

## Manipulating Social Roles in a Tagging Environment

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### Abstract

Social roles structure daily life because people adjust their behavior according to the role that they have in a specific situation. Online social roles are not necessarily the same as those in daily life and, because they are not so strictly assigned, the question arises whether they can be manipulated. We conducted a structured experiment to investigate whether the manipulation of online social roles can affect user behavior in a tagging task.

### Introduction

Social roles are the parts people play as members of a social group. Social roles structure our everyday life since people's behavior changes to fit the expectations they and others have of their role. Social roles are variable depending on the situation people are in and the others that are present (Goffman 1959).

Online society is emerging and therefore also the interest in online social interactions (Haythornthwaite and Hagar 2005). Online, people can create their own identity to escape their daily lives (Turkle 1995). This indicates that online social roles are not necessarily the same as the roles people play in everyday life. Since social roles are not so strictly assigned online, the question arises whether or not they can be manipulated and if this manipulation can result in behavioral changes.

Online behavior of users is important for crowdsourcing systems that rely on user contributions, such as tagging systems. If the behavior of users in tagging environments can be influenced by the perception of social roles, it is important that systems support this and are designed to encourage high quality contributions.

In a structured experiment, we investigate the influence of manipulating social roles of users on their tagging and reviewing behavior. We hypothesize that users adjust their tagging and reviewing behavior to fit with the role that is assigned to them. We also expect that the reviewing behavior of users is influenced by the role of the person that supposedly added the tags being reviewed.

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### Experiment

**Participants** Participants were recruited by social media and mailing lists. Data from 78 participants who completed the experiment is used for the analyses. They received no monetary or other reward for their participation.

**Stimuli** 24 images were used in the experiment: 8 depict a flower, 8 a plant and 8 a tree. The images were provided by the Rijksmuseum Amsterdam<sup>1</sup> and used with permission. Each participant saw 12 images, which were semi-randomly chosen to include 4 flower images, 4 plant images and 4 tree images.

**Design** The participants were randomly divided into three different groups: student role ('student'), teacher role ('teacher') and no role. We selected the roles of student and teacher because these are common roles with differing levels of authority that many people can identify with.

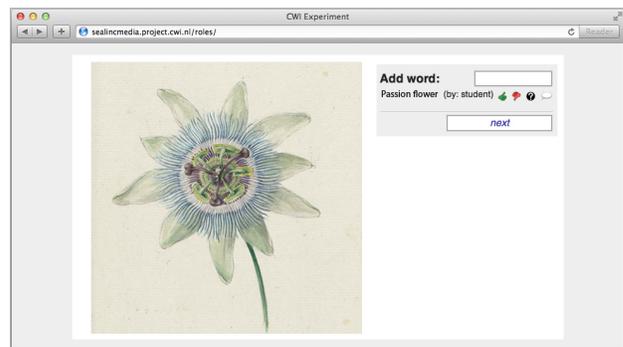


Figure 1: Screenshot of the online tagging interface. Art-work courtesy of Rijksmuseum Amsterdam, used with permission

Each image presented to the participants was accompanied by a tag that correctly or incorrectly named the depicted object (the specific kind of flower, plant or tree). Next to the tag was indicated what type of user (student or teacher) supposedly added it. This resulted in four conditions: correct from student (a tag that correctly describes the object and that was supposedly added by a student (e.g. "Passion flower (by student)"), see Fig. 1)), incorrect from student,

<sup>1</sup><http://www.rijksmuseum.nl>

correct from teacher and incorrect from teacher. The design was balanced by randomly assigning these conditions to the 4 flower images, the 4 plant images and to the 4 tree images presented to each participant.

**Procedure** Participants carried out the experiment from their own computer via a website.

Two groups of participants were told that they should imagine to have a certain role, introduced as follows:

- Student role: “Imagine that you are a student. You and other students need images of trees, plants and flowers for your classes. A way of facilitating the search is to describe the images. By correctly describing the images, you don’t only help yourself and other students, but you also show your knowledge to teachers.”
- Teacher role: “Imagine that you are a teacher. Your students need images of trees, plants and flowers for their classes. Your goal is to help your students search for these images. A way of facilitating the search is to correctly describe the images.”

The ‘students’ and ‘teachers’ were asked to list some tasks that were related to their role to ensure that the participants actively thought about the role that was assigned to them. The third group of participants had no role assigned to them.

All participants saw instructions on how to add tags that described the images and how to review tags of others.

In the tagging and reviewing task, tags added by participants were immediately added to the list of tags in the user interface. If they were uncertain about the tag they added, they could indicate this and they could also add comments whenever they wanted to provide more information. Participants were informed that if they agreed with tags added by others, they could indicate this by clicking ‘thumbs up’, or ‘thumbs down’ if they did not agree. Here they could also indicate that they were unsure or add a comment.

After participants tagged 12 images, they were asked to answer some questions regarding their motives for adding and reviewing tags. They were also asked to indicate whether they were a teacher or student in daily life and whether they were flora experts.

## Results and Discussion

Two different kinds of data were provided by participants: reviews and additions. Reviews are the judgments that participants made of the presented tags: agree, disagree, unsure, none. Additions are the tags that the participant added, categorized as follows: correct new (correct naming of the object), correct old (replication of correct presented tag), incorrect new, incorrect old, generic (generic description of the object), nothing (no tag is added that names the object).

For both the reviews and the additions, we carried out within-subject repeated measures ANOVA’s to compare the conditions (correct from student, incorrect from student, correct from teacher, incorrect from teacher) and one-way ANOVA’s to compare the manipulated roles (‘students’, ‘teacher’, no role). We made use of an  $\alpha$ -value of 0.95, this means that the differences described are significant with a  $p$ -value smaller than 0.05.

All participants, independent of the role that was assigned to them, agreed more with correct tags than with incorrect tags and they disagreed more with incorrect tags than with correct tags. We expected that participants would agree more with tags that were believed to be added by teachers, since teachers have an authority role, but we did not find evidence for this in our results. We did find that ‘teachers’ agreed more with tags that were supposedly added by teachers than ‘students’ or ‘no role’, both when the tags were correct or when they were incorrect. The reverse was true for ‘students’: When reviewing correct tags that were supposedly added by students, ‘students’ disagreed more often than ‘teachers’ and ‘no role’.

In all conditions, participants mostly did not add a tag. As expected, participants added more correct tags when an incorrect tag was presented than when a correct tag was presented. Participants that had no role assigned to them added more correct new tags than other tags when an incorrect tag was presented. For ‘students’ and ‘teachers’ this was only the case when an incorrect tag from a student was presented, not from a teacher. This might indicate the authority role of a teacher.

Apart from investigating the manipulated roles, we also compared participants that indicated that they were a student or teacher in their daily life. Participants that were students in their daily life mostly indicated that they were not sure about presented incorrect tags. Daily life teachers, on the other hand, disagreed with incorrect tags and added correct tags to them. This indicates that the role a person has in everyday life can affect online behavior.

No flora experts participated in the experiment, therefore no comparison can be made between experts and non-experts.

Since there are only minor differences in the task descriptions of the three different participant groups, a difference in performance stresses the importance of the task description. The results can support design guidelines for online tasks that rely on user contributions. This is not only relevant for online tagging tasks, but for many online tasks that have components in which people are asked to contribute new content and components where people are asked to review other users’ contributions.

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<sup>2</sup><http://www.commit-nl.nl/>

<sup>3</sup><http://sealincmedia.wordpress.com/sealincmedia/>