthesis model of dreams
  - See it working to make sense of things that don’t make any sense
    - Split-brain context, delusions, dreams

Sensemaking Sleep

Split-brain context, delusions, dreams
Bell + Music example
(from Severed corpus callosum video)

- Joe sees Bell + Music
- “Bell” registers in his right hemisphere
- His right hemisphere picks the picture of bells
- His left hemisphere sees him pointing to a picture of bells and concocts an explanation
  - That the last music he heard was bells

Split-brain patient PS

PS foveates dot in middle of screen
Scenes (snow, claw) flash briefly
PS is asked to point to the cards that went with the picture

Experimenter: Why did you choose those items?
PS: Oh, that’s simple. The chicken claw goes with the chicken, and you need a shovel to clean out the chicken shed.

[Cooney & Gazzaniga, 2003]

Patient DB

- 76-year-old widow who suffered a stroke
- Well oriented for time, person, place
- No evidence of dementia or amnesia
- But had delusions of misidentification...

Examiner: How long had you been married?
DB: Up to now we’ve been married 57 years. In 1932 we got married.
Examiner: And he was cremated you said?
DB: Yes.
Examiner: You were telling me your husband was also at this hospital. Is that right?
DB: Yes, yes.
Examiner: What is he doing in this hospital?
DB: I don’t know, I still can’t find out.
Examiner: Is he well or a patient?
DB: A patient.
Examiner: But you don’t know why he’s in this hospital
DB: I’ve been trying to find out. But I did hear when he was talking to some of the nurses that he had a stroke and he could feel it coming on.
Examiner: So he had a stroke as well you think?
DB: Probably. Can’t you find that out yourself?

Examiner: Well, I’m not sure I understand what’s going on. I thought you and your husband was dead. How can your husband be in this hospital if he is dead?
DB: That’s what a lot of people say, don’t you get worried about it? And I said I’m not religious fortunately so I might be worried about it, you know.
Examiner: It still seems odd. If he was cremated, how could he be still be here?
DB: Death is final isn’t it, as a rule.
Examiner: Well, you would think so wouldn’t you. How can you explain that he is still here if he has been cremated?
DB: Well, that’s it. I think they took him to seven different hospitals to get a certificate.
Examiner: You’re not mistaken? You’re not mixing names or or the time for him are you?
DB: No.
Examiner: You’re very sure it’s him.
DB: Yes.
Dreams

• The activation-synthesis model:
  – Activation: During REM sleep, signals travel from brain stem to thalamus to visual areas of cortex
    • Mimicking visual sensations
  – Synthesis: Brain tries to make sense of the resulting images

Lexical decision task

• Is the second thing a word?

light

• People are faster to respond to the second (probe) if it’s related to the first (prime)

Sleep is important

• For consolidating learned knowledge
  – Facts and skills
• For gaining insights (“incubation”)
  – Sleep made people about 3 times as likely to discover a problem-solving shortcut
    (Wagner et al., 2004, Nature)