Take it slow! Using an augmented fork to reduce eating speed: A qualitative user experience study

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Introduction
Eating rate is a basic determinant of appetite regulation, as people who eat more slowly feel sated earlier and eat less. Unfortunately without assistance, eating rate is difficult to modify due to its highly automatic nature.

The 10SFork
The 10SFork, designed by Slow Control, Paris, provides feedback to raise awareness of eating rate in order to help people eat more slowly. It records behaviour and provides real-time haptic feedback on individual eating rates.

Method
11 participants (3 male, 8 female, M age = 21.2) used the fork both in a laboratory setting and at home. All participants indicated having high eating rates. We interviewed them on perceived efficacy, acceptability, comfort, accuracy, motivation, and sustained use of the fork.

Conclusions
Participants feel the 10SFork is an acceptable tool to decelerate eating rate. Participants were more aware of their eating rate, but this did not always lead to behaviour change. The fork is generally seen as comfortable and sufficiently accurate. The vibrotactile feedback worked as expected, but the visual feedback largely remained unnoticed. Sustained motivation to use the fork was limited because participants did not see themselves as the product’s target group.

Perceived Efficacy and Effect
Participants were more aware of their eating rate. Almost all participants indicated they ate more slowly due to the feedback of the fork. Although participants did not expect the current effect to last, they also expected sustained effects after longer training.

Acceptability and Social Use
Participants did not feel uncomfortable using the fork in a social context. Eating companions (family, house mates, friends) generally found the fork interesting and / or responded humorously. One participant reported that her eating companions tried to mimic her eating rate, without success. All participants mentioned taking part in this study as a moderator of fork acceptability.

Comfort and User Experience
All participants found the fork’s size, weight, and comfort in use acceptable. The vibrotactile feedback did not feel uncomfortable, but could not be ignored either. Most participants did not notice the light signals. The ten second time frame was long enough to slow down eating rate. However, some participants did find the pace too low which caused frustration and insecurity. Participants find it hard to estimate when the 10 second wait is over.

Actual and Perceived Accuracy
All participants felt the fork was mostly accurate in detecting eating rate. All participants reported false positives, but did not see them as problematic. The fork does not take bite size into account. Participants saw that as the biggest accuracy-related issue. Meal types influenced the fork’s performance; some dishes caused more false positives than others.

Motivation
All participants were motivated to use the fork. After a few days, motivation decreased for half the participants. Most participants experimented with ways of cheating: bigger fork servings, ways of handling the fork. One participant even went so far as using another fork on the side to keep up with his eating companions.

Sustained Use
Although participants reported that they were fast eaters, they did not feel that they were part of the product target group, which reduced their motivation for longer use.
One participant reported that she was glad the test was over and she could return to her old eating rate.

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