

THE COST OF CREEPINESS:  
HOW ONLINE BEHAVIORAL ADVERTISING AFFECTS  
CONSUMER PURCHASE INTENTION

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## ABSTRACT

LISA BARNARD: The cost of creepiness:  
How online behavioral advertising affects consumer purchase intention  
(Under the direction of Maria Leonora Comello)

Technological progress has enabled marketers to track and use online behavioral data to target consumers more effectively with relevant advertisements than was possible in the past. For example, marketers are increasingly using an online marketing practice called *retargeting*, in which an individual consumer is served an ad for the exact product she shopped for in the past – at a later time, on a different website. Historically, the research on tailored advertising has shown positive effects on persuasion, affect and memory. However, previous research does not take into consideration the increasing availability of consumer data online and newer techniques that tailor advertising to match an individual’s past online behaviors. The current study tested newer tailored advertising techniques in an experimental context, to discover whether the effects of tailoring are still consistent for newer, more invasive, practices.

This study examined the relationship between the type of information used to tailor an ad and purchase intentions toward the featured products, using reactance theory as a framework. The results revealed that while behaviorally targeted online ads do have a positive direct effect on purchase intention, as marketers assume, exposure to behavioral tailoring also sets off a negative indirect effect on purchase intention that attenuates the positive direct effect. This reduction of purchase intention can be attributed to the creepiness factor – or the sense that marketers are watching, tracking, following, assessing, and capitalizing on an individual’s personal information or online activities that she perceives as private. Exposure to behaviorally

tailored ads led to increased perceived creepiness, which led to increased threat, increased reactance, negative attitudes toward the ad, and ultimately negative purchase intention toward the featured product. The overall effect on purchase intention was reduced by five percent, indicating that the creepy aspects of behavioral tailoring have a real cost for marketers. Theoretical, methodological, and practical implications are discussed, and directions for future research are offered.

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## CHAPTER 1

### INTRODUCTION

In a recent survey asking students' opinions on advertising tailored to their interests and behaviors online (Barnard, 2013), a free-response question asked how they felt "when seeing an ad that seemed to be tailored to their interests." They wrote comments such as the following:

[Seeing those ads] is kind of weird. For example, I had been looking into getting a new Patagonia jacket one day, and then a few hours later there were ads on the side of Facebook and other websites that I went on advertising the jackets that I had been looking at. It feels like a violation of privacy, and it's just creepy. I feel like everything I do on the Internet is being recorded (which it is) -- but it's just weird to think about.

Another respondent wrote:

Every time I see an ad that is clearly based on a Facebook status or a shoe search on Zappos, I feel like I've been spied on. I don't exactly understand how this works, but I feel like it should be considered a violation of my privacy. If someone can see what I'm searching for on Amazon, can they also see my credit card information?

Both of these examples refer to an online marketing practice called *behavioral targeting*, where marketers track consumers' Internet use and tailor ads for them based on that behavior. These two respondents seem particularly troubled by a specific tactic called *retargeting*, where advertisers serve an individual consumer an ad for an exact product he or she shopped for in the past – at a later time, on a different website. These tactics are increasingly used by marketers in an effort to segment and target audiences more effectively. However, as demonstrated by the comments above, when marketers use this type of highly individualized consumer information to

tailor an advertisement, in increasingly personal contexts, it can give a consumer the sense of “creepiness” – that the marketer is watching her and her privacy has been violated.

Behavioral targeting and retargeting fall into a category of advertising tactics called tailored online advertising: when a company designs an ad or other piece of strategic communication to match the characteristics, personality, preferences, or behaviors of an individual consumer. As increasing amounts of consumer data are collected online and made available for marketer use, tailored strategic messages are becoming more common, more sophisticated, and based on individual consumer data.

Historically, the research on tailoring has shown that it has positive effects on persuasion, affect, and memory (Kalyanaraman & Sundar, 2006). However, this line of research tends to focus on relevant (“tailored”) versus irrelevant (“not tailored”) messages and giving consumers online experiences designed around their interests. It does not take into consideration the increasing availability of consumer data online and newer techniques that tailor advertising to match an individual’s past online behaviors. The current study, therefore, seeks to test newer tailored advertising techniques in an experimental context, and to discover whether the effects of tailoring are still consistent for newer, more invasive, practices.

Consumers who have received the types of ultra-tailored advertisements used by marketers today may not feel the positive attitudes previous research suggests. Out of all students who answered the free-response question in the survey mentioned above, 22 percent used the word “creepy” to describe tailored advertising tactics, while many others used similar descriptors such as “eerie,” “disturbing,” “invasive,” “frightening,” or “scary.” In one study, researchers found 66 percent of Americans do not want marketers to tailor ads to them. Once respondents were informed about data collection practices, that number rose to between 73 and 86 percent

opposed (Turow, King, Hoofnagle, Bleakley, & Hennessey, 2009). Attitudes are especially negative for tailored political ads, although political candidates are using some of the most advanced data-based techniques (Barnard & Kreiss, 2013). Researchers have shown that 86 percent of Americans do not want political ads tailored to them, and 64 percent said their likelihood of voting for a candidate they support would decrease if they discovered the campaign used data to tailor messages to their interests (Turow, Delli Carpini, Draper, & Howard-Williams, 2012).

As demonstrated by the students' comments above, perhaps recent forays into behavioral tailoring take relevance a step too far, crossing the line into invasiveness – a phenomenon that could be called the “creepiness factor.” The positive impact of earlier, more simplistic tailoring, in concert with consumer reactions to recent, more sophisticated and data-driven practices, suggests that tailoring may have a positive outcome to a point, and once it becomes too invasive with the use of private consumer data and in private contexts, it may result in a negative outcome. Because attitudes can ultimately influence behaviors (Chaffee & Roser 1986; MacKenzie, Lutz, & Belch, 1986; Ajzen & Fishbein, 1969; 1980), negative reactions toward advanced tailoring practices could ultimately negatively impact product purchase. Consumers could avoid purchasing a product, or avoid even browsing the website of a company such as Zappos that employs these tactics, because of the information it may contribute to his or her online footprint.

Marketers continue to spend billions of dollars online – online ad spend for the first half of 2013 rose 18% over the same period in 2012 (Interactive Advertising Bureau, 2013) – and larger portions of marketing budgets are increasingly spent on behavioral tailoring. In fact, in a 2010 study, eMarketer projected that by 2014 one in five display ad dollars will be spent on online behavioral tailoring (eMarketer staff, 2010). As marketers rush to collect and use more



consumer data, including behavioral data, it is important to understand what makes these tactics more or less effective, if more tailoring is always necessarily better, and what characteristics of strategic communications -- and also of consumers -- might impact attitudes toward tailored online ads.

These concepts were initially tested in the aforementioned survey by the author (Barnard, 2013), which showed that consumer attitudes toward tailored online media were increasingly negative when the tailoring involved more personal information (i.e. behavioral information such as websites visited, versus demographic information such as age or school) and when the ad appeared in more private contexts (i.e. email or social networking, versus news or shopping). The current study attempts to explore the possible conceptual underpinnings of such consumer reactions and test them in an experimental context.

The majority of academic research on behavioral tailoring, which is sometimes also called behavioral targeting or online behavioral advertising (OBA), has thus far been conducted in law reviews and policy journals, because companies' collection of increasing amounts of consumer data has raised privacy concerns within the legal community. However, it is important to examine the effects of these advertising tactics not just from a legal perspective, but also from a marketing perspective.

Although marketers spend increasing amounts of budget dollars on these tactics under the assumption that they lead to positive behavioral intention, this study seeks to test these ads in an experimental context to better examine their psychological effects on consumers. It explores the following general research question: What is the relationship between the type of information used to tailor an ad and consumer purchase intentions toward the featured products? Reactance theory (when a person's freedom is threatened, she experiences an aversive affective and cognitive

reaction) is presented as a possible explanation for negative consumer reactions to behaviorally tailored ads, and product type is proposed as a possible intervening variable.

This study contributes to theory in several ways. It challenges the standard paradigm for tailoring studies, suggesting that new technologies require a reexamination of the persuasive effects of tailored advertising. It also applies reactance theory to tailored online advertising for the first time, suggesting that the use of consumer data in tailored advertising may be perceived by the consumer as limiting his or her freedom online. Finally, it proposes and attempts to operationalize creepiness as a concept that affects consumer attitudes toward behavioral targeting online, similar to but distinct from ad intrusiveness. Methodologically, this study contributes by examining retargeted advertising in an experimental context, a concept that has primarily been studied in non-quantitative legal articles. This study also contributes to practice, in that it tests the effectiveness of tailored advertising techniques currently and increasingly used by marketers online. The hope is that this study will help reveal to marketers the psychological effects these techniques have on consumers, so they can better understand whether tailoring is always effective, or if there is a point at which using too much data has negative effects on consumer attitudes and behaviors.

The following literature review focuses on online ad tailoring, and behavioral tailoring and retargeting in particular, and explains how reactance theory might help explain attitudes toward these practices.

## Literature review

### Creepiness

As mentioned above, the “creepiness factor” occurs when tailored communications, designed to be relevant to the consumer, take relevance a step too far, crossing the line into invasiveness. Often this is demonstrated by an overuse of consumer data, where marketers create messages that use consumer information that’s *too personal*, or where the tailored messages appear in contexts that are *too private*, to the extent that the consumer perceives the message as “creepy.” This often manifests as a pervasive feeling of having had one’s privacy invaded by a marketer -- the sense that the marketers are watching, tracking, following, assessing, and capitalizing on an individual’s personal information or online activities that he or she perceives as private. Marketers increasingly collect user data such as consumers’ personal interactions with friends; profile page information designed for friends, not marketers, to see; and personal behavioral data such as websites visited and products viewed online. When marketers collect increasing amounts of highly individualized consumer information and use that information to tailor an advertisement, the consumer may feel it is “creepy,” because he or she is *too* identifiable to the marketer; his or her personal identity is *too well known*.

For example, a news story in 2012 revealed the tactics Target uses to tailor advertisements to its customers. A father stormed into Target after his 17-year-old daughter received coupons for maternity clothes and infant items. Outraged, he asked the manager why they were trying to encourage his child to get pregnant. A week later, he called Target to apologize, because the girl was indeed pregnant. A sequence of purchases she made, made up of seemingly innocent items like unscented lotion and cotton balls, when aggregated, fit the profile

of someone who was pregnant. Target had capitalized on this by sending her maternity coupons. Target's database knew she was due in August, even before her father did (Duhigg, 2012).

This is just one of many examples of marketers targeting consumers and tailoring messages for them to an extent perceived as too invasive. Online travel agency Orbitz used consumer data to determine that web visitors browsing on an Apple computer tended to spend more money on hotel rooms than those browsing on PCs. Orbitz changed its homepage for Mac users only to feature more expensive hotels (Mattioli, 2012), earning the story a segment in marketing podcast HubSpotTV called "Customization – compelling or creepy?" (HubSpotTV, 2012).

In 2010, *The New York Times* ran an article about retargeting practices in which consumers, one of whom used the word "creepy" to describe the practice of retargeting, complained that retargeted ads made them feel spied on by marketers. *Advertising Age* writer Michael Learmonth called it "being stalked by a pair of pants" (Helft & Vega, 2010, n.p.). *The New York Times* article described consumers as having "visceral negative reactions" to the ads, even for those who understood how the technology works (Helft & Vega, 2010, n.p.). "Retargeting has reached a level of precision that is leaving consumers with the palpable feeling that they are being watched as they roam the virtual aisles of online stores," the journalists wrote (Helft & Vega, 2010, n.p.). After seeing retargeted ads for a diet service she had visited online, one consumer said: "They are still following me around, and it makes me feel fat" (Helft & Vega, 2010, n.p.).

In a related vein, a new study from media planning agency PHD showed that women feel less attractive on Mondays, especially in the morning. The study encouraged marketers to concentrate on these "prime vulnerability moments," and serve ads or messages at this time that

feature beauty tips and tricks, beauty rescues, dressing for the success, etc. The PHD study also showed that individual women feel most insecure about themselves when they are stressed, sick, or crying. The study suggested marketers should monitor women's activity on sites like Twitter and Gmail to discover when they use keywords that indicate emotional distress and target them with beauty ads during those times. This was reported in an article on *The Atlantic's* website, titled: "Is this the grossest advertising strategy of all time?" (Rosen, 2013, n.p.). The availability of consumer data online has transformed target marketing strategies, giving marketers an opportunity to make their messages ultra-personal... and perhaps sometimes *too* personal.

A concept that at first glance might seem similar to behavioral tailoring is contextual advertising. This is a form of targeted advertising where advertisements are selected and served by automated systems based on the content a user is viewing on a webpage. The system scans the web page for keywords and then serves relevant advertisements based on those keywords. If a consumer were to visit a news website to read an article about the best hotspots for European travel, and an ad appeared on the side of the page offering a special price for a flight to Belgium, that would be an example of contextual advertising. This is also the method used by search engines like Google to serve text ads on the side of a search results page. (Offline, this is similar to matching tactics used by media planners in which products are paired with matching programming – for example, running an ad for golf clubs during the Master's tournament.)

Online contextual advertising seems similar because both forms of advertising capitalize on relevance. However, the key distinction is that contextual advertising is relevant to the *content on the webpage* the consumer is browsing, whereas tailored advertising is relevant to the *consumer herself* – her characteristics, personality, preferences, and, increasingly, her actual actions and behaviors in real time. This self-relevance is what presumably makes tailored

advertising more effective (Kalyanaraman & Sundar, 2006) – but it’s also what leads consumers and critics to refer to these practices as “creepy,” a term that has been used to describe many technological innovations in the past, as far back as the train or the telegraph (Selinger, 2012). When a consumer encounters contextual advertising, it’s fairly clear that the ad appeared thanks to a keyword-match with the web page’s content. However, when a consumer encounters advertising tailored to his or her past behaviors, the genesis of the ad may not be so clear.

There are several features of strategic communication efforts that give rise to creepiness. The key to good advertising is that it resonates with and is relevant to the consumer, and marketers use the STP process – segmenting, targeting, and positioning – to create an effective campaign (Solomon, Cornell, & Nizan, 2013). This is not a new tactic for marketers – Paul Lazarsfeld used these advertising tactics in the 20<sup>th</sup> century in his work with the Bureau of Applied Social Research, where he analyzed the occasions where housewives would send laundry out to be done. He learned that marketers should target housewives with advertising for laundry services after announcements of births, deaths, and weddings (Schramm, 2007).

However, the STP process is evolving rapidly as technology enables marketers to learn more about their target audiences. In the past, segments were typically broad consumer groups; today companies can define and manage finer and finer segments of consumers. They can place cookies<sup>1</sup> in consumer web browsers to track their behaviors, process incredible amounts of consumer data, and use online ad channels to specifically target a market of one.

Similarly, online technologies give marketers the ability to target consumers wherever they are on the web. Instead of widely broadcasting a television ad and hoping to reach the target group, the Internet provides the opportunity for marketers to advertise on websites, on consumers’

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<sup>1</sup> A cookie is a piece of data sent from a website to a user’s web browser. Every time the user loads the website, the browser sends data back to the server to notify the website of the user’s browsing behaviors since the last visit.

social networking profiles, and even inside consumer emails. Google's Gmail site tailors advertisements to a consumer based on the actual words she has written in the body of her personal emails. On Facebook, marketers can choose to tailor advertisements for users based on the information in their personal online profile as well as the profile information of their friends, and advertisers can target users based on actions they've taken in Facebook apps such as checking in to a location or listening to a song on Spotify (Constine, 2012). In addition, Facebook now allows advertisers to serve behaviorally targeted ads to Facebook users based on their browsing activity on sites outside of Facebook (Davis, 2013). Google also uses another practice it calls remarketing, where, for example, a user who visits a website like NBA.com is tagged as a basketball fan and later served ads containing basketball-related products on other websites unrelated to sports (Helft & Vega, 2010).

Google also recently announced a new policy that it will show user information such as ratings and comments as well as names and photos in advertisements across the web endorsing products. Although a user may not have intended to endorse a brand by following it on Google Plus, his or her information can be used in advertisements, not only on Google, but also across the web (Miller & Goel, 2013). This is similar to Facebook's "sponsored stories," which paired user photos and comments with ads for brands she followed or whose pages she commented on, without explicit permission from the user beyond having agreed to the terms of service – a practice that led to a costly class-action lawsuit for the website (Edwards, 2013).

Behavioral tailoring techniques and the collection of individual user data allow marketers to improve their segmenting, targeting, and positioning. However, this also means they access and use information not originally intended for marketers to see, such as consumers' personal interactions with friends, profile pages, and personal behavioral data. As scholar Ryan Calo has

said, “Any ad worth its salt is targeted (e.g. beauty products in women's magazines, car ads in the auto section). However, the sort of targeting enabled by the Internet is categorically different” (Rosen, 2013, n.p.). Advertisers can now reach us anytime, anywhere (even on the go through our mobile devices), with messages that are addressed specifically to us as individuals. When strategic communication efforts use this type of highly individualized consumer information to tailor an advertisement, it can give a consumer the sense of heightened invasiveness.

Where is the line between relevance and, as the many students and scholars quoted above have said, creepiness? Does behavioral advertising elicit a sense of intrusion and surveillance that trumps the benefits provided by tailoring practices? How might this impact consumer attitudes and behavior when encountering behaviorally tailored ads? This study seeks both to explore these questions and to further conceptualize and operationalize the idea of creepiness in the context of tailored online advertising. This study is unique in that it suggests that new data-driven online advertising may not provoke the same responses as classic tailoring – unlike tailoring, a positive persuasion technique, features of this new advertising may make audiences uncomfortable. This study extends the concept of ad intrusiveness to incorporate how the qualities of data-driven online advertising can result in a negative sense of “creepiness,” or being watched by marketers online, and challenges whether this evolution of tailoring necessarily results in positive effects.

### **Online ad tailoring and related concepts**

#### *Online ad tailoring*

As mentioned above, tactics such as behavioral targeting, retargeting, and remarketing fall into a category called tailored online advertising. The concept of tailoring has been studied across many disciplines, including healthcare, advertising, marketing, e-commerce, computer



science, and social psychology. According to Merriam-Webster (2013), to *tailor* means to “to make or change something so that it meets a special need or purpose.” According to Oxford Dictionaries (2013), it means to “make to fit individual customers; make or adapt for a particular purpose or person.” Tailoring has been used synonymously with several other terms, including targeting, customization, and personalization. This will be discussed further below.

A pioneer of research on tailoring in health communications, Kreuter (and his various colleagues) was perhaps the first to explicate tailoring in his research. Kreuter and Skinner (2000) likened the tailoring of communication materials to the actions performed by a “tailor” by trade, or a person who cuts and sews clothing that is custom-fit in style and size to the taste and shape of an individual person. In this vein, Kreuter, Farrell, Olevitch, and Brennan (1999) defined tailoring as creating information intended to reach one specific person, derived from an assessment of that person, and based on the unique characteristics of that particular person. Similarly, Rimer and Kreuter (2006) define tailoring as the process of creating individualized communications by gathering and assessing personal data related to a given health outcome, in order to determine the most appropriate information or strategies *to meet that person’s unique needs*. These scholars specify that while some tailored communications are personalized (which they define as including the receiver’s name in the message), merely containing one’s name is not sufficient to classify a message as having been tailored. In order to be considered a tailored communication, the message must be based on and reflect data about an individual’s unique needs.

The term tailoring has historically been used in health communications research when discussing health interventions wherein researchers collect information about psychosocial behavioral determinants (in other words, factors beyond demographic information that may

influence an individual's health behaviors) and then use algorithms to generate individualized feedback to meet the person's specific health needs. On the other hand, messages based on an aggregate profile of a group, rather than an individual, is *not* tailoring, according to Kreuter and colleagues. Rather, this would be referred to as *targeting* (Kreuter & Skinner, 2000). For example, a booklet addressing characteristics, behaviors, or needs assumed to be shared by all members of a subgroup (i.e. middle-aged African-American women) would be *targeted*. If on the other hand, individual versions of the booklet were created which addressed the characteristics, behaviors, or needs of *a particular* member of the subgroup (i.e. one particular middle-aged African-American woman) based on her responses to an assessment form, it would be tailored.

In the health communications literature, this distinction has persisted fairly intact, even as the advancement of computer technology has encouraged the move of health interventions online. For example, a 2008 meta-analysis of health interventions on the web defines tailoring as a multi-dimensional communication strategy aimed at increasing the perceived personal relevance of health messages for persuasion purposes (Lustria, Cortese, Noar, & Glueckauf, 2009). The authors stress that computer tailoring better facilitates the collection and assessment of individual data and the use of decision rules to create persuasive strategic messages compared with print-based interventions. However, where they part from the earlier definitions provided by Kreuter is in the characteristics they include as possible tailoring factors. They specify that in the health literature, tailoring has been based on any number of personal characteristics including demographic information, health risk factors, health behaviors, information needs, health beliefs or motivations, and individual characteristics such as need for cognition. Note that unlike Kreuter and colleagues, this updated definition incorporates demographic characteristics in to the definition, provided these characteristics are used to individualize a message.

Another meta-analysis by Noar, Benac, and Harris (2007) reiterates the distinction that tailored communication is uniquely individualized to a person and requires assessments of members of a population. The researchers highlight three information categories that can be used to tailor health messages. The first, again, is demographic information. The second is information about the behavior the message is attempting to alter (in a health context: smoking, exercise, diet, etc.). The third is information regarding what the authors refer to as theoretical concepts, such as attitudes, stages of change, self-efficacy, and social support.

When operationalizing the concept of tailoring, it is generally used as an independent variable in quantitative studies, primarily in experiments that may or may not also include a survey component. Therefore, unlike attitudinal concepts, “tailoring” is not typically something that is measured in respondents – instead it is manipulated by the experimenters and then used as a condition into which participants are assigned.

Many experimental studies use a binary measure of tailoring where the condition is either: 1) “tailored,” meaning the experimental condition takes into consideration user characteristics or preferences and is individualized for that user, or 2) “non-tailored,” which means one of two things: that the content provided in the experimental condition is generic for all participants, or that the content intentionally *does not match* the preferences of the individual participant.

Other studies expand the operationalization of tailoring by including additional dimensions of relevance, so that the conditions are either tailored or generic on multiple dimensions, to essentially create levels of tailoring. For example, a study by David, Henry, Srivastava, Orcena, and Thrush (2012) tested an intervention encouraging teachers to promote a preventative health behavior (what is known as the “cover-the-cough” technique) in their

classrooms. The messages were tailored for the grade level taught by the teacher (elementary school or high school) and whether the teacher had already begun the lessons with their students (pre-action teacher or action teacher).

On the other hand, some tailoring studies, particularly health interventions as reviewed by Noar et al. (2007), Lustria et al. (2009), and Suggs and McIntyre (2009), use much more complex conceptualizations of tailoring. Suggs and McIntyre (2009) performed a content analysis of websites providing health interventions. They measured tailoring by “level,” which they specify as the number of variables collected in the initial assessment and then used to individualize feedback. This included variables such as attitudes, knowledge, and motivation. One measured 11 variables, for example, whereas many other sites measured between one and four variables. These variables were used numerically as an interval measure rather than being grouped into an ordinal (high/medium/low) measure.

Similarly, Noar et al. (2007) operationalized tailoring by: behavior the intervention is attempting to alter (e.g. smoking), theoretical concept (e.g. attitude), theoretical concept plus demographic information, theoretical concept plus behavior, and finally theoretical concept plus behavior plus demographic information. They operationalized theoretical concepts by the number of concepts tailored to, using numerical values to create an ordinal scale of low (0-3 concepts), medium (4-5 concepts), and high (6-9 concepts).

As can be seen, the conceptualizations of tailoring are fairly consistent in the health communications literature, but the operational definitions range from relatively simplified to highly complex. Many technological advances have been made since the original distinctions set out by Kreuter and his colleagues. These technological advancements have allowed strategic communicators in other disciplines to use the same logic behind tailored health interventions to

create their own tailored persuasive messages online. However, the terminology outside the health communications literature is inconsistent, to the extent that these practices are rarely called “tailoring” outside of a health context. Instead, three other terms are often used.

Tailoring has been used synonymously both across and within the aforementioned disciplines with the terms *personalization*, *customization*, and *targeting*. According to Merriam-Webster (2013), to *personalize* means to “mark something in a way which shows it belongs to a particular person; to change something for a particular person.” To *customize* means “to change something in order to fit the needs or requirements of a person” (Merriam-Webster, 2013). Finally, to *target* means “to direct an action or message at someone or something” (Merriam-Webster, 2013).

In an early attempt to distinguish these terms from each other, Kreuter et al. (1999) defined *targeting* as creating materials based on a set of demographic characteristics shared by a subgroup of the population. They used the example of breast cancer screening materials designed for midlife women to illustrate this concept. On the other hand, they defined *personalization* as using a person’s actual *name* to draw attention to a generic message, as exemplified by the tactics used in direct mail (for example, “Mary – you may have already won two million dollars!”). As previously reviewed, they defined *tailoring* as creating information intended for one specific person, derived from an assessment of that person, and based on the unique characteristics of that particular person. They relegated the term *customization* to the realm of consumer goods production, defining it as an individualized process of production based on individual relationships with each consumer. In another article from the same year, Kreuter, Strecher, and Glassman (1999) defined *generic* communication as the counterpoint to all four

terms -- communication that is not individualized or based on any kind of assessment of personal characteristics, such as a brochure.

However, outside of the health communications literature, the distinctions are muddier. Communications scholars such as Shankar (2001) and Sundar and Marathe (2010) insist that, considering the literature on customization in human-computer interaction, *agency* should be the main point of distinction in terminology – whether the user feels like he or she is the one creating the individualized experience. In an attempt to clarify this confusion, they draw a sharp distinction between “customization” versus “personalization” (the only two terms used by these scholars). Shankar (2001) clarifies that customization involves letting the consumer decide what he or she wants, whereas personalization involves predicting and anticipating consumer needs by using consumer data. Sundar and Marathe (2010) define “personalization” as *computer systems* tailoring content to match an individual user’s tastes – they call this system-initiated personalization. In contrast, they define “customization” as *users* tailoring content for themselves by choosing options – they call this user-initiated customization.

However, this distinction does not help clarify the differences between the four terms customization, tailoring, personalization, and targeting, and it is also not a commonly accepted distinction of terminology across all disciplines. Customization and personalization are often used synonymously with each other as well as with the other two terms, leading to much confusion and inconsistency. Some scholars argue that this debate in nomenclature is an exercise in futility. They emphasize that each of these terms is used to express the same basic idea which lies at the heart of tailoring, no matter the name – that every user is unique and receives distinct messages or content geared toward his or her individual self (Kalyanaraman & Sundar, 2006;

Beier & Kalyanaraman, 2008). In light of this, a single definition of the term has not been agreed upon.

Below, several concepts related to online ad tailoring will be discussed further in depth in order to more clearly define the distinctions between these concepts and their use.

*Related concept: Customization*

The term *customization* has been used by many scholars as Sundar and Marathe (2010) have defined it, with a focus on agency. They reiterate that the key is not that the content *is tailored*, but that the users are able to *perform the tailoring* on their own. These scholars help define customization by using the term tailoring. Here tailoring refers to the ability to individualize content. They stress that with customization, individuals can shape the nature of the content they consume – they are the ones with agency, not the companies or websites (Sundar & Marathe, 2010).

This agency distinction is what distinguishes customization from the conceptualizations of tailoring. Customization is called “manual decision-rule systems” in the computer science literature, or individualized services that rely on explicit user input (Mobasher, Dai, Luo, Sun, & Zhu, 2000). This is called user-initiated customization in the marketing literature (Ansari & Mela, 2001) and simply customization in the human-computer interaction literature (Kalyanaraman & Sundar, 2006). It is the method used by portal services such as MyYahoo! or iGoogle, which allow users to individualize their personal home pages in their web browsers to match not only their own demographic information (for example, to display their own horoscope or their local weather), but also to match their own personal preferences in news sources, news topics, favorite sports teams, ideal travel destinations and other information, by selecting from various options

provided on the site (Pierrakos, Paliouras, Papatheodorou, & Spyropoulos, 2003; Kalyanaraman & Sundar, 2006). Unlike tailored communications, these changes are under the user's control.

When referring to changes made by a company, rather than by a user, but based on user preferences, it is referred to in the marketing literature as "customerization." Wind and Rangaswamy (2001) have defined this as the process by which users identify or define what they want, allowing companies to deliver a product or service that matches that user's specifications. Customerization is sometimes discussed in terms of online manipulation of features of a physical product to individualize that product before ordering (such as selecting a name to engrave on a piece of jewelry or a color for a personal computer). This has also historically been called "mass customization," or the idea of personal sales of individualized products for customers to meet their individual specifications. This concept has long been embraced by marketing researchers in the offline world as an effective strategy for consumer loyalty (Piller, 2005; Kumar, 2008; Broekhuizen & Alsem, 2002; Ansari & Mela, 2003; Kalyanaraman & Sundar, 2006).

Today, the term is also used to refer to online modifications made by a company to a website or to website search results based on stated user preferences – for example, airline prices on Priceline.com, or news content from Google News, which respond to user feedback, filtering and specifications (Wind & Rangaswamy, 2001; Miceli, Ricotta, & Costabile, 2007; Kumar, 2008; Kalyanaraman & Sundar, 2006). This conceptualization of customization is similar to tailoring, in that it is based on a user assessment and specified for that individual in particular.

*Related concept: Personalization*

Personalization is a widely used term today and is not conceptualized consistently. As specified in the discussion of tailoring, personalization was initially used to refer to products or messages that include a person's actual name (Kreuter et al., 1999). This conceptualization is



still used by some scholars across all fields (e.g. Noar et al., 2007; Malheiros, Jennett, Patel, Brostoff, & Sasse, 2012).

Along with this traditional definition, however, personalization sometimes indicates the ability to individualize products or messages to individual consumer taste (Chellappa & Sin, 2005), often designed around the characteristics of the individual, as stated by the individual in an online profile or survey. This is similar to the conceptualization of tailoring described above. In the user modeling literature, this is called “rules-based personalization,” where a company uses the information provided in a user’s personal online profile to divide users into segments and subsequently deliver products, promotions and information designed specifically for these segments (Shankar, 2001). On the other hand, sometimes personalization refers to the use of data mining and clickstream analysis techniques to adapt website content to consumer preferences in real time (Ho, Bodoff, & Tam, 2011).

Many scholars in the marketing and advertising literature have used personalization today as a catch-all term. It has been used to mean simply “a specialized flow of communication that sends different recipients distinct messages tailored to their individual preferences or characteristics” (White, Zahay, Thorbjørnsen, & Shavitt, 2008, pp. 40). In this definition, which uses the word tailoring to help define the term, consumer information employed to individualize the message can include demographics, psychographics, or purchase history (White et al., 2008). Similarly, Baek and Mormoto (2012) define personalization as “a form of customized promotional messages that are delivered to each individual consumer through paid media based on personal information (such as consumers’ names, past buying history, demographics, psychographics, locations, and lifestyle interests)” (pp.59). This definition, which uses the word customization to help define the term, also includes demographic, psychographic, and behavioral

information.

*Related concept: Targeting*

As discussed earlier, targeting has historically been used to refer to communications that assume segments of a population share certain characteristics and are designed to address those group characteristics to appeal to that segment (Kreuter & Wray, 2003). For example, Pérez-Stable, Otero-Sabogal, Sabogal and Nápoles-Springer (1996) used targeting to promote cancer screening among Latina women living in San Francisco. They created an educational booklet that used Latina models and testimonials from the Latina community, and which also addressed specific misconceptions about cancer screening thought to be held by this community. This is an example of what the health communications literature calls targeting, or creating a message with content designed to appeal to a specific group of people – a segment or subpopulation – and then directing the message to members of that group.

This tactic is also used in advertising – where it is often called target marketing, market segmentation, or niche marketing (Kalyanaraman & Sundar, 2006). A report by Yahoo! research conceptualized targeting as a form of “personalized” advertising where advertisers specify the features of their desired audience, either explicitly, by selecting characteristics such as demographics, location, and context, or implicitly by providing examples of their ideal audience (Broder, 2011).

However, the introduction of data collection capabilities online has broadened the definition of targeting to include *behavioral targeting* or online behavioral advertising. This is conceptualized as the use of past online behavior (identified through consumer clickstream data) to individualize ads for a particular consumer (Goldfarb, 2013). A user’s behavior is tracked by a website over time through the use of cookies. Advertisements, recommendations or

individualized experiences are then generated for that particular user, based on his or her past behavior and how this behavior matches the behaviors of other like-minded users (Shankar, 2001; Sundar & Maranthe, 2010). One particular kind of behavioral targeting is called *retargeting*, where a user browses on one website, views a particular product, and then sees an ad for that specific product on a different website, either in the same web browsing session or a later session (Goldfarb, 2013). The idea behind behavioral targeting is that consumers would be more likely to click on these ads because they are more relevant to them and ultimately they would be more likely to purchase the product featured in the ad. This is similar to the idea behind loyalty programs at a grocery store, where consumers exchange personal information for coupons or discounts. However, the difference is that online the consumer does not actively give consent for advertisers to track her behavior online (Penn, 2012).

It is perhaps worth noting that this type of behavioral tailoring, made possible thanks to the personal information readily available for collection on the Internet, is slightly different from behavioral tailoring referred to in the health communications literature or in traditional advertising studies. When health studies such as those discussed in the meta-analysis by Noar et al. (2007) refer to tailoring based on behaviors, they mean health behaviors, such as whether or not the person is a tobacco user. Similarly, in classic advertising parlance, behavioral segmentation refers to dividing an audience based on participation or nonparticipation in an activity. Classically this has resulted in dividing consumers into segments of “heavy users” versus “light users” of a product (Solomon et al., 2013).

The distinction between this traditional type of behavioral tailoring and behavioral tailoring online is that with these traditional examples, consumers are defined as heavy or light users of a product, or smokers or non-smokers, typically based on self-report data. For example,

a smoker would report how many cigarettes he smokes per week and then would be classified as a smoker or a non-smoker, or a heavy or light smoker. Online, on the other hand, users have not provided a report of behavior. Instead, their behaviors are tracked behind the scenes, often without their knowledge and without their explicit consent, and they are then served with advertising or experiences based on those behaviors. This is perhaps a factor that contributes to creepiness and ultimately to negative consumer reactions toward behavioral targeting practices online.

This conceptualization of targeting is used to explain the approach used by Amazon.com to recommend products such as books and DVDs (Shankar, 2001), personalized Internet radio websites such as Pandora to recommend new music (Weber, 2011), websites like Hulu.com, who serve advertisements based on user behavior on the site (Weber, 2011), and companies like Zappos who use retargeted ads to show consumers products they have shopped for in the past (Helft & Vega, 2010).

It is important to note that unlike the conceptualization of customization, the content is tailored to each user's individual tastes *by the system itself*, with no action or initiative taken by the user to optimize the content on the website (Sundar & Marathe, 2010). The websites themselves are adaptive, with the ability to change automatically based on users' unique and ever-changing interests or even potential interests (Kalyanaraman & Sundar, 2006).

This is sometimes referred to with the use of the term personalization. It has been called "automatic personalization," when websites leave cookies in each user's web browser to track behaviors and gather data to help individualize the experience for each user (Sundar & Marathe, 2010). In the user-modeling literature, this was initially called usage-based personalization, which began as a simple concept of using website visitors' personal data to troubleshoot and

improve their experiences on a web site without the intervention of an IT staffer (Pierrakos et al., 2003). However, today it is defined in user-modeling by one of two processes: 1) “content-based filtering,” where a website uses machine-learning techniques to construct a personal profile for a user complete with recommendations based on patterns in his or her past navigational behavior, or 2) “collaborative filtering,” where a website compares a user’s data profile against data obtained over time from users with similar characteristics (sometimes called ‘nearest neighbors’) in order to generate a more relevant online experience (Mobasher et al., 2000; Kalyanaraman & Sundar, 2006).

Despite the technological progress in this area, which allows for individualized content based on user behavior, the operationalization of this concept still tends to be dichotomous. So far, many studies testing targeting have operationalized the content as either targeted or untargeted. For example, Farahat and Bailey (2012) tested the effectiveness of “individually catered” advertisements targeting users based on the content of the website, geographic location of the user, browsing history, demographics, and user profile. The conditions were divided into two categories – content was either targeted to the user, or not targeted to the user.

#### *Summary and current study*

Scholars cannot agree on a single term to describe the process by which a user may now receive individualized media messages online that reflect his or her personal characteristics, preferences, or behaviors. Although this section attempted to outline the conceptualizations for each term individually, in reality, these terms are used interchangeably. A study may define its concept as personalization at the outset but then use the term tailored in the definition, or indeed in the rest of the article. There is clear disagreement in the literature about the use and meanings of these terms, although each term tends to be treated as binary or dichotomous concepts,

especially in experimental settings, with the exception of studies that distinguish different categories of individualization (i.e. David et al., 2012), ordinal levels of high, medium or low individualization (i.e. Kalyanaraman & Sundar, 2006), or an interval count of variables used to individualize communications (i.e. Lustria et al., 2009).

To describe the broad category of advertisements referred to here, this paper generally adopts the classic concept of tailoring outlined by Kreuter et al. (1999) – creating a message intended to reach one specific person, derived from an assessment of that person, and based on the unique characteristics or identity of that particular person. This appears to be the clearest and most comprehensive conceptualization. The goal of this study is to investigate whether some individualization leads to positive attitudes and too much individualization leads to negative attitudes. This topic does not necessarily involve agency on the part of the user, which would eliminate the use of the term “customization.”

However, it is important to specify that in an attempt to investigate various levels of individualization, the concept of interest includes tailoring based on demographic information as one possible level of online tailoring (which Kreuter would call targeting), and also behavioral targeting. Due to the technological features present in the tailoring landscape online, these are two different types or levels of tailoring which use increasing amounts of personal information to serve consumers with relevant and individualized messages. This is in line with some advertising and marketing definitions of personalization. However, as personalization is often confused with merely adding a person’s name to a piece of communication, the term tailoring will be used in this study to describe the overall category of advertisement, while behavioral targeting will be used to describe the specific type of advertisement used that references a user’s past behaviors online.

Lustria et al. (2009) specified several strategies that have been used to create more personal relevance in tailored online messages. One of these strategies is including personally identifiable information in the content to *cue* the individual that this content was designed specifically for him or her. Before discussing specific hypotheses for the current study, it is perhaps worth explaining how and why cues are used in online communications and how an advertisement may use cues to signal personal relevance to a user.

### **Cue processing & context**

#### *Cue functioning online and offline*

Early research on computer-mediated communication (CMC) assumed all CMC would be inherently less personal than face-to-face (FtF) communication. This point of view, called the “cues-filtered-out” perspective (Culnan & Markus, 1987), emphasized the nonverbal cues typically present in FtF communication and suggested that without these cues, communication would be impersonal (Walther, 1996). These theories suggested the lack of nonverbal cues would lead online communicators to lose interest in each other and would inhibit any valuable emotional or relational message exchange (Braithwaite & Baxter, 2006).

However, the social information processing theory (SIPT) suggests that this limited view is too focused on the structural characteristics of communication through a computer channel and does not take into proper consideration the contextual and functional processes that actually occur online (Walther, 1992). In online communication, all cues are not lost. Instead, users adapt other types of textual and linguistic cues in lieu of nonverbal relational cues.

There are many cues present online today thanks to the use of social networking sites. For example, individuating cues such as photographs, comments or status updates, and stated likes and dislikes can distinguish one person from another online (Westerman, Van Der Heide, Klein,

& Walther, 2008). System-provided information can also serve as a cue. Online interfaces bring into proximity information from many different types of sources, which can be analyzed simultaneously to form an impression, or a profile, of a person, or perhaps of a brand, online (Walther, Carr, Choi, DeAndrea, Kim, Tong, & Van Der Heide, 2010).

Part of the criticism in the cues-filtered-out theory was that to have true relational communication, messages should be adapted to the receiver based on actual psychological or individual knowledge of that person (Walther, 1992). In a 1996 study, Walther recommended that corporate-consumer relationships could be enhanced if companies used personal names and pictures as cues to signal to the message receiver online that there were real people behind the communication. This more personal interaction, he suspected, could lead to the development of more brand affinity on the part of the consumer (Walther, 1996). A 1998 article by Cassell, Jackson, and Chevront suggests that the best persuasive communication is transactional and response dependent, in that it solicits information and provides feedback tailored to be responsive to the information provided. The intention would be to mimic interpersonal communication and cue the reader that the communication is in direct response to his or her input. Indeed these abilities have been provided by online communication, opening up a world of possible cues to not only make it clear that there are real people behind the brand but also to make persuasive communications more relevant to the consumer. Although these articles were published long before Twitter and Facebook came into existence and corporations collected troves of consumer data for marketing purposes online, it perhaps foreshadowed the evolution of brand-consumer relationships to come.



### *Tailoring cues*

As discussed, cues have been used both offline and online to indicate personal relevance, which is key to tailoring's effectiveness. One commonly used relevancy cue is portrayal of demographic similarity. Historically, demographic relevance has been indicated by similarity between the message source and the recipient. High levels of similarity between a viewer and an endorser increase the belief of the viewer that she is the intended audience for the message (Aaker, Brumbaugh, & Grier, 2000). Race is one cue of similarity in this context (Forehand & Deshpande, 2001). For example, Elias and Appiah (2010) found that Black web surfers respond more favorably to testimonial advertisements that use black endorsers, in that they were more likely to believe a site was targeting them and they recalled more product information. Feick and Higie (1992) found that source similarity to the consumer is important in the consumer's ability to determine attitudes and intentions toward goods and services where there is a wide range of consumer preference, such as hair salons and restaurants.

Similar effects have been found for other cues of demographic similarity indicated by endorser chosen, such as gender (Debevec & Iyer, 1986), as well as for other aspects of social identity that may be cued in an advertisement, such as copy that indicates age (i.e. Generation X nonconformists or millennials) (Reed, 2004).

Other cues used offline and online include the indication of endorsement by friends. Several studies have measured the effects of peers as the source of content recommendations. Howard and Kerin (2004) tested the effects of source credibility in personalized product recommendations on advertisement response rates. Respondents received traditional direct mail where in some cases the mail included a hand-written recommendation note ("John – try this. It works!"), signed with a common name or initial. The researchers ran several experiments to test

the effects, and they found that those responders who thought they could identify who sent them the ad (i.e. the note was signed “Mary” and their best friend’s name is Mary) requested more free samples, regardless of the strengths of the arguments of the ad in the mailing. However, marketers have also misused this tactic. For example, recently Facebook implemented “sponsored stories,” which paired consumers’ profile pictures with brand advertisements for any brand the user followed on Facebook – without explicit permission of the consumers to do so. As mentioned earlier, this controversial practice led to a class action lawsuit and a settlement by Facebook, litigation which likely cost the website millions of dollars (Edwards, 2013).

References to the personal preferences or needs of audience members is another cue that has been used both online and offline to signal relevance to audience members, especially in the health communications literature. In the new media environment, reference to past online behaviors, such as web browsing activities, in retargeting practices are used as cues to signify relevance, as explained above.

Because marketers now have access to so much individual information, it is difficult to create a typology that can encompass all possible cues. However, there are three main categories of cues that reflect those used by marketers both offline and online to indicate relevance in tailored communications.<sup>2</sup> There are three major categories of cues included in this typology: demographic cues, psychographic cues, and behavioral cues.

Demographic cues typically focus on the inherent characteristics of the user, such as gender, race, etc. The media messages are designed around the characteristics of the individual, as assumed from his or her membership in a group. As discussed above, in advertising, tailoring

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<sup>2</sup> In previous studies on relevance, scholars have also used descriptive instructions as cues for relevance, instructing participants that the products featured in the ad would be available in their town, or that a PSA campaign was to be implemented in their state, or that the outcome would affect policies at their school (see Laczniak, Muehling, & Grossbart, 1989, for a review). However, because these are experimental cues not message cues, they will not be included in this typology.

by group characteristics is often called target marketing, market segmentation, or niche marketing. Individuals are thought to belong to different groups based on personal information offered up by the receiver of the communication (Rimer & Kreuter, 2006) or determined by a behavioral assessment (Kreuter & Wray, 2003; Kreuter & Skinner, 2000). Characteristics are assumed from a person's group membership, and messages are targeted to appeal to those group characteristics (Kreuter & Wray, 2003; Noar et al., 2007).

Psychographic cues reflect an individual's personal likes, desires and value systems (Beier & Kalyanaraman, 2008). These are typically specifically stated by the individual in an online profile or survey and then reflected back to the consumer in the advertisement. In e-commerce, researchers such as Meech and Marsh (2000) have suggested that the ability of e-commerce systems to perform tasks other humans would typically perform (for example, recommending a product) means that human users are essentially experiencing a form of social interaction online (albeit with a computer rather than a human), and therefore content should be optimized or matched to reflect the users' personality traits, attitudes and preferences (Meech & Marsh, 2000).

Behavioral cues occur when a user's behavior is tracked by a website over time, and advertisements, recommendations or an individualized experience is then generated for that user, based on his or her past navigational behavior (Shankar, 2001; Sundar & Marathe, 2010). This is the approach used by marketers in retargeting practices. The exact product a user has viewed in the past is often used in the content of the ad to indicate relevance to the user.

This typology is outlined with brief examples of cues in the following table:

Table 1  
*Typology of tailoring cues*

	Offline cues	Online cues
Demographic cues	<ul style="list-style-type: none"> <li>-Endorser demographic targeting (photo, icon, text that includes an endorser representative of a particular group of people)</li> <li>-Product targeting a particular demographic (i.e. a women's pants ad displayed in a medium thought to be viewed by females)</li> </ul>	<ul style="list-style-type: none"> <li>-Endorser demographic matching (photo, icon, text that includes an endorser representative of a particular group of people to which the viewer is known to belong)</li> <li>-Product demographic matching (i.e. a women's pants ad delivered to a known female)</li> </ul>
Psychographic cues	<ul style="list-style-type: none"> <li>-Intervention copy mentioning specific user needs (i.e. nutritional goals expressed by the user in a questionnaire)</li> <li>-Peer preference targeting (i.e. direct mail including note signed with initial)</li> </ul>	<ul style="list-style-type: none"> <li>-Facebook ads referencing interests expressed in online profile (i.e. skiing)</li> <li>-Peer preference matching (i.e. pairing Facebook friend's picture with product)</li> </ul>
Behavioral cues	<ul style="list-style-type: none"> <li>-Intervention copy mentioning specific user behaviors (i.e. smoking)</li> <li>-Ads referencing the behaviors characteristic of a specific group (i.e. "fast foodies")</li> </ul>	<ul style="list-style-type: none"> <li>-Retargeting (photo of product the user has already viewed)</li> <li>-Product recommendations based on past purchases</li> <li>-'Similar others' behavior matching ("others like you like the following products...")</li> </ul>

*Cue processing*

When faced with these types of cues online, how are consumers expected to react? Two theories suggest that information that cues personal relevance online have positive effects on message processing and persuasion.

As information processors, we are cognitive misers (Fiske & Taylor, 1984), and we only have a fixed pool of mental resources to spend at any given time (Lang, 2000). The limited capacity model of motivated mediated message processing (LC4MP) explains that mental

processing of any message involves three basic subprocesses: encoding, storage, and retrieval (Lang, 2006), and these subprocesses are affected by message content and structure, as well as personal relevance. The model specifies that in order to determine which information gets encoded into working memory, we rely on an automatic selection mechanism called the orienting response (Lang, 2000). The mere appearance of information on a computer screen does not cause an orienting response – rather, it is caused by stimuli that are either “novel” (caused by a change in the environment) or “signal” (personally or motivationally relevant – for example, the use of a person’s own name) (Lang, 2006). These stimuli are encoded automatically. This model suggests that if the communicator wants the audience to remember a message, it’s important to consider the goal of the message, who is in the target audience, what medium the message will be delivered through, and finally the motivational and personal relevance of the message for the audience (Lang, 2006).

The Elaboration Likelihood Model of persuasion, originated by Petty and Cacioppo (1986), also explains cue processing in persuasive messages. ELM specifies a finite set of conditions under which persuasion occurs as a result of effortful processing (the *central* route to persuasion) and proposes alternate peripheral mechanisms that explain why persuasion occurs when these conditions are not met (the *peripheral* route to persuasion) (Eagly & Chaiken, 1993).

ELM predicts that if a person is motivated and able to process the information presented in a persuasive message, attitude change is more likely to occur through thoughtful elaboration of the message content – in other words, he or she is more likely to consider the information carefully, generate feelings about the information based on that careful consideration, and change his or her attitude in response (Petty, Cacioppo, & Goldman, 1981). Both motivation and ability

must be high in order for information processing to take place (Petty & Cacioppo, 1986; Petty & Wegener, 1999; Wegener, Petty, & Smith, 1995).

However, when the “elaboration likelihood” is not high, because the individual is not motivated and/or able to process the information presented, attitude change happens as a result of other processes that are less thoughtful and less likely to be based on the material presented in the message itself. Instead, the individual is affected by peripheral cues, or variables that can affect persuasion without affecting argument scrutiny (Petty & Cacioppo, 1986). As motivation and ability to process information decreases, the importance of peripheral cues increases. Different variables can affect the amount and direction of attitude change by: 1) serving as either persuasive arguments or peripheral cues, and also by 2) affecting the amount and direction of elaboration of the issues (Petty & Cacioppo, 1986; Petty & Wegener, 1999).

Petty, Barden, and Wheeler (2002) found that any feature of a message that invokes self-relevance, or identity, increases information processing, when other variables have not constrained elaboration likelihood to be high or low. When likelihood of thinking is low, self-relevance serves as a peripheral cue and self-bias operates to increase agreement with a message. When likelihood of thinking is high, self-relevance motivates message recipients to see the merits of the position associated with the self (Petty et al., 2002). Therefore, personal relevance of a message can serve as a motivational variable that affects mode of processing (Todorov, Chaiken, & Henderson, 2002).

Social psychologists have argued that tailoring’s defining feature is matching messages to some aspect of the self, or “me-ness” matching, and that the more closely linked messages are to aspects of the self, the more persuasive effects they exert (Petty et al., 2002; Kalyanaraman & Sundar, 2006). Studies on tailoring in healthcare have found that tailored health communications

have more positive effects on attitudes and health outcomes for the target population than non-tailored communications (Rimer & Kreuter, 2006). Kalyanaraman and Sundar (2006) found that greater levels of customization in a web portal led to more positive attitudes toward the content presented, and they also found several key variables that mediated the relationship between customization and attitudes, including perceived relevance of content and perceived involvement with the content (which, as stated earlier, leads to increased motivation to process the message). Overall, the results in the literature on tailored online media messages suggest that tailoring can 1) positively influence attitudes toward communication content, and 2) increase user perceptions of relevance of information and personal involvement with that information, which increases elaboration and leads participants to process those messages more closely (Bakker, 1999; Kreuter et al., 1999; Tam & Ho, 2005; Oenema, Tan, & Brug, 2005; Petty et al., 2002).

However, effects for all types of tailoring have not always been found to be so consistent. White, et al. (2008) found that too much personalization could backfire. Their study showed email tailoring does not elicit positive responses from consumers if the content is perceived as too highly tailored (e.g. using too many pieces of identifying information) or inappropriately tailored (e.g. using incorrect identifying information). Researchers have also found inconsistencies depending on the role of the medium for the user. In a survey of online consumers, Awad and Kirshnan (2006) found users who had experienced a privacy invasion were less open to tailored online advertising, but this did not hold true for online services. Similarly, in a survey, Alreck and Settle (2007) found consumers held negative attitudes toward tailoring practices. However, these attitudes did not affect online shopping behaviors. Baek and Morimoto (2102) examined motivations for ad avoidance, including perceived tailoring by

marketers. They found increased perceived tailoring in each medium led to decreased ad avoidance and decreased skepticism, but this varied depending on medium.

On top of these inconsistent effects, there is a dearth of experimental research on behavioral tailoring, which as argued above is qualitatively different from other types of tailoring. This, in combination with consumer reactions to behaviorally tailored advertising in surveys and news articles, suggests there may be something about new, data-driven methods of online ad tailoring that makes consumers uncomfortable and may actually lead to negative effects.

### **Ad intrusiveness, creepiness, and reactance**

One factor that could explain negative consumer attitudes to behaviorally targeted ads is perceived intrusiveness, a concept which appears in some advertising research. Consumers are more concerned about invasion of privacy when they become aware that a marketer has acquired their personal information without permission (Sheehan & Hoy, 2000), and intrusiveness has been defined in a previous study as interference with the consumer's media content, cognitive/task performance, or privacy (Morimoto & Chang, 2006). This breach of trust could potentially be conveyed through an overabundance of relevancy cues without sufficient justification for the use of personal information (White et al., 2008), leading to negative effects such as ad irritation, ad avoidance, message rejection, and source derogation (Miller, Lane, Deatrick, Young, & Potts, 2007; Edwards, Li, & Lee, 2002; Baek & Morimoto, 2012; White et al., 2008).

However, this study argues that the concept of "intrusiveness" does not fully explain consumer reactions toward behaviorally targeted ads. Intrusiveness is typically defined as ad interference with the user experience, and it has been associated in past research with content that *interrupts* user activity, such as a pop-up ad. However, this idea of intrusiveness, as it has



been conceptualized and measured in previous research, does not include the sense that the consumer is being *watched or followed* by the marketer, a characteristic unique to behaviorally targeted ads – and especially ads using retargeting practices. Creepiness is similar to but distinct from the concept of intrusiveness. Unlike intrusiveness, the operationalization of creepiness should include items that indicate the consumer feels she is being observed or tracked by the advertiser. For a conceptualization of creepiness, see below.

It is possible that perceived intrusiveness can increase perceived threat or lack of control (Morimoto & Chang, 2006), and this study argues that perceived creepiness functions in the same way. Threat or lack of control is a contributing factor in what is called reactance theory. Reactance theory suggests that when persuasive appeals *threaten a person's individual freedom*, people are motivated to resist or reject the message and feel more negatively about the source of the message (Brehm & Brehm, 1981). As explained by Morimoto and Chang (2006), if an individual finds an ad intrusive, she may feel her control over her own choices and behaviors has been threatened, which can lead to greater reactance.

Reactance has been demonstrated in marketing contexts, although not with regard to behaviorally targeted advertising. Fitzsimons and Lehmann (2007) found that when product recommendations are unwanted by the consumer – specifically, when unsolicited recommendations by experts contradict a consumer's initial choice preference, a reactant state is activated. This leads to a behavioral backlash wherein consumers intentionally contradict the expert's advice.

Godfrey, Seiders, and Voss (2011) found that in the case of multichannel communication, after the ideal level of communication with a marketer is exceeded, reactance occurs. They showed that in this context, aligning the choice of marketing channel with consumer preferences

could attenuate the effect of reactance. However, this study did not take into consideration ultra-tailored communications such as behavioral targeting. Other studies suggest reactance may be a possible contributor to consumer reactions to highly tailored online advertising.

As discussed above, David et al. (2012) tested different tailored health messages to encourage teachers to enact certain health behaviors (cover-the-cough) in their classrooms. For teachers who had not yet begun the project in their classrooms, tailored messages were rated more negatively than non-tailored messages. This outcome was ascribed to reactance – while teachers who were already enacting the behaviors in their classrooms saw the messages as positive reinforcement, those who were in the pre-action stages saw the messages as focusing on their insufficiencies or lack of action. This turned the “perceived relevance or salience offered by tailoring into a negative” (David et al., 2012, pp. 926). In a field experiment, Goldfarb and Tucker (2011) found that while either matching an ad to a webpage’s content OR increasing an ad’s visual obtrusiveness separately increases purchase intent, when used in combination, the tactics were ineffective. They argued this was a result of reactance thanks to privacy concerns on behalf of the consumer, because the combination of these tactics may raise a red flag that signals the advertiser is trying to manipulate the consumer (Goldfarb & Tucker, 2011). Research on traditional advertising has shown that when consumers perceive manipulative intent they have more negative attitudes toward the ad and the brand, and decreased purchase intent (Campbell, 1995).

In a study on email and direct mail marketing, White et al. (2008) proposed a particular type of reactance, called *personalization reactance*, can occur when *highly tailored messages* lead consumers to feel their *freedom has been threatened* because they are too observable or identifiable to the marketer. In other words, messages that convey highly distinctive knowledge

of someone's personal characteristics can threaten his or her perceived ability to avoid being closely observed. These communications are perceived as being *too* personal and conveying an inappropriate level of familiarity with consumer preferences and behaviors that threatens the consumer's sense of freedom online (White et al., 2008; Baek & Morimoto, 2012). Consumers may perceive that their right to autonomous handling of their own private information is being abused (Okazaki, Li, & Hirose 2009) or threatened by unknown third parties (Baek & Morimoto, 2012). When behavioral freedom is threatened by overtly persuasive messages, consumers can become negatively psychologically aroused (Miller et al., 2007). In previous research, threat has been included inconsistently. It has been assumed in models, measured as part of reactance, measured simply as a manipulation check, or measured as an antecedent variable to reactance, often at the discretion of the researcher based on theoretical concerns (Consumer Health Informatics Research Resource, 2013). Considering how reactance is presumed to work psychologically, especially in the case of personalization reactance, the current study includes threat in the theoretical model as an antecedent variable to reactance.

In the White et al. (2008) direct marketing study, when justification for the high level of personalization with regard to offer fit was *not* provided, consumers had a negative reaction to a highly tailored marketing message (in terms of a higher reactance level and a lower click-through rate), especially when the utility of the product featured in the offer was low. However, it is important to note that this study revolved around email marketing, where there is an opportunity to justify the use of personal information. In a banner ad on the side of a website, there is not such an opportunity. Therefore, it is likely, based on their findings, that threat and reactance would be present in a highly targeted ad where justification is not present.

In this case, personalization was operationalized as number of pieces of relevant information used in either email or direct mail, ranging from 1 piece of information to 5 pieces (information used to tailor the message included: first name, last name, city of residence, state of residence, and phone number). However, this type of operationalization, a count of information, used in many tailoring studies as discussed above, might not be a realistic representation of the actual advertising landscape, where advertisers use demographic, psychographic, or in particular behavioral information to tailor ads. A study by Barnard (2013) found respondents have significantly more negative attitudes toward tailoring when it uses information such as websites visited and products purchased (behavioral information), when compared with demographic information typically used to target ads. However, that study was a survey and those results have not been tested in an experimental context.

### **Hypotheses & research questions**

In light of this research, the following hypotheses and research questions are presented:

**H1:** Advertisements tailored using behavioral information will result in greater perceived creepiness than advertisements not tailored using behavioral information.

**H2:** Advertisements tailored using behavioral information will result in greater perceived creepiness than advertisements tailored using demographic information.

**RQ1:** Will any effects of behavioral tailoring be moderated by product type?

**H3:** Greater perceived creepiness will result in greater threat.

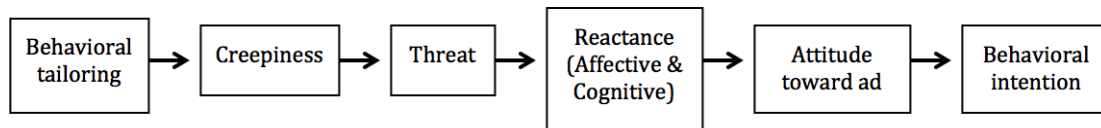
**H4:** Greater threat will result in greater reactance (affective & cognitive)

**H5:** Greater reactance will result in more negative attitudes toward the ad.

**H6:** Negative attitudes toward the ad will positively predict negative behavioral intentions toward the product.

These hypotheses can be visualized in the following theoretical model:

Figure 1  
*Theoretical model*



In summary, this study argues that although marketers believe behavioral tailoring results in direct positive purchase intention toward the product, this does not take into account “the creepiness factor.” Creepiness occurs when tailored communications use so much personal data the consumer gets the sense that marketers are inappropriately gathering and using his or her personal information online, giving the consumer the sense the marketer is watching, following, or tracking them. This study hypothesizes that although historically tailoring has been shown to have positive effects, and this is invariably what marketers believe to be true for behavioral tailoring, new behavioral tailoring techniques such as retargeting can also result in negative attitudes from consumers. Specifically, this study proposes that advertisements tailored using behavioral information will be perceived as significantly “creepier” than advertisements not tailored with behavioral information and than those tailored with demographic information; that feelings of creepiness result in a sense that the consumer’s freedom has been threatened; this will lead to reactance (affective and cognitive) on the part of the consumer; in turn, this reactance will lead to more negative attitudes and negative behavioral intentions. This study also seeks to investigate whether any effects of behavioral tailoring will be moderated by product type.

## **Conceptualization: Creepiness**

As reviewed earlier, the “creepiness factor” occurs when tailored communications, designed to be relevant to the consumer, take relevance a step too far, crossing the line into invasiveness and surveillance. Often this is demonstrated by an overuse of consumer data, where marketers create messages that use consumer information that’s *too personal*, to the extent that the consumer perceives the message as “creepy.” This often manifests as a pervasive feeling of having had one’s privacy invaded by a marketer -- the sense that the marketers are watching, tracking, following, assessing, and capitalizing on an individual’s personal information or online activities that he or she perceives as private. Marketers increasingly collect user data such as consumers’ personal interactions with friends; profile page information designed for friends, not marketers, to see; and personal behavioral data such as websites visited and products viewed online. When marketers collect increasing amounts of highly individualized consumer information and use that information to tailor an advertisement, the consumer may feel it is “creepy,” because he or she is *too* identifiable to the marketer; his or her personal identity is *too well known*.

In the current conceptualization, marketing practices would lead to creepiness when marketers use highly specific personal information (such as individual web browsing histories); when the use of this information is out of consumers’ control (in other words, the consumer has not opted *in* to such highly targeted marketing or to have his or her online behaviors tracked for use by marketers); and when the use of such information is unpredictable (i.e. consumers are not sure when or where ads using their personal information will appear, or which information might be used – to quote the previous survey respondent: “Do they have my credit card information too?!”).

Creepiness is similar to but distinct from the concept of intrusiveness, a concept reviewed above. Intrusiveness has been defined as ad interference with the user experience, and it has been associated in the past with content that *interrupts* user activity, such as a pop-up ad. However, this idea of intrusiveness, as it has been conceptualized and measured in previous research, does not include the sense that the consumer is being *watched or followed* by the marketer, a characteristic unique to behaviorally targeted ads – and especially ads using retargeting practices.

Creepiness is also distinct from the embarrassment that might accompany seeing ads for certain product types. Consumers seek out brands and products that reflect their identities (Forehand, Deshpandé, & Reed, 2002). If the identity portrayed in an ad is inconsistent with the consumer's own perceived identity, it has been shown to result in biased processing of messages and to generate irritation or anger as a response to a distorted vision of the self (Slater, 2006). It is possible that the surveillance aspect of behavioral targeting might make consumers wary that unwanted information might be added to the mysterious online profile marketers are creating about them, depending on the type of product they are searching for online. However, this study suggests that creepiness is likely product agnostic – regardless of whether the product is socially embarrassing or benign, creepiness stems from the awareness that the marketer has collected and capitalized on real-time information about a consumer's personal actions online. Although seeing a previously viewed product that is more embarrassing might bother a consumer *more*, behavioral targeting should generate more creepiness and thus more reactance and negative attitudes than demographic tailoring, regardless of product type. While product type may play a role, it is not the defining characteristic behind the creepiness factor. Therefore, product type is included in this study to help rule out alternative explanations for creepiness.

## **Operationalization: Creepiness**

At the IV level, tailoring practices that may give rise to increasing levels of perceived creepiness are studied. At the DV level, perceived creepiness itself as a psychological state is measured as an outcome.

Marketing practitioners classify the practice of tailoring in terms of the type of information used (as exemplified with the headings used below). Although this is how tailoring choices appear to the practitioner, this study breaks this scheme down further in the 2x2x2 design, in an attempt to un-confound type and specificity. The hope is to understand at a deeper level what contributes to perceived creepiness. The following levels of cues exemplify increasing amounts of specificity in terms of information the marketer has obtained about the consumer:

*No tailoring:* Does not refer to any characteristics of the consumer; does not recall any actions taken by the consumer.

*Demographic tailoring:* More specific in that it refers to a group characteristic of the consumer such as age, gender or geographic location.

*Behavioral tailoring:* Most specific about the consumer in that it refers to actual actions the individual consumer has taken in the past, such as actual products she has searched for or actual web pages she has visited.



Table 2  
*Conceptualization and operationalization*

Potential influences	Conceptualization	Operationalization
Tailoring practices	Tactics marketers can use to reach consumers with relevant advertisements	-Demographically tailored, or not (college-focused copy; neutral copy) -Behaviorally tailored, or not (ad for product seen in study 1; ad for product not seen previously)
Product type	Embarrassing or non-embarrassing item that can be purchased online	Acne treatment cream or flash drive
Psychological outcomes	Conceptualization	Operationalization
Perceived creepiness	Being <i>watched or followed</i> by the marketer	5 items measured on a 7-point scale (see below)
Threat	Sense that one's freedom has been threatened by a marketer	4 items measured on a 7-point scale (see below) adapted from Dillard and Shen (2005)
Reactance	Resistance or rejection of a message when the persuasive appeal threatens individual freedom	-Affect (anger arousal) & Cognition (unfavorable thoughts) -8 items measured on a 7-point scale (see below) adapted from Gardner (2010)
Attitude toward ad	Positive or negative affect regarding the marketing message	7-point semantic differential questions, adapted from Dillard and Shen (2005)
Behavioral intention	Participant's likelihood of purchasing product featured in ad	11-point estimate of product purchase intent, adapted from Dillard and Shen (2005)

## CHAPTER 2

### METHOD

#### Overview

The study followed a 2 (product type) x 2 (demographic tailoring) x 2 (behavioral tailoring) between-subjects design (N=280) to test the hypotheses. The 2x2x2 design was fully crossed.

Participants were randomly assigned to one of eight experimental conditions and exposed to websites specifically designed for the study. The three independent variables were manipulated as follows: a) an advertisement in the right-hand column on each page feature either an embarrassing product or not (i.e. acne treatment cream versus a flash drive); b) the advertisement was either demographically tailored or not (i.e. addressing in the copy that there is a special for students at the participant's school, or not); c) the advertisement was either behaviorally tailored or not (match the product they viewed in "study 1" – acne treatment cream or a flash drive – or not). See Appendix for screenshots of the manipulations.

Another, perhaps clearer, way to explain the manipulations is to outline what the participants saw at time 1, or T1 (as the product featured on the shopping website), and at time 2, or T2 (in the ad on the Facebook page. The two columns for T2 specify whether the participant saw a product that cued behavioral tailoring (indicated if product in the ad in the center column matched the product they viewed on the website in the first column), as well as whether the

participant saw copy that cued demographic tailoring (indicated with “demographic” in the last column, as opposed to generic).

Table 3  
*Manipulation conditions*

T1 (website) Product on site	T2 (Facebook page) Product in ad	T2 (Facebook page) Copy in ad
Acne cream	Acne cream	Generic
Acne cream	Acne cream	Demographic
Acne cream	Flash drive	Generic
Acne cream	Flash drive	Demographic
Flash drive	Acne cream	Generic
Flash drive	Acne cream	Demographic
Flash drive	Flash drive	Generic
Flash drive	Flash drive	Demographic

### **Participants**

Participants comprised a sample of 280 undergraduates from a research university in the southeast U.S., recruited through the journalism school participant pool and compensated with class credit. The sample was predominantly white (83.6%) with a mean age of 20.7 (range = 18-38) and mostly female (73.6%). When asked if they had ever seen an ad online that seemed to be tailored to their interests, 100% of respondents said they had. Table 4 shows the descriptive results for the key variables in the analysis, and Table 5 shows Pearson’s *r* correlations between

key variables. Race and age were left out of the correlation table, as they were not significantly associated with the other variables.

## **Manipulations**

### *Product type*

Participants were exposed to two different web pages, under the guise that they were participating in two separate studies in the same session. For “study 1,” the website was a shopping website. The cover story was that the experiment was for market research on a product. Participants saw a page featuring one of two products, depending on condition -- either acne treatment cream or a flash drive (see Appendix for screenshots). To make the product salient, they were asked to read carefully through the information for the product, as they would need to rank product features after the task.

These two products were chosen to represent a neutral product (a flash drive) and a potentially embarrassing product (acne treatment cream) that someone may not want marketers to associate with them -- but which would not be so embarrassing that seeing an ad for the product in any context would likely lead to reactance on its own (i.e. toe fungus cream or cockroach repellent). These two items are both approximately equal in price, not gender specific, easily targeted toward college students, and can both be bought online. Little-known brands were selected for the task (Acne-Free, for the acne treatment cream, and ADATA, for the flash drive), so as to avoid prior brand perceptions playing a role. Descriptive copy was taken from the manufacturers’ websites and edited to be equal length and equal reading level.

### *Behavioral & demographic tailoring*

Under the guise that the next page was for a different experiment, participants were asked for their feedback on a new Facebook design. They were told we wanted to see how people react to different types of information presented on social media sites.

A version of the Facebook newsfeed was created, containing a variation of Facebook's current design elements (see Appendix for screenshots). The top left of the page, where each person's name and a thumbnail of their profile picture is typically located, will be replaced with a generic thumbnail and copy that said "Your name." Each of the pages contained one ad in the top right corner of the page.

For those in the "behavioral tailoring" conditions, the page contained an ad that matched the product they saw in study 1 (either acne treatment cream or a flashdrive). Those in the "no behavioral tailoring" conditions received an ad for the product they did not see in study 1 (either acne treatment cream or a flashdrive). For those in the "demographic tailoring" conditions, the copy mentioned a special promotion for students at the participant's college. For those in the "no demographic tailoring" conditions, the copy mentioned the special promotion but did not specify that it was for students at that college.

### **Dependent measures**

#### *Creepiness*

Several items created by the author were used in an attempt to measure the creepiness factor. Respondents answered on a seven-point scale ranging from 1 = *strongly disagree* to 7 = *strongly agree* whether viewing the ad made them think they'd been: watched, observed,

followed, tracked, spied on. The items were summed and averaged ( $M = 3.311$ ,  $SD = 1.87$ ,  $\alpha = .958$ ). This measure is examined further in the confirmatory factor analysis below.

### *Threat*

Items adapted from Dillard and Shen (2005) were asked to test whether the advertisement was perceived as a threat. Participants indicated their level of agreement with the following statements on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*: “The advertiser threatened my freedom to choose,” “The advertiser tried to make a decision for me,” “The advertiser tried to manipulate me,” and “The advertiser tried to pressure me” (Dillard & Shen, 2005; Quick & Stephenson, 2008; Gardner, 2010). Items were summed and averaged ( $M = 2.17$ ,  $SD = 1.24$ ,  $\alpha = .881$ ). As mentioned earlier, threat is included in different research models as either part of the state reactance measure, as a manipulation check, or as an antecedent variable in the model. This choice is often made at the discretion of the researcher based on his or her theoretical interests (Consumer Health Informatics Research Resource, 2014). In this case, threat was included directly in the model as an antecedent variable to state reactance.

### *Reactance*

The study of reactance theory shows that state reactance can be observed in both affect (anger arousal) and cognition (unfavorable thoughts). Reactance was measured as follows:

Affective reactance: Anger arousal (affect) was assessed on a 7-point scale, where 1 = *none of this feeling* and 7 = *a great deal of this feeling*. Respondents were asked “how much the advertisement made you feel each of the following feelings” (irritated, angry, annoyed, and aggravated). To better mask intent and avoid priming angry feelings, four positive emotions were added to the list as a decoy (amused, happy, upbeat, cheerful). Negative affective items were summed and averaged ( $M = 2.03$ ;  $SD = 1.33$ ,  $\alpha = .927$ ).

Cognitive reactance: Unfavorable thought (cognition) was assessed on a 7-point scale, where 1 = *strongly disagree* and 7 = *strongly agree*. Although sometimes cognition is measured using thought-listing and then each thought is coded by participants (Dillard & Shen, 2005), using such a highly cognitively taxing measure so early in the experiment raised concerns that participants would be too taxed to accurately answer the remaining questions pertaining to the dependent variables. Therefore, the following alternate measure was used, with items adopted from Gardner (2010), (four-item index adapted from larger scales by Dillard, Kinney, and Cruz, 1996, and Miller, et al. 2007). Participants were asked to respond to each of the following statements: “The ad was pleasant” (reverse-coded), “The ad got in the way of what I wanted” “The ad was reasonable” (reverse-coded), “The ad was fair” (reverse-coded). Items were summed and averaged ( $M = 3.624$ ;  $SD = 1.066$ ,  $\alpha = .641$ ). This measure is examined further in the confirmatory factor analysis below.

#### *Attitude toward the ad*

Participants’ attitudes toward the advertisement was measured by 7-point semantic differential questions, adapted from Dillard and Shen (2005). The word pairs used were: bad/good; foolish/wise; unfavorable/favorable; negative/positive; undesirable/desirable; unnecessary/necessary; and detrimental/beneficial. The items were summed and averaged ( $M = 3.879$ ,  $SD = 0.821$ ,  $\alpha = .849$ ).

#### *Behavioral intention*

The dependent variable of behavioral intention was measured by an 11-point, single-item estimate of the likelihood that participants would purchase the product featured in the ad, on a scale from 0 = *not at all likely* to 10 = *highly likely* (adapted from Dillard and Shen, 2005) ( $M = 5.64$ ,  $SD = 3.147$ ).

## **Additional items**

### *Manipulation check*

To check the demographic tailoring manipulation, participants were asked to indicate their level of agreement with the following statements (adopted from Kalyanaraman & Sundar, 2006) on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*: “The ad was tailored according to my interests” ( $M = 3.35$ ,  $SD = 1.732$ ), and “The ad did not have anything to do with me or my life” (reverse-coded) ( $M = 3.31$ ,  $SD = 1.79$ ). The following items created by the author were asked to check the behavioral targeting manipulation: “The ad featured a product I have seen in the past,” ( $M = 4.05$ ,  $SD = 2.402$ ), and “I felt the advertisement targeted me based on my past browsing behaviors” ( $M = 4.23$ ,  $SD = 2.183$ ). To check the product type manipulation, the following item was used: “The ad featured a product that could cause embarrassment if someone saw me purchase it” ( $M = 2.58$ ,  $SD = 1.82$ ).

### *Familiarity with tailoring*

Participants were asked to indicate whether they had seen tailored advertisements in the past (100% of participants reported having seen a tailored ad in the past), as well as how familiar they were with tailored advertising on a scale from 1 = *not at all familiar* to 7 = *very familiar* (Kalyanaraman & Sundar, 2006) ( $M = 4.74$ ,  $SD = 3.746$ ).

### *Narcissism*

Although narcissism is not included in a hypothesis and is likely to be distributed among the conditions thanks to randomization, it was measured at the end of the experiment due to its role in the author’s previous survey. To measure narcissism, the 10-item Hypersensitive Narcissism Scale was used (Hendin & Cheek, 1997). This scale was designed by correlating the



items of Murray's (1938) Narcissism Scale with an MMPI-based composite measure of covert narcissism. It provides a more representative picture of narcissistic personality characteristics including not only overt narcissism, but also covert narcissism. Sample items include: "I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others," "I dislike being with a group unless I know that I am appreciated by at least one of those present," and "I feel that I am temperamentally different from most people."

Participants rated their agreement on a seven-point Likert scale ranging from 1 = *very uncharacteristic or untrue* to 7 = *very characteristic or true* ( $M = 3.48$ ,  $SD = 0.943$ ,  $\alpha = .757$ ).

#### *Intrusiveness*

Perceived intrusiveness was also measured. This measure was adapted from the intrusiveness scale developed by Li et al. (2001). Respondents answered on a seven-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree* whether they thought the ad was: distracting, disturbing, forced, interfering, intrusive, invasive, and obtrusive (Li et al., 2001; Edwards et al., 2002) ( $M = 2.813$ ,  $SD = 1.326$ ,  $\alpha = .918$ ).

#### *Media use*

Respondents also indicated how often in a TYPICAL WEEK they participate in the following media activities below. Responses were on an 8-point scale (1 = *never or less than once per week*, 2 = *1 day per week*, 3 = *2 days per week*, 4 = *3 days per week*, 5 = *4 days per week*, 6 = *5 days per week*, 7 = *6 days per week*, 8 = *every day*). Activities were the following: read a newspaper ( $M = 2.19$ ,  $SD = 1.55$ ), read the news online ( $M = 5.26$ ,  $SD = 2.21$ ), read a print magazine ( $M = 1.71$ ,  $SD = 1.05$ ), read magazine or blog articles online ( $M = 4.98$ ,  $SD = 2.26$ ), listen to broadcast radio ( $M = 2.35$ ,  $SD = 2.04$ ), listen to streaming music online (e.g. Pandora, Spotify) ( $M = 6.19$ ,  $SD = 2.21$ ), watch TV on a television set ( $M = 4.29$ ,  $SD = 2.26$ ), watch TV

shows on the Internet (Hulu, Netflix, HBOGo, TV network websites, etc.) ( $M = 4.93$ ,  $SD = 2.674$ ).

Respondents were also asked in a TYPICAL WEEK how many times they check/use the below types of media. Responses were on an 8-point scale (*never or less than once per week, once per week, a few times per week, 1-3 times per day, 4-6 times per day, 5 days per week, 7-9 times per day, 10+ times per day*). Media types were the following: Facebook ( $M = 3.84$ ,  $SD = 1.303$ ), Twitter ( $M = 3.93$ ,  $SD = 1.88$ ), Instagram ( $M = 3.61$ ,  $SD = 1.84$ ), online chat programs (e.g. GChat) ( $M = 1.80$ ,  $SD = 1.871$ ), Snapchat ( $M = 3.70$ ,  $SD = 1.988$ ), Vine ( $M = 1.71$ ,  $SD = 1.597$ ), SMS or text messages ( $M = 4.80$ ,  $SD = 0.641$ ), and email ( $M = 3.51$ ,  $SD = 0.851$ ).

#### *Demographic variables*

Demographic variables (gender, age, and race/ethnicity) were also recorded. For correlation and path analysis, gender and race were dummy coded (male = 1 and female = 0; white = 1 and other = 0).

#### **Procedure**

The experimental sessions took place in a campus computer lab. Each session included up to 22 participants seated at computer workstations. They were told that the purpose of the study was to evaluate how information was presented on different types of websites and that they would be asked to fill out an online questionnaire after their exposure to the websites. Informed consent was obtained from all participants. On each computer there was an open web browser, where participants read an introductory instruction page outlining the procedure for the experiment. At the bottom of the page, a hyperlink directed participants to click through to the first website. Participants were presented with a webpage laid out to mimic the design of a

product detail page on an online shopping site. Told they had been recruited to help with market research for a product, the participants were asked to examine the product information on the page for 30 seconds and read it carefully enough that they would be able to answer questions about the product and its features. Participants saw a page featuring one of two products, depending on condition -- either Acne-Free acne treatment cream or an ADATA flash drive (see Appendix for screenshots).

After the 30 seconds were up, participants were able to click through to the questionnaire, where they were asked recall questions about the products to help encode it in memory. They were asked to select the product category of the product they saw and also to write the name of the product. They were also asked to rank the product's characteristics based on how that feature would factor into their purchase decision (price, brand name, features, packaging, convenience of purchase). Once this task was complete, participants were asked to click through to a new instruction page for the "next" experiment.

Participants were told the "second" experiment involved seeing how people react to different types of information presented on social media sites, and therefore they would be asked for their opinions on a Facebook page design. They were asked to read through all the content on each page, including the newsfeed, the trending topics, and the sponsored content. They were also informed there would be questions about the content after they were finished viewing the page, to encourage them to pay attention to the content.

Participants were told that first the researchers needed to know some information about their Facebook use (to help maintain the cover story). They were asked questions about how often they use Facebook, on which devices, and for what activities. They were also asked age-

and year-related demographic questions here (so that they knew the researcher had this information about them for the next section of the experiment).

Once this task was complete, they were told they would be shown a Facebook Newsfeed and asked for feedback about the page content and design after viewing. They were asked to read through all the content on the page. After they finished reading the directions, they were asked to click through to view the Facebook page for at least 30 seconds. The page contained Facebook design elements slightly rearranged in the side columns – including the brand new Facebook “trending topics” feature -- and generic news posts in the center of the page. The page also contained the ad matching his or her condition at the top right of the page.

After taking 30 seconds to view this page, the respondents were allowed to click to continue and taken to a questionnaire, where they answered the state reactance questions, the creepiness and intrusiveness items, the attitude toward the ad measure, and the behavioral measure, as well as a set of decoy questions about the design elements included on the Facebook page and several recall questions about the product in the ad and the news content on the page.

They then clicked through to a series of closing questions, which included the manipulation check items, the tailoring familiarity questions, the narcissism questions, and additional demographic and media use questions. After the participants completed the questions, they were given a de-briefing statement, thanked for their participation, and dismissed.

### **Data analysis**

Before additional analyses were performed using the measures, a confirmatory factor analysis was performed to examine the items used. Confirmatory factor analysis is used so the researcher can be sure each indicator variable outlined above loads on the appropriate latent variable, and that the data collected for each indicator and latent variable fit the outlined model.

Variables that were problematic or not significant were removed from analysis. After this process was complete, descriptive statistics and a correlation table were created for the key variables in the analysis.

Following these preliminary analyses, ANOVA analyses were conducted for the manipulation check questions, to test whether the manipulations for the three independent variables (behavioral tailoring, demographic tailoring, and product type) were statistically significant predictors of answers to the manipulation check questions. Then, an ANOVA was conducted to test the main effects and interactions proposed in the model, for all three independent variables with all dependent variables proposed in the model (creepiness, threat, affective reactance, cognitive reactance, attitude toward the ad, and behavioral intention), as well as to test hypotheses one and two (behavioral tailoring with creepiness, demographic tailoring with creepiness, and behavioral \* demographic tailoring with creepiness). Finally, a structural equation model was tested to evaluate the rest of the hypotheses proposed in the model (hypotheses 3-6). Model fit was examined as well as the unstandardized and standardized coefficients, *t* values, significance levels, total effects, direct effects, and indirect effects for the model.

## CHAPTER 3

### RESULTS

#### **Confirmatory factor analysis**

Confirmatory factor analysis is a special case of structural equation modeling used to examine the measurement model linking latent variables to their indicators (i.e. scale items). In LISREL, a confirmatory factor analysis of the variables for this model was performed using maximum likelihood model estimation. In examining the relevant fit indices for the factor analysis, the comparative fit index (CFI) was .948, and the RMSEA was .0831. Although meaningful cutoff criteria for these fit indices have not been established (Barrett, 2007; Jackson et al., 2009), a criterion of .90 is often applied to normed fit indices (Bentler & Bonett, 1980), in which case the CFI presented here demonstrates an acceptable fit between the model and the observed data. However, it does not meet Hu and Bentler's (1999) suggested criterion of .95. For the RMSEA, Browne and Cudeck (1993) suggest a value of .05 is a close fit, while values of .08 or higher show reasonable errors of approximation. The RMSEA for this model (.0831) is above .08 and is therefore not acceptable, indicating misfit in the model.

To diagnose the causes of misfit, the indicator items for the latent variables were examined in more detail. Looking at the completely standardized solutions, each item appropriately loaded on its expected factor. However, the factor loading for the second item on the Cognitive Reactance scale ("The ad got in the way of what I wanted") was only 0.095, which is below the acceptable cutoff of .30 (Pedhazur & Schmelkin, 1991). All other items had

loadings exceeding .30. Examining the measurement error variance, the same item had a THETA-DELTA value of .991, much greater than the other items' values, which is to be expected considering it demonstrated the weakest loading in the model. A THETA-DELTA value of .991 means that 99.1% of the variance was explained by error.

Standardized residuals can also indicate model misfit, and they take into account measurement scale units. Standardized residuals are considered large if they are above 2.58 in absolute value (Pedhazur & Schmelkin, 1991). Quite a few of the standardized residuals exceeded the cutoff, but most of the large residuals involved two variables in particular. In line with the previous results, the second item on the Reactance - Cognitive scale (“The ad got in the way of what I wanted”) had standard residuals much larger than the cutoff value, for its relationship with nearly every other variable. The second problematic item was the last item on the “creepiness” scale developed by the author – “Viewing the ad made me think I’d been spied on.” This item had standardized residuals larger than the cutoff value for its relationship with several other variables. In particular, the residuals between this item and three of the four indicators for the “threat” latent variable were higher than the cutoff point, indicating that the model underestimated the covariance between that particular creepiness item and the threat scale. In addition, in looking at the modification indices, the maximum modification index was 48.16, which is also for the above item and the threat latent construct. This large value indicates the model fit would improve if these item errors were allowed to correlate.

Considering the results of the confirmatory factor analysis, all items from the “threat,” “affective reactance” and “attitude toward the ad” scales were retained. Because the “creepiness” scale was developed by the author, and therefore the items had no previous history as a scale, the

problematic fifth item was dropped from the scale. The other four items of the creepiness scale were retained ( $M = 3.429$ ,  $SD = 1.936$ ,  $\alpha = .960$ ).

Turning to the “cognitive reactance” scale, this scale was used as an alternative to a thought-listing exercise to measure the unfavorable cognition aspect of reactance. As discussed earlier, reactance has not been measured consistently in the past, and the use of this scale is no exception. The items in the current study were taken from Garnder (2010), but they were originally part of a larger 18-item scale created by Dillard, Kinney, and Cruz (1996). Previous authors have chosen to leave this item out when measuring reactance. For example, after performing a maximum likelihood exploratory factor analysis, Miller et al. (2007) did not include the item in their scale. Considering the lack of uniform measurement of reactance, the precedent for leaving this item out of the scale, and the highly problematic nature of the item in the current confirmatory factor analysis, this item was dropped from the measure. The other three items were retained ( $M = 3.895$ ,  $SD = 1.26$ ,  $\alpha = .823$ ).

After dropping these two problematic items, another confirmatory factor analysis was performed, again using maximum likelihood model estimation. In examining the relevant fit indices for the factor analysis, the comparative fit index (CFI) for the revised model was .961, which surpasses the Hu and Bentler (1999) criterion of .95, indicating the model is now an acceptable fit. Additionally, the RMSEA was .0723, which is below the cutoff of .08 (Browne and Cudeck, 1993) and therefore meets the standard for an acceptable fit as well. Each item appropriately loaded on its respective factor once again, and all items had loadings exceeding the cutoff of .30.

Examining the standardized residuals once more, nearly all of the issues were resolved with the removal of the two problematic items above. The pattern of residuals indicates



unmodeled positive covariance among the reverse-coded items in the “attitude toward the ad” scale. This was expected, considering the items were reverse-coded, and therefore these items were retained. In addition, the pattern indicates unmodeled positive covariance between the “affective reactance” scale items 1 (“Seeing the ad made me feel irritated”) and 3 (“Seeing the ad made me feel annoyed”). There was also unmodeled positive covariance between items 2 (“Seeing the ad made me feel angry”) and 4 (“Seeing the ad made me feel aggravated”) on the same scale. This indicates that the items in each pair are more similar to each other than they are to the items in the other pair. However, considering these four items are typically used together and do not appear to be causing a problem with overall model fit, all four were retained. No other problems stood out in the revised model.

Table 4  
*Descriptive statistics for final variables*

<b>Variable</b>	<b>N</b>	<b>M</b>	<b>SD</b>
Creepiness (combined $\alpha = .960$ ) <sup>a</sup>	280	3.311	1.87
Watched	280	3.30	2.088
Tracked	280	3.58	2.058
Observed	280	3.62	2.048
Followed	280	3.21	2.006
Threat (combined $\alpha = .881$ ) <sup>b</sup>	280	2.17	1.24
The advertiser threatened my freedom to choose	280	1.84	1.232
The advertiser tried to make a decision for me.	280	2.11	1.444
The advertiser tried to manipulate me.	280	2.31	1.542
The advertiser tried to pressure me.	280	2.42	1.561
Reactance: Affect (combined $\alpha = .927$ ) <sup>c</sup>	280	2.03	1.333
Seeing the ad made me feel irritated	280	2.23	1.606
Seeing the ad made me feel angry	280	1.65	1.158
Seeing the ad made me feel annoyed	280	2.40	1.680
Seeing the ad made me feel aggravated	280	1.85	1.383
Reactance: Cognition (combined $\alpha = .823$ ) <sup>c</sup>	280	3.90	1.259
The ad was pleasant	280	4.86	1.386
The ad was reasonable	280	3.39	1.505
The ad was fair	280	3.44	1.502

Attitude toward the ad (combined $\alpha = .849$ ) <sup>d</sup>	280	3.879	0.821
Bad -- Good	280	3.96	1.159
Unfavorable – Favorable (recoded)	280	3.90	1.254
Negative -- Positive	280	4.00	1.086
Foolish – Wise (recoded)	280	4.08	0.970
Undesirable – Desirable (recoded)	280	3.64	1.216
Unnecessary -- Necessary	280	3.41	1.267
Detrimental -- Beneficial	280	4.17	0.945
Behavioral intention (likelihood of purchasing product) <sup>e</sup>	280	5.64	3.147
Narcissism <sup>f</sup>	280	3.48	0.945
Age	280	20.74	2.037
Media Use - Traditional <sup>g</sup>			
Newspaper	280	2.19	1.551
Online news	280	5.26	2.205
Magazine	280	1.71	1.053
Radio	280	2.35	2.044
Streaming music online (e.g. Pandora, Spotify)	280	6.19	2.206
TV	280	4.29	2.674
TV shows online (i.e. Hulu)	280	4.93	2.331
Media Use - Social <sup>h</sup>			
Facebook	280	3.84	1.303
Twitter	280	3.929	1.881
Instagram	280	3.61	1.838
Online chat programs (e.g. GChat)	280	1.80	1.871
Snapchat	280	3.70	1.988
Vine	280	1.71	1.597
SMS/Text	280	4.80	0.641
Email	280	3.51	0.851
<b>Variable</b>	<b>N</b>	<b>%</b>	
Gender <sup>i</sup>	280		
Male		26.4	
Female		73.6	
Race <sup>j</sup>	280		
White		83.6	
Other		16.4	

<sup>a</sup> Creepiness scored 1-7 (1 = none of this feeling, 7 = a great deal of this feeling)

<sup>b</sup> Threat scored 1-7 (1 = strongly disagree, 7 = strongly agree)

<sup>c</sup> Reactance scored 1-7 (1 = strongly disagree, 7 = strongly agree)

<sup>d</sup> Attitude toward the ad scored 1-7 as a semantic differential (e.g. 1 = bad, 7 = good)

<sup>e</sup> Behavioral intention scored 0-10 (0 = not at all likely, 10 = highly likely)

<sup>f</sup> Narcissism scored 1-7 (1 = very uncharacteristic/ untrue, 7 = very characteristic/ true)

<sup>g</sup> Media Use - Traditional scored 1-8 (1 = never or less than once per week, 8 = every day)

<sup>h</sup> Media Use - Social scored 1-7 (1 = never or less than once per week, 7 = 10+ times per day)

<sup>i</sup> Gender dummy coded (1 = Male, 0 = Female)

<sup>j</sup> Race dummy coded (1 = White, 0 = Other)

Table 5  
*Pearson's r correlations for key variables*

	Beh. Tailoring <sup>a</sup>	Creep.	Threat	Affective Reactance	Cognitive Reactance	AAd	Beh. Int.	Gender <sup>b</sup>	Narciss.
Behavioral Tailoring <sup>a</sup>	1								
Creepiness	.206***	1							
Threat	.083	.370***	1						
Reactance: Affect	-.005	.288***	.503***	1					
Reactance: Cognition	-.078	-.087	.150*	.178**	1				
AAd	.042	-.032	-.308***	-.447***	-.413***	1			
Beh. Int.	.151*	.150*	.010	-.121*	-.163**	.271***	1		
Gender <sup>b</sup>	.016	-.051	-.056	.031	.080	-.021	-.127*	1	
Narcissism	-.022	.131*	.150*	.187**	-.016	-.109	.120*	.019	1
Intrusiveness	.085	.336***	.517***	.517***	.159**	-.486***	.051	.008	.234***

<sup>a</sup> Behavioral tailoring coded as: 0 = no behavioral tailoring, 1 = behavioral tailoring

<sup>b</sup> Gender coded as: 0 = female, 1 = male

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

## **ANOVA main effects and interactions**

A three-way between-groups factorial ANOVA using the generalized linear model (GLM) was performed in SPSS to test the effects on the dependent variables for the independent variables, which were dummy coded. For behavioral tailoring, 1 = exposed to behavioral tailoring, 0 = not exposed to behavioral tailoring. For demographic tailoring, 1 = exposed to demographic tailoring, 0 = not exposed to demographic tailoring. For product type, 1 = exposed to ad featuring embarrassing product (acne cream), 0 = exposed to ad featuring non-embarrassing product (flash drive).

### *Behavioral tailoring manipulation*

Perceived creepiness was significantly higher for those exposed to behavioral tailoring ( $M = 3.827$ ,  $SD = 1.93$ ), compared with those not exposed to behavioral tailoring ( $M = 3.03$ ,  $SD = 1.86$ );  $F(1, 280) = 12.347$ ,  $p < .001$ , partial  $\eta^2 = .043$ . In addition, behavioral intention (intent to purchase the product) was significantly more *positive* for those exposed to behavioral tailoring ( $M = 6.114$ ,  $SD = .264$ ) compared with those not exposed to behavioral tailoring ( $M = 5.164$ ,  $SD = .264$ );  $F(1, 280) = 6.466$ ,  $p < .05$ , partial  $\eta^2 = .023$ , which is the opposite of the expected effect. This is explored further in the structural equation model below. No other effects were significant for this manipulation.

### *Demographic tailoring manipulation*

No significant effects were found for any of the dependent variables for the demographic tailoring manipulation.

### *Product type manipulation*

No significant effects were found for any of the dependent variables for the demographic tailoring manipulation.

*Product type x demographic tailoring*

No significant effects were found for any of the dependent variables for the product type x demographic tailoring interaction.

*Product type x behavioral tailoring*

No significant effects were found for any of the dependent variables for the product type x behavioral tailoring interaction.

*Demographic tailoring x behavioral tailoring*

No significant effects were found for any of the dependent variables for the demographic tailoring x behavioral tailoring interaction.

*Product type x demographic tailoring x behavioral tailoring*

No significant effects were found for any of the dependent variables for the three-way product type x demographic tailoring x behavioral tailoring interaction.

Table 6  
ANOVA: Main effects and interactions of IVs on creepiness

<i>IVs (with DV creepiness)</i>	<i>df</i>	<i>F</i>	<i>Partial <math>\eta^2</math></i>	<i>Sig.</i>
Behavioral	1	12.347	.043	< .001
Demographic	1	1.252	.005	.264
Product Type	1	.025	.000	.875
Product Type * Demographic	1	.090	.000	.765
Product Type * Behavioral	1	2.336	.009	.128
Demographic * Behavioral	1	2.385	.009	.124
Product type * Demographic * Behavioral	1	.397	.001	.529

*Note:* Behavioral tailoring coded: 1 = Exposed to behavioral tailoring, 0 = not exposed to behavioral tailoring. Demographic tailoring coded: 1 = exposed to demographic tailoring, 0 = not exposed to demographic tailoring. Product type coded: 1 = exposed to ad featuring embarrassing product (acne cream), 0 = exposed to ad featuring non-embarrassing product (flash drive).

Table 7  
Means and standard deviations by manipulation

	<b>Behavioral N = 140</b>		<b>No Behavioral N = 140</b>		<b>Demo. N = 140</b>		<b>No Demo. N = 140</b>		<b>Acne Ad N = 140</b>		<b>Flash Ad N = 140</b>	
	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>
<b>Creepiness</b>	3.87	1.93	3.03	1.86	3.56	1.86	3.30	2.00	3.45	1.82	3.41	2.05
<b>Threat</b>	2.27	1.30	2.07	1.18	2.21	1.23	2.13	1.26	2.25	1.28	2.09	1.21
<b>Reactance: Affect</b>	2.03	1.33	2.04	1.34	2.01	1.35	2.05	1.36	2.02	1.33	2.05	1.34
<b>Reactance: Cognition</b>	3.80	1.25	3.99	1.27	3.89	1.30	3.90	1.23	3.87	1.20	3.92	1.32
<b>AAd</b>	3.91	.835	3.84	.808	3.96	.780	3.80	.857	3.82	.879	3.94	.756
<b>Beh. Int.</b>	6.11	3.14	5.16	3.09	5.80	2.97	5.48	3.32	5.35	3.20	5.93	3.07

## Hypotheses and research questions

Hypothesis 1 predicted that advertisements tailored using behavioral information would result in greater perceived creepiness than advertisements not tailored using behavioral information.

Behavioral tailoring had a significant effect on perceived creepiness,  $F(1, 280) = 12.347$ ,  $p < .001$ , partial  $\eta^2 = .043$ , such that those exposed to behaviorally tailored ads experienced more perceived creepiness ( $M = 3.827$ ,  $SD = 1.93$ ) than those who were not exposed to behaviorally tailored ads ( $M = 3.03$ ,  $SD = 1.86$ ). Therefore, hypothesis 1 was supported.

Hypothesis 2 predicted that advertisements tailored using behavioral information would result in greater perceived creepiness than advertisements tailored using demographic information. Although those exposed to behavioral tailoring also reported a higher mean level of perceived creepiness than those exposed to demographic tailoring ( $M = 3.56$ ,  $SD = 1.86$ ), an independent-samples  $t$ -test showed this mean difference of 0.27 was not statistically significant;  $t(278) = 1.19$ ,  $p = 0.23$ . In addition, the interaction between demographic and behavioral tailoring was not significant for any of the dependent variables, including creepiness. Therefore, H2 is not supported – for this sample, advertisements tailored using behavioral information resulted in more perceived creepiness than advertisements that were not tailored using behavioral information, but not significantly more creepiness than those tailored using demographic information.

RQ1 asked whether any effects of behavioral tailoring would be moderated by product type. As was demonstrated in the main effects and interactions analysis above, the effects for product type were not significant, and neither was the interaction between behavioral tailoring x

product type, for any of the dependent variables, including creepiness. Therefore, the answer to RQ1 is no, in this study the effects of behavioral tailoring were not moderated by product type.

## **Post-hoc tests**

### *Manipulation checks*

The behavioral tailoring manipulation was successful, as there was a statistically significant effect for those in the behavioral tailoring conditions compared with those not in the behavioral tailoring conditions for the relevant manipulation check questions. “The ad featured a product I have seen in the past”:  $F(1, 280) = 23.915, p < .001, \text{partial } \eta^2 = .081$ ; and “I felt the ad targeted me based on my past browsing behaviors”:  $F(1, 280) = 69.403, p < .001, \text{partial } \eta^2 = .203$ . Interestingly, there was also a statistically significant effect for those in the behavioral tailoring conditions for the following question, which was meant as a manipulation check for those in the demographic tailoring conditions: “The ad was tailored according to my interests”:  $F(1, 280) = 11.023, p < .001, \text{partial } \eta^2 = .039$ .

On the other hand, the demographic tailoring and product type manipulations did not produce statistically significant effects for the appropriate manipulation check questions. This is perhaps what led to the lack of statistically significant results for these two manipulations (product type and demographic tailoring) for any outcome variables. In retrospect, the demographic tailoring manipulation was very subtle (just a slight copy change in the ad suggesting the promotion was for students of the school rather than for everyone). If participants did not read the ad carefully or notice the copy mentioning their school, it follows that there would not be significant differences. A school logo or something more noticeable might have better cued demographic tailoring and resulted in significant effects.



In addition, the manipulation check question for demographic tailoring, which was taken from previous tailoring studies, may not have been an adequate question in this context. The question asked whether the ad was tailored to the participant's interests. However, considering the subtle copy change that comprised this manipulation, perhaps it was not the most accurate manipulation check question to use, as the ad was not tailored to participants' interests as much as just mentioned their affiliation with the university.

Responses to the manipulation check question "The ad featured a product that could cause embarrassment if someone saw me purchase it" were not significantly different between those exposed to the flash drive ad and those exposed to the acne cream ad. In terms of product type, although acne cream rated as more embarrassing in a pre-test, it is possible that it is not an embarrassing product for people in this population who are not actually using acne cream. The directions instructed participants to answer the question as if they were in the market for the product – however, perhaps the participants did not read carefully enough or were not able to imagine the situation. Actual current use of acne cream was not measured.

However, there was an interesting exception for both of these manipulations that is worth discussion. When participants were in a condition where they were exposed to demographic tailoring or the embarrassing product *as well as behavioral tailoring*, the manipulation check *did* produce a statistically significant effect. For example, the effect for demographic tailoring on its own for "The ad was tailored according to my interests" was not significant. However, the demographic tailoring x behavioral tailoring interaction for the same question was significant:  $F(1, 280) = 5.058, p < .05$  partial  $\eta^2 = .018$ . Behavioral tailoring appears to activate demographic tailoring for more superficial attributes. For example, behavioral tailoring seemed to make

participants aware of the demographically tailored copy (“special promotion for UNC students!”) that they either did not notice or did not believe to be tailored to their interests otherwise.

Similarly, the effect for product type on “The ad featured a product that could cause embarrassment if someone saw me purchase it” was not significant. However, for the same question, the behavioral tailoring x product type interaction was significant:  $F(1, 280) = 147.356$ ,  $p < .001$ , partial  $\eta^2 = .183$ . As above, behavioral tailoring seemed to make participants aware that the product featured in the ad was embarrassing, which they either did not take note of or did not believe to be true otherwise. However, this could potentially be a negative for marketers of embarrassing products if consumers suddenly feel the product is an embarrassing one to purchase when they are exposed to behavioral tailoring.

In addition, the two memory checks incorporated into the study were examined post-hoc. Participants were asked to recall the name of the product featured on the website, as well as the name of the product featured in the ad. They were counted as having positive recall if they remembered the exact name, a name close to the actual name, or the correct product type (i.e. “It was a flash drive”). Those who were able to recall both the website and ad products received a score of 2, those who could only recall one received a score of 1, and those who could not recall either received a score of 0. The mean recall was 1.85, with a standard deviation of 0.399. In all, 90.1% of participants recalled the product featured in the ad, and 91.9% of participants recalled the product on the website. Only 1.4% of participants did not recall either the product on the website or the product in the ad. Recall was significantly associated with behavioral tailoring, with those exposed to behavioral tailoring having a higher mean product recall ( $M = 1.91$ ,  $SD = .315$ ) compared with those not exposed to behavioral tailoring ( $M = 1.78$ ,  $SD = .461$ );  $F(1,280) = 6.617$ ,  $p < .05$ , partial  $\eta^2 = .023$ . This effect could be due to the repetition involved in

behavioral tailoring, in that those exposed to behavioral tailoring saw the same product twice, which may have assisted with recall. Failed recall is also one potential explanation for the embarrassing product manipulation check – if the participant could not remember the product, they would not know whether it would cause embarrassment if someone saw them purchase it.

### **Hypothesized model**

To test hypotheses 3-6, a structural equation model was performed using maximum likelihood model estimation in LISREL. The hypothesized model examined the predictors of behavioral intent when advertisers use behavioral tailoring. Hypothesis 3 predicted that greater perceived creepiness would result in increased threat, Hypothesis 4 predicted that increased threat would result in increased reactance, Hypothesis 5 predicted that increased reactance would result in negative attitudes toward the ad, and Hypothesis 6 predicted these negative attitudes toward the ad would significantly predict negative purchase intentions toward the product. Purchase intent was a variable with a single-item indicator (intent to purchase the product featured in the ad). The hypothesized model is shown in Figure 2. Circles represent latent variables, and rectangles represent measured or manipulated variables. Solid lines represent hypothesized direct effects, and a dotted line indicates a hypothesized indirect effect through the model. Absence of a line connecting variables implies lack of a hypothesized effect.

Marketers and advertisers use behavioral tailoring to get consumers to purchase a product they viewed in the past, assuming a direct relationship between behavioral tailoring and positive purchase intent (and ultimately purchase behavior itself, although that was not measured in this study). However, the model proposed in this study predicts that there is also a black box effect that marketers have not taken into consideration, called the “creepiness factor,” which this study

shines a light into. The hypothesized model suggests that behavioral tailoring can also lead to the creepiness factor [a sense of being watched or followed (creepiness), which leads to threat, then reactance, then negative attitudes toward the ad], which then ultimately leads to decreased purchase intent. Marketers' current approach to behavioral tailoring does not take into consideration the potential effects of the creepiness factor. This is outlined in the model in Figure 2.

### **Model estimation**

Two models were examined – the first was the fully mediated model, which is the most restricted. In this model, all effects of behavioral tailoring on purchase intent are channeled through the creepiness factor. The second model was the partially mediated model, which is the less restricted of the two. This model allows for behavioral tailoring to have its own direct effect on purchase intent, as marketers assume, as well as an effect that is channeled through the creepiness factor, which explains additional variance in purchase intent.

Examining the first, fully mediated and most restricted model, the chi-squared test for the hypothesized model was significant, indicating the model was not a fit to the data,  $\chi^2(246, N = 280) = 555.107, p < .001$ . However, this test is sensitive to sample size. Hu and Bentler (1999) suggested the researcher should choose a combinational rule that minimizes error type. Therefore, model fit was examined based on the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). The CFI for the model was .959, which surpasses Hu and Bentler's suggested cutoff of .95 for model fit, demonstrating the model fit the data. For the RMSEA, Browne and Cudeck (1993) suggested a value of .05 is a close fit, while values of .08 or higher

show reasonable errors of approximation. The RMSEA was .0660, also indicating the model fit the data.

For the second, partially mediated and less restricted model, the chi-squared test for the hypothesized model was again significant,  $\chi^2 (245, N = 280) = 550.510, p < .001$ , although the value was less than the previous model. Again model fit was examined based on the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). The CFI for the model was .959, the same as the fully mediated model, which again surpasses Hu and Bentler's suggested cutoff of .95, indicating model fit. The RMSEA was .0658, a slight improvement over the previous model, again indicating the model fit the data.

A chi-squared difference test was performed to see whether the partially mediated model (which includes the direct path between behavioral tailoring and purchase intent) provided a significant improvement over the fully mediated model (in which all effects of behavioral tailoring are channeled through the creepiness factor). The results showed the model was significantly improved with the addition of the direct path from behavioral tailoring to purchase intent in the partially mediated model,  $\chi^2_{\text{difference}} (1, N = 280) = 4.597, p < .05$ . The final model is presented in Figure 2.

### **Direct effects**

As recommended for SEM analysis, all coefficients reported below are completely standardized, but significance levels were determined based on the  $t$  values in the unstandardized portion of the output. Examining the direct effects, behavioral tailoring significantly predicted perceived creepiness ( $\gamma = .218, p < .001$ ), perceived creepiness significantly predicted threat ( $\beta = .382, p < .001$ ), and threat significantly predicted both affective reactance ( $\beta = .544, p < .001$ )

and cognitive reactance ( $\beta = .201, p < .001$ ). In turn, attitude toward the ad was significantly predicted by both affective reactance ( $\beta = -.431, p < .001$ ) and cognitive reactance ( $\beta = -.345, p < .001$ ), and finally attitude toward the ad predicted behavioral intention ( $\beta = .290, p < .001$ ). All effects were significant and in the hypothesized direction.

### **Indirect effects**

In addition, the indirect effect of behavioral tailoring on behavioral intention through the “creepiness factor” mediators is significant, in the hypothesized direction (standardized indirect effect of  $\xi$  on  $\eta = -.007, p < .001$ ). Although the effect is small, it is indeed statistically significant and *negative*, as hypothesized.

However, it is interesting to note that the direct effect of behavioral tailoring on purchase intention is also significant, in line with marketers’ hopes – in other words, behavioral tailoring also had a significant direct effect on behavioral intention, in a *positive* direction ( $\gamma = .136, p < .01$ ).

The total effect of behavioral tailoring on purchase intent represents the direct effect of behavioral tailoring on purchase intent (which, again, is .136), plus the indirect effect of behavioral tailoring on purchase intent through the mediated model (which, again, is -.007) – in other words, the effect that occurs through the creepiness factor. The total effect of behavioral tailoring on behavioral intention is .129 and is statistically significant (standardized total effect of  $\xi$  on  $\eta = .129, p < .05$ ).

This effect is what is often called a suppressor effect or a suppressor system. Within a mediation model, a suppressor effect is present when the direct and mediated effects of an independent variable on a dependent variable (in this case, behavioral tailoring on purchase

intent) have opposite signs (MacKinnon, Krull, & Lockwood, 2000). As explained by Davis (1985), this indicates that a change in the independent variable has a certain effect on the dependent variable but *also* sets off a causal chain that attenuates this effect.

As previously discussed, marketers generally use behavioral tailoring with the idea that if they present a consumer with an ad featuring a product he or she has viewed in the past, that consumer will click through to the website and purchase the product. However, what the results for the model demonstrate is that while marketers are correct that behavioral tailoring can have positive effects on purchase intent, this assumption does *not* take into account the black box (so to speak) of the creepiness factor, represented in the model by the indirect effect. Indeed, as hypothesized, while the direct effect of behavioral tailoring on purchase intent is positive as marketers intend (likely due to seeing a product viewed in the past), behavioral tailoring *also* creates a causal chain due to creepiness that creates a *negative* effect and reduces the benefits of behavioral tailoring. The direct effect (.136) shows what would happen to purchase intent if the creepiness factor (-.007) were to be removed from the experience of seeing a behaviorally tailored ad (.129). In other words, all the aspects of behavioral tailoring that are *not* creepy do indeed result in positive effects as marketers assume. However, the creepy aspect of behavioral tailoring indeed exists and leads to actual negative effects that attenuate purchase intention.

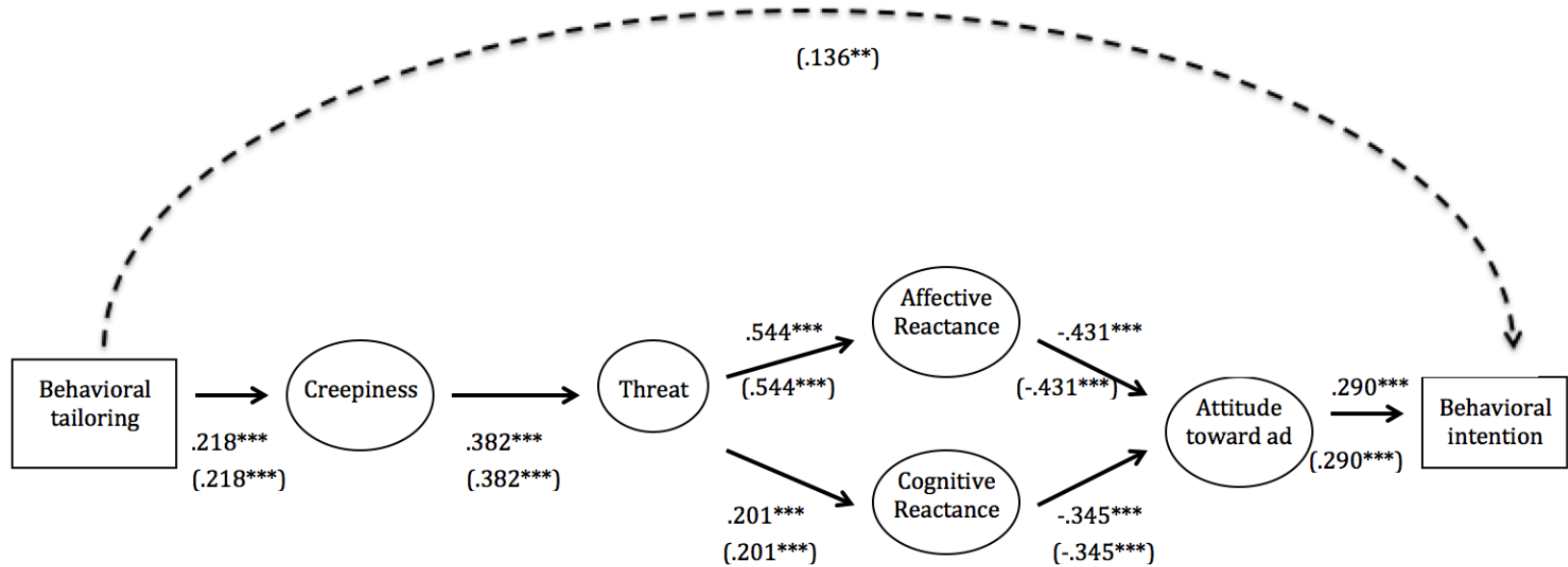
To translate these numbers, a 1-unit change in behavioral tailoring (i.e. the change from using a regular ad to using a behavioral ad) has a positive effect on purchase intent of .129 (the total effect). However, by removing the creepiness factor, this could be *improved* to have a positive effect of .136. Dividing the indirect effect (-.007) by the total effect (.129) results in a difference in effect size of -.05, or negative 5 percent (Shrout & Bolger, 2002). This means that,

at least for the current sample, when using behavioral tailoring, advertisers experience a 5% *reduction* in the effect of behavioral tailoring on purchase intent, thanks to the creepiness factor.

This model supports hypotheses 3-6 and also better explains the positive effect behavioral tailoring had on purchase intent in the ANOVA results. To reiterate, the model showed that while marketers are right in thinking there is a direct positive effect on purchase intention due to behavioral tailoring, this effect is actually attenuated by the creepiness factor – the aspect of behavioral tailoring that makes consumers feel marketers know them *too well* and in fact are watching and tracking their every move. While the direct effect is positive, the indirect effect through the creepiness factor is negative, meaning that all of the aspects of behavioral tailoring that are not creepy or do not elicit a perceived creepiness effect result in the positive effects assumed by marketers. However, the aspects of behavioral tailoring that are creepy and result in the creepiness factor do have a real and statistically significant *negative* effect on purchase intention, thanks to reactance on the part of the consumer.



Figure 2  
 Standardized parameter estimates for fully and partially mediated models



Note: Standardized coefficients for the partially mediated model are listed above. Standardized coefficients for the fully mediated model are listed in parentheses. Dashed line represents path only estimated in partially mediated model. Fit of partially mediated model:  $X^2(245, N = 280) = 550.510, p < .001$ ; CFI = .959; RMSEA = .0658. Fit of fully mediated model:  $X^2(246, N = 280) = 556.107, p < .001$ ; CFI = .959; RMSEA = .066.

Table 8  
*Structural equation model results*

	<i>Coeff.</i>	<i>t</i>	<i>Sig.</i>
Behavioral tailoring → Creepiness	.218	3.637	< .001
Creepiness → Threat	.382	6.071	< .001
Threat → Affective Reactance	.544	8.595	< .001
Threat → Cognitive Reactance	.201	2.955	< .001
Affective reactance → Attitude toward the ad	-.431	-7.089	< .001
Cognitive reactance → Attitude toward the ad	-.345	-4.979	< .001
Attitude toward the ad → Behavioral intention	.290	4.536	< .001
Behavioral tailoring → Behavioral intention (indirect)	-.007	-2.451	< .01
Behavioral tailoring → Behavioral intention (direct)	.136	2.381	< .01
Behavioral tailoring → Behavioral intention (total effect)	.129	2.255	< .05

## CHAPTER 4

### DISCUSSION AND CONCLUSION

This study examined the relationship between the type of information used to tailor an ad, consumer attitudes toward tailored online ads, and purchase intentions toward the featured products. The creepiness factor leading to reactance was presented as a possible explanation for negative consumer reactions to behaviorally tailored ads, and product type was proposed as a possible intervening variable.

To test these relationships, a 2x2x2 experiment was performed. Participants were assigned to one of eight conditions, in which they were first exposed to one of two websites featuring either a flash drive (a product intended to be less embarrassing) or acne treatment cream (a product intended to be more embarrassing). They were then exposed to a Facebook page that contained either an ad for the same product they saw on the website (behavioral tailoring) or an ad for the product they did not see (no behavioral tailoring). In addition, the ad's copy either mentioned a special promotion for students at their university (demographic tailoring), or it did not (no demographic tailoring). These were all fully crossed.

Hypothesis 1 predicted that those exposed to ads featuring behavioral tailoring would experience greater perceived creepiness than those exposed to ads that did not feature behavioral tailoring. This hypothesis was supported – behaviorally tailored ads resulted in significantly more perceived creepiness than ads that were not behaviorally tailored.

Hypothesis 2 predicted that those exposed to ads featuring behavioral tailoring would experience greater perceived creepiness than those exposed to ads featuring demographic tailoring. This hypothesis was not supported. Although behaviorally tailored ads did result in greater mean perceived creepiness than ads tailored using demographic information, the difference was not statistically significant. However, as noted above, this may be attributed to the subtlety of the demographic tailoring manipulation.

Research question 1 asked whether any effects of behavioral tailoring would be moderated by product type. The manipulation check item was not significantly associated with the “embarrassing product” condition (acne cream). In other words, those exposed to the acne cream did not find the product to be significantly more embarrassing than those exposed to the flash drive, despite the acne cream being rated as more embarrassing in pretests. Perhaps acne treatment cream is not an embarrassing product if a person is not actually using it. Regardless, there was no significant difference between the flash drive conditions and the acne cream conditions for any of the outcome variables, showing that at least for these two products, there did not appear to be variation in reactions to behavioral tailoring based on product type. This is an area that deserves further study to see if there are differences depending on product or if the creepiness of behaviorally tailored ads is product agnostic.

Finally, a theoretical model was tested, which included the additional hypotheses. The model predicted that participants exposed to behavioral tailoring would experience greater perceived creepiness than those not exposed to behavioral tailoring (H1), and this creepiness would lead to greater perceived threat by the consumer (H3). This increased threat would lead to greater reactance (H4), which was hypothesized to lead to negative attitudes toward the ad (H5), which would lead to negative behavior intentions toward the product (H6).

To test whether this model was a viable one, a structural equation model was examined which took into account measurement error, indicator items for the latent variables, and comprehensive model fit information.

The model did indeed fit the collected data. The effects were all significant and in the expected direction. In addition, the model helped explain the positive effect behavioral tailoring had on purchase intent in the ANOVA results. The model showed that while marketers are right in thinking there is a direct positive effect on purchase intention due to behavioral tailoring (possibly due to seeing a product one has already viewed, the idea that marketers “know” them, etc.), this effect is actually attenuated by the creepiness factor – the aspect of behavioral tailoring that makes consumers feel marketers know them *too well* and in fact are watching and tracking their every move. While the direct effect is positive, the indirect effect through the creepiness factor is negative, meaning that all of the aspects of behavioral tailoring that are not creepy or do not elicit a perceived creepiness effect result in the positive effects assumed by marketers – however, the creepiness factor does indeed have a statistically significant *negative* effect on purchase intention.

As hypothesized, behavioral tailoring leads to increased perceived creepiness, which leads to increased threat, increased reactance, more negative attitudes toward the ad, and ultimately more negative behavioral intentions (purchase intent toward the product featured in the ad). Although some of these effects are stronger than others, all of them are statistically significant.

In all, this study contributes to theory in several ways. As discussed in the literature review, three main theories suggest information that cues personal relevance has effects on message processing and persuasion – namely, the limited capacity model of motivated message

processing (LC4MP), the Elaboration Likelihood Model (ELM), and reactance theory. These are discussed in turn below.

LC4MP, or the limited capacity model of motivated message processing (Lang, 2000; 2006), says that processing of a message is affected by message structure and by personal relevance. An orienting response is caused by stimuli that are either novel (a change in the environment) or signal (personally relevant). In this case, those exposed to behaviorally tailored ads had significantly more accurate memory for the products, as demonstrated by the significant difference in recall, and paid significantly more attention to the ad's content, as suggested by the manipulation check interactions wherein participants exposed to behavioral tailoring then noticed the ad was tailored to them and that the acne product was embarrassing. This suggests that behaviorally tailored ads are stimuli that are a "signal" (that cue personal relevance), that this was successfully cued in the current study, and that, in line with LC4MP, this does indeed cause an orienting response.

In addition, Petty, Barden and Wheeler (2002) found that any feature of a message that invokes self-relevance increases information processing when other variables have not constrained elaboration to be high or low. In this study, elaboration was not intentionally constrained. Increased information processing should lead participants to process the message more closely, which was supported in this study by the significant differences in recall and the manipulation check interaction. Following ELM, when likelihood of thinking is low, self-relevance should act as a peripheral cue such that self-bias would be a shortcut causing agreement with the message. When likelihood of thinking is high, self-relevance should motivate the participant to see the merits of the position associated with the self. Either way, self-relevance should lead to positive message effects. However, this does not seem to have

functioned as expected for behavioral tailoring, in that while the self-relevance cued by behavioral tailoring did encourage participants to process the information more closely, this increased processing actually led to increased perceived creepiness, threat, reactance, and negative attitudes toward the ad. This is much different from the effects typically seen with other tailoring practices when viewed through an ELM lens. Therefore, this study suggests that behavioral tailoring functions in a different way psychologically than other types of tailoring and should not automatically be treated the same by researchers or marketers.

Finally, reactance theory suggests that when persuasive appeals *threaten a person's individual freedom*, people are motivated to resist or reject the message and feel more negatively about the source of the message (Brehm & Brehm, 1981). Although a perceived threat to one's freedom is a necessary condition for reactance to occur, it is not reactance itself. Threat is not always incorporated into the model, but it was included here to better shine light into the reactance process for online behavioral advertising. In an email marketing context, White et al. (2008) suggested the idea of personalization reactance – that highly tailored messages lead consumers to feel their freedom has been threatened because they are *too* observable or identifiable to the marketer. Messages that convey highly distinctive knowledge of someone can lead her to believe her right to autonomous handling of her own private information is being abused (Okazaki, Li, & Hirose 2009) or threatened by unknown third parties (Baek & Morimoto, 2012). When behavioral freedom is threatened by overtly persuasive messages, consumers can become negatively psychologically aroused (Miller et al., 2007).

Reactance has been studied in other marketing contexts (unsolicited recommendations, intrusive pop-up ads, too much communication from a marketer, etc.), but it has not been studied specifically in the context of behaviorally tailored ads in the past. However, this study showed

that reactance functions the same way in behaviorally tailored ads as it does in other contexts. Indeed, the creepiness elicited by behaviorally tailored ads (similar to intrusiveness elicited by pop-up ads) made the consumer feel her control over her own choices and behaviors had been threatened, which led to greater affective and cognitive reactance. This expands the idea of reactance into a behavioral advertising context and also demonstrates that reactance can occur even with a short, fairly innocuous banner ad – if that ad uses behavioral information collected about a user.

This study challenges the standard paradigm for tailoring studies, demonstrating that new technologies call for a reexamination of the persuasive effects of tailored advertising, and highlighting that all tailored advertising does not necessarily have the same positive effects on the consumer. It also proposes and operationalizes creepiness for the first time as a concept that affects consumer attitudes toward behavioral targeting online. Methodologically, this study contributes by examining retargeted behavioral advertising in an experimental context, a concept that has primarily been studied in non-quantitative law and policy articles.

This study also contributes to practice, in that it tests the effectiveness of tailored advertising techniques currently and increasingly used by marketers online. The results suggest that just because marketers have access to nearly unlimited data about consumers, it does not always pay off to use that data mindlessly. For the participants in the current study, behavioral tailoring prompted increased feelings of creepiness (being watched, tracked, and followed by marketers), which led the consumer to feel threatened. This increased threat led to increased reactance, which resulted in negative attitudes toward the ad and negative behavioral intention toward the product featured in the ad.



Although the model here shows that marketers are correct in assuming that behavioral tailoring has a direct positive effect on purchase intent, they are not taking into considering the negative impact the creepiness factor has on that purchase intent. In fact, as shown above, the creepiness factor can lead to a 5 percent *reduction* in effect size. Marketers could be spending less to get the same return on their online behavioral advertising, if they could eliminate or reduce the creepiness factor from behaviorally tailored ads. In other words, marketers may be spending a certain amount of money (for example, \$1,000,000) on behaviorally tailored ads to experience a 1 unit increase in purchase intention – but if the creepiness factor could be reduced, they could achieve the same increase in purchase intention spending 5 percent less (for example, \$950,000). Therefore, finding a way to reduce the creepiness of these ads could have a significant positive impact for marketers. Five percent may not seem like a large amount at first glance, but when considered in terms of advertising budgets of millions or even billions of dollars, it is certainly something to take into consideration. It is important that we do further research to investigate how marketers can *decrease* the perceived creepiness that results from behavioral tailoring practices, in order to mitigate the negative causal chain triggered by behavioral tailoring.

Marketers should take heed and consider the psychological effects behavioral advertising techniques may have on consumers. They should use behavioral advertising with caution. More research should certainly be done on the cost of creepiness and behavioral tailoring, to help marketers get more out of the dollars they spend on these ads. In addition, the different product recall between those in the behavioral tailoring condition compared with the other conditions suggests that the repetition involved in behavioral tailoring may lead consumers to pay more attention to the ads, including to demographic tailoring and product information -- although

ultimately this results in more negative attitudes toward the ad, according to this study. Negative attitudes toward the ad is part of the black box proposed here – the effects marketers do not take into consideration when spending budgets on behavioral tailoring. Its relationship with negative attitudes toward the brand itself is another area for future research, especially for marketers who may be considering using behavioral tailoring for a branding play. The current study suggests this may not be wise. These are benefits and downsides marketers should weigh when deciding whether or not to use behavioral tailoring practices.

As with all experimental research, this study has several limitations. First and foremost, the sample in question consisted of college students between the ages of 18 and 38, and therefore the results cannot reliably be generalized to a larger population. However, the demographic of 18-36 is a prime target for marketers, and college students are more likely to engage with the types of websites that contain behaviorally tailored content, such as social media sites like Facebook (Smith, Rainie, & Zickhur, 2011). Therefore, the results of this study are still relevant to both researchers and practitioners, regardless of the applicability of its results to the larger population of adults. However, this limitation certainly suggests that further research should be done to assess the psychological effects of behavioral tailoring on the wider population. It will be interesting to see whether older adults are more or less likely than younger adults to notice the advertisements presented on the page, and whether this impacts reactance. It would also be helpful to measure technological experience and whether that impacts reactance, as age may not be as significant as familiarity with these types of practices. In addition, this sample was predominantly white and female. It is worth investigating whether these effects hold for a more diverse sample of participants.

Speaking of individual characteristics, although narcissism was not examined as a key variable in this study, its correlation with all of the main variables suggests it may be an important factor in consumers' reactions to behaviorally tailored ads, which supports the previous findings of Barnard (2013). This is an area worthy of further research as well. Another variable that could have an impact is awareness of politics or current events and the state of online privacy. For example, those who are more aware of Edward Snowden and NSA's data collection activities may have more negative reactions to data-based advertising techniques.

Experiments, as a research method, of course provide both benefits and drawbacks. The double-sided coin of this study is that everything was controlled in a laboratory environment. This ensured that individual differences were distributed across condition and that the effects were a result of the manipulated variables. However, this does not take into account the fact that the products consumers see in retargeted ads in reality are products they have searched for in the past of their own volition, rather than products they were required to view in a lab. However, this suggests that the results of this study may in fact be even more conservative than in a real-life setting, where marketers are tracking consumer behavior on a consumer's own personal laptop. Future research should investigate this in a field setting, using products the consumers have searched for on their own.

In addition, studying social media in a laboratory setting is incredibly difficult. In the case of this study, participants viewed a screenshot of a Facebook page, rather than an actual Facebook page where they were seeing updates from their real friends. It is possible that seeing these ads in a "live" social networking situation may actually lead to more perceived creepiness, because of heightened social awareness while using a working social network. Researchers should explore more realistic ways to study social networking phenomena, while still

maintaining experimental controls. Perhaps this could be achieved with the use of more sophisticated computer programming, a group experiment, a field experiment, or by using a confederate to interact with the participants. Consumers may experience increasing levels of creepiness depending on whether the consumer believes anyone else besides themselves can see the behaviorally tailored ad – for example, in the case of Facebook social ads that pair user pictures, comments, and “likes” with advertisements. This is an area worth further research in light of the current study’s results.

The subtle manipulations for demographic tailoring and for product type were also a limitation for this study. Although the effects of primary concern were those associated with behavioral tailoring, a manipulation which worked, the comparisons with demographic tailoring and between different products are still of valuable concern for researchers. Future research should test these differences with stronger manipulations to better determine if marketers selling different types of products should be more or less concerned about negative effects of behavioral tailoring, as well as whether the use of demographic information alone elicits any sense of creepiness on the part of the consumer and if it is significantly different from that elicited by behavioral tailoring. The lack of effects due to product type is consistent with the suggestion earlier in this paper that creepiness is likely product agnostic – regardless of whether the product is socially embarrassing or benign, creepiness stems from the awareness that the marketer has collected and capitalized on real-time information about a consumer’s personal actions online. However, product type cannot be adequately eliminated as an alternative explanation for creepiness factor, considering the manipulations did not produce significant differences for the manipulation check question. In addition, the fact that behavioral tailoring activated awareness that a product was embarrassing is something for marketers to consider and something for

researchers to investigate further. The apparent association with product recall is also an area worth further exploration, to help marketers evaluate whether the benefits of product recall outweigh the drawbacks of negative attitudes toward the ad and negative purchase intention associated with creepiness.

In fact, the manipulations overall were all very subtle, including the behavioral tailoring manipulation, as can be seen from the screenshots of the stimulus materials and the description of the cover story. Results from a funnel debrief suggest participants did not at all suspect the true intention of the study and were therefore focused on the Facebook page's newsfeed content. Although this approach was used in order to be more realistic and to ensure the study had external validity, it does suggest that with stronger manipulations, even stronger effects may be seen.

Further research might also extend the conceptualization of creepiness begun here. For example, the scale proposed by the author should be further assessed for reliability and validity outside of the current study. In addition, perhaps it is worth exploring whether creepiness is indeed a *visceral* negative reaction, as suggested by the article in *The New York Times* (Vega, 2010, n.p.). Measuring not only psychological discomfort, as demonstrated in the current study, but also *physiological* discomfort, might provide illuminating results. It would also be helpful to explore whether creepiness is more likely to occur on different types of websites, as suggested by the survey conducted by Barnard (2013). For example, is it more “creepy” to see behaviorally tailored ads on a social networking site, as used in the current study, compared with a news site? This is an area for future research as well.

Research on reactance in other areas suggests several possible solutions, worthy of further study in a behavioral advertising context to predict how marketers can better mitigate the

reactance consumers experience. Self-affirmation theory suggests that defensive reactions such as reactance are an attempt by the self-system to maintain integrity. Researchers such as Schüz, Schüz, and Eid (2013) have found that a self-affirmation manipulation can mitigate the negative effects of reactance. Although this was in an experimental context where self-affirmation was manipulated with the use of scale items, perhaps there is a way for advertisers to reaffirm the consumer's sense of self in the ad copy with the use of a positive, self-affirming message. This may help mitigate the reactance experienced due to the creepiness factor.

In addition, previous reactance research has suggested that offering reasons and justifications can help mitigate reactance by softening perceptions of intrusiveness – or in this case creepiness – to decrease threat (Dillard & Shen, 2005). This is another solution that could possibly be useful to advertisers – providing a link at the bottom of an ad that explains how and why the consumer is seeing that ad could potentially help soothe consumer reactance. Godfrey, Seiders, and Voss (2011) found that letting the consumer choose how marketers contacted them could attenuate reactance effects. Perhaps giving consumers more of a choice between different ads on the side of the website that serves the ads – much like Hulu does when letting consumers choose which pre-roll ad she would like to see – could help reduce reactance. Finally, David et al. (2012) in the cover-the-cough experiment found that teachers felt the intervention message was a reprimand that focused on their lack of action, and that is what led to reactance. Perhaps this is the case with behaviorally tailored ads as well, in that consumers feel websites are hounding them about the purchases they did not make. Therefore, adjusting the timing of behaviorally tailored ads by leaving more time in between the website visit and serving the ad could potentially have a positive impact on consumer reactance. These are all solutions that should be

explored in future research to help guide marketers in creating more effective online behavioral advertising strategies.

Overall, the results from this experiment are consistent with the results from surveys such as those conducted by Turow et al. (2012) and Barnard (2013), which demonstrated negative public opinion about the use of personal information. However, this study went beyond previous research to test these ideas in an experimental setting. This study also established that there is a very real “creepiness factor” that behavioral tailoring instills in consumers, and that this creepiness factor can result in reactance, which can create negative consumer reactions to a behaviorally tailored ad and even negative purchase intentions that can attenuate the otherwise positive effects of this innovative technology.

This study is unique in that it suggests that new data-driven online advertising does not provoke the same responses as classic tailored ads. Unlike classic tailoring, a positive persuasion technique, features of this new advertising made consumers in this study uncomfortable. This study extends the concept of ad intrusiveness to show that the qualities of data-driven online advertising can result in a negative sense of “creepiness,” or being watched and tracked by marketers online. This study challenges the popular thinking that this evolution of tailoring necessarily results in positive effects. Instead, this study suggests that there is a black box – one that includes creepiness, threat, reactance, and negative attitudes toward the ad -- that marketers are not taking into account in their assumptions that behavioral tailoring leads to positive purchase behavior. In addition, this study demonstrates that the inconsistencies seen in the tailoring literature, based on amount of personalization, may in part be attributed to the psychological effects of creepiness. It also suggests, at the very least, that creepiness, threat,

reactance, and negative attitudes are all potential psychological outcomes of behavioral tailoring – an effect of which marketers should be aware.

Indeed, this study serves as a cautionary tale for advertisers and marketers. Although it is tempting to think more tailoring is always better, this study warns marketers to proceed with caution when using troves of consumer data and to think of *all* potential costs. The results show that there is a threshold for which too much tailoring is too much – even among these digital natives, who have grown up surrounded by digital technologies (Prensky, 2001) – beyond which the creepiness caused by behavioral tailoring can result in a real cost. This study calls for more research in the area of behavioral tailoring, to help further define the line between relevant advertising and *too relevant* advertising, and to help pinpoint when and where these negative psychological effects may occur.




## APPENDIX: STIMULUS MATERIALS

### Flash drive shopping page

# ONLINE PRODUCT SHOP

0 items - \$0

[Home](#)



## ADATA DashDrive

**\$9.99**

A high-speed flash drive with a cap that smoothly extends from the drive at the push of a thumb. The USB 3.0 interface delivers read speeds as high as 90 MB/sec, and write speeds up to 40 MB/sec. The USB connector is concealed in the body, fully protected without the need for a cap. It can be used with just one hand, for greater convenience. Swipe forward to use, and reverse to stow for storage or travel. The matte texture body is scratchproof and dirt-repellent.

- 1 + [Add to cart](#)

Description [Reviews \(0\)](#)

### Product Description

**ADATA DashDrive**  
USB 3.0 high-speed flash drive with convenient capless design


- Read speeds as high as 90MB/sec, and write speeds up to 40MB/sec
- Sliding USB connector smoothly extends from the drive at the push of a thumb
- Scratchproof, dirt-repellent matte body in two stylish color schemes

ONLINE PRODUCT SHOP © 2014. All Rights Reserved. Powered by WordPress. Designed by **WOO THEMES**

# ONLINE PRODUCT SHOP

Search for products

Home 0 Items - \$0



## AcneFree Terminator 10

\$9.99

This acne spot treatment quickly reduces the size, redness and visibility of pimples and blackheads. AcneFree Terminator 10 is the most powerful acne treatment cream available without a prescription. It absorbs faster and deeper to kill 99% of acne bacteria directly on contact. It also works to fight breakouts all day long, thanks to its 12-hour time release formula. Unlike ordinary acne medication, it does not lead to dry skin or skin irritation. It reduces redness with the soothing double-action power of chamomile and ginger.

- 1 + Add to cart

Description Reviews (0)

### Product Description

**AcneFree Terminator 10**  
The strongest acne spot treatment medication available without a prescription

- Medicine absorbs faster and deeper to kill 99% of acne bacteria on contact
- Minimizes the over drying that can occur with ordinary acne medication
- Reduces redness with the double-action power of chamomile and ginger

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Facebook page: Acne ad, demographic tailoring

The screenshot shows a Facebook news feed interface. On the left is a navigation sidebar with sections for FAVORITES (News Feed, Messages, Events, Photos, Browse), APPS (Games, Games Feed), PAGES (Pages Feed, Like Pages, Create a Page...), and INTERESTS (Pages and Public Figures, Add Interests...). The main feed area contains several news items: 1. An update status box with the text "What's on your mind?". 2. A news article from The Guardian via Guardian US about Bitcoin, with a quote: "Bitcoin still has long term issues regarding transaction speed, price volatility, and ease of use, as well as finding a killer app which isn't online drug sales. But those take a back seat to the need to credibly reassure people who own bitcoins that their cash is safe. It needs to replace Mt Gox with Fort Knox." 3. A news article from The New York Times with a quote: "Suddenly, I find myself in a moment of extreme vulnerability. Fortunately, I've got one of the greatest leaders in human history on my side: myself." 4. A news article from Bloomberg News with a quote: "No one has come up with an Egg McMuffin killer," one researcher said. "It's an iconic product; it's hard to compete against." 5. A sponsored advertisement for AcneFree Terminator 10, featuring an image of the product box and text: "Strongest acne spot treatment without a prescription" and "Special promotion for UNC students!". On the right side of the feed, there are sections for "Sponsored" (with a "See All" link), "Trending" (listing items like Alec Baldwin, Florida Gators Men's Basketball, and Brooke Burke Charvet), and "Games You May Like" (with a "See All" link).

Sponsored See All

### AcneFree Terminator 10



Strongest acne spot treatment without a prescription


Special promotion for UNC students!

Facebook page: Acne ad, no demographic tailoring

The screenshot shows a Facebook news feed with a search bar at the top. The left sidebar contains navigation options like 'Your Name', 'News Feed', 'Messages', 'Events', 'Photos', 'Browse', 'Games', 'Games Feed', 'Pages', 'Like Pages', 'Create a Page...', and 'Interests'. The main feed area displays three news stories: 1) 'The Guardian via Guardian US' about Bitcoin's transaction speed and Mt Gox, with a quote: "Bitcoin still has long term issues regarding transaction speed, price volatility, and ease of use, as well as finding a killer app which isn't online drug sales. But those take a back seat to the need to credibly reassure people who own bitcoins that their cash is safe. It needs to replace Mt Gox with Fort Knox." 2) 'The New York Times' article by David Brooks titled "Suddenly, I find myself in a moment of extreme vulnerability. Fortunately, I've got one of the greatest leaders in human history on my side: myself." 3) 'Bloomberg News' article about an Egg McMuffin killer, quoting a researcher: "No one has come up with an Egg McMuffin killer," one researcher said. "It's an iconic product; it's hard to compete against." To the right of the feed is a sponsored advertisement for 'AcneFree Terminator 10', featuring an image of the product box and text: "Strongest acne spot treatment without a prescription" and "Special promotion!". Below the ad are sections for 'Trending' (Alec Baldwin, Florida Gators, Brooke Burke Charvet) and 'Games You May Like' (Guess The 90's).

**Sponsored** [See All](#)

## AcneFree Terminator 10



**Strongest acne spot treatment without a prescription**

**Special promotion!**

Facebook page: Flash drive ad, demographic tailoring

The screenshot shows a Facebook news feed interface. At the top, there is a search bar and navigation icons. The left sidebar contains navigation options like 'Your Name', 'News Feed', 'Messages', 'Events', 'Photos', 'Browse', 'Games', 'Games Feed', 'Pages', 'Like Pages', and 'Create a Page...'. The main feed area contains several news items:

- The Guardian via Guardian US:** "Bitcoin still has long term issues regarding transaction speed, price volatility, and ease of use, as well as finding a killer app which isn't online drug sales. But those take a back seat to the need to credibly reassure people who own bitcoins that their cash is safe. It needs to replace Mt Gox with Fort Knox." Includes a quote: "What happens when a major Bitcoin exchange collapses? Just look at Mt Gox" and a link to theguardian.com.
- The New York Times:** "Suddenly, I find myself in a moment of extreme vulnerability. Fortunately, I've got one of the greatest leaders in human history on my side: myself." Includes a link to an opinion column by David Brooks.
- Bloomberg News:** "No one has come up with an Egg McMuffin killer," one researcher said. "It's an iconic product; it's hard to compete against." Includes a link to an article about Taco Bell's breakfast menu.

On the right side, there are several promotional sections:

- Sponsored:** ADATA DashDrive advertisement featuring an image of a black and yellow USB drive. Text: "High-speed flash drive with capless design. Special promotion for UNC students!"
- Trending:** A list of trending topics including "Alec Baldwin: Alec Baldwin says he's leaving public life", "Florida Gators Men's Basketball: Florida new No. 1 as Syracuse drops to 4th", and "Brooke Burke Charvet: Erin Andrews to Replace Brooke Burke-Charvet on Dancing with the Stars".
- Games You May Like:** Advertisement for "Guess The 90's" game, featuring "1 million players" and a "Play Now" button.

At the bottom of the page, there is a footer with "Facebook © 2014" and links for "English (US)", "Privacy", "Terms", "Cookies", and "More".

Sponsored See All

## ADATA DashDrive



High-speed flash drive with capless design

Special promotion for UNC students!

Facebook page: Flash drive ad, no demographic tailoring

The screenshot shows a Facebook news feed interface. At the top, there is a search bar and navigation icons. The left sidebar contains navigation options like 'Your Name', 'News Feed', 'Messages', 'Events', 'Photos', 'Browse', 'Games', 'Games Feed', 'Pages', 'Pages Feed', 'Like Pages', 'Create a Page...', and 'Interests'. The main feed area contains several posts:

- A post from 'The Guardian' via 'Guardian US' about Bitcoin, with a quote: "Bitcoin still has long term issues regarding transaction speed, price volatility, and ease of use, as well as finding a killer app which isn't online drug sales. But those take a back seat to the need to credibly reassure people who own bitcoins that their cash is safe. It needs to replace Mt Gox with Fort Knox." It includes a link to an article and engagement metrics (35 likes, 12 comments, 14 minutes ago).
- A post from 'The New York Times' with a quote: "Suddenly, I find myself in a moment of extreme vulnerability. Fortunately, I've got one of the greatest leaders in human history on my side: myself." It includes a link to an opinion piece and engagement metrics (409 likes, 24 comments, 76 shares, 3 hours ago).
- A post from 'Bloomberg News' with a quote: "No one has come up with an Egg McMuffin killer," one researcher said. "It's an iconic product; it's hard to compete against." It includes a link to an article and engagement metrics (24 likes, 1 comment, 1 share, 3 hours ago).

On the right side of the feed, there are several sponsored and trending items:

- A sponsored advertisement for 'ADATA DashDrive' featuring an image of a black and yellow USB drive. The text reads: "High-speed flash drive with capless design" and "Special promotion!".
- A 'Trending' section with items like 'Alec Baldwin: Alec Baldwin says he's leaving public life', 'Florida Gators Men's Basketball: Florida new No. 1 as Syracuse drops to 4th', and 'Brooke Burke Charvet: Erin Andrews to Replace Brooke Burke-Charvet on Dancing with the Stars'.
- A 'Games You May Like' section featuring 'Guess The 90's' with 1 million players and a 'Play Now' button.

At the bottom of the screenshot, a larger view of the ADATA DashDrive advertisement is shown, highlighting the 'Sponsored' label, 'See All' link, and the product image and text.

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