The audio-diary method

- Unique events documented on portable audio recorder
- Participants ($\underline{N} = 5$) do not listen to recordings
- Recordings sampled from pool and edited for presentation during fMRI
- Recording conditions 5 recordings (30 s) per condition – September 11, 2001
 - Control conditons
 - Everyday (non-emotional)
 November 12, 2001
 - Visual fixation

Ratings

- Encoding (uniqueness, emotional change, importance)
 - Sept 11 > other two conditions
 Nov 12 > everyday condition
- Retrieval (re-experiencing of thoughts, feelings, visual imagery, frequency of reactivation)
 - Sept 11 > other two conditions
 - Nov 12 = everyday condition





Summary

- Everyday and emotional events
 - Mediodorsal posterior and prefrontal cortex, ventrolateral prefrontal cortex, lateral temporoparietal cortex, medial temporal regions, thalamus
- Remote memory recovery, working memory, spatiomotor imagery, self-related information processing • Emotional events
 - Limbic regions (amygdala, hypothalamus)

 - Coding of emotional significance
 Deactivation of dorsal cingulate regions
 - Reciprocal relations between emotional and cognitive
 - neural systems

Flashbulb memory

- Brown & Kulik (1977)
- High level of surprise, consequentiality
- "Primary live quality that is almost perceptual"
- Livingston (1967): "Now Print!"
- Neisser (1982), McLoskey et al (1988)
 - Flashbulb memories subject to distortion
 - Linkage of own history with "History"
 - Emotions prompt retellings, elaboration
 - No special mechanism

Implications for theory

- Findings inconsistent with special encoding mechanism
- Findings consistent with emotional modulation at retrieval

Gold (1992):
 "In terms of evolutionary adaptation, memory systems modifiable after the experience is over would appear to be a design destined to lead to uncertain memory storage unless -and this is the crux of the matter - the brain uses post-experiential consequences of an experience to determine whether it was worthwhile to store the specific information provided by each experience."

Flashbulb memory

