#325 Measuring Serendipity in the Lab: The Effects of Priming and Monitoring

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1 What is serendipity?

The accidental yet beneficial discovery of something one was not looking for directly.

2 Why is serendipity important?

Serendipity has played an important role in many scientific discoveries, for example:

- x-rays
- penicillin
- velcro
- nylon
- microwave oven

Serendipity also plays an integral part in everyday information behavior when *"chance encounters with information, objects, or people [...] lead to fortuitous outcomes"* [5].

As a result, systems and technologies for stimulating and supporting serendipity have received much attention (e.g., recommender systems, search engines, social tagging, micro-blogging).

3 How can we detect it?

We need to be able to detect and measure serendipity before we can claim a system induces or even enhances it!

Common ways of detecting serendipity
- interviews [4]
- diaries [3]
- controlled experiments in the lab [2]

4 Measuring serendipity in the lab

Goal: to determine whether we can create certain conditions in the lab that can induce more serendipity, thereby making it easier to evaluate serendipity-enhancing systems.

Experiencing serendipity could be influenced by many different factors, such as the systems and tasks used, individual differences between participants, and priming and monitoring. In this poster, we present an examination of the latter two factors.

Priming is the cognitive effect in which exposure to a particular stimulus influences the response to a later stimulus.

RQ 1 *Does informing participants that serendipity is a part of the experiment make them more or less likely to experience it?*

It is essential to keep the laboratory environment as natural as possible and remove all distractions. Monitoring participants during an experiment is one such distraction.

RQ 2 *Does monitoring participants during the experiment make them more or less likely to experience serendipity?*

5 Methodology

Participants
We recruited 20 current and former LIS students. All participants rated their Internet experience as being at least 'average', with 85% (N=17) rating it as 'good' to 'very good'.

Design of the study
Between-subjects factorial design with two independent variables with 5 participants randomly assigned to each condition:
- 'Primed' participants were introduced to serendipity before the experiment and asked to be aware of it; 'Not primed' participants were not.
- 'Monitored' participants had the experimenter present at all times; 'Not monitored' participants were left alone during the information seeking part of each task.

Tasks
- Three search tasks using the native search functionalities of either Amazon.com or Digg.com
- Two pre-selected tasks (informational + transactional) and one of personal interest
- Max. 12 minutes for each task; randomized task ordering

Example task

Your best friend is turning 30 and you would like to get him/her a very unique gift of up to $100. You know your friend is very passionate about rock music. Try to find some unique collector's items or rock memorabilia on Amazon for the stated $100 budget.

- Participants were asked to bookmark relevant and/or interesting articles or products
- After each task participants graded bookmarks using a four-point graded scale on two dimensions (similar to [1]):
  1) relevance to the work task
  2) personal interest
- Serendipitous hits were those judged as interesting, but not relevant

6 Results & conclusions

Results
- On average, our 20 participants found 2.85 serendipitous hits per participant
- Priming appears to have a negative influence on serendipity (2.7 vs. 3.0 unprimed serendipitous hits)
- Primed participants opened fewer Web pages and stayed on task longer
- Monitoring has a negative effect on serendipity: unmonitored participants experienced more serendipity (3.1 vs. 2.6 hits)
- Participants in the most natural condition (unprimed + unmonitored) experienced the most serendipity at 3.4 hits

Main findings
Keep controlled experiments as natural as possible. Priming and monitoring participants during their experiments seems to have a negative influence on experiencing serendipity.

R References

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