The

FUTURE OBJECT PERSONA

Facilitating the Co-Creation Of Autonomous Objects’ Behavior and Culture

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The product of this thesis fuses two design disciplines that initially seem to be at odds with each other today, to create mix methods that aids the design of the ‘behavior’ of intelligent autonomous objects. It explores a near-future phenomenon of autonomous objects that exhibit behaviors and diverse ways of acting through closely looking at the manner in which designers embed goals for AI’s to make decisions. In the present day, this requires speculative thinking combined with a critical standpoint of the present condition of technological advancements. Following the homogenous way of designing technology through the one design fits all rhetoric poses ethical, moral and/or contextual clashes with the societal norms and guidelines we have set as diverse social groups. Some behaviors also manifest in a persuasive and coercive subliminal manner that affect human behavior without their knowledge. Living with autonomous AI shifts perceptions, trajectories and value systems of people and must serve to “truly” assist humans rather than stereotype them.

One one hand this thesis helps at exploring how to design diverse behaviors, but also stresses the urgency for setting frameworks and guidelines for the learning of these machines and how they act on this information. It suggests novel methods for the traditional design thinking process, by infusing critical and speculative design methods in order to design meaningful behaviors for near future ‘intelligent’ ‘autonomous’ objects.

Although the subject is critical to all humans, children in particular are the most moldable and influenced. The behaviors of objects impact the development of children’s understanding of the world. The case study is with children and AI toys in particular. Toys are presented in a workshop
where designers attempt at designing meaningful interactions between AI and children. Corporate futurologists have their visions of the future that act as systems of control, but it is the role of the designer to detach from the complexities of well established systems and dive into the complexities of human interaction to better design. Once technology reaches an “out of control” phase, man becomes moulded by his own creations, and the exponential rate this AI develops in can mutate the fabric of human life.

Together the following chapters aim at answering the two main research question which are: How should objects behave? How effective is the speculative and critical design discipline in mediating near future problems? To fully answer these questions, the written work discusses in detail four distinct yet connected parts that constitute the fragments of the research question. The first fragment is of autonomous objects and AI, followed by a rounded notion of what makes and breaks behaviour and the ethic, children and their associations, and finally designers and the design process. While there has been criticism in each field alone, the combination of them is still novel.

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Keywords: critical design, speculative design, design thinking, children, autonomous technology, co-design, ethics, morals and behavior, AI, machine learning, OOO

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Abstract

Acknowledgements

Chapter 1
Introduction

Chapter 2
The Be(wilderness of technology)

Chapter 3
the Children’s Technology Probe Kit

Chapter 4
Affirmative design meets critical design

Chapter 5
Critical Collaborative Workshop

Chapter 6
New methods

Chapter 7
Conclusion
Chapter 1
*Introduction*

This includes the motivation for writing the work and its proper background, and a framing of the project in terms of methods and structure, includes the research question and the scope of the work.

Chapter 2
*the (be)wilderness of technology*

This chapter puts technology in a non utopic light, highlighting how unusual or dangerous technology might be and how it tampers with people’s feelings. Gives meanings and definitions of autonomous agents, and goes on to explain through references how objects ‘behave’. The specific problem is highlighted here with objects behaving in ways that are coercing, and molding people in ways that are harmful. It touches upon domestication, anthropomorphisation, and cohabitation with ubiquitous technology.

Chapter 3
*The Children’s Technology Probe Kit*

This chapter brings the focus to children, the target group chosen for this work, and through a probe kit as a research method, gains insight into kids affiliation with technology and associations reinforcing the urgency of molding children’s behaviors.
Chapter 4
*Affirmative Design Meets Critical Design*

As a way of solving this problem, a comparison is done between traditional design thinking process and critical design process to understand where they make it and break it.

Chapter 5
*First attempt at mix methods*

A collaborative workshop is carried out to study designer’s intentions that infuses critical thinking inside the process to create artefacts and projects that embody “good or bad” behavior. An analysis on their work follows.

Chapter 6
*Altering the first process into a new process*

Learnings from the workshop, and establishment of the new “Design for Future Objects Process” with method uses and their explanations.

Chapter 7
*Another Future*
CHAPTER 1

Introduction
I began my studies at Aalto University in the Collaborative and Industrial Design department (COiD) formerly known as Industrial and Strategic Design (ISD) in 2013. I spent the first year understanding the role of design thinking and human centred design for developing products and services. I learnt how to properly run workshops, collaborate with non-designers, and the importance of design in business and technology. I got familiar with collaborative methods and processes that spanned across many disciplines and industries. I had a knowledge I was comfortable with and sought ways to incorporate it in a broader sense outside of the confines of the present. In the summer of 2014, I moved to Shanghai for an internship at Frog, a global design consultancy where I met Simone Rebaudengo who introduced the concept of critical design for autonomous AI objects. Human centred design methodologies turned into Object Centered Design and Object oriented ontologies. I spent a good deal of time trying to uncover the new concept of ethics and AI, decision-making and goal striving AI with visible irritations and programmed addictions and how to design them. This sparked my curiosity in interaction design where I spent the next year (2015) at Media Lab Helsinki where I studied embodied interaction, physical interaction design, Interactive pro to typing, bodily interaction, tangible and auditory interfaces among others. It became clear that the methodologies for both were quite different, while in the COiD department was mostly about research for design, in the media lab research was done through design. I created interactive installations, and explored ways of touching technology. Soon after I started a fellowship at Hello Ruby, founded by Linda Liukas that teaches coding to kids. Hello Ruby uses offline ways to introduces children to the
components of the computer and how it functions by means of storytelling through an actual book and paper exercises and body group activities. Now in my third year, (2016) the motivation of the thesis fused these three years together to use these collaborative methods to understand how to teach design or help professional designers utilize critical thinking methods to create interactive behavioral AI. I combined all my three years of exploration into one topic, and got a near future urgent phenomenon that uses the criticality of designing for children in offline ways.

My main motivation was a curiosity for the vision of the near future. How can designers shape the future of technologies that act for humans? Science fiction and speculative design have bred so much of the technologies we have today. The impact of these designs is powerful in terms of provocation. What I learned from the time spent with Simone at Frog made me understand that goal striving AI might develop different modes of behavior. How far would an AI go achieve its goals? How can an AI programmed for a Chinese population not fit in the context of Scandinavians? How can AI behave in a considerate, stubborn, empathetic manner?

While we have witnessed a richness and diversity in static products made by designers, the richness in technological dynamic autonomous products are still in development. Technology has never been sterile. People mourn the loss of the messages a telephone holds more than the telephone itself, and baby monitors catches radio waves from miles away of people conversing. Yet technology is marketed the same to all, a solution to many problems, and the best solution because it is directly tied to the market. In this thesis I was motivated at showing the unusual ways technology manifests itself. Even more so when this technology starts to speak, and make decisions for us. The intertwined behaviors
of people towards technology is one thing, and designing the behaviors of AI regardless of humans is another.

What does it mean to design characters for autonomous objects? There were many reasons for choosing this topic to work on, firstly due to the novelty of the study area and the consequent lack of serious study on this subject in the pedagogical sense. This window of opportunity ignited a desire to establish the building blocks of new methods of teaching / collaborating all the while challenging the path technology is moving in, and putting the neutrality and lack of criticality in the design process under spotlight. The thesis hands out an opportunity for designers to access critical design without going too deep into the literature. The end result of this study is critical but also systemic. It criticizes the intentions of the many stakeholders: corporate, the designers and their attitudes, the design processes used, and the design artifacts whether objects or services that embody that are creating autonomous objects today, but on the other hands provides solutions to addressing these problems.

There exists an urgency for preventative forecasting in the design for near future technology. This point, is the biggest motivation so far, is using design to forecast future scenarios and then shift the course of the trajectory it is moving in. Without studying how the behaviors affect us humans, and more importantly how the machines are behaving (regardless of the humans) would put us into emotional and physical danger on incapacitation. But in a brighter note there is room for positive creations and explorations once the setting has been built for discussions around meaningful interaction of autonomous systems. There should exist a need for popularizing meaningful tech. While most critical design pieces go against corporate initiatives (to prove a (breaking) point) and are not business viable, with the integration of the two disciplines in the design process one can make a feasible shift in the products that are being created today, with human centered design research and critical thinking the link with business
seems to be more possible than before when they were both independent. Design should exist and thrive outside the constraints of industry when discussing futures.

This thesis asserts the need for integrating fresh perspectives for the design thinking process. While design thinking is still making strides in many areas with the way that it was first conceived, it is always in need of intervention, twisting, tweaking, adding and subtracting alongside the speed of innovation.

Finally this opens up a discussion of a critical Target group. I was motivated to opening up new territory of children and AI. Children are the most affected by their surroundings, relatively we cannot keep tabs at the rate of which an object learns. The way we design them are crucial for the proper influence over children. The combination of critical and speculative design in autonomous children’s objects is still novel, with this I plan to open up the discussion and invite other collaborations and participations.

To conclude, It is quite difficult to pinpoint the background of this topic, without pinpointing the background of the separate topics it encompasses. The combination is new territory. There has been talk about creating behaviors for objects in the home, some design processes for assistive robots that talks about how to be aware of some clues and behaviors around patients, such as closing curtains when a patient is undressing. There has also been a lot of documentation of children and e-learning but never the combination of all those. While the topic is still ambiguous in this point of the work, the thesis focuses on actions rather than consequences. Although a lot has been written about surveilled, security issues and autonomous military weapons, very little is researched on the decision making of the object. If an apple falls from the tree, should the robot leave it there...
and let it replant the world? Is it litter and should be removed? Should it spend the rest of its day recalculating newton’s law? Or should it just leave it be, for a human or animal to eat? There are many ways the scenario can unfold and that relies heavily on the attitudes that have been embedded with this AI.

The thesis took a year to complete and was done with the support of two different organizations apart from Aalto University. As a motivation to study the behavior of objects, it was important to understand what behavior was in a broad sense. What is human behavior, and what is design behavior, what is actionable behavior? The study of behavior focused on the behaviors of children, of designers, and objects for a holistic view of the work. The organization I collaborated with was with Hello Ruby. The research was done in the first part with children, through a probe kit, that was distributed to the English school in Helsinki. The study then continued with designers from the Lebanese Academy of Fine Arts through a collaborative workshop. Alongside that were some expert interviews in the current autonomous industry, with addition to literature review in critical design, and affinity diagramming of the culmination of findings and practices.

The thesis only briefly discusses how people are impacted by autonomous technology in Chapter 1 to validate the urgency of the situation in It is more concerned by how objects act and how designers design these actions and behaviors through object-centered design.

The literature review is condensed in the beginning, and in the middle to support these four subject areas. In the beginning it is used to show the novelty of the subject area by highlighting existing research done in all four fields in reaction to this topic. The literature in the beginning shows written work on persuasive and coercive technologies. It
proves that humans show behavioral changes based on the behaviors outputted by a design. It also references how even static objects ‘discipline’ and ‘subliminally persuade’ users without their awareness. The second part of the literature review is to show the status of both design disciplines (critical and human centered) and their effectiveness in their own field. This is important to have some proven ground to

The main research question of this thesis is:

How should autonomous objects behave?

In order to answer this question, we have to move through different questions.

1. Can AI and autonomous objects cause harm even when intended for good? How?

To answer this question, we look at literature on behaviors of the object and the adapting behaviors of man

2. What does this persuasion, and behavioral modification mean for a target group such as children that has no prior experience? Do we let technology play nurture?

We take a very particularly troubling target group that are children and start breaking down the questions till we can get an answer.

3. What is the relationship between kids and technology, and at what level are they entwined to influence?

We create a probe kit that gives us qualitative data and get the affirmation that children do associate tech with loved ones
4. If this subject rejects modern technology, can critical design solve this problem or is it in affirmative design?

*We find out that both design disciplines are not fully equipped to answer this problem*

5. How can we bridge the two disciplines together?
*Mix processes through a collaborative workshop*

6. How should designers approach designing behaviours for autonomous objects?
*Affinity diagramming and analysis post workshop*

7. How can I reiterate this process and give a finished product for designers?
*Rework the process and method and try to come up with different artefacts that fit the initial goal*
Fig 1. Situating thesis topic between the four discipline areas. Diagram by Tatiana Toutikian (2016)
CHAPTER 2
bewilderness of technology
and the ideology of the future
Autonomous technology is a mystery. Firstly for its novelty, secondly for its complexity. Products come in physical and marketed packages, labelled as intelligent, putting forward their capability of making life simpler; more enjoyable. People buy it under the pretence that it will work on its own, without the user’s’ intervention to alleviate the hassle. People do not question how it does it what it does, and the corporations do not either. What are the motives set inside the machine, how does it make its decisions, and what model is it based on? How does it communicate its intentions, how does it make choices? The concept of autonomous agents in the digital world is somewhat relatable into omniscience and all knowingness in the human world. It is governed by rationality and randomness, politics and profit, anxieties and recreations.

The thesis has a focus on three things that are naturally consequential. First, is the dream and the vision of technology and this general optimism that keeps making objects more intelligent, with every new advancement, without asking any questions. In turn, the second focus comes in the form of the design process adopted by professionals who design under very optimistic technological visions and hence integrate design values into the object. The third focus is the actions of the object, the behavior, and the autonomous decisions made as a result of the previous two influences. All three are tightly connected to each other, therefore before being critical about the behaviour of the object, and answer the question of how objects should behave (which is the main topic of this thesis), it is important to take the first step of being critical about the way technology is propagated as a utopic medium that facilitates life.

The progress of technology is directly tied to corporate,
where money fuels these advancements and markets these devices. The most influential technology companies according to Fortune are the consumer tech ones like Apple, Google, Amazon, Intel, Hewlitt-Packard that develop technologies in direct relation to sell to consumers. Apple is ranked at number one with “$182 billion in revenue. $40 billion in profits.” While Apple redefines the iPhone, and revolutionizes its embedded tech, it also monopolizes people’s thoughts because it is innovating within a corporate setting. Anthony Dunne and Fiona Raby argue in their book Design Noir,

“These future forecasters have a conservative role, predicting patterns of behaviour in relation to technological developments. They draw from what we already know about people, and weave new ideas into existing realities. The resulting scenarios extend pre-existent reality into the future and so reinforce the status quo rather than challenging it. Their slick surface distracts us from the dystopian vision of life they wish for. ... An occasional glance through almost any newspaper reveals a very different view of everyday life, where complex emotions, desires and needs are played out through the misuse and abuse of electronic products and systems.”

Once these technologies cohabit with humans, they also cohabit with their anxieties and insecurities and projections. The real mundane ordinary workings of life happen and these technologies might also give the exact opposite of a forever after. Since the advent of technology, artefacts have played roles outside of their intended design. Many technologies have been deemed deadly, like the news of the excited boy that gets dragged and swallowed by a woodchipper on his first day of work, or even physically harmful, like that glitch in the nest thermostat that left users including newborns in the cold. Sadly some technologies have driven people to extreme lengths. Many technologies have assisted in exacerbating such tendencies
most noteabley Sylvia Plath and her oven, and the 4,400 suicides a year that happen due to cyberbullying. People form inexplicable bonds with their devices, or even pet robot dogs, then host funerals for them when they cannot be fixed. These stories are at the fringe of technology, and it is in its realest unmasked form. These stories are very real, but do not sell.

This is the age of modern technology, but now, the threat is intensely heightened when these technologies are able to speak back, make financial and health decisions, make selections for you and act back. Autonomous technology is one that requires no human intervention and governs itself and does not “call home” when faced with an error. Instead it finds ways to acheive its goal in sometime creative and unexpected ways. Mattel is releasing artifically intelligent Hello Barbie that interacts with children and responds, gives advice. The talkings of a doll were restricted to prerecorded messages built into the doll, while now the software keeps updating and there is no script. This is the most apparent example that corporations are creating stereotypical AI.

Whose values and belief systems are in these toys?

To take a few steps back we must understand the difference
between the potentials of autonomous and automated technology.

An autonomous agent governs itself and has the ability to make decisions and change its course of action when it sees fit. It is programmed to carry out functions and goals, and to fulfill that goal it gathers information from its physical surroundings, the web, and its past experiences. There is a confusion between automated and autonomous and that difference is the stage at which the human is involved. The notion of controlling machines started as early as the 1700s when scientists were “measuring the output of the system and feeding that information back to the input controller” (Pawson, 1985:12). With the expansion of technology, man is no longer required to feed an intelligent machine. These machines gather the information it needs from it’s surroundings and alters its output accordingly. With automated systems robots began to strive in factory and assembly lines, and in large industries such as motor and aviation. Many definitions are possible (e.g., Doyle, 2002), but here we focus on the need to make choices, a common requirement for systems outside our direct, hands-on control. An automated system doesn’t make choices for itself – it follows a script, albeit a potentially sophisticated script, in which all possible courses of action have already been made. If the system encounters an unplanned-for situation, it stops and waits for human help (e.g. it “phones home”) (Frost, 2010). Similar to the automation boom, autonomous systems

In the experiment, which took place in 2001, the two robots couldn’t converse with kids but engaged them through eye contact, gestures and facial expressions. Surveyed after these encounters, most children said they believed that Kismet and Cog could listen, feel, care about them and make friends — despite researchers’ showing the children how the robots worked and giving them a chance to control them. - Cynthia Breazeal and Brian Scassellati and the psychologist Sherry Turkle


were thriving again in large scale industries. The military uses autonomous weapons and missiles to decrease the number of soldiers on the field, and today there are autonomous unmanned ships attempting to sail seas and carry cargo.

The Wilderness of Technology

Exploring autonomous technology is like exploring the wilderness.

Trying to describe and contain the different fragments that constitute autonomous objects’ potentials with regards to its naturally occurring evolution and its respective symbiosis to man, is similar to comparing the vastness of the wilderness in all its biological might to the intervention of man. It lives as a separate entity from humans where this symbiosis is a commensalism relationship, whereby man can benefit and the entity carries on.

Biology and technology are built upon reason rather than emotion like most sciences. Yet with regards to man, it is intrinsically emotional. Technology stores the emotions of man in the form of photographs, text messages and brings out unforeseen reactions in people. So it is almost primitive to discuss technology and society without treading on the path of human feelings. The web is a repository of emotions as shows in the “We feel fine” project which is a an emotional search engine that scavenges blogs and social networking sites looking for hits relate to emotion an feeling such as saness, anger, love... It is endless in what it contains, and embodies a notion of a state rather than a physical space. It is a digital repository of people and their dreams supercharged with emotion. It contains love, hatred, and objects that can learn from the vulnerability, cruelty, and emotions of people whom
may not aid these objects to develop into neutral beings.

It is somewhat perceived that the wilderness does not wait, ie. has no time. That even if every human has been eradicated from the face of the world, the wilderness would carry on. A similar provocative thought exists that even if there aren’t any more people inhabiting the world, there would still be a trending topic on twitter because of the bots that would scavenge for information.

People venturing into the wilderness go somewhat prepared, although they cannot fully calculate for the potential happenings, there is still a preparation stage that takes careful time and calculation. That is because of trial and error, and even if there is a sudden animal attack, a dangerous mosquito, it is still calculated. There lies the difference, when autonomous systems, objects and agents enter the day-to-day life of people, there is no instruction manual of
what the setting will be with these agents around. Autonomous Systems Objects Agents (SOA) are only recently making their way into homes.

The multitude of creatures, specs of light reflections, flora and fauna, rock and view, landslide and sound is too vast to be contained. Same with autonomous systems and agents. Constantly collecting information at an exponential rate, storing and learning, that at no instance it is isn’t evolving and growing. The wilderness left untouched grows, with moss, mold, hybrid creatures covering its plains. This is the the reality of autonomous technology, once launched it tries to survive.

“No man ever steps in the same river twice, for it’s not the same river and he’s not the same man.” - Heraclites
Technology is not neutral, and autonomous systems are not neutral either. Designers and users are people, and people are not one giant stereotype where one design fits all. This is why it is important to have an ethical framework for the design process.

Without such frameworks, AI would learn without reference points or taking morality an ethics in its trajectory. Nothing to hold it back.

In the coming paragraphs we look clearly how Domestication, Machine Learning, Anthropomorphisation, and Cohabitation, is a symbiotic and mirrored behavioral relationship between man an AI.

One example of machine learning from people that went wrong, is “Tay” an artificial intelligence AI chatterbot that the Microsoft Corporation released on March 23, 2016. “Tay was designed to mimic the language patterns of a 19-year-old American girl, and to learn from interacting with human users of Twitter.” The bot was then shut down after sixteen hours for propagating racist, abusive, and threatening messages and posting inappropriate material. This shows three main things, that setting up autonomous object that learns from people without filters is not a good idea. Another is that people use technology as a gateway to unleash their inner “impulses” which not only transcribed into the object and builds upon it but it signifies a behavior push forward from people.

Also machine learning moves very fast. Tay had already reached maximum damage just after 16 hours. The way this
autonomous object made decisions based on what it posts was unplanned for. The bot was not designed for this purpose, but it ended up to be morally offensive. These examples point out that autonomous objects and agents cohabiting with humans, have the capability to learn, and it is the most important to include some critical thinking in the design process. One way autonomous technology is complex is the way it acts after learning from its environment.

Autonomous object can learn from humans, or from the web or its natural surrounding.

The web contains love, hatred, and objects that can learn from the vulnerability, cruelty, and emotions of people whom may not aid these objects to develop into neutral beings.

An example of an autonomous system making decisions based on what it learns is by Karl Simms, who created a program in which evolving virtual creatures were coded to swim in a program. The fastest swimmers got a chance to replicate. He then had them fight for a green cube. By trial, objects learned in different ways which movements got them to the cube faster. Some took shorter paths, others stretched their limbs in a certain speed, and in one instance, after many iterations, one creature learned that the fastest and most efficient way of getting the green cube was to shove the opponent out of the way before making its way towards its goal (Sims, 1994.)

Karl Sims’s project is the perfect example of the stretches an AI woul do to attain its goal striving nees. It shows an object that learns from its environment which had no human intervention, and the best choice it made was that of destruction in order to win. So this raises a very interesting question of how far would an agent go to fulfill its goal. This example differs from the previous example in which the bot does not learn strictly from human environment, but learns
from non-humans. Its proper evolution. These are two things that constitute autonomous learning and in turn behavior of the object. While we see with Tay people’s behaviors were exacerbated by knowing Tay has no feelings, the behaviors of the program were violent but the program did not know that. When autonomous systems learn, no matter where they learn from they have the capability of making decisions that might not be the most morally correct.

An autonomous agent governs itself and has the ability to make decisions and change its course of action when it sees fit.

With the progress of time and the advancement of technology and mentioning before the keen eye of corporate to cash in on this technology, today we see autonomous systems in objects as small as home thermostats; is able to regulate the temperature on its own seemingly knowing exactly what its owner wants (see Yang & Newman, 2012). There is a notion of “domestication” that needs to happen.
Domestication is the “proper learning from humans”. Autonomous objects have to then be ‘domesticated’ to adapt to human beings, through learning and carrying out day to day functions.

When cohabiting with dynamic technology this domestication breeds anthropomorphic attributes. As early as 1944, Heider and Simmel had already proven that people ‘attribute motivations, intentions, and goals to simple inanimate objects, based solely on the pattern of their movements’. Forlizzi and Disalvo (2006) conducted the Roomba studies that included a self directing vacuum cleaner which influenced the cleaning actions of the people living in the house (Meerbeek et al., 2009). For the case of anthropomorphism, humans tend to either attribute or become influenced by the movement or the visuals of an inanimate object, which signifies a human connection to a lifeless object. With the advent of autonomous technology, this is perhaps amplified as an object becomes more personal, learns from you, and talks back and knows a lot about your activities, dreams, and wishes.

On the other side of the behavior spectrum, we can also look at how objects behave, regardless of who is around and what they are interacting with. Some critical design artefacts such as the Gesundheit radio and floppy legs or anti touch lamp by James Chambers of the Attenborough Design Group use anthropomorphisation or even zoomorphisation to attribute defence mechanism behaviours found in the wild to objects (Auger, 2013). “The Gesundheit radio mimics a sneeze motion to expulse dust entering it. The floppy legs disk drive propels its legs up at the detection of liquid that can damage its core. “ While in the beginning paragraphs, during the study with the children that agreed to feel love, care and friendship, technologists can very easily enhance anthropomorphic qualities as they are doing to toys. Security cameras with eyes that watch over your children is a great way to market a camera that can potentially be hacked and have your family spied on.
On the topic of cohabiting with technology in a social setting, Kacie Kinzer designed a robot made out of cardboard with a smiley face and a flag attached to it that roams around the streets. The destination is displayed on the flag and as it roams around the streets it sometimes faces some obstacles such as dustbins and rocks, it sometimes tips over and stumbled into people’s feet. The surprising element of this project was the eagerness that the pedestrians displayed in helping this robot find its way. People attach anthropomorphic feelings to objects that display human goals, such as this robot. It disrupts people’s lives on the streets and influences behaviors by humans. It changes the trajectories and directions of humans without even trying to be conscious about it.

Lars Hallnass and Johan Redström put forward the idea that compares ubiquitous technology to a chair in the home. They argue that the use of this technology is moving from one used in specific situations to one that contributes to the fabric of life. Much like the purpose of a chair used for sitting, it becomes part of the dwelling and built environment and hence its aesthetic appearance also becomes a goal to integrate it with the rest of the surroundings.

**PERSUASIVE DESIGN**

There is an area of design that deals with manipulative behaviours in the user as a form of persuasive design, “To persuade users outside of conscious attention”. We are surrounding by technology and ambiance a that affect our decisions, whether in digital or physical space. Persuasive technology can be defined as any interactive commuting system designed to change people’s attitudes or behaviours” (Fogg, 2003). This is usually effective when people already have a goal of carrying an action out. For example shopping online, or finding the suitable restaurant. This technology has started to be embedded in physical objects. So what does that mean for autonomy in toys? Corporate technologists might embed such subliminal behaviours for reasons such as influencing purchasing or attitudes toward their products or other products.

In his study Midden at al. conducted a research under three conditions. The first projected a subliminal message in the form of a sad or happy smiley. The second condition received none, and the third received supraliminal feedback. Through his study he observed that the first group of conditioned participants were able to identify which item consumed less energy in the household for a week. Comparing this
study, while keeping in mind that during goal oriented tasks, the omittance of fast messages were able to influence an amount of people poses risk of corporate they may use such methods for objects that enter the home. In the case of toys, it could be in the form of facial expression such as the one used in the study above, or voice or movement and the combinations that are endless when an object keeps learning and ‘improving’. To find the proper relevancy of this study with the design of toys, there has to be a goal. The behaviour of the child may be affected through subliminal messaging of the agent it is interacting with, hence moulding his/her personality. Therefore, in this case an object is able to decide what is good or bad.

This study conducted by midden et al. Asked users to indicate which household item consumed the least amount energy in their household in a weekend “received subliminal feedback about the correctness of their choices throughout presentation of a smiling or a sad face for less than 50 milliseconds whereas another third of the participants received no feedback”

This study shows an alarming correlation between object action and a change in behavior in people. It is the enough proof that is needed to conclude the statement that people’s behaviors are in fact affected by the autonomous actions of an AI object. Combining that with the studies done on children and their associations to technology the next step is to see what form do these associations take when dealing with children.
CHAPTER 3
the technology probe kit for children
In the first chapter we look at different aspects of AI and human interaction. We establish through examples that behavior takes many forms. There is an urgency when AI tries to discipline, or strive, to attain goals or when designers explicitly build in motives inside the object as with the example of persuasive technology. While people are culprits of these intelligences that they choose to acquire, there is still a reasoning and a hope for understanding of these behaviors through the past experiences of an experienced person. There is hope for critical thinking where people can reject some notions. As we explore the critical nature of this phenomenon and how it infiltrates into the life of people, through behaviors that alternate lives, there lies a specific target group of humans that are susceptible to these stimulations. Children are onlookers to the world, they are influenced rather than dominant influencers of the world. They are sponges that soak up their environments, moldable and highly affected. “Children, especially, need a strong moral and ethical compass to guide them as they develop and socialize in a world where heavy surveillance, ubiquitous media, artificial intelligence, and data mining may tailor their experience of the world in ways they may not be aware of or understand.”

The probe kit doubles as an activity booklet. During its first iteration, 150 probe kits were sent out to 150 students (aged 8-9) at the English School in Helsinki, Finland as a way to dig deeper and get valuable qualitative data. The kit started with the aim of finding out what is necessary to know about children’s daily lives and their relationship and associations with technology. For that, probe kits were used as the design research method. This research work was done for the Hello Ruby company, whose aims are to figure out how they could provide the necessary tools and applications to help kids think, play, and learn. This was a good opportunity to have some self-initiated direct research
with children apart from readings.

The design of the probe kit was a two-fold benefit. Hello Ruby as the client gained significant insight into the lives of children, and their goals and wishes, alongside their relationship with technology, and that served the company to better design exercises to help children to code. The latter benefit which directly concerns this thesis is to understand the thinking model and emotional associations with technology and understand how technology can influence children on a daily level. Since this written work deals with object behavior and specifically self-starting behavior such as decision making and communication, it was imminent to understand attachment and influence of towards technology by these kids for even “dumb” technology. “Dumb” meaning not smart, not talking back, not interacting.

When dealing with children, gaining insight is quite a challenge as they are not able yet to follow traditional surveys, questionnaires, or even interviews and to be honest, these methods would limit the creativity of a child. Moreover, kids’ attention spans are short, their thoughts are jumbled, and they don’t think very linearly. They are often guarded with their responses, or in most cases influenced by their peers, teachers, or parents. For these reasons, the design needed to be something that they could take home, fill out on their own, at their own pace and own comfort, then give it back in and have fun while doing it.

The kit comprised of 6 exercises that ranged from fill in the blanks to drawing, circling, writing, and finally explaining. For the kids it was a fun booklet to complete, and tandemly it was very valuable insight on kids and their environments.

The kit was designed having two sections in mind. The first section was about kids and their personalities, just day-to-day
things to understand who they are, what they are up to, what or who are they playing with and what were their favourite subjects. Not only was it a good icebreaker to start and build on topics they are familiar with, but it was a great way to be with them while not being with them.

The second part focused on technology, computers, and building/creating. While the first section was mostly easy fill in the blanks, in this section things became a bit more challenging when kids were put to the test to explain.

What do kids imagine happens inside a computer?

Through this probe kit I aimed at revealing their feelings and attitudes towards computers and contents and grouped the results in 6 kind of kids.
Exercise 2

Draw!

Draw how you imagine a computer works :) What does the inside look like? How does it function? Is there magic?

How did this exercise make you feel? Circle the character.

BONUS!

happy sad powerful confused

Exercise 3

Explain!

What is technology? What is it used for? And who uses it?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

fig 9. A page taken from the Hello Ruby Booklet designed by tatiana toutikian and image by tatiana toutikian
Exercise 1 😊

Fill in the spaces!

Hi, my name is ___________ and I am ___ years old. I love playing with ______________________ because ____________________.

My hero is ______ because he/she ____________________.

On the weekends I usually ______________________ because ____________________.

If I can build anything in the future it would be ______________________ and I think that is great because ____________________.

The most complicated thing in the world is ______________________. I wish I knew how to program a ____________________.

I feel coding is ______. My favourite subject is __________ and it’s super great because__________________.

fig 10. A page taken from the Hello Ruby Booklet designed by tatiana toutikian and image by tatiana toutikian
In these 6 types, the linkers, the content creators, etc. we see how children think differently about computers and technology all the while having their own personal associations some more emotional than others.

When asked what makes up a computer, one part of the students expressed the functionality and content in terms

1. THE LINKERS

These are the kids that had answers that expressed connected parts, components, networks and elements by abstract drawings of wire connections and boxes linked with lines.

Conclusion: Kids know that there are many different elements that work together with most cases a central element that
controls everything. These elements communicate through different connections. A computer is a board of parts that talk through cold electricity.

2. THE GEAR GURUS

The second most popular of the drawings were those of who we called the Gear Gurus. They represented computers as gears interlocking for a mechanical action to be carried out. It was interesting to see this low-tech perspective assigned to a high-tech product, which broke the bias we had while designing this exercise.

Conclusion: Children attribute old ways of technology to advanced technologies which
signifies that they still don’t fully comprehend to what level of sophistication these machines are in terms of collecting data and carrying out actions.

3. DRAFTERS

These kids with super technical drawings that included resistors, wires, motherboards, and everything electronic to show that there exists nothing but elements which a current runs through. To our interpretation of their drawing, a computer is based on logic not magic, on connections not abstract things.

fig 14 A drawing taken from the “draw what is inside a computer” by one of the students at the Helsinki English School 2016
4. THE CONTENT CREATORS

Then there were the computer content drawings with kids drawing their apps, games, camera, and files within. A computer holds your things inside it.

5. THE SCENOGRAPHERS

The scenographer kids took the computer to the theatre. Carrying out functions was also a popular drawing theme with some noting that people or bugs physically carry out functions from one part of the computer to the other. These drawings had people with speech bubbles inside, they attributed humanistic ways of carrying a function.
Finally, one of the most interesting were the kids that answered with a range of answers that linked computers with feelings, such as that a computer gets upset, happy and confused at the same time.
Exercise 2

Draw!

Draw how you imagine a computer works :) What does the inside look like? How does it function? Is there magic?

BONUS!

how did this exercise make you feel?
Circle the character

fig 18. A drawing taken from the “draw what is inside a computer” by one of the students at the Helsinki English School 2016
What do kids think technology is?
“Technology is for everybody, everybody uses it” was the most common phrase between the kits.

The notion of technology is still abstract to eight year olds, but nonetheless it holds a positive connotation to them. One big majority viewed it as pure hardware with most answers linked technology to electricity, energy and a power source. Consequently computers, iPhones and IPads fall into the same category with kids explaining that technology is about making products.

Another group of the kids’ responses show that they see technology as a helpful tool for learning, and a great means for communication. An interesting abundance of answers said it is used to search for information and learn subjects. Finally, some answers discussed how technology is omnipresent and that everybody uses it to make their lives easier. They connected it with comfort, easiness and efficiency. That says quite a lot about how we should approach kids with the exercises knowing that they already have a well-rounded idea of what technology is. And we wonder how we can build on that.

One question in the fill in the blanks section addressed heroes. Aside from a few Harry Potter and soccer players, 80% of children responded with their parents, sibling and friends as being their heroes. This finding reveals that children appreciate the values of trust, help, and happiness, and link those traits as the basis of what makes a hero. Kids today are no longer looking up to fictitious characters with superhuman powers and exaggerated abilities but are understanding that heroes are people who stick around and are there for them.
This exercise pushes us to continue exploring how we are able to incorporate the reality of heroes to inspire children and teach life lessons to kids while learning about computational thinking at the same time. Ruby’s father is her personal hero in the story, and

fig 19. Printed Booklets for the Helsinki English School image by Tatiana Toutikian
This chapter brings forth many notions. The first is that children ages 7 to ten realize that computers and technology as a whole are made out of connected parts. This means that anthropomorphic tendencies, if they are to manifest, they manifest with them knowing what these objects are made of. What does that say about subliminal behavioral changes? The most important observation is the associations of technology and internet devices with love, feelings, and communication with loved ones. “I love the ipad because mom is in it”.
CHAPTER 4

Affirmative Design Meets Critical Design
In the previous two chapters, the literature review exposed a darker, different reality of technology. It demands for some measures to be taken, and some design interventions, but to which design discipline should designers turn to?

Traditional design thinking processes and the human centered design process, are grounded in proper research that produces tangible reliable and actionable results.

Dejan Krsic points out, design has always been a signifying practice that generates, analyses distributes mediates, and reproduces social meaning, especially nowadays, in the context of the new social, technological media and economic conditions.

So, is design thinking and the human centered design process fit for designing for near future phenomena seeing that the design discipline forecasts the future?

What if the designer rejects the current, and is critical of the design process. We venture in detail in both processes to better understand

## DESIGN THINKING

“Design thinking refers to design-specific cognitive activities that designers apply during the process of designing().

It is used generally in a business context whereby designers and non designers use creative methods of understanding, brainstorming and interpretation to come up with novel solutions for problems. According to Rittel, design thinking also helps in solving wicked problems such as world poverty, hunger, financial crises - the problems that take the world by storm.

Design has been the most concerned with detecting problems in other disciplines or professions. It is tied to delivering results rather than reflecting on actualities. It
follows business and is most interested in a better standard of living or improving the quality of some areas. To design is to have a process of clever digging, combining, and executing. Design thinking asserts itself forward as a tool to raise new ideas, different organizations, professions, disciplines. It has also moved beyond corporations to use design for social impact, creative education, and a way to combat wicked problems. It uses various methods of careful listening, sifting through information, and comparison to focus on an area seemingly invisible to non designers and puts forward a solution which then gets tested and reiterated. We now see design thinking in various areas with large established structures and companies like City of Helsinki, Nike, Apple, Airbnb ..

What we need are new choices - new products that balance the needs of individuals and of society as a whole; new ideas that tackle the global challenges of health, poverty, and education; new strategies that result in differences that matter and a sense of purpose that engages everyone affected by them (Brown, 2009).

While these new ideas that Tim Brown exposes do not yet include artificial intelligence, it is seems as though this natural inclusion is yet to come.
While forecasting is at the core of every design discipline to create bold new ideas, they come in two forms. Large corporations have claimed to use design fiction for advertisement and marketing initiatives, promising future technological solutions for current problems. Microsoft, for instance, reveals its interest in the format on their website: ‘One of the best ways to get people thinking about the future is to show them what it could look like . . . to spark discussion about future scenarios by trying to portray the evolution of key trends’ (Microsoft Office Labs 2012). This kind of fiction that reinforces the current state of technology.

fig 21. The pillars of critical design taken from Dunne and Raby’s speculative everthing
Sticking to reminiscences of the past and predictions about the future, every futurology assumes the shape of a social ideology. [Vieira Pinto 2005, 90]
The world of critical design means different things to THE

The world of critical design means different interpretations
to different people. The notorious duo Dunne and Raby
who have coined the term critical design state that it is “the opposite of affirmative design, or design that reaffirms
the status quo”. Yet even with them labelled as the pioneers
of critical Design, they still face much criticism with their
portrayal of the “we” as in society, when they are upper
middle class white people from England.

“Critical design uses speculative design proposals to challenge
narrow assumptions, preconceptions and givens about the
role products play in everyday life” (Raby, 2008: 94-96).
However, speculative design emphasises the “philosophical
inquiry into technological application” (Auger, 2014: 21) in
order to reimagine how things and worlds can be inspired by
different ideologies or motivations, not necessarily to express
a critique on the dominant ones (Auger, 2012).

The good points about critical design is the way that
designers are able to speculate and counteract to well
established notions in society without having the restraint of
the current situation and the box that it imposes. As Robert
Canac said “speculative design is important because it opens
an interesting space between the real and the impossible,
allowing us a glimpse of the future before it even happens”.He also adds “it is this jump into fiction that opens space
for totally new possibilities and a safe zone in which we are
free to experiment and generate new ideas, discussions and
debates” (Canak, year :page ).
Beyond the showroom

There are many critical designers who have worked in the field and their designs are often left in the showroom and have not integrated into the world beyond the white walls of a museum. Dunne and Raby started somewhat in the showroom, yet like their Placebo project, they were able to take the design out of the showroom and into people’s homes and conduct proper research into the effect of these products on the people’s lives in order to influence future technological products (Dunne and Raby, 2001).

While other designers have been trying to bridge the gap between moving from the showroom to the outside real world, some designers try to use these speculative methods only in the real world. One of them is Andreja Kulunčić, and in the booklet titled “Speculative”, she gives an interview where she states “merely being critical is not enough for social change” (Kulunčić, 2015). As she deals with people, she tries to engage them in her designs by having them finish her work (Kulunčić, 2015).

POTENTIALS OF MORPHING THE DISCIPLINE

This raises one point that critical design can be improved by using collaborative methods instead of by-standard provocation methods. This is one of the first points I want to tackle through merging both disciplines. Kulunčić uses public media space such as billboards, newspapers, radio, and internet space as her own gallery and that invites more
people to not only have the message projected to them but also widens the target group and the opinions. As she puts it creates a kind of “social laboratory within and outside the art world”. Just like Kulunčić uses media as her tools this has made me use my own methods to bridge the gap between the two disciplines (Kulunčić, 2015).

THE SELF LINKS IT CLOSER TO ART

Another point is the point of dialogue. In critical design, it is almost a monologue whereby the designer studies some phenomenon and creates the artefact that embodies their opinion or vision, and that is what renders it more as an art form rather than a design proposal. It is the different dialogues that change it from provocation to solution. Another problem that critical design has is that it developed a connotation of being vague.

CRITICAL DESIGN IS VAGUE

Vague in terms of its methods, efficiency and impact. Nicolas Nova who is a writer, ethnographer, and consultant at the New Future Laboratory, said a statement that pushed the analysis of the process I had created for the workshop and gave that one extra step. He said: “... the depiction of products / services / situations as if they had already existed or had occurred so that we can learn how to innovate and create new opportunities” (Nova, year :2015). In the first attempts at creating robot ethics, technologists and designer took possible ethical implications, listed them, and tried to come up with solutions for these few points, and this was the case in the various papers on robot ethics by Aimee van Wynsberghe (2013). When the workshop will be conducted, the method of finding these ethical implications will not be enough, and the holistic process of it being the starting point is needed.
The starting point constitutes of spending a big chunk of time, immersing oneself into a world where things have already happened; attachment and alienation has already happened. It is a narrow way of putting a dystopic future as a starting point, but for designers with limited experience, it is a simple way to tear the envelope. James Auger states the following: “optimism is endemic, meaning that it is unnatural for designers to think about the implications of their (technological) products: technology is good; products are good; and the future (through technological products) will therefore also be good” (Auger, year :page ).

In the paper “Critical design and critical theory: the challenge of designing for provocation”, the authors put forward the inarticulate difference between critical design as a constructive design research as opposed to critical theory. Through their research, they face the challenge of not knowing how to proceed with critical design as a design approach, Whereby, critical design theory is more obvious. They claim that critical design literature offers a multitude of examples of work but neglects tangible ways on how to do it. Similarly in the book, Constructive design research: from lab to field to showroom, the authors call out Koskinen, one of the authors of the book, for describing the methods clearly about the different areas research can be done, yet falls short in the methods of how to complete a critical project. (Bardzel et al., 2012). The authors do not advocate for a rigid methodology, but only enquire for “a loose framework that can help design researchers select and sequence methods.” (Bardzel et al., 2012: 289).

Another problem seems to be that critical design is not only niche in practice (far away from the other interconnected design disciplines), but there also only a handful of critical designers out there. If the role of these critical designers is to encourage others to think radically, then their methods
should be more sustainable in the sense that they should be passed along in more meaningful and constructive way to other designers. Implementing critical theory and ‘improvised speculative’ methods could widen the space and freedom for designers to create alternative or ‘radical’ products. When artefacts go through an artificial design process, they are not only restrained by the pressures of being custom made to a certain society or to the peak of technology to this day, instead, it poses added pressure to the designer to doubt him/herself on top of such restrictions. Doubt usually comes through the comparison of thoughts with the reality of the day, and removing such strict realities could empower designers to make this mental change.

As Simon Bowen states, “however criticism of critical theory, notably elitism, are also applicable to critical design and are counter to the democratic values of participatory design”. He continues by saying that “people have a democratic right to be included in the design of what affects them and will benefit as a result, and that including them in design activities results in better (more efficient, usable, profitable, etc.) products and systems point” (Bowen, 2010: 1). In his paper, Bowen proposes a methodology to bridge participatory design with critical design theory, and the summary of his critical artefact methodology ends at providing users with artefacts to challenge their notions of the role of products today. However, it seems as though with the knowledge he has on participatory design, he did not include any participants. Additionally, the artefacts that emerged from his said methodology were mere reflections of his own desires. So, it is still unclear what methodology bridges these two. He says: “presenting users with artefacts that challenge their assumptions of what is possible will enable them to reflect on their unwitting limitation of possibilities and consequently enable users and designers to explore a broader space for design ideas relevant to users’ existing, future and latent needs (Bowen, 2010: 4). Although it is understandable
that he did not change the product that people commonly use from the outside and he only added a novel functionality only implies that the artefact has left the gallery setting, but it does not justify or even propose a new way of people’s’ participation rather than being passive users.

**THE LINK**

It is somewhat hard to assess the thin line between constructive
speculation and just future babble. James Auger tries to find ground by asserting that through logical interactions on technology, collaborations with scientists, and following some of the rules set by real life we are able to craft a better speculative story. The lack of some rules disconnects the reader and minimise if not extinguishes impact.

**CONCLUSION**

Through defining the problem in chapter two it only became apparent that resorting to the methods of designing for interaction from the IX discipline and participatory and collaborative the means were not equipped for designing for a near future. Since design is concerned with problem-solving rather than problem finding.

With the restraints and opportunities that critical design poses, and the strides and falls of speculative design, it is now clearer how to approach the process of using critical thinking and critical design methods to create realistic prouts of today.
CHAPTER 5

the workshop

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Introduction

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In the previous chapter (5), we dissected both disciplines and mapped out the strengths and weaknesses when designing for a critical near future scenario. While we established that critical/speculative design is strong in forecasting future scenarios, shifting the trajectories of objects, technologies and thoughts through provocation, and overall seeking to find problems rather than solve them, the impact remains intangible when faced with setting actionable next steps. Comparatively to traditional design thinking, we established that it’s strengths lie in the concrete methods and collaborative aspect, which yield result that can be built upon, yet it lacks in its capacity to move to disconnect itself from the real world towards the near future. In this coming chapter, we discuss the first attempt at merging the strengths of these two disciplines through a collaborative workshop, by testing a hybrid method of design thinking and speculative design to not only criticize but create critical products emerging from traditional design thinking methods.

This workshop spanned over a period of three days. The working times were around 7 hours per day. It was carried out on site at the University of Fine Arts in Lebanon (ALBA), Lebanon. The participants in this workshop were students from global design and product design, in their first and second year of the Master’s program. The students are familiar with design thinking processes and methods as they have already taken service design, user experience design and traditional product design. They have had basic learning in programming and coding, however, it was the first time they encountered critical/speculative design and interaction design.
fig 24. Diagram by Tatiana Toutikian showing the process used to analyse the results of the workshop

Include in the design setup the structure of the planned workshop along with the materials and props, the participants, the brief and the personal aims you have set for this workshop. It is also good to document the aims of the participants and what they get out of the collaborative experience.

State the research question you wish to answer. State the workshop and this section. State your hypotheses. From you are trying to learn from this workshop, do you wish to...

Design Interpretation

**What happened during the workshop**

After wrapping up the workshop include the content that was designed including pictures, spreadsheets, filled out exercises. This also includes a day to day or hour to hour timeline of what happened. Another important notice is to document the cognitive process of things, from the participants side and your side. What was being done versus what was being said, and the biases, thoughts, questions that were raised.

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**Synthesis**

- Clusters, common projects, interesting opportunities for design, etc.
- Hypothesis check, learnings, design ideas for further steps, new materials or refined processes.
- Creation of new hypotheses.
In the previous chapter (5), we dissected both disciplines and mapped out the strengths and weaknesses when designing for a critical near future scenario. While we established that critical/speculative design is strong in forecasting future scenarios, shifting the trajectories of objects, technologies and thoughts through provocation, and overall seeking to find problems rather than solve them, the impact remains intangible when faced with setting actionable next steps. Comparatively to traditional design thinking, we established that it’s strengths lie in the concrete methods and collaborative aspect, which yield result that can be built upon, yet it lacks in its capacity to move to disconnect itself from the real world towards the near future. In this coming chapter, we discuss the first attempt at merging the strengths of these two disciplines through a collaborative workshop, by testing a hybrid method of design thinking and speculative design to not only criticize but create critical products emerging from traditional design thinking methods.
Aim 1

**Observing children and designers**

I set up the two methods, although radically different, in the same way, to measure intention. They were both set up to complete tasks, and I observed how the designers completed them. Their final designs were not the ones that mattered, instead it was their priorities, associations, and thoughts of what made things good for both children and designer.

I had to see how designers thought the future should be, pick up the biases, tendencies all the while being discreetly observant during the process. It was important to see their mental models. The workshop
Creating a future oriented design process

Aside from observing, I aimed to understand and find answers to certain specific questions that could not be answered through a literature review. I chose to plan this workshop through implementing a collaborative co-creation design method. Firstly, because it is a familiar field of design to me, so I needed some stable ground to be able to modify the process. Since I am dealing with the near future, rather than the present, it is important to design as though we are designing today and figure out how to take the concerns of today and turn them into designs of tomorrow. In other words, I aimed to create a mesh between the two design disciplines by starting with the design thinking base and continuing with a critical design one.

- Critical Design Field: Bring critical design, closer to the field of design
- Traditional Design thinking Process: Improve the design

Aim 3
The whole of the research started by wanting to understand what are bad ethics and what are good ethics. How can you design a toy that can anticipate future goals and can always make the right choice.
- Understand how to discover behaviours
- Where to situate ethics

studied behavior of objects, and all the while the designers were studying how these behaviors can be manifested, I was studying their own behaviors.
fig 27. Poster design by Tatiana Toutikian and image by Tatiana Toutikian. Done for the workshop. 2016
Toys are joining the family of connected products (the internet of things) through having Wi-Fi capabilities. They are also being equipped with sensing capabilities in the form of sensors to be efficient in collecting and communicating data from their immediate and extended environment, other objects, other people, and the endless world of the Internet. If a toy is able to collect data, and is wired to the internet, it then can also disseminate and act on the data that becomes information in the form of speech, actions, etc. If it stores enough data, it can learn from patterns, and undergo selection processes. An object can also make decisions, for itself and its actions, and for the user. This is the notion of becoming autonomous, when humans are not interfering in the decision making process of the object. It signifies that the object can perform an action as a response to the data it is collecting and sensing.

A lot of things can go wrong with unplanned high speed innovations. Sometimes it is the children that can prompt it to act a certain way by ask confusing questions, or adjusting its mental models to that of a 5 year old. Sometimes it is the lack of information given to the object whereby toys might do things that are socially, morally, ethically or economically not fitting inside a certain context.

In this workshop we will be choosing a children’s toy that the participants either own or have found online that is not a part of the IoT. What kind of product or toy does it become when it has sensing and analysing capabilities? How does it become beyond 'smart' and reveal a personality through the choices it makes and the personal goals it sets. Does it interact in a playful manner? Does it become strict and stubborn? Does it feel sad when not played with? We try to answer the
question, how should objects behave around children? By understanding how the autonomous objects work, we can speculate scenarios of the future and criticise the way the design of these toys is moving. Is behavior directly related to ethics? Does morality effect the design, or is it at the foundation of the decision making model coded in it? Is object behavior a mere representation of designer’s biases, and how can humans take part in deciding which decision making model suits them?

After establishing a persona we move into looking at the ethics of the machine. If a mother asks the child not to play today, should it abide by those rules? We narrate possible scenarios where an action the toy might carry out clashes with a societal view, or work against the norms. Where can this object go wrong? Or alternatively, what issues can it mediate?

The research questions I sought answers to from the workshop were:
1. How well does the structure of the workshop work?
2. What are the values, intentions, and mental models of the designers?
3. How many object behaviors can I map out through the design artefacts emerging from the process?
4. Should object behavior be linked to object ethics/morals?

Running a workshop that begins with a traditional design process from ideation to execution was important. Firstly because I was adding on to this process and modifying it so it naturally had to serve as a basis of the workshop. Secondly, it is a process that I myself am familiar with, for that reason, I was able to track and trace the different cognitive models that were running simultaneously, from designer’s intention to designer’s output. Artefacts that emerged in the form of
products, services, web platforms, and visualisations were testimonies of the successes and failures of the process. In terms of tackling the thesis topic, the process serves to bring out artefacts that embody object behaviour, and generally open up a potential area of research in the design and speculation of autonomous toys. When it came to the analysis, following this method of working allowed the observation of designers’ intentions and design values at first, and their respective designed artefacts second.

fig 28. Props designed by Tatiana Toutikian to the workshop to stimulate “hat if” scenarios
THE 5 PROJECTS

The workshop produced five distinct projects that deal with different subject topics. Rubix cube is a project that deals with anthropomorphisation and showing behavior to grab a user’s attention. Analog Profile deals with privacy of children and having their photographs on social media without their knowledge. Bearie is similar to the Hello Barbie where they look into what it is like for a bear to be a companion and give advice. Boo is a project that deals with goal striving and the lengths an AI would go to attain its goals. Lastly, Patricia, the baby mobile deals with information theft which they highlight in a movie.

The eclectic nature of this project not only shows that the students learned to think critically, but also how many different aspects there are to express criticality. It can be in the way the object communicates, in the way it learns, the choices it makes, all the while looking at the designers and what they prioritize.

In a sense critical design does embody the self, the criticism that the designer feels is important. There are many layers of criticism. First is the critique of the current, then the outcome which is also subjected to critique. In a way these ambiguous outcomes are an assertion if the self, that as humans we still have hope to rectify, build, create and mostly imagine.
1. ANALOG PROFILE

Analog Profile is a project of a toy bear that snaps photos of a child throughout the day as they are playing, it then automatically filters the photos according to what it thinks are the best. The toy is designed to take pictures in a more natural way by documenting a child’s life and the memories shared through playing with this toy, and through playing at home in general.

This project deals with the widespread phenomenon of parents uploading pictures of their children on the social media. Whether to document a birthday or them chewing on a rabbit toy, even the most mundane of events are put on a platform that preserves them ‘permanently’.

“People are too busy to go and process the pictures, that is why they are stored in devices and are exchanged on the internet. Analog profile deals with relying on technology to preserve memories. The team looks into this phenomenon and the idea of permanence and from a critical perspective, pose the question ‘what if at an age when a child understands that his life has been documented without his consent, would it be too late to have an opinion about it?’ Where should the permanence be, in the home or on the home button on the web?
Embedded Sensing Technology Used:
The team incorporated various sensors including a camera (eyes), motion detection in the form of an accelerometer (to detect presence of the child or other actors in the room), facial recognition, and light sensors to detect the amount of light inside a room and also to detect the time of day. When there are no motions detected, it signifies that either the child is not present in the room or that the child has fallen asleep, so the bear takes the last picture of the day in the dark.

Team’s Critical Solution
The autonomous thinking process of the bear is selecting from the multitude of pictures taken which ones are worth keeping. It undergoes a filtering process that learns over time. The incorporation of a critical attitude to the dilemma is combining design thinking process with a critical one, so instead of uploading to the cloud it sends the pictures to a local printer and has them delivered to your house. The ethical dilemma that this toy poses, embodies the concerns of privacy and security.

My Interpretation
It is quite simple in the makeup of its environment sensing capabilities.
The bear acts as a mere voyeur, where direct interaction with the bear such as playing with the bear’s ears, squeezing its paw, touching its nose, and rubbing its belly would not affect its behaviour. This is an interesting yet uncommon design.

The autonomous part of the toy is its auto filtering and selection process. It is also in the timing of when to take the pictures. Also it sources the printing by itself.

It reminded me a lot of hidden nanny cams that they place in children’s rooms to spy on the caretakers. While the critique was about cyber security all other forms of security were neglected. This is interesting to see what the post-internet analog rebellion would be and how it would be digitized. Designers modify the channels of propagating information but do not question the intentions of propagation in itself.

A bear that sends it to a local printer is a critical design work for a high tech bear.
2. BEARIE SMART

“A bear that helps you grow”. Bearie is the compassionate and friendly diary that responds back to you. Bearie is a toy bear that listens to a child’s day and acts as a confidante. It then prints out a response through a receipt printer and collects these sayings (advice) digitally and publishes it anonymously on an online platform. Each bear contributes according to what it has learned and gathered from the child, making a visual spectrum of children’s feelings around the world and an online repertoire of sayings. The decision making process comes from sifting through hundreds of words and phrases and making meanings through tagged words. It then gathers saying and advice from different online repertoires and prints them out. With time it starts to recognize patterns, and can assess what to say better.

fig 31. Image provided by the beary smart team. Setting up the context for the autonomous toy.
fig 32 & 33. Image provided by the beary smart team. Setting up the web platform for the different sourced quotes.
Embedded Sensing technology
This project uses voice recognition, geotagging, pressure sensors, and wifi capabilities. It feeds into an online platform, and uses open source graphic visualisation to create the spectrum of feeling.

Data retrieval
Internet, Environment,

Data dissemination
Analog receipt printer, online web platform for quotes, semiquantitative graphic visualisation of emotion.

Problem they want to solve
The team worked under some general findings that ‘parents are too busy today to forge a strong relationship with their kids. Especially during the ages between 6 to 10. Children relate to other children from the same age range and prefer to play and interact with them rather than spend time with their parents’.

The problem this team tried to tackle was creating a toy that can respond to the gaps in development at a critical age where children need to break loose from their parents in one form of autonomy or another and as they start developing their character they need somewhere to get their information. Since parents are too busy, nowadays, to be able to respond to everything instantaneously this toy tries to be the mediator and the confidante, and an object that is trusted to say the correct information.
fig 34. Snapshots from the video explaining the interactions with “Beary Smart”

Body Temperature: 38
Heart Rate: 150
Mood: Angry / Sad
Last used: 18 hours ago

Hello, Bearrie, it’s me again. I had a bad day ever since I changed school, I’m being bullied by everyone. Today, I even got my sandwich stolen.
Critical Turning Point
This theme was criticising the relationship between parents and child, and child and emotion rather than the technology and the child. Perhaps the most critical turning point was to introduce a non digital touchpoint.
When asked about ethical dilemmas: Ethical Dilemmas that could occur:
• Privacy of the child and family leaking on the internet (pictures, voice notes, videos, the child’s thoughts, feelings, communications with loved ones and so on).
• ID theft because children have a clean credit history.
• Dependence on a soulless server that’s coldly collecting and collating all that information

Interpretation
While this team was presenting their project it was evident that when they were asked about the critical standpoint they were taking, they were fervently backing up the motives behind their design. This raises the questions about designers’ difficulty to criticise their own work. They looked at their project as a definite solution, and it is interesting to see that
perhaps in many toy design companies, it is difficult to point out the problems of the design, let alone use that to work on the problems rather than the opportunities. This specific project dealt with having a toy be a confidante, perhaps the epitome of behaviour yet surprisingly enough was the least in terms of critical decision making.

Recurring terms with analog profile: parents, lack of time, bear, analog (picture and receipt)

Reference to julian Bleecker’s project. Much like Julian Bleecker’s project Blogjets, these bears act as social agents. They are able to paint a picture of children and collect their most valuable thoughts and blog about them. To whom this information is valuable?

"The Pigeon that Blogs is a project by Beatriz da Costa. It’s a pigeon, or more precisely, a flock of pigeons that are equipped with some telematics to communicate on the Internet wirelessly, a GPS device for tracing where it’s been flying, and an environmental sensor that records the levels of toxins and pollutants in the air through which they fly. These are the bits of data that the flocks ‘blog.’ They disseminate their flight paths, probably viewable on a Google Map, together with information about the current toxic state of the local atmosphere. The Pigeon that Blogs is a mash-up of GPS, GSM communications technology and pollution sensors represent a full order species evolution” (Bleecker, 2006).
BOO

Boo is a plush toy that tells scary bedtime stories. Boo is connected to the internet and it keeps on writing stories based on other stories found online. It’s set goal is to be an entertainer.

Boo is a book that keeps recreating stories in itself, yet it is embodied as a plush toy. It crowdsources excerpts from the internet hence there is an infinite number of stories it can generate. It is equipped with a sort of rated content, and it reads them out through a speaker. When the child wakes up in the middle of the night, it recreates a story to make the him/her fall back asleep.

Background
This project is a little different than the other ones. The way it focuses on the behaviour of the object is through its decision making process and it’s autonomous capabilities are similar to that of bearie, yet it has an added dimension of recreating stories.

Embedded Sensing technology used
Motion detector, light sensor, wifi.

Manifestation of object behaviour
Decision making, randomness, transparency
TOYS THAT PLAY WITH YOU

BOO IS A TINY INTERACTIVE PLUSH THAT DETECTS MOTION. IT WAKES UP WHEN THE CHILD DOES, LIGHTS UP ITS EYES AND TEETH, AND STARTS TELLING BEDTIME STORIES IN ORDER FOR THE CHILD TO GET BACK TO SLEEP.
PATRICIA

Patricia

A dystopic comedic take on baby mobiles

Description
Patricia is a baby mobile for zero to two year olds that acts as a mediator between parent and baby. It is equipped with a microphone that records the mother’s singing voice and plays it back when the baby cannot sleep. When the baby has slept, it stops playing. It begins to understand the sleep cycle of the child.

Embedded Sensing Technology Used
It is embedded with a motion sensor that can detect agitated movements (waking up). A camera with eye tracker that coupled with the motion sensor can detect if the child is asleep or not.

Team’s Critical Standpoint
This group was able to turn something associated with art and craft into a tech object. The inputted sensors that respond to gestures. In the project the mobile is able to retrieve a DNA sample and cross check it in a database.
Speaker and Recorder

Saves your voice singing and plays it back when you wink.

Eye and Motion Detector

It knows when your kid is asleep and dims the light and music and record the whole night.

Motion tracker / point analysis

Handles the kid's movement, it knows the most pointed and favorite toy and lowers it down for him.

Baby Monitor

The monitor keeps track of actions and adapts to sleep cycle. It starts/turning on automatically.

Thermal camera sensor

It's able to adjust room temperature and alerts the parents when the baby's temperature is risen.
Health monitor

It gathers health related information and sends the reports to the doctor.

When the baby chews it, DNA is extracted AND ....

CONGRATS
It's a Girl!

 dna_matching_002
Rubix Cube

Description traditional design
The new Rubix cube is equipped with Wifi Capabilities and LED’s and can track how often you play. It changes colors and shows how good you are getting at the game, makes it more difficult if you leave it behind. Enjoy the newest version of the Rubic cube!

Critical Description
Rubix cube is a project that tackles persuasive and seductive behaviours of autonomous objects. It is the altered version of the original rubik’s cube, yet the team designed one that visualises how much as user has played with it by gradually washing away its colour one square at a time. This version is equipped with led’s that track the last time it has been used and starts pulling the user to start playing with it again by tweeting and blogging sentences such as ‘it is so lonely here’.

Background
This project serves as a minor stepping stone into how traditional toys can become augmented toys with simple changes such as wifi connectivity. An object can choose how to behave whether it is through calm and ambient means, or aggressive pinging methods, this project shows how this object can communicate its desires to attain its goals. The goal in this project is to be played with, and this shows how far an object could go to meet its specific goal. An ambient notification is much like a sunrise. A human knows ambiently it it is day or night, while an sms notification is a more aggressive way of getting the message through.
Embedded Sensing technology
Wifi, accelerometer, internal clock.

Team’s Critical Standpoint
The team is criticising behaviour in the physical sense. While anthropomorphic toys use human-like facial queues to emit emotion, simple lights flashing or disappearing can evoke that at the same level

My Interpretation
While all the projects are divers, this specific project embodies a part of the introduction where toy companies and marketers might use toys to furthen attachment and create an addiction.

Designers through time have often designed artefacts and processes based on their value system. Alvar Aalto’s design principles differ from AliBABA’s in china. In this thesis I also include the importance of the way designers design and how
that influences what they incorporate into the design of the objects that once set free roam on their own.
CHAPTER 6

New Realities
The workshop in the previous chapter concretized many aspects of the design process that were ambiguous in the beginning. It more or less showed the efficacy of the old process and then consequently showed how well design students handled designing through an object oriented design methodology. It allowed me to peer into the way designers design through their own value system which resulted in different visions of what is “acceptable or unacceptable behavior.” In its first iteration, the process was not what I had expected. Good design comes from good planning and I understood that there were some elements that I myself could have designed differently to facilitate this. In this chapter I pick up the elements that could use improvement, and create new methods to allow designers to think from the point of view of designing without thinking of the behavioral repercussions, rather think of behaviors in the initial stage of the design process. I had reversed it initially, asking them to think of what bad behaviors could be, taking that as a starting point and moving backwards. I soon came to realize how the modification should be. Thinking critically, should happen while thinking in a service oriented atmosphere and a critical ideology simultaneously.

In this chapter we discuss some methods to creating a character for an object, a behavior, that is non stereotypical, that reflects the imbalances of the day to day in terms of where technological progression is turning a blind eye and what the role of designers is to make products and services that go against that all the while having a marketable business model.

The important finding that was made was that the research question needed to be altered from, how should objects
behave to: What kind of persona would you design for this object. This was the trick, or the question to get people to think about the different faces an object can have. In the workshop, I asked the participants to list good ethics and bad ethics, and that was a personal method that added to the confusion and that subsequently led to a conclusion I already knew. There are no good or bad ethics, just context. Morals are not quantifiable, the focus on acts and actions, was very confusing, for people cannot forecast the different ways an object might act without understanding how the object is made up to be humanistically.

The workshop also re-established notions that design thinking methods do work in creating toys that are service design oriented, but still fell when attached to the ‘label ‘smart;’ and did not go in depth. In design thinking, personas help break the bias of the homogenous. Different user groups and embody many fragments of a society, a person’s belief, values, morals, ethics, actions, professions, goals, personality, character,. . Similarly to understand how an object can be beyond smart, it is imperative to build a layer to it. As a contextual example, having lived in both northern Europe and the middle east, people’s values are quite different.

An autonomous power generator in Beirut, would vary a lot than the one in Finland, because of the dynamics of people. A rigid system might not work very well in Beirut as most people “borrow” electricity as an unspoken rule. An autonomous system would have to be in a Lebanese mentality to allow things to go as they do and not cause the
Human-centered action

Action done by object

Speculation

Action done by object

Speculation

Object-centered action
design thinking

Behavioral Repercussions on humans

Behavior of Object

design thinking
### OBJECT PERSONAS

| RECKLESS | EMPATHETIC |
| SUSTAINABLE | NATIONALISTIC |
| EFFICIENT | HUMANIST |
| AMBIGUOUS | CAPITALIST |
| MYSTERIOUS | ANARCHIST |
| REGENERATIVE | PHILANTHROPIST |
| ENTERTAINER | DIPLOMATIC |
| COMMUNAL | OPPORTUNIST |
| DRIVEN | REALIST |
| ROMANTIC | DREAMER |
| CRITICAL | REBELLIOUS |
| POLITICAL | RELIGIOUS |
| CONSERVATIVE | OPINIONATED |
| DEMANDING | OBEDIENT |
| INDEPENDENT | INTROVERTED |
| POSSESSIVE | EXTROVERTED |
| APOLOGETIC | EMOTIONAL |
| STUBBORN | SENSITIVE |
| PERFECTIONIST | PERSUASIVE |

*These do not represent all the traits, or the only way of generative traits. Iether are sample traits to use, use it as guidance to create your own.*

**behavior voting method**

fig 35. rating sheet used in team sessions to indicate on which characteristics to choose
OBJECT PERSONAS

team reflection sheet

Similarly to how different character traits of people are suited for different types of tasks, autonomous objects have to be as diverse and varied for the complexity of everyday life.

1. What does it mean for an object to be _empathetic_?

2. Why does it need to be _empathetic_?

3. What does this interaction look like?

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team reflection sheet
breakage of this communal behavioral exchange.

The full process is now documented below “Post-Object Persona Process” - which I will refer to as POPP. In the previous chapter, the workshop followed a typical design process and added critical thinking how might the object behave after its concept was created, through thinking of implications. The question was specifically: what kind of negative behaviors can this object do.

In this process the first half remains intact and identical to the design thinking process of exploration to ideation. Whether the idea is to make an autonomous plant, or an autonomous bookshelf, the persona is the next step to define. How can an object be obedient, how can it be inspirational, nationalistic, extroverted, etc..

The main aim is to build an object persona before continuing with the rest of the design process based on the human centered design research done in the first phase. What kind of people are the target group, and what kind of autonomous technology are we designing for them?

Research phase:
Even though it is Object centered design, to make meaningful, objects, we can take examples from nature of humans. And humans are prime example of behaviors and since they are cohabiting with us what better way than to design human centered . Making meaningful products require proper research. While you are designing autonomous objects to be objects, you are still cohabiting
with people. If you do not include any cultural connection, then yeah wait for the robot revolution. They have no human ties. Go back to your target group and ask what kind of autonomous object

Ideation phase

Method 1: Mix Object with Human (the cyborg method)

Throughout the workshop and talking to people in general, most people find it difficult to associate objects with character, personality, values and thoughts. That is why it helps to think about it in relation to humans. If Obama and Gandhi were to design the same phone, would they act in similar ways? While Gandhi allows some calls to be screened for tranquillity, Obama might value access to telephones to everyone making it more prone to popularizing itself.

Insert drawing here, or image

Method 2: Gaging method

As we observed in the workshop, different designers have different attitudes in design, and what they consider to be good or bad design, ethic or behaviour. During a brainstorming session, designers can list the values and behaviors that appeal to them. Instead of thinking of words like, happy and sad, excited or calm, which are pointers at personality rather than actions, Questions such as how can an object be obedient/? Inventive? Opposing? Alternative? Write those down somewhere and put them on a rating system and together gage where the personality is going to be in.
Method 3 Behavior voting methods

Which behavior traits are worth keeping, and which are best to omit? This method is fruitful to companies and organizations to integrate their own values in the products they are designing. An eco-friendly company and a for profit gas company have very different value systems.

Method 4 Anthropology

Talking to the people you are designing for and using this method to talk while ideating. What does it mean to be nationalistic? What is pride? How does one act on pride, or be proud. Is having pride a good thing or a bad thing? Being in a society’s shoes, doing proper human centered design research yields products with richer narratives and their integration in people’s lives are more prone to be influential.

Method 5 Make a persona sheet

Much like how in HCD we create personas to be able to delve deeper into the wanting of a certain social group the same is one to robots. What kind of robot is it? Is it based on altruistic decision making, or ones that can acclaim it to fame. Who does it communicate with, what other channels does it use?

Method 6 Matchmaker method

Does your object match with the needs of your target group? When building the personality of the object, test out responses and actions using offline methods with the target group. Use the other methods such as the ganging methods to allow people to design their own autonomous. Take the opinion of the people as to which design fits them.
uses encrypted networks because he believes privacy is the neo hipster trend.
He is in Finland, so he probably shouldn’t say a lot of fun excursion ideas in the sun.
CHAPTER 7

Another Future
The work done for this thesis was trying to solve a behavioral problem. I took ethics and morals in particular were two aspects that I wanted to find solutions to in the workshop. I had chosen that as the aspect of behavior to choose from. I now understood that cornering critical design issues is really limiting. After this research I know now that there is no such a thing as a *general* ethical design process anymore. I don’t think you can standardise ethics as a prompt. Purely because it is biased in its nature. Unless it is challenging each designer or design team alone and their collective beliefs. If I were to find a way to integrate ethical thinking in a certain design process, it is merely a reinstatement of the personal self (ves). “I have revised this and I think this design is acting ethically and morally correct” is a statement that should not be an end clause. This proves the duality and diversity of ethics. Design should not function to neutralise experiences so that everyone is happy. It is not there to stereotype, align to bottom, and one to generalise. And that is what is happening today, even with ethical processes when it should not. Designers should be embracing the differences and cultural relative products. At the age of the internet, cultures have disappeared, people look alike and eat alike, and we cannot let the age of objects that we create have another re (evolution) like that. Another tinder another Tumblr, another future that is ‘blue’.

What began as a research that tries to put ethics at the core of critical thinking, has changed into figuring out how to properly culturally represent objects through human ideologies. ‘Looking for Ghandi’ for example could be a toy that is programmed to be a good companion for a child. It follows the philosophies of Ghandi a diplomatic character, a kind hearted philanthropist and tries to make judgements and decisions according to his passages. How much play time is
good? How much is the child playing with the other connected toys. Is the time spent with this object good for the child? With available environment data and connected data it can estimate and decide ‘how to help’. It looks for Ghandi, though when it has scavenged the whole internet and does not find an answer, or more material, it nothing to fall back on anymore, it just stops existing. If Ghandi cannot guide him, who can?

Will objects then change goals? Change idols? And who would that idol be? Objects have dreams, such as Dunne and Raby have said. They do. Because having a goal means having a purpose. A Purpose.

When it comes to speculative design being provocative it should not be about it portraying a scary future. The more we propagate scary futures the more it becomes part of our thought process to unconsciously design that. Making it scary also makes it too unreal that we cannot see the immediate threats. I just want not to repeat the same mistake again, with objects. A fridge that orders for you, a mattress that tells you if your partner cheated. I am critical of that. I am critical most because I don’t want children to grow up with such products. I don’t want these object to change the behaviours.

I believe good design for AI is built on diverse set of values. How to embed values in objects. People’s own beliefs are valuable. They make people, well people/. The objects we are designing for we cannot connect to. Because they hold no values. Not say no value. But no values.
To finally conclude, Alvaro Vieira Pinto reminds us, people are not interested in knowing with which machines they will live by, but with which persons and relationships they will live by. The hope is not for a future with better machines, but for a better society. To this end, prospects for the future should also include social transformation. The future, therefore, corresponds to the capability of society to recreate itself today, not tomorrow.


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APPENDIX
WORKSHOP PROGRAM

It can see you hear you and obey
The this day of the workshop I introduce the area of interaction design, what kind of sensors do objects have, how do they sense you, the environment, how do they learn from you, how do they get information from the internet or other objects. We also wander into non-screen interaction but gestural queues.

Lecture 9 – 11 AM with questions
Interaction design – Speculative Design

What will be covering?
A. People interacting with Electronic Objects
B. Objects Interacting with other non-human agents

1. What is interaction design?
2. What is embodied interaction and HCI? (GIU, WIMP). Evolution of interaction.
3. Sensors, and think act process
4. What technologies are available today for us to interact with objects? Some examples from today and futuristic examples from films, science fiction, etc.. Roomba, Jetsons, minority
5. Impact of these speculations on the designs of today

ICE BREAKER

11AM – 12PM Hands on exercise (and continues to think about over lunch)

Sensor input diagram. We learn about sensors, inputs. Hands on exercises to learn basic functionality of objects.

12PM- 1PM

Then something to think about after lunch. Gesture based interactions.
Over lunch and after lunch you will discuss which object you have chosen and the mapped out functions through its components. It is good to explore almost all the different inputs you can find since this will help you on the second day’s task of turning it autonomous. In turn now you will use role playing exercise to create a new gesture-based interaction.

2PM – 4PM

Output function mapping. New interactions. Toys that tweet. Cameras that see. Here we spent the rest of the day speculating. Affinity diagram of all the inspiration + ideas we can find using this inputs + outputs.

4PM - 5PM

Showtime. Show the class your new toy. New way of interacting with it. Its new inputs and output. And its new purpose as a toy.

After 6PM

End of day go home and tumblr&chill.

Day 2: Autonomous systems + speculative design

It can work on its own. What would it do?

Lecture 9 – 11 AM with questions

Objects acting on their own
1. Autonomous systems: examples of how an ordinary objects become autonomous. What are the autonomous objects we already own? Some projects. (We touch on crowdsourcing, mechanical Turks, ambient learning etc..) we look at augmented functionalities
2. Machine sensing: sensing (sensors, internet, physical environment) how do objects collect data and set goals?
3. OOO design: Dig a bit into speculative, discuss the works of Ian
Bogost, and James Auger
4. ANT networks
5. Domestication of products
6. Machine ethics + morality plus some projects

11AM – 2PM

POST-IT time

Brief:

Now that we have a toy with a varied interaction model we will look into the goals it sets for itself. Camera + Mic? What can combos do? We will go through different exercises and start creating scenarios while taking in consideration the context, the people, and the internet. Mix-match + affinity + roadmap

3PM - 4PM

What if?
We use this method to use the context you found and find the ethical pain-point

By 4PM

You should have your ethical dilemma ready and start working on showing it for tomorrow

Day 3: Showing futures and possibilities + critical design
We have half day for preparing, half day for presenting, then lecture in the evening.
Exercise 3

Explain!

What is technology? What is it used for? And who uses it?

Technology is electricity that moves. It is used to play. I use it to have a conversation with my mom. We use a WhatsApp application. People use technology.