Better the Tweeter you know: social signals on Twitter

Martin Chorley, Gualtiero Colombo, Stuart Allen, Roger Whitaker
Preferences for consuming content

Placement of content

"Mobile users wandering around a city being pushed content that is spatially and temporally relevant"

Content Provision

"Users consuming and interacting with content - moving from one item to the next"

Content Consumption

"Allowing content to become responsive to the needs of the users through management of accessibility and availability"

Content Management

Cognitive heuristics

Decision making from self-aware content
“If one of two objects is recognised and the other is not, then infer that the recognised object has the higher value with respect to the criterion.”
Test whether the recognition heuristic applies when deciding which tweets to read.
Welcome to the TweetCues Experiment

The TweetCues experiment aims to understand how people view information on Twitter, and we'd like you to take part! In order to participate you need to be a Twitter user following at least 10 people and who has at least 10 followers.

We won't use, sell or distribute any of your personal data without your permission. For more information please see our privacy policy.

Sign in with Twitter

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Funded by EU-FP7 grant 257756 "Recognition", a Future Emerging Technologies project concerning Self-Awareness in Autonomic Systems
Question 2 of 12

Which tweet would you prefer to read?

Tweet Information
Name
Wired UK

Tweet Information
Name
Itthinkthatway™

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Question 2 of 12

Which tweet would you prefer to read?

Wired UK
@WiredUK

Label Engine: the software that's rewriting the rules for record labels bit.ly/wtxfSU by @roboffard

6 Feb 12

Next Question

<table>
<thead>
<tr>
<th>Tweet Information</th>
<th>Tweet Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Wired UK</td>
</tr>
<tr>
<td>Name</td>
<td>Ithinkthatway™</td>
</tr>
</tbody>
</table>

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experiment details
There are 2 types of information.

**Friendship**
- Screen Name
- Name
- Avatar
- Friendship

**Quantitative**
- Follower Count
- Following Count
- Tweet Count
- Number of Retweets
25 combinations of information
Screen Name, Name, Avatar, Friendship, Follower Count, Following Count, Tweet Count, Number of Retweets...

1 question of each type (per participant)

between 106 - 113 answers for each question type
Question 2 of 12

Which tweet would you prefer to read?

Tweet Information
Name
Wired UK

Tweet Information
Name
Ithinkthatway™

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Question 1 of 25

Given the below information, which of these tweets would you prefer to read?
(just click on the information to select)

<table>
<thead>
<tr>
<th>Tweet Information</th>
<th>Tweet Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profile Image</td>
<td><img src="https://via.placeholder.com/150" alt="Profile Image" /></td>
</tr>
<tr>
<td>Screen Name</td>
<td>centrepompidou</td>
</tr>
<tr>
<td>Name</td>
<td>CentrePompidou</td>
</tr>
<tr>
<td>Number of Followers of this user</td>
<td>35,532</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Profile Image</td>
<td><img src="https://via.placeholder.com/150" alt="Profile Image" /></td>
</tr>
<tr>
<td>Screen Name</td>
<td>RWW</td>
</tr>
<tr>
<td>Name</td>
<td>ReadWriteWeb</td>
</tr>
<tr>
<td>Number of Followers of this user</td>
<td>1,160,653</td>
</tr>
</tbody>
</table>

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single cue questions
single cue questions

Friendship
is the timeline
tweet selected?

Quantitative
is the largest
value selected?

\[ P_T \] proportion of users selecting tweet from the timeline

\[ P_G \] proportion of users selecting tweet represented by the greatest value
significantly large for *all* friendship cues

timeline tweet selected in ~88% of cases
<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen Name</td>
<td>0.897</td>
</tr>
<tr>
<td>Name</td>
<td>0.885</td>
</tr>
<tr>
<td>Avatar</td>
<td>0.881</td>
</tr>
<tr>
<td>Friendship</td>
<td>0.881</td>
</tr>
<tr>
<td>Names + Avatar</td>
<td>0.860</td>
</tr>
</tbody>
</table>
only significantly high for *one* quantitative cue

*the greatest value selected in ~90% of cases for ‘number of retweets’*
*not* significantly high for other quantitative cues

greatest value selected in ~50% of cases
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Followers</td>
<td>0.547</td>
</tr>
<tr>
<td>Tweets</td>
<td>0.505</td>
</tr>
<tr>
<td>Following</td>
<td>0.505</td>
</tr>
<tr>
<td>Retweets</td>
<td>0.904</td>
</tr>
</tbody>
</table>
consistency

random selection?

left vs. right

further work needed...
what about the size of the difference between values?

100 vs 99

100,000 vs 99
Proporotion'selec%ng'greatest'when'difference'≥'x

Difference'between'number'of'Followers'(x)
Proportion selecting greatest when difference ≥ x

Difference between number of Retweets (x)
number of tweets

Graph showing the probability of selecting the greatest value when the value is greater than or equal to X, as a function of the difference between the number of tweets written and X.
number following
combined cue questions
addition of **quantitative** cues has a statistically significant **negative effect** on the impact of the **friendship** cues

*except when **friendship** cues are combined*
<table>
<thead>
<tr>
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<th>Following</th>
<th>Tweets</th>
<th>Retweets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screen Name</strong></td>
<td>0.779</td>
<td>0.816</td>
<td>0.798</td>
<td>0.745</td>
</tr>
<tr>
<td><strong>Avatar</strong></td>
<td>0.772</td>
<td>0.820</td>
<td>0.861</td>
<td>0.731</td>
</tr>
<tr>
<td><strong>Friendship</strong></td>
<td>0.814</td>
<td>0.738</td>
<td>0.775</td>
<td>0.654</td>
</tr>
<tr>
<td><strong>Names + Avatar</strong></td>
<td>0.846</td>
<td>0.822</td>
<td>0.929</td>
<td>0.848</td>
</tr>
</tbody>
</table>
addition of **friendship** cues has a statistically significant **negative effect** on the **impact** of the ‘**number of retweets**’ cue
<table>
<thead>
<tr>
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<th>Following</th>
<th>Tweets</th>
<th>Retweets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen Name</td>
<td>0.449</td>
<td>0.472</td>
<td>0.522</td>
<td>0.615</td>
</tr>
<tr>
<td>Avatar</td>
<td>0.427</td>
<td>0.514</td>
<td>0.472</td>
<td>0.536</td>
</tr>
<tr>
<td>Friendship</td>
<td>0.416</td>
<td>0.467</td>
<td>0.401</td>
<td>0.674</td>
</tr>
<tr>
<td>Names + Avatar</td>
<td>0.441</td>
<td>0.383</td>
<td>0.495</td>
<td>0.500</td>
</tr>
</tbody>
</table>
conclusions
in the absence of any further information participants prefer tweets recognised as coming from their own timeline the recognition heuristic
only one quantitative value has an effect on the decision making process

the number of retweets
qualitative friendship information has a stronger effect on decision making than numerical information.
thanks

SocialCom 2012
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