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Interaction Measure in Human-Computer Interaction

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In this editorial, an effort has been made to highlight the issue of measuring human-computer interaction. In human- computer interaction (HCI) and affective computing studies, an interaction is often considered as a kind of information or discrete internal states of an individual that can be transmitted in a loss-free manner from people to computing interfaces (or robotic interfaces) and vice versa [1-3]. Interaction, rationally speaking can be termed in cognitivist accounts of human activity, as it relies on cognitive models and reproduces the information processing model as studied in the cognition theory.

The fact that interaction can be defined as a physiological measure and quantifiable can lead to the idea that interaction is originally a biological measure, something objectively not subjectively observable, containable and definable. The problem in defining the interaction as a scientific object of study as a biological measure, is the way in which the definition of interaction has been altered to fit a particular conception of a rational, well-defined, and culturally universal. The aspects of interaction that do not fit the view of science (physiological measure) that are not objectively accessible and measurable, are primarily based on personal and demographic information, i.e. which varies over geographical boundaries and cultures.

Although, affective computing a popular branch of HCI talks heavily about the concept of interaction and emotional interaction. In [4] author argues that it is partly difficult to isolate interaction from HCI studies but also it is difficult to construct interaction as an approachable by the sciences. According to scientists problem solving and decision making are worthy pursuits, then the recognition that interaction plays a pivotal role in these processes proves its importance for understanding both human and computer intelligence.

Similarly, in [5] the author has advocated interaction as a key component of people's experience with the world, each other and with the physical objects in the environment. In [5] a design of emotional interaction has been argued and in this approach incorporating interaction is a central component of the design. Also, it has been argued that the interaction with everyday things is conditional not only by logical or practical concerns but also by aesthetics.

Interaction inherently is a private emotional state of mind and is purely information-based. The information can be shown in the form of bio-psychological (chemical) events that occur entirely in the human body. Interaction can be modeled as a form of information which tells about the form or pattern of internal signaling, providing a context for cognitive action. Interaction as an internal, discrete, and stable phenomenon means it can be measured in an objective, abstract, and standard way. So, the information account of human actions towards a computing devices or interfaces can be modeled in an interaction model, which affective computing often reproduces the very terms of that account.

The phenomenon of interaction gives insights into the relationship between practice and technology, and in particular a fundamental change from technologies of representation to technologies of participation. By technology of participation it means that defining more subtle ways in which information systems act as platforms while considering social structure as a cornerstone element, rather than as entities merely employing representations of the world.

Furthermore, as the digital technology is increasingly be- coming part of the everyday life, there is a need, to understand them on different levels, explaining the cultural narratives, social facts and technological boundaries. In the pervasive technology, it is foremost important to address people's interaction around technology. This requires moving away from the concepts of usual scientific notions, which tend to sideline people's interaction in preference for objective measurements.

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