



DUX 2015: EXERCISES

The course consists of four exercises. Passing these is worth 2 credits in itself.

Exercises are carried out in **pairs**, or, if you are the odd one out, alone.

- You must find a **new partner** to work with for each exercise.

Each exercise ends with a **crit**.

- Before the crit you must **upload your deliverables** to PingPong.

Exercises are not graded, other than with **pass or fail**.

- Nevertheless you will be given spoken feedback during the crit, and afterwards, the teachers will also give you a grade on the range F/3/4/5. If you fail, you have to resubmit (in which case you'll get some pointers regarding what to improve).
- The grades are not used for anything else than pointing out to you how well you did.

ON CRITS

Each exercise ends with a crit session. Crits are carried out in half-class; a schedule for this will be posted on the website. You have five minutes to present your design, and remember that your “presentation design” very much affects the kind of feedback you will get. After the presentation, ten minutes are spent on giving feedback. Feedback is focusing on:

- How well you have solved the given task, i.e. how “good” the design is in relation to the assignment.
- That you have a solid and relevant rationale for your design.
- How insightful your reflection is.
- Wow!-factor

You are expected to take down notes regarding the feedback you get. (If it were us, we'd write them directly into the presentation, to keep feedback on the same place as the design, but hey, that's us.)

Ex1: Character of Things

Task in short: To redesign a printer, a bike or a vacuum cleaner, imbuing it with a character.

Aim: To explore coherency. To practice character design of artifacts in terms of form, material, movement, manner of interaction.

Related papers: Janlert, L. and Stolterman, E. (1997) *The character of things*

TASK

Today it's your task to design an object with a certain character. In doing this you will design not only the functionality of the object, but also the form, and how one interacts with it.

Step 1: Defining the character (ca 1 hour)

Start by choosing and analyzing a character; pick one of the following:



Discuss how your character behaves in general, and how he/she/it interacts with people. Note that you should not create a complex and skewed background for your character, go with the cliché.

- What is your character's general attitude towards life (e.g. friendly, shy, cynic, aggressive, ignorant, accommodating...)?

- What is your character's primary need (e.g. love, attention, piece & quiet, revenge)?
- What is your character's general attitude towards **other people**?
- How do other people interact with your character?
- How does your character get others' attention?
- How does your character flirt?
- What does your character like to do together with others?

Now you shall use an approach that is sometimes called Chinese Portraits or Concept Portraits. Take a few minutes to *separately (and quietly)* ask yourself the following questions. First answer the questions straight off the top of your head, then explain to yourself why you think so.

- If your character was a **material**, which one would it be? Why?
- If your character was a **tool**, which one would it be? Why?
- If your character was a **color**, which one would it be? Why?
- If your character was a **sound**, which one would it be? Why?
- If your character was an **activity**, which one would it be? Why?
- If your character was a **shape**, which one would it be? Why?

Discuss your answers in the group.

Step 2: Establishing interaction (ca 45 minutes)

Once you've gotten all this figured out, it is finally time to choose the object you will design. So, choose **one** of the following: A printer, a bike, or a vacuum cleaner. Focus on your object for a while. List its functions and how users interact with the object – not only in relation to the functions, but also in general, i.e. in carrying it, using it as book ends or whatever.

Then, try to find mappings between your character's behaviors and your objects functions. Try to leave the human/dog dimension behind in doing this, i.e. do NOT let your object talk or write things as a way to communicate its personality. It should be an object with character, not a personality dressed up as an object (as in many Disney movies). So, try to take the "soul" of your character, and place it into your object, and let the soul manifest itself in how the object acts and interacts. Note that you mustn't go too far from what a printer/bike/vacuum cleaner "is"; you can add new functionalities, but not drastically change the appearance of it. Try to utilize its expressions (i.e. functionalities, sound, general behavior) instead.

Example: Imagine a toaster with the personality of a very aggressive and destructive person. It would probably always burn the bread, and would aggressively spit it out, high up in the air. This action comes with a very loud mechanical noise. Also, the cover would lead heat very well so that whoever tries to touch the toaster will burn themselves.

Does your object have some extra functionalities due to its character? Or does it miss functionalities that it should have?

Example: The aggressive toaster lacks a control for stating how much you want to toast your bread. It decides that by itself and is unpredictable. Most of the time the bread is burnt black, but sometimes it is instead spat out at once, not burned at all. Even more seldom the aggressive toaster delivers a perfect toast.

It has an extra "functionality"; it is very hostile towards strangers. If a stranger appears in the kitchen it will turn on itself, become hot and repeatedly make the spit-out-the-bread-movement with the accompanying sound. This side-effect of its aggressiveness can be used as an alarm.

How do people interact with your object and how does it react? Like, the aggressive toaster burning everyone who tries to touch it.

Step 3: Appearance (ca 30 minutes)

Now, start discussing your objects' physical properties. Go back to the Chinese portrait and look at your answers for inspiration.

Example: The aggressive toaster is made of pitch black metal with a matte finish, somewhat stained. The little handle that can be used to eject the bread with is made of shiny stainless steel whose shape is not rectangular as usual, but instead looks like an arrowhead. There are no soft edges; they are all very sharp. The shape is compact, more like a cube than a rectangular cuboid. It is very heavy.

Step 4: Compile (45 minutes)

At this point you need to divide. One of you sketches (4a) and the other creates the rest of the powerpoint, waiting to include the illustration. (4b)

Step 4a: Illustration

Make an illustration of your design. If possible also point out the glorious functions here, in an ad-like manner. Or list them on the next slide. You may not use a photo or someone else's pre-made drawing you must design the object from scratch, because every design decision matters in expressing your character! Consider shapes, angles, material, color, surface, size, weight... everything.

Step 4b: Rationale, Analysis & Reflection

You get to work on the rest of the slides. First, provide a rationale for your design; how did you choose to manifest your given character in the design of its functions, features, appearance and, most importantly, interactions? How well do you think you succeeded in transferring the original character onto the object? Is your design coherent do you think? And at which point does coherency break (because it always does...) In which ways does the changed object generate expectations and provide a context for interpretation?

DELIVERABLES

Hand in a presentation, as ppt or pdf in landscape format, **before the crit**, covering the following topics:

- A **description** of how your final design looks and works, including nice sketches. This should be short and sweet.
- A **rationale** where you *motivate your design choices*. This includes discussing not only what you did, but also what you didn't do, e.g. omitting certain functions.
- A **reflection** on your design.

Both of you upload your file to your respective PingPong accounts. Name it as follows:

Ex1_lastname1_lastname2

E.g. Ex1_eccleston_smith.pdf.

Ex 2: Jekyll/Hyde Design

Task in short: To design an online conference tool (similar to google hangouts in its functionality)

Aim: to design such a conference tool so that creates a specified emotion/feeling for its users.

Related papers: VAN Gorp, T. and Adams, E. (2012). Design for Emotion (Chapter 5)

Jung, J. and Love, T. (2008). A strategy for creating design methods based on social behaviours for pleasurable user experiences in human-computer interaction.

Fokkinga, S., & Desmet, P. (2013). Ten ways to design for disgust, sadness, and other enjoyments: A design approach to enrich product experiences with negative emotions.

TASK

The task here is to design an online conference tool with that provides different interaction possibilities than the norm with the goal of making the user feel a certain emotion. The emotion that you are working with will be assigned to your group in class. **Important: Your assigned emotion is secret to the other groups so keep it private.** Of course, how people feel is also up to them, but the conference tool can influence these feelings. Therefore you are to design as if you were designing for the same person, hereby assuming that it is the interaction with your design that creates the necessary conditions for your target emotion.

There are a lot of opportunities here to play with social dynamics, since you are mostly in control of how people will appear to each other (since they have to go via your design to communicate!).

Nota Bene

- Assume that all users react in the same way. This means that whether the user experiences your emotion is **independent of the user**. Yes, we know this is unrealistic but save your user ideas for the 'designing people' course. ;)

Example: Let's assume there are two versions of the interface. Kiko loves her version of the system, since it always makes her feel serene, calm and in control. Terje dislikes his version, possibly even fears using it, since it makes him feel stupid and intimidated. IF however, they switch systems, their feelings would be reversed. (And, since you wondered, they will never fall in love.)

- Assume that whoever your user is talking to, is using a normal version of the interface (much like skype or hangouts), so no emotion design for them.
- Remember that this is **interaction** design. You therefore need to address the interaction with the system, and that should be your primary focus. I.e. you should use interaction design as your main tool for changing the feeling you aim to design for.

Step 1: Think. Identify & Clarify the Emotions

Within your group, start with defining what the emotion that you received means to you. Can you identify past experiences that have made you feel this emotion? Consider the A.C.T. model, Jung and Love's strategies for using social behaviors in design, Fokkinga's approach to analysing negative experiences as well as other relevant knowledge. How can you apply these frameworks in order to set up situations where the desired emotion may take place? For example you could look at Fokkinga's work and cut out the part of it that makes the experience positive. Or you could use the A.C.T. approach and design the personalities of your interface that will result in the pushing for the desired emotional responses. **Don't be afraid to do some ethnography!** Go observe people, talk to people and find out what makes for uncomfortable social interactions, and what makes for comfortable ones.

Step 2: Do. Design

Start by listing the functions in the conference tool. This part is not rocket-science; just look at any such tool, like google hangouts or Skype. But, more interestingly, look at what factors make these programs function well, what functions they support and so on.

Then, start tampering with your interface! Decide on where to start and how to approach the challenge of designing for your target experience. You could also assign certain features /functions to each member and then switch the assignment and iterate. Another possibility is to focus first on a certain part of time (i.e. initial interaction, after x minutes, when finishing a call) in order to design a more robust experience. Basically, design your design process!

Whatever the decision is, go in with a solid plan! Remember to keep track of what you do for reporting reasons.

Step 3: Show. Illustration/ Prototyping

Create some sort of illustration, "screendump", prototype or thing which clearly and visually describes how the interface promotes your emotion. Storyboards could be another good idea. Do not include the name of your emotion anywhere on the prototype as other groups will try to guess what emotion you were designing for.

Analysis & Reflection

Analyze your design(s). Did you meet your goals? Are you satisfied? Did you design an experience? Which problems did you run into and can or can't they be solved with this specific emotion that you were assigned? Why and how? As always, there should be coherency in your solution; is there? At which point does coherency break (because it always does...)?

Reflect -- how can this way to design -- i.e. designing towards a certain emotion -- be used to alter behavior?

DELIVERABLES

Hand in a presentation, as ppt or pdf in landscape format, **before the crit**, covering the following topics:

- A **description** of how your final design looks and works, including nice sketches. This should be short and sweet. Here, you must NOT reveal what emotion you were assigned.
- A **rationale** where you *motivate your design choices*. This includes discussing not only what you did, but also what you didn't do, e.g. omitting certain functions. This section should come AFTER the description of your design. In this section you can reveal the emotion.
- A **reflection** on your design.

Both of you upload your file to your respective PingPong accounts. Name it as follows:

Ex2_lastname1_lastname2

E.g. Ex2_adama_thrace.pdf.

Ex 3: Everyday Life in Pandemia

Task in short: *To create a critical design that is, in some aspect or to some extent playful.*

Aim: *To experiment with value fiction, critique and playfulness.*

Related papers: *Dunne, A., and Raby, F. (2001) The Designer as Author*
Bardzell, J. and Bardzell, S. (2013) What is "Critical" about Critical Design?
Gaver et al (2003) Ambiguity as a resource for Design

TASK

In this task we'll experiment with value fiction, as described by Dunne and Raby (2001). As you know, critical design can appear by designing for one set of values and then transfer it to our "normal" world with our "normal" set of values. It is the aim of this task to design an object that somehow criticizes aspects of modern society: e.g. how online relationships replace real relationships, and the intense focus on career and ownership.

Step 1: Imagination-stage (in groups of 4, preferably!)

Imagine Pandemia: a world quite similar to ours, now. The technology level is the same, the climate threat remains, as do economic crises. However, in this society, the major threat to normal human life is not wars, but illness. In this version of today's world, humanity has previously suffered greatly under various pandemics: the Spanish Flu in the 1920ies killed 10% of the world's population¹, followed by a Marburg pandemic in the 1960ies, killing 30%. The latest large outbreak took part in the late 90ies and was caused by a hitherto undiscovered mutation of the H1N1-virus strain called H1N2 (commonly known as "Captain Trips" or "Blue"). Since health care and quarantine routines had improved since Marburg, the mortality rate was only 18%, most of which were children and young adults under 23 since most adults had already gained substantial immunity due to earlier epidemics with similar strands.

Apart from the pandemics, smaller outbreaks of various diseases are very common; according to the latest report from Pandemia's version of WHO an average city (i.e. with a population density of 1200-9000 persons per square kilometer) will suffer from a more or less serious outbreak every 54,2 months.

Albeit the world has recovered since the Captain Trips-disaster (the world population is ca 5 billion and the average life expectancy is 57 years²), there are a couple of inherent values that differ from the world as we know it.

- Firstly, close physical contact of any kind is normally reserved for only one's family members and loved ones; typically the **distance** between people who are not family or lovers is ca 1,5 – 2 meters at all times. If closer, you are in someone's personal zone.

¹ In "our" world the 1918 epidemic killed 3-5% of the population.

² The "real" life expectancy globally in 2010 was 67,2 years.

- Secondly, one must be mentally prepared to, at any given time, be **separated** from one's loved ones for an unknown time, not knowing whether you will ever meet again, due to quarantine and possibly death. Quarantine processes are often rehearsed, and everyone knows that this kind of separation will happen to them four to seven times in their life, or possibly more, if the trend worsens.
- Thirdly, as a strategy for dealing with sudden losses in population (either due to death or long-term quarantine and/or convalescence), most people have **double educations** or skill sets, so that they can serve as back-up. Most people thus have two half-time jobs.
- Fourthly, people are **not very interested in ownership**, especially not of large, stationary or expensive things. This since they in times of crisis either will be put in quarantine and as such deprived from most of their personal belongings, or will be commanded to share or give away whichever resources they have for the sake of the community.
- Lastly, being old(er) is once again a good thing: **older people are valued** for two things – their collected experience and their ability to cope with whatever illness or disaster life throws at them.

Work in groups of 3-4. Use this value fiction. Brainstorm wildly regarding what it would be like to live in Pandemia. Would the inhabitants of this alternate world have different needs than we do? Which kinds of products are there, that address the needs created by values. Do not stop to develop ideas here, because you will split up for the following steps. Focus mainly on "normal" life, i.e. try to stay away from the most extreme pestilence scenarios.

Step 2: Selection and transfer to critical design

Split up. From now on, you work in pairs. Now for the tricky part; you need to select one of the products you came up with in the previous stage which **has potential to both address the need in Pandemia and at the same time criticize a value in our world**.

Example: A wearable, flexible hula-hoop (rockring) with a diameter of 3 meters, will in Pandemia very conveniently stop people from entering the wearer's personal zone. In our world, it serves as a comment on estrangement.

If you have trouble choosing or finding something, choose one of the five values listed and return to Bardzell & Bardzells definition of critical design and see if you can work with some of the aspects in their definition, especially perspective-changing, which is what value fiction is all about. Or, try to apply ambiguity (as in the Gaver-paper) as a design tool (ambiguity by relationship probably works best).

The design you choose to work on can be either an everyday product or system.

Step 3: Elaborate!

Keep working on your design, elaborating it. Never lose sight of the value you are designing for ("age/experience is good"; "ownership does not matter" or whatever else you could derive from the list of values above). The way value design works is that you need to pick a value which is opposite to what is being valued here and extrapolate on that.

Try to keep walking the fine line between something that makes sense in Pandemia and is a critique here – if you need to sway, sway towards critical design here, leaving Pandemia-feasibility behind.

Step 4: Imaginary Evaluation and Body-storming

Imagine that you actually take this product/system and put it in the hands of a set of users: how would you test acceptance/use of it and why? What would happen? How would they react? Meet up with another group and have them “test” your system for you just to get a feel for it. Also make them pretend they belong to your user group. Then, return the favor.

Step 5: Compile – Analysis, Reflection, Making Things Up as You Go Along

Together, you will now create the deliverables, which today differ somewhat in form; a very simple powerpoint and a fake paper.

Write a fake paper on your design; an imaginary abstract. It should be 2-3 pages of text, plus illustrations if any. Use the paper template that you can download from the home page; it is very explanatory in terms of what goes where. **You should write it as if the design exists here and now, as if you actually built it for its initial purpose and tested it.** Print three copies of it and bring it to the crit.

Also make a powerpoint containing an image and/or a description of your design, and fake test results and an analysis of them. Don't work too much on this, since we'll have your paper, do 2-4 slides.

DELIVERABLES

Your **imaginary abstract**, formatted and laid out as in the template, as pdf.

Your **presentation**, as ppt or pdf in landscape format, covering the following topics:

- A **description** of how your final design looks and works, including nice sketches. This should be short and sweet.
- A **fake description of user tests** where you “*describe what happened*” as statistics, or quotes or something else

Both of you should upload your files to your respective PingPong accounts. Name them as follows:

Ex3_abstract_lastname1_lastname2 and Ex3_pres_lastname1_lastname2

E.g. Ex3_abstract_reynolds_washburne.pdf and Ex3_pres_reynolds_washburne.pdf

Ex 4: ExperiWalk

Task in short: To turn an ordinary walk into an experience.

Aim: To explore spatial and temporal aspects of design.

Related papers: Benford et al (2009) *From Interaction to Trajectories: Designing Coherent Journeys Through User Experiences*
 Lundgren, S. (2013) *Toying with Time: Considering Temporal Themes in Interactive Artifacts*,
 Fogtmann et al (2008) *Kinesthetic interaction: Revealing the bodily potential in interaction design*

TASK

This task is about turning an otherwise ordinary or even boring walk into an experience. It can be a one-time experience that builds up over a couple of hours, like a walk through a museum or a tourist-targeted experience for walking through a city. Or, it can be about enhancing peoples' daily or weekly walks (to the job, to school, their ordinary jogging path etc) in which case the experience has to be built up over a longer period of time. Moreover you can choose to design for a specific spatial area (e.g. Lindholmen, Manhattan, Le Louvre) or for any area, however taking spatiality (in the form of map data) into account. Consequently, the design space looks as follows:

	One-time experience	Used daily/weekly for long periods of time
Designed for a specific area	Here-once <i>Museum guide</i>	Here-recurring <i>Tram experience</i>
Designed for any area	Anywhere-once <i>Atomic Orchid</i>	Anywhere-recurring <i>Zombies Run</i>

Step 1: Setting up boundaries

Now, you need to get ideas, and make a series of choices, in any order:

- What is the main purpose of your design, and in relation to that, which emotion are you aiming at?
- Which quadrant of the design space do you want to design for?
- Can Fogtmann et al's kinesthetic themes help you to get ideas?

For now you only need to get loose ideas; evolving them comes in the next step.

Step 2: Shaping the spatio-temporality

To get inspiration, return to Benford et al and toy with the idea of using different types of traversals, transitions and whether there are different trajectories. And/or return to Lundgren, try to identify events and then explore possible temporal themes. Designing for Live Time or

Real Time may seem to be obvious choices, but are there other temporal themes that could be included? Iterate, iterate, iterate. Never lose sight of the emotion you are aiming for!

Step 3: Show. Illustration/ Prototyping

Create some sort of illustration, “screendump”, prototype or thing which clearly and visually describes how your walk “works”. Storyboards could be another good idea, or trajectory diagrams. There are others as well.

Analysis & Reflection

Analyze your design(s). Did you meet your goals? Are you satisfied? Which problems did you run into and can or can't they be solved with this particular combination of emotions and spatio-temporality. Did you manage to use spatio-temporality to your advantage? Why and how?

DELIVERABLES

Hand in a presentation, as ppt or pdf in landscape format, **before the crit**, covering the following topics:

- A **description** of how your final design looks and works, including nice sketches or photos/dumps of your prototype. This should be short and sweet.
- A **rationale** where you *motivate your design choices*. This includes discussing not only what you did, but also what you didn't do, e.g. omitting certain functions.
- A **reflection** on your design.

Both of you upload your file to your respective PingPong accounts. Name it as follows:

Ex4_lastname1_lastname2

E.g. Ex4_hendrix_manning.pdf.