

Coping with Nuisances on the Web

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ABSTRACT

A model of web annoyance coping was constructed based on the Cognitive-Motivational-Relational Theory of Emotion. The proposed model predicts that web users would cope with annoyances through both problem- and emotion-focused strategies. In two focus groups, participants identified nuisances encountered during use of the two websites (Facebook and MySlice), and their reactions to the nuisances as coping strategies. The findings include a web nuisance categorization and empirical evidence to support the proposed model of web annoyance coping. Besides filling a gap in the literature and providing theoretical contributions, the study has practical implications to website designers, marketers and other stakeholders.

Keywords

Web, Website, Nuisance, Annoyance, Irritation, Emotion, Coping

INTRODUCTION

Pop-up advertisements. Unwanted announcements. Confusing features. Broken links or pages. Most of us have experienced some or all of these and more. In other media – books, films, or music – nuisances are considered unacceptable. Who would read a book if popup advertisements flashed constantly across its pages? Who would watch a movie if stopped playing part way through its run-time? Yet in an online environment, nuisances are simply part of the landscape. It is the rare web user who vacates a website because of a pop-up or a flashing advertisement. Most of us have learned to accept a certain amount of distraction, irritation, and frustration as we navigate the web.

This study considers annoyance as the state or feeling of being annoyed, and nuisances as the sources of annoyance. It addresses two research questions: 1.) what are considered nuisances by web users? 2.) what do users do when they face nuisances? A conceptual model of web annoyance coping is constructed to understand users' coping strategies. An exploratory study with focus groups was conducted to (1) identify objects, features, and phenomena that are considered to be nuisances by web users, and to (2) verify the model of web annoyance coping. The focus groups included participants representing two different web user populations and focused on two different types of websites, Facebook, a popular social networking site, and MySlice, the web version of a PeopleSoft system used by a higher education institution.

Understanding web annoyance and coping has implications for a variety of web stakeholders. For web designers, a better understanding of key nuisances and users' means of coping is critical for improving design. Nuisances can take many forms, from usability problems to irritating advertisements to invasions of privacy. This study identifies various types of nuisances, many of which may be easily avoided once designers become aware of the effects they have on a user's online experience. Furthermore, an understanding of users' coping approaches can help developers to make good decisions about design, content, and features that reduce the need for coping by their users.

For advertisers, e-commerce managers, online marketers, and others who are interested in attracting the all-too-short attention span of millions of potential web customers, this research has a different application. Many nuisances, like pop-up advertisements and announcements, distract users and affect their task performance (Zhang, 2000; 2006). Distractions may not always be irritating, depending on the nature of the distractions (Bailey, Konstan, & Carlis, 2001; Edwards, Li, & Lee, 2002). Understanding types of nuisances and annoyance coping strategies should shed light for advertisers/marketers in attracting customers' attentions more effectively.

LITERATURE REVIEW

The first research question of this study is informed by web nuisance literature. Interruptions on the web (Bailey *et al.*, 2001), the intrusiveness of interstitials and pop-up advertisements (Edwards *et al.*, 2002), web privacy and trust (Passant, Kärger, Hausenblas, Olmedilla, Polleres, & Decker, 2009; Debatin & Lovejoy, 2009; Dwyer, Hiltz, & Passerini, 2007; Peterson, 2010), and web download times (Rose, Lees, & Meuter, 2001; Rose & Straub, 2001) were some of the web nuisances identified.

Bailey *et al.* (2001) pointed out that, in the real world, people consider it extremely rude to interrupt someone else while they are concentrating on a task. In the same way, a computer which interrupts users at inopportune times will be annoying and anxiety-causing. In their study, users performed more slowly on interrupted tasks, perceived interrupted tasks to be more difficult, and had increased anxiety when peripheral tasks interrupted primary ones. Annoyance levels depended on the type of primary task being worked on and the timing of the interruption (Bailey *et al.*, 2001).

Edwards *et al.* (2002) looked at pop-up advertisements and interstitials, along with the effects of their timing. They found that users were most annoyed when advertisements interrupted tasks, as opposed to when they were timed during to occur between activities. Edwards, *et al.* (2002) drew upon work by Hu (1996) regarding *Advertising Clutter*, drawing comparisons between the density of advertisements in magazines with the density of advertising on the Web. They also examined the content of pop-up advertisements and interstitials, as well as the value that they provided to users. Their study recommended reducing annoyance from advertising by, “targeting viewers when their cognitive effort is low, increasing the relevancy of advertising, and providing value to viewers” (Edwards *et al.*, 2002).

Privacy has been looked at from both technical and trust standpoints. Debatin *et al.* (2009) argued that safer use of social network services would require changes in user attitude, while Dwyer *et al.* (2007) compared trust and privacy concerns between Facebook and MySpace, demonstrating that online relationships may develop even in sites where perceived trust and privacy safeguards are weak. Privacy is less well researched from the perspective of annoyance. Passant *et al.* (2009) examined this topic from a practice-oriented viewpoint, identifying key privacy-related nuisances. They noted that in a social networking environment, users often upload images and photographs of others without permission from people appearing in the photograph. In addition, “too much” update activity from members of a social network was also identified as common privacy nuisance (Passant *et al.*, 2009).

Rose and Straub (2001) identified several technological impediments to e-commerce, including delay and download time. They examined aspects of download delay with respect to user attitudes toward retailers, anticipating that poor download performance on a retailer’s website would negatively affect the user’s attitudes toward the retailer. Instead, they found that download delay had no effect on attitudes toward a retailer. This implied that delay might affect a user’s likelihood of leaving a site or abandoning a download, but not a user’s attitudes toward a retailer generally. This was tested by Rose *et al.* (2001) and found to be true – delay did appear to increase the likelihood of user’s abandoning a download.

Though there is a relative scarcity of literature regarding web nuisances and annoyance, the above studies describe several possible nuisances. Few, however, focused on categorizations of web nuisances or users’ coping strategies.

CONCEPTUAL DEVELOPMENT

Our model of web annoyance coping is derived from the Cognitive-Motivational-Relational Theory of Emotion (Folkman & Lazarus, 1985; Lazarus, 1993) that describes the way people appraise problems and cope with stress.

The Cognitive-Motivational-Relational Theory of Emotion

The Cognitive-Motivational-Relational Theory of Emotion, proposed by Lazarus (1966, 1968, 1993) and elaborated upon by others (Stone & Neale, 1984; Folkman & Lazarus, 1985; Carver, Scheier, & Weintraub, 1989; Skinner, Edge, Altman, & Sherwood, 2003), examines the ways in which individuals encounter and handle stress. Lazarus (1993) described stress as the result of an unfavorable individual-to-environment relationship, where conditions in the environment cause anxiety for the individual. Stress might be the result of extremely unfavorable conditions such as the death of a loved one, or less serious conditions, such as the anxiety of waiting for exam grades (Lazarus, 1993).

According to Lazarus (1993), individuals deal with stress through an *appraisal* process, differentiating between benign environmental conditions and potentially harmful ones. This occurs through a process of negotiation between the “demands, constraints, and resources of the environment,” and “the goal hierarchy and personal beliefs of the individual” (Lazarus, 1993). Carver *et al.* (1989) described this process in three steps. First, *primary appraisal* occurs, where the individual identifies and assesses a threat. Next, *secondary appraisal* occurs, where he or she determines a potential response. The last step is *coping*, a process of executing an appropriate response to the threat (Carver *et al.*, 1989).

Lazarus (1966, 1968, 1993) described two broad strategies for coping. Problem-focused coping involves changing the environmental conditions for the better. For example, a student who feels anxiety about taking an important exam can alter the environmental conditions by studying. Emotion-focused coping occurs in situations where environmental conditions cannot realistically be changed. It is an internal process of recasting or reinterpreting stressors to reduce their effects. A student waiting for her grade experiences anxiety, but can do little about it. Instead, she tries to think about the grade less, downgrading it and putting it out of mind. As Lazarus (1993) said, “A threat that we successfully avoid thinking about, even if only temporarily, doesn’t bother us.”

To more clearly identify specific aspects of coping, Lazarus and others empirically tested subjects under stressful conditions (Lazarus & Alfert, 1964; Speisman, Lazarus, Mordkoff, & Davison, 1964) and requested information from participants about types of stress encountered and ways of coping with it (Carver *et al*, 1989; Skinner *et al*, 2003; Stone and Neale, 1984). Folkman and Lazarus (1985) also explored stress over time, measuring levels of anxiety in college students who were taking an exam. A “ways of coping checklist” was created and refined over the course of these efforts, which identified eight separate scales of coping (Folkman and Lazarus, 1985). These include one problem-focused method of coping, six emotion-focused methods, and one mixed method (Folkman and Lazarus, 1985):

1. Problem Focused Coping (analyze and understand the problem, make a plan of action)
2. Wishful Thinking (wish to change what is happening or how one feels)
3. Distancing (try to forget, wait to see what will happen before acting)
4. Emphasize the Positive (look for silver linings, look on the bright side)
5. Self-Blame (criticize or blame oneself)
6. Tension-Reduction (try to make oneself feel better though eating, drinking, exercise, etc.)
7. Self-Isolation (avoid being with people, hide problems from others)
8. Mixed (seek support from others, accept sympathy and understanding)

Coping with Web Annoyances

We posit that unfavorable individual to environment relationships may take different forms, some being stress, and some being annoyance or irritation. Stress is an emotional reaction people have toward unfavorable environmental conditions, and so is annoyance. This suggests that stress coping strategies may be applicable for coping with other unfavorable relationships.

Although stress does not necessarily equate to annoyance, the two concepts are frequently related in the literature. A number of environmental factors studies have drawn connections between the physiological effects of stress and the physiological effects of annoyances caused by odor or noise (Winneke, Neuf, & Steinheider, 1996; Rylander, 2004; Guski, 1999). In addition, some such studies use the terms annoyance and stress interchangeably, identifying common environmental stressors like pollution, traffic, or climate as “stressors,” “annoyances,” and “hassles” equally (Moser & Robin, 2006). Stress and annoyance are most often paired in environmental factors research, suggesting that the concepts may be related or even equivalent in this context, even if the relationship between them is not as clear in other contexts (e.g. the death of a family member, which is almost certainly stressful but is not likely to be annoying). This implies that many annoyances resulting from environmental conditions, including annoyances resulting from the web environment, might also be understood in the context of stress and coping as described by Lazarus (1993) and others.

Indeed, Johansson and Aronsson (1984) specifically explored how interruptions, delayed computer responses, and other computer-related nuisances caused stress in white-collar office workers. In their study, stress was measured through questionnaires, physiological, and biological measures (Johansson & Aronsson, 1984), and computer-related workplace nuisances were found to cause stress-like physiological symptoms and reactions. Hudiburg and Necessary (1996) similarly examined computer-related stress, showing that high-stress users typically employed emotion-focused coping approaches while low-stress users employed problem-focused coping approaches.

Given the relationship between stress and annoyance in the literature, and similarities between stress and annoyance as emotional reactions toward unfavorable environmental conditions, we believe that web annoyances constitute a phenomenon similar to stresses encountered in one’s environment. Therefore, the two broad coping strategies (problem and emotion-based) and eight specific ways may apply to coping with web nuisances.

According to Folkman and Lazarus (1985), problem-focused coping is favored when opportunities exist to change the individual-environment relationship; on the other hand, problem-focused coping falls out of favor when no such opportunities exist. Considering the characteristics of the web environment, problem-focused coping approaches will likely involve user actions which take advantage of functionality provided by a website developer (e.g. closing pop-ups using a “close” button or modifying website settings via available controls). An associated issue is whether the user perceives that s/he has the ability to use the features to address or fix the nuisances. Among the emotion-focused approaches, some may be more likely to occur in a web environment than others. The coping approach “emphasizing the positive” is particularly well-positioned to accommodate the kinds of trade-offs that users experience on the web, where nuisances are often tolerated because the website in question affords functionality or content that is important to the user. The same holds true for wishful thinking, distancing, self-blame. Approaches like “tension-reduction” and “self-isolation” may be less likely to be used because of the “low intensity” nature of most web nuisances relative to other, more serious forms of nuisance or annoyance. Finally we think the mixed method is highly likely to happen in the web environment as well.

To summarize, the model of web annoyance coping considers three processes when one is facing web nuisances: primary appraisal (identifies and assesses a nuisance), secondary appraisal (determines a potential response), and coping (executing an appropriate response to the nuisance). The model considers two broad coping strategies: problem-focused and emotion-focused, and there can be six specific ways of coping:

1. Problem-focused (understand, analyze the nuisance, assess one's own ability to fix the nuisance)
2. Wishful thinking (wish to change what is happening or how one feels)
3. Distancing (try to forget, escape/quit/stop, or wait to see what will happen before acting)
4. Emphasizing the positive (look on the bright side, the utilitarian value of using the web, use of humor)
5. Self-blame (blame oneself, including not being able to find problem-focused solutions to address the nuisances)
6. Mixed (seek support from others, accept sympathy and understanding)

The web annoyance coping model should be able to predict general ways that web users react to nuisances. Users who encounter nuisances that can be addressed through some actions on their part (for example, closing a pop-up or modifying a website security feature) will likely take a problem-focused coping approach. If users perceive no such feature available, they will likely take a predominantly emotion-focused approach.

To test the proposed model of web annoyance, and to explore the nature of web nuisances generally, an exploratory study was undertaken.

RESEARCH METHOD

In order to remain unrestricted by the particular type of web site and user population, we conducted two focus groups: one consisted of eight full time staff members, and the other five full time students, all from a private university in the northeastern United States. In both groups, two websites were considered: Facebook and MySlice. Among the 13 participants, 85% were female, 54% were married, and the ages ranged from 22 to 58. Participants have been users of Facebook from two months to six years, and have been using it from "a few times per month" to "several times per day." They have been users of MySlice from two months to nine years, and have been using it from "rarely" to "several times per day."

Each focus group ran for approximately 45 minutes. Participants were prompted with the following five questions:

- Q1: What are the three Facebook features that annoy you? What specific aspects of these features annoy you?
- Q2: Why haven't the nuisances made you avoid or stop using Facebook?
- Q3: What kinds of nuisances would make you avoid or stop using Facebook?
- Q4: What are the three MySlice features that annoy you? What specific aspects of these features annoy you?
- Q5: What would make you use MySlice more or avoid it less?

ANALYSIS, RESULTS, AND DISCUSSION

Audio was recorded during the focus group sessions and then transcribed into text documents. These text documents were further content analyzed with Atlas.ti.

An iterative process of examining a small part of the text document from the first focus group led to a coding scheme, which was further refined during the rest of coding both focus groups. Three researchers finalized the coding based on the final coding scheme and have achieved 95% agreement after discussion and mediation, a high satisfactory inter-coding reliability.

Types of Nuisances

Table 1 lists the categories, specific codes, frequencies and sample excerpts on the types of nuisances reported by the participants.

The majority of nuisances are related to certain parts of the website in question. These parts are classified into 12 classes, as shown in Table 1. Almost equally frequent are two other types: 3rd party applications (four classes) and behaviors of others (only in Facebook). The annoying conditions created by other users seem quite prominent and difficult to control by users. Such conditions include the content of the postings (e.g., posting of trivial matters), frequency of postings, postings from people the user does not care about, and extreme customization of interfaces among others.

Nuisance Types	Total	Facebook	MySlice	Staff	Students	Sample Excerpts
Parts of Website that Annoy	101	52	49	49	52	
Confusing	20	10	10	10	10	<i>"Really? Well I don't know how to do that, so I just don't. I just ignore them all."</i>
Content Consequences	16	10	6	8	8	<i>"90% of the stuff that's on there I don't really care about to be honest... I don't really care that she [my daughter] put her sweatpants on at 2:20 pm on Saturday."</i>
Website Performance	14	1	13	8	6	<i>"Yea, because even if you type in the correct course number, half the time it wouldn't show up"</i>
Appearance Consequence	13	3	10	6	7	<i>"I think that the look and feel and functionality of MySlice is very dated. It's like early 2000's or late 90's type of development and it's horrible. It's horrible looking."</i>
Instigates User Action	11	5	6	4	7	<i>"I have to acknowledge in some way that I have received the poke, or if I need to poke back. I need to download things on your computer. It just takes up too much time."</i>
Privacy Consequences	9	9	0	3	6	<i>"I didn't have any pictures posted online, which is how I wanted it. But somebody posted a picture of me. They got to, I really don't know how it works. But all of sudden they are there. And I don't like the picture."</i>
Complexity	6	4	2	2	4	<i>"It's just a dashboard with a million things thrown in your face at once."</i>
Social Consequences	5	5	0	4	1	<i>"Your crazy friends are posting notes to your page, and you're not monitoring that in any way"</i>
Customization	2	2	0	1	1	<i>"Something like that would really, really annoy me: customizable profiles, pop up advertisements. Every time you looked at somebody's profile some song would blast out..."</i>
Financial Consequences	2	2	0	1	1	<i>"Having to pay. That would be my limit, I don't like paying for things."</i>
Glitches	2	0	2	1	1	<i>"When you have a box open it will time out. And I'm like, 'I'm working in MySlice!'"</i>
Compatibility	1	1	0	1	0	<i>"I think if they stopped developing their mobile app I would stop using it [Facebook], because 90% of the time I use it from my phone."</i>
3rd Party Annoyances	17	17	0	6	11	
Content Consequences	7	7	0	3	4	<i>"They [third-party games] are constantly populating your news feed. Putting a new item on your news feed that really you don't care about."</i>
Privacy Consequences	5	5	0	0	5	<i>"Because a lot of them are third-party trying to get your information, which is kind of a privacy issue to me."</i>
Instigates User Action	3	3	0	2	1	<i>"I don't like any of those kinds of things where you get the gifts and drinks... I feel bad if I don't respond to people when they do this to me."</i>
Appearance Consequences	2	2	0	1	1	<i>"And they [updates from 3rd party games] are physically large. Like they increase your scroll."</i>
People's Behaviors That Annoy	17	17	0	10	7	<i>"The same person has asked me to be their friend like three times, and I hit ignore every single time. Not because I don't have any interest, but I always feel bad every time."</i>

Table 1. Nuisance Categories, Frequencies, and Sample Excerpts

Friends were mentioned frequently in the context of these nuisances, suggesting that particular categories of acquaintance may be more likely to cause annoyance than others. For example, the activity of family members appeared to be less annoying overall than the activity of friends. Since heightened emotional responses also occurred regularly in these circumstances, it may be that behaviors by some groups result in much more annoyance than behavior by others.

This may be why participants, who identified excessive customization as an extreme form of annoyance, also indicated, somewhat contradictorily, that the ability to customize was a positive feature. Customization allowed participants to “fix” nuisances caused by others:

“The nice feature is they just added ‘hide applications’ which, instead of just hiding people that use that stuff [third-party games which send updates from other users] all the time, now you can hide the application itself.”

Granting users the ability to control the effects of other people’s behavior appears to be one way of reducing this unique cause of annoyance, but there is a need for caution. Customization that gives users the ability to fix nuisances is beneficial, but this can morph into nuisances if customization adversely affects the experience of others.

What Do Users Do When Facing Nuisances?

Table 2 summarizes the ways of coping as evidenced in the data. Participants mentioned several ways of coping when facing nuisances. For example, participants described instances where web application features allowed them to overcome annoyance by modifying the interface, changing settings, or hiding unwanted information. This indicates problem-based coping. In addition, three of the emotion-focused coping approaches were evidenced in the data: “emphasizing the positive,” “distancing,” and “self-blame.” The data reveals that these were used when (1) problem-focused coping was not available or (2) in addition to problem-focused coping (thus mixed approach).

No participants indicated that they had previously sought support or help from others (“mixed” approach coping), but focus group conversations themselves sometimes assumed a “support group” role, with participants sharing common problems and providing solutions to each other:

A: *“Like, it’s [MySlice] very slow, and having to sit and wait for all the information... like, it’s frustrating to me. I don’t know if I’m just impatient, but...”*

B: *“It might just be that MySlice doesn’t come up well on your computer.”*

A: *“Okay. It might be....”*

B: *“Did you try, like, working around another site? Because that site might be fine, and then MySlice....”*

One participant went so far as to address the researchers directly:

“I don’t know what you’re getting out of this [addressed to the researchers], but this is very enlightening.”

As expected, there was no evidence in the data for use of emotion-focused coping through “tension-reduction” or “self isolation.” Coincidentally, there was also no evidence for “wishful thinking.”

Ways of Coping	Sample Excerpts
Problem-focused	<i>“If you hit it on the side you can change it back to the original like the way it was before”</i>
Distancing	<i>“When I first started on Facebook, which wasn’t that long ago, couple months ago maybe, less than 6 months ago, and, um, you know when you first [sign up] you go on it a lot. But the nuisances, you know, quickly made me go from, you know, maybe 5 minutes twice a day to 5 minutes once a day to once a week, and now I’m like a once-a-monther because 90% of the stuff that’s on there I don’t really care about.”</i>
Emphasizing the Positive	<i>“I’m going to continue [using Facebook despite nuisances] because that’s now one of my communication tools. All my family is on there. Everybody’s posting their vacation pictures instead of emailing them...”</i>
Self-Blame	<i>“I’ve got to figure out how to do that [create different groups in Facebook]”</i>
Mixed	See the excerpt in the text.

Table 2. Ways of Coping and Sample Excerpts

CONCLUSIONS

This research looked at two web applications, which by no means encompass the full extent of the web. Furthermore, participants for this study were selected from two specific demographic groups: university staff and students. Using different web applications or different participant groups might reveal additional nuisances or evidence for coping strategies. In addition, studying users who use the web infrequently would be particularly interesting, since such users might exhibit different coping strategies from those who are more familiar with typical web nuisances.

Another interesting future direction would be to examine websites in a domain where competition is fierce and services provided are quite similar. In such a case, nuisances might have a magnified effect on users' coping strategies and decisions to switch loyalties. It would be very appealing to study users who have stopped using a website because of annoyances.

More work can be done to refine and test our model of coping web annoyances. Different research methods can be utilized for such refinement and verification.

This exploratory study is the first step to a systematic examination of annoyances caused by nuisances in the web environment. To our knowledge, it is the first study to develop categories of various nuisances and the first study to examine various coping strategies from a theoretical perspective. Empirical evidence was found to largely support the proposed a model of web annoyances coping, which is based on the Cognitive-Motivational-Relational Theory of Emotion. Both problem- and emotion-focused coping strategies were used by participants, with problem-focused approaches typically being preferred when available.

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