A Democracy called Facebook? Participation as a Privacy Strategy on Social Media

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Abstract. Despite its known inadequacies, *notice and consent* is still the most common privacy practice on social media platforms. Indeed, conceptualizing alternative privacy strategies for the social media context has proven to be difficult. In 2009, Facebook implemented a participatory governance system that enabled users to vote on its privacy policy. However, three years later, Facebook held a final vote that led to the termination of its participatory governance system. Here, we empirically assess this participatory privacy strategy designed to democratize social media policy-making. We describe the different components of Facebook's participatory governance system, show how users could influence privacy policy decision-making, and report the privacy policies users accepted and rejected by vote. Furthermore, we identify the common themes users discussed during the final electoral period by applying an unsupervised machine learning topic modeling algorithm to thousands of Facebook user comments. Our results demonstrate that users voiced concerns about being insufficiently informed about participation commitments and possibilities, attempted to orchestrate a transfer of the vote to a third-party platform, and engaged in spreading misconstrued data ownership claims. Based on our results, we analyze the key reasons behind Facebook's failure to implement a successful participation process. Finally, we highlight the significance of framing diversity for privacy decision-making in the context of a participatory privacy strategy on social media.

Keywords: Social Media Democracy, Social Media Governance, Privacy, Online Participation, Topic Modeling.

1 Introduction

"So this was a major breach of trust and I'm really sorry that this happened. You know we have a basic responsibility to protect people's data and if we can't do that then we don't deserve to have the opportunity to serve people."
Mark Zuckerberg in an Interview with CNN following the Cambridge Analytica scandal, March 22, 2018 [1].

Today, social media platforms must solve a variety of different data-related problems such as fake news [2], election meddling [3], as well as numerous privacy challenges such as data breaches due to interdependent privacy violations [4, 5]. Even before the Cambridge Analytica data scandal became public, a study by Stieger [6] found that the majority of users ending their social media accounts had justified their virtual identity suicide due to privacy concerns.

To address privacy challenges, one can distinguish between two recognized approaches: first, the widely applied *notice and consent* strategy, commonly consisting of privacy disclaimers and privacy control interfaces, enabling users after registration to set their privacy preferences to various degrees [7]. Second, *privacy by design (PbD)*, essentially an architecture approach, requires data protection to be a built-in feature of information systems [8, 9]. Thus, PbD is not a matter of privacy policy design and communication, but an engineering solution with a focus on data minimization. For example, one goal of PbD is to minimize processing of personal data outside the scope of the data's original collection context, which is known as secondary use.

Both privacy methods come with specific drawbacks. For example, notice and consent has weaknesses related to the efficient informing of users and accounting for the complexity of data sharing contexts. It requires users to parse and understand lengthy and complex privacy disclaimers in order to evaluate whether the service's data practices are in line with their own privacy preferences [10]. Further, early digital privacy research has shown that individual privacy decision-making is subject to multiple biases and heuristics leading to deviations from preferred privacy behavior [11, 12]. The growing opaqueness of the current automated data collection practices including interoperable services, third-party data brokers, and ID-based cross-device tracking technologies (to name a few), have further amplified the incomprehensibility of privacy disclaimers and consequently the number of uninformed privacy choices – including those of some privacy experts [13]. Second, social media's notice and consent strategy usually comprises privacy control interfaces that have different degrees of data management capacities. The purpose of such controls is to allow users to manage their information disclosure. However, granular privacy controls can backfire: several studies found that more granular privacy control settings can lead merely to an increased data protection perception, a heightened sense of security, which, paradoxically, results in even more user information disclosure. Some authors have termed this phenomenon "privacy fatigue" [14, 15]. Notice interfaces may also be designed to subtly coax individuals to reveal more information than likely intended [16, 17].

PbD's focus on engineering privacy into information technology systems is even less suitable for the social media context: first, people-based marketing techniques are social media's economic lifelines and therefore hard to reconcile with PbD's minimization of data transfer, storage, and processing. Spiekermann and Cranor, for example, have pointed out that social media's business model requires linkage of identifiers across different databases creating data flows that render a PbD approach to privacy untenable [18]. Furthermore, as users have

an incentive to engage in social interactions that necessarily produce vast data flows, social media user activity appears largely incompatible with PbD's strict data minimization principle.

Evidently, both notice and consent and PbD are inadequate privacy strategies for the social media context, which raises the question how alternative privacy strategies could be conceptualized and implemented. In this paper, we examine the feasibility of a participatory governance approach to privacy that relies on social media users to participate in data policy-making. For this purpose, we analyze the first, and to our best knowledge only, large-scale social media governance initiative with the objective to democratize data policy processes for a global online population. Between 2009 and 2012, Facebook implemented a participatory governance system that enabled users to vote on its privacy policy. The participatory governance process consisted of two main parts: First, in a blog post, Facebook published changes to its data policy documents and subsequently allowed thirty days for user comments [19]. A threshold of 7,000 user comments needed to be reached for the proposed changes be to subjected to a vote. This rule, however, was not applied to the initial proposal, the introduction of the participatory governance system itself. Generally, if a proposal did not reach the required 7000 user comments, Facebook implemented the changes without user voting. Second, if a vote was held, then 30% of the active user population needed to participate in order for the results to be binding. Within the three-year period, only two out of eleven proposed policy changes managed to reach the necessary number of comments to be subjected to a vote. Importantly, in late 2012, Facebook held a final vote, in which users lost their voting privileges since a pre-specified quorum of about 300 million users was decisively missed (i.e., only 668,872 Facebook users voted). Newspapers responded to this outcome with headlines such as "Facebook Democracy is Dead" [20] and "Whoever promised us Facebook 'rights'?" [21]. Despite such attention-grabbing press articles, however, no research has been conducted on Facebook's participatory privacy initiative.

To fill this gap, we first explain the different components of Facebook's participatory governance approach and show how it enabled users to exert influence over the data policy decision-making procedure. Second, we chronicle the events between 2009 and 2012, in particular, those that are relevant for the introduction and eventual elimination of the open governance initiative. Third, we apply an unsupervised machine learning topic modeling algorithm to 5269 Facebook posts surrounding the final vote in 2012. Thereby, we identify common themes based on the topics users engaged with most during the final electoral period. We then outline the main reasons why Facebook's effort to democratize its data policy design failed. Finally, we end by briefly discussing the significance of framing effects for participatory governance processes that rely on user judgment. Learning from Facebook's attempt to democratize data policy procedures, we argue that the success of future participatory privacy initiatives essentially depends on establishing competition among different data policy frames.

2 Background

In February 2009, Facebook received widespread protests from users and non-profit privacy organizations after it had changed its main data policy document called *The Statement of Rights and Responsibilities (SRR)* [22]. This change essentially granted Facebook the right to handle user information for advertising practices for indefinite time after users had left the platform [23]. In response to the public outcry, Facebook revised its decision and publicly announced to open up the policy design process to its users by launching a notice-and-comment rulemaking process [24]. Over a three-year period, Facebook drafted a total of twelve privacy proposals that were subject to this process. The first such policy proposal was published on April 26, 2009, which included the introduction of the novel participatory governance process (among others).

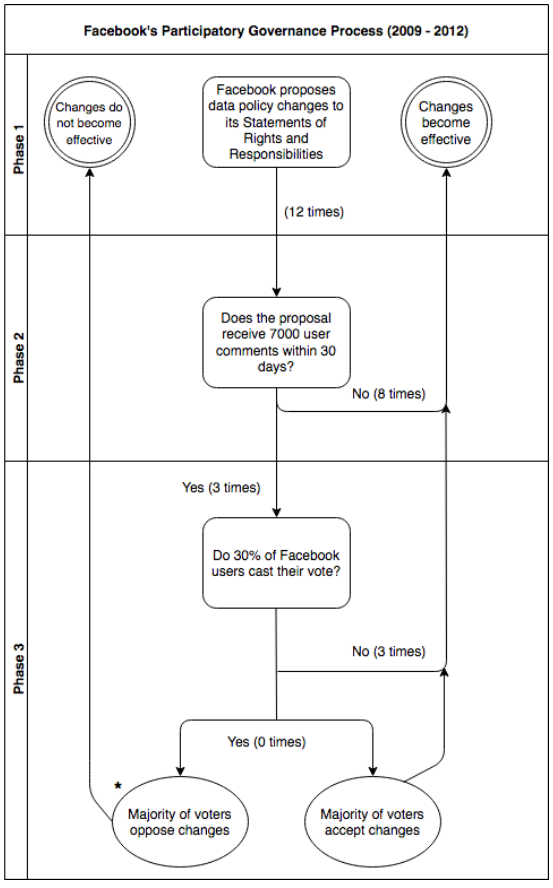

Fig. 1. The three phases of Facebook's participatory governance system (2009 - 2012). [* indicates user influence in the governance process. The first policy proposal did not include phase 2.]

2.1 Facebook's Participatory Governance Process

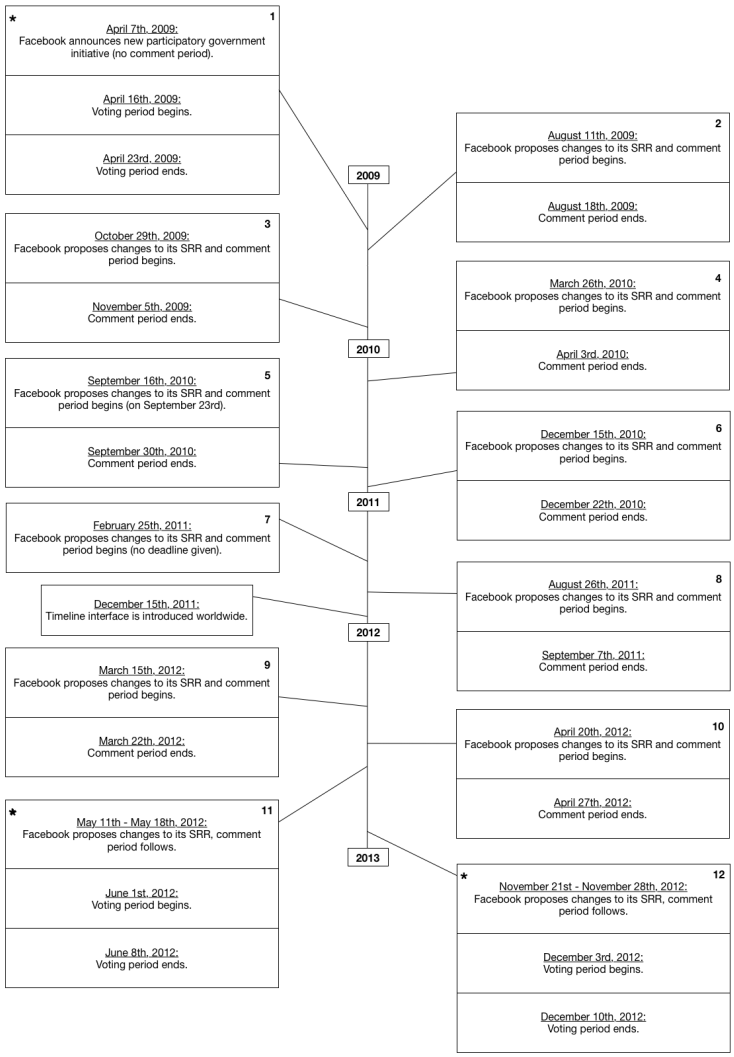

Fig. 2. Timeline of all Facebook policy proposals between 2009 and 2012. [* indicates proposal was subjected to a vote. No vote reached the required 30% voter turnout.]

The governance process was structured into three phases: during the initial phase, Facebook presented a new policy draft on a Facebook page called *Facebook Site Governance* [25]. This triggered a thirty-day period, the second phase, enabling Facebook users to provide comments on the proposal. Users were asked to place their comments on Facebook's blog page [26]. A rule specified a necessary threshold of 7000 user comments on a policy proposal for a vote to take place. However, for the first policy proposal in 2009, Facebook circumvented phase 2 and asked users to directly partake in a vote. Generally, once the number of comments exceeded 7000, in a final phase, users were given a seven-day time frame to cast their vote on the policy suggestions through a Facebook app. Importantly, a voting regulation required a minimum of 30% of active Facebook users to participate in the vote for the results to become binding (active users were defined as users who had logged on to Facebook at least once in the last thirty days prior to the vote, see [19]). Figure 1 illustrates the three phases of the governance process.

A Facebook policy proposal could only be rejected by user vote once phase three of the process had been reached and 30% of active Facebook users had casted a vote with the majority opposing the proposal. Between 2009 and 2012, three out of a total of twelve policy drafts were subjected to a vote, however, as mentioned above, the initial policy proposal did not require user comments. No proposal reached the required participation percentage (see Figure 2 for a detailed timeline of the relevant governance events).

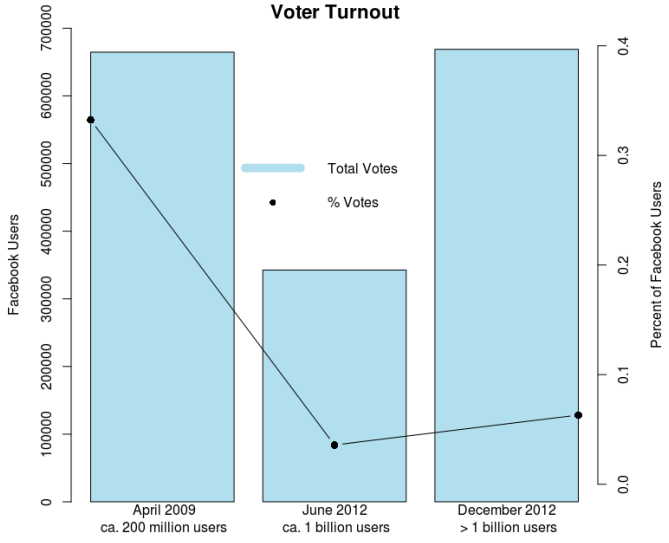

Fig. 3. Voter turnout. Bars represents the number of valid votes casted for each vote. Line represents the percentage of active Facebook users who voted.

A second policy change was subjected to a vote on June 8, 2012, that contained multiple modifications to the SRR. Among others, it explained in more detail how user information and information of users' friends is saved on users' phones, and provided more information on how advertisement is served on the platform [27]. Finally, on November 21, 2012, Facebook published its 12th and last policy draft that comprised three updates to the SRR: new filters to manage privacy controls of Facebook's messaging tool, the integration of users' Instagram data into their Facebook profile, and the termination of the voting component of Facebook's governance process [28].

The required 30% participation turnout was missed by large margins in all three votes. In fact, user participation did not exceed 0.4% of active Facebook users for any of the three votes (Figure 3). The final vote in November 2012 mobilized the largest number of voters with 668.872 Facebook users voting out of a total of 1.060.000.000 active Facebook users at the time [29].

All votes produced clear results. In April 2009, a large majority voted in favor (74.3%) of the introduction of the voting system itself [30]. In June 2012, a second vote produced a clear result with 86.9% of the voters rejecting Facebook's data policy proposal (see Figure 4). Similarly, for the final vote in December, 88% of the voters opposed the data policy proposals to prevent Facebook to take away their voting rights [31]. As the final two elections failed to reach a voter turnout of 30%, Facebook went on to adopt the policy changes.

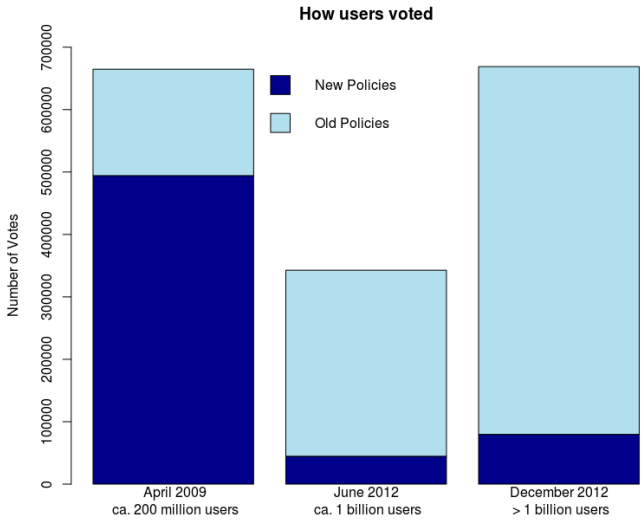

Fig. 4. How users voted. Voters accepted the first and rejected the second and third Facebook SRR data policy proposals by large margins.

3 Methods

For our empirical analysis, the Facebook Graph API was accessed to collect user comments associated with Facebook's participatory governance process. Specifically, Facebook comments on the following four dates surrounding the final vote were collected. On November 21, 2012, Facebook announced the end of the governance initiative in the context of a policy update. On December 3, 2012, Facebook announced the start of the voting period. Both posts were published on Facebook's blog [29]. On December 10 and December 11, 2012, Facebook published and commented on the voting results, respectively. These posts were published on the Facebook Site Governance page [25]. In total, 5269 user comments were collected on these four events on the corresponding pages in order to understand how users experienced and reacted to the voting process during the final vote.

We first employed a bag-of-words approach to analyze user comments. Thereby, we counted the weighted frequency of single words in every single comment by measuring their term frequency-inverse document frequency (TF-IDF) distribution on our sample [32]. A high frequency for a specific word in a mass of different comments does not mean that this word is very significant to a specific comment. On the contrary, single words that could be found very frequently in one specific comment are very often significant for this comment. TF-IDF copes with this issue and gives a more representative overview of the sample under investigation, which can be seen when reviewing the relevant word cloud (see 4.1, Figure 6).

In the second step, we applied a topic modeling algorithm to find underlying discussion topics that exist in our sample and are not easily identifiable. Topic modeling is a family of probabilistic models for uncovering the underlying semantic structure of a document collection [33]. In our case, we applied a non-negative matrix factorization (NMF) algorithm to uncover immanent properties of our sample [34]. NMF assumes that a matrix V can be approximately factorized in two matrices H and W, with all matrices being non-negative: $V \simeq HW$. Given that someone knows matrix V, one can apply a sequentially coordinate-wise algorithm [35] to acquire an estimation of H and W, by minimizing the objective function:

$$min||\mathbf{V} - \mathbf{HW}||_F$$

where V, H, $W \geq 0$ and $||.||_F$ is the Frobenius distance. In topic modeling, matrix V represents a document-term matrix, and matrices H and W a document-topic matrix and topic-word matrix, respectively. Given our sample, we created a document-term matrix by assuming that each user comment corresponds to one document. We removed all non-Latin characters in our sample, including punctuations. In order to derive the related document-topic and topic-word matrices from our document-term matrix, we needed to choose the number of topics a priori. We found the optimal number of topics by applying a density-based method proposed by Cao-Juan et al. [36]. The method calculates

the document-topic and topic-word matrices for various models, assuming a different number of topics each time. Then, for each model, it calculates the mean cosine distance between the derived topics with the function:

$$D_k = \frac{\sum_{i=1}^{K} \sum_{i=i+1}^{K} c(T_i,T_j)}{K(K-1)/2}$$

where K represents the number of topics in a model, and $c(T_i, T_j)$ is the cosine distance between topics i and j, calculated by:

$$c(T_i, T_j) = \frac{\sum_{v=0}^{V} T_{iv} T_{jv}}{\sqrt{\sum_{v=0}^{V} T_{iv}^2} \sqrt{\sum_{v=0}^{V} T_{jv}^2}}$$

where V is the number of words in the document-term matrix, and T_{iv}, T_{jv} the empirical distribution densities for word v in topics i and j, respectively, as derived from the topic-word matrix. The optimal model is the one that has the minimum mean cosine distance, in our case that was for K = 11 (Figure 5).

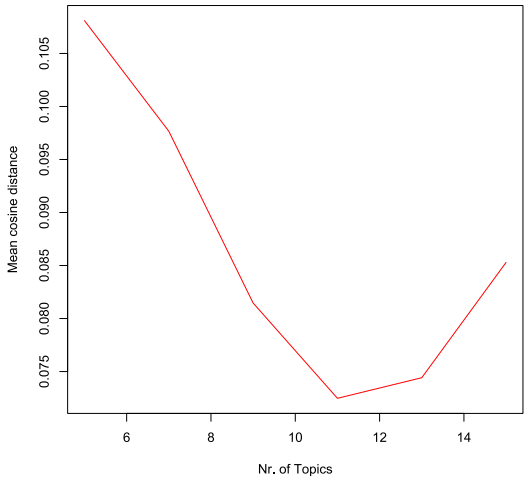

Fig. 5. Topic optimization process. The model with the minimum mean cosine distance consisted of 11 topics.

4 Results

4.1 Word Cloud Analysis

Our TF-IDF based word cloud analysis of the 5269 Facebook comments surrounding the final vote reflects users' dismissive stance towards Facebook's proposal to effectively end the voting component (Figure 6). Users oppose the removal of their right to vote on future Facebook policies. The most prominent terms in the visual word cloud are: "opposed", "oppose", and "changes". Generally, the majority of terms in the word cloud address governance (e.g., "demands", "change", "policy", "voting"). Furthermore, users specifically refer to the concrete issues that are at stake in the final vote (e.g., "privacy", "control", "personal", "data"). The lack of unrelated terms in the word cloud illustrates users' serious interest in voicing their opinion towards the proposal at hand. Moreover, the word cloud contains English as well as German terms.

Fig. 6. Word cloud of user comments during the final electoral period in 2012 [November 21, December 3, December 10 & 11].

German-language user comments are also associated with general governance-related terms (e.g., "abstimmen", "forderungen") as well as address their opposition to the proposal (e.g., "wiederspreche", "(ä)nderungen", "daten", "weitergabe").

4.2 Topic Modeling Analysis

The NMF-based analysis produced eleven topic bags: five English topics, four German topics, one Spanish topic, and one German-English topic. An overview of the topic bags with their distribution across the relevant events of the final vote can be seen in Figure 7. Topic 1 aggregates English comments of users that addressed the lack of notice provided by Facebook on the participation process. These user comments were published on the day of the policy change announcement (24%), the voting period deadline (37%), and the day after the results had been published (31%). Also, on the day of the proposal announcement, users stated that their friends had not been informed about the governance process (Topic 2, 59%). Beginning with the announcement of the policy proposal and throughout the voting period, users voiced their general opposition to Facebook's data policy changes. These claims commonly included demands to move the vote to the platform www.our-policy.org (Topics 3 & 4). A URL to the archived version of the website mobilizing participants for the vote in June 2012 can be found in [37]. Topics 5 and 6 include German comments made almost exclusively on the voting period deadline day (97% and 100%, respectively). Topic 5 aggregates comments that are reposts of a prefabricated text stating the opposition to the commercial use of personal data. Topic 6 includes reposts of a text opposing the commercial use of personal photos with references to European data protection law. Similarly, Topic 7 consists of German posts with the same content but referring to German data protection law. These posts were all published on December 3, 2012, the first day of the voting period (100%). After the voting period had ended, comments in Spanish included personal data ownership statements (Topic 8, 100%). Topics 9, 10, and 11 collected similar comments in English, which were mostly prefabricated texts discernible by terms such as "hereby" and "declare" (Topic 10). Such comments were supposed to function as signed user statements, which had the intention to prohibit Facebook from using personal data for commercial purposes.

Based on the topics identified by the NMF algorithm, we can cluster them into three prominent emerging themes: 1) lack of notice provided by Facebook, 2) demands to move the vote to another platform, and 3) general opposition against Facebook's data practices by reference to various laws. We will discuss these themes below.

Emerging Theme 1: Lack of notice provided by Facebook

A common theme we discerned was users' dissatisfaction with Facebook's effort to adequately raise awareness about critical participatory events. As Topics 1 & 2 illustrate, users stated that they were not sufficiently informed of their right to vote. For example, users complained that none of their friends seemed to be aware of the vote on deadline day (see example comment 1).

Example comment (1), November 10, 2012 (end of voting period):

(1) *"...I personally went on a 6 day barrage of information to my limited number of friends over 99% of them had no idea the vote was going on - much less how to access the proper page to vote..."*

Other users mentioned that they received the Facebook notification one day after the vote had ended either in their email spam folder or in their "other messages" inbox on Facebook; see example comment (2) & (3).

Example comments (2) & (3), December 11, 2012 (one day after voting period had ended):

(2) *"I'm just hearing about it today. Found this by accident. The only reason I'm even on this page today is because I found an email from you, dated 2 years ago that was hidden in my facebook spam inbox..."*

(3) *"...the notification I received about this was in my "other" messages folder. I just found out about this spam folder today, maybe that's not the best place to send these notifications..."*

Facebook had stated that it would first send out emails to all active Facebook users prior to a vote, second, inform about the vote on its Facebook Site Governance, and, third, its separate Facebook blog page. Nonetheless, our topic analysis indicates that users experienced timing and visibility problems for relevant governance-related notices. Moreover, the majority of user comments relating to notification problems were posted after the final vote had ended (Topic 1, December 11 & 12, 2012). Thus, many notification issues surfaced only when it was already too late.

Emerging Theme 2: Demands to move the vote to www.our-policy.org

Topics 3 & 4 cover German- and English-speaking users' opposition against ("widerspreche", "oppose") the removal of voting rights. Additionally, groups from both language regions demanded to move the vote to the website www.our-policy.org ("moechte", "abstimmen", "demand", "vote"). This website was created by privacy activist Max Schrems in order to facilitate the mobilization of 7000 user comments to trigger a vote for the June 2012 proposals. Example comments (4) & (5) illustrate that these postings were copy-and-paste messages. The initiative was successful in breaking the voting threshold, but the eventual vote did not pass the required 30% turnout (see 2.1, Figure 2).

Example comments (4) & (5) on November 21, 2012 (announcement of proposal):

(4) *"Ich widerspreche den Änderungen und will über die Forderungen auf www.our-policy.org abstimmen."*

(5) *"I oppose the changes and want a vote about the demands on www.our-policy.org"*

All user concerns calling for a move of the vote outside of Facebook occurred before and at the beginning of the voting period (Topics 3 & 4, 100% posted on November 21 & December 3). Since the website www.our-policy.org was available in English and German only, no such copy-and-paste messages can be found in Spanish (or any other language, see [37]).

Topic 1	Topic 2	Topic 3	Topic 4
didnt	dont	widerspreche	oppose
know	privacy	forderungen	changes
policy	change	moechte	demand
page	changes	ueber	vote
never	see	aenderungen	moechte
email	posts	wwwourpolicyorg	anderungen
voting	from	abstimmen	abstimmen
news	friends	abstimmung	wwwourpolicyorg
Theme 1: Lack of Notice		**Theme 2: Move vote to other website**	

Topic 5	Topic 6	Topic 7	Topic 8	Topic 9	Topic 10	Topic 11
lehne	widerspreche	widerspreche	datos	personal	hereby	companies
forderungen	weitergabe	weitergabe	personales	data	declare	share
ab	bild	daten	uso	photos	handwritten	users
verbiete	inhalte	inhalte	escrito	commercial	consent	information
daten	einhaltung	dritte	consentimiento	use	authorize	privacy
kommerziell	europäischen	erhaltung	totalmente	prohibited	personal	policy
anderweitig	datenschutz	urheberrecht	derechos	written	data	without
abstimmen	urheberrecht	deutschland	autorizo	control	use	permission
Theme 3: Opposition against Facebook's data practices by reference to copyright law						

Distribution across events	**Topic 1**	**Topic 2**	**Topic 3**	**Topic 4**	**Topic 5**	**Topic 6**	**Topic 7**	**Topic 8**	**Topic 9**	**Topic 10**	**Topic 11**
Announcement 21st Nov	0,24	0,59	0,02	0,78	0.02	0	0	0	0.53	0.17	0.55
Voting begins 3rd Dec	0,08	0,12	0,98	0,22	0.02	0	1	0	0.09	0.05	0.02
Voting ends 10th Dec	0,37	0,16	0	0	0.97	1	0	0.78	0.25	0.23	0.19
Day after vote 11th Dec	0,31	0,13	0	0	0.01	0	0	0.22	0.13	0.56	0.24

Fig. 7. Topic bags 1-11 (top) and their distribution (bottom) across the four significant events of the final vote.

Emerging Theme 3: Opposition against Facebook's data practices by reference to copyright law

Users from the different language regions expressed their discontent with Facebook's data practices in response to the final policy proposal. Yet, such user comments often did not address the specific content of the proposals. Rather, many of the posts were, again, copy-and-paste comments purported to have an effect on user data ownership rights on Facebook. Many users falsely believed that Facebook owns users' intellectual property, granting Facebook the right to publish and share user data without any constraints (independent of a user's privacy settings). In practice, signing up enables Facebook to share and redistribute user data as specified in users' privacy settings configuration. Similarly, German comments included statements prohibiting data use for commercial purposes (see Topic 5). German users stressed that their rights are under the jurisdiction of the law of the European Union (see topic 6) or German law (see Topic 7).

Example comment (6), December 3, 2012 (voting begins):

(6) *"Ich widerspreche den vorgeschlagenen Änderungen von Facebook und fordere die Einhaltung der Datenschutz- und Urheberrechtsvorschriften der Bundesrepublik Deutschland und der europäischen Union."*

English- and Spanish-speaking users also posted ownership-related messages. Commonly, users thereby announced that data controllers required handwritten authorization in order to use their personal data (see Topics 8 – 11).

Example comment (7), December 11, 2012 (one day after voting period had ended):

(7) *"I do not authorize use of my info posted or deleted before or after the changes made-by any third parties or any other group known or unknown to me.you must have my written consent or you do not have my permission."*

Example comment (8), November 10, 2012 (end of voting period):

(8) *"Les prohibo terminantemente usar cualquier tipo de información ma, es prohibida y / o solo con mi consentimiento puede ser usada. Cualquier uso sin mi consentimiento escrito es un hecho penal y será juzgado como tal Diego Bernal."*

Such declarations of data ownership were posted across all data collection dates. From the postings, it is unclear whether users were aware of the content of the policy draft, which may have contributed to a general fear of losing control over their personal data (see Topic 9, for example). Recently, a similar case occurred prior to the introduction of the General Data Protection Regulation

(GDPR): a Facebook picture containing a satirical objection message was frequently reposted by German users to attempt shielding them from obligations associated with the GDPR. The message was shared more than 5000 times [38].

4.3 Analysis

The topics we identified are rooted in the weaknesses of Facebook's governance process and the role Facebook played as a governance organizer. First, the lack of notice (Theme 1) users complained about, was partly due to a complicated multiphase governance procedure: it required users to carry out different activities (read and understand the policy changes, write a comment on a separate page, download an app and hence cast a vote) under varying time constraints (comment and voting period). Contrary to its April 4, 2009, announcement, Facebook shortened the official thirty-day comment phase to seven and fourteen days for some of the policy proposals (see 2.1, Figure 2). For the first vote in 2009, there was no comment phase at all. Such irregularities probably increased the confusion among users as to when and where their engagement was required. Furthermore, Facebook inconveniently scheduled the last vote for US users on November 21, 2012, exactly one week prior to Thanksgiving, when US users are more likely to travel or be occupied with other activities [39]. At the same time, rather than pinning relevant information on each user's individual timeline or newsfeed, Facebook sent out emails that ended up in some users' spam. Generally, social networks exhibit informational scalability that can dramatically mitigate the cost of reaching individuals – particularly for the platform operator. An experiment on 61 million Facebook users demonstrated that Facebook's mobilization messages for the 2010 congressional elections had a significant influence on voter turnout [40]. Thereby, experimenters showed that social mobilization on Facebook (automatically publishing "I voted" messages) is much more effective for political mobilization than for general information mobilization. For its own participatory policy process, however, Facebook did not apply such effective measures to increase voter turnout.

Second, the lack of effort to raise awareness undermined the legitimacy of Facebook as the organizer of the governance process among users. This is not only reflected by user calls to separate the electoral process from the Facebook platform (Theme 2) but also by the general passivity of Facebook as a mediator of user comments. Facebook did not react to user comments voicing concerns over insufficient information about the government process, it did not address the spreading of imprecise ownership claims, and did not respond to the orchestrated request to transfer the electoral procedure to a third-party platform.

Third, the imprecise statements regarding data ownership rights (Theme 3) expressed by English, German, and Spanish language groups reflect a wider disconnection between Facebook and its users. Evidently, both parties talked at cross purposes indicating the overall lack of informed user involvement in a governance process that did not provide users with the necessary resources to exert influence in the first place. This is perhaps best reflected in the regulatory requirements of the electoral procedure: only two out of eleven proposals that

had required user comments managed to pass the 7000-comment threshold and triggered a vote, while voter turnouts remained below 0.4% of active users for all three votes. In the last election in December 2012, a clear majority decided against the SRR proposals, but the vote missed 317,331,128 votes to be effective (for comparison: the US population is about 325.7 million). Even when Facebook held the first vote in 2009, a vote would have required more than 66 million participants to be binding (population of France is 66.9 million).

Besides such electoral hurdles, users had little influence in co-designing, co-directing, or correcting SRR proposals. For example, users could not vote on specific sections of a proposal, but only accept or reject the entire policy document. Also, while the comment phase permitted users to express their views on the policy changes, user comments appeared to have little to no influence on the actual decision-making process. Facebook itself complained that user comments followed a "quantity over quality" [41] principle when justifying the termination of the voting component on November 21, 2012.

5 Discussion & Concluding Remarks

Facebook is not an elected government organization, it has no legal obligation to hold elections or enable user participation on data policy. Yet, the societal and political repercussions of the recent global privacy breaches put pressure on Facebook. The question is whether Facebook can continue operate solely as a for-profit company accountable first and foremost to its investors [42]. Its prime source of economic value is users' personal information. Thus, in protecting its economic advantages, Facebook should be accountable to its users, too. Sharing more responsibility over data policy governance with users could be a way to fulfill this role.

In this paper, we evaluated the first social media open governance initiative, which had the stated objective to democratize data policy processes for a global digital population. We described the different phases of Facebook's open governance initiative and chronicled the relevant events of its multi-year duration. We applied unsupervised machine learning to identify major themes Facebook users discussed during the final electoral period: first, users voiced their concerns about being insufficiently informed about their participation requirements; second, users expressed their discontent with Facebook's data practices and made uninformed references to data ownership; and third, users demanded moving the electoral process to another platform. Taken together, our analysis suggests that Facebook's participatory privacy strategy and its implementation did not provide a solution to the weaknesses of notice and consent implementations.

Given its micro-targeting advertising capabilities, Facebook could have used its own information infrastructure to target individual users about governance-relevant information to better inform them about their participation opportunities. Moreover, the governance process provided too little meaningful participation possibilities leaving users with little influence. Finally, copy-and-paste

messages manifested users' frustration: the process did not trigger sufficient exchange and debate between users and between users and Facebook.

Based on our analysis, we can identify a number of ways in which a better participatory governance process could be designed: among others, sharing decision-making on policy design so that users have more influence on policy outcomes, giving users more time to understand and vote on new policies, and implementing an electoral process without unrealistic voter turnout requirements. Discussing the implications of each of these insights for future participatory privacy strategies would go beyond the scope of this research. Yet, many of the issues participants expressed in the comments are a result of Facebook having a monopoly over controlling the framing of governance-relevant information.

Democratic theory provides a useful distinction between proceduralistic and nonminimalistic democratic systems. Facebook's governance system was fundamentally proceduralistic. Proceduralism denotes that the benefit of democratic governance, its core value, essentially lies in the characteristics of the governance process [43]. Such minimalist theories of democracy commonly make little demands on the epistemic quality of citizens' choices. Accordingly, Facebook's procedural strategy placed little value, and therefore relied only to a very small extent, on user's privacy decision-making competence. Thus, with a proceduralistic democratic policy process in place, user participation is unlikely to help overcome the shortcomings of notice and consent strategies.

Nonminimalistic democratic theories, on the other hand, emphasize democracy, allowing individuals to determine policy outcomes that reflect their preferences. Such theories and their implementations must necessarily rely on the quality of individual decision-making. Importantly, both privacy [44] and democratic theory research papers [45] have shown that controlling how choice-relevant information is presented, in so-called frames, represents a powerful position in shaping individuals' privacy and voting competence. Since individuals are known to be highly susceptible to framing effects, a governance system permitting only one framing channel can hardly produce informed decision-making. Multiple frames could help mitigate the inherent bias of each individual frame [46, 47].

As such, different frames could lead to more user deliberation of privacy preferences, more discussion about how to interpret choice-relevant information on the platform, and more exchange between voters on privacy policy. Note that such an approach likely necessitates the involvement of several third parties to produce competing policy frames. In summary, a participatory approach to privacy policy should follow a nonminimalistic conceptualization of participation by strengthening individual privacy decision-making through the provision of multiple competing frames.

Acknowledgments: We are grateful to Kathryn E. Lambert and Alan Nochenson for their contributions to data collection and preliminary analysis of the data. We also thank the anonymous reviewers for their comments. The research activities of Severin Engelmann and Jens Grossklags are supported by the German Institute for Trust and Safety on the Internet (DIVSI).

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