"Like" it or not: How do Users Understand the Relationship between "Likes" and Edited Social Media Content?

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Abstract

The "like" button on many social media platforms allows individuals to express endorsement of content. However, sites with a "liking" feature, such as Facebook, also permit users to edit or change the content of the original post after it has been published and "liked" by other users. This can be problematic if a transparent edit history is not (easily) available. In this paper, we report an online survey that assessed how individuals interpret what has changed in such a case. We tested four interface designs to see whether making the evolution of "likes" and edited comments more explicit improved users' understanding of what had happened. We found, that in contrast to what is displayed in current interface implementations, alternate interface designs make clearer how "likes" are associated with posts that changed over time. These have the potential to help users understand what has been changed in the post more easily.

Author Keywords

Social Media; Facebook; User Interface; "Like"-button; Information; Notification

ACM Classification Keywords

H.5.2. [Information Interfaces and Presentation (e.g. HCI)]: User Interfaces

Introduction

Being able to "like" and comment on social media content is a key feature of many social media platforms. Individuals may do so for a variety of reasons, including to show agreement or support for a statement posted by another person [6]. However, many social media platforms such as Facebook [5], Google+ [7], and Instagram [9] also allow people sharing content to edit their posts even after gathering "likes" and comments. While the user interface often indicates that a post's original content has been edited, such an affordance does not exist for other-generated content that is associated with it (such as "likes"). This could lead to confusion about what was "liked" (the original content or the altered content) or worse, manipulation for nefarious aims in the case where a poster changes the content of their comment after gathering "likes" from many people [13]. Minor changes in the semantics of a sentence are barely a problem worth discussing, but changes that contradict a previous statement may be used to harm people. The possibility to make changes was only introduced in 2012 [2]. Soon after that feature was announced on lifehacker [17], a discussion started on how this feature can be misused in different ways. While no data could be found how often and how significantly "liked" contents and comments are changed, we believe that this is still a serious problem. Data about the significance of changes may never be available because only Facebook can release this data. Therefore, it is important that an interface makes it clear and understandable as to how "likes" match up to the edit history of a post. Accordingly, the goal of this work was to understand:

RQ1: *How do interface design decisions help or hinder understanding about what happens to "likes" after content changes?*

RQ2: *In what cases do people want to be informed if content they "liked" changes?*

We conducted a survey with 104 people around the world to understand their impressions and preferences with regards to the above questions. We found that people do not universally understand how current platforms such as Facebook illustrate the connection between "likes" and edited content, and that social media platforms can incorporate additional interface cues to potentially help alleviate this issue.

Related Work/Background

Previous research centered around "likes" in social media has focused on attitudes and perceptions of the person giving or receiving "likes" ([4], [15]) or the varied motivations that users might have for favoring or "liking" something on Twitter, which can signal many things [12]. Another study examined what makes people click "like" on Facebook [10] and found out that people click "like" to express either enjoyment or to please others depending on one's own emotional stability and self-esteem.

Liking has also recently been studied in the context of the enterprise, where "liking" content can also occur for bookmarking, support, and low-cost feedback [8]. At the same time, work looking at the darker side of "likes" have noted that the way a social media site uses "likes" to promote or favor content in its algorithmic feed can lead to cases where page owners try to game the system, for example using "like-farming" tactics [3].

Less attention has been placed on understanding perceptions of the relationship between "likes" and content that changes over time. Related work on collaborative writing, such as in Wikipedia, has focused on visualizing edit history over time or unearthing patterns of conflict between editors
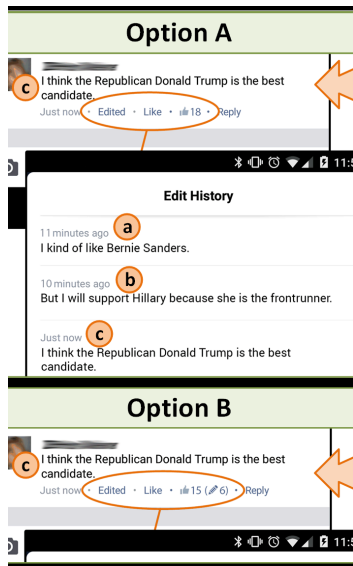
Figure 1: Different designs that were presented in the survey (Option B had the same "Edit History" as Option A).

[18]. However, no similar study has focused on assessing understandings of content editing and change in social media comments. As a result, we conducted a survey-based study to understand how individuals perceived the interplay between "likes" and edited comments, and how the interface presentation affected these perceptions.

Study/Method

To answer the questions stated in the introduction, we conducted an online survey with 104 respondents.

Participants
Survey participants were recruited through Amazon Mechanical Turk (AMT) and Social Network Systems (SNS). We used a snowball system through emails and postings on social networks [5, 11, 19] trying to find as many participants from Asia and Europe as possible (as those continents are less available in Amazon Mechanical Turk). HITs on Amazon Mechanical Turk [1] were used to get answers from participants from the US (participants were paid $ 1.30 for a 10-minute survey). The demographics as well as other relevant data are summarized in Table 1. Most participants were 39 years or younger. About two thirds of the participants were male and one third were female. Most of the participants used Facebook daily or a few days a week. The respondents can be considered representative taking statistical data about Facebook users into account [14, 16].

Procedure/Data Collection
Participants filled out an online survey with a series of questions about "likes" on Facebook. First, they were asked about their pre-existing assumptions about what happens to "likes" of a comment or post when its content is altered.

To assess understanding and comprehension of the existing and three new user interfaces, four designs were presented. The interface prototypes depicted different ways

of showing "likes" on a series of comments on Facebook. (These were shown in the context of a simulated discussion about the upcoming U.S. election, as this is a topic known and discussed allover the world). After discussions with a small group of Facebook users, we decided to use an example with significant changes, because we found out that minor changes (like typos) are not considered important enough to raise interest. We picked this example because it is easy to follow. But also less significant changes like adding or removing a "not" or changing just two letters, for example from "in"creasing to "de"creasing, also changes the meaning completely, but may be harder to recognize from the survey participants. The prototypes were generated based on thoughts and results of a discussion with a group of five users where every user described his/her assumptions regarding the current implementation of "likes" on Facebook. As shown in Figures 1 and 2, these prototypes varied in how much they broke down the "likes" in terms before and after the edited comment.

Option A (which is the current design that Facebook uses) only showed the sum of the "likes" over all (multiply edited) comments, as well as an edit history of previous versions of the comment. Option B showed the number of "likes" as well as a pen symbol and a number. The edit history view was the same as for Option A. Option C showed the number of "likes" and a "before edit" text with a number. As for Option B, the edit history view was the same as for Option A. Alternately, Option D showed the number of "likes" as in Option A, but the edit history view showed detailed numbers of how many "likes" each of the versions of the comment got. This allows the viewer to get an overview of how many "likes" the comment received for each of its versions. All versions indicated that the comment was edited in the info-line. The interface options were always shown in the same order to each participant (from Option A to Op-
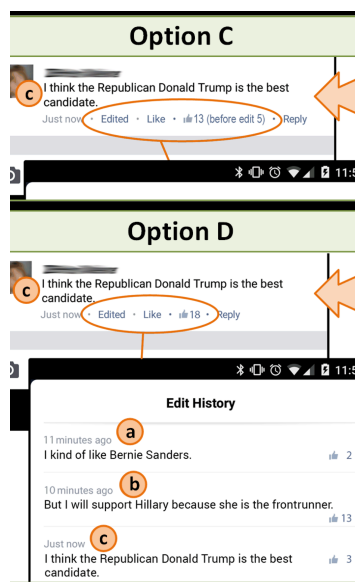
Figure 2: Different designs that were presented in the survey (Option C had the same "Edit History" as Option A).

tion D), where provided information was added from interface to interface. Randomization was not feasible, because then knowledge would have been provided beforehand that could have influenced the answers to the following questions (for example if Option D was shown before the others). Randomization of the interfaces was not an option due to their design. We wanted to compare the interfaces and look at the explanations why one interface was preferred over another by a participant to gather further knowledge for future tests. This would not have been possible with an between-subjects design. For each interface, participants were asked

1. How many "likes" the initial (Figure 1, (a)) and the for the first time edited comment (Figure 1, (b)) got together,
2. How many likes the for a second time edited and currently visible (Figure 1, (c)) got, and
3. How many likes the comment got altogether.

They also had to rate how easy or difficult it was to come up with their answer, and how confident they were in their answer. Next, to determine relative preference of interface designs, participants were asked: *Please rank the different solutions in terms of which you think is clearest/easiest to understand to most confusing/hardest to understand.* They were also asked to explain their ranking in an open text field.

To assess attitudes towards being notified when a "liked" comment changed, participants were asked to indicate which option they preferred:

1. I do not want to be notified in any case.
2. I only want to be notified if the meaning of the comment is changed.
3. I want to be notified if text is added or changed.

4. I always want to be notified, independent from the change (even for small changes like correcting typos).

Finally, participants answered demographic questions about their age (given in ranges), gender, cultural background, and experience using Facebook (see Table 1).

Table 1: Demographics (in percent)

		all	SNS	AMT
Age	below 29	41.35	21.15	20.19
	30-39	37.50	23.08	14.42
	40-49	12.50	4.81	7.69
	above 50	8.65	2.88	5.77
Gender	Male	65.38	34.62	30.77
	Female	34.62	17.31	17.31
Facebook usage	Daily	54.81	27.88	26.92
	A few times a week	25.00	10.58	14.42
	Once a week	3.85	1.92	1.92
	A few times a month	7.69	5.77	1.92
	Once a month	1.92	0.96	0.96
	< than once a month	3.85	3.85	0.00
	Never	2.88	0.96	1.92
Cultural identification	Europe	37.50	34.62	2.88
	North America	46.15	1.92	44.23
	other	16.34	15.38	0.96

Analysis and Results

Following, we answer the research questions by providing and discussing data from our survey. The initial question in the survey showed that people have an understanding about how the "like" counter changes with edits.

Option	correct
A	29.8%
B	39.4%
C	51.9%
D	68.3%

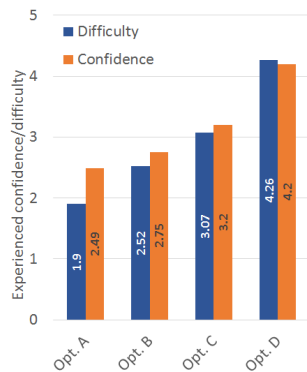**Table 2:** Correct answers for the different screen options.

Figure 3: Experienced confidence and difficulty for the different options (0 (very difficult/very unconfident) to 5 (very easy/very confident)

Interface design (RQ1)

Testing several interface designs, we try to answer the following research question: *"How do interface design decisions help or hinder understanding about what happens to "likes" after content changes?"*. Thereby, we assume that if people understood how posts are changed, they can answer the question correctly by filling in the right numbers in an open text form with three fields. As table 2 shows, Option D (providing the most information, especially in the edit history view) scores best (68.3%), followed by Option C (51.9%) and Option B (39.4%). While Option B and C have a similar interface design, it can be stated that the variety of answers given by the participants for option C indicated a more uniform understanding of the interface resulting in less overall combinations of numbers in the answers. Option A, which is the current implementation used by Facebook, was answered correctly only by 29.8 % confirming our impressions that lead to this work.

In terms of preferences, the overall ranking indicated that Option D was the clearest and easiest to understand (preferred by 84%), followed by Option C (11%), Option B (3%), and Option A (3%). This was also supported by the felt difficulty and confidence while answering the questions for the different options. On a scale from 0 (very difficult/very unconfident) to 5 (very easy/very confident), Option D was experienced best, followed by Option C, Option B, and Option A (see Figure 3). It can be stated, that there was a significant effect of the interface design on the perceived difficulty $(F(3, 412) = 73.13, p < .001)$ and a significant effect of the interface design on the confidence $(F(3, 412) = 34.39, p < .001)$. Regarding the difficulty, the values for the various options are significantly different. The confidence values for the options are also significantly different except between Option A and Option B. Furthermore, there is a strong correlation between correct answer, perceived dif-

ficulty, and perceived confidence for Option D (correlation between correct answer and perceived difficulty: 0.70, correct answer and perceived confidence: 0.64, difficulty and confidence: 0.92).

In an open-ended question, participants were asked to explain their ranking. Participants found Option D easier to understand than the other options: *"Option D is the most understandable one. Everyone can see what it means"*, *"Clearly option D gives the most information (though it should also state a "before edit"). Option C is better than option B as it is less ambiguous. Option A ignores the like/edit issue completely"*. They also liked the transparency of Option D: *"With multiple edits, option D is the most transparent of what has happened before and after edits"*, *"More transparency makes it easy"*. They liked the fact that likes were shown on a per comment basis: *"The last one was much clearer because it had the like counter next to each comment"*, *"Unless you can break down the likes on a per edit basis, it's best to display only the total like number. Using the "before edit" and/or the after edit icon is confusing and isn't all that helpful"*, *"Option D is the clear choice, with the history of likes per comment clearly laid out"*. This also supports the rankings for experienced difficulty and confidence. However, some participants remarked that *"[...] it's a pain that you have to open the edit history for that"* or *"I like how D is also upfront about pre and post edit likes, and in detail, but one has to look through the edit history to see this"*. This indicates that those participants want a solution that shows the history inline with the current comment. This should be investigated in future work. Another participant states *"I like it best when it shows how many likes each version of the comment got. My only problem with this is that people would be able to see previous edits, which defeats the purpose of editing a comment in the first place"*, which puts the option to edit comments into question altogether.

Information about changes (RQ2)

Trying to answer the second research question *"In what cases do people want to be informed if content they "liked" changes?"*, we asked for user preferences. The answers for the question of: "You can decide that you want to be notified when a comment you "liked" is changed after you clicked the "like" button. In which case do you want to be notified?" were:

1. I do not want to be notified in any case. (27%)
2. I only want to be notified if the meaning of the comment is changed. (31%)
3. I want to be notified if text is added or changed. (28%)
4. I always want to be notified, independent from the change (even for small changes like correcting typos). (14%)

The results show that 73 % of the participants want to be notified somehow if something they "liked" is changed. Most of these people (59 %) only want to be notified if there is a bigger change.

Discussion

As the survey results indicated, currently, the way the Facebook interface design communicates the relationship between "liked" and edited content (Option A) is confusing as compared to alternate designs that could make it clearer as to how the content has changed over time. We showed three alternate interfaces which provide more information than the current implementation of Facebook. Our results suggest that the more information is shown the better. An implementation that could be implemented in the current interfaces used by Facebook is proposed in this paper. However, it would be interesting to test other designs providing the same amount of information in a different way.

We chose Facebook as a platform to use for this study because of its large user base. In future work, studies have to show if these findings can be applied outside of Facebook to any sort of collaborative or social system that allows editing of comments. We furthermore only gathered the opinions of 104 users where half were recruited through AMT and half with a snowball system using emails and social media. Qualitative interviews may help to get more insight into how people experience the presented information. Considering the findings of Kizilcec (2016), these interviews should also be used to investigate how much more information should be provided to the users to "build trust, help manage expectations, and preempt experiences of inconsistency". Additional tests are necessary for providing users with the option to receive notifications about "liked" comment changes and if these are a useful and appreciated feature. However, future work also should examine how significant the semantic changes regarding the meaning of the comment or regarding changing or adding of content have to be in order to notify users.

Conclusion

In this paper, we present a study about the assumptions and understandings people have about "likes" on Facebook in case the "liked" content is altered. We found out that people have some understanding about what happens if posts are changed in the current implementation of "likes" on Facebook. We furthermore tested different representations of interfaces and found out that people prefer more information than provided in the current implementation of Facebook. If they had more information, the given task (telling how many "likes" an initial and an altered post got) seemed less difficult to the participants and they felt more confident about their answers. We also found that most people would like to be notified if contents they "liked" are changed if the change in the post or comment is big enough.

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