Harvestworks, NYC
Material Matters

Abstract

In recent years, much critical consideration developed within the global practice of Media Art having to do with discrepancy between the discreteness of the digital medium and the continuous nature of human perception and cultural engagement. From a much wider perspective - from philosophy to Artificial Intelligence - the role of situated activity versus formal operations in human cognition is being reconsidered thoroughly.

The Material Matters (MM) research project (2022 – 2025) aims to study and analyze the complexity of hands-on material and object centered studio practice within a digital context. Many questions arise, such as: (1) how to integrate affective gesture and algorithmic decision making, and (2) how to extract underpinning procedural patterns from engaging with physical materials. Our objective is to address these questions through experiments in human-machine co-creation with both entities sharing a common physical environment.

Therefore, MM centers on the philosophical notion of embodied cognition (EC). EC rejects viewing cognition as the construction and manipulation of representations of abstract symbols. In contrast, EC considers thinking processes as constituted and afforded through motivated bodily activity in a situated physical setting. In the context of the art studio, such inclination marks the difference between creative development through impulsive improvisational object handling and the synthesis of new ideas through pure contemplation. MM thus discards the mind-body, software-hardware and analog-digital dualities.

MM suggests experiments engaging humans and machines while considering notions of identity, co-operation, motivated action, adaption and freedom. Experiments in 'social mediation' involve two human performers engaged in materialist action and a participating machine learning algorithm optimizing their social context. Planned experiments consider humans and machine intimately linked through situated hybrid action. Then, a new medium might arise through assimilation of scripted procedural objectives and spontaneous body language. Consequently, experiments in real-time human-machine co-operation investigate how both forces interact, adapt, operate and blend into a novel operational paradigm.

MM also studies the notions of materiality and 'object' in the light of recent philosophical theories such as object-oriented philosophy and speculative realism. We also acknowledge a much relevant art-historical context as beyond Media Art and machine art of the 20th century. MM also studies how conventional (extended) tools and materialist strategies might inform the discovery of rich alternatives for fully embodied human-machine studio practice.

Experiments shall typically accommodate visual, audio, tactile, affective, gestural, kinesthetic and interactive components as present in human-machine (and sometimes human-human) co-creation. This necessitates, (1) development of original sensing technology to be integrated on and inside bodies and machines and, (2) identification of existing activators and design of original activators to engage bodies and machines in a novel, intimately interconnected supportive physical substrate. We envision experiments with a variety of such new hybrid tools: physical/computerized musical instruments operated by multiple performers using real-time machine learning, human-robot co-creation encompassing robot-vision (industrial robots manipulating large objects), drawing by human hand and mechanical hands at equal levels of authority, robot-human behavioral interaction/articulation through reciprocal perception and adaptation. Experimental results will be presented in publications and a large-scale event exhibition/symposium in 2025. The Material Matters research project is financed by the Flemish Government of Belgium (2022-2025).

Peter Beyls, January 2023