What's in a Name? Understanding Profile Name Reuse on Twitter

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1 Introduction

1. They analyze the phenomenon of profile name changes in Twitter by collecting and analyzing a dataset comprising of 70 million users. They also describe the prevalence of such phenomenon in other social networks like YouTube, Facebook etc.

2. They attempt to answer three main questions:

   (a) **RQ1**: Differentiate profile name reuse of popular accounts and those of general accounts
   (b) **RQ2**: Identify characteristics of accounts that reuse other profile names.
   (c) **RQ3**: Identify profile name reuse in other social networks

2 Main Points & Results

1. Data Collection:

   (a) They collect 1% random sample of all tweets during a period of 6 months and have a total of 70 million Users. Out of these, 4263 users are very popular (> 1 million followers) and these accounts were used for the analysis of popular accounts. They also identified approximately 192k users in their dataset that changed their profile names during the observation period, which represents a "General" dataset.
   (b) To characterize the accounts that would represent a baseline, they randomly sampled 1 million accounts out of the total of 70 million accounts.

2. **Profile name reuse in popular accounts:** To validate the assumption that profile names are taken to hijack name recognition, they analyzed the popular accounts mentioned above. They found that approx 1% of all popular profile names were abandoned and taken up by others. This number is 4 times more than that for general accounts. The plausible reasons given in the paper are:

   (a) No malicious intent and mere coincidence
   (b) Profile names taken by third party accounts to set up parody account
   (c) Profile names taken by third party accounts with malicious intent. These accounts were suspended by Twitter later on and this was used to determine the intent
   (d) Some profile names were "protected" with a placeholder account. In such cases, the owner of the popular account created new accounts that took the old profile name.

3. **Profile name reuse in general accounts:** They categorize accounts into 3 main types:

   (a) First Unique: Those users who changed profile name to something new not used earlier
   (b) Second Unique: Those users who changed profile name to something that was already used earlier in dataset
   (c) Multi: These accounts are involved in multiple profile name changes during dataset observation

4. They found that the accounts involved in profile name change post less tweets than the general twitter population and that multi accounts in general were able to attract more followers in a given day. They also performed theme based analysis of the tweets of old and new owner and concluded that accounts reusing new profile names are mostly not owned by previous owners. There were also a group of accounts that shared profile names bw each other in a form of follow-back schemes

5. Analysis of suspension and deletion activity of accounts revealed that suspension rate is 5% for random twitter accounts and that for *second unique* accounts is 10% (double). Analysis of web links reveled that *multi accounts* have higher preference of using profile names that have more links pointing to them (SEO purposes) as compared to *second unique* accounts.

6. The final part of analysis dealt with profile name changes in other social networks and specific recommendations for the social networks.