

Foreword

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A decade ago, I held hands with a robot. Developed at MIT Media Lab as a prototype domestic servant, Domo was legless and fused to a table but could speak, track faces, and gently grasp objects such as cups and plates (Jackson, 2018). On the day that I visited the Lab, I tried to touch Domo to see how it would react, and it promptly reached out its steely fingers and grasped my hand. I was enchanted.

Now our robots are no longer rare creatures caged in laboratories. In 2018, global sales of service robots rose nearly 60 percent to 16.6 million robots worth \$12.9 billion from the previous year (International Federation of Robotics, 2019). Bolstered by advances in AI and programmed to respond to us with “emotion,” they are increasingly becoming our teammates, tutors, and companions. And yet for all their rising complexity, it still takes very little on their part to win us over. If a robot cheats while playing a game with a human, it need only put a finger to its lips—offering a conspiratorial shhh!—to persuade the human *not* to report its transgression (Scassellati, 2018). Savvy technologists “coo like children at the petting zoo” when playing with social robots at electronics shows (Calo et al., 2011, p. 22). Soldiers mourn when their bomb-detection robot, which resembles little more than a souped-up toy truck, is destroyed (Hall, 2017).

It almost does not matter what a robot looks like, we are willing to hug and touch them, talk to them, and befriend them. We quickly forget that it is, in the words of researcher Gill Pratt, “like a hollow doll,” with smarts that cannot match ours and no capacity to return our love or care (Metz, 2018, p. B3). Humanity has been longing since Biblical times to create autonomous creatures in its own image. Now the Grand Experiment has begun. Who will profit, who will benefit, and who may get hurt?

Such questions carry a real urgency, as some of the most vulnerable members of human society are at the front lines of efforts to make robots a part of everyday life. As William Gibson noted, “the future is already here. It’s just not very evenly distributed” (Gibson, 2018). Robots now comfort sick children in hospitals; tutor children with autism in social skills; and serve as companions, assistants, and therapy pets to older people (Jeong et al., 2015; Scassellati et al., 2018, Pedersen, Reid & Aspevig, 2018). The rapid aging of the world’s population, in fact, is a main driver of the rise of the service robot industry (Pedersen et al., 2018). (I can imagine a time not far off when self-driving cars and drones are marketed as Grandma’s friendly helpers.) Yet

delegating some of the most intricate and challenging forms of human care to autonomous devices may wind up threatening the dignity and freedom of the very people that society is trying to help.

Consider the case of Paro, the robot baby seal used in eldercare facilities since 2003, often with those who have cognitive impairments such as dementia (Turner, Personal Communication, Nov. 14, 2018). Although more robust research remains to be done, studies show that the furry creatures can lower stress, offer tactile stimulation, and stimulate patient's involvement with their environment (Mordoch et al., 2013). In one study in an Australian facility for the aged, residents with dementia reacted most strongly to Paro, "their eyes sparkle," one recreational therapist reported (Birks et al., 2016, p. 3). But is it a fair yardstick of a robot's value to society if its success is measured by the reactions of those least able to choose how and when to use them? It may be both a victory and a defeat for humanity if a robot wins over those most easily deceived by the fiction of its "care." Paro is marketed as a nonpharmacological intervention for depression, anxiety, and symptoms of dementia, yet classified by the USDA as a medical device, a point of confusion that further underscores how its effects and our intentions are as yet far from clear (Turner, Personal Communication, Nov. 14, 2018).

Before we can understand who might benefit from robots, we must clarify what we want from these mechanical creatures, now and in future. Only recently have older people begun to be consulted in the design of robots designed for their use, a lapse that echoes the insufficient attention historically paid to technology users. And early findings reveal numerous disconnects between what many older people want, and what robots are designed to offer. Senior citizens are well aware that robotic companions are mostly built for those who are mentally frail, physically weak, and lonely, stereotypes of aging that many elderly belie and reject. In one recent US focus group study, most participants said they were willing to open their homes to a robot, but wanted one that might help augment their social lives, not position itself as their intimate friend (Lazar et al., 2016).

Consumers and some roboticists further wonder if making robots with humanlike charm may make it easier for people to evade responsibility for one another. A majority of Americans say that they would *not* use a robot caregiver for themselves or a family member, and nearly 65% expect such devices to *increase* feelings of isolation in the elderly (Smith & Anderson, 2017, p. 4). When an older person who is sad or in pain smiles at a robot or eagerly anticipates its visit, it might be easier for a relative or friend to evade the difficult act of consoling them. "I won't be visiting mum ... on Thursday, could you please take [the robot] up to her?," a resident's daughter told a therapist at a facility using robotic companions (Birks et al., 2016, p. 4).

The task of aiding the vulnerable in any society is deeply complex, but we must take care that in deputizing robots as our partners in this work, we do not wind up diminishing ourselves as humans. Designing devices that promote

human flourishing, rather than simply remedying our assumed deficiencies, should be our aim. That might mean, for instance, creating robots that quiet when humans are interacting with one another, thereby ceding their charms to the emotional nourishing that we need most.

To understand something fully “we need not only proximity but also distance,” the philosopher Walter Ong once wrote (Ong, 1982, 2002, p. 81). He was referring to the impact of writing on culture, yet his words can inspire us as we prepare to interact with robots each day. It is alluring to draw close to these creatures, yet we must guard our distance in order to gain perspective on them.

We can do so firstly by remembering that technology’s effects on life are a mix of augmentation and subtraction, of tensions and trade-offs, and unintended consequences. That is why it is crucial to keep looking beyond moments of easy enchantment to the wider issues raised by our relations with these machines: the unspoken values embedded in their design; their long-term effects on our notions of good care; the digital divides that may surface over time (forty-two percent of Americans think robot caregivers will only be used by those who cannot afford human help) (Smith & Anderson, 2017, p. 4). Going forward, we can heed a lesson long taught by technology: turning a device “on” marks only the beginning of its reach.

Second, we can wisely integrate robots into society only by clearly recognizing the lines that still divide our species from our devices. In this realm, transparency is key, as some leading roboticists now argue (Scheutz, 2011). The routine practice in the field of calling a robot with a low battery “in pain” or referring to an inventor as a robot’s “caregiver” (Lim, 2017) furthers the fallacy that such devices are human, a deception that can only muddy our efforts to discover the true limits and powers of both technology and humanity itself. “On the Internet, nobody knows you’re a dog,” we once joked, celebrating the masquerade ball-flavor of the virtual. Yet as we have learned online, knowing who or what we are dealing with is crucial for fostering human autonomy in relationships and in thought.

In future, we may be enchanted each and everyday by a robot, as I was once long ago. But let us endeavor *not* to get carried away. This book, with its deep and varied perspectives on living with some of humanity’s most astonishing inventions, can help us answer one of the most crucial dilemmas confronting us today: when to let a robot take us by the hand, and when to let it go.

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Further reading

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