

Distribution of Attention and Cognitive Resources

Discussion Summary (1)

- Background

- Increasing number of devices, apps, notification types
- Using devices to assist is common – e.g. navigation
- Using multiple devices, e.g. working on a laptop and answering messages on phone, is also common
- Our 24/7 life with notification
- Can look at from the perspective of between-task or between-device attention

- Problems

- At worst, interruptions can kill (safety critical environments)
- At best, minor annoyance
- How can we measure attention distribution?
- There is no unified model of human cognition



Discussion Summary (2)

- Challenges
 - How to establish attention status in our life, with or without computing devices
 - Attention distribution highly context dependent
 - Defining possible different types of “distributions”
 - Multi-modal attention status sensing – e.g. visual attention and aural might be partially independent
 - Sensing in multi-device situation
 - Difficult to establish user’s context using only one device
 - What do we do in safety-critical situations and emerging new situations – lots of prior research in workplace and safety critical environments but not in new ones where devices are present
 - E.g., automotive cars – with different autonomous driving levels.