
What Would *You* Do? Design Fiction and Ethics

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Abstract

Design fiction can be highly effective at envisioning possible futures. That envisioning enables, among other things, considering ethical implications of possible technologies. This paper highlights that capacity through a curated collection of five short design fiction pieces, each accompanied by its own author statement. Spanning multiple genres, each piece highlights ethical issues in its own way. After considering the

unique strategies that each piece uses to highlight ethical issues, the paper concludes with considerations of how design fiction can advance broader discussions of ethics in computing.

Author Keywords

Design fiction; ethics.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Recent years have seen a flourishing of interest in design fiction within HCI and related areas [6,10–12,16,26,29]. This development is perhaps unsurprising, given the multitude of purposes that design fiction can serve. Perhaps most notably, design fiction enables, or at times even forces, thinking through the specific details and ramifications of a technology without actually figuring out implementation, conducting a study, analyzing the results, etc. [10]. Interestingly, Dunne and Raby's [18] formulation of critical design describes it as a sort of value fiction. While some work has extended this sensibility to design and to implement speculative artifacts [51], writing and analyzing design fiction can serve many valuable purposes.

Much of design fiction's unique capacities come from its implicit nature. For example, a review for a fictional book can conjure various sorts of impressions about a

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book (that does not exist) without needing to actually create the book itself [48]. Indeed, the reader creates for herself or himself imagined details of the book, and different readers may come away imagining different details. In many ways, this implicit aspect resembles what Blythe and Encinas [12] refer to as ambiguity. Rather than being explicitly didactic, these types of fictions leave much interpretation (and interpolation) to be done by the reader. The reader is given the opportunity to consider, given a hypothetical scenario, what s/he would.

Ethical issues provide a prime opportunity to take advantage of these unique aspects of design fiction. In some ways, all (design) fiction might be considered ethical, in so far as both ethics and fiction deal with what people, real or imagined, either should or would do in specific scenarios. For any issue, there are multiple different kinds of arguments that one could make about how to proceed ethically. Design fiction essentially allows us to take a designerly approach [cf. 15] to issues of ethics and technology. In so far as design revolves around simultaneous consideration and exploration of different possible paths forward [14,17], design fiction provides an opportunity to consider different means of ethical judgments and decision making.

To levy this multiplicity more fully, this paper presents a curated collection of five short design fiction pieces. In this way, the approach resembles other recent design fiction efforts. For instance, Blythe and Encinas [12] present four different design fiction pieces, all within the same future world but each highlighting a different aspect of the design fiction genre. Similarly, both Baumer et al. [6] and Penzenstadler et al. [39] present collections of fictional abstracts for papers to appear in future conference proceedings. In one case, an entire fictional conference was created to garner

submissions for such a curated collection [<http://www.fictionalconference.com/>].

After establishing some background on different fundamental approaches to ethics, this paper presents the five short design fiction pieces. Each piece is accompanied by an author statement, written by the authors of that piece, as well as a curator's note, written by the author who curated these pieces. Both the curator's note and the author statement serve to highlight the different ways that ethics are highlighted in each fiction. The paper concludes by considering both the strengths and weaknesses of design fiction as a means of facilitating debate about ethical issues in computing.

Background: Ethics

Different traditions define and constitute the purview and function of ethics in varying manners. This section reviews three dominant approaches to normative ethics, i.e., determining what people should do.

First, according to virtue ethics, one determines what one should do by following certain precepts, or virtues. These virtues are less rules per se but more particular aspects of one's character. These aspects are revealed in response to certain situations, especially challenging moments. For instance, Aristotle [2] describes courage as a virtue that one might demonstrate in response to fear-inducing situations. One who lacks the virtue of courage would, in the face of fear, instead demonstrate the vice of cowardice. Alternately, one who exhibits excessive or unwarranted confidence exhibits the vice of rashness or recklessness.

Second, according to duty ethics, one determines what one should do by fulfilling one's duties. In some approaches [e.g., 42,43], specific duties constrain and guide our actions. Examples include duty to others (e.g., treating people as equals) or duty to self (e.g., caring for one's body by avoiding gluttony or excessive

drinking). Other approaches formulate all ethical decisions in terms of a single duty. For instance, Kant's categorical imperative [25] suggests that human life should not be treated as a means to an end. Stealing would be ethically wrong, as it uses someone else's work as a means to benefit one's self. Similarly, suicide would be ethically wrong, as it would essentially treat one's own life as a means to alleviate one's own suffering. In yet another take, duties emerge because of one person's obligation to fulfill the rights of others. For example, Locke [30] argued that all humans have the rights of life, health, liberty, and possessions. Thus, people have a correlative duty to uphold and not harm anyone else's life, health, etc. The influence of this line of thinking can be seen in the American "life, liberty, and the pursuit of happiness" or in the French "liberté, égalité, fraternité."

Third, according to consequentialist ethics, one determines what one should do by weighing the consequences of one's actions. To take an example from above, gluttony could be seen as resulting in negative consequences both to one's self (e.g., becoming overweight and developing various medical conditions) and to others (e.g., the family and friends who end up needing to care for the gluttonous eater). This consequentialist approach can be applied in different ways. In some approaches, one considers the consequences of individual actions [7], tallying both the positive and negative outcomes of any given choice. For example, watching television might be less desirable than volunteering for charity because of the sum positive benefits of the latter. Other approaches [32] focus not on individual actions but on the consequences of broader moral rules. For instance, a rule prohibiting stealing could be seen as ethical because it produces the most favorable outcomes for the greatest number of people, as opposed to allowing stealing which would provide benefit to the powerful few who could steal without fear

of retribution. In many ways, this line of thinking resembles utilitarianism, which seeks to provide the most good for the greatest number of people and the least detriment to the fewest number of people.

This review is far from exhaustive. Other perspectives bring different intellectual traditions to bear. Speculative fabulation [23] applies concepts from feminist thought [24] to explore, among other things, the ethics embedded in the stories, the fables, that people tell each other. A postmodernist approach avoids codification of ethical codes in favor of relying on a fundamental human moral impulse that, it is argued, serves as the foundation for all sociality. Afrofuturism [33,54] as a literary and artistic movement suggest that ethics of technology should consider, among other things, socio-cultural dimensions. Thoroughly covering every existing approach to ethics far exceeds the scope of this paper. Instead, this section seeks to establish what we mean by ethics and, moreover, what counts as an ethical issue. This groundwork helps demonstrate how the short fiction pieces below highlight ethical issues.

Context and Writing Process

The short fiction pieces below were all written by students in a course on the social and ethical dimensions of computing. The class dealt with a number of topics and issues, from persuasive technology [8,20,44], to social media use and non-use [5,22,41], to privacy and surveillance [34,36,47], to algorithmic bias and discrimination [1,4,50]. A full syllabus for the course is available at <http://ericbaumer.com/wp-content/uploads/2012/10/CSE252Spring2017Syllabus.pdf>.

During the final week of class, students were assigned a reading on design fiction [9] as well as a related piece of fiction [49]. During class, students were then asked to form small groups and write a piece in the genre of

□

From the Product Description: Know yourself is an app that uses all data available on a user (Google, Facebook, Amazon, iMessages, etc) along with groundbreaking machine learning algorithms to compile an incredibly comprehensive personality report. These reports can be used to find friends with similar personalities, discover your dream job, pick out the perfect vacation spot, and so much more!

design fiction. The ostensible goal for the assignment was to suggest something about the nature of the relationship between technology and society. Although the course focused on ethical issues, students were not explicitly asked to write about ethics. However, every one of the pieces that students wrote raised ethical issues.

Students were asked to write approximately 100 to 200 words, but many students wrote more. Students were also informed that this assignment was inspired by the GROUP Design Fiction track and given a link to the call for submissions. During the final several minutes of class, some of the pieces were read aloud by the students who wrote them and discussed by other students.

Curated Collection

After reviewing all twelve short fictions, the first author invited eight for inclusion here. These were chosen on the basis of which most effectively used the format to highlight ethical tensions. Of these eight, five had at least one contributor who was willing to write an author statement. All students who contributed to the short fictions included here are listed as authors on this paper.

User Reviews of "Know Yourself"

See sidebar for product description.

User Review 1 ★★☆☆☆: I guess this app is okay. I used it when I was trying to switch majors in college. It gave me some advice, but most of what it told me I already knew. It's nice to have the option of using this app tho.

User Review 2 ★☆☆☆☆: Would give 0 if I could. This app doesn't tell me shit! It makes assumptions about my personality and interests without knowing who I truly am. Like it says I could be a doctor, but doesn't take into account I can't afford med school! Sad! It's

presumptuous and discriminatory. Would not recommend.

User Review 3 ★★★★★: I was a senior in high school with no idea what I was going to do in college but my school made us all use this app and it told me to be an engineer and I've never looked back. It even matched me with people that I would get along with so I didn't have to worry about making friends in college, we just found each other on Facebook, created a GroupMe before we got to campus, and didn't talk to anyone else. Know Yourself has my whole life figured out!

User Review 4 ★★☆☆☆: A company I was applying to made me share my 'know yourself' results. My personality apparently didn't line up with what they were looking for so they canceled my interview :(

AUTHOR STATEMENT

Reviews from the app 'Know Yourself' highlight some of the dangers and benefits of a future in which massive amounts of personal data from various sources can be aggregated and analyzed to paint a detailed picture of a person. While some people may seek out this information to learn more about themselves and are happy with the results, others feel the data doesn't portray them fairly. This misportrayal raises larger ethical issues when seeing the powerful influence the data has over certain situations, such as companies making hiring decisions.

We decided to present this information in reviews of an app because it is a concise, relatable way to display differing views of the technology. Reviews range from a user hating the app to a user loving the app, including viewpoints where users were on the fence. This format makes it unnecessary to write blocks of text when a short statement, like from User review 4, is enough to showcase the user's poor experience. App reviews allows the reader to put themselves in the place of a po-

tential downloader of “Know Yourself”. Which reviewer would you side with? Would you download the app after reading? These questions provoke readers to think about data sharing and privacy, without explicitly saying so.

CURATOR’S NOTE

This piece clearly draws inspiration from work on inferring individual traits from social media data [55]. Through the different reviews, it asks in what ways someone might actually make use of such technologies. These differing uses lead to a whole variety of issues: privacy [34,36], accuracy, accountability/transparency [4], socioeconomic status [1,50], filter bubbles [38], etc.

This piece emphasizes a consequentialist approach. Each review gestures toward different set of potential consequences from the Know Yourself system. Each of these consequences highlights different potential benefits or detriments to different individuals or groups. In line with consequentialist reasoning, the reader is implicitly asked to weigh each of these benefits and detriments in assessing Know Yourself.

Part of the piece’s strength comes from leveraging the review format. Aside from humorously invoking the common trend of every product receiving both lauding and damning reviews, it provides a unique format to deploy ideas of multiplicity and plurality in interpretations of technology [3,40,46]. Furthermore, the reader brings yet another perspective. Review 3 writes glowing praise for Know Yourself while seemingly unaware of the constraints the system may place on social interaction. Juxtaposition against the other reviews allows the reader to identify Reviewer 3 as the classic unreliable narrator [13]. It is also likely quite intentional that Review 3 is an engineer.

Radio Advertisement for Medi-Check

Don’t go another day without getting your individualized Medi-Check. A new, revolutionary medical technology designed to monitor your health at all times. Medi-Check is painlessly injected into your neck by professionally trained staff members at your local office. Immediately after the procedure you will reap a wealth of benefits from this advanced technology.

Medi-Check will automatically monitor your blood sugar, cholesterol, blood pressure, heart rate, iron and vitamin levels and report to you via free downloadable application. If measurements become problematic, your primary care physician will be contacted and informed of the issue. The days of waiting forever in the doctor’s office are over.

But that’s not all! Hypersensitive isolated nerve trackers can detect localized physical injuries such as broken bones, lacerations, burns and sprains. Medi-Check will immediately contact emergency medical professionals based on the severity of the injury.

Parents, never worry if your children are safe again. With the parental control app, constantly monitor your child’s health and activities. Automated drug and blood alcohol content measurements will ensure your kids stay safe and out of trouble. Physical fitness monitoring that outstrips any other product makes sure your child stays active and healthy.

Most importantly, in dire medical circumstances your Medi-Check can administer emergency automatic defibrillation that could save your life.

Don’t wait until it’s too late, get your Medi-Check today!

```

//#1 Last Updated 2017-05-02
15:33:27 UTC-5

/get/weather?location=place
Retrieves weather forecast at place.

/post/weather?location=place&
pdate_key=key&update_value=valu
e
Provides user-submitted update of
weather forecast at place.

/get/traffic?location=place
Retrieves state of transportation at
or near current place.

/post/traffic?location=place&
pdate_key=key&update_value=valu
e
Provides user-submitted update of
traffic at place.

/get/info?person=name
Retrieve current status of an entity
person.

/post/info?person=name&update_
key=key&update_value=value
Update current status of an entity
person with attribute update_key
and new value.

/get/history?person=name
Retrieve historical records of an en-
tity person.

/post/history?person=name&upda
te_key=key&update_value=value
Update historical records of an enti-
ty person for a given time/date and
the event that occurred.

Sample Request:
curl
https://skynet.google.com/post
/info?person=epsb&update_key=w
ater_bottle_level&update_value
=100%

Response:
{
  status: 200
}
© 2017 Alphabet. Inc.

```

AUTHOR STATEMENT

The idea of the Medi-Check came when thinking about the invasion of privacy of a person's current state of health. We wanted to question what is too much when considering keeping current on a person's health. It is like an extreme version of a Fitbit which also monitors different aspects of a user's health.

CURATOR'S NOTE

The Medi-Check advertisement employs what might be called a slippery-slope style argument. Essentially, it progressively adds layer upon layer of ethically dubious functionality. Monitoring glucose levels, cholesterol, blood pressure, and heart rate all seem fairly innocuous. However, automated drug and alcohol testing becomes reminiscent of the Quantified Toilets critical making intervention during the CHI 2014 conference [<http://quantifiedtoilets.com/>]. Similarly, the physical interventions Medi-Check purports to be able to make would make it similar to Fit4Life [44]. The advertisement asserts that these invasive functionalities are actually in the user's best interest and may even save her or his life.

These arguments belie a combination of consequentialist and duty ethics. Clearly, Medi-Check should be interpreted in terms of its consequences. Functionally, it purports to improve health through self-monitoring. Societally, it normalizes surveillance [21]. However, Medi-Check also makes appeals to the various responsibilities or duties that one has: to care for one's own body, to report on one's health to one's doctor, to monitor the health of one's children. The advertisement implicitly asks readers to consider the extent to which a device such as Medi-Check would actually help fulfill these duties, and, moreover, whether they would use such a technology.

Part of what becomes compelling, then, is where and how the line is drawn. At what point does Medi-Check

start to become ethically questionable, either in terms of fulfilling duties or in terms of its consequences? At what point does it become ethically objectionable? Both where and how the reader draws these lines helps reveal the reader's own ethical decision making processes around (health) technology.

SkyNet API

SkyNet is an online service available to all users of the Internet, providing a simple, programmable interface for many aspects of daily life. Because of the open nature of SkyNet, there is no need for authentication tokens or other security mechanisms. Anyone can make an HTTP request to any of the following endpoints. These requests make use of SkyNet's vast amounts of resources and technologies to organize, request, and provide information about various aspects of the current state of life, along with the past and future. See sidebar for a few examples.

AUTHOR STATEMENT

We came across this idea when thinking about the current state of technology. With products like the Amazon Echo and Google Home, we can check the weather, schedule appointments, and buy groceries, all without lifting a finger. Our vision of the future was a world where machines like the Echo and Home did all of the mundane tasks in our lives, but also had the power to go even further and alter time and space. Rather than just receiving information, our SkyNet API allows users to update information on anything, whether that is the current state of traffic or the current level of water in your glass. The idea can then be extended further to changing people's personalities or family history to give a level of customizability that only SkyNet could provide. We presented the idea in the form of an API document to emphasize the ease and flexibility with which people can achieve such tasks in the future.

In addition, there is the added benefit of needing no security in the API because anyone can adjust anything about it. Any potential security issues can be fixed by a friendly developer or user of the API. However, this is flawed thinking, and a satirical comment on how some real-world developers may treat computer security without proper knowledge of the subject. Ultimately, we want readers to consider the potential reach of technology (particularly “Internet of Things” devices) and how security is an important consideration when developing these devices. An API like ours demonstrates the importance of privacy and security in technology and how necessary they are in our interconnected society.

CURATOR’S NOTE

Much in the SkyNet API is reminiscent of Wikipedia. For example, the anyone-can-edit model similarly carries the concomitant notion that errors or vandalism could be easily corrected/reverted by others, e.g., through the `/post/history` endpoint. The fact that people are indexed by name suggests that this piece may be written in a distant future, or perhaps an alternate reality, where a person’s name is unique enough to serve as a database key.

These points suggests a virtue-oriented take on ethics. In the potentially threatening situation of cyber attacks, SkyNet responds with the virtue of openness; “there is no need for authentication tokens or other security mechanisms.” This framing implicitly suggests security as the complementary vice to openness. In doing so, it echoes a recurring theme in both popular media and scholarly research intimating a future without privacy [19,27,45,52].

EULA for Kohai Meets Senpai (Companionship Site)
Please read this End-User License Agreement carefully before clicking the “I agree” button and using this companionship site.

By clicking “I Agree” button, you are agreeing to be bound by the terms and conditions of this Agreement. The agreement is between you, the user, and Kohai Meets Senpai, Inc. (referred to as KMS from this point forward).

If you do not agree to the terms of this Agreement, do not click on the “I Agree” button and miss out on a chance to find happiness in this world.

Other than that, feel free to find your senpai!

Warning!! If you join this companionship site, you will find that you may not be able to handle the multitude of attention that will be coming your way. We are not liable for the amounts of dates you will be asked out on or for the many new people you will meet.

Licensing: The companionship site grants you a revocable, limited license to join and use solely for your personal, non-commercial purposes strictly in accordance with the terms of this Agreement. Redistribution of profiles is forbidden and will result with the immediate termination of said profile along with a \$500.00 fine to both distributor and the person receiving, as well as the deed to your house. This, in turn, includes everything you own.

Warranties: This internet companionship site is set to update every day. New pictures, profiles, and statuses are made constantly. So, in order to allow this, you must have the latest version of Javascript. 4rend LLC is not responsible for any damages to your accessing device. This includes but is not limited to water damage to device, full on 40-episode battles, kamehameha waves, and/or complete destruction.

Liability: KMS is not responsible for any feelings of fever, severe cold, sudden hotness, sudden nausea, sud-

□ I am writing this letter to notify the entire organization of Iota Eta Pi that they are currently under investigation. As of the beginning of the year, Wossamotta University has been granted privileges to monitor and collect all GroupMe messages sent and received while using WoU Wifi. All messages have been sorted and analyzed greatly. After much deliberation, it was evident that I Eta Pi has been involved in many activities that go against our code of conduct. The University will take all necessary and reasonable steps to stop the alleged conduct and provide support to the complainant, the respondents, and as necessary, to other members of the University community. The data we have uncovered is extremely disappointing, and we will be taking all consequences very seriously. Investigations will be conducted and all members involved in the disorderly messages will be punished accordingly. Furthermore, any signs of illegal activity found within the messages will also be sent to the authorities for further investigation.

den coldness, and inability to log out of the virtual environment.

Laws: The biggest law that users must be aware of is having any “companionship” with a minor and vice versa. In different states, these laws vary greatly, users are responsible for doing research in their own local area on this aspect. 4rend LLC is not responsible for any arrest in regards to using the service.

AUTHOR STATEMENT

EULA for Kohai Meets Senpai highlights ethical issues in user agreements. Because people rarely read EULAs, they can end up agreeing to many unreasonable statements. Although you usually still own content you post to sites such as Facebook, you also grant them a license to use that content in almost any way they want. In turn, because they did not read the EULA, users do not really know what they agreed to.

CURATOR’S NOTE

This piece relies heavily on virtue ethics. The company 4rend LLC exhibits several Aristotelian [2] vices in this EULA. A combination of malice and greed is shown by the company’s willingness not only to fine its users but also to seize “the deed to your house, [which], in turn, includes everything you own.” This EULA could also be said to exhibit cowardice in its disownment of responsibility for a multitude of different effects that may result from use of Kohai Meets Senpai. Despite this emphasis on virtue, the piece also asks the reader to consider a duty ethics perspective. What duty or responsibility *should* such a company have to its users?

Clearly, this piece relies heavily on parody and exaggeration. However, these exaggerations and parodies are effective primarily because they are grounded in and inspired by actual corporations and business practices. The relationship between Kohai Meets Senpai and 4rend LLC feels reminiscent of the relationship between

Google and its parent corporation Alphabet, Inc. The suggestion that using a companionship site could result in physical symptoms from fever to nausea seems surprising, until it is suggested that the site uses, or perhaps takes place in, a virtual environment.

Most notably, the notion that a user who redistributes profiles from the site agrees to give up “the deed to your house [and] everything you own” seems absurd. However, prior work has found that people willingly agree to sign up for social media websites even when the user agreement includes, for instance, giving up one’s first born child as payment to use the site [35]. The point is not that people actually agree to these terms, the point is that they do not read them. This is perhaps unsurprising, given that the volume of text in the privacy policies to which most people agree in a year far exceeds the amount of time most people have available to spend reading such policies [31]. This piece implicitly asks which of the above clauses are most ridiculous (e.g., those dealing with “kamehameha waves”) and which might actually find their way into real EULAs.

Letter of Disorderly Conduct

Iota Eta Pi, 123 Greek Rd., Anytown, XY 99999

To the members of Iota Eta Pi: (see sidebar for text)

Sincerely,

Office of the Code of Conduct, Wossamotta University,
1 Admin Way, Anytown, XY 99999

AUTHOR STATEMENT

Our intent with this piece was to address the ownership of information privacy. Students across the world use wireless devices to interact with one another and the world around them, and most students believe that communication through their own devices is private. As

social media sites have done with their services, it is possible for a university to offer wifi under a policy that entitles them to access users' information. Because so much information flows through wireless devices on a college campus, the conduct letter is intentionally vague to leave the student wondering about their possible violations. It is a scary thought that your university could be monitoring all of your online activity on campus, but it is entirely possible. In April, 2015, the Alpha Delta Pi Sorority at George Washington University was placed on disciplinary probation after a chapter member posted inappropriate material about their philanthropy on social media [37]. This showed that a university can and sometimes will punish students for their conduct online. Conduct letters like this one are a common occurrence on many college campuses with greek life. A story like this could instill great fear in university students' minds since it is both feasible and re-latable.

CURATOR'S NOTE

This piece's greatest strength comes from its vagueness. As the author statement notes, quality derives from actual letters that Greek organizations have received. In actual conduct sanction letters, the motivation for such vagueness is unclear. In the piece here, that vagueness becomes a source of ambiguity [12], leaving the reading to surmise exactly what sort of activities the administration observed that ran contrary to the institution's code of conduct.

That vagueness also extends to the ethics of the situation depicted here. The letter most directly raises questions about the ethics of surveillance. On the one hand, if members of Iota Eta Pi were in fact engaging in objectionable behavior, it seems important and perhaps even valuable that Wossamotta U identified and sanctioned these behaviors. Indeed, many universities have policies about what constitutes acceptable use of their

networking and internet resources. On the other hand, these policies often deal with bandwidth usage or illegal activities, with file sharing services being a prime example of both. Less often do these policies deal with the content of such communication. One could consider the question being raised in terms of a consequentialist means-end analysis [25]. That is, the piece implicitly asks the reader whether the goal of detecting and sanctioning conduct violations justifies the surveillance of individual students' communications with one another? Again, the intentional vagueness and ambiguity here – of the nature of Wossamotta U's policy, of Iota Eta Pi's conduct, of the mechanisms by which surveillance is conducted – make it even more difficult for the reader to determine what s/he would do in such a situation.

Concluding Remarks

Each of the above short fictions uses different strategies to highlight ethical issues. The curator's note intentionally avoids assessing the strengths or weaknesses of each piece, instead emphasizing the different kinds of ethical issues raised by each. Although they might not address the question individually, these pieces collectively point out some of the unique challenges particular to the ethics of computing.

First, one of the main difficulties comes from the displacement or translation of agency [28]. Many of the approaches to ethics described above assume that individuals are taking actions, based either on their duties or obligations [25,30,42,43], on the expected consequences [7,32], or on the individual's underlying virtues and vices [2]. When an action is performed by, say, Medi-Check, it is less clear that duty, consequences, or virtues are as relevant. The situation becomes even murkier with technologies such as Know Yourself or the SkyNet API. When technologies are created by one person or persons, then used by others (possibly in an unintended manner), whom do we interrogate?

Second, fairly blurry boundaries divide questions of ethics from those of politics and power [53]. In Letter of Disorderly Conduct, the issues have less to do with the specific implementation details of any one technology and more to do with the use of technology as an exercise of authority [21]. Similar questions are raised by the satirical EULA, both with respect to reasonable or expected consequences that might arise from making use of some technology and with respect to the designers' or implementers' ability to abdicate responsibility for those consequences.

Third, this paper offers design fiction as a means of engaging students in technically-oriented courses. The pieces presented here demonstrate students' ability to use this genre in novel and compelling ways. While this paper emphasizes ethical issues, the approach may be viable for highlighting other types of sociotechnical issues.

To be sure, there is a certain power to the presence of an actual artifact and to stories of what actual people actually did with it [51]. Design fiction provides just one of many potential formats for raising and debating ethical issues in computing. Each of these different formats has their own strengths and weaknesses in terms of working through the consequences of different kinds of underlying commitments and values [3,18]. While physical artifacts can leverage rich implementation details to afford multiple interpretations [46], they also require advanced design skill. Design fiction, then, may prove more accessible means for students, who may not yet have completed their technical training or have significant implementation experience, to consider how we think about and work through the ethics of computing.

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