



ChatRoulette: An Initial Survey

a publication of the Web Ecology Project
(1 March 2010)

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About The Web Ecology Project

The Web Ecology Project is an interdisciplinary research group based in Boston, MA and New York City, NY that analyzes the system-wide flows of culture and community online.

Please visit our website (<http://webecologyproject.org>) or contact us via email at contact@webecologyproject.org.

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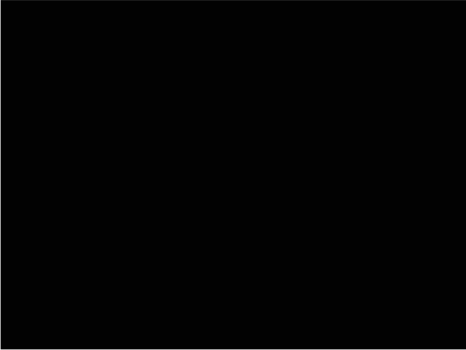
This paper represents an initial study of ChatRoulette.com, conducted between February 6th and 7th, 2010 by researchers in attendance at Web Ecology Camp III in Brooklyn, NY. We sampled 201 ChatRoulette sessions, noting characteristics such as group size and gender. We also conducted 30 brief interviews with users to inquire about their age, location, and frequency of ChatRoulette use.

Summary

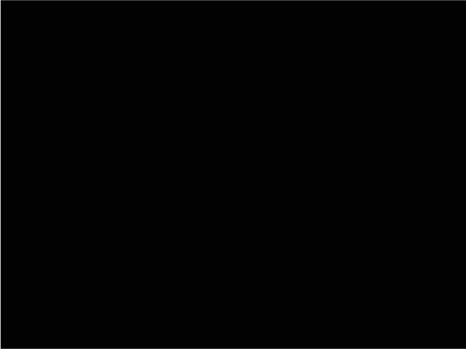
- ChatRoulette represents an example of a probabilistic community: a community shaped by a platform which mediates the encounters between its users by eliminating lasting connections between them.
- After ChatRoulette users become more acquainted with the system (ie., do not browse solely to explore), we predict a decrease in explicit content, an increase in the consolidation of content genres, and an increase in the formation of celebrity figures.
- Our survey shows that ChatRoulette's current community continues to consist of males age 18-24, concurrent with Alexa data.

Chatroulette Auto reconnect Cam required Users online > 20000

Partner



You [\[Preview your cam\]](#)



Auto start Clean chatlog Chat sounds

[Different layout](#) [Agreement](#) [Contacts](#)

Welcome to the world of Chatroulette!

Click "Play" to start the game.

Tips:

- You can also access this site by typing [chatrt.com](#)
- If you are having a bad video connection, enable UDP in firewall or turn your firewall off.
Most likely you don't need to do this step, as everything should be working well by default.
- If you don't want to see the "allow/deny webcam" window every time you are connected:
 1. Right-click anywhere and select "Settings".
 2. In the second tab, check "Remember" to remember your choice.

Terms of Service:

- You have to be at least 16 years old to use our service
- Chatroulette does not tolerate broadcasting obscene, offending, pornographic material and we will have to block users who violate these rules from using our service
- Please use "Report inappropriate video" link to notify us about inappropriate content and we will take necessary steps

Introduction

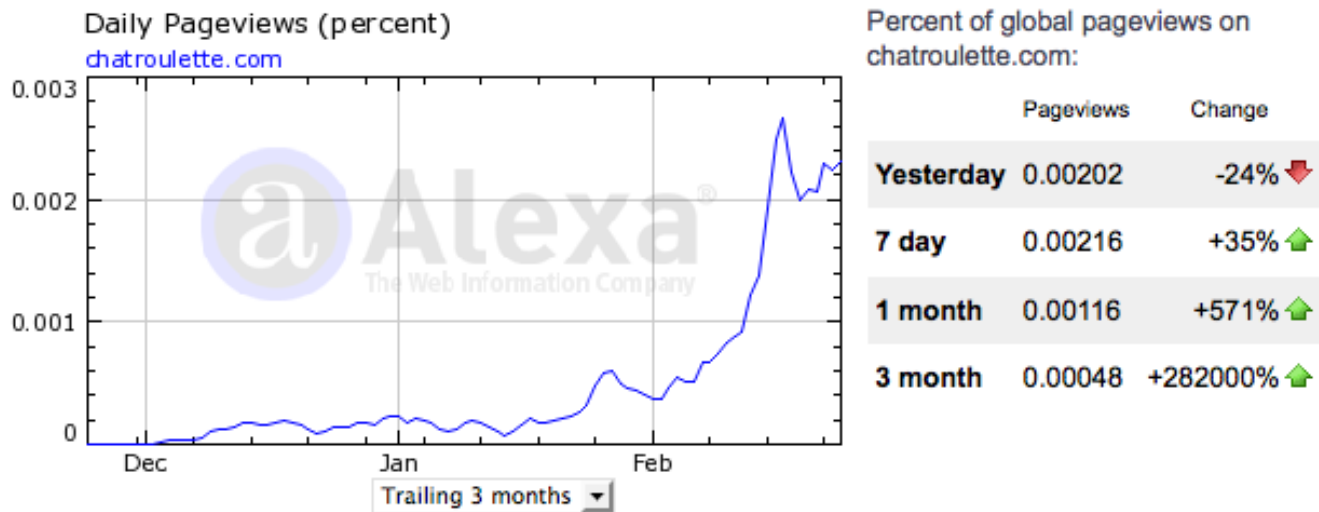
ChatRoulette.com is an anonymized, non-identifying chat service that randomly pairs users to chat with one another via video, audio, and text messaging. The site was created by Russian 17-year-old Andrey Ternovskiy. ChatRoulette launched on 5 December 2009¹, though previously it had been associated with the chat service <http://head-to-head.org>, which launched on 10 November 2009. The site is also accessible at the <http://chatrt.com> domain. A user is paired with an unidentified, random user by clicking Play and may end the browsing session by clicking Stop. A small number of options are built into the platform, including the ability to connect with only users with an operational webcam, to be paired with another user automatically after a chat session has ended, and to disable the reception and/or projection of audio or video. A “report” button is also available to inform the website’s administrator of potentially unacceptable content. Finally, the platform allows the user to choose both audio and video sources: generally, the user chooses the webcam, but unrelated software (such as ManyCam²) can be utilized to alter the video or append additional images or text.

ChatRoulette is significant from a research point of view since it provides a potentially non-anonymized window (an image via webcam functionality) upon which to explore the social mechanics of anonymized communities. Furthermore, ChatRoulette suggests a new type of community structure that evades connected networks: the probabilistic community. We place a probabilistic community in opposition to the typical social network, in which a user may interact and connect (with or without identity) with multiple other users. In contrast, a probabilistic community relies on the transitory connections between users that cannot be maintained beyond the initial period of contact.

¹ via <http://serversiders.com>

² <http://manycam.com>

Finally, the site has grown quite dramatically since its launch, such that ChatRoulette also presents an opportunity to observe the effect of a rapidly scaling userbase on an anonymized online community. The site’s rapid increase in numbers of users since December is documented in the following graph³ from Alexa.com:



Source: <http://alexa.com>

ChatRoulette also shows interesting promise as a space to study cultural and transnational exchange, as the platform often pairs together international users. As Alexa data⁴ shows, use of ChatRoulette in the United States is balanced against strong participation in areas beyond the Western European and North American world. However, ChatRoulette appears to attract a primarily English-language user base: a probable outcome, given that four of the top twelve ranked countries (accounting for 34.6% of all traffic) use English as their primary language.

³ 26 February 2010

⁴ 20 February 2010

Country	Percent of Site Traffic
United States	25.0%
China	18.0%
Germany	6.8%
France	6.1%
United Kingdom	5.3%
Italy	4.1%
Turkey	3.8%
Spain	3.2%
Brazil	2.5%
Canada	2.3%
Netherlands	2.0%
Australia	2.0%
Russia	2.0%
Chile	1.2%
India	1.0%
Austria	0.8%
Norway	0.6%
Argentina	0.6%
Belgium	0.6%
Switzerland	0.6%
Japan	0.5%
Denmark	0.5%
(Other)	(10.5%)

Source: <http://alexa.com>

In the interest of exploring some of our research interests and to provide a guide for researchers examining the platform in its youth, this paper presents a small initial survey of ChatRoulette and some broader thoughts about how the site structures community and social interaction in a novel way. It will first discuss a sampled set of sessions and then draw from this data to discuss more broadly how the ecology of ChatRoulette (the relationship between users and platform) affects the resultant interactions, content, and culture.

Methods for Initial Survey

To evaluate the community of users on ChatRoulette, we took a broad survey of the ChatRoulette landscape on the afternoon of 6 February 2010. In this phase, a group of researchers opened ChatRoulette, took screenshots of participants (each dubbed “random stranger” by ChatRoulette), and immediately disconnected (by clicking “Next,” unless the paired user had already clicked it him/her/itself). We collected 201 screenshots and derived answers to the following questions:

- *How many users are in the session?*
- *What are the (visible) genders of the users in the session?*
- *Is the user visible or off-screen?- Is the user represented by an altered image or video?*
- *Is the user naked?*

On the afternoon of 7 February, we collected 30 short chat transcripts from interviews with users who did not immediately disconnect. In addition to the information above, we collected:

- *Age*
- *Location*
- *Frequency of ChatRoulette use*
- *Goals or expectations of ChatRoulette usage*

We did not account for the effect of the composition of our research groups. We assume that the effect of group composition on the connecting user (gender, age, race, number of users, etc.) influences both the duration of the chat sessions and the results of the interviews. Also, dependent on the immediate reaction of the connecting user, some users disconnected so quickly that we could not take a screenshot; therefore, our data does not represent a set of users encountered consecutively. Further research is necessary to assess the absolute effect of composition on our data and analyses.

Results

To represent the diversity of content and behaviors that appear on ChatRoulette based on the number of users present in the community, we noted site usage for each of our study sessions. At our different sample times, the following numbers were recorded⁵ (including one night session during which we only explored the website):

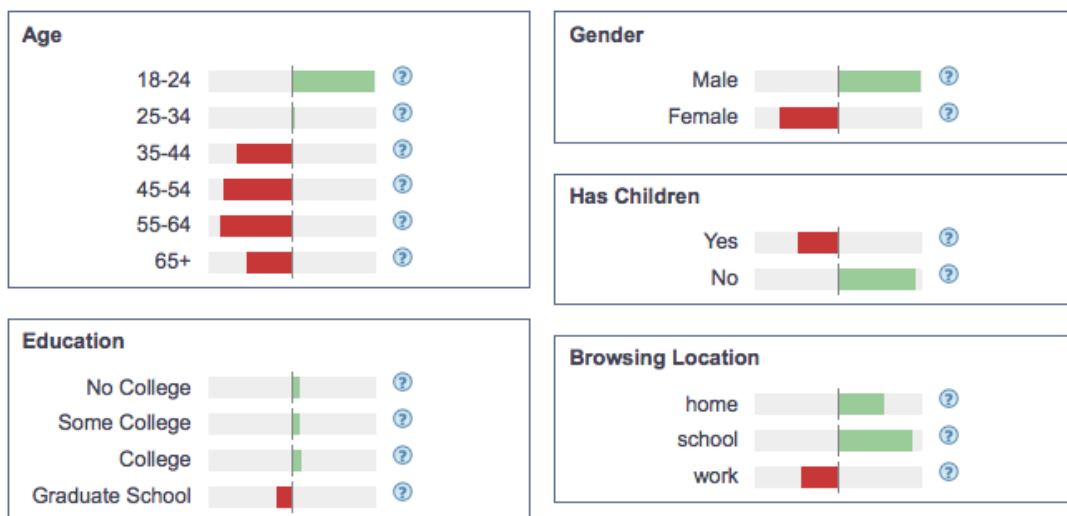
11583 users at 1:27 pm EST (Saturday 6 February 2010)

134776 users at 12:26 am EST (Sunday 7 February 2010)

9908 users at 12:10 pm EST (Sunday 7 February 2010)

Given that approximately one-fourth of users connect in the United States, this data shows an increase in use at night that might reflect ethics of usage at work, increase in free time to use ChatRoulette, etc.

Before we provide our own statistics, below is the demographic data as represented by Alexa.com⁶, which shows that ChatRoulette skews strongly toward young males.

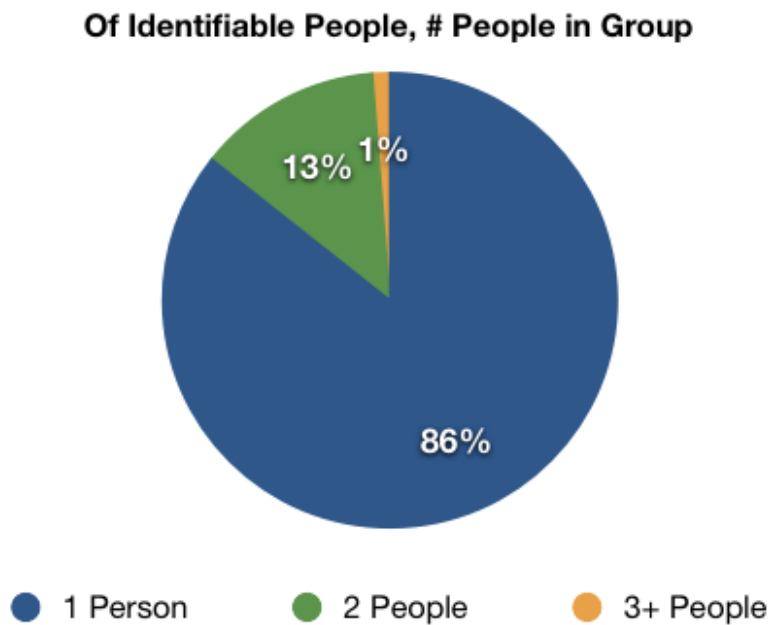
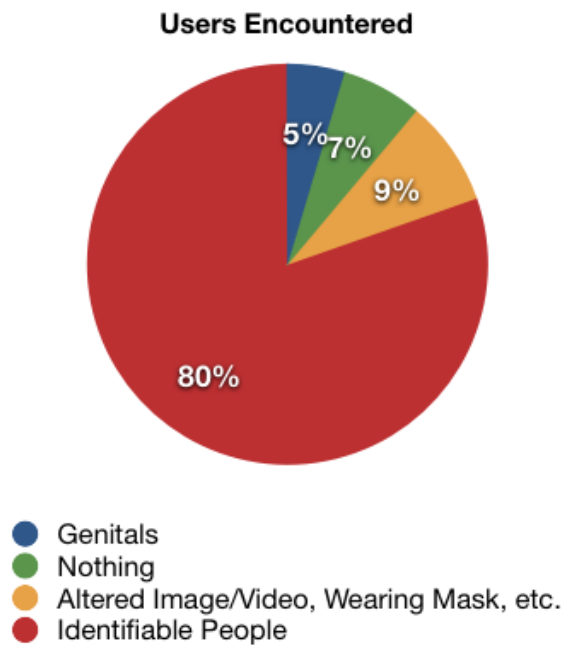


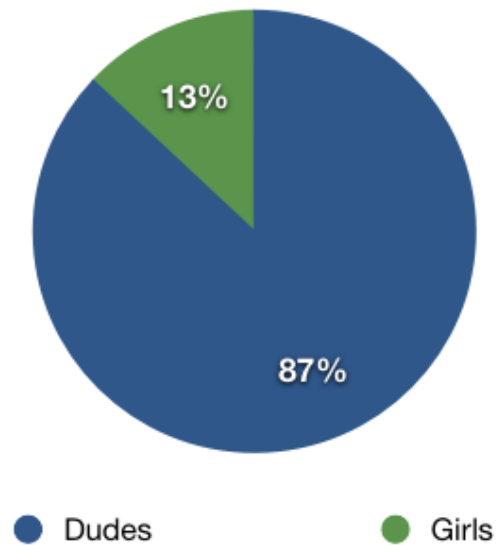
Source: <http://alexa.com>

⁵ Since the collection of these numbers on 6 & 7 February 2010, the ChatRoulette interface has been updated to show only user counts below 20,000. If above, the website displays “Users online > 20000.” (26 February 2010)

⁶ 26 February 2010

From the initial 201 session sample taken on 6 February 2010, we arrived at the following estimates of the composition of ChatRoulette:



Of Identifiable People, Visible Gender

Our qualitative interviews also revealed some common trends running through the users of the site. By and large, the major use of ChatRoulette took place in user combinations of gender-uniform groups or individual males. The reported age fell most frequently between 18 and 24.

The purposes of using ChatRoulette amounted primarily to exploring the site, but frequency of use ranged from first day of use to every day. We have included a selection of transcripts from our interviews below (“...” represents redacted, peripheral conversation):

Interview Example 1

YOU: HOW OFTEN DO YOU COME HERE?

...

STRANGER: IVE NEVER BEEN

STRANGER: THIS IS MY FIRST TIME ON THIS SITE

YOU: DO YOU LIKE IT?

STRANGER: I DONT EVEN KNOW HOW IT WORKS LOL

YOU: WHAT ARE YOU HOPING TO GET FROM IT?

STRANGER: I HAVE NO CLUE REALLY

STRANGER: JUST KINDA HEADING IN WITH AN OPEN MIND

Interview Example 2

YOU: HOW OFTEN DO YOU COME HERE?

...

STRANGER: UMM NEVER MY FRIEND TOLD ME ABOUT IT

...

YOU: WHAT DO YOU LIKE ABOUT CHAT ROULETTE?

...

STRANGER: THE RANDOM PPL

STRANGER: ITS PRETTY FUNNY

...

STRANGER: OH YEA....I SEEN TOO MANY DICKS ALREADY PRETTY SICK

YOU: BUT YOU KEEP COMING HERE

YOU: WHY'S THAT?

STRANGER: BECAUSE OF PPL LIKE YOU

STRANGER: ITS FUN TO TALK TO RANDOM STRANGERS...

Interview Example 3

YOU: HOW OFTEN DO YOU USE THIS PROGRAM?

...

STRANGER: ALMOST DAILY

YOU: REALLY?

STRANGER: YEAH..

...

STRANGER: TIME PASSING

...

STRANGER: NOTHING TO DO SO I TYPE CHATROULETTE.COM INTO MY BROWSER

...

STRANGER: ALL THE PENISES ARE NOT WHAT I'M LOOKING FOR, BUT SOMETIMES YOU MEET NICE PEOPLE

As for users that use the website for sexual exhibitionism (none were interviewed), we estimate that the percentage of users who were naked or had the camera focused on their genitals comprised approximately 5-8% of the sessions in the samples gathered. This suggests that -- in spite of common assumptions -- that the large majority of ChatRoulette users do not utilize the platform for sexual purposes.

This characteristic pattern of data, along with the common threads running through our brief interviews, suggests a deeper question: How does the structure of ChatRoulette shape general modes of participation and cultural practices on the platform?

A Theory of Probabilistic Communities

We contend that ChatRoulette represents the most contemporary example of a probabilistic online community. ChatRoulette is an online system that mediates the encounters between certain users; however, compared to other “networked” online communities, in which users maintain distinct relationships (usually documented by the system), ChatRoulette terminates each user-to-user interaction following each session.

Therefore, we define a “**probabilistic online community**” as a community shaped by a platform which mediates the encounters between its users, specifically by eliminating lasting connections in the framework of the platform. ChatRoulette allows for users to maintain relationships outside of the ChatRoulette platform, but due to the randomness of the connections in the platform, it remains unlikely that two users will meet again in a viewing session, and any deeper connections must take place beyond the context of the website. Moreover it is the case that it is precisely the deep connections that occur on the platform that are the most invisible to researchers and the userbase as a whole, since the duration of these conversations imply those individuals cycle through less sessions and encounter fewer individuals.

The probabilistic online community then might be considered the converse of the social network (which emphasizes and encourages the documentation of users’ connections and identity). Still, like most online communities, ChatRoulette allows for the construction of social capital between users: eg., if a user makes him/her/itself distinct enough (notable or memorable) for multiple users to recognize him/her/it, then these identities form a sort of celebrity. Of course, this social capital develops in the absence of strong connections based on identity or fixed reputation. But like other online communities, ChatRoulette generates distinct patterns of usage, emergent behaviors, common practices based on language, etc.

This type of community requires further study -- the fact that it hasn't is likely a product of the probabilistic community's unique features. While in physical spaces (the busy street, the county fair, a popular dance club) probabilistic communities might be temporarily joined, only online can this state be sustained indefinitely since code can limit the extent to which relationships can form. Since it enforces this artificial transience between users, probabilistic communities are able to scale, and indeed to flourish in a way foreign to our everyday "real-world" experience.

Because the connections between users are impermanent, the probabilistic community fosters user loyalty and participation with the promise of a particular mixture of content and interactions, rather than the specific identities or reputation of individuals.

How Will the Probabilistic Community Shape ChatRoulette?

Based on our theories about the operation of probabilistic communities, we contend the following predictions about the future of ChatRoulette as a site of cultural production online:

1) Decline in Explicit Content

As more press directs intrigued, new users to ChatRoulette, we foresee explicit content probably being outpaced by a larger number of users engaging in non-explicit content. If we apply our measured 8% of sexually explicit users to modes of common practice, most other users will avoid the explicit content by immediately clicking the Next button. As new users explore the community, we predict an increase in exploratory practices rather than sexual ones. As more users become acquainted with how the website operates and what interactions they will encounter, we anticipate a rise in non-sexual content, such as visuals meant to stimulate emotion (fright, confusion, etc.), microhumor (small jokes, Cam Toys, etc.), or creative content (displays of music, links to websites, etc.).

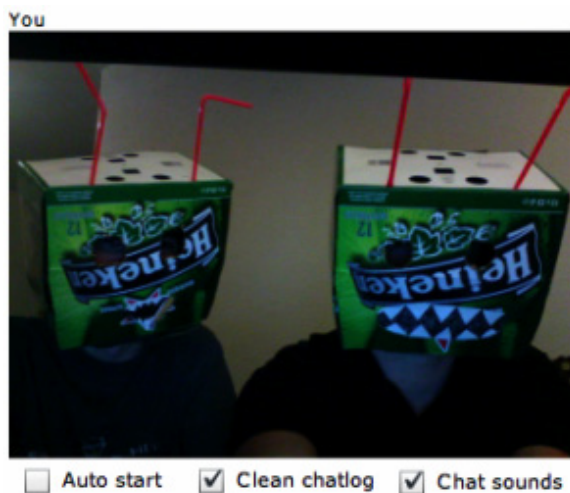
Those users interacting with the sexual content on ChatRoulette will not be able to see more sexual content unless they click “Next.” With an increase in the number of new users, the frequency of finding sexual content on ChatRoulette will decrease, because it will require a user to click Next more times. Users particularly searching for sexual content, then, might find ChatRoulette ultimately cumbersome for their needs and utilize other websites (also in effect decreasing the amount of explicit content).

The example of declining explicit content reveals a specific trait of probabilistic communities: the composition of participation distorts the experiences of users on the platform. The presence of a large number of users engaging in a similar activity (eg., dancing on camera) increases the probability that a given user will encounter that activity while browsing. ChatRoulette is distinct from other platforms such as Twitter and Facebook, where inaccessible groups of connected users remain isolated from larger trends, due to the use of privacy settings, selective “friend”ing, etc.

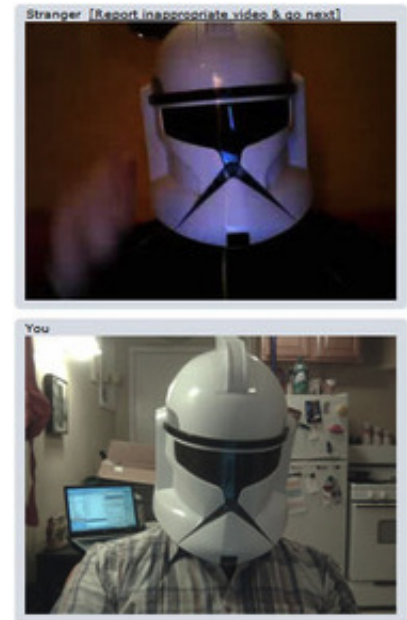
2) Consolidation of Content Types

In reaction to the enforced anonymity implemented by the platforms of probabilistic communities, trends toward unity -- common practices, standards of communication, cultural common ground, etc. -- still persist. We forecast that as the amount of content increases to meet the constant churn implemented by the ChatRoulette system, certain genres of content will become identifiable.

The appearance of specific content will begin to spread in groups, as categories of images, video, text, etc. One recent example is the proliferation of masks worn by users. We might speculate that masks are worn to create a stronger sense of anonymity; however, the behavior of wearing a mask has also extended beyond the purpose of further anonymity to reflect creativity on the part of the user (Example A). The act of wearing a mask, then, includes the user in a behavioral group formed around this type of content. Consolidation continues as users who interact with content genres potentially extend the category through their own experimentation (Example B).



Example A⁷

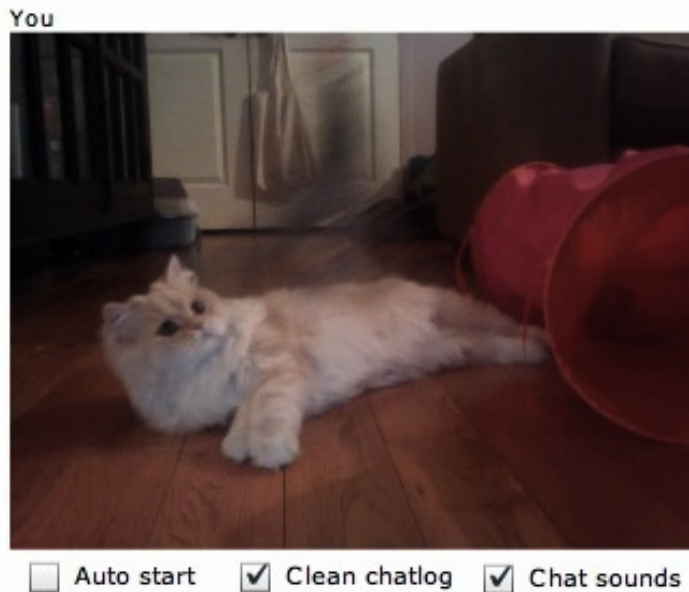


Example B⁸

As content becomes consolidated into categories inside the ChatRoulette system, external communities shape content genres to import back into the ChatRoulette community. Because the ChatRoulette platform does not document or archive interactions, users can discover content categories archived on other websites. For example, CatRoulette is a blog that aggregates screenshots of user pairs, at least one of which includes a cat. The existence of the CatRoulette blog (*Example C*) encourages users to put up visuals of cats in order to capture their chat partners' moments of interaction or reaction to the felines. While the appearance of cats on ChatRoulette might influence other users to exhibit their pets, CatRoulette provides a space where a community can develop stronger ties around specific content.

⁷ <http://techcrunch.com/2010/02/21/chatroulolz-chatroulette/>

⁸ *Ibid.*



Example C

3) Formation of Celebrity Figures

Similar to the construction of content types, we predict the initial formation of community celebrities: users whose popularity depends on the distinguishability of their individual visual (or possibly aural/textual) traits. Since ChatRoulette rejects the formation of identity (stored within the system), users can make themselves “known” through repeated modes of action. Since ChatRoulette operates primarily as a communication tool, we envision social interaction primarily as a movement toward individual identification (figuring out who is on the other end of the chat).

While identity can be solved by exchanging information, the high barrier to enduring chat sessions eliminates most of these exchanges. To increase the chance of a potential session, certain visual elements might be used to attract interest. Ultimately, a combination of visual elements that create a specific visual identity will foster celebrity figures, whose knowledge of existence will likely spread on external websites.

Of course, identity can also be revealed by current celebrities. For example, the prominent music producer Diplo has revealed himself on ChatRoulette numerous times, confirming his presence via Twitter⁹ and prompting users to figure out what visual elements cue them to his identity.

Conclusion

The technical code of ChatRoulette plays a key role in influencing the culture fashioned on the platform. However, unlike other structure for community creation on the Web like Facebook or Twitter, ChatRoulette enforces social rules that depend on the inverse proportion between the temporal and the social: as more time is spent with one user, you encounter fewer other users. ChatRoulette prioritizes the one-on-one (or, group-on-group) relationship that other social networks bypass when they strive to collect larger and larger groups of friends, colleagues, followers, etc. ChatRoulette's platform therefore provides an interesting social space which is infrequently encountered in real life (perhaps the best example of which is a nightclub, where people congregate frequently without knowing others yet interact with strangers through dance). While the addition of anonymity to the system allows for encounters with random, unexpected content, ChatRoulette's anonymous features also allow for an increased rate in the consolidation of information, as users click past the content they dislike in search of relevant media. As Christopher Poole, founder of 4chan.org, states on the topic of anonymous Web spaces, "You judge somebody by the content of what they're saying, and not their username, not their registration date. With identity the discussion is mostly revolving around who is saying what and not what they're saying."¹⁰

⁹ <http://twitter.com/diplo/status/8790209305>

¹⁰ <http://www.cnn.com/2010/TECH/02/22/chris.poole.4chan/>