

Studying Misinformation effect on the Episodic and Semantic memory

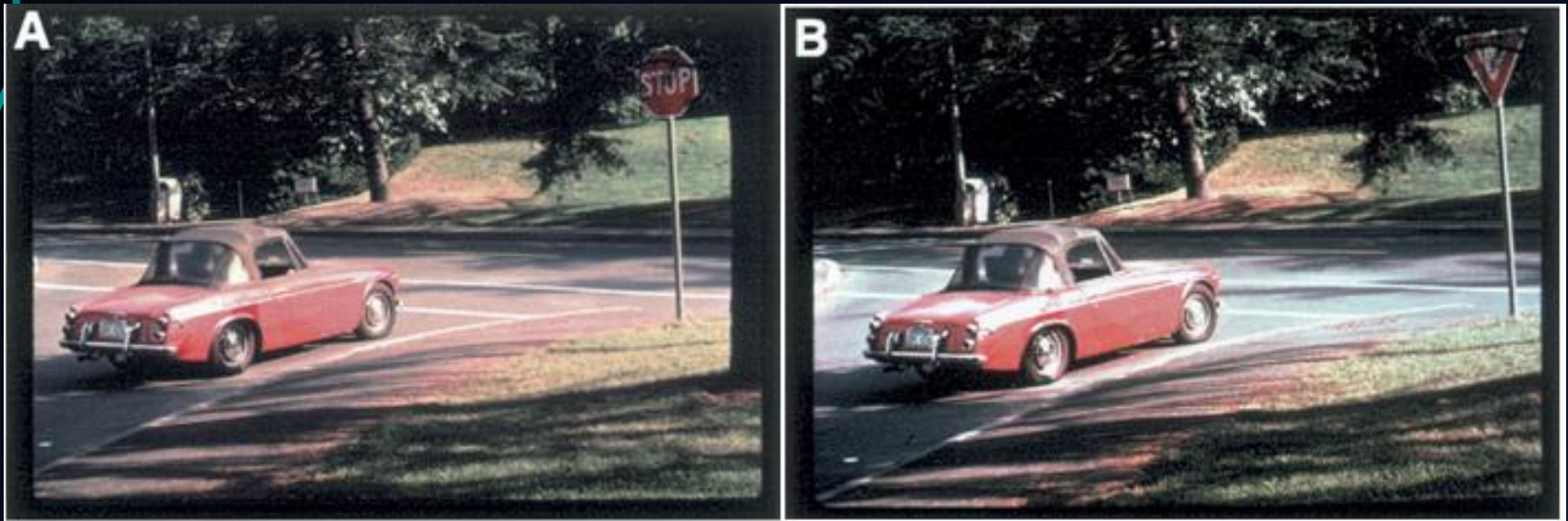
INSTRUCTOR

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- **MISINFORMATION EFFECT:** Impairment in memory for the past that arises after exposure to misleading information
 - One of the four major false memory paradigms and the first one to be known
 - Understood for the first time in the late 70s by Loftus, Miller and Burns



Research so far...

- The nature of misinformation memories (Zaragoza and Lane 1994) - source misattribution effect
- Age matters - young children are more susceptible to misinformation than are older children and adults (see Ceci and Bruck 1993) and the elderly are more susceptible than are younger adults (Karpel et al. 2001; Davis and Loftus 2005)
- Observed with some unusual subject samples - three month-old infants (Rovee-Collier et al. 1993), gorillas (Schwartz et al. 2004)
- Rich false memories: plant an entire memory for an event that never happened

...continued

- Encoding processes play a critical role in determining true and false memory outcome in misinformation paradigms as seen by fMRI (Okado and Stark 2005)
- Negative correlation between intelligence as measured on the WAIS and false memory (Zhu et al 2010)

Source monitoring

- theory describing misinformation effect
- states that false memories arise due to the difficulty in distinguishing the source of a memory or imagining
- we store traces of memories, events, imaginings, and knowledge
- In some cases original sources are mistaken

Study on Semantic memory and Episodic memory

- So far to my knowledge, no study has been done on semantic memory
- Here I propose to study the effect of misinformation on the semantic memory and the variation from others
- Cambridge Semantic Memory(CSM) Test Battery can be used
- Modified method of Masters thesis by Patihis can also be used

Experiment

- Subjects of varied age, gender and background will be selected and tested with the CSM test or the modified test
- [Here](#) is the CSM
- Prof. L Krishnan is helping out to design the experiment
- On the similar grounds of visual memory test(can be used for comparison)

References

- Planting misinformation in the human mind: A 30-year investigation of the malleability of memory[Review]. Loftus E. *Learn. Mem.* 2005 12: 361-366 doi:10.1101/lm.94705
- Memory Distortions: Individual Differences and Paradigm Comparisons Patihis L. Masters Thesis, UCI
- Semantic Integration of Verbal Information into a Visual Memory. Loftus E. et al. *Journal of Experimental Psychology; Human Learning and Memory* 1978, Vol. 4, No. 1, 19-31
- <http://www.neura.edu.au/frontier/research/test-downloads/>



Additional Slides

Figure 7.11

The effect of leading questions on eyewitness recall. Subjects who were asked leading questions in which cars were described as *hitting* or *smashing* each other were prone to recall the same accident differently one week later, demonstrating the reconstructive nature of memory. (Based on “Reconstruction of Automobile Destruction: An Example of Interaction Between Language and Memory,” by E. F. Loftus and J.C. Palmer, 1974, *Journal of Verbal Learning and Verbal Behavior*, 13, 585–589. Academic Press, Inc. Adapted by permission of the author.)

Leading question asked during witness testimony

Possible schemas activated

Response of subjects asked one week later, “Did you see any broken glass?” (There was none.)

“About how fast were the cars going when they hit each other?”



“Yes”—14%

“About how fast were the cars going when they smashed into each other?”



“Yes”—32%

Consequences

- This effect has a huge impact during witness testimony
- Many innocents are falsely convicted and convicts let free
- Testimony is based on pre-formed decisions, so concerns are raised by many