A Crowdsourced Approach for the Documentation and Transcription of Graffiti in Public Restrooms

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Abstract

In this short paper we introduce graffiti in public restrooms – also known as *latrinalia* – as a promising object of research. We present an application that uses crowdsourcing techniques to upload and transcribe images of latrinalia on a public web site. This article describes the basic design and functions of the application, presents the status quo of the current dataset, and also gives an outlook on the next steps and future work.

Keywords: Graffiti, Latrinalia, Crowdsourcing, Media analysis, Digital humanities

1   Introduction

Graffiti, which generally denote writings or drawings in a public place, have long been the object of study in various disciplines, e.g. *sociology* (Lachmann, 1988) and *geography* (Ley & Cybriwsky, 1974). Such public writings

are, however, by no means a novel phenomenon, but can be traced back as far as to ancient Pompeii (cf. Hunink, 2011). One specific subtype of graffiti can be found in public restrooms, and is hence referred to as *latrinalia,* a term proposed by folklorist Alan Dundes (1965). Latrinalia are an interesting object of study, as they occur in a setting that is partly private but at the same time also partly public (Haslam, 2012: 114.). In his article "Toilet Graffiti", Haslam (2012) gives an overview of research on latrinalia. While most of the existing research is focused on gender aspects, this type of written, semi-public information might also be discussed from a *human information behavior* perspective, as described by Spink & Currier (2006). In order to promote more research on latrinalia, that may also include *socio-linguistic* and *geographical* research questions, we present a web-based tool that can be used to upload images of latrinalia and at the same time produce machine-readable transcriptions, to make the data accessible for automatic analyses. The approach may be classified as *crowdsourcing* (cf. Howe, 2006) and is inspired by the *digital humanities* project "Dictionary of Words in the Wild"[1], which allows users to upload images of public textuality, e.g. of signs or commercials.

2   Architecture and implementation details

We designed our application as a responsive web service that adapts its layout to mobile phones, tablets or more traditional desktop screens.[2] The application utilizes a number of freely available *JavaScript* libraries, e.g. *jQuery*[3], *Exif*[4], *Underscore*[5] and *Modernizr*[6]. All textual data is stored in an SQL database. The images are stored on the public image hosting service *Imgur*[7].

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1 http://lexigraphi.ca/ (all URLs referenced in this article were last visited on January 6, 2015)

2 The application is publicly available at http://www.latrinalia.de/.

3 Note: Provides DOM traversal and manipulations, available at http://jquery.com/

4 Note: Extracts metainformation from images, available at https://github.com/blueimp/JavaScript-Load-Image

5 Note: Helps to manage templates, available at http://underscorejs.org/

6 Note: Ensures cross-browser compatibility, available at http://modernizr.com/

7 http://imgur.com/

Uploading images

When users want to upload an image, they have to provide a short *title* and select whether the image was found in a *male*, *female* or *unisex* restroom. The users may also provide a *transcription* of the image during the upload process. If they do not provide a transcription, the image may be transcribed by other users, once it has been published. Users are also asked to select one of the following *graffiti types* for their image: *writing*, *painting*, *sticker*, or *installation*. In addition, users may select one or more existing *tags* (e.g. *politics*, *insult*, *conversation*, *sex*, *sports*, etc.*)* or create a new tag to describe the content of an image. The graffiti types as well as the tags suggested by the system are the result of a preliminary *content analysis* (cf. Krippendorff, 2013) approach, in which 190 images were classified by four independent coders. Finally, users are asked to (optionally) provide a location for their latrinalia graffiti. The application is able to detect geolocation information from the image metadata or via the users' IP.

Viewing and transcribing images

Any uploaded image is presented on the home page of *latrinalia.de*. By clicking on an image, users have access to all associated metadata provided by the uploader, but also to comments and ratings of other users (cf. fig. 1). Users may view the latest or best rated images, look for images without a transcription, or search for images with specific keywords, tags, type, sex or location.
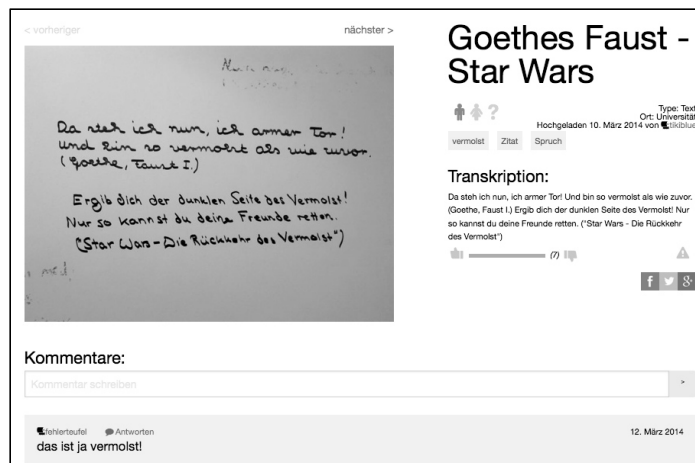

Figure 1. Screenshot of an uploaded and transcribed latrinalia image.

Social networking and gamification elements

In order to motivate users to contribute to the platform, we provide basic social networking features (personal timeline, following of other users, etc.) and some basic *gamification* elements: Users are rewarded with an increased *rank* (levels) and a number of *achievements* when they upload images, post comments, rate images of other users, transcribe images, etc.

3   Status quo of the dataset and research potential

The application is live since March 2014. Since then, 162 images were uploaded and transcribed, and a total of 242 tags were provided. Among the most frequent tags are many of the predefined tags, e.g. *saying* (count: 47), *politics* (33), *quote* (15), *insult* (8), *philosophy* (8), but also a number of user generated tags that may describe a location, e.g. *Regensburg* (10), or that may refer to a specific category of insider humor, such as the made-up word *vermolst* (25). After the application of German and English stop words lists, frequent terms that occur in the transcriptions include political concepts, e.g. "Nazis" (4) and "Freiheit / freedom" (3), religious terms such as "Gott / god" (3), but also more generic concepts such as "Liebe / love" (3).

The data gathered in our application can be used as an image archive for qualitative research on latrinalia. It may be used to answer a broad range of research questions, e.g.:

• How does the language of male and female latrinalia differ?
• Are there regional characteristics for the topics of latrinalia?
• Is there a relation between the type of latrinalia and its content / topic?

4   Future directions and next steps

As the application has been evaluated successfully with regard to its performance and usability for almost 12 months, we are planning to promote the tool more actively on our local university campus, but also via other media

channels, to attract more potential contributors, and to grow a larger database of latrinalia images and transcriptions. The application might also be used in combination with a commercial crowdsourcing platform, such as *Amazon Mechanical Turk*[8] or *CrowdFlower*[9]. In order to make the database more accessible for researchers, we plan to implement an analysis dashboard that provides basic statistics and analyses for the latrinalia data.

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8 https://www.mturk.com/mturk/welcome

9 http://www.crowdflower.com/