Chapter 2

UNDERSTANDING SOCIAL INTELLIGENCE

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Abstract Believable social interaction is not only about agents that look right but also do the right thing. To achieve this we must consider the everyday knowledge and expectations by which users make sense of real, fictive or artificial social beings. This folk-theoretical understanding of other social beings involves several, rather independent, levels such as expectations on behaviour, expectations on primitive psychology, models of folk-psychology, understanding of traits, social roles and empathy. Implications for Socially Intelligent Agents (SIA) research are discussed.

1. Introduction

Agent technology refers to a set of software approaches that are shifting users’ view of information technology from tools to actors. Tools react only when interacted with, while agents act autonomously and proactively, sometimes outside the user’s awareness. With an increasing number of autonomous agents and robots making their way into aspects of our everyday life, users are encouraged to understand them in terms of human behaviour and intentionality. Reeves and Nass [5] have shown that people relate to computers - as well as other types of media - as if they were ’real’, e.g., by being polite to computers. However, some systems seem to succeed better than others in encouraging such anthropomorphic attributions, creating a more coherent and transparent experience [20]. What are the reasons for this? What encourages users to understand a system in terms of human intentionality, emotion and cognition? What shapes users’ experiences of this kind? Software agent research often focuses on the graphical representation of agents. Synchronisation of lip movements and speech, gestures and torso movements as well as the quality of the graphical output itself are questions that have been investigated [6] [14]. In
contrast, the authors of this chapter propose a multi-facetted view of how users employ an intentional stance in understanding socially intelligent agents.

In order to understand how and why users attribute agents with intelligence in general and social intelligence in particular, we turn to a *constructivist explanation model*. The ontological claims underlying this approach focus mainly on the active role of the human mind in constructing a meaningful reality [25]. ‘Social intelligence’ is not some transcendental faculty, but an understanding arising in the interaction between a set of cues and an active and cognitively creative observer. Thanks to the constructively active user, the cues needed to prompt anthropomorphic attributions can be quite simple on the surface [1] [5, p. 7] [27, p. 173].

Since science knows little about how ‘real’ intelligence, intentionality or agency work - or even if there are such things outside of human experience - we cannot create intelligence independently of an observer/user. In order to achieve appearance of intelligence it is crucial to design SIA systems with careful consideration to how such systems will be received, understood and interpreted by users. The function of SIA technology becomes the centre of attention, whether this is learning [30], therapy [19], game/play experiences [22] [15], the SIMS or the spectacular appearance of a Sony Aibo robotic dog. According to a constructivist approach to SIA, there is little use in creating artificial intelligence unless it is meaningful consistent [20] and coherent to a given user.

An opposing view of social intelligence research takes an *objectivist standpoint*. According to this view - rooted in strong AI - social intelligence is something that can be modelled and instantiated in any type of hardware, software or wetware, but transcendentally exists outside any such instantiation. The aim is to create SIA that are socially intelligent in the same sense as humans are and thus the models created are based on theories of how actual human social intelligence manifests itself.

Depending on the view taken the purpose of SIA research differs. While constructivists aim to study how users understand, frame and interpret intelligent systems in different situations, and use this knowledge to improve or enhance the interaction, objectivists aim to study emergent behaviour of systems and find better models and hypotheses about how human intelligence works.

The purpose of this chapter is to develop a conceptual framework, describing how understandings/impressions of social intelligence arise in users. Once this is in place, we will be able to develop a method for investigating and developing socially intelligent agents.