From Interactions to Integrations

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ABSTRACT This address offers a reflection on the aptness of the metaphor of interactive technologies, in light of developments over the past ten years. It argues for a shift from the focus on interaction narrowly defined, to a project of integration of artifacts into work environments and working practices.

KEYWORDS interaction, work practice, integration

1. SUMMARY

The growth of the Internet has brought with it a renewed interest in the idea of artificial “agents,” “knowbots,” and other computational artifacts attributed with a capacity for intelligent, interactive behavior. In “Plans and Situated Actions: The problem of human-machine communication” (1987) I proposed that the term “interaction” might best be reserved to describe what goes on between persons, rather than extended to encompass relations between people and machines. My argument was based on the observation that human interaction relies on interpretive resources not available to machines. The difference is one of an embodied user, on the one hand, present in specific, historically and culturally mediated circumstances of action, and what remains effectively an artifact, however dynamic its presentation. The language of interactivity and dynamics of computational machinery obscure this difference, but the user of the machine invariably rediscovers it in practice.

In this address I will re-examine this argument in light of reflections on the past ten years of developments in computing and HCI. I will suggest that while interesting developments have unquestionably emerged

during that time in terms of what Bruno Latour and others have characterized as non-human agency, critical issues remain. These issues have to do with the fundamental character of the problem of mutual intelligibility of action between people and machines, and the reliance of mutual intelligibility on participation in a social world not reducible to discrete abilities and skills.

The intractability of the problem of mutual intelligibility recommends a new research agenda for system design, aimed less at the creation of interactive machines than at an understanding of the distinctive dynamics of working with computational artifacts. Those dynamics, moreover, extend beyond the interface narrowly defined to the relations of people with each other and to the place of computing in their ongoing activities. The future of information systems, on this view, lies neither in the single, all encompassing workstation nor the universal, seamless web, but in an ecology of always partial information resources, assembled together through the skilled activities of their use. System design, it follows, must include not only the design of innovative artifacts, but their artful integration with the rest of the social and material world.