DinnerWare: Why Playing with Food Should Be Encouraged

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Abstract
DinnerWare is an exploration of eating as a medium for computation and aesthetic expression. It consists of a dining service electronically equipped to react to the properties of the food that it holds and respond to a user's eating gestures.

Keywords
Dinnerware, food, edible circuits, edible interfaces, responsive materials

ACM Classification Keywords
H.5.2 User Interfaces: Theory and methods.

Introduction
"Men think, dream and act according to what they eat and drink" [1]. With this Futurist assumption in mind, DinnerWare is an initial effort towards creating a synesthetic experience that can help us put some of our most ritualized eating habits into perspective. DinnerWare is composed of four main dining utensils: plates, cutlery, wine glasses and a saltshaker. Each one of these instruments is embedded with electronics to examine an individual mode of interaction and to concomitantly incorporate food as an integral part of an electronic circuit.

Technology and Interaction

Similar to a conventional dining setting, the plates and cutlery (figure 1) are the primary instruments that make up DinnerWare and guide the user interaction. The plate is outfitted with an array of LEDs and functions as a parallel switch network separating the voltage potential between the conductive tablecloth and the wired fork. The food, through its electric resistance, acts as a continuous circular sensor: the higher the conductivity of the food or the fork's proximity to an LED, the greater the light intensity. The aesthetic response of the plate is ultimately determined by the eating behavior and the physical qualities of the food: temperature, acidity, moisture, etc.

This direct and continuous interaction between eater and food is contrasted by the collaborative interaction of the knives, which are connected to each other across the table to act as a jumper wire, so that both eaters can influence the lighting pattern on each other's plate. Secondly, the wine glasses predispose a negative interaction by "turning on" only when they are put to rest. When the eaters remove the glasses from the table and drink, the lights turn off. Finally, the salt shaker activates a tricolor LED to scan through the RGB spectrum when it is shaken or turned upside down, and the salt further contributes to increase the salinity of the food and its conductivity. It is the equivalent of an edible potentiometer that chemically affects the sensing mechanism on the plate.

DinnerWare augments dining without bounding food and taste to the constraints of a digital domain [2]. Moreover, it makes an idiomatic use of the natural gestures and ordinary rituals surrounding collective dining.

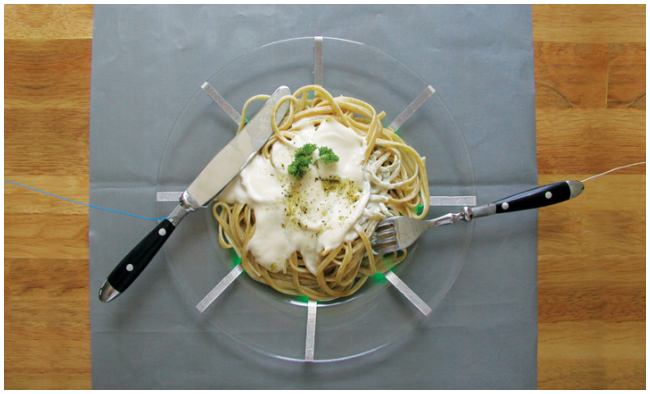

figure 1. The conductivity of the food and position of the fork determine how the plate lights up.

By examining eating and dining etiquette, DinnerWare hopes to address several questions. How easy is it to undermine culturally reinforced gestures when the ritual of eating is challenged or re-contextualized? Moreover, is it possible to work with the more neglected senses, like taste and smell, with the same primacy that currently grounds video or music? What are the implications of eating the medium through which we interact and communicate?

Conclusion

DinnerWare is about food and how we eat it. Its goal is to increase the potential of our dining experiences through simple electronic technology, by turning food into a medium for our sensory explorations.

References

[1] Marinetti, Filippo T. *The Futurist Cookbook: Against Pasta*. London: Trefoil Publications, Ltd. (1989).

[2] Maynes-Aminzade, D. *Edible Bits: Seamless Interfaces between People, Data and Food,* in the Ext. Abstracts CHI 2005, ACM Press (2005).