

# Constructing Computational Coordination Mechanisms on the Web

## A Case for Community Companions

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**Abstract.** On the basis of a study of collaborative work on Simple Wikipedia, an online encyclopaedia, we argue that there is an important role for CSCW to participate in the design of protocols that would render the construction of common information spaces on the Web more manageable.

Web 2.0 (O'Reilly, 2005), the online collaboration fostered on sites like Flickr and Wikipedia, is a space that is still left largely unexplored by the CSCW community. Granted, the design of underlying technologies like the Wiki has received quite a bit of attention (e.g. Rick and Guzdial (2006)), but this has mainly been in, shall we say, "laboratory" settings where the technology remained in the researchers' control. There have also been a number of careful ethnographic studies of online collaboration "in the wild" (e.g. Bryant et al. (2005)), but it has been hard to see how to implement and test the implications for design that emerged as the underlying technologies were typically hard to amend and outside the observer's control. We suggest the participatory design of collaboration protocols as a way forward that would benefit both communities of research and communities of practice. We coin these protocols *Community Companions*.

Ultimately, a Community Companion is what Schmidt and Simone (1996) would call a *computational coordination mechanism*. But it is a special case. In particular, a Community Companion is the set of scripts that assist people with a shared interest in the prosecution of that interest. Like Agents (Maes, 1994), Companions

(Wilks, 2005) are there to reduce work and information overload of the people they assist. But whereas Agents and Companions generally only try to assist people individually, Community Companions serve the whole community and the protocols embedded within them, whilst they remain in the community's control, embody the goals of the community as whole.

The goal of Simple Wikipedia, or Simple English Wikipedia as it is now called, is to provide “an easy-to-read online encyclopedia for people who are learning English” with articles that “use fewer words and easier grammar than the original English Wikipedia.” A recent study by den Besten and Dalle (2007) investigated what mechanisms are employed by contributors and editors to the encyclopaedia to keep its articles easy to read. The labelling of difficult-to-read articles as “unsimple” was identified as one of the main mechanisms. An illustration of the effect of labelling

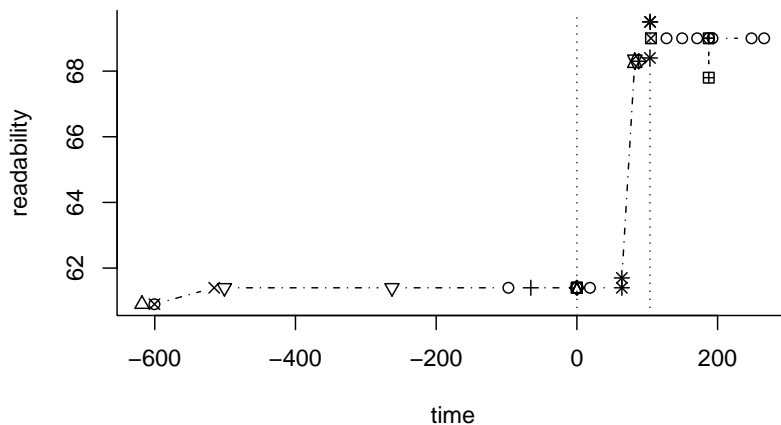


Figure 1. Evolution of readability over time for the article “Propaganda”. Readability is given as Flesch score and time is given in days since the first appearance of the “unsimple” label..

is given in Figure 1. The Figure shows the evolution of Flesch measure of readability of an article entitled “Propaganda” over time. The dotted vertical lines indicate the period in which the article was labelled “unsimple” and shapes on connected by the dashed line correspond to contributors to the article. The figure shows that from a relatively difficult article, the label “unsimple” transformed “Propaganda” into an article that is relatively easy to read. And so, in this case labelling worked. However, den Besten and Dalle (2007) also find places in Simple Wikipedia where this simple mechanism is not sufficient and that is where Community Companions could step in.

A Community Companion in the context of Simple Wikipedia would be a script that warns contributors of articles that do not seem to meet the criteria of simplicity that the encyclopaedia strives to. Currently, den Besten and Dalle (2007) found a large amount of articles within Simple Wikipedia with a low readability score that had not yet been identified and labelled as “unsimple”. Besides, the Companion

could identify articles that had been labelled “unsimple” before but have seemed to reached a reasonable level of simpleness again. Finally, the Companion could identify those articles labelled “unsimple” where not much activity had followed the labelling and try to trigger interest again.

Yet, in addition to providing guidance on readability, a Community Companion could do much more. For one thing, the guidance can be more broadly. For instance, Stvilia et al. (2005) developed a set of measures for information quality in Wikipedia. The Companion could incorporate those measures as well. And the guidance can go beyond the computation of indicators as well. Willinsky (2007) gives advice on how to find open access references for Wikipedia articles. Large parts of this advice could be incorporated in the Companion protocols.

“The art of simplicity is a puzzle of complexity.” Doug Horton famously quipped. What is nice about Community Companions is that they would help address the complexity and magnitude of the task that editors of information spaces like Simple Wikipedia are facing. The construction of these Community Companions could be set up as an open source development. Provided contributors are sufficiently computer literate, the development of these Companions could then serve to reify and clarify the goals of the community. At the same time, the development Companions could serve as test-bed for protocols that assist specific collaborative work. In this way, the participatory design of Community Companions could enhance CSCW and improve online collaborations simultaneously.

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