Metaphoric Interfaces

A case study for the digitally enabled luxury kitchen

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Appendix
Appendix

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A case study for the digitally enabled luxury kitchen

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APPENDIX I
How can the user experience the state of the dish using new senses?

- Tops get hard, stiffer when almost ready
- Burning smell when burning
- Moving like flames
- Hot fire
- Low to fire

Something with magnets
How can I control the appliance using new sensory experiences?

- Position before to a handle from "pan or mixer..." where you feel how much it is done.
- Control how much it is done by pushing interface to desired status.
Which shape should haptic / other sensory experiences have? Physical shape

Diagram:
- Input
  - Button that can be placed on the appliance you are using
- Output
  - Connected to one display on counter
- Stove
- Grill
  - Side of counter displays the appliance
How can tactile interfaces with other senses (smell, visual...) separate components per ingredient?

Visual: See what you are touching

Temperature: Make secret: temperature renders how frozen through it is

To increase sense of smell/youth lost

Can heptics get warm too?

Can heptic get in contact somehow with ingredient to observe taste or smell.

IT can glow from the inside to show light. Light captures attention.
Pains:

- Burning the cake in the oven before it is totally baked.
- Boiling eggs, it is hard to predict stages of the inside.
- Steak and veggies, there is a big range of how much is done and the good result depends on the taste.

"With bread I would want to knock on it."

"People throw paste on the wall to see if it sticks."

"Stick in the bread/cake to see if the dough still sticks."
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...
- meat
- desired texture, "hardness"?

I experienced... (e.g. a sense or feeling of something, an emotion...)

Can I/Can it...?
Can it show me how it should feel and how it is right now?

☐ I wish I had something like this for... meat, cakes
☐ I would not like to use this because...

VISION #2

Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...
- meat

I experienced... (e.g. a sense or feeling of something, an emotion...)
- I felt like cooking meat.
- I felt it’s something that can really make my life in the kitchen easier.

Can I/Can it...?
Can I set it to how I expect my food to be cooked and it tells me when it is ready?

☐ I wish I had something like this for... MEAT!
☐ I would not like to use this because...

VISION #1

Other thoughts? Doodle?
I’d make these layers to check how each part of the dish is doing.
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Car stick

I experienced... (e.g. a sense or feeling of something, an emotion,...)
I was a bit confused.

Can I/Can it...?

☐ I wish I had something like this for... Spiced consistency of food. Temperature.
☐ I would not like to use this because...

Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...
Dimmer

I experienced... (e.g. a sense or feeling of something, an emotion,...)

Can I/Can it...?

☐ I wish I had something like this for... oven/stove
☐ I would not like to use this because...
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

I experienced... (e.g. a sense or feeling of something, an emotion...)

Happiness
Excitement

Can I/Can it...?

☐ I wish I had something like this for... cooking in the oven. Perfect for bread.
☐ I would not like to use this because...

Additional thoughts:

List of common appliances:
- Stove (Electric, Gas, Induction, Ceramic matrix...)
- Oven (Electrical, wood-fired, stone...)
- Microwave oven
- Grill (Electrical, Gas)
- Fridge
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker
Please feel free to use this template to visualize your thoughts:
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Screw blade(s), when you said stake that sounded logical too.

I experienced... (e.g. a sense or feeling of something, an emotion, ...)

a bit of disgust because of the silicone, curiosity, confusion.

Can I/Ca...?

☐ I wish I had something like this for...
☐ I would not like to use this because...

VISION #1

Other thoughts? Doodle?

I like the idea of having smaller squares that can do the same, by your display – more info.

VISION #2

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

an animal that I am strangely a fan of. Beautiful.

I experienced... (e.g. a sense or feeling of something, an emotion, ...)

a sense of control, compassion and expectancy.

Can I/Ca...?

☐ I wish I had something like this for...
☐ I would not like to use this because...

VISION #2

Other thoughts? Doodle?

Try? Can it tell me weather stuff gets bad in the fridge? U

I wish I had something like this for... convenience my dough.
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

a scale at first glance, later

I experienced... (e.g. a sense or feeling of something, an emotion...)

resistance, small fight, & aliveness

Can I/Can it...?

Do 360° turns?

I wish I had something like this for... [ ]

[ ] I would not like to use this because...

Can I/Can it...?

Talk?

Other thoughts? Doodle?

This was my favorite

[Signature]

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

a stove

I experienced... (e.g. a sense or feeling of something, an emotion...)

anxiety, it could burn my fingers,

[Signature]

Can I/Can it...?

I wish I had something like this for... [ ]

[ ] I would not like to use this because...

Other thoughts? Doodle?

You have to

get used to it

[Signature]
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

a philips light is, a children's toy

I experienced... (e.g. a sense or feeling of something, an emotion...)

unpredictable, it's super cute

Can I/Can it...?

play the light at exactly the spot where I passed?

X I wish I had something like this for...
☐ I would not like to use this because...

controlled several heat sources

Additional thoughts:

List of common appliances:

- Stove (Electric, Gas, Induction, Ceramic matrix, ...)
- Oven (Electric, wood-fired, stone, ...)
- Microwave oven
- Grill (Electric, Gas)
- Fridge
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker
Please feel free to use this template to visualize your thoughts:
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... 

- Transition, force, fluffiness, comparison
- Hard

I experienced... (e.g. a sense or feeling of something, an emotion...)

- Control, learning

Can I/Can it...?

- Can it make my food into layers to understand what is happening between them?
- Can it teach me how to cook?

☐ I wish I had something like this for... an oven, or microwave
☐ I would not like to use this because...

* Recalling a cake

Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... Bacon!

I experienced... (e.g. a sense or feeling of something, an emotion...)

- Curiosity, physics, understanding

Can I/Can it...?

- Can I visualize what's going to happen with my next mushrooms, spinachs?

☐ I wish I had something like this for... estimating my quantities

Other thoughts? Doodle?

Also do understand how yeast works maybe?

VISION #2
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of... ever

I experienced... (e.g. a sense or feeling of something, an emotion, ...)
Response, AI, Feedback

Can I/Can...?
Can I stir my food remotely; but having a feedback on the texture?
Can I set a motion inside a soup/recipe?
☐ I wish I had something like this for... instead of attend...
☐ I would not like to use this because...

Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of... burners, fridge

I experienced... (e.g. a sense or feeling of something, an emotion, ...)
Danger

Can I/Can it...?
Record the heat... I need

☐ I wish I had something like this for... understanding what happens with my
toxins, recipes, and learn
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of... 3D touch, jelly candy

I experienced... (e.g. a sense or feeling of something, an emotion, ...)

Innovation, future, imagination.

Can I/Can it...?

Can I shape it? Can I see the consistency of my food? (touch it)
Can I feel my food? Can I turn it?

☐ I wish I had something like this for... learning how my food changes, how the inner of my food looks.
☐ I would not like to use this because...

Other thoughts? Doodle?

I would like to shape my stove, by showing how the burners are distributed.

Additional thoughts:

I think a magnetic field (as in a ferromagnetic) matches these experiences, where you interact with a system in a more physical-interesting way. I would like to see combination of the appliances maybe. Also, can a % air fryer be added to the idea.png

Maybe if I could have these feedback in more simple appliances could also be nice (blender, toaster, mixer).

List of common appliances:

• Stove (electric, gas, Induction, Ceramic matrix...)
• Oven (electrical, wood-fired, stone,...)
• Microwave oven
• Grill (electrical, gas)
• Fridge
• Freezer
• Coffee maker
• Food processor
• Sous-vide cooker
Please feel free to use this template to visualize your thoughts:
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

LAYERS OF A CAKE
A PAUSE BUTTON

I experienced... (e.g. a sense or feeling of something, an emotion...)

IT WAS ODDLY SATISFIED TO HANDLE THE OBJECT, BOTH FIRM AND GENTLE.

Can I/Can it...?

BE MADE BIGGER WITH MORE COMPARTMENTS?

☐ I wish I had something like this for...
☐ I would not like to use this because...

LEISURE, INTUITIVE CONTROL OF....

VISION #1

Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

it reminded me of/made me think of...

ALIVING ORGANISM

I experienced... (e.g. a sense or feeling of something, an emotion...)

A COMPLICATED FEELING, FEEL LIKE FIRMLY HANDLE THE OBJECT, BUT IT WAS SOFRAGILE!!

Can I/Can it...?

BE MADE MORE STORDY?

☐ I wish I had something like this for...
☐ I would not like to use this because...

VISION #2
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

A TIME KEEPING DEVICE

I experienced... (e.g. a sense or feeling of something, an emotion,...)

RECOGNITION

Can I/Can it...? MOVE BY ITSELF?

☐ I wish I had something like this for...
☐ I would like to use this because...

TO KEEP TRACK OF CERTAIN PROCESSES IN THE WISSEN

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

A SPECIAL ICE CREAM COLD PLATE
A JAPANESE T2AT2IRI PLATE

I experienced... (e.g. a sense or feeling of something, an emotion,...)

AMAZEMENT, HOT AND COLD

Can I/Can it...? DESERT TO MUCH MORE
EXTREME SETTINGS SO YOU COULD COOK WITH IT?

☐ I wish I had something like this for...
☐ I would not like to use this because...

COOL TO SHOW IT TO FOR VISITORS

Other thoughts? Doodle?
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means
necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

A FUTURISTIC MULTIFUNCTIONAL 'BUTTON'

I experienced... (e.g. a sense or feeling of something, an emotion, ...)

EXITEMENT ABOUT THE TOUCH AND COOK

Can I Can it...?

☐ I wish I had something like this for...
☐ I would not like to use this because...

Additional thoughts:

List of common appliances:
• Stove (Electric, Gas, Induction, Ceramic matrix, ...)
• Oven (Electrical, wood-fired, stone, ...)
• Microwave oven
• Grill (Electrical, Gas)
• Fridge
• Freezer
• Coffee maker
• Food processor
• Sous-vide cooker
Please feel free to use this template to visualize your thoughts:
Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...
-...-
-...-
-...-

I experienced... (e.g. a sense or feeling of something, an emotion...)
-...-
-...-

Can I/Can it...?

☐ I wish I had something like this for...
☐ I would not like to use this because...

Other thoughts? Doodle?

VISION #1

Please describe your encounter with the prototype.
Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...
-...-
-...-
-...-

I experienced... (e.g. a sense or feeling of something, an emotion...)
-...-
-...-

Can I/Can it...?

☐ I wish I had something like this for...
☐ I would not like to use this because...

Other thoughts? Doodle?

VISION #2
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

**Appendix II**

**VISON #3**

It reminded me of/made me think of...

- [Image]

I experienced... (e.g. a sense or feeling of something, an emotion...)

- [Image]

Can I/Can it...?

- [Image]

☐ I wish I had something like this for...
☐ I would not like to use this because...

Other thoughts? Doodle?

---

**VISON #4**

It reminded me of/made me think of...

- [Image]

I experienced... (e.g. a sense or feeling of something, an emotion...)

- [Image]

Can I/Can it...?

- [Image]

☐ I wish I had something like this for...
☐ I would not like to use this because...

Other thoughts? Doodle?
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Temperature, color, sound, smell, texture, shape. (Is this a wheel? A cloud? An object?)

I experienced... (e.g. a sense or feeling of something, an emotion...)

Can I/Can it...

Yes, but... It reminds me of...

Other thoughts? Doodle?

Additional thoughts:

- Visualize it... in various ways.
- Make it move.
- Visualize it in various ways. It feels like it's moving. It's dynamic.

List of common appliances:

- Stove (Electric, Gas, Induction, Ceramic matrix...)
- Oven (Electric, wood-fired, stone...)
- Microwave oven
- Grill (Electric, Gas)
- Fridge
- Freezer
- Coffee maker
- Food processor
- Sous-vide cooker
Please feel free to use this template to visualize your thoughts:
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

Sous-vide pour la conservation des aliments.

I experienced... (e.g. a sense or feeling of something, an emotion...)

Leur dosage, le goût, l’arôme, la saveur de la soupe au vin de la cuisine du monde.

Can I/Can it?....

Un appareil précis et pratique pour faire de la sous-vide ou peut-être même pour faire de la sous-vide à domicile.

I wish I had something like this for...

I would not like to use this because...

Other thoughts? Doodle?

VISION #1

VISION #2
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me/made me think of...

Pour les ouvertures de porte à la cuisine ou des tiroirs

I experienced... (e.g. a sense or feeling of something, an emotion,...)

Avec quelle force et jusqu'où aller jusqu'à ce que le fonctionnement se fasse sans effort et avec élégance.

Can it/Can I...

Je souhaitais ce système pour l'ouverture et la fermeture des machines et porte et tiroirs dans la cuisine

☐ I wish I had something like this for...
☐ I would not like to use this because...

Other thoughts? Doodle?

Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me/made me think of...

En général c'est la température au four qui ne garantit pas de même partout.

I experienced... (e.g. a sense or feeling of something, an emotion,...)

Les aliments ou les gâteaux ne cuisent pas de la même façon partout.

Can it/Can I...

Je trouve que ce serait bien de pouvoir utiliser une température au four pour une meilleure répartition de la chaleur.

☐ I wish I had something like this for...
☐ I would not like to use this because...

Other thoughts? Doodle?
Please describe your encounter with the prototype.

Feel free to use full sentences, words, doodles or sketches or any other means necessary to reflect the thoughts, feelings and associations the prototype evoked.

It reminded me of/made me think of...

I experienced... (e.g. a sense or feeling of something, an emotion,..)

Can I/Can it...?

Additional thoughts:

List of common appliances:

1. Stove (Electric, Gas, Induction, Ceramic matrix,..)
2. Oven (Electrical, wood-fired, stone,..)
3. Microwave oven
4. Grill (Electrical, Gas)
5. Fridge
6. Freezer
7. Coffee maker
8. Food processor
9. Sous-vide cooker
Please feel free to use this template to visualize your thoughts:
Notes

It is very hard to know if meat is ready without cutting it, guidance would be helpful.
A Brioche made by Anna.

Why do some recipes have milk and others don't.

What is the consequence of adding milk.

My nose doesn't work properly so smelling is not my thing.

The diagram above shows the process:

1. Pre-Experience: gathering ingredients, setting up the kitchen.
2. Experience: mixing ingredients in a bowl, rising the dough in the fridge.
3. Post-Experience: baking the bread in the oven.

Notes:

- Visual
- Gustatory
- Haptic
- Auditory
- Olfactory
APPENDIX IV
APPENDIX V
<table>
<thead>
<tr>
<th>Position</th>
<th>Function/Heating Function</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Off position</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Light</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Hot air</td>
<td>60-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>3</td>
<td>Eco hot air*</td>
<td>50-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>4</td>
<td>Top + bottom heat</td>
<td>60-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>5</td>
<td>Top + 1/3 bottom heat</td>
<td>60-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>6</td>
<td>Top heat</td>
<td>60-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>7</td>
<td>1/3 Top + bottom heat</td>
<td>50-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>8</td>
<td>Bottom heat</td>
<td>50-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>9</td>
<td>1/2 Hot air + bottom heat</td>
<td>50-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>10</td>
<td>1/2 Hot air + 1/3 bottom heat</td>
<td>60-300 °C, Default temperature 170 °C</td>
</tr>
<tr>
<td>11</td>
<td>Full surface grill + circulated air</td>
<td>60-300 °C, Default temperature 220 °C</td>
</tr>
<tr>
<td>12</td>
<td>Full surface grill</td>
<td>50-300 °C, Default temperature 220 °C</td>
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<td>13</td>
<td>Compact grill</td>
<td>50-300 °C, Default temperature 205 °C</td>
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<td>14</td>
<td>Baking stone function</td>
<td>50-300 °C, Default temperature 250 °C</td>
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<td>15</td>
<td>Roaster function</td>
<td>50-300 °C, Default temperature 185 °C</td>
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<td>16</td>
<td>Dough proving</td>
<td>30-50 °C, Default temperature 38 °C</td>
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<td>17</td>
<td>Defrosting</td>
<td>45-80 °C, Default temperature 45 °C</td>
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<td>18</td>
<td>Keep warm</td>
<td>30-130 °C, Default temperature 70 °C</td>
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<tr>
<td>5</td>
<td>Basic settings</td>
<td></td>
</tr>
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</table>

**Symbols**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶️</td>
<td>Start</td>
</tr>
<tr>
<td>❌</td>
<td>Stop</td>
</tr>
<tr>
<td>☀️</td>
<td>Pause/End</td>
</tr>
<tr>
<td>☠️</td>
<td>Confirm/save settings</td>
</tr>
<tr>
<td>⏸️</td>
<td>Selection arrow</td>
</tr>
<tr>
<td>✖️</td>
<td>Open appliance door</td>
</tr>
<tr>
<td>🔖</td>
<td>Call-up additional information</td>
</tr>
<tr>
<td>📊</td>
<td>Rapid heating with status indicator</td>
</tr>
<tr>
<td>☐</td>
<td>Call-up individual recipes</td>
</tr>
<tr>
<td>☑️</td>
<td>Record menu</td>
</tr>
<tr>
<td>☑️</td>
<td>Edit settings</td>
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<td>❌</td>
<td>Error name</td>
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<td>✌️</td>
<td>Delete letters</td>
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<td>☙️</td>
<td>Child lock</td>
</tr>
<tr>
<td>☑️</td>
<td>Call-up timer menu</td>
</tr>
<tr>
<td>☑️</td>
<td>Call-up kitchen timer</td>
</tr>
<tr>
<td>📖</td>
<td>Demo mode</td>
</tr>
<tr>
<td>☑️</td>
<td>Call-up core temperature probe</td>
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<tr>
<td>☑️</td>
<td>Start roasting function</td>
</tr>
<tr>
<td>☑️</td>
<td>Stop roasting function</td>
</tr>
<tr>
<td>☑️</td>
<td>End roasting function</td>
</tr>
</tbody>
</table>
APPENDIX VII
APPENDIX VIII
Imagine you and your partner are baking a bread. Your partner left you in charge to take the break out once it’s ready.

You know the oven is set to 170°C and the bread has been in the oven about 30 minutes ago.

You come into the kitchen, you see the oven and its interface. What are your first thoughts?

The light emitting surface is intriguing and I immediately take a closer look at the soft touch area of the dial.

Did the interface steer you towards the right touch point (the dial)?

Yes, to me it seems pretty clear that the soft area is intended to provide an interaction. And I assume that the way around it is some sort of rotary dial.

Was the meaning of the interface clear to you? Describe your experiences.

As soon as I apply pressure on the soft area I can see a change in color & experience all different grades of density. I associate the color with temperature and in combination with the visual.

What benefits or drawbacks do you see compared to conventional interfaces? Reference (labeled)

I do understand that the density must reflect or indicate the consistency of the bread.

Firstly I think that it is quite novel, thus it might take a while to fully make use of its potential.

How satisfied were you with the experience of discovering the meaning of the interface?

To be honest I am quite fascinated by the sensation of its feedback. Definitely a new point that triggered my curiosity. It feels like a more natural & engaging way of interacting with a machine.

Would you want to use it in your own kitchen?

I could very well imagine to get used to such a multisensory dial.

Any further ideas or suggestions?

Perhaps the color could also indicate how long the meal still needs to cook or distance. Or you might even track the dial with your cell remote control.

That quality I miss in conventional kitchen aids.
APPENDIX X
IDE Graduation Assignment

GENERAL INFORMATION

<table>
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<tr>
<th>Title Graduation Project</th>
<th>Achieving Sustained Satisfaction via Metaphoric Interface Design: A case study for the digitally enabled luxury kitchen</th>
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CONTENT

Introduction

Gaggenau is a luxury kitchen- and home appliances manufacturer. As such, it can be argued that enabling more luxurious and satisfactory experiences by defining novel interactions for its products and services is paramount. While technological progress leads to an increasingly complex situation in which to achieve this, it also provides a multitude of opportunities to shape more intuitive, meaningful experiences in unexpected ways.

As the permeation of digital technology into traditional fields of design progresses, the chance arises to see this not merely as the driving force behind increasingly complex interfaces. Rather, it might be leveraged into evoking curiosity, compelling the user to explore and appropriate the possibilities the interface provides in an intrinsically motivated manner. By those means, interfaces may provide ways to ensure a sustained level of satisfaction, renewed challenge, intrigue and wonder, as the product turns into a reflection of individual ambitions. Instilling it with metaphorical meaning to allow users to call upon their inherent sense of intuition in a given context (e.g. by anthropomorphizing it) may be of exceptional interest for achieving this goal.

Problem definition

When it comes to better understanding the nature by which interactions between individuals and digitally enabled products are shaped, the field of Human-Computer Interaction (HCI) provides many insights. One paradigm discussed within this field is of particular interest: Multimodal interfaces. As opposed to unimodal interfaces, they explore multiple human perceptual channels to establish an effective dialogue between a system and its user. Most knowledge available about multimodal interfaces and (to some extent) HCI in general however, focuses on functional requirements of the interface rather than the quality of the user experience. This also holds true for its theoretical potential to effectively convey information in a particular context. While limited knowledge is also available about the potential to shape meaningful, multimodal interactions within the confines of artistic expression, it provides little insight into enriching interfaces with metaphorical meaning or designing for a more human-centered approach in general.
### Assignment

The ambition is to investigate how an intimate, conversational relationship between user and interface can be achieved, in particular by means of creating metaphoric allegories allowing users to call upon an immanent sense of intuition catering to multiple sensory modalities. To that end, two modalities (senses) may be of heightened interest when it comes to emotional richness, namely the tactile (touch) and the olfactory (smell).

A concept demonstrator of a product/interface incorporating the desired interaction qualities will be developed as a case study within the domain of kitchen appliances in the digital age.

The demonstrator will be evaluated in order to validate claims made in favor of metaphoric interface design, as well as to gain a more comprehensive understanding of how to elicit satisfactory experiences, specifically within the context of kitchens in the digital age.

### Approach

The approach taken towards the accomplishment of the above-mentioned assignment is best characterized as “Research Through Design”.

In an iterative process, prototypes will be developed in order to test individual aspects of metaphoric and/or multimodal interface design. The prototypes will be situated within the context of digitally enabled kitchen appliances and will be investigated with respect to their effectivity in eliciting a sustainable sense of satisfaction and empowerment.

The project will be structured as follows: In an initial immersion phase, the context and future trends pertaining to it will be illuminated. Subsequently, emerging technologies (sensors, materials, actuators, algorithms and services) conductive to the achievement of metaphoric interface design will be investigated. Based on these findings, an iterative process of ideation, prototyping, testing and evaluation will determine the framework for the refinement of one final concept. This final concept will be worked out in greater detail and a demonstrator for evaluatory purposes is to be developed.

### Graduation Project results

The outcome of the project will be a blueprint for metaphoric, multimodal interfaces. This will be achieved by the development of a demonstrator situated in the kitchen context.

It is intended to serve as a framework initiating a paradigm shift in the development of technology-humanizing interfaces not only at Gaggenau.

### Deliverables

Demonstrator

### Relation and relevance to the domain of Industrial Design Engineering, the chosen master direction and the IDE pillars

Within a specific context, this thesis project investigates the way appropriately embodied data can facilitate an intuitive, natural dialogue between the user and complex systems. The interaction being the conductor for this transfer of knowledge, the DfI relevance is clear. As the nature of this interaction is to be defined by its very own design language, a clear IDE relevance is also given.

Companies such as Gaggenau stand to benefit from resulting insights and developments, as it will help them create value by delivering interfaces that will provide their customers with a more virtuous, long-lasting, transparent and satisfactory experience. Technological advancement is perceived to increase the complexity of the systems we interact with. In this case however, technological advancements are to be leveraged into humanizing their context of application. Instead of abstracting the causal relation of processes, technology is to be used to maintain but translate those relations into a more intelligible form.
IDE Graduation Assignment_Bernstein, Adriaan_4543157_22-11-2017

### Planning

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#### Further comments and information

None

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