

Don't Destroy the Vitamins! – A Look at the “Tada” Microwave from Several Perspectives

Design invariably creates artifacts. But do these prototypes, concepts or products constitute design research? By situating the newly created object within socio-techno theories and explaining the design process of the artifact, this allows a designed object to mature into design research. A student designed concept known as the “Tada” microwave is presented and analyzed from the viewpoint of several “reading the object” theories. An understanding emerges to show how the device works in favor of the user through technological mediation and is respectful of social engagement, an important part of the cooking and dining experience. This research into the design process shows how meaning can be reconstructed through acting with the designed product and can change the designer’s perspective of intended use.

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INTRODUCTION

In an attempt to incorporate interaction style periods of kitchens, students explored ways to allow microwaves to encourage social behavior of its users.



Figure 1: The “Tada” microwave is placed in the center of the dining table.

The “Tada” microwave was the concept that emerged from the project team looking at interaction styles from the 1990’s and beyond, nicknamed “Induction Cooker Playboy.” A key feature of the design situates the cooking apparatus in the middle of the dining table. The microwave has a circular shape with a deep bottom to allow for especially designed dishware such as a tray for multiple plates or a soup pot. Rethinking the conventional front swinging door led to a lid as the way to gain access inside. Turning the device on or off was accomplished in two ways: either tap the large silver button or remove the lid. Another component was the large rotating handles that determine the temperature setting:

[Paul rotates the handles on the “Tada” microwave.]

Rachel: No! I don’t think so. You’ll destroy the vitamins. I think we should set it to “orange.”

[Rachel moves the handles to another position.]

Paul: It should be short and hot.

Rachel: But still...it is vegetables. I think we should stick to “orange,” right?

Even with a simple prototype, the student designers act out a convincing scenario of their new device as part of a presentation that will be revealed throughout the paper. In this dialogue, they manage to show a new cooking paradigm that replaces the solitary interaction of a microwave oven with a more social engagement. The impact of the technology is apparent because it could destroy the vitamins, but the “Tada” device itself does not command attention and instead allows the food to take the focus. I will show that technology, in this

case, helps preserve social engagement and keeps the spirit of eating for users while reducing the effort needed to cook.

For a broader perspective, I will introduce some of the views that designers and users took when working with the “Tada” concept. As a result of my participation in this project, I caught a glimpse into the designers’ views of the object. In spite of those differences in portraying and understanding the design object, the engaging nature of the “Tada” prevails.

IMPACT OF TECHNOLOGY AND/OR SOCIETY

Technologies are introduced to society at certain points in time and can be seen as having an impact on ways of living. But as [1] says “in all cases technology is both socially shaped and society shaping.” The impact is a two-way street and can often have unpredictable results.

The shifting sands of paradigms

[2] characterizes Borgmann’s understanding of technology as “device paradigms,” an analysis of devices in the way they shape people’s lives. We might say that moving from cooking with fire to a stove represented the first paradigm shift in cooking devices. The change was from a high interaction with the food and a social atmosphere to a more solitary way of preparing meals. A fire allows everyone to surround the cooking “device,” hence a greater possibility for social interaction. A stove has a spatial orientation, because of its usual placement against a wall, which hinders interaction compared with the roundness of a fire pit or grill.

Continuing with this theoretical thinking, the second device paradigm could be from the stove to the microwave. The microwave decreased the interaction quality a bit more than the stove. However, the shift that differentiates it from the first is that the interaction with the food is greatly decreased. Reducing the burden of preparing food is not necessarily bad, as I will show later, as long as the device keeps other engaging characteristics.

Using this device paradigm notion, I propose that the “Tada” represents the third cooking shift; where the social interaction or engagement is returned to a level represented in the first and second paradigms, the fire and stove:

Rachel: Maybe we can start carefully and not too hot. So where should I set it? “Yellow?”

Paul: A bit more like this.

[Paul adjusts the lid.]

Rachel: Ah, it’s already done. Can you see it? It’s already “yellow.” Try it.

[Paul takes the lid off and stirs the soup, then tastes it.]

Paul: No.

Rachel: No? Maybe we should add something. A bit of this, maybe?

[Rachel adds some spices.]

Paul: Should be more “red.”

In this continuation of the design students’ dialogue we see that the interaction with the food and with each other seem to have a good balance. One reason for the increased interpersonal engagement compared to a conventional microwave could be that the device does not have a direction (with the exception of the projected elapsed time). All participants feel as though they have equal rights in deciding the progress of cooking dinner because of the spatial positioning.

Which way is it?

Hold on. Is technology’s impact on society bidirectional? It could be that the shift in solitary eating habits was a direct result of the microwave device. It is also conceivable that society shaped the technology to its own needs in a time of short attention spans and multi-tasking. Proposed by [3], one way of looking at this issue without resorting to “technological determinism” or “social constructivism” would be to compare “the designer’s projected user and the real user, between the world inscribed in the object and the world described by its displacement” known as ‘de-scriptio.’”

The designers’ comments during the presentation of the “Tada:”

Rachel: Of course it is also like the very fancy effect you have, because you can actually lift the top and go “tada.” And that was also important to us.

Paul: That’s why it’s called “Tada”

Rachel: And another thing is that microwaves, nowadays, have a bit of a cheap implication. It’s cheap food, not healthy and...

Paul: You feel guilty using a microwave.

Rachel: Yeah, and it is something that you don’t really want to present to people. Like if you have guests you don’t want, oh, open the microwave and get it out. So, this is actually a nicer way to use it in an official role. Out of the private area setting. And we also talked about of course if you don’t want to have your microwave on the table. You remove it and can turn the pot away.



Figure 2: Scenario in which students act out the use of the concept. Social interaction through the use of the temperature setting handles (top) and interaction with the food (bottom) are characteristics of the new device paradigm.

In Akrich’s view, this dialogue could simulate the designers’ projected user. They dislike cooking with the microwave because of the feeling that it lacks elegance and style. However if you compare the designers’ acting out in the scenario (as a representation of real users) you do not find this “important”

aspect of making it chic as transparent. They setup the scenario in this way:

Paul: So honey, how was your day, today?

Rachel: Oh, it was horrible. I'm totally tired and I just want to go to bed, get a quick something to eat. So...

Paul: Let's microwave.

Rachel: Yeah, we actually have some leftovers from yesterday. Nice to heat them up, right?

Paul: Yeah, I think we should just use the microwave.

This dialogue shows the contrast between the designer's projected user and a "real" user using the object. It is only after the events that we are able to say what technical objects do and what people do, in a process of reciprocal definition [3]. Since this device is not available to actual users, it may be a bit premature for this approach.

Sorry, I Did Not Mean to Impose

Another way of looking at this issue without trying to determine if society or technology has the greatest impact would be to view the behavior imposed on the humans by nonhumans (for example, the microwave) called "prescription" [3, 4].

In a conventional microwave, the user sets a cooking time and gives the microwave control. A buzzer sounds demanding your attention; meaning that the microwave says the food is done and turns off. True, one can reset the time again. You still give control back to the microwave because it shuts off like a safety valve. [4] phrases this as going from "intrasomatic" to "extrasomatic" skills, in that we rely on safe, delegated nonhumans when incorporating technology.

The "Tada," as introduced by the students, does not have a timer option. Therefore, it does not rely on delegated nonhumans. The user needs to be aware of heating the food. There is no safety switch because the "Tada" does not shut off without intervention. The behavior imposed on the user is not extrasomatic like the conventional microwave, and instead relies on the user's intrasomatic skills.



Figure 3: The projected color ring shows the temperature setting of the "Tada." The color on the lid shows the temperature of the food as it heats.

SEEING DOUBLE, TRIPLE, QUADRUPLE...

Analyzing the "Tada" from the impact of technology and its use is an angle one can take. One can also look at how people view a particular object or device. [5] talks about the rhetoric techniques of language and metaphor that engineers use to master the objects they design. Each designer has an "object world" in which they participate and consequently, their view is shaped by this world. [6] allows every social group's view of

an artifact to become a separate artifact. A "pluralism of artifacts" results from all the meanings given to one object.

As a participating designer in the project, I saw our microwave as a stove instead of an oven. In my personal notes I wrote, "Design microwave based on interaction style of stove – more social than oven."

There were other viewpoints within our team. In design discussions, one designer viewed it as a thermal imager because of the way it projected the temperature of the food by using color on the lid, another designer's perspective was that of a lid on a silver platter, giving it a touch of class.

Recall from the student dialogue that even same person can have multiple perspectives. Rachel the designer talked about the "fancy effect" of removing the top, whereas Rachel the user in the scenario seemed to view it as a way to negotiate the temperature with her dining companion.

Will the Real "Tada" Please Stand Up?

Now we seem to have come to a predicament. If there are four designers, as there was in the design of the "Tada," that means there are at least four views of the object being designed. Instead of multiple personality syndrome, we might be looking at multiple object world syndrome. How do all of these separate visions come together into a final product?

We Are All Correct

Bucciarelli describes the notion of a temporary "shared vision" that occurs between design participants. This social construction is flexible in that its meaning changes as informal meetings, documentation and other tangible and intangible communication occurs. An example from the "Tada" project was what happened before an early design critique. The team held a quick informal gathering before the review to try and grasp what to present. My notes from this meeting:

Advanced dinner, experienced cook

On/off with lid

Heat control / turn pot

Microwave like oven/want to be like stove

At this point in the process there was no object. We had a plastic bowl (which later would become the lid of the microwave). However, we were able to negotiate a common understanding within our own object worlds because we each saw a part of our object world in the device to be created.

Bucciarelli also believes that naming and labelling is a part of design because participants use the "construction" of a name as a design act. The name "Tada" came about as a way to solidify meaning and bring together the separate object worlds. To testify to the difficulty in constructing a name for an artifact that does not yet exist, we did not agree on the name until the day of the presentation.

The "Tada" model may have worked for the designers because of its use as a flexible "boundary object" that allowed for embedded meanings within a common or universal understanding [1]. It is this ability to be read on many levels that gave the designers a piece of mind that they could view it from their own perspective. Henderson says that models qualify as boundary objects because of the unfinished nature that leaves plenty of details to be worked out in the designer's mind. The "Tada" model was engaged as a boundary object. One designer even felt the need to "dress up" the model by bringing in real food and dining utensils in order to present a convincing scenario. Another was adamant that we use a projector and mirror to simulate the temperature changes using color.

ENGAGE THE USER

Borgmann [2] sees technology as having its greatest strength as its weakness, which is to disburden people. For example, the microwave decreases the effort needed to cook food therefore making food a commodity that doesn't need to be engaged with from its origin.

Isn't it Ironic?

Borgmann wants to expose technology's promise to disburden and give us fulfilling lives. Consumption as the way to engage with technological devices in fact, according to Borgmann, impedes engagement with reality. The designers of the "Tada" were also confronted with such a predicament during the presentation:

Amelie: I can see a little bit of a dilemma. Because, when having the microwave in the table...I mean, cooking food in the microwave is sort of quick and fast. But this is like a social gathering that should be a long time that you should...umm...you know what I mean?

Paul: That is what we found out. We want to have this long time table dinner, but we can't manage it. And so, we try to...like an emergency solution.

There seems to be a conflict in using a microwave because of the social aspects of cooking and dining may be left behind in the shortened time constraints of a modern society.

Romance is Alive

[2] rips into the romantic notion that the disappearance of exertion leads to a loss of meaning. His counter example is that the loss of drawing water from a well does not render getting water valueless. It always had a defined goal that is accomplished, with the help of technology, in another way. "People do not run to move, and do not practice the culture of the table to alleviate their hunger," as Verbeek says it. That is to say, being social does not fill you up. Eating is goal orientated, while the social qualities are a separate meaningful engagement that coincides with dining.

The "Tada" helps realize the goal orientated part and may also create a meaningful engagement for "culture of the table" as two presentation guests commented:

Amelie: What I mean is that when you actually want to cook together, it should be a process...like it should be a long time. Of course a microwave is a quick...a quick thing to do. Yeah.

Cindy: Then isn't this more the fact that you don't have time to do that everyday, to have long meals together everyday. But this is like bringing that feeling into the quick everyday meal.

Hear Me, I Want Your Attention

"Follow the ball" is advice commonly given to children learning how to play baseball. When you are in a position to hit the ball, you should focus on the ball coming your way and not the bat you are holding that will intercept it. The bat withdraws from the task at hand and almost becomes invisible. [2] sees technology as a mediator that withdraws from attention and makes engagement possible. This does not mean there is no interaction with the device; it is that the device does not demand attention. This is contrary to Borgmann's opinion that technologies usually reduce involvement with the device.

A conventional microwave demands your attention with the buzzer, but as Borgmann predicts, the technology has concentrated the interaction with the microwave as responding only to its demands. Referring to the designers' dialogues, we

see that the "Tada" does not require the user's attention. It is a mediating technology that determines how people can experience each other and interact [2]. The "Tada" can change the microwave experience from solitary to cooperative activity by withdrawing and therefore mediating interaction with the food.

CONCLUSION

The "Tada" microwave is a student-designed concept that may change the way people experience microwave cooking. Interaction is returned to levels seen in other cooking device paradigms, like fire pits or grills because of the round shape, placement in the table and reorientating the door to be a lid. To avoid the debate of whether technology or society has the greatest impact, the designer's projected user and a "real" user (through the use of a scenario) were compared. This revealed that users did not think of the "Tada" as an elegant substitute and instead as a quick way for encouraging social interaction. It was only through acting with the device that the designer's perspective was transformed and a common meaning established with audience members.

Before the presentation, the designers themselves had numerous ways of seeing the "Tada." Each object world is correct in that it allowed a "shared vision" to temporarily coalesce the design into a product. It may be that the "Tada" worked as a boundary object for the designers to engage with. These perspective differences did not impede the successful creation of the concept because of the engaging qualities of the device as a boundary object.

The "Tada" is able to separate the goal-orientated part of cooking and eating by reducing the burden of preparing meals, while also respecting the social aspects of dining by mediating interaction through the use of its temperature setting handles. Metaphorically speaking, the "Tada" preserves the vitamins of engagement with a device that is thought of as interactively devoid. Finally, through explanation of the design process, an object can constitute to design research.

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REFERENCES

1. Henderson, K. (1999). *On Line and On Paper*. Cambridge, MA, MIT Press: 25 - 105.
2. Verbeek, P. (2002). Devices of Engagement: On Borgmann's Philosophy of Information and Technology. *Techné*, 6 (1), Fall 2002: 69 - 92.
3. Akrich, M. (1992). "The De-scription of Technological Objects." In Bijker, W., and Law, J. (eds.), *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Cambridge, MA, MIT Press: 205 - 224.
4. Latour, B. (1992). "Where are the Missing Masses? The Sociology of a Few Mundane Artifacts." In Bijker, W., and Law, J. (eds.), *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Cambridge, MA, MIT Press: 225 - 258.
5. Bucciarelli, L. (1996). *Designing Engineers*. Cambridge, MA, MIT Press.
6. Bijker, W. (1995). *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*, Cambridge, MIT Press: 19 - 100.