

Socially Assistive Robots

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For the January 2020 issue of National Geographic, the publication covered a range of topics related to *The Future Of Medicine*. One of the topics covered was that of socially assistive robots, under the title of "Could a robot care for grandma?".¹ The article made mention of several key individuals involved in recent developments.

Goldie Nejat: Developer of Socially Assistive Robots

Dr. Goldie Nejat is a professor of Mechanical Engineering at the University of Toronto and Canada Research Chair in Robotics for Society.² In addition, she is the Founder and Director of the university's Autonomous Systems and Biomechatronics (ASBLab) Laboratory.

Nejat has been developing socially assistive robots since 2005. Many of the lab's latest research papers and a number of research highlight videos are accessible on the ASBLab website.³ Included in the videos are some demonstrations of technologies noted in the National Geographic article. For example, videos provide brief demonstrations of 1) 'Tangy', the Socially Assistive Robot facilitating a Bingo Game; 2) 'Casper', the Friendly Robot Assisting in the Home; and 3) 'Leia', the Social Robot Providing Clothing Assistance.⁴

These robots and technologies developed by Nejat and her team are particularly aimed at patients with Alzheimer's disease or dementia, being able to "assist with everything from providing medication reminders to leading exercises".⁵

Yves Gellie: Photographer and Documentary Filmmaker, *Year of the Robot*

Mr. Yves Gellie is a French photographer who spent two years creating the award-winning 2019 documentary film, *Year of the Robot*.⁶ The film "documents interactions between elderly people and social robots in long-term care facilities in France and Belgium [and attempts to] humanize robots by allowing active engagement between person and machine. In scenes that appear futuristic, people play piano, dance, and even tearfully divulge secrets with their robotic companions."⁷

¹ Kalb, Claudia. "Could a robot care for grandma?". National Geographic. January 2020 Issue. Available at: <https://www.nationalgeographic.com/magazine/2020/01/could-a-robot-care-for-grandma-feature/>. Accessed on December 31, 2019

² Bio available at: https://www.mie.utoronto.ca/faculty_staff/nejat/

³ ASBLab Website available at: <http://asblab.mie.utoronto.ca/>

⁴ Links for each robot video also available directly on YouTube as follows: 1) *Tangy*: <https://youtu.be/goGny3LKB5E> 2) *Casper*: https://youtu.be/noSJ9qWt_f0 3) *Leia*: <https://youtu.be/WTjCYutcGjw>

⁵ Kalb, *op cit*.

⁶ Gellie, Yves. *Year of the Robot*. International Documentary Filmfestival Amserdam (IDFA) 2019 Website. Abstract and Trailer. Available at: <https://www.idfa.nl/en/film/6ad3f390-85c1-4ba0-8a5f-5be4e5e358cb/year-of-the-robot>. Accessed on December 31, 2019.

⁷ Kalb, *op. cit*.

Following the creation of *Year of the Robot*, Mr. Gellie continued his work in a related project in which he photographed the interactions of elderly subjects with robots over the course of months of observations. His overall goal was to explore "humans' capacity to form relationships with machines".⁸

A number of hand-picked photographs were provided in the National Geographic article, which seemed to demonstrate a strong ability for subjects to find great utility from the use of robots as well as an ability to form meaningful relationships. These examples included the ability to help people complete a range of tasks, including exercise; interactions that helped to reduce the recurrence of stress; the ability to motivate and focus patients in their physical exercises; the ability to gain experience fulfillment from reading to and 'teaching' the robots; the ability to associate a robot's diminutive size with that of a child and to feel that the robot 'has no judgment' (so-believed by Fabrice Goffin, co-CEO of ZoraBots)⁹; to appreciate the patience and lack of anger or change in mood from the robot; and, the ability to learn from the robots.

In the documentary and the photographs, robots used included ones manufactured by Tokyo-based Softbank Robotics, but with software designed by ZoraBots, in Belgium.¹⁰ One of these robots was called the NAO robot.

Brian Scassellati: Head of Yale University's Social Robotics Lab

There is some level of criticism that the use of caregiving robots could have negative impacts on the social skills of the care recipient due to a reduction in human interaction, and that the use of robots could result in the elimination of caregiving jobs.

Brian Scassellati, head of Yale University's Social Robotics Lab, has stressed the goal of robot use to support the human aspect of caregiving - as opposed to replacing it. That may be the case, but the effect remains uncertain.

What does seem clear from Dr. Scassellati's research is that daily interaction with robots can actually help in the development of social skills. Much of his work focuses on early childhood development, but the assumption is that the same might apply to the elderly.

This field of research is expected to grow. Scassellati's own research might be considered as a sort of guidepost. As he notes, "Robots can provide personalized, on-demand care—and the need for that will only increase in the future."¹¹

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ ZoraBots Website: <https://zorarobotics.be/index.php/en/>

¹¹ Kalb, *op. cit.*