

Exercise HRI

Hüttenrauch and Severinson Eklundh (1) discuss the effect of *bystander interventions* in HRI with a mobile service robot, Parasuraman and Riley investigate how humans react to and interact with technology “thrown at them” (2). Obviously, there are other roles than that of a bystander to consider when humans interact with robots, however, the bystander role and the effects of “throwing technology at people” are of quite some significance and should be considered when designing (in particular) autonomous systems. Also relevant is the idea of mixed-initiative interaction, discussed, e.g., by Peltason *et al.* (3). Answer the following questions with a brief statement each.

- a) Why is the *bystander role* relevant in particular for HRI rather than for other forms of HMI / HCI?
- b) Consider autonomous, mobile platforms (service robots, drones, cars) - why is it important, but also quite difficult to design for their meaningful interaction with both users and bystanders?
- c) Why is it in many cases “not enough” to equip an autonomous (robotic) system with a simple interface for starting it? What would a system need to implement a mixed-initiative communication strategy?

(1) *To help or not to help a service robot - Bystander intervention as a resource in human-robot collaboration.* Helge Hüttenrauch and Kerstin Severinson Eklundh, *Interaction Studies* 7:3, 2006

(2) *Humans and Automation: Use, Misuse, Disuse, Abuse.* Raja Parasuraman and Victor Riley, *Human Factors*, 39:2, 1997

(3) *Mixed-Initiative Human Augmented Mapping.* Julia. Peltason, Elin A. Topp, Frederic H.K. Siepmann, Thorsten P. Spexard, and Marc Hanheide, In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, Kobe, Japan, May 2009