

What's Love Got to Do With It?

Practical and Ethical considerations in fostering attachment to robotic artifacts

ABSTRACT

Ronald C. Arkin¹

Social and companion robotics is currently a highly active research field, with numerous conferences on the subject. Rarely, however, is the subject of intimate human-robot interaction broached in these scholarly venues, which is still largely considered taboo. Nonetheless, robotic artifacts that are more or less sexual devices are being developed and marketed in a technically unsophisticated manner.

This talk addresses the issue of robotic embodiment and how that raises the stakes with respect to love, as opposed to merely sexual objects. Physical robots can possess behaviors capable of inducing attachment [1] (love if you will) to human users through a variety of methods: affective modelling [2], behaviour generation [3], kinesics and proxemics [4], all of which are believed to yield significant unidirectional affective bond formation between a human and the robot. Some have warned about the potential deleterious effects of such a bond (e.g., [5]) and others about the ethical ramifications of so doing (e.g., [6]). Our research in the technical areas mentioned above for companion robots is described and we consider the ethical consequences of the creation of such intelligent machines on society.

REFERENCES

- [1] Bowlby J., *The Making and Breaking of Affectional Bonds*. London: Tavistock Publications, 1979.
- [2] Moshkina, L., Park, S., Arkin, R.C., Lee, J.K., Jung, H., "TAME: Time-Varying Affective Response for Humanoid Robots", *International Journal of Social Robotics*, 2011.
- [3] Arkin, R., Fujita, M., Takagi, T., and Hasegawa, "An Ethological and Emotional Basis for Human-Robot Interaction", *Robotics and Autonomous Systems*, 42 (3-4), March 2003.
- [4] Brooks, A. and Arkin, R.C., "Behavioral Overlays for Non-Verbal Communication Expression on a Humanoid Robot", *Autonomous Robots*, Vol. 22, No.1, pp. 55-75, Jan. 2007.
- [5] Scheutz, M., "The Inherent Dangers of Unidirectional Emotional Bonds Between Humans and Social Robots", chapter in *Robot Ethics: The Ethical and Social Implications of Robotics*, (eds., P. Lin, K. Abney, G. Bekey) MIT Press, 2011.
- [6] Sparrow, R., "The March of the Robot Dogs", *Ethics and Information Technology*, 4(4), pp. 305-318, 2002.

[1] School of Interactive Computing, Georgia Institute of Technology, Atlanta, GA, U.S.A. 30332. Email: arkin@gatech.edu.