Navigational web atmospherics
Explaining the influence of restrictive navigation cues

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Abstract

Building on the recent work in web atmospherics, the theoretical notions of psychological reactance and the flow experience, propositions and a model are developed, which provide a framework in which the navigational atmosphere of a website can be examined. This paper specifically examines how and why consumers are influenced by restrictive navigation cues on the web. Essentially, the present author proposes that restrictive navigational cues act as barriers that threaten consumers’ control over web navigation, which, in turn, arouses psychological reactance and leads to negative consequences for the web marketer. These negative consequences include increased levels of negative emotions, negative attitudes toward the website and increased site avoidance behavior. The magnitude of the threat to control, consumers’ expectation of control and the importance of web navigation are proposed to moderate this relationship. The reduction in navigational control associated with restrictive navigation cues is also posited to reduce the likelihood of the consumer flow experience, which, in turn, leads to negative attitudes and site avoidance behavior. Implications for web marketers and avenues for future research are discussed.

Keywords: Web atmospherics; Navigation; Navigation control; Psychological reactance

1. Introduction

The pervasiveness of the web emphasizes the importance of understanding consumers’ responses to this new retail environment. One aspect of this new environment is the website interface. The website interface is the portion of the website that is visible to the web user. Alba et al. (1997), in their seminal piece on interactive shopping, suggest that the effective design of this interface may lead to a competitive advantage. However, the question remains “How can marketers design effective web interfaces?” Web atmospherics may offer insight into this question. Despite the importance of this topic, limited research has been conducted in this area.

This paper will extend the web atmospherics literature by specifically addressing navigational atmospherics on the web. Building on the recent work on web atmospheres, the theory of psychological reactance and the experience of flow, the present author develops a model and propositions that offer insight into consumers’ responses to the navigational atmospheres of websites. Specifically, consumers’ responses to restrictive navigation cues are examined. First, this paper will review brick-and-mortar atmospherics and define and discuss web atmospherics. Next, navigational atmospherics and three types of navigation cues will be discussed. The theory of psychological reactance and the flow experience will then be reviewed and utilized to develop a model and propositions that help explain the influence of restrictive navigation cues. Managerial implications and avenues for future research will then be discussed.

2. Brick-and-mortar atmospherics

2.1. Defining atmospherics

In the seminal work on atmospherics, Kotler (1973) defines atmospherics as “The conscious designing of space to create certain buyer effects. Specifically, the designing of buying environments to produce specific emotional effects in the buyer that enhance purchase probability.” Milliman and
that stimulates one’s senses (Milliman and Fugate, 1993). Fugate (1993) define atmospheric cues as any component within an individual’s perceptual field that stimulates one’s senses. Thus, an atmosphere is defined as a collection of atmospheric cues.

2.2. Research on brick-and-mortar atmospherics

The retail store environment has been described as a bundle of cues that affect and shape consumer behavior (Markin, 1976). Research suggests that atmospheric cues may be more influential than other marketing inputs that are not present at the point of purchase (Baker, 1986; Baker et al., 1994) and may be even more influential to the purchase decision than the product itself (Kotler, 1973).

To explain the influence of atmospheres on consumers, atmospheric research has focused heavily on the Mehrabian–Russell Affect Model (Mehrabian and Russell, 1974; Turley and Milliman, 2000). This model, which utilizes a stimulus–organism–response paradigm, proposes that cues within an environment cause behavioral responses (approach or avoidance) to the environment through altering consumer affect, specifically pleasure, arousal and sometimes dominance (Mehrabian and Russell, 1974; Donovan and Rossiter, 1982). Empirical research in the area emphasizes atmospherics influence on consumers. Turley and Milliman (2000), in their review of the atmospherics literature, identified over 60 published studies that found significant relationships between store atmospheres and consumer behavior. For example, atmospherics has been shown to influence consumer perceptions of retail products (Obermiller and Bitter, 1984), store satisfaction (Spies et al., 1997) and store approach/avoidance behaviors such as consumers’ intention and decision to patronize a store and spend money in a store (Turley and Milliman, 2000; Donovan and Rossiter, 1982; Donovan et al., 1994; Darden et al., 1983; Stanley and Sewall, 1976). As shown throughout the literature, atmospherics can be a means of influencing the consumer in brick-and-mortar environments.

3. Web atmospherics

3.1. Web atmospherics defined

By altering Kotler’s (1973) definition of brick-and-mortar atmospherics, web atmospherics can be defined as the conscious designing of web environments to create positive effects (e.g., positive affect, positive cognitions, etc.) in users in order to increase favorable consumer responses (e.g., site revisiting, browsing, etc.). When marketers design web interfaces in order to entice consumers, they are utilizing web atmospherics.

A web atmospheric cue is comparable to a brick-and-mortar atmospheric cue and can be defined as any web interface component within an individual’s perceptual field that stimulates one’s senses (Milliman and Fugate, 1993). Recent literature on web atmospherics has further delineated web atmospheric cues. Similar to Baker’s (1986) brick-and-mortar atmospheric cue typology (i.e., social cues, design cues and ambient cues), Eroglu et al. (2001) propose a typology that classifies web atmospheric cues into two groups: high task-relevant cues and low task-relevant cues. High task-relevant cues are cues that facilitate and enable the consumer’s shopping goal attainment (i.e., descriptions of the merchandise, the price, delivery and return policies, pictures of the merchandise, navigation cues, etc.) (Eroglu et al., 2001). On the other hand, low task-relevant cues are defined as being inconsequential to the completion of the shopping task (i.e., the colors, borders and background patterns, typstyles and fonts, animation, music and sounds, entertainment, decorative pictures, etc.) (Eroglu et al., 2001). Taken together, these cues form the atmosphere of a web site.

3.2. Research on web atmospherics

As in brick-and-mortar environments, atmospheric cues have been posited to influence consumers on the web (Eroglu et al., 2001; Dailey, 1999). However, research on web atmospherics has been somewhat limited primarily due to the newness of the topic. Dailey (1999) and Eroglu et al. (2001) introduced conceptual models illustrating the influence of web atmospheres on consumers. Both of these models utilize a stimulus–organism–response paradigm and suggest that atmospheric cues influence consumers through altering their cognition and affect. Consumers’ affect and cognition, in turn, are proposed to influence their approach/avoidance behaviors towards the web site. These approach/avoidance behaviors include browsing/not browsing the web site and revisiting/not revisiting the web site. Limited empirical research suggests that web site atmospheres do, in fact, significantly influence behavioral intentions toward web sites through altering consumer affect, specifically pleasure (Dailey and Heath, 1999).

Turley and Milliman (2000) suggest that brick-and-mortar atmospheric research is limited in its use of explanatory theory and that future research should focus on identifying theoretical explanations, beyond the standard stimulus–organism–response paradigm, to help explain and predict the influence of brick-and-mortar atmospheres. The web atmospheric research thus far is also limited in its theoretical explanation of why web atmospherics influence consumers. This limitation may exist because researchers have not examined specific atmospheric cues (i.e., colors, layout, navigation cues, etc.); but rather, their focus has been on atmospheric cues in general (i.e., high task-relevant cues, positive atmospheres, etc.), thus decreasing the likelihood of finding theories that adequately explain the unique influence of these cues. Web atmospheric researchers should begin to focus on specific web atmospheric cues (i.e., color cues, navigation cues, etc.) and theoretical explanations of how and why these cues may influence consumers. This paper
will address this issue by focusing specifically on navigation cues and utilizing theoretical explanations to explain the influence of restrictive cues.

4. Web navigation and navigation cues

In the brick-and-mortar world, consumers must physically maneuver a store’s environment. This maneuvering process has been conceived in the environmental psychology literature as wayfinding. Wayfinding is defined as the act of individuals determining where they are within a setting and what actions to take in order to reach a desired location within the setting (Downs and Stea, 1977; Titus and Everett, 1995). Consumers must also engage in wayfinding on the web; however, the physical maneuvering process associated with brick-and-mortar environments is replaced with maneuvering through scrolling and linking on the web. The act of wayfinding on the web is commonly referred to as navigation. Hoffman and Novak (1996) define navigation as the process of self-directed movement through a computer-mediated environment.

4.1. Navigation cues

Navigation cues are important cues in brick-and-mortar environments as well as on the web. In brick-and-mortar retail environments, marketers utilize directory signs and the physical layout of the store as cues to assist consumers in store navigation (Baker et al., 1994). On the web, marketers utilize text and icon links as cues to aid consumer navigation (Hoffman and Novak, 1996). These navigation cues can be classified according to Baker’s (1986) and Eroglu et al.’s (2001) typologies as high task-relevant, functional, design cues. Many types of navigation cues have been utilized since the inception of the web. These navigation cues offer consumers varying levels of control over web site navigation. The author will subsequently describe three of these cue types.

4.1.1. “Next” and “previous” links

One type of navigation cue on the web is “next” and “previous” page links. These cues were commonly utilized in the early days of the web and are still utilized by some web sites today. The “next” link takes the consumer through a sequence of web pages predetermined by the marketer. The consumer can utilize the “previous” page link to return to previously viewed pages. These links function similarly to the forward and back buttons on web browsers. Essentially, this form of navigation cue facilitates linear web site navigation and can be described as restrictive in nature (Hoffman and Novak, 1996). With these cues, the marketer controls the sequence in which consumers navigate the web site, thus allowing the marketer high levels of control over consumer navigation and the consumer low levels of navigational control.

4.1.2. Navigation bars

Beyond “next” and “previous” links, many marketers utilize navigation bars on the home page and subsequent web pages as navigation cues (Rajani and Rosenberg, 1999). A navigation bar is a set of links that are listed on each web page that the user can click in order to move to a desired section and view pages of interest (Rodriguez et al., 1997). A navigation bar essentially acts as a cue that guides the consumer much like store signs guide shoppers in traditional retail environments. With this type of navigation cue, the marketer predetermines important sections and pages that they want the consumer to view, such as product information, shipping information and so on. Thus, similar to “next” and “previous” navigation cues, the marketer has considerable control over the pages that are viewed and the sequence with which they are viewed because the consumer is required to “drill down” to the information of interest. However, utilizing navigation bars does give the consumer more control over web navigation when compared to “next” and “previous” links because the consumer is able to choose which category of information they will start navigating, and they can easily switch between categories. Thus, navigation bars are somewhat restrictive in nature allowing the marketer moderate levels of control, however, not as restrictive as “previous” and “next” links.

4.1.3. Site indexes coupled with navigation bars

A limitation of the navigation bar is that it only presents categories of information, such as “product information,” and “dealer information.” To further aid navigation, some marketers add site index links to their navigation bars. A site index is a web page that lists and provides links to all or most of the pages within the web site (Rodriguez et al., 1997). Rodriguez et al. (1997) found that once users discover a site index, they frequently return to the index to guide their navigation activity. The site index coupled with a navigation bar is less restrictive in nature when compared to the cues previously discussed because the consumer does not have to “drill down” for information viewing unwanted information in the process. Therefore, with the site index, the consumer controls the sequence in which they navigate the web site, not the marketer, thus giving the consumer high levels of navigational control.

4.2. Marketers’ utilization of restrictive cues

Marketers have many options to choose from when designing web navigational atmospheres. The question becomes “Why would marketers choose highly restrictive navigation cues?” The answer to this question may lie in the amount of control the marketer desires over consumers’ navigation. For example, each type of navigation cue discussed above allows marketers varying levels of control. The “next” and “previous” links allow marketers the most
control over consumer navigation, whereas site indexes allow marketers the least control, with navigation bars falling somewhere between the two.

Marketers may want to control consumers’ navigation of web sites for a number of reasons. One reason is to ensure the consistency of the marketing message (Hanson, 2000). By controlling the sequence in which consumers navigate the site, marketers ensure that each consumer is exposed to certain information in a sequence that suits marketers’ goals. For example, a marketer may want the consumer to be exposed to product attribute information and sales promotion information in a specific order. Thus, they may utilize the “next” and “previous” links to ensure that the consumer is exposed to this information in the desired order.

Another reason marketers may want to control consumers’ web navigation is to increase advertising revenues. Many firms utilize different forms of advertising (i.e., banner ads fees, prospect fees, sponsorships, etc.) to generate revenue from their web site (Hanson, 2000). These advertising revenues are dependent on the amount of traffic that the site receives, the duration of site visits and the number of page views that the site obtains. When marketers are able to control the sequence of navigation, they can help guarantee traffic to specific pages. They also may be able to increase the duration of the consumer’s visit because the consumer is forced to click through many pages to obtain their desired information. Thus, marketers may believe that restrictive navigation cues increase the number of page views, visit duration levels and, consequently, advertising rates.

Marketers may associate positive consequences with utilizing restrictive navigation cues to control consumers’ navigation. However, this reasoning may be naive because marketers have not considered consumers’ psychological reactions to restrictive navigation cues. Essentially, consumers may react negatively to having their navigation controlled and may have negative reactions towards the web site. Section 5 describes how and why restrictive navigation cues may negatively influence consumers.

5. Control: psychological reactance and the flow experience

The present author suggests that user control, or lack thereof, is a major principal underlying consumers’ responses to restrictive navigation cues. The theory of psychological reactance and the flow experience are utilized to help explain consumers’ reactions to reductions in control caused by restrictive navigation cues. Propositions and a model (see Fig. 1) are subsequently developed, which present a framework within which consumers’ reactions to web navigational atmospheres can be examined.

5.1. The theory of psychological reactance

Much of the control research views control as a generalized characteristic in which people are motivated to have increased control over the outcomes in their lives in general (Brehm and Brehm, 1981; deCharms, 1968; Deci, 1975). Brehm (1966) suggests a nongeneralized conception of control in his theory of psychological reactance. This theory takes a narrower view of control by suggesting that the motivation to control is specific to the situation (Brehm, 1966). Brehm’s theory suggests that when individuals expect to have control over a behavior and this control is threatened, psychological reactance (motivation to control) is aroused. The key differentiating factor between this theory and generalized notions of control is that the theory of psychological reactance is situation specific: Consumers do not expect to control everything, but rather, they expect to have control in certain situations. Brehm (1966) suggests that only when this expectation exists, which is acquired through experience, formal laws and agreements, do individuals experience control motivation.

The theory of psychological reactance has received much empirical testing in the social psychological literature. It also has been utilized in the consumer literature to explain consumer reactions in many situations including product unavailability, promotional influence, helping behaviors and store crowding (cf. Clee and Wicklund, 1980; Herman and

![Fig. 1. A model of the influence of restrictive navigation cues.](image-url)
Leyens, 1977; Mazis et al., 1973; Eroglu and Harrell, 1986). Clee and Wicklund (1980) suggest that the theory of psychological reactance can be applied to any setting in which consumer control is threatened. As discussed, web navigation cues may restrict consumers’ control over navigation. Thus, the theory of psychological reactance offers a framework within which consumers’ responses to restrictive navigation cues may be examined. The primary elements of the theory of psychological reactance are control, the magnitude of the threat to control, the expectation of control, the importance of control and the effects of reactance.

5.1.1. Navigational control

At the basis of the theory of psychological reactance is consumer control. Consumer navigational control is defined here as the degree to which the consumer can access information on an on-demand basis where the content, timing and sequence of the communication is under control of the consumer, as opposed to the marketer (Fortin and Dholakia, Forthcoming, p. 263). The design of the navigational atmosphere of a web site dictates the level of control granted to the consumer. This level of control can arouse reactance.

Proposition 1: The navigational control granted to consumers by the navigational atmosphere of a web site may arouse reactance.

5.1.2. Magnitude of threat to control

Brehm and Brehm (1981) define a threat to control as any force on the individual that makes it more difficult to exercise control. Threats to control fall into one of three categories: social influence threats, self-imposed threats and barrier threats (Wicklund, 1974). Given the nature of navigation cues, this paper will focus solely on barrier threats. Barrier threats are defined as anything that imposes itself between a person and control over their behavior such that rewards are deterred and/or effort expenditure is increased (Clee and Wicklund, 1980; Wicklund, 1974; Brehm and Brehm, 1981). The magnitude of the barrier threat influences the degree of reactance experienced by individuals (Brehm and Brehm, 1981). For example, a large barrier enacted to stop a child from obtaining a toy produces more reactance than a small barrier (Brehm and Weinraub, 1977). Hence, as the magnitude of the threat increases, the level of reactance should also increase (Brehm and Weinraub, 1977). There have been many different types of barrier threats that have been found to arouse reactance in the psychological reactance literature including physical distance, monetary fees, censorship and elimination of choices (cf. Hammock and Brehm, 1966; Brehm and Weinraub, 1977; Wicklund and Brehm, 1968). In addition to these barrier threats, certain types of navigation cues may also be viewed as barrier threats.

As discussed previously, navigation cues vary in the level of control they grant consumers. “Previous” and “next” links allow the consumer the least navigational control; hence, they are highly restrictive and should produce high levels of reactance. Navigation bars are less restrictive than “previous” and “next” links but still somewhat restrictive, thus, they should produce reactance although less reactance than “previous” and “next” links. Additionally, site indexes coupled with navigation bars are even less restrictive in nature allowing consumers high levels of navigational control, thus they should produce low levels or no reactance.

Proposition 2: The magnitude of the threat to control presented by the navigational atmosphere moderates the relationship between consumers’ navigational control and reactance.

5.1.3. Expectation of control

Brehm and Brehm (1981) define the expectation of control as having the perception that one can affect the probability of the occurrence of a specific behavior. They suggest that individuals will only experience reactance if they view themselves as having control over the behavior under question. The necessity of having an expectation of control for reactance to occur has been empirically tested and supported in the literature (Jones and Brehm, 1970; Hammock and Brehm, 1966).

On the web, many web sites grant web users high navigational control through the use of less restrictive navigation cues. Brehm’s (1966) theory suggests that once a consumer has experienced these less restrictive web sites, they will begin to expect high levels of navigational control because according to Brehm (1966), the prior experience of control creates the expectation of control. Thus, web novices, with no prior knowledge of the navigation possibilities on the web, may not expect high levels of navigational control. However, consumers that have direct or indirect experience with less restrictive navigation cues may expect high levels of navigational control. When this control is threatened through the use of restrictive navigation cues, psychological reactance may occur.

Proposition 3: Users’ expectation of navigational control moderates the relationship between consumers’ navigational control and reactance.

5.1.4. Importance

Brehm and Brehm (1981) suggest that higher levels of importance lead to higher levels of reactance. This proposal has been empirically supported in the psychological reactance literature (cf. Wicklund, 1974; Brehm and Brehm, 1981). Clee and Wicklund (1980) suggest that importance refers to the degree to which control over the behavior in question is relevant to an individual. For example, they suggest that control over the decision of which graduate school to attend would produce higher levels of reactance when threatened than the decision of which lunch item to have. Therefore, based on the theory of psychological
reactance, threats to navigation control will generate higher levels of reactance as the navigating task becomes more important, such as when consumers are navigating a web site to locate important information.

**Proposition 4:** The importance of the navigating task moderates the relationship between consumers’ navigational control and reactance.

### 5.1.5. Effects of reactance

When a threat occurs decreasing an individual’s control, reactance is aroused. Brehm and Brehm (1981) define psychological reactance as a motivational state that has energizing and behavior-directing properties. The theory predicts that psychological reactance arousal leads to negative emotions, negative attitudes and the direct/indirect reassertion of control.

**Negative emotions**, such as frustration, anger and hostility, are effects of reactance (Worchel, 1974; Brehm and Brehm, 1981). In a study of psychological reactance, Worchel (1974) found that respondents, who were assigned to experimental conditions that aroused reactance, experienced the highest level of hostility; thus demonstrating that reactance can lead to negative emotions. Therefore, when firms develop restrictive navigational atmospheres, such as web sites with restrictive navigation cues, individuals may experience increased levels of negative emotions (frustration, hostility, etc.).

**Proposition 5:** The level of reactance aroused by the navigational atmosphere of a web site influences consumers’ emotion.

**Negative attitudes** towards the object or individual that presents the threat is another consequence of reactance. An attitude is defined as a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor which is developed through affective, cognitive and behavioral evaluation (Eagly and Chaiken, 1993). Affective evaluation occurs when individuals incorporate an evaluation of their emotions, such as frustration, into their attitude toward the object (Eagly and Chaiken, 1993). Thus, negative emotions, created by the navigational atmosphere, may lead to negative attitudes toward the web site. Worchel’s (1974) finding supports this statement by showing that assistants in the most threatening condition were rated the least favorably. Thus, restrictive navigation cues on the web should lead to negative attitudes toward the web site.

**Proposition 6:** The level of reactance aroused by the navigational atmosphere of a web site influences consumers’ attitudes toward the web site.

**Direct/indirect reassertion of control** is an important indicator of reactance as suggested by the theory (Brehm and Brehm, 1981; Clee and Wicklund, 1980). When reactance is aroused in individuals, they experience the need to regain control. For example, Heilman (1976) found that when individuals were strongly pressured to not sign a petition, a 20% increase in petition signing occurred. Thus, individuals directly reasserted their control. In addition to the need to reassert control, Brehm and Brehm (1981) also found support for reactance leading to increased attractiveness for the threatened behavior. Thus, consumers who experience reactance find having control increasingly attractive and accordingly make attempts to regain control. Brehm (1966) suggests that a number of factors may limit the ability to directly restore control. For example, the threat may have made it impossible to regain control, the costs of regaining control may be too high for the individual and/or avenues of regaining control may exist that are easier for the individual to attempt. Thus, individuals may engage in the indirect reassertion of control where control is not restored over the exact behaviors being threatened but rather similar behaviors (Brehm and Brehm, 1981).

In a web context, direct reassertion of control over navigation is not possible. Individuals are not able to redesign the navigational atmosphere of the web site. Hence, it is likely that indirect reassertion of control will occur on the web when individuals’ reactance is aroused by restrictive navigation cues. This indirect reassertion of control may take the form of avoidance behaviors toward the web site. For example, if a consumer’s navigational control is threatened by the navigation cues presented on a web site, reactance may be aroused and the consumer may indirectly reassert their control by enacting avoidance behaviors toward the site, including halting exploratory site navigation, leaving the site and locating and browsing similar web sites. The attitude–behavior literature lends support to this proposition by suggesting that attitudes can lead to behavioral intentions and ultimately behavior (Regan and Fazio 1977; Eagly and Chaiken, 1993). Thus, if a consumer experiences negative attitudes toward a web site, they are likely to enact negative behavior toward the web site. A primary goal of web marketers is to promote approach behaviors toward the web site including increased site navigation and repeat site visits (Hanson, 1999). Therefore, threatening consumer control through restrictive navigation cues may be detrimental to the success of the web site.

**Proposition 7:** The level of reactance aroused by the navigational atmosphere of a web site influences site approach/avoidance behavior.

### 5.2. The flow experience

The flow experience lends additional insight into the impact of restrictive navigation cues. The flow experience has been described as the state in which people are so intensely involved in an activity that “nothing else seems to matter” (Csikszentmihalyi, 1990, p. 4). In the state of
flow, one moment flows holistically into the next moment without conscious deliberation. This state leads to a sense of self-efficacy that is highly satisfying (Csikszentmihalyi, 1990). The flow state is posited to occur in structured activities, such as rock climbing, chess playing and dancing, in which an action follows an action (Hoffman and Novak, 1996; Csikszentmihalyi, 1977). Hoffman and Novak (1996) extend the concept of flow specifically to the use of computer-mediated environments, such as the web, and suggest that flow may occur during the act of web navigation. They define flow as a state that is (1) characterized by a seamless sequence of responses facilitated by interactivity, (2) intrinsically enjoyable, (3) accompanied by a loss of self-consciousness and (4) self-reinforcing. Thus, when users actively surf the web and are totally immersed in the act of navigation, they are experiencing flow.

5.3. Antecedents to the flow experience

Novak et al. (in press) found empirical support for the following antecedents to the flow experience in computer-mediated environments: control, skill, challenge, telepresence and interactivity. In a flow state, individuals must feel as if they have control over the technology (Hoffman and Novak, 1996). Shih (1998) suggests that allowing individuals to modify their virtual environment should increase the level of control they experience. As discussed previously, restrictive navigation cues reduce the amount of control users have over web navigation. Thus, when this control is threatened, users are less likely to experience flow when browsing the web.

5.4. Consequences of the flow experience

The experience of flow is a highly desirable goal because it is a self-motivating, enjoyable state (Ghani and Deshpande, 1994; Trevino and Webster, 1992). Thus, merely the experience of flow has value for consumers. The consumer flow experience can also be valuable to marketers. Flow has been associated with positive attitudes (Baronas and Louis, 1988; Csikszentmihalyi, 1977) as well as approach behaviors including increased exploratory behavior of the web site (Hoffman and Novak, 1996; Novak et al., in press). When consumers’ experiencing flow during web navigation, restrictive navigation cues may interrupt the flow experience by reducing consumer control. This may result in negative attitudes and avoidance behavior toward the web site. Thus, promoting, not inhibiting, the flow experience makes strategic sense for marketers.

Proposition 8: The navigational control granted to consumers by the navigational atmosphere of a web site influences consumers’ flow experience, which, in turn, influences consumers’ web site attitudes and approach/avoidance behavior toward the web site.

6. Conclusion

This paper presents propositions and a model that can be utilized to examine the navigational atmospheres of web sites. Specifically, this model was utilized to examine the restrictiveness of navigation cues associated with the navigational atmospheres of web sites. In essence, restrictive navigation cues act as barriers that threaten web users’ control over web navigation, which, in turn, arouses psychological reactance leading to negative consequences for the web marketer, including negative emotion, negative web site attitudes and site avoidance behavior. As the magnitude of the threat to control, consumers’ expectation of control and the importance of web navigation increase, the level of reactance also increases. Additionally, restrictive navigation cues also decrease the likelihood of the flow experience, which, in turn, results in less favorable attitudes and site avoidance behavior.

7. Implications and future research

This paper suggests interesting implications for web marketers. First and foremost, this paper emphasizes how important it is for marketers to understand consumers’ responses to the navigational design of web sites. This paper suggests that restrictive navigation cues may lead to negative consequences for the web marketer including negative attitudes toward the site and decreased site usage. Future research is needed to test the propositions set forth in this model. Experiments that compare consumers’ responses to web sites with similar content but differing navigational atmospheres could be conducted to test this model. Future research should also focus on individual difference variables that may influence consumers’ responses to navigational atmospheres. These variables could include variables that influence consumers’ need to control such as locus of control and personality type (Brehm and Brehm, 1981). Additionally, task variables such as the type of navigation, goal-directed or exploratory, that the consumer implements may also impact consumers’ responses to differing navigational atmospheres (Hoffman and Novak 1996). Thus, future research is also needed in this area.

Another implication of this paper is that even though some marketers may associate positive benefits with restrictive navigation cues, such as consistent marketing messages and increased visit duration, this association may be naive because restrictive cues may lead to unintended negative consequences. Thus, it seems imperative that marketers test various navigational designs for their web sites prior to launching the site in order to avoid potential negative outcomes. Future research should be aimed at developing and researching alternative means for creating consistent messages and increasing visit duration that do not restrict consumer control.
An additional implication of this paper for marketers is the importance of consistently monitoring new navigation technology and altering the design of the web navigational atmosphere as necessary. As technology improves, new navigation cues may be developed that are increasingly less restrictive (i.e., search technology, voice technology, etc.). As these cues are introduced and are increasingly utilized by web marketers, consumers’ expectations of control may change (Brehm and Brehm, 1981). Cues that are considered less restrictive today may be considered more restrictive as technology and consumer expectations change. For example, the use of search technology within web sites is becoming increasingly common. Thus, in the near future, as this technology becomes more prevalent, web marketers may need to incorporate this technology in order to avoid reactance and promote flow. This implication highlights an interesting avenue for future research by suggesting that the types of web navigation cues and the restrictiveness of each cue should be researched, documented and continually reevaluated over time.

Although this paper specifically examined navigation cues, the model presented in this paper can be applied to other aspects of navigational atmospheres. For example, researchers could utilize this model to examine the impact of web sites’ response times, level of customization and amount of interactivity. Each of these navigational features influence the level of control experienced by the consumer. Essentially, most or all web atmospheric elements that influence the level of control experienced by the consumer can be examined within this model.

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