Chapter 3.12
Awareness Mechanisms for Web-Based Argumentative Collaboration

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ABSTRACT
Much research has been performed on how computer-based technologies might facilitate awareness among cooperating actors. However, existing approaches in providing awareness services prove to be inadequate in data-intensive instances of argumentative collaboration. Moreover, they fail to address the needs of dynamic, Web-based communities. In this context, this article presents a list of awareness mechanisms that have been integrated in an innovative Web-based collaboration support tool, where the ultimate aim is to satisfy the requirements associated with the above remarks. The proposed mechanisms are described and elaborated with respect to various awareness types reported in the literature.

INTRODUCTION
The concept of awareness has been extensively elaborated in the field of computer-supported collaborative work (CSCW) (Carroll, Rosson, Convertino, & Ganoè, 2006; Schmidt, 2002). In this context, awareness can be defined as an understanding of the activities of others, which provides a context for one’s own activity (Dourish & Bellotti, 1992). Much research has been performed on how computer-based technologies might facilitate awareness among cooperating actors (i.e., members of a community). An important body of this work attempts to develop computational environments based on event propagation mechanisms for collecting, disseminating, and integrating information concerning collaborative activities.
Awareness in Argumentative Collaboration Environments

While awareness is critical in CSCW, it is a rather unexplored domain in the context of argumentative collaboration environments. Although many tools exist to support online discussion and deliberation, which range from simple discussion forums found on the Web to sophisticated and formal argumentation and decision support systems (Karacapilidis & Papadias, 2001), these do not consider awareness mechanisms as a focal point. Such mechanisms are usually considered a complementary (i.e., not a core) functionality of solutions addressing collaboration needs. The majority of these tools provide only simple awareness mechanisms that include user presence indicators and information related to the source of individual resources (i.e., who admitted a resource and when).

One reason that these tools do not employ more sophisticated awareness mechanisms is related to the way these tools support the underlying collaboration. In particular, the majority of argumentative collaboration approaches enable only asynchronous collaboration between participants and limit the number of allowed discourse moves during the collaboration. In discussion forums, for...
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