

The Magician's Assistant

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Abstract. This is a science fiction story that describes a world in the not-too-distant future in which context aware technologies, ubiquitous computing, and persuasive technologies are virtually everywhere. This world is navigated by a character of the utmost average credentials who, because he has lived in this technology-saturated world his whole life, does not really notice how much he relies on it. Throughout his day he and his colleagues rely on digital personal assistants who have over time learned more or less every intricacy of their user's behavior. These digital assistants manage their user's work and social life to maximum efficiency and have become absolutely necessary in everything they do, which raises the question—what happens when they are absent?

Keywords. Ubiquitous computing, context-aware computing, natural language processing, persuasive computing, human-computer interaction

Introduction

The objective of the science fiction prototype “The Magician's Assistant” is to bring to life a future filled with context aware technology. Context awareness, in the area of computer science, is the concept of having computers sense the environment that they are in by using various sensors and react accordingly to provide the most apt support for the user [9]. While initially context awareness was conceptualized largely in terms of geographic location, such as by using GPS data, with recent expansions in the abilities of technology, it has moved towards more sophisticated context sensing capabilities. Using embedded microphones, video records, accelerometers, as well as other sensors, there is an increased ability to create a technological understanding of human behavior. With the strategic use of sensors we can determine whether or not people can be interrupted or not [5], create real-time estimates of bus arrival times [12], and help multiple users determine what to watch on television given their individual preferences [8]. The technology demonstrated in this science fiction prototype goes beyond the borders of context aware computing and into ubiquitous computing in general with examples of natural language processing systems and smart homes and offices. This was done in order to give a full picture of how life might be lived in the near future. In this science fiction prototype, contextually aware technology is the norm and it is not even marveled upon or even

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noticed by the users. It is truly ubiquitous, with the technology fading into the background [10].

It is important to note that this story is meant to be somewhat satirical for the purpose of being thought provoking. The question postulated by this prototype is what exactly is the result of living in such a technology-integrated world? Can this have a profound impact on how people socialize and communicate? While there are many benefits to all context aware technology, it is also important to pay attention to what it might take away, and to maintain the appropriate relationship between technology and “real life”.

The story focuses on a young man who lives in a world where his behavior is closely monitored and guided by technology. The context aware technologies monitoring him and helping him navigate his day-to-day chores are manifested in a digital personal assistant he calls “Becca” — an all-knowing digital entity who advises him on how to proceed. He is so close with this technology that he unwittingly develops a dependent relationship with her — or it. The relationship he has with it is not unlike that which one would have with a friend or loved one. He then loses his technological companion and is left to navigate a world that is new to him. An eye-opening adventure ensues leaving him a changed person, himself now more aware of his own context.

1. Discussion

This science fiction prototype examines life in a not-so-distant future to investigate people’s relationship with technology. The technology highlighted in the story touches upon a number of different fields of research, but largely revolves around the emerging work being done in context-aware computing, pervasive technology, and ubiquitous computing. As a researcher in human-computer interaction, I am interested in how technology will influence our behavior in the future. Examined in this piece is the idea of how context aware technology could make us extremely less self-aware of our own context.

The “Magician’s Assistant” takes place somewhere between 10-20 years from now in a nondescript city in the United States. The protagonist is a young professional whose exact job is also not revealed, but is typical to that of any profession whose work process revolves around sitting at a desk, making phone calls, and working on the computer. The technology he encounters is incredibly complicated and being developed today, but he uses it without knowledge of the complexity or history behind it.

The technologies demonstrated in the story are inspired by a wide variety of research papers that I have read on the topic of context aware technologies. In addition to already published work in this domain, there is also a significant influence by the ongoing work of my colleagues at Carnegie Mellon University, much of which is in progress and will yield publications in the coming years. The research and patents that have led to the concepts demonstrated in this story can be found in the references section.

I am a research associate in the Human-Computer Interaction Institute at Carnegie Mellon. My personal research interest is in persuasive technology, mental health HCI,

and ubiquitous computing. Currently I am working with Dr. Anind Dey on bringing new technologies to the public health domain as well deploying it to help in the treatment of autism.

2. The Magician's Assistant

2.1. Part One

On April 22, at 7:23AM, Vernon Lee woke from a pleasant dream—though he would never know it. That is because at 7:23, at the optimum point in Vernon's estimated REM cycle for him to wake, his dream was lost when he heard one of his all-time favorite songs blast from his alarm clock. Alarm clock would really be underselling it, though—more of a mattress-sensor integrated, smartphone-synced, Mp3 enabled supercomputer. He would not mourn the loss of this dream, as he did not know it had ever occurred. Besides, he was too busy being told that the weather was a fair 65°F with a slight chance of showers in the evening. He was also told that he ought to wear a light sweater over his usual workwear, and pack an umbrella in case things did indeed become turbulent in the evening. The voice telling him these things was lithe and liling with a lovely Australian accent. He imagined the possessor of such a voice to be a pretty, petite, blond-headed woman whose name was something like Becca—something that sounded particularly charming with an Australian pronunciation. Alas, Vernon is not a rich man yet and he cannot afford a personal assistant of such endearing qualities. In fact, he cannot afford a personal assistant of any qualities. The voice emitted from, of all things, his cellular phone, via an app that he purchased for an outlandish \$1.65. Damned inflation—as Vernon said.

This app was a companion that organized his digital life with his physical one. It synced his e-mail, his calendar, his work schedule and social life, and Vernon in general. Becca accompanied Vernon through anything with a microchip. She manifested herself on his mobile phone, tablet, work computer, and television. She could operate elevators, order takeout, and remind him at the optimum time to complete errands he himself had long forgotten about. And with this \$1.65 purchase he could choose from a number of voices to accompany him throughout his day: Americans Gus or Cindy, English Thomas or Carey, Irish David or Lily, or Australian Bruce and Rebecca. If he got the full edition, he could get access to over 350 different voices, including those of his favorite celebrities, as well as some other bonus features—but that was a bogus, what-is-the-world-coming-to \$3.15. So he went with Becca, because she sounded nice and he could understand her when she told him what to do.

Once Vernon sat up in bed, he grabbed his phone and Becca immediately presented him with his e-mail, followed quickly by his calendar—it was his brother’s birthday. Then she presented the news. “News” is perhaps too strong a word, because Becca didn’t really tell him everything that was going on in the world. Instead, she provided items of gossip, a recap of his favorite sport teams, Twitter updates, and amusing pictures of sea otters (he had always loved sea otters)[7]. There was none of the gruesome stuff about foreign conflicts, the coming elections, or local crime reports, as he had opted to obscure such information ages ago.

Under Becca’s direction, the shower turned on and tuned itself to the ideal temperature given Vernon’s preference and the current temperature of the apartment. Vernon rose, lumbered into the bathroom, and obliged the shower until it determined that he was done. He dried off, brushed his hair and teeth, and was dressed in 7 minutes and 23 seconds, which though he did not know was 6.23 seconds faster than his average. Becca was nothing if not efficient[2,3,4].

With a few moments to spare before he had to leave for work, Vernon decided to turn on his television. Based on the number of likes he’d given to the morning’s sea otter photos, Becca anticipated his mood and the channel was already set to a live feed of the most adorable otters Vernon had ever seen. Hardly five minutes had gone by before Becca commanded him to head out the door to catch the bus at the corner of Elwood and Locust. As he neared the corner, the bus pulled up, squeakily opened its dingy doors, and admitted one Mr. Vernon Lee. Vernon thought to himself, “That’s lucky!” as though he had not caught this bus at precisely the same moment for the past 182 consecutive work days—ever since he had downloaded Becca. Vernon did not know that Becca knew the exact location, acceleration, and orientation of the bus thanks to crowd-sourced GPS traces of the phones of individuals already on bus matched with real-time traffic conditions and predicted traffic light patterns for this time of day. No matter. He hopped aboard. A monitor with a bus driver avatar welcomed him warmly and, whilst he yawned, asked for his fare. Vernon waved his phone at the general vicinity of the monitor and sat down.

Vernon dozed off as Becca provided soothing music through his headphones, until he was awakened some time later by her sharp announcement of, “Pardon me, but your stop is approaching.” Vernon was more annoyed by the intrusion than he was thankful for the advice; nonetheless, he readied his things for departure. While this particular bus was still equipped with an “antiquated” call chord—a yellow line that when pulled would allegedly request for the driver to stop the bus—Vernon had no need for it. Already Becca had communicated directly to the bus itself via a bluetooth network and covertly informed the driver that this passenger was ready to go. Stumbling out of the doors he noticed his friends Stan and Rachel, who had been on the bus since Lake St., but had been so absorbed by a movie and an e-book respectively that they had not noticed him.

“Did you hear about the fire on Locust?” Rachel asked him, holding up her phone. She had the same app as Vernon, only she had gone with English Thomas.

“Yes, of course!” Vernon lied. Sometimes he regretted changing his preferences to exclude local news. “Terrible, terrible.”

“Well, luckily, it didn’t get The Watering Hole,” Stan interjected. “We were going to grab a bite there tonight; you in?”

“That sounds great!” Vernon replied. “Does 7 work for you guys?”

Rachel and Stan nodded, and then all three of them raised their phones—which, by the way, had been parsing the entire conversation and had already generated a calendar event reading “7 p.m., The Watering Hole”—and each pressed the confirm button, which added the event their respective itineraries while simultaneously optimizing their impacted plans and task requirements accordingly. Easy.

Vernon entered his cubicle at 8:23AM, logged into his computer and looked up to wave to his boss, Mr. Billingsley, as he headed to his office.

“Vernon!” the boss said cheerfully. “The early bird gets the worm, eh?”

“Yes, sir!” Vernon said in a manner that may have come dangerously close to revealing the sarcasm he was trying to conceal. Vernon had arrived at his desk at 8:23 every day for the past six months, which made him a real “go-getter” in the eyes of Mr. Billingsley, whose smartphone—Maria—helped him arrive at the office at 8:25AM. Since he did not realize that Vernon spent these early extra minutes browsing the internet and texting his friends, Mr. Billingsley saw something of his younger self in his employee, though, of course, Mr. Billingsley’s younger self had used an actual digital alarm clock to help him get to work in time to impress the higher-ups.

The morning heaved on and Vernon did his usual mix of writing e-mails, making phone calls, and looking at spreadsheets with lots of numbers on them. Vernon was not particularly good at his job, but not terrible either. The higher-ups liked him—he always knew the latest scores (thanks to Becca) and he was an excellent conversationalist, so long as the topic wasn’t about work.

Vernon listened to music as he worked. At 10:23, the music abruptly halted when Becca reminded him to depart for the meeting regarding client contracts in conference room 3C. Vernon logged out of his computer and entered a waiting elevator, which identified his presence and promptly headed for the third floor. At 10:29 he took a seat in the dimmest corner and pulled out his tablet computer that Becca preemptively opened to the notes application. This time- (and thought-) saving application would autonomously transpose an ongoing discussion into bullet point summaries, adding tags and annotating as it went[6]. With Mr. Billingsley directly to his right, Vernon did his best to look attentive through the hour-long meeting.

After the meeting, Vernon left the office to grab lunch from a nearby cafe. Becca scanned the menu and, based on her knowledge of Vernon’s culinary preferences as well as his daily caloric intake and estimated physical activity for the rest of the afternoon, recommended he try the pesto aioli chicken wrap[11]. His appetite satiated, he returned to the office and continued to work somewhat diligently. His only respite came at 4:32 in the afternoon, when Becca suggested he call his brother Larry, a lawyer in Albuquerque, to wish him a happy birthday. Larry picked up on the second ring—he was coincidentally available, as he had an unscheduled ten minutes between meetings. Well, Vernon and Larry thought it was coincidence, but in actuality Vernon’s Becca had talked to Larry’s Gus to determine the optimal time for a phone call, taking into account the brothers’ schedules, the two-hour time difference, and an analysis of their keyboard/mouse activity

and auditory environment[5]. Regardless, Vernon and Larry laughed at this happenstance, reminisced about Larry infamous 12th birthday party, and made plans to make plans to visit their mother sometime next month.

Not long after his call ended, Becca told Vernon it was time to go home, and under her direction, he arrived at his bus stop punctually. At home he relaxed, playing a video game with an old schoolmate who happened to be online and who had, like Vernon, recently purchased *Street Fighter VIII*. Vernon was only one match down, when Becca apologetically interrupted to remind him of his plans with Stan and Rachel. Vernon quickly disengaged himself from the gaming console and charged out the door to catch the inbound bus. A swipe of his phone and ten minutes later, Vernon hopped out to find himself on Locust Street staring at a street performer doing magic in front of a small crowd. He was half-tempted to stay and see what was going to become of the magician's bright red scarf when Becca buzzed, telling him to head south two blocks and cross the street to arrive at The Watering Hole, 22 Locust Street—estimated time of arrival 7:01PM.

He crossed the street and climbed up a short set of brick stairs to reach the front door of The Watering Hole. Vernon had been to this establishment several times before, but hadn't remembered it being so dark. Squinting, he scanned the heads of the people in the bar, looking for Stan or Rachel. Stan's hand popped up to show Vernon where they were sitting—in a booth in the back, under a television showing a national bass fishing tournament. As the group sat down, the television above gathered channel and program preferences from their mobile phones and, given the options currently on air as well as the other bar patrons within eyeshot of the screen, changed abruptly to what it determined was the most agreeable programming[8].

"Oh, hooray!" Rachel said as the image onscreen flickered to an ornately attired couple on skates, dramatically circling an ice rink. "I *love* ice dancing!"

"I love it, too!" Stan exclaimed. He blushed in response to the quizzical look Vernon gave him. "I watch it during the Olympics, of course...and other times, too."

Vernon just laughed. He had no particularly strong feelings about ice dancing, but was pleased to see headlines with relevance to him scroll along the bottom of the screen—such as news on the recent protests of a prominent group of sea otter rights activists, and the most up-to-date blernsball scores.

The friends talked about their workdays, and their various intersecting interests in pop culture. Stan and Rachel had both seen the highly anticipated remake of *Avatar* the previous weekend, and were eager to share their impressions with Vernon.

"The effects were *okay*," Stan said, sipping the beer that his phone, Tina, had recommended. "The holograms were totally cheesy, though."

"I know!" Rachel agreed. "And the acting was just terrible."

"I thought the one guy was okay—what's his name?—the one who played the Sixteenth Doctor," Stan said.

Rachel laughed. "There's no way that's the same actor! He was awful! And the Sixteenth Doctor was the best Doctor of all time!"

The conversation was interrupted by a small beep from Becca, who had pulled up the relevant page on a film website, confirming that the actors were one in the same. The

debate between Vernon, Stan, and Rachel thus shifted seamlessly into whether or not this actor was, as Rachel claimed, the best Doctor of all time. Vernon took Rachel's side, but Stan preferred the classic series—his favorite Doctor was Twelve. They ordered another round. Becca kept track of Vernon's tab, eliminating the need for checks or receipts or for the three tipsy friends to maneuver a splitting of the bill, and after a certain pre-programmed dollar amount had been spent, she encouraged Vernon to go home. For once, Vernon ignored her. He was having a good time.

2.1. Part Two

On April 23, at 7:23AM, Vernon Lee was driving a convertible in a desert somewhere. Next to him was his brother Larry, and in the back seat was Trish, a girl who worked at the front desk in Vernon's office, and either Cleopatra or Wonder Woman. It was a dream, and a pretty good one at that. They had been fishing and now they were going to see a movie an old drive-in movie theater. They never got to movie, however, as at 8:12 Vernon was woken by the sound of his neighbor dragging in the garbage cans from the street. Given Vernon's sudden wake from a heavy sleep, aided by the number of drinks he had consumed on the previous night, this seemed like the loudest thing he had ever heard. He was so confused by this noise that for a brief moment he worried that the air force had designated his living room as a place to test their latest jet engines. Such was not the case. The case was that Vernon Lee was late for work.

"Damn it, Becca!" Vernon muttered, though it sounded like shouting in his head. It was the first time he had ever said the name out loud. "What happened?"

Vernon sprang out of bed and bounced around his bedroom, searching for his mobile phone. He checked the pockets of his jeans and his jacket. He checked under his bed. He frantically tore off his blankets. The slim black phone that contained Becca was nowhere to be found. A cold sweat broke over Vernon as he wondered what he would do about work—how he could let them know he would be late. He wondered if Stan or Rachel had grabbed his phone by mistake. The alarm clock beside his bed, at which he hardly ever looked anymore, read 8:18 a.m. He was running out of time.

Vernon headed determinedly into the bathroom to shower. As Vernon looked at the ancient operating controls, they looked to him like a mocking face—the knobs as eyes and a faucet nose. Vernon smiled at this thought before pulling, turning, and yanking at the handles until water was coming out of the showerhead at a temperature he could bare. By the end of his shower, a necessarily quick one almost 2:32 faster than his usual time, he managed to get out with relatively few first-degree burns.

He clothed himself quickly, throwing on a sweater as he had the day before, and threw himself out the door without so much a glance at the television—if he had turned it on, he might have known that the day was an unseasonably warm one, rendering his sweater unnecessary. As Vernon arrived at his bus stop, he was struck with a kind of dumbfounded shock, often depicted best in television or movies when someone suffers whack on the head from a heavy frying pan. The problem, you see, was that Vernon had no idea what bus to take, and the sign at the corner indicated that no less than four buses serviced this stop—the 51C, 75A, 23C, and the 74. Vernon tried to remember which was

the bus for him, but could only come up with a vague assertion that the bus he wanted was blue... Or was it green?

It was seven long, nerve-wracking minutes before a bus finally came in sight—and it was blue! As the bus approached Vernon waved it down and hesitantly climbed aboard. Vernon looked past the avatar on the monitor to get the actual driver's attention.

"Um, excuse me?" Vernon called out, weakly.

The driver turned to him with the utmost surprise.

"Would this possibly be the bus that stops at the Blakewood Office Center?" he asked.

"Yes, of course," said the driver. She seemed confused by Vernon's uncertainty.

"Oh!" Vernon sighed in relief, but his ordeal was not over yet. "And could you tell me how much it costs to get there, exactly?"

"\$3.25," the driver replied.

Vernon thanked her profusely and opened his wallet to procure the decrepit dollar bills that had resided there for who knows how long. As he awkwardly counted out his fare, he remembered how his mother had always insisted on giving him cash, even though Vernon never knew what to do with it. Finally, it had come in handy!

Vernon was shocked by the sounds of his bus ride—not from his fellow passengers, who were all absorbed in their phones, but from the bus itself, and the traffic on the street. He supposed he'd grown inured to the music Becca usually played during his commute, and the pleasant sound of her Australian accent as she reminded him of his daily To Do list. He didn't know when to expect his stop, and so when they arrived, he was in the process of pulling his sweater over his head—the day was much too warm for it.

"Hey, buddy," the bus driver called, glancing suspiciously at Vernon in her rearview mirror. "This is you."

"Thank you!" Vernon cried as he grabbed his briefcase and stumbled out the door.

No one at work made any mention to Vernon of his lateness, but he felt sure they were all as acutely aware of it as he was. His desk was piled with paperwork to complete, but it was hard to concentrate without an unending playlist of his favorite songs streaming through his ears[1]. And without Becca, his sense of time was all off—he was shocked to hear his stomach growl at nearly 2:00 p.m. He had almost missed lunch. Vernon got on the elevator to find Mr. Billingsley already riding it.

"Vernon!" Mr. Billingsley said jovially. "Heard you slept in today."

"I'm so sorry, Mr. Billingsley," Vernon replied. "My phone—"

But Mr. Billingsley just waved a hand in dismissal. "Not to worry, Vernon, a well-deserved rest! Anyway, what did you think about that game last night?"

Vernon was stumped. Having missed Becca's succinct morning news report, he could not even be sure as to which sport Mr. Billingsley referred. He vaguely remembered the blernsball feed that ran along the ice dancing competition on the television at the Watering Hole the night before, but try as he might, he could not remember any of the scores.

"Missed it," Vernon said.

“Oh!” Mr. Billingsley said, sounding surprised. “Well, it was a hell of a game. You ought to watch the highlights when you get the chance!”

Vernon did not know what to say to this. Where does one go to find these highlights? Becca had always just shown them to him first thing in the morning. Now without her, he felt detached from the rest of the world, missing crucial information that everyone else had. He and Mr. Billingsley spent the rest of the elevator ride in silence. Vernon found it strange—he used to be quite the conversationalist. In fact when Vernon was seven years old, his grandfather told him he could “talk a cat out of a tree”—but as he had never had a cat, he interpreted from this that cats were born from and resided inside trees. Vernon spent many of the following weeks and months trying to strike up a conversation with the odd spruce or oak hoping to get a kitten in return. Lost in this reverie, Vernon almost didn't notice that the elevator doors had opened and Mr. Billingsley had rushed out, murmuring a brusque, “Well, see you,” to his awkwardly quiet employee.

Vernon ended up at a pizza place for lunch, the closest food establishment within walking distance of his office. He ordered a pepperoni calzone, not taking into account his cardiovascular health and dietary history, as Becca would have. And lacking Becca's ability to scan all online reviews of Pizza Prima, he had no idea that their pepperoni calzone was easily the least popular item on the menu for good reason. He felt very sad and his stomach was quite uneasy—he hoped Becca was not gone forever. His only hope, he figured, would be to revisit the Watering Hole after work and pray that no one had absconded with his phone. He spent the dismal hours that remained in his workday making calls, but his schedule was no longer synched with the schedules of others—he was sent to voicemail in nine out of the thirteen calls he made.

Vernon left his office at 5:12. He wondered which bus would take him to the bar.

“Excuse me,” he said, trying to get the attention of a young man at the bus stop, whose earbuds were firmly embedded, playing music loudly enough that Vernon could easily identify the saxophone solo belonging to a current chart-topper. Vernon edged closer and into the youth's line of sight. “Excuse me.”

“Yeah?” said the young man, whose music went quiet as he spoke.

“I wonder if you know what bus goes down Locust? Downtown?”

The kid showed his displeasure at being inconvenienced, but asked his phone and after a murmur through his headphones said “The 81C inbound. It'll be here in four.”

The bus came and Vernon boarded, greeting the driver warmly, and sat down eager to get to his destination. As they moved Vernon stared out the window for a familiar sign or landmark, *something* to tell him he was approaching his stop. He saw children playing. He saw a house that he recognized as belonging to an old schoolmate from fifth grade. And then Vernon saw a man who looked very familiar, sitting on an upturned suitcase, twirling his hat and tapping his feet. It was the magician! He jumped up and pulled the bus's yellow call chord, this time coming incredibly close to pulling it down altogether. For a moment he worried he had done it wrong—he had seen it in an old film once and seemed easy enough—but his fears were alleviated when he heard a ding and the “stop requested” sign lit up. Relieved and invigorated, Vernon rushed out the doors as soon as they opened.

He could see the bar's sign from two blocks away and he smiled as he headed towards it. He stared at the front door, hardly blinking even once for fear it would disappear. He nearly got hit by a car as he crossed the street, but he did not care. He was walking faster and faster—nearly running. Had this been the end of a romantic film—the part where the two lovers run into each other's arms—the melodic strings would have started swelling in an overcoming manner as soon as his foot touched the bottom step. He ran up the stairs, blew through the door and, catching his breath, tried to ask coolly, "Excuse me, but by any chance did someone find a phone last night?" The host left to check with the manager, walking extremely slowly (or so it seemed to Vernon) towards a back room. A moment later, he reappeared with phone in hand. Vernon snatched it, caressed the scratch on its back from when it fell out of his pocket the very first week he got it, and said, "Yes! Thank you!" As if in greeting, Becca's sweet Australian lilt informed him of his number of messages (fourteen), and flashed a particularly precious picture of a sea otter.

With phone in hand, Vernon left the Watering Hole and headed to the bus stop. It was a pleasant spring night and he remembered that when he was a kid he would come on trips into the city with his parents. He thought of his mom and wondered what she was doing. As he sauntered down the sidewalk, he called her and left a brief message tell her that he was thinking of her and to call him back when she has a chance, that perhaps they could have a video chat in the evening and watch a movie together. Vernon felt good—very good.

When he got to the stop, he saw the magician across the street, sitting on his suitcase and now shuffling a deck of cards. It was still too early for the dinner crowds and there was nobody there watching. Vernon knew he had a few minutes. In fact, he knew he had nine minutes and twenty-three seconds until his bus would arrive and so he approached the magician.

"Beautiful night," said Vernon brightly.

"Isn't it?" the magician agreed.

"You know," said Vernon, "I wanted to be a magician once. But I could never manage even a simple card trick."

The magician laughed. "It ain't that tough. It's all just manipulating the peoples' attention." He paused. "Want to see a oldie but a goodie?"

Vernon nodded eagerly, and the magician shuffled his deck, shooting the card from one hand to another before spreading them out before him and advising Vernon to pick a card, any card. Vernon obliged, memorizing and returning the card. Several flames, scarves, and hats later, the magician asked Vernon to check his shirt pocket. Lo and behold the card was there.

"That was marvelous!" said Vernon, with nearly the amount of sincerity and astonishment with which he meant it. With only a minute until his bus arrived, Vernon took out his phone, pressed a button here and there, including the numbers two and zero, and swiped his phone in front of the magician's sign, which read *Donations Welcome*. Vernon thought to himself how funny it is that everyone these days has an RFID reader. His phone asked him to confirm a payment of \$20.00 to be paid to the account of "The Amazing Mauricio" and Vernon tapped yes. As the bus came barreling down the street,

he took a quick photo, too, instructing Becca to please post it to all his social networking profiles. Vernon Lee said goodnight to the magician and stepped on to the bus, thinking contently of home, happy to be reunited with his faithful assistant.

3. Author's Notes on "The Magician's Assistant"

"The Magician's Assistant" is meant to be a thought-provoking satire set in the not-so-distant future. It is in part a response to a growing tendency to over-rely on technology in our day-to-day lives. As technology grows more and more portable, it becomes increasingly easy to be distracted by it. Examples of this can be quite mundane, such as ignoring a magnificent view because one is too busy watching a YouTube video on a mobile device, or not knowing how to navigate to one's neighborhood grocery store because one has never ventured there without the GPS. I myself am by no means a luddite; in fact, I actively work to introduce new technologies into places where they do not currently exist. However I am an advocate for ensuring that technology does not replace our lives, so much as it enhances them.

Context aware computing is quickly becoming part of the popular reality, and it holds great potential to really improve people's lives. There is much to be gained by developing technology that understands context and can thus provide better support for people's routines. In contrast to the future depicted in this story, it is possible that as this technology enhances one's efficiency, one could have more free time in the day to spend with friends and family, go outside, read, and enjoy life.

This story is meant to encourage thought and conversation about how "quality of life" will be defined in the future. I did my best in this story to show both how technology can inhibit our experience of life, as well as how it can enhance it. I wanted to end on a hopeful note by having an example of technology improving a face to face interaction with Vernon's donation to the magician.

I am not posting that this concern of losing ourselves in technology is one that can be solved solely by the design and implementation of the technology itself. Perhaps instead it is an issue of developing a social and cultural lifestyle that helps us maintain a better balance between the digital and the physical worlds. I believe it is important to ponder these questions as technologies evolve and create new user experiences, and in large, change the human experience.

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