

Creating “companions” for children: the ethics of designing esthetic features for robots

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Abstract Taking the term “companion” in a broad sense to include robot caregivers, playmates, assistive devices, and toys, we examine ethical issues that emerge from designing companion robots for children. We focus on the relative importance and potential ethical implications of creating robots with certain types of esthetic features. We include an examination of whether robots ought to be made to appear or act humanlike, and whether robots should be gendered. In our estimation, this line of ethical inquiry may even provide insight into the nature and appropriateness of existing institutions and widely accepted interactions among human beings.

Keywords Robot ethics · Robot companions · Design ethics · Gender · Human–robot interaction · Children

1 Introduction

This article examines the ethical aspects of robots that function as friends, caregivers, assistive devices, or toys for children. The increased use of robots is intended to affect various facets of human life, including individual welfare, decision-making, and relationships among humans. In addition to anticipating and addressing basic safety issues,

roboticists should also grapple with ethical questions generated by design decisions that have no obvious safety-related implications. While it is important to minimize the probability of harmful malfunctions, the focus of this article will be on risks emerging from properly functioning robots. More specifically, we will discuss the relative importance of a robot companion’s esthetic features, including whether it should be designed to look human and whether it should be gendered. Our hope is that continued examination of design decisions will promote children’s well-being and contribute to positive transformations of social institutions.

2 Background and rationale

Contemporary societies are moving away from robots operating in isolation from human beings to an era of pervasive human–robot interaction (HRI). Regarding the increasing prevalence of HRI, the International Federation of Robotics (IFR) quotes a “robot expert” who states that “as technological improvements resulting in more intelligent robot systems with better sensors enable closer interaction between human workers and robots, it will become a reality” (IFR 2011a, 31). Though the development of robots outside of military and industrial contexts is still in its early stages, the rate of advance in robotics is accelerating. Robots designed for therapeutic or educational purposes are increasingly being used in experimental settings. Moreover, according to *World Robotics 2011*, “about 2.2 million service robots for personal and domestic use were sold,” marking an increase of 35 % over 2009 sales (IFR 2011b, XIV). The report also projected that this number would increase significantly between 2011 and 2014 to 14.4 million “units of service robots for personal

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