Explanatory Models for Near-Death Experiences

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Psychological Models

- Expectation
- Depersonalization
- Birth models
- Personality factors
  - Dissociation
  - Absorption
  - Fantasy-proneness
**Expectation**

- **Pro:**
  - influence of beliefs on NDE reports
  - cross-cultural differences
- **Con:**
  - NDEs that contradict beliefs
  - no effect of prior knowledge of NDEs
  - similar NDEs pre- and post-Moody (1975)
  - similar NDEs in children and adults

**Depersonalization**

- **Pro:**
  - feelings of detachment from body
  - feelings of “strangeness”
- **Con:**
  - sense of reality decreased or lost
  - predominantly unpleasant affect
  - detached but not “out of body”
Birth Memory

• Pro:
  bright light and end of dark tunnel
  emergence into new world
• Con:
  newborns cannot register memories
  does not account for other NDE features
  NDEs as common after C-section births

Personality Factors

• no effect of age, gender, race, religion, religiosity, IQ, neuroticism, extroversion, anxiety, Rorschach measures
• equivocal correlation with dissociation, absorption, fantasy-proneness
• ambiguous relevance: fantasy or ability to enter altered state of consciousness?
Physiological Models

- Altered blood gases ($O_2$, $CO_2$)
- Neurochemical models
  - Endogenous opioids
  - Endogenous ketamine analogs
- Neuroanatomic models (limbic system)
  - Temporal lobe epilepsy
  - Temporal lobe stimulation
- REM intrusion

Altered Blood Gases

- Pro:
  - some features of hypoxia (low $O_2$)
  - some features of hypercarbia (high $CO_2$)
- Con:
  - NDEs occur with normal blood gases
  - NDE-like features rare and isolated
  - NDEs lack most common features of hypoxia and hypercarbia
  - lack of NDEs in hypoxia and hypercarbia
Neurochemical Models

• Pro:
  similar effects of opioids
  similar effects of NMDA receptor agents

• Con:
  NDEs too short for chemical effect
  no chemical models for some features
  most chemical effects frightening, bizarre
  chemical effects recognized as unreal
  chemical effects imply functional brain

Neuroanatomical Models

• Pro:
  “similarity” to temporal lobe epilepsy, stimulation

• Con:
  “similarity” not documented in literature
  NDE-like effects are fragmentary and isolated
  epilepsy and stimulation disrupt rather than activate local brain function
  seizures disrupt memory, produce amnesia
  stimulation frightening, bizarre, and dream-like
REM Intrusion

- **Pro:**
  autoscopy, light, alertness while immobile
  NDErs report REM intrusion symptoms
- **Con:**
  biased samples of NDErs and controls
  different survey methodologies
  REM intrusion usually frightening
  NDEs occur with REM *inhibition*
  ambiguous direction of causal relationship
Problematic NDE Features

- Enhanced mentation
- Veridical out-of-body perceptions
- Visions of deceased acquaintances
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