Autonomous Systems Interaction Design (ASID) based on NDHB-Model/RT

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Abstract: Traditional interactive systems transform input to the systems from the environment to output in the environment by using a set of rules. However, these systems are not intelligent enough to respond to an ever-changing environment including users. There are thus cases where inputs to a system may drift too far to be treated by the set of rules, and the system might respond inappropriately. This paper proposes a new perspective on interactive system design. The key idea is to treat interactive systems as autonomous systems that interact with users that are other autonomous systems, and designing interactive systems implies designing autonomous system interactions that establish natural cooperation among them. At CogSci2007 and CogSci2008, we proposed an architecture model called the Nonlinear Dynamic Human Behavior Model with Real-Time Constraints, NDHB-Model/RT. We demonstrate in this paper that this architecture model provides a basis for Autonomous System Interaction Design.