• The brain: a functional system
• Proximal/Ulimate
• Ancestral environment
• Proper domain/Actual domain
• Domain specificity
• Modularity
The brain: A functional system.
The brain: A functional system
Figure 1. Algorithm for treatment of nausea and vomiting of pregnancy: If no improvement, proceed to next step.

If no improvement:

- Dimenhydrinate 50 to 100 mg every 4 to 6 h PO or PR up to 200 mg/day
- Metoclopramide 5 to 10 mg every 8 h IM or PO
- Ondansetron 4 to 8 mg every 6 to 8 h PO
- Prochlorperazine 5 to 10 mg every 6 to 8 h IM or PO
- Promethazine 12.5 to 25 mg every 4 to 6 h IM, PO, or PR

Start rehydration treatment:
- IV fluid replacement (per local protocol)
- Multivitamin IV supplementation
- Dimenhydrinate 50 mg (in 50 mL of saline, over 20 min) every 4 to 6 h IV

Add any of the following:
- Chlorpromazine 25 to 50 mg every 4 to 6 h IM
- Metoclopramide 5 to 10 mg every 8 h IV
- Prochlorperazine 5 to 10 mg every 6 to 8 h IV
- Promethazine 12.5 to 25 mg every 4 to 6 h IV

NOTE
- Use of this algorithm assumes that other causes of NVP have been ruled out. At any step, when indicated, consider total parenteral nutrition.
- At any time you can add any or all of the following:
  - Pyridoxine (vitamin B6) 25 to 50 mg every 8 h PO
  - Ginger root powder, capsules, or extract up to 1000 mg/day and acupuncture or acupressure at acupoint P6.
  - Study showed that up to 8 tablets daily did not increase serous risk for major malformations or other adverse effects.

* No study has compared various fluid replacements for NVP.
* Safety of up to 200 mg/d of B6 has been confirmed.
* Ginger products are not standardized.
* Studies are not recommended during the first 10 wk of pregnancy because of possible increased risk for oral clefts.

IM — intramuscular; IV — intravenous; NVP — nausea and vomiting of pregnancy; PO — by mouth; PR — by rectum.
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• «Why» questions
• «How» questions
Ulimate level / Proximal level

Evolu&ionary level

Behavioral level

Neuro‐cogni&ve level
Environment of Evolutionary Adaptedness (EEA)
Fight-or-flight Response

- Hypothalamus
  - Activates sympathetic nervous system
  - Activates adrenal medulla
    - Impulses activate glands and smooth muscles
      - Releases norepinephrine
      - Releases epinephrine
    - Bloodstream
      - Neural activity combines with hormones in the bloodstream to constitute fight-or-flight response
  - Activates adrenal-cortical system by releasing CRF
    - Pituitary gland secretes hormone ACTH
      - ACTH arrives at adrenal cortex and releases approximately 30 hormones
• heart rate and blood pressure increase
• veins in skin constrict to send more blood to major muscle groups (responsible for the "chill" sometimes associated with fear—less blood in the skin to keep it warm)
• blood-glucose level increases
• muscles tense up, energized by adrenaline and glucose (responsible for goose bumps—when any muscles attached to each hair on the surface of skin tense up, the hairs are forced upright, pulling skin with them)
• smooth muscle relaxes in order to allow more oxygen into the lungs
• nonessential systems (like digestion and immune system) shut down to allow more energy for emergency functions
• trouble focusing on small tasks (brain is directed to focus only on big picture in order to determine where threat is coming from)
Figure 1. (a) The proper domain (blue) and the actual domain (red) of a cognitive module. In assigning items to a domain, it is likely that there will be some false negatives and some false positives. (b) The proper domain (blue) and the actual domain (red) of a wasp-detector module. An area of the actual domain (shown in black and yellow stripes) is occupied by hover flies mimicking wasps (false positives).
Proper domain and actual domain
Proper domain and actual domain
Domain specificity
### Table 1
General Features of the Two Systems

<table>
<thead>
<tr>
<th>The Intuitive system</th>
<th>The Reasoning System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast and effortless</td>
<td>Slow and effortful</td>
</tr>
<tr>
<td>Process is unintentional and runs automatically</td>
<td>Process is intentional and controllable</td>
</tr>
<tr>
<td>Essential; only results enter</td>
<td>Process is consciously accessible and viewable</td>
</tr>
<tr>
<td>Demands attentional resources, which are limited</td>
<td>Serial processing</td>
</tr>
<tr>
<td>Parallel distributed</td>
<td>Pattern holism</td>
</tr>
<tr>
<td>Memory matching; thought is metaphorical, tac</td>
<td>Symbol manipulation; thought is truth preserving, analytical</td>
</tr>
<tr>
<td>Mon to all mammals</td>
<td>Unique to humans over age 2, and perhaps some language-trained apes</td>
</tr>
<tr>
<td>Ext dependent</td>
<td>Context independent</td>
</tr>
</tbody>
</table>

Note. These contrasts are discussed in Bruner (1986); Chaiken (1980); Epstein (1954); Freed (1960/1976), Margolis (1987); Metcalfe and Mischel (1999); Peiry & Cecioppo (1986); Posner and Snyder (1975); Pyszczynski and Greenberg (1987); Rebe (1993); Wegner (1994); Wilson (in press); and Zejonc (1980).