

# Textured Agreements: Re-envisioning Electronic Consent

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## 1. INTRODUCTION

It is estimated that less than 2% of people read the end-user license agreements (EULAs) shown during software installations [4]. However, the terms in these agreements can convey important information describing the consequences of using the software. For example, many spyware programs collect sensitive information, such as the user’s browsing habits, and outline this collection in their EULAs; users often unwittingly agree to these terms without reading the EULA [3, 4]. Users are also disincentivized to read EULAs since they interrupt the primary task of installing the software to accomplish a larger goal [5].

A number of solutions have been proposed to better communicate the terms of software legal agreements. Many of these proposals have taken the form of short summaries (also called “highlight” notices), which are shown separately from the main agreement. A study by Good *et al.* demonstrated that these summaries can significantly reduce the number of users who install spyware applications [4]. On the web, the Platform for Privacy Preferences (P3P) project has focused on developing machine-readable terms that can be analyzed by user agents. Numerous efforts are actively examining how to best present this information to users (e.g. [2]).

In this poster, we offer an alternative approach to compelling users to read legal agreements. Instead of introducing an additional summary of the material, we augment and embellish the agreement itself. We call these embellished agreements *textured agreements*. A laboratory study suggests that these visually enhanced agreements significantly increase reading time by an average of 30 seconds, from a baseline of essentially zero seconds. We briefly describe the design techniques employed to create textured agreements and present results from a controlled, experimental study.

## 2. TEXTURED AGREEMENTS

Textured agreements make use of information layering, pull-quotes, vignettes with mini-narratives, sensationalism, and visual variety [6, 1] to enhance agreement presentation. These techniques are commonly used in other visual communications, but have not been applied to, nor tested on, license agreements. Notably, as used in textured agreements, these techniques do not modify the underlying content. Instead, the visual enhancements serve to augment and emphasize the content. The end result is a visually vibrant design not unlike those found in popular media, such as magazines.

Textured agreements’ use of information layering improves the ability to scan and navigate the document, while techniques such as pull-quotes and vignettes (small comics il-

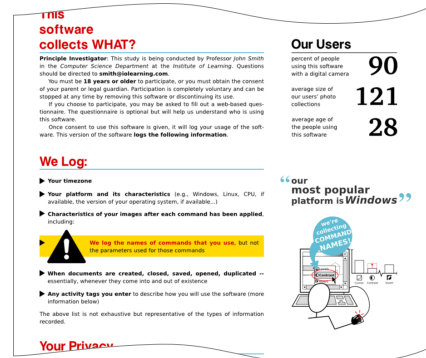


Figure 1: Example application of our techniques. A pull-quote, a warning symbol, and vignette/mini-narrative are shown.

lustrating concepts of the agreement) pull readers in and suggest the author’s intent to effectively communicate the concepts of the legal agreement (see Figure 1). As we will argue, this approach of enhancing the primary object of interest (namely, the legal agreement) has benefits compared to introducing additional documents, such as summaries.

## 3. EXPERIMENTAL EVALUATION

We evaluated the efficacy of textured agreements through a between-subjects deception study with five conditions: a control condition (standard text-only agreement), a summary condition (generated using the format and heuristics proposed by Good *et al.* [3, 4]), and three variations of textured agreements, which comprised minimal, moderate, and heavy applications of the visual design techniques. We took steps to avoid priming users by introducing a distractor task that concealed the true nature of the study: users were asked to download, install, and evaluate three pieces of software for an image manipulation task and to choose the application that they would prefer to use “now and in the future.” This simulated a more realistic scenario of downloading and installing software to accomplish a task. Subjects also provided verbal consent, rather than written consent, to avoid exposure to similar agreements prior to installing software. Written consent was later obtained after the study was complete.

We replaced the installation programs for each piece of software with a custom installer that mimicked the appearance of a normal click-through installer. This custom in-

Measure	Heavy	Moderate	Minimal	Summary	Control
A Consent screen times (seconds)	mean=39.8 SD=39.0	mean=35.6 SD=39.2	mean=16.7 SD=23.5	mean=10.3 SD=22.0	mean=7.1 SD=11.2
B Maximum scroll amount (%)	mean=53.4 SD=48.3	mean=41.5 SD=38.5	mean=34.7 SD=38.7	mean=14.6 SD=29.1	mean=18.4 SD=32.0

Table 1: Summary of results across conditions

staller was instrumented to record user interface events (e.g., scroll events, click events, and event timings) and experimentally varied the license agreement presented according to the participant’s experimental condition. In the summary condition, the “Welcome” screen shown by the installer was replaced with a summary of the agreement. A questionnaire was administered after the subjects arrived at their choice.

90 subjects were recruited from a university. 6 dropped out, leaving 84 subjects: 16 for the heavy condition and 17 for all others, with 43 females and 41 males, aged 17-47 years old (mean=24, SD=6).

### 3.1 Results

**Scrolling and Reading Behaviour.** To understand the effects of the agreement, we examined the time spent on each installer screen and the distance each user scrolled in the main agreement. Time spent on the EULA screen is given in Table 1A. An ANOVA indicates significant differences between conditions ( $p < 0.01$ ). Post-hoc Tukey tests indicate significant differences between heavy and control ( $p < 0.01$ ), heavy and summary ( $p = 0.026$ ), moderate and control ( $p = 0.026$ ), and a trend for significance between moderate and summary ( $p = 0.063$ ) conditions. Thus, moderate and heavy application of textured agreements’ visual design techniques significantly affected time spent on the EULA screen.

The maximum distance scrolled in the agreement (as a percentage of length) is given in Table 1B. An ANOVA indicates significant differences between conditions ( $p < 0.01$ ). Post-hoc Tukey tests indicate significant differences between heavy and control ( $p = 0.04$ ), and heavy and summary ( $p = 0.02$ ). This result provides further evidence of the value of visually enhancing EULAs to compel reading.

The summary condition did not significantly affect time spent on the EULA screen, but there is evidence that the summary was noticed by users. Participants in the summary condition spent an average of 18 seconds longer on the summary screen than users in the other conditions spent on the welcome screen, and post-hoc analysis indicates that this difference is significant ( $p < 0.0001$ ).

**Qualitative Responses.** The post-task questionnaire asked for a range of feedback on the consent process. We highlight a few important trends.

In contrast to the control, summary, and minimal conditions, users in the moderate and heavy conditions routinely reported being drawn into the content. For example, a participant in the heavy condition commented:

It got me to read them, when I install other programs, I NEVER read them. Big letters, organized points, and cartoons help. I think the organization was the most important.

Such comments suggest the value in the careful application

of visual design techniques to license agreements.

We previously noted that the summary condition compelled people to read the summary, but not the full agreement. When asked about their motivations behind reading or not reading the license agreements, some participants in the summary condition cited the short notices as motivation to skip reading the full EULA. For example, one participant stated:

I assumed that no trickery is involved. I haven’t heard of anyone who has been cheated in this manner. Thus I optimized my decision making for the moment by not reading the agreements.

Users seem to trust that the short notices accurately represent the full agreement, though this is problematic: By definition, not all information from the full agreement is found in the summary.

## 4. DISCUSSION

Textured agreements and summaries can both increase the chance of effectively communicating content in legal agreements: Users spent approximately 30 seconds more reading textured agreements and 18 seconds on summaries. However, our study results caution against the use of summaries. Participants spent significantly more time reading the *full* license agreement and scrolled more in the heavy condition than did subjects in the summary condition. In essence, the summary notices *short-circuited* participants’ reading behaviour, while textured agreements brought their attention to the *primary object of interest* (the full agreement).

This initial study suggests the value in attending to the visual design of license agreements, terms of use, and privacy policies. Given these results, we are now conducting a follow-up study to better understand how these techniques affect users’ comprehension of the agreement terms.

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