

Internal clocks and fast living: Do time saving devices alleviate stress?

Aoife McLoughlin  
MIC

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

Overview

- Human Time Perception and the Internal Clock.
- The Internal Clock and Time Saving Devices.
- Proposed method of investigation.

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

Human Time Perception



- Basic feature of human perception.

However...

- Time can appear to drag or fly by

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Mankind's Obsession

- Abundance of passage of time references in literature, music, films and TV.

However, within Psychology, it is an area that has been generally overlooked...Why?

- Confused with reaction times/circadian rhythms
- No obvious time organ
- Until recently no dominant model/ theory

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---



## The Internal Clock

- Credit is generally given to Hudson Hoagland who publicized the idea in the 1930's.

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Hoagland (1933)



- Noticed that when he left his sick wife alone for ten minutes, she felt it was much longer.
- Hypothesised that her fever was causing an internal chemical clock to speed up.

aoife.mcloughlin@mic.ul.ie

---

---

---

---

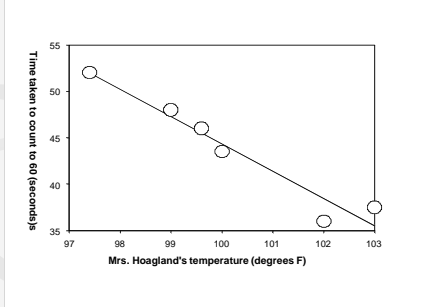
---

---

---

---

### Mrs. Hoagland's Estimations



aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

### Basically...

- The hotter Mrs. Hoagland was, the faster she counted to sixty
- Therefore, her estimate of a second became shorter as her temperature rose
- This is consistent with a speeded up internal chemical clock

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

### Basic Internal Clock Model



- Consists of
  - Pacemaker which generates pulses
  - Accumulator which stores them
  - Switch which connects the two

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Where has all our “saved time” gone?

- People claim they :
  - are more time pressured
  - have less free time
  - experience more stress, than previous generations

WHY?

aofe.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Arousal and the Internal Clock

- Internal clock is extremely sensitive to any form of arousal.
- Click trains, dance music, greater magnitudes have been seen to affect the rate at which the pacemaker sends out pulses.

Could these so called time saving devices be having the same effect?

aofe.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## The Current Research

- Purports that time saving devices, rather than alleviating stress levels, are adding to them, through arousal of the pacemaker in the internal clock.
- Speeding up the internal clock, creates a dissonance between subjective time and real time, causing a sense of hurry in the individual.

aofe.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Clock Speed Variance

- Imagine we have two taps and two jugs
- One flows at 10cc/second, the other at 12cc/second

aoife.mcloughlin@mic.ul.ie

---

---

---

---

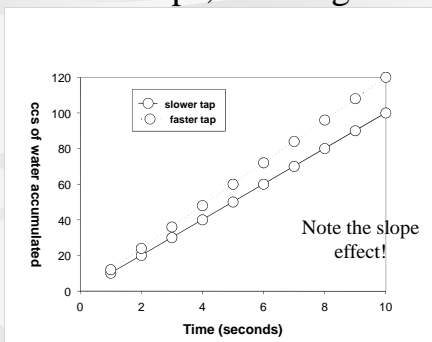
---

---

---

---

## Two Taps, Two Jugs



aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Mixed Methods

- Quantitative
  - Questionnaire
  - Verbal Estimation
  - Interval Production
  - HR and GSR under time pressure
- Qualitative
  - One on one interviews between the researcher and those who claim to have either extremely high, or extremely low usage of these devices

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Verbal Estimation and Interval Production

- An increase of clock speed
  - Overestimation in estimation tasks
  - Underproduction in production tasks
- Slope effect is extremely important

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## HR and GSR

- Looks at physiological level of stress in the individual when they are under time pressure.
- Does psychological stress that we feel with regard time reveal itself physiologically?
- Is there a positive correlation between usage of time saving devices and stress levels?

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

## Interviews

- The experience of time is extremely subjective.
- Quantifying it numerically does not do it justice.
- It is important to also look at how the individual feels about the passage of time in their daily lives.

aoife.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

### Expected Findings

- I hypothesize that those who use more time saving devices will have a faster clock speed than those with lower levels of usage.
- In turn those with higher levels of usage will experience more stress when it comes to deadlines, as they believe more time has gone past than is actually the case.
- Therefore, rather than alleviating stress these so called time saving devices are adding to stress levels.

aofe.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

### In Conclusion

- Our perception of time appears to be controlled by some form of pacemaker-accumulator style internal clock.
- Through the use of mixed methods the current research aims to investigate whether technologies such as time saving devices are having an adverse affect on this internal clock.

aofe.mcloughlin@mic.ul.ie

---

---

---

---

---

---

---

---

### Thank You

---

---

---

---

---

---

---

---