**Automaticity**

**blue**

An incongruent Stroop stimulus

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**Stroop effect**

- The Stroop effect:  
  - Incongruent meanings interfere with color names  
- Naming a color is a controlled process  
  - Requires attention  
- Reading a word is an automatic process  
  - Occurs on its own, requiring little to no attention  
  - Requires attention to inhibit reading

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**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 patients, delusions, dreams
Bell + Music example
(from Severed corpus callosum video)

• Stimulus: “Bell + Music”
• Joe’s right hemisphere chooses bells
• Joe’s left hemisphere...
  – saw “Music”
  – now sees him choosing bells
• Joe’s left hemisphere connects the two:
  – “Music... last time I heard any music was coming from the bells out here, banging away”
  – So sense-making is probably left lateralized

(Conway & Gazzaniga, 2003)

Patient DB
(Breen et al., 2000)

• 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
  – Delusion: A fixed, false belief
  – Hard to make sense out of something that’s false

Examiner: I believe your husband died some years ago.
DB: Four years ago.
Examiner: Could you tell me a little bit about that? What happened?
DB: He just collapsed when he was in the infirmary on Sunday afternoon. We got the ambulance and they got the police because there was no doctor present. Then they took him as a patient in the different hospital. They took the remains to the different hospital for the death certificate and then we had a conversation. He was 76.

Examiner: How long had you been married?
DB: Up to now we’ve been married 27 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’s he doing in this hospital?
DB: I don’t know, I still can’t find out.
Examiner: Is he still a patient?
DB: A patient.
Examiner: But you don’t know why he’s a patient here?
DB: I’ve been trying to find out. But I didn’t hear when he was talking to some of the men 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 quite what’s going on. I thought you said 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? I said I wasn’t religious fortunately as I might be worried about it, you know.
Examiner: It’s necessary as well, if he was cremated, how could he 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 mistaking someone else here 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

### Some functional roles of sleep

- **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)
- **Exam 1 will not cover pp. 234-235**
  - Technical details of sleep-wake cycles