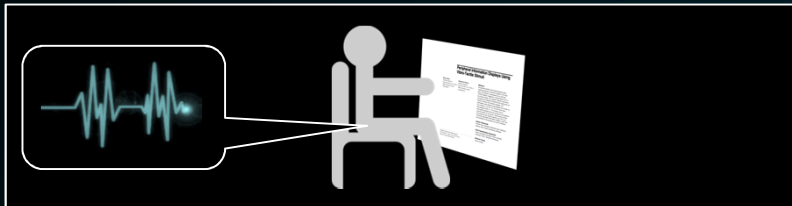


Peripheral Information Displays Using Vibro-Tactile Stimuli

Contribution



Vibration can act as peripheral, continual status display

Background and Motivation

Ambient/Peripheral Displays

Convey Information in the periphery of attention
Allow users to focus on other tasks

Motivation

Continually connect people to information source
Avoid information overload

Vibration

would enable personal, private peripheral displays
But, sense of vibration usually warns about dangers

RQ: Can vibration – at all – enter periphery of attention?

Methodology

For three days, subjected 12 participants to continual vibration pulse

H1: if intensity is sufficiently low, users will “forget” vibration

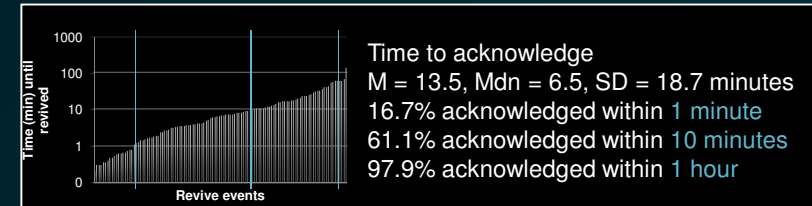
H2: yet, users will notice changes

Measured peripheral awareness through *Death Events*

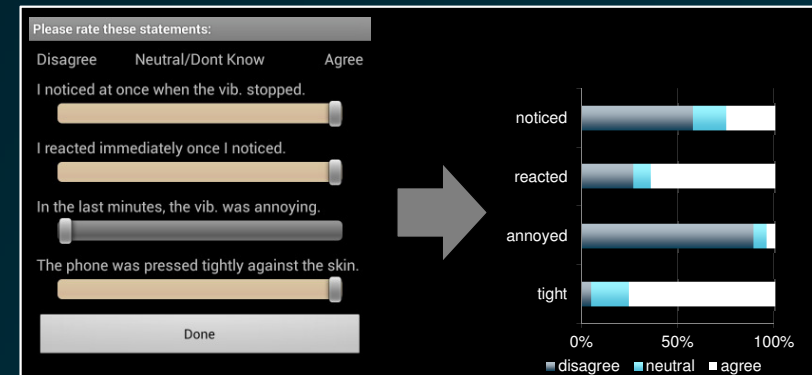
Vibration stops at random times

Participants need to acknowledge as soon as they notice

Results



Majority of Death Events acknowledged with reasonable delay



Participants were hardly annoyed and mostly not aware of vibration

Correlation between revive time and
level of activity (m^2/s^2) prior to event (Pearson's $r = .023$, $p = .79$)
noise level (dB) prior to event (Pearson's $r = .095$, $p = .26$)

No significant external factors identified

Conclusions

Not in focus

Participants could focus in primary tasks
and hardly reported to be annoyed

General Awareness

Participants reacted quickly to two third of the events

Characteristics of peripheral display