WikiLayer:
Annotation for *Wikipedia*

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Figure 1: *WikiLayer* in action. Highlighted the TOC entry for the *wikinote*.

Abstract
Reading *Wikipedia* is the entry to more involved activities such as editing. However, the jump from reading to editing could be too big for some wikipedians who can be intimidated by exposing their content to public scrutiny. Annotating might foster not only reading but also be the prelude to editing. Different annotation tools exist for the Web (e.g., *Diigo*, *A.nnotate*). Being a Web application, *Wikipedia* can benefit from these tools. However, general-purpose annotation tools do not make annotation a natural gesture within *Wikipedia*. That is, annotation editing, rendering or retrieval in e.g. *Diigo* is dissociated from the edition, rendering or location of articles in *Wikipedia*, hindering the role of annotation as the prelude to article edition. **WikiLayer** is a *Wikipedia*-specific annotation tool. The implications include: (1) *wikinotes* (i.e. annotations on *Wikipedia* articles) might be *WikiText* formatted; (2) *wikinote* rendering is seamlessly integrated within the *Wikipedia* front-end; (3) *wikinote* editing, management and sharing is achieved without leaving *Wikipedia* (no separated annotation repository). *WikiLayer* is available for *Firefox* and *Chrome*.

Author Keywords
Wikipedia, Annotation, Personal Knowledge Management

Introduction

Reading has been characterized as "a gateway activity through which newcomers learn about *Wikipedia*" [1]. Reading *Wikipedia* spurs community engagement, and it is the entry to more involved activities such as editing. However, the low rate of readers who become editors seems to suggest that reading is not enough. Understood as a learning activity, reading is commonly associated with taking notes. Different studies highlight the importance of annotation as a way to fix, relate and structure knowledge as you read [2]. Being a Web application, *Wikipedia* can benefit from Web annotation tools such as *Diigo* or *A.nnotate*. Annotation systems permit users to "add, modify or remove information from a Web resource without modifying the resource itself. The annotations can be thought of as a *layer* on top of the existing resource, and this annotation *layer* is usually visible to other users who share the same annotation system". Layering is a suitable approach for *general-purpose annotation* since it decouples the annotation functionality from the underlying website. The downside is that such decoupling leads to two different Web experiences: the annotating experience provided by the annotation tool (e.g. *Diigo*) *versus* the Web experience of the annotated website (e.g. *Wikipedia*). Such mismatch might not be a problem for most of websites. However, we advocate for *Wikipedia* to regard annotation not as an end but as a mean to foster reading and editing. Annotation in *Wikipedia* is not limited to record Web content for later referral. While annotating a University website is not directly related with the University goals (i.e. educating), Wikipedia is all about engaging the crowd in article contribution. From this perspective, annotation is no longer an ancillary activity but a main mean to fulfil *Wikipedia*'s ends. By using general-purpose Web annotation tools, we miss the opportunities brought by a

Wikipedia-specific annotation tool. This implies annotating being seamlessly integrated within *Wikipedia*, i.e. being a natural gesture for wikipedians. But *Wikipedia* itself is a public repository whereas annotation is a private activity. Browser plugs-in offer a balance for local functionality to look like being natively provided by *Wikipedia*. This demo describes such an attempt: *WikiLayer*. This demo aims at raising awareness about the importance of annotation for engaging wikipedians, and collects evidences about what is meant by *Wikipedia*-specific annotation. The *Firefox's WikiLayer* and the *wikinote* samples are available for download at http://webaugmentation.org/wikilayer.xpi and http://tinyurl.com/wikilayerwikisym2012, respectively.
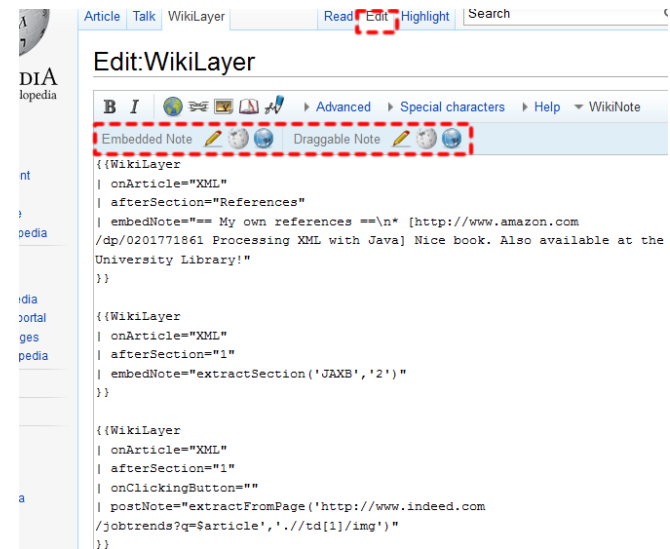

Figure 2: *Wikinotes*: the 'edit' view. Besides *WikiText* buttons, the editor bar includes buttons to readily create *wikinote* templates. A single click, and the corresponding template is introduced.

Making the Act of Annotation a Native Gesture within Wikipedia

So far, *Wikipedia* supports two modes for article interaction: describing an article, and talking about an article. *WikiLayer* envisages annotations as a third mode: besides describing and talking, articles can also be subject to annotation. *Wikipedia* uses tabs to reflect modes: the *Article* tab and the *Talk* tab. Accordingly, *WikiLayer* introduces a third tab: the *WikiLayer* tab (see Figure 1). By clicking on this tab, the *view* tabs, *i.e.* "*Read*" and "*Edit*", become online editors for annotations upon the current article (hereafter referred to as 'wikinotes'). Clicking the "*Edit*" tab leaves you to a canvas to write a *wikinote* (see Figure 2). Clicking the "*Read*" tab renders the *wikinotes* associated with the current article (see Figure 3). Finally, if you go back to the "*article*" mode then, annotations are seamlessly integrated with the original content. Indeed, it is not possible to distinguish the original content from the annotation content. Since this might be convenient in some scenarios, the 'Highlight' tab paints with yellow the annotation content when reading the article (see Figure 1).

Tuning Annotation Definition to Wikipedia

A *wikinote* is more than just content. *A wikinote is a contextual rendering-aware annotation upon an existing Wikipedia article*. Broadly, a *wikinote* is a triplet <*content, context, rendering options*>. Akin to *Wikipedia* editing practices, this structure is captured through a wiki template (see Figure 2). These templates capture this multifaceted character of a *wikinote*. First, **wikinotes are annotations.** They have content. The source of this content serves to typify *wikinotes*: *ad-hoc wikinotes* (i.e., those provided by the user itself using *WikiText*; icon 🖊 in the editor bar), *transclusion-like wikinotes* (i.e., those

obtained from somewhere else within the *Wikipedia*; denoted by the *extractSection*() function; icon 🌑 in the editor bar) and *mashup-based wikinotes* (i.e., those dynamically obtained from anywhere in the Web[1]; denoted by the *extractFromPage()* function; icon 🌐 in the editor bar). **Second, wikinotes are contextual.** This means that the annotation refers to a certain section of the annotated article, and most importantly, it takes its full meaning by being rendered by this context. Template properties "*onArticle*", "*afterSection*" and "*beforeSection*" serve to pinpoint the scope of the annotation. Unlike decontextualized annotations, *wikinotes* do not have a specific recovery mechanism. The *Wikipedia* article itself acts as an entry to your *wikinote* local repository: type the *Wikipedia* URL as usual but now you will get the article plus the *wikinotes*. Third**, wikinotes are rendering-aware.** No doubt about the importance of visual appearance when reading, more to the point, if such reading is geared towards learning. The role of the *wikinote* (e.g. its importance) might impact the rendering. *WikiLayer* offers two mechanisms. First, *wikinotes* might be rendered readily and seamlessly integrated with the original article (i.e. *onClickingButton* = false) or rather be popped up on demand when clicking a button. Second, *wikinotes* might be embedded as part of the original article (i.e. *embedNote*) or provided as a draggable note to be moved around the article (i.e. *postNote*).

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[1] *XPath* is used to pinpoint the *HTML* region to extract. However, wikipedians do not need to know *XPath*. The first time a *wikinote* with an *extractFromPage()* function is enacted, the engine automatically navigates to this URL and intersperse a grid-like structure on top of the current *DOM* tree. As the user moves the cursor around the screen, the *DOM* node under the current cursor location is highlighted. By clicking, the user makes up his mind about the fragment to be extracted, and the *wikinote* becomes bound to the so-identified *XPath*. Subsequent enactments of this *wikinote* will directly extract this external region.
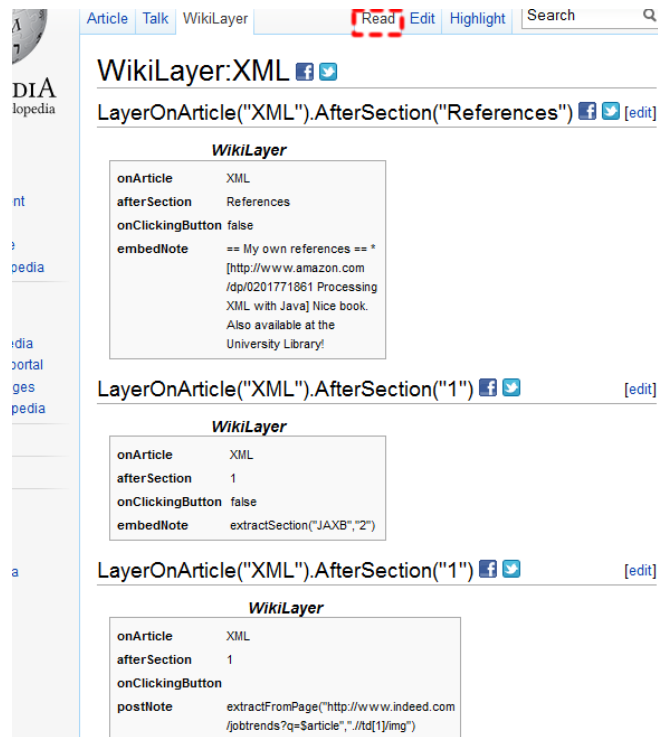
Figure 3: *Wikinotes*: *'read'* view. From top to bottom: an *ad-hoc wikinote*, a transclusion-like *wikinote* and a mashup *wikinote*.

Sharing Wikinotes

Annotation alone might not be enough. Sharing within your close fellows might increase not only the quality of the *wikinote* but also your confidence to consolidate the *wikinote* as part of the original article. Hence, sharing might play a pushing role in this transition from reading to editing. By its very own nature and purpose, *wikinote* sharing departs from *Wikipedia* article sharing. Rather than a central repository, we regard social networks as more appropriate for *layer* sharing. Being plain text, *wikinotes* can be easily e-mailed or posted in a *Facebook* wall. In addition, *WikiLayer* permits *wikinotes* (individually or in an article basis) to be turned into an URL (by clicking the *Facebook* or *Twitter* icons in Figure 3). Once on the tweet (e-mail or *Facebook* wall), click the *wikinote* URL, and *WikiLayer* will automatically introduce the *wikinotes* in the given article. Benefits include easy sharing of large *wikinote* sets through *Facebook* and *Twitter* but also, the possibility of using bookmark repositories (e.g. *Del.icio.us*) to store and share your *wikinotes*. All your colleagues need to see "your *Wikipedia*" (i.e. the original article + your *wikinotes*) is to install *WikiLayer*.

Conclusions

WikiLayer provides a lightweight, seamless, client-based approach to *Wikipedia* annotation. This endeavour is framed within the efforts to blend social knowledge management and personal knowledge management. From this perspective, *WikiLayer* paves the way towards introducing the personal perspective in wikis.

References

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