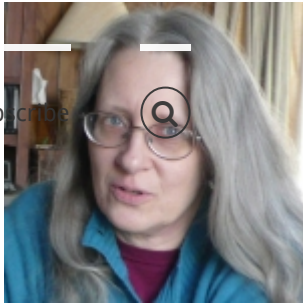


## ‘Barbie’: the smart choice of toy?

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*Robots are already far more pervasive than most people realise, from smart TVs to self-driving cars. As the introduction of ‘Smart Barbies’ could now also be invading our children’s privacy, **Wendy M. Grossman** explores the impact of such smart technology, and how we must not underestimate its risks. Wendy writes about the border wars between cyberspace and real life. She is the 2013 winner of the **Enigma Award**. Her **website** has an extensive archive of her books, articles, and music.*

The arrival of ‘Smart Barbie’, which **records what a child says and transmits it to a remote computer** to analyse it and pick a reasonable response, has alarmed a lot of people. Earlier this year, new models of ‘smart’ Samsung televisions were discovered to be **recording everything said in front of them** and transmitting this information to company servers. Other smart TVs **collect data on viewing habits to pass to marketers**.

Each of these products is, in its own way, deceptive. Despite the product documentation, few people (including parents) would intuitively connect the TV’s responsiveness to voice commands with the possibility that it is recording what they say and passing on that information. Smart Barbie’s deception is more profound, however: it has deliberately been designed to make a child believe that the doll is at least somewhat sentient, when in fact it’s being what several speakers at the recent **We Robot** conference called ‘Wizard of Ozzed’. In other words, the work apparently performed by the magic device is in reality the work of the man (or computers) ‘behind the curtain’.



Credit: C. Roark, CC BY-NC-ND 2.0

We Robot convenes lawyers and engineers to scope out the future rushing towards us. For this group, ‘robot’ has a wide definition. **Garry Mathiason**, of the law firm Littler Mendelson, talks about four categories of robots: traditional robotics, cognitive computing (artificial intelligence and software), telepresence and telemanipulation, and assistive and medical technologies. From this, it’s clear that as a set of technologies, robots, from your favourite search engine to self-driving cars (trialled at Google and in **Oxford**), are already far more pervasive than most people realise. **Software bots** argue with us on social media; algorithm-driven decision systems decide who gets credit or state benefits. Probably few of us have yet interacted with someone via a video screen

mounted on wheels – known as a **telepresence device** – but it’s only a matter of time. Telemanipulation is what the person on the other end of those devices does: driving the device via the internet to join meetings and interact with co-workers. Such devices have been used to help **sick children go to school**.

Media coverage tends to focus on a narrow band of fears: surveillance and tracking, like the Samsung TV; the potential for spying and killings by drones (unmanned autonomous aerial vehicles); and the loss of jobs to automation – even **sheepdogs** are at risk. Mathiason noted, for example, that 90 per cent of legal work could probably be automated, although the remaining 10 per cent is substantial and complex. Finally, the potential for smart devices attached to the growing ‘internet of things’ (or, as one speaker put it during the conference, the ‘internet of other people’s things’, to reflect how little control consumers have over connected devices they have bought) to spy on their supposed owners is substantial.

Other risks are rarely discussed. Robots incorporate many technologies that are already familiar, such as the capabilities of smartphones and ‘cloud’ services that let us store information such as photographs or email on remote computers to be accessed from anywhere. Give a robot video cameras, microphones, Wi-Fi, GPS locators, accelerometers and other sensors, and you have a device with full access to your home and its inhabitants in an unprecedentedly intimate way. These modern problems are already alarming enough, but the potential is that these personal devices – tomorrow’s Smartest Barbie, for example – will become the targets of highly intense emotional relationships in which the device appears to love its owner back. The **funerals for pet robot dogs** are an early example.



Credit: S. Depolo, CC BY 2.0

**Smart Barbie** is just one of an increasingly large number of **robot companions** aimed at various niches, such as older people, or autistic children, that deliberately evoke the appearance of intimacy. As **Kate Darling**, a research specialist at the MIT Media Lab, argued, humans can anthropomorphise anything. Her research includes a study of human willingness to smash toy bug-like robots (Hexbugs, pictured above) when told personalised stories about them. The more personal the story, the more the human sees it as emotionally valuable and balks at destroying it.

For this sort of reason, deception emerged as a key theme at We Robot, inspired by a question asked by **Karen Levy and Tim Hwang**: should **self-driving cars have steering wheels** when they become purely ornamental? They called the idea ‘design theatre’. It is already difficult for consumers to know accurately what a robot (of any category) can and cannot do: the Samsung smart TV is privacy-invasive in a way Smart Barbie is not (or not yet), although the Smart Barbie’s

humanoid form and intended child audiences makes it more immediately creepy. Deception matters in another way: taught by long-running TV series such as *CSI*, many of us overestimate the capabilities of today’s robots while underestimating what they will be able to do in future. Simultaneously, ~~we risk underestimating the risks of the data gathering and manipulation that~~ these devices actually do perform. Today’s children are being taught to confide in devices whose manufacturers’ interests are collecting information about them. By the time today’s children reach the age at which most of us were able to reinvent ourselves in the past, they may not have that choice.

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