**Impact of Media Multitasking on Attentional Filtering and Disengagement**

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**Goal**

Examine individual differences in attentional processing

- Are there attentional differences between:
  - Heavy Media Multitaskers: those who regularly consume more than one form of media at a time (e.g., reading while watching TV)
  - Light Media Multitaskers: those who regularly consume only one form of media at a time

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**Experiment 1 Results**

- **Task** (Costello et al. 2010, Leber & Egeth 2006):
  - Did the circle (the target) contain + or =
  - 3, 5, 7, or 11 square distractors
  - On half the trials one shape was a red color singleton

**Two Block Types** (12 alternating blocks of 64 trials)

- **Never blocks**: Red singleton is never the target; never looking at the red shape is ideal
- **Sometimes blocks**: Red singleton is sometimes the target (as often as any other shape); treating the red shape as any other shape is ideal

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**Current Questions**

- Previous findings are clear, but how and why do Heavy and Light Media Multitaskers differ?
  - Are differences due to memory impairments or problems with attentional capture, filtering, or disengagement?
  - **Experiment 1** is an attentional capture task to test if the deficit is attention-based
  - **Experiment 2** is a stop-signal task to test if there are differences in attentional disengagement
    - Heavy Media Multitaskers may engage in sensation seeking behaviors (Jeong & Fishbein, 2007)
    - Other studies have found high sensation seekers do not disengage from salient stimuli (Avila & Parcet, 2001)

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**Stop Signal Reaction Time (SSRT) Measurement**

- **Stop Signal Onset Staircase**: 50% Stopping Performance
- **Go Response Time Histogram**

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**Examine individual differences in attentional processing**

- **Stop Signal Reaction Time is longer for Heavy Media Multitaskers**
  - Heavy Media Multitaskers needed more time to stop a planned response
  - This suggests that Heavy Media Multitaskers are slower to disengage from salient stimuli

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**Participants**

**Media Multitasking Index** (MMI; Ophir et al., 2009):

How often multiple media are consumed, normalized by total consumption

**Experiment 1**:

- 84 Duke undergraduates
- 17 Light Media Multitaskers (MMI < 2.86; 11M, 6F)
- 17 Heavy Media Multitaskers (MMI > 5.90; 8M, 9F)

**Experiment 2**:

- 95 Duke undergraduates
- 23 Light Media Multitaskers (MMI < 2.77; 14M, 9F)
- 23 Heavy Media Multitaskers (MMI > 4.81; 7M, 16F)

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**Conclusions**

Differences in attentional mechanisms may underlie group differences in attentional filtering and disengagement

- Those who commonly consume multiple forms of media at the same time may be worse at filtering out irrelevant or distracting information
- They also take longer to disengage from such stimuli
- Everyday behaviors may be indicative of different underlying attentional abilities and/or strategies
- These strategies affect both what information is attended and how long it is the focus of attention

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