'Dark Germany': Temporal Characteristics and Connectivity Patterns in Online Far-Right Protests Against Refugee Housing

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ABSTRACT

We present a quantitative study of the social media activities of a contemporary nationwide protest movement against local refugee housing in Germany, which organizes itself via dedicated city-level Facebook pages. We analyse data from 2015, containing more than one million interactions by more than 200,000 users. We investigate the temporal characteristics of the social media activities of this protest movement, as well as the connectedness of the interactions of its participants. We find several activity metrics such as the number of posts issued, negative polarity in comments, and user engagement to peak in late 2015, coinciding with chancellor Angela Merkel's much criticized decision of September 2015 to temporarily admit the entry of Syrian refugees to Germany. Furthermore, our evidence suggests a low degree of direct connectedness of participants in this movement, (i.a., indicated by a lack of geographical collaboration patterns), yet we encounter a strong affiliation of the pages' user base with far-right political parties.

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1 INTRODUCTION

In recent years, Europe has experienced a massive influx of refugees from Middle Eastern and African regions, mainly due to civil wars and economic stagnation in these areas. In Germany, this influx peaked in 2015 with 890,000 people seeking asylum; in early September of that year, chancellor Angela Merkel decided to admit the entry of Syrian refugees stuck in South-East European countries. These developments have been accompanied by a steep rise in popularity of German right-wing organizations, especially in the form of the political party *AfD – Alternative für Deutschland*, ("Alternative for Germany") [1], which managed to enter the European parliament as well as multiple German state parliaments since its inception in 2012. The AfD and other right-wing organizations successfully leverage social media to communicate with their followers; recent research shows that their gains in popularity are highly correlated with growing interaction rates and user engagement on Facebook [2].

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The refugees in Germany have been registered and temporarily placed in hastily implemented shelters distributed all over Germany. As a reaction to these refugee shelters, a large number of local protest movements have formed against their placement in the corresponding cities. Also, refugee shelters and refugees have become targets of a series of more than a thousand crimes in 2015 (including arsony of buildings and attacks with explosives against inhabitated shelters). Communication within anti-refugee housing movements often happens via dedicated Facebook pages, a large proportion of which promote racist, xenophobic and islamophobic views. We present a limited quantitative study on the scale of 136 such protest pages in 2015, including more than one million interactions of more than 200,000 users with these pages. Given this data, we focus our efforts on two research questions (i) *What are the temporal characteristics of the social media activities of this protest movement?* (ii) *What is the degree of connectedness and cooperation in this protest movement?* The goal of the first question is to obtain insights into general activity patterns of this protest movement, the general keynote of the content posted on these pages, and to find hints on how these activities relate to external events. For the second question, we focus on the connectedness of users of these pages in order to investigate the nature of cooperation between the participants in this protest movement. We focus on direct interactions as well as on interactions with the Facebook pages of political parties, which serve as an indicator for indirect connections between the users.

Data Acquisition. In order to find a large number of protest pages, we consulted online articles listing pages and conducted several exhaustive searches on Facebook using the queries *"Nein zum Heim"* and *"wehrt sich"*, where we manually inspected all search results. For the found protest pages, we crawled all publicly available posts with their corresponding likes and comments, restricted to the year 2015. Furthermore, we manually added geographical information to each protest page. Thereby, we obtained 136 such pages, as depicted in Figure 1. Our dataset comprises more than 46,000 posts and more than one million interactions (comments and likes) by more than 200,000 users.

2 ANALYSIS

Time course of page posts. We analyze the time course of the number of published posts to gain insight into a general activity pattern of the pages. We observe a peak at the end of the third quarter of 2015, which coincides with the aforementioned admission of Syrian refugees into Germany in September [3]. The same phenomenon has also been recognized in previous studies of far-right engagement on social media [2].

Polarity in user comments. Next, we place our focus on the users interacting with the pages and investigate the time course of overall sentiment in the user comments. For that, we employ

Figure 1: Geolocation of the pages.

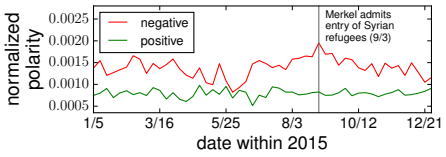

Figure 2: Time course of normalized polarity in user comments.

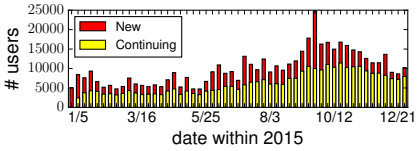

Figure 3: Weekly active users on the protest pages in 2015.

a dictionary denoting the negative sentiment $\phi^-(t)$ and positive sentiment $\phi^+(t)$ of a German term t when used in certain parts of speech [4]. We apply part-of-speech tagging to all comments in a given week w, which gives us all contained terms T_w. Next, we compute the normalized negative polarity per week $p_{w^-} = \frac{1}{|T_w|} \sum_{t \in T_w} \phi^-(t)$ (and analogously, the normalized positive polarity). In Figure 2, we observe that negative speech dominates the comments throughout the whole year. Furthermore, we encounter a peak in negative polarity in early September, which confirms that Merkel's decison provoked widespread anger in the far-right political spectrum.

User attraction. Subsequently, we analyze the pages' ability to attract users over time. For that, we compute the set of active users U_w for every week w, (users who interact with at least one of the protest pages during that week). For every week w, we split these active users into two groups: *new* users, which we encounter for the first time and *continuing* users, whom we have already seen previously. The corresponding sizes of these users sets for all weeks in 2015 are shown in Figure 3. We see a slight increase in both new and continuing users in the late second half of 2015. However, this increase starts to diminish again towards the end of the year. We note that the number of mean weekly active users (9,935) is very small compared to the overall number of users. We encounter a strong and significant correlation of the number of continuing users with time index i, but cannot determine a similar significant correlation for new users. These findings suggest that the protest pages maintain a low constant growth of users, but fail at its acceleration.

Low correlation between geographical distance and amount of shared users. In order to investigate geographical aspects of the data, we compute the geographical distance between the corresponding cities for each pair of pages, and compare this to the Jaccard similarity between their sets of users. We expect to see a strong negative correlation if geographical closeness implicates co-operating user bases. However, the maximum Jaccard similarity is only 0.1428, and 4,727 pairs exhibit non-zero similarity, leaving 3,916 pairs with zero shared users. Even for pairs of pages with non-zero similarity, the correlation is rather low (−0.19), which suggests against a geographical collaboration pattern.

Absence of a giant connected component in the user co-like network. Next, we construct the *user co-like network* as follows: users form the vertices of this network, and for every post, we introduce edges between all users that liked this post. The resulting network has 95,639,173 edges (co-likes among users). We study the connectivity of this network by computing the size of its largest connected component. This size amounts to 89,094 users, which account for only 57.5% of the overall user base. This gives a hint that the social media activities of the users might be highly separated, as real-world social networks typically exhibit a giant component containing nearly all users.

Strong affiliation with far-right organizations. Finally, we analyse the affiliations of the users on the protest pages to political parties in Germany, to see whether these users are connected in that way. For that, we employ additional data about likes of posts on the parties' Facebook pages from previous work [2]. We compute the *affiliation* $\text{aff}_{p,o}$ between a page p and a political party o as the ratio of users interacting with the page that also liked posts on the party's page. In the resulting distributions, we observe that the median affiliation with the right-wing parties *AfD* (0.45) and *NPD* (0.41) is about one order of magnitude higher than the affiliation with parties from the remaining spectrum, such as the Christian conservative *CDU* (0.04), the social democratic *SPD* (0.04), the green party *Die Grünen* (0.03) and the socialist left party *Die Linke* (0.02). While it is expected to see a strong affiliation with the *NPD* (which is commonly considered to be the voice of the extreme right and has repeatedly been the target of party ban trials by the German state), it is suprising to see an even stronger affiliation with the *AfD*, as the latter party claims to locate itself in the conservative spectrum rather than the extremist-right spectrum.

3 CONCLUSION

We encountered peaks in several activity metrics that coincide with chancellor Merkel's decision to temporarily admit the entry of Syrian refugees to Germany, which suggests that this political move caused anger and outrage in far-right circles. However, despite the presumed mobilization effects stemming from Merkel's policies in 2015, our evidence suggests a low degree of user growth, connectedness and cooperation in this protest movement. From all German political parties, the *AfD* exhibited the strongest affiliation among the user base of the studied protest pages, which contradicts previous classifications of the *AfD* as not belonging to the far-right political spectrum [1]. *This work has been supported by the German Federal Ministry of Education and Research (BBDC 01IS14013A).*

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