



# Rejected By My Own Robot: Studying the Potential for Artists to Subvert Technological Expectations Using Critical Design

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## ABSTRACT

This paper provides a framework for how artists can use critical design to subvert deeply ingrained expectations around technology. I begin by defining the technological understanding of being as introduced by Martin Heidegger and break down expectations of technology into efficiency, control, and pleasure. I then ask if the burgeoning HCI practice of critical design could be an effective tool for artists in subverting these expectations. My methodology to study this question is to install a provocative object, in my case a disobedient kissing robot, in a public space and analyze participants' reactions to it using both video and survey analysis. Results show over 70% of users experienced some degree of surprise, friction, or disappointment with the device due to broken expectations about how they assume technology should work. Our study concludes with a discussion of what value there is in challenging the status quo, how artists can take this work further, and what element humor has in provocative critical design.

## CCS CONCEPTS

• **Human-centered computing** → **Human computer interaction (HCI); HCI theory, concepts and models;** • **Applied computing** → **Fine arts.**

## KEYWORDS

critical design, critical theory, philosophy of technology, fine arts

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## 1 INTRODUCTION

### 1.1 The Technological Understanding of Being

In *The Question Concerning Technology*, German philosopher Martin Heidegger [10] argues that technology is not a material: it's a mindset. He explains that currently we live in the technological era, the consequence of which is that our understanding of being

itself is strictly in terms of productivity. According to Heidegger, this technological mindset is so ingrained in our way of being in the world that we take it for granted as the only possibility.

This sentiment, that our worldview is limited by a modern technological ethos, is echoed by many contemporary thinkers across diverse disciplines. For example, Mark Fisher [6] points to a new understanding of being in *Capitalist Realism* which investigates "the widespread sense that not only is capitalism the only viable political and economic system, but also that it is now impossible even to imagine a coherent alternative to it". His book describes a world where Heidegger's technological understanding of being has been taken to its extreme. Donna Haraway [8] approaches this question from an ironic standpoint in *The Cyborg Manifesto*, where she declares "the cyborg is our ontology". Meanwhile, sociologist Sherry Turkle [14] argues that technology is not just affecting our behavior but redefining our understanding of human identity in ways we aren't consciously aware of.

Using these thinkers as a jumping-off point, we can break the technological understanding of being into expectations around efficiency, control, and pleasure.

**Efficiency** — Hubert Dreyfus [4] explains in his interpretation of Heidegger that "the essence of modern technology... is to seek more and more flexibility and efficiency simply for its own sake". Or in Heidegger's own words: "Everywhere everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for a further ordering" [10].

This sentiment where man is no longer a "raw material" but is instead "drawn into the process" [10] is reminiscent of the world presented in Haraway's *Cyborg Manifesto*. She describes it as *The Informatics of Domination* where human beings can be thought of as nodes "in a system architecture whose basic modes of operation are probabilistic, statistical" [8]. Fisher [6] describes this phenomenon through the lens of *Capitalist Realism*, where he explains that our only understanding of value, that of others and of ourselves, is through productivity alone. All these writers suggest that in the technological era, the defining goal and expectation is efficiency.

**Control** — Heidegger [10] explains that in our quest for efficiency, the dominant strategy is control. As William Lovitt [10] explains in his introduction to Heidegger, "The modern technologist is regularly expected, and expects himself, to be able to impose order on all...he is forever getting things under control". Haraway [8] suggests that in the cyborg era, everything in the universe will be thought of as "control strategies... in terms of rates, costs of constraints, degrees of freedom". Similarly, Turkle [15] explains that in the robotic moment, our dependence on technology is built on the promise that we are in control of the relationship, one that

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carries no risk of unexpected behavior that one might have in human relationships. In this sense, control is an essential strategy and expectation in the technological understanding of being.

**Pleasure** — Turkle [15] continues to explain that at the heart of our increasing relationship with technology is an addiction to easy, seemingly uncomplicated pleasure. Instead of pursuing risky endeavors like relationships with other people or real-world experiences, we are increasingly likely to recede into our safe digital worlds where we can get a predictable dopamine hit. Fisher [6] describes this phenomenon as a depressive hedonia “constituted not by an inability to get pleasure so much as it is by an inability to do anything except pursue pleasure.” These writers suggest that in the technological era, we have become addicted to easily accessible, uncomplicated pleasures which we expect our devices to reliably provide.

## 1.2 Releasement

After outlining the realities of the technological era, Heidegger [10] suggests that there is in fact an alternative to this way of being: a way to enter into a free relationship with technology, an experience he describes as *releasement*. If we can recognize that our assumptions about technology were received as opposed to being inherent or natural, we can enter into a new relationship with technology. In this state, Dreyfus [4] explains, we can accept that “efficiency—getting the most out of ourselves and everything else—is fine, so long as we do not think that efficiency for its own sake is the only end for man, dictated by reality itself, to which all others must be subordinated.” In other words, we will be released from the capitalistic insistence that all objects and all people exist solely for their productive value and instead explore novel ways of being in the world.

## 1.3 Critical Design

In contemporary HCI research, there is a burgeoning field of study related to challenging our assumptions and inspiring new ways of looking at the world: critical design.

Critical design as a method of study was formally introduced by Anthony Dunne and Fiona Raby [5] who described it as a method to “reject how things are now as being the only possibility” by providing “a critique of the prevailing situation through designs that embody alternative social, cultural, technical, and economic values”. This is done, they explain, “by developing alternative and often gently provocative artefacts which set out to engage people through humor, insight, surprise and wonder” [5]. This type of design sits in contrast to the more familiar affirmative design seen in the marketplace which reinforces techno-capitalist values of efficiency, control, and uncomplicated pleasures. In more recent years, their conception of critical design was challenged and expanded by Jeffrey and Shaowen Bardzell [1]. They expressed disappointment in critical design’s lack of use in spite of its potential in contemporary HCI research. They argue that designers and researchers must move beyond the framework set out by Dunne and Raby by “actively and creatively developing critical design in ways that we as a community want to see it used” [1]. According to the Bardzells [2], interaction design is both informed by and an active agent in critical theory which can bring forth alternative ways of seeing the world.

Since then, the field has expanded and grown many branches, specialties and champions. One example can be seen in feminist and queer studies which feature designs that trouble and queer the status quo [9]. Another is Chris DiSalvo’s adversarial design [3] which uses design to provoke and engage conventional politics. Similar examples can be seen across disability communities, postcolonial studies, ecological activism, and HCI4D [7, 11, 13].

Overall, critical design as formulated by the Bardzells is a creative tool to challenge the status quo. My research question, then, is can artists wield critical design to subvert expectations born of the technological understanding of being — that is, assumptions about efficiency, control, and pleasure?

## 2 METHODOLOGY

Using a research through design methodology, I developed a critical design probe, a disobedient kissing robot, that attempted to challenge people’s assumptions about technology. I set this object in a public space and analyzed people’s interaction with it, specifically looking out for visible signs of subverted expectations.

### 2.1 Research Probe

The research probe worked as follows:

- (1) A mechanical device was set up in a public space with a sign beneath it that read “Kiss Me”.
- (2) When a user approached, the front gates of the device opened, and a pair of mechanical lips extended out towards the participant.
- (3) It appeared as if the participant was able to kiss the approaching robot lips, but if the participant moved towards the robot too quickly or got too close to actually kissing it, the robot rejected the user.
- (4) When rejected, a buzzing alarm went off, the LED indicator lights turned red, and the robot lips quickly retracted back into the device while the gates closed in the user’s face. The user could then take a step back and try again.



Figure 1: Rejection robot with gates opened and lips exposed.

## 2.2 Data Collection

I recorded video of user interactions with the device throughout the day which I later analyzed for signs of visibly broken expectations (for example, repeated attempts by participants to accomplish the impossible task). I also asked users to fill out a survey which asked about their experience with the device as well as their expectations concerning technology.

## 3 RESULTS

The robot was placed in a public space at the University of Arts London for four hours during which 30 individuals interacted with it and 24 responded to the optional survey. Most participants were Camberwell College students between the ages of 20-30 years old.

The quantitative survey results show a clear picture that people have strong expectations around technology when it comes to efficiency, control, and pleasure. For example, 75% of respondents agreed with the statement “I expect technology to work efficiently”.

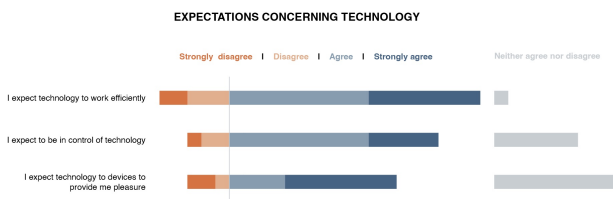


Figure 2: Qualitative results from participant survey.

Analyzing the video of users interacting with the device, over 70% of people demonstrated some sort of surprise, friction, or disappointment. These behaviors include:

- (1) Multiple attempts to kiss the robot in spite of repeated failures.
- (2) Flinching or physical discomfort when interacting with the device.
- (3) Audible signs of surprise like gasps, exclamations, sighs, or laughter.

These inferences were reinforced by the written survey, where many respondents expressed their surprise or frustration when using the device in their free-form responses. These provocations can be further understood within the matrix of the technological understanding of being:

**Efficiency** — Most participants who saw the instructions “kiss me” assumed the task would be straightforward and that the device would be a partner in accomplishing the goal efficiently. These users would stand in front of the device, lean into the approaching lips, and then audibly gasp or recoil when the lips quickly pulled back and the gates closed on them. Some participants wondered about what the rules were: “she tr[ies] to kiss me but when I move forward she just move[s] back.” One wondered “Maybe I just need to wait.” Another respondent openly asked after the initial rejection: “Does she want me to kiss it... I don’t know!”

Overall, these interactions point to the fact that the underlying assumption at the beginning of the task was that the device would be a tool in accomplishing the goal as opposed to a source of friction.

**Control** — In a similar vein, results show that participants expected to be in control of the device. This is most obvious in people’s

persistent attempts to accomplish the task in spite of repeated failures. On average, people repeated their attempt between two or three times before they gave up, at which point they understood the task was either impossible or that they simply didn’t understand the rules. In a few cases, users looked for ways to trick or beat the robot. This experience was also reflected in the written response, with one person saying, “I’m frustrated. I guess it’s because it’s the first time a robot refuse[s] my requests.”

**Pleasure** — Finally, the video suggests that people expected the robot to be a source of pleasure. This was most obvious in the ways the robot was personified. Many participants waved or spoke to the device. One asked jokingly, “Can you be my boyfriend?” Many in their free responses spoke about how unexpectedly intimate the experience was with one person stating, “I would have thought it was a human for a moment.”

However, when the relationship was not fulfilled many participants expressed some type of betrayal or disappointment. One participant said, “I wanted the robot to like me”, while another wrote, “I thought it hates me.” One participant went as far as describing the device as “a tease.” These results echo Sherry Turkle’s sentiments concerning people’s modern relationships with technology with their promise of easy, predictable pleasures. When that expectation was broken, participants expressed disappointment, betrayal, and anger.

A video dramatization of the research probe in action can be found in appendix A.



Figure 3: Rejection robot in action, moments before rejecting the participant and retracting back into its shell.

## 4 DISCUSSION

Overall, the results suggest that expectations about technology are pervasive and can be successfully subverted by artists practicing critical design. People’s interaction with the device directly reflected many of the sentiments outlined in the technological understanding of being: an assumption that tasks will be completed efficiently, an expectation to be in control of technological devices, and an anticipation of pleasure from such machines.

One difficulty in analyzing the results was quantifying provocation. Video analysis is an imperfect tool for deciphering what

was sincere surprise and what was normal behavior. Dimitrios Raptis et al. [12] approach this question in their study of provocation in research through design by stating that the goal is not “what is true” but “what is real”. With this understanding, researchers benefit from an experimental, non-rigid setup when practicing and analyzing research through design. They go on to state “we do not believe we need a strict definition on what provocation is, but a better understanding on what it is not” [12]. While this paper can’t make a definitive statement about how provocation can be measured, it can add to the literature of the possible analyses of provocative outcomes.

Another aspect of this project not addressed in the referenced literature is the effect of joy and humor in critical design. Many respondents laughed in the face of their broken expectations and stated how funny the experience was in their written response. In this project, humor was a useful tool in getting users to participate. The request to kiss a robot is inherently absurd and reinforced by the flamboyant design of the device. However, does laughter reflect a failure to provoke? Or is it a clear sign that some underlying assumption of the status quo was broken, thereby providing the user with a new outlook? Does humor blunt the effect of critical design or amplify it? These are interesting questions that would benefit from further reflection and study.

Finally, I’d like to end with a consideration of what value this research can provide to the HCI community. There are already plenty of artists and designers building devices that actively challenge our techno-capitalist expectations [11]. What this study offers is a clear framework to understand what those expectations are and an HCI research methodology to study how they can be challenged.

However, there is also value outside the confines of HCI research. In defining the technological understanding of being, Heidegger [10] asks us to see its limits, and dangers and ultimately recognize it as an invention as opposed to a natural reality. This is the same language Fisher [6] uses in describing Capitalist Realism, a sentiment this paper argues is the exaggerated culmination of Heidegger’s technological understanding of being. Fisher [6] ends the essay stating, “that even glimmers of alternative political and economic possibilities can have a disproportionately great effect... From a situation in which nothing can happen, suddenly anything is possible again.”

A critical design practice focused on subverting the expectations of the technological understanding of being is no panacea for the ills of techno-capitalism, but it can at least beg the question: *is there an alternative?*

## 5 CONCLUSION

In this essay, I provided a framework for the technological understanding of being as a theme that presents itself across a wide array of contemporary thinkers. I then asked if critical design could be a useful tool for artists to challenge that mindset. My research focused on studying a specific provocative object and analyzed if users’ expectations around technology were successfully subverted using both video analysis and survey results. The study confirmed the hypothesis and suggests there is an opportunity for artists to adopt critical design practices to subvert technological expectations. Furthermore, this paper can help guide future critical design research

as it relates to HCI by providing a framework for understanding prevailing expectations around technology and potential methods for subverting them. The hope is that by exploring critical forms and provocative behaviors, artists and the HCI research community can instigate new ways of seeing the world.

## REFERENCES

- [1] Jeffrey Bardzell and Shaowen Bardzell. 2013. What is “Critical” about Critical Design?. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (Paris, France) (CHI '13)*. Association for Computing Machinery, New York, NY, USA, 3297–3306. <https://doi.org/10.1145/2470654.2466451>
- [2] Jeffrey Bardzell, Shaowen Bardzell, and Mark A. Blythe. 2018. *Critical theory and interaction design*. The MIT Press, Cambridge, MA, USA.
- [3] Carl DiSalvo. 2015. *Adversarial design*. MIT Press, Cambridge, MA.
- [4] Hubert Dreyfus. 1995. *Heidegger on gaining a free relation to technology*. Indiana University Press, Bloomington, IN, USA, Chapter 6, 97–107.
- [5] Anthony Dunne and Fiona Raby. 2001. *Design noir: The secret life of electronic objects*. August/Birkhäuser, London, UK.
- [6] Mark Fisher. 2009. *Capitalist realism: Is there no alternative?* Zero Books, Winchester, UK.
- [7] Aimi Hamraie and Kelly Fritsch. 2019. Crip technoscience manifesto. *Catalyst: Feminism, Theory, Technoscience* 5, 1 (2019), 1–33. <https://doi.org/10.28968/cft.v5i1.29607>
- [8] Donna Jeanne Haraway. 2016. *Manifestly haraway*. University of Minnesota Press, Minneapolis, MN, USA.
- [9] Ellie Harmon, Matthias Korn, Ann Light, and Amy Volda. 2016. Designing Against the Status Quo. In *Proceedings of the 2016 ACM Conference Companion Publication on Designing Interactive Systems (Brisbane, QLD, Australia) (DIS '16 Companion)*. Association for Computing Machinery, New York, NY, USA, 65–68. <https://doi.org/10.1145/2908805.2913020>
- [10] Martin Heidegger. 2013. *The Question Concerning Technology: And Other Essays*. Harper Perennial, New York, NY, USA.
- [11] Netta Iivari and Kari Kuutti. 2018. Critical Design in Interaction Design and Children: Impossible, Inappropriate or Critical Imperative?. In *Proceedings of the 17th ACM Conference on Interaction Design and Children (Trondheim, Norway) (IDC '18)*. Association for Computing Machinery, New York, NY, USA, 456–464. <https://doi.org/10.1145/3202185.3202773>
- [12] Dimitrios Raptis, Rikke Hagensby Jensen, Jesper Kjeldskov, and Mikael B. Skov. 2017. Aesthetic, Functional and Conceptual Provocation in Research Through Design. In *Proceedings of the 2017 Conference on Designing Interactive Systems (Edinburgh, United Kingdom) (DIS '17)*. Association for Computing Machinery, New York, NY, USA, 29–41. <https://doi.org/10.1145/3064663.3064739>
- [13] Huatong Sun. 2020. *Global social media design: Bridging differences across cultures*. Oxford University Press, Oxford, UK.
- [14] Sherry Turkle. 1995. *Life on the screen: Identity in the age of the internet*. Simon & Schuster, New York, NY, USA.
- [15] Sherry Turkle. 2017. *Alone together: Why we expect more from technology and less from each other*. Basic Books, New York, NY, USA.

## A LINKS TO VIDEO MATERIALS

*Rejected By My Own Robot* Dramatization of the research probe object in action: <https://vimeo.com/651633372>.