The title of your paper

Ivana Kajić
Bernstein Center for Computational Neuroscience
Berlin, Germany

Other Authors
Department of Computer Science Berlin, Germany

ABSTRACT

Hand-eye coordination is an important motor skill acquired in infancy which precedes pointing behavior. Pointing facilitates social interactions by directing attention of engaged participants. It is thus essential for the natural flow of human-robot interaction. Here, we attempt to explain how pointing emerges from sensorimotor learning of hand-eye coordination in a humanoid robot. During a body babbling phase with a random walk strategy, a robot learned mappings of joints for different arm postures. Arm joint configurations were used to train biologically inspired models consisting of SOMs. We show that such a model implemented on a robotic platform accounts for pointing behavior while humans present objects out of reach of the robot's hand.

Keywords

cognitive robotics, HRI, sensorimotor coupling

1. INTRODUCTION

Hand-eye coordination is an important motor skill acquired in infancy which precedes pointing behavior. Pointing facilitates social interactions by directing attention of engaged participants. It is thus essential for the natural flow of human-robot interaction. Here, we attempt to explain how pointing emerges from sensorimotor learning of hand-eye coordination in a humanoid robot. During a body babbling phase with a random walk strategy, a robot learned mappings of joints for different arm postures. Arm joint configurations were used to train biologically inspired models consisting of SOMs. We show that such a model implemented on a robotic platform accounts for pointing behavior while humans present objects out of reach of the robot's hand. [1]

2. BIOLOGICALLY INSPIRED MODEL

Hand-eye coordination is an important motor skill acquired in infancy which precedes pointing behavior. Pointing facilitates social interactions by directing attention of engaged participants. It is thus essential for the natural flow of human-robot interaction. Here, we attempt to explain how pointing emerges from sensorimotor learning of hand-eye coordination in a humanoid robot. During a body babbling phase with a random walk strategy, a robot learned mappings of joints for different arm postures. Arm joint configurations were used to train biologically inspired models consisting of SOMs. We show that such a model implemented on a robotic platform accounts for pointing behavior while humans present objects out of reach of the robot's hand.

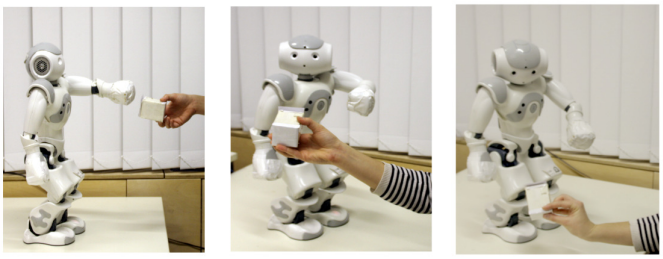

Figure 1: Human-robot interaction

3. RESULTS

Hand-eye coordination is an important motor skill acquired in infancy which precedes pointing behavior. Pointing facilitates social interactions by directing attention of engaged participants. It is thus essential for the natural flow of human-robot interaction. Here, we attempt to explain how pointing emerges from sensorimotor learning of hand-eye coordination in a humanoid robot. During a body babbling phase with a random walk strategy, a robot learned mappings of joints for different arm postures. Arm joint configurations were used to train biologically inspired models consisting of SOMs. We show that such a model implemented on a robotic platform accounts for pointing behavior while humans present objects out of reach of the robot's hand.

4. FUTURE WORK

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5. ACKNOWLEDGMENTS

Thanks!

6. REFERENCES

[1] V. V. Hafner and G. Schillaci. From field of view to field of reach - could pointing emerge from the development of grasping? *Frontiers in Computational Neuroscience*, 2011.