The Robot Quartet : a Drawing Installation

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Abstract: The Robot Quartet — a group of four robots receive identical instructions and jointly draw a repetitive pattern. This project investigates the relation between an abstract idea and its physical manifestation, and explores the poetry of this divide — an aesthetic space that lies beyond human control over machine.

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1. Introduction

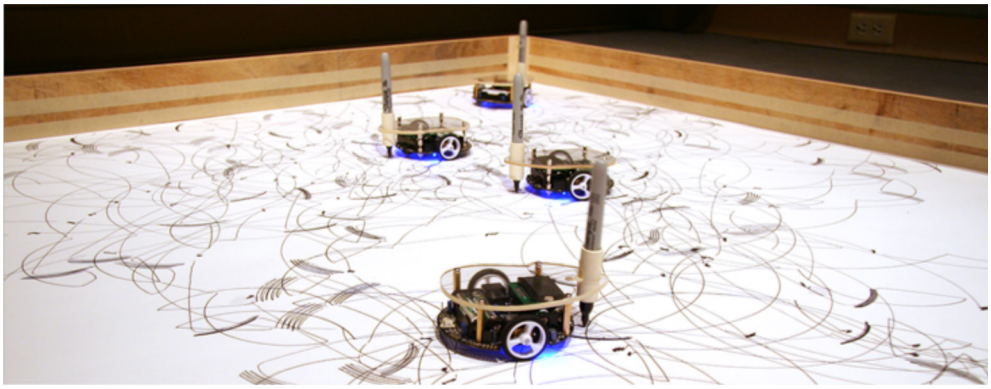

Fig. 1. The Robot Quartet at work.

The robot quartet — four drawing robots, equipped with identical repetitive instructions, start with symmetrical motions. Their drawing gets increasingly distorted by mechanical imperfections. The project is situated between Kinetic- and Generative Computer Art (Galanter); inspirations go back to Jean Tinguely's drawing machines (Tinguely). Being a reflection on properties of a mechanic system as a form-giving principle, the piece embraces imperfections, rather than eliminating them. Repetitive software patterns, as well as seemingly organic traces of mechanic deviations, generate an aesthetic between analog and digital.

The author hopes to argue for a beneficial role of inaccuracies in robotics. While technology may become increasingly precise, the work hopes to trigger reflections on how to embrace imprecision.

2. Description of the system

Four slightly adapted, identical Pololu 3pi robots steer freely in all directions with two independent motors. Initially synchronized, with inexact motions they follow an exactly timed choreography. As physical machines, they do not only move back and forth, but draw from a repertoire of straight and curvy lines, scribbles and zigzag-shapes, and perform rattling and wiggling motions, thus balancing considerations between visual output and dynamics of the robots.

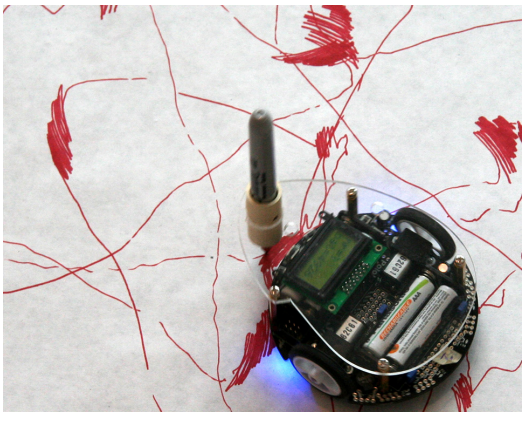

Fig. 2. Repetitive vs. organic lines.

Fig. 3. Detail: composition.

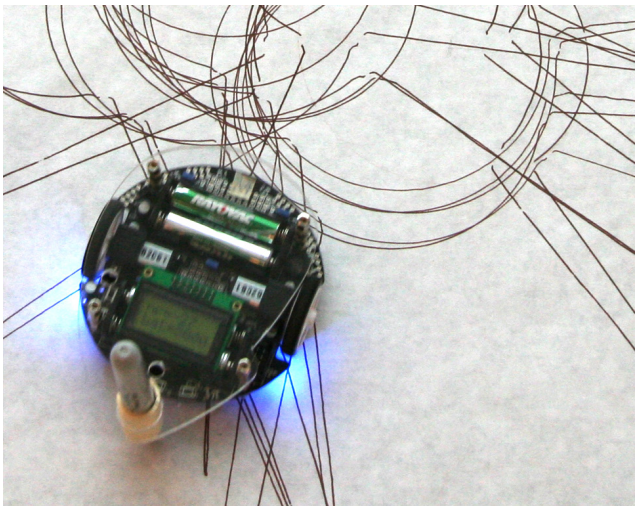

Fig. 4. Replicating the same figure.

3. Documentation

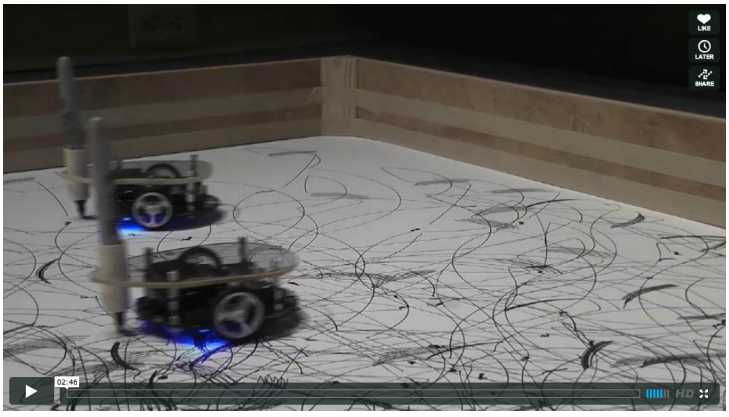

Fig 5. Documentation Video on http://vimeo.com/55805990.

Fig 6. Robot Drawing *Farewell to Canada*. Patterns of different line-qualities can be read as dancing figures, heart-shapes or falling leaves

Fig 7. This drawing, *Composition 1.1* consists of different curves. The irregular density emerged independently of the algorithm.

References

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Tinguely, Jean. "*Méta-Matic No. 6*," 1959. Museum Tinguely, accessed January 16, 2013, http://www.tinguely.ch/de/museum_sammlung/sammlung.1954-1959_0110.html