Behaviorally Targeted Ads as Implied Social Labels

DISSERTATION

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Abstract

“Behavioral targeting” is an Internet-based targeting strategy that delivers digital ads to individuals based on their online behavior (e.g., search, shopping). This dissertation explores the unique ways in which consumers respond to ads using this type of targeting (vs. to ads that use more traditional forms of targeting), demonstrating that a behaviorally targeted ad can act as a social label even when it contains no explicit labeling information. Instead, when consumers recognize that the marketer has made an inference about their identity in order to serve them the ad, the ad itself functions as an implied social label. Across seven studies, I demonstrate that behaviorally targeted ads lead consumers to make adjustments to their self-perceptions to match the implied label; these self-perceptions then impact behavior, including purchase intentions for the advertised product and other behaviors related to the implied label. Importantly, these effects only hold when the label is plausibly connected to consumers’ prior behavior (i.e., when the targeting is at least moderately accurate). I conclude by discussing theoretical and practical implications.
Dedicated to everyone who has had a positive influence on my life
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Table of Contents

Abstract ............................................................................................................................................ ii

Dedication ....................................................................................................................................... iii

Acknowledgments .......................................................................................................................... iv

Vita .................................................................................................................................................. vi

List of Figures ................................................................................................................................. ix

List of Tables ................................................................................................................................... x

Chapters:

1: Introduction .................................................................................................................................... 1

2: Behaviorally Targeted Ads as Implied Social Labels ................................................................... 5

   2.1 Theoretical Development ...................................................................................................... 5
   2.2 Studies .................................................................................................................................. 15
       2.2.1 Study 1 ......................................................................................................................... 15
       2.2.2 Study 2A ....................................................................................................................... 21
       2.2.3 Study 2B ....................................................................................................................... 28
       2.2.4 Study 3 ......................................................................................................................... 36
       2.2.5 Study 4 ......................................................................................................................... 45
       2.2.6 Study 5 ......................................................................................................................... 53
       2.2.7 Study 6 ......................................................................................................................... 65
3: Summary and Conclusions ........................................................................................................ 69

3.1 Theoretical Contributions ................................................................................................ 70
3.2 Managerial Contributions ............................................................................................. 72
3.3 Future Research ............................................................................................................. 74

References .................................................................................................................................. 80

Appendix: Figures and Tables ................................................................................................ 86
List of Figures

Figure 1. Results for study 1 ............................................................................................. 87
Figure 2. Results for study 2A .......................................................................................... 88
Figure 3. Results for study 2B .......................................................................................... 89
Figure 4. Results for study 3 ............................................................................................. 90
Figure 5. Results for study 4 ............................................................................................. 91
Figure 6. Results for study 5 ............................................................................................. 92
Figure 7. Additional results for study 5 ............................................................................ 93
Figure 8. Results for study 6 ............................................................................................. 94
Figure 9. Study 1 stimuli................................................................................................... 95
Figure 10. Study 2A stimuli.............................................................................................. 96
Figure 11. Study 2B stimuli.............................................................................................. 97
Figure 12. Study 3 stimuli................................................................................................. 98
Figure 13. Study 4 stimuli............................................................................................... 99
Figure 14. Study 5 stimuli............................................................................................... 100
Figure 15. Study 6 stimuli............................................................................................... 101
List of Tables

Table 1. Shopping task product categories for green and non-green products............ 102
Chapter 1: Introduction

To effectively communicate with different groups of consumers, firms have long relied on targeting—the segmentation of a market into smaller groups based on a meaningful variable and selection of a particular segment as the target (Aaker, Brumbaugh, and Grier 2000; Blattberg, Buesling, and Sen 1980). Commonly used segmentation variables include demographic variables like ethnicity (Deshpandé and Stayman 1994) or gender (Stafford 1996) and psychographic variables such as values, personality, and lifestyle (Wells 1975). Due to widespread Internet use and advances in technology that tracks online behavior, a new form of targeting has emerged.

“Behavioral targeting” is an Internet-based targeting strategy that uses several elements of a consumer’s online behavior (e.g., his or her purchases and browsing history) to piece together a user profile that determines the ads that are displayed to the specific individual (Yan et al. 2009). It is a unique process because consumers are not shown ads based solely on broad demographic or psychographic variables, nor are they presented with ads for the same products they have already viewed or clicked on (as is the case with retargeting; Lambrecht and Tucker 2013). Instead, websites display digital advertisements to consumers that reflect marketers’ inferences about the type of person they are, based on their previous individual-level behavior. For example, a marketer’s
behavioral targeting algorithm may identify a consumer who purchases energy-saving light bulbs online as the type of person who is interested in environmental sustainability more generally, and, consequently, that user may be served with an ad for a different environmentally-friendly product or service. As this practice becomes increasingly common, it is important to understand how consumer response to behaviorally targeted advertisements differs from the response to ads using more traditional forms of targeting.

This dissertation investigates the unique impact of behaviorally targeted advertising on consumer outcomes and aims to make several theoretical and practical contributions. First, I provide an early and novel inquiry into the effects of behaviorally targeted ads. I show that this increasingly common form of digital advertising has theoretically interesting psychological consequences compared to advertising using more traditional types of targeting, thus contributing to the growing literature on consumer response to digital marketing tactics (Hoffman and Fodor 2010; Hoffman and Novak 2011; Lambrecht and Tucker 2013; Naylor, Lamberton, and West 2012; Schumann, von Wangenheim, and Groene 2014; Stephen and Galak 2012; Tucker 2014; Yadav and Pavlou 2014). Second, my work contributes to the literature on social labeling (Allen 1982; Kraut 1973; Miller, Brickman, and Bolen 1975; Strenta and DeJong 1981; Tybout and Yalch 1980) by demonstrating that (1) simply receiving an advertisement can cause consumers to recognize that the marketer has labeled them as a particular type of consumer, even when the ad itself contains no explicit labeling information, and (2) these implied social labels can affect self-perceptions and behavior, consistent with self-perception theory (Bem 1972). Third, I contribute to the literature on marketplace
metacognition (Bolton, Bloom, and Cohen 2011; Brown and Krishna 2004; Hamilton and Srivastava 2008; Morales 2005; Wright 2002) by demonstrating that consumers’ beliefs about marketers’ actions (specifically the inferences marketers make about consumers on the basis of their online behavior) can influence consumers’ perceptions of the self. In doing so, I also add to the literature exploring the interplay between identity and consumer behavior (Oyserman 2009; Reed 2004; Reed et al. 2012) by demonstrating that behaviorally targeted advertisements provide consumers with additional information about their identity by providing an external indication that they are behaving in a way that reflects a particular trait or set of traits. I end by discussing how my findings can help marketers understand why behaviorally targeted ads are effective and also shed new light on the current debate about whether marketers should disclose that a given digital ad has been behaviorally targeted.

I report seven empirical studies that test my research propositions. Study 1 is designed to show that behaviorally targeted ads function as implied social labels, and that this prompts different responses to advertisements than to advertisements targeted in more conventional ways (i.e., demographic). Studies 2a and 2b draw on the literature on identity priming to test whether the effects of a behaviorally targeted ad are distinct from the effects of making an existing identity salient. Study 3 investigates the effects of an implied label that is perceived to be undesirable by the consumer (a “negative” label) and how that interacts with consumers’ liking for targeted ads. Study 4 examines whether the self-perception changes resulting from receiving behaviorally targeted advertising extends to behavior that is conceptually related to the focal self-perception in addition to
behaviors related to the advertised product. Studies 5 and 6 investigate the impact of targeting based on its degree of accuracy and in a more ecologically valid setting, respectively.
Chapter 2: Behaviorally Targeted Ads as Implied Social Labels

2.1 Theoretical Development

Behaviorally targeted advertising differs from advertising that uses more traditional targeting (e.g., based on demographic or psychographic variables) in two important ways. First, behaviorally targeted ads are person-specific. With conventional forms of targeting, the same ad is presented to everyone who encounters a particular piece of media. This is obviously true for ads appearing in traditional media outlets, as large audiences watch the same commercial on broadcast television and readers of a particular magazine view the same ad on the back cover. It may also be true in online contexts, where every visitor to a given website sees the same ad if the website does not use behaviorally targeted advertising. With behavioral targeting, however, ads that appear on a webpage are customized to each user that visits the site (i.e., the ads change by person). Consumers can readily identify whether a digital ad has been behaviorally targeted because marketers and websites are increasingly adopting the AdChoices icon, a small blue symbol shown in the upper right hand corner of the ad, to indicate that a given digital ad has been behaviorally targeted (Digital Advertising Alliance 2014).
Second, behaviorally targeted ads are distinct from other forms of advertising because they are based on consumers’ past individual-level behavior. By placing data onto consumers’ hard drives (i.e., cookies), firms are able to collect information about consumers’ viewing and clicking patterns, web searches, purchase histories, and social media use, from both their personal computers and mobile devices (Yan et al. 2009). Advertising networks then create a user profile from this data and deliver ads for products that their software predicts will be appealing to the individual consumer. In contrast, the majority of other marketing communications tend to draw on broad classifications of people using demographic variables like ethnicity (Deshpandé and Stayman 1994), psychographic traits such as values, personality, and lifestyle (Wells 1975), or social identities (e.g., athletes; Forehand and Deshpandé 2001), under the assumption that members of these groups share certain characteristics, preferences, and behaviors. I next discuss how these unique characteristics of behaviorally targeted ads cause them to function as implied social labels.

This research introduces the notion that behaviorally targeted advertisements act as *implied social labels*. I propose that when a consumer knows that an ad has been behaviorally targeted, he or she recognizes that the marketer has made an inference about his or her identity based on his or her past online behavior. The behaviorally targeted ad then functions as an implied social label, prompting consumers to adjust their self-perceptions and behavior to be consistent with the implied label, even in the absence of explicit labeling information about the consumer in the ad copy. Across seven studies, I
demonstrate that behaviorally targeted ads lead consumers to make adjustments to their self-perceptions to match the implied label; these self-perceptions then impact behavior, including purchase intentions for the advertised product and other behaviors related to the implied label (e.g., donating to an environmental charity after receiving an ad for an environmentally friendly product). Further, I demonstrate that these effects on purchase intentions can persist for up to two weeks after initial exposure to a behaviorally targeted ad. Importantly, I find that the effects of behaviorally targeted ads on both self-perceptions and purchase intentions only hold when the label is plausibly connected to consumers’ prior behavior (i.e., when the targeting is at least moderately accurate).

Social Labels, Self-Perceptions, and Behavior

Social labels have generally been defined in the literature as explicit characterizations of individuals based on their behavior, beliefs, or personality (Goffman 1963). Past research has demonstrated that people tend to behave consistently with a variety of explicit social labels (Kraut 1973; Miller et al. 1975; Strenta and DeJong 1981; Tybout and Yalch 1980). For example, Kraut (1973) found that people who were explicitly labeled as “charitable” after they donated to a charity were more likely to contribute to a second charity than people who had also donated but were not labeled. These findings are consistent with self-perception theory (Bem 1972), which proposes that people perceive themselves to have certain qualities as a result of observing their own behavior and act according to the traits they believe they possess. The self-
perception process is most likely to occur when internal cues are weak or uncertain, meaning that people do not have a clear understanding of where they stand on certain traits. The ambiguity in self-judgments prompts people to evaluate their qualities by taking on the position of an external observer and, therein, watch their behavior for insight. Explicit social labels reinforce this tendency to learn about the self and evaluate the implications of one’s behavior by providing an external characterization of the self. In the case of consumers, explicit social labels provide new self-knowledge based on prior choice by highlighting prior behavior and tagging it as indicative of an inner quality.

Although no past research has explored whether simply receiving an ad can act as a social label, a few researchers have explored the effect of explicit social labels contained in advertising copy. In one of these investigations, Allen (1982) found that a commercial containing an explicit social label (i.e., “American consumers are willing participants in solving the energy problem”) was more effective at increasing energy conservation behaviors than a commercial containing a persuasive argument (i.e., “American consumers must be more energy conscious”). He also joins Miller et al. (1975) in suggesting that persuasive statements like “American consumers must be more energy conscious” can serve as implicit social labels, while “American consumers are not energy conscious” would be an explicit social label. Notably, even when a social label is implicit—in that it requires the consumer to fill in a small gap in a message about themselves to complete the label—it still contains explicit descriptive information about the consumer (or his or her group) and a focal behavior. For example, even though an American consumer could perceive an implicit label (“We, as Americans, are not
currently energy conscious”) from the advertising copy, “American consumers must be energy conscious,” such an ad explicitly addresses “American consumers” and overtly suggests that they engage in more “energy conscious” behavior. Thus, past research has explored how the messages within advertising copy can serve as social labels. I seek to extend past research by focusing on a different type of implied social label—one implied through mere receipt of an ad rather than through descriptive information about the ad’s recipients contained in the ad copy.

I propose that when a consumer recognizes that an ad is behaviorally targeted, he or she recognizes that the marketer has made an inference about his or her characteristics based on his or her past online behavior. In other words, I argue that a behaviorally targeted ad can act as an implied social label, which I define as a characterization of the self that is implied to be held by an external agent in the absence of explicit information about the self. The receipt of a behaviorally targeted ad signals to consumers that some information about the self was used to generate the ad. In the absence of an explicit social label within the ad (i.e., most behaviorally targeted ads do not directly state “you are this type of consumer”), the consumer must infer what the ad implies about them. Most directly, receipt of the ad signifies that one is expected to like the featured product. The implications may be broader, however, as receipt of the ad can imply that one is viewed as a specific type of person. When one recognizes an external characterization of one’s identity in this way, I predict that consumers adjust both their self-perceptions and behavior to be consistent with the implied label.
It is important to distinguish between the nature and the effects of an implied social label and the activation of an element of a consumer’s identity. Current work in consumer identity explicitly defines identities as social category labels, with Reed et al. (2012) noting that “a category label becomes an identity once the consumer has begun to incorporate it into his or her sense of who he or she is and has initiated the process to become that kind of person” (p. 312). An identity, then, is a label that the consumer has come to accept about oneself, whether it is a personal identity (e.g., being sophisticated or outdoorsy) or a social identity (e.g., being an American or a parent; Oyserman 2009). Advertisements can prime identities, such as when an ad featuring an image of the Great Wall of China makes a Chinese consumer’s Chinese identity more salient (Forehand, Deshpandé, and Reed 2002).

Unfortunately, little research has clarified the commonalities and distinctions between identity priming and social labeling. It is clear from past research that advertising can successfully execute both processes (Allen 1982; Forehand et al. 2002) and that both processes can increase purchase and behavioral intentions (Allen 1982; Reed 2004). The critical difference between these two constructs is that making an identity salient temporarily heightens the consumer’s internal awareness that he or she has a specific trait or traits while social labeling serves as an external recognition that one has exhibited a pattern of behavior that reflects a specific trait or traits. Behaviorally targeted ads provide the consumer with additional information about the self that comes from an external source: the marketer. Thus, the key distinction between an
advertisement making an identity salient and one that implies a social label lies in whether the information the ad provides about the self is internally or externally focused.

This internal versus external distinction shares some commonality with the literature in judgment and decision making on stated versus revealed preference. Revealed preferences are “revealed” by observing actual choice (vs. simply asking consumers to state their preferences). Both types of preferences provide useful information for marketers (Hensher and Bradley 1993), but revealed preferences are generally considered more reliable in predicting future behavior (Carson et al. 1996). The notion of revealed preferences shares some commonality with that of constructed preferences, which are constructed on the fly as a result of the interaction between the properties of the human decision making system (internal) and the properties of the environment in which a decision is made (external) (Bettman, Luce, and Payne 1998). I propose that the effects of a social label implied by a behaviorally targeted ad are akin to informing a consumer of their revealed preferences (based on past choices that are affected by the external environment), and those of identity priming are akin to reminding a consumer of their stated preferences (generated exclusively from accessing internal information).

Consumers therefore receive additional information about what others (i.e., the marketer) think about them (based on observing their choices and other past behavior) when they receive a behaviorally targeted ad, a process that is distinct from making an identity salient (Reed 2004) because it involves an external indication that one has a trait or set of traits. Thus, in contrast to much of the identity literature, which suggests that
consumers may respond best to identity appeals when they are embedded within the advertising context and serve as unconscious cues (Kirmani 2009; Oyserman 2009), I propose that a central aspect of behaviorally targeted advertising is consumers’ conscious reflection about how and why the marketer is delivering an ad to them. Awareness of behavioral targeting prompts cognition about the basis of the advertisement (“Why am I being delivered this ad?”) and leads consumers to extrapolate from the marketplace norm of being shown ads for products that marketers think they will like (“Because the marketer sees me as someone who will like this product”) to the implied social label (“The marketer thinks I have a particular identity”) and an understanding that this characterization represents information about the self from an external source. Given that consumers have a well-established desire to learn about themselves (Festinger 1954; Wu, Cutright, and Fitzsimons 2011), such cognitions are precipitated by individualized information. Thus, a key distinction between my research and past work on identity in advertising (Bhattacharjee, Berger, and Menon 2014; Forehand et al. 2002; Oyserman 2009) is consumers’ conscious recognition that the marketer has made an inference about them based upon their individual-level behavior.

Such “marketplace metacognition,” or thoughts about the marketplace and the actions of marketers (Wright 2002), has been demonstrated to shape consumer response to a wide variety of marketing variables, including pricing strategies (Hamilton and Srivastava 2008), choice architecture (Brown and Krishna 2004), and persuasion (Bolton et al. 2011; Campbell and Kirmani 2000; Williams, Fitzsimons, and Block 2004). I propose that the effects of behaviorally targeted advertising on self-perceptions and
behavior stem from the marketplace metacognition that the marketer has made an individual-level inference about the consumer and not simply from making an identity salient (an alternative account that I rule out empirically), and I directly measure the extent to which consumers believe the marketer has made an inference about them when receiving a behaviorally targeted ad. Thus, while prior work on identity has shown that making an identity salient can increase the likelihood that consumers engage in identity-consistent behavior (Forehand and Deshpandé 2001; Forehand et al. 2002; Reed 2004), I propose and demonstrate that the effects of behaviorally targeted ads on behavior occur through a different process, one that is dependent on the recognition that the marketer has made an individual-level inference about the consumer based on his or her past behavior, and the adjustments in self-perception that result. My primary hypotheses can therefore be stated as follows:

**H1:** Behaviorally targeted advertisements can act as implied social labels, resulting in adjustments to self-perceptions and behavior consistent with the label.

**H2:** Changes in consumer behavior in response to behaviorally targeted ads are mediated by the recognition that the ad implies information about the consumer based on his or her past behavior and the subsequent self-perception adjustments that result as a function of recognizing this implied label.
In order for consumers to adjust their self-perceptions and behaviors in response to the receipt of a behaviorally targeted ad, they must accept the social label implied by the ad. I propose that acceptance of the label will depend on the accuracy of the targeting—that is, the extent to which the label is plausibly connected to consumers’ past behavior. Prior research on social labeling suggests that two conditions must be met in order for social labels to affect behavior. First, people must engage in behavior that can be used as the basis for self-perception (Bem 1972). This could include filling out a survey about attitudes toward voting (Tybout and Yalch 1980), donating (or not) to a charitable organization (Kraut 1973) or, in the context of behaviorally targeted advertising, engaging in a variety of activities online, from shopping to search. Second, people must receive information from an external source that somehow characterizes this behavior. In the context of my research, this information is the receipt of a behaviorally targeted ad. I propose that the influence of this implied label on consumers’ self-perceptions depends on the extent to which the consumer believes the label accurately reflects his or her past behavior. Specifically, if someone has never expressed any interest in outdoor activities like camping, being labeled as an outdoor enthusiast would be perceived as inconsistent with his or her past actions. In such a situation, consumers would not perceive the label to be generated as a result of their own behavior and, as a result, that label would not be accepted and would therefore not impact their self-perceptions and future actions (Bem 1972; Miller and Turnbull 1986). However, if there is a plausible connection between the label and past behavior, the label is accepted and
consumers adjust self-perceptions and behavior in line with that label.

I therefore predict that when the label implied by a behaviorally targeted advertisement is plausibly connected to the consumer’s prior behavior (i.e., the targeting is at least moderately accurate), consumers perceive that the marketer has labeled them correctly and respond accordingly, altering their self-perceptions and, hence, behavior to be consistent with the identity implied by the ad. In contrast, when the label is unconnected with their prior behavior (i.e., targeting is inaccurate) consumers will not accept the implied label and will not adjust their self-perceptions and behavior. Formally:

**H3:** The effects proposed in hypotheses 1 and 2 only hold when the implied label is plausibly connected to consumers’ prior behavior (i.e., when behavioral targeting is at least moderately accurate).

### 2.2 Studies

#### Study 1

Study 1 was designed to test whether an ad that is purportedly behaviorally targeted acts as an implied social label and whether this implied label results in greater purchase likelihood for the advertised product compared to when the product appears either within an ad that is purportedly demographically targeted or non-targeted.

**Participants and Procedure**

15
One hundred and eighty-eight undergraduate students (47% females; $M_{age} = 21.1$) participated in this study for course credit. At the start of the study session, all participants were asked to indicate their age and gender. They were then directed to the focal study which consisted of two parts. In part 1, everyone was asked to put together a plan for a visit to Atlanta, Georgia as part of a study ostensibly about creation of travel itineraries. Participants browsed the Internet to find a flight, hotel arrangements, restaurant, and activities for the dates listed in the instructions. All participants were given 10 minutes to complete the task and were informed that they could browse the Internet if they finished early, as the computer screen that would move them to the next task would not advance until the allotted 10 minutes had elapsed. The timing was set at 10 minutes to ensure that the majority of participants finished the task, and the lab manager and research assistants confirmed that participants used the extra time to browse the Internet. This procedure was designed to create a “browsing history” that could plausibly be used to generate a behaviorally targeted advertisement in the next part of the study.

Participants were then directed to part 2, described as an “advertisement evaluation” study. I manipulated the type of targeting purportedly being used to deliver the ad to participants using a 3 cell (Type of targeting: behavioral vs. demographic vs. control, non-targeted ad) between-subjects design. In the behaviorally targeted condition, the ad was described as “targeted specifically to you based on your online activity in today’s session, including the websites you looked at while planning your trip to Atlanta
and other websites you may have visited.” In the demographically targeted condition, participants were informed that the advertisement was “targeted specifically to you based on your demographic information, including the gender and age you indicated at the beginning of the survey.” Participants in the control condition were not given any information indicating that the ad was targeted in any way and were simply shown the ad.

Next, all participants were presented with an advertisement for a fictitious restaurant called Eatery 21 (see Appendix A), which advertised “Refreshingly Sophisticated American Classics.” This ad was not matched to the browsing behavior or demographic responses in either of the targeted conditions; this allowed me to test the effects of participants’ perceptions of being targeted while holding the advertisement constant across conditions. After indicating how much they liked the advertisement (1 = not at all, 7 = very much; \( M_{\text{behavioral}} = 3.29 \) vs. \( M_{\text{demographic}} = 3.39 \) vs. \( M_{\text{non-targeted}} = 3.31 \); \( F(2,185) = .08, p = .93 \)), all participants were shown a fictitious Groupon for Eatery 21 (i.e., a deal that offers participants the chance to pre-pay for food at the restaurant for a discounted price) and asked how likely they would be to purchase it (1 = very unlikely, 7 = very likely); see Appendix A. To assess the degree to which participants recognized an implied label, participants responded to the following statements (1 = strongly disagree, 7 = strongly agree): “The advertiser thinks I am the kind of person who would like Eatery 21,” “This advertisement implies something about my tastes,” and “The algorithm that presented me with an advertisement inferred that I have sophisticated food preferences.” These items were collapsed into a single labeling index (\( \alpha = .82, M = 4.26, SD = 1.33 \)). Finally, as a manipulation check, participants rated their agreement (1 = strongly
disagree, 7 = strongly agree) with the statement that, “The ad was matched to information about me provided earlier in the session.”

Results

*Manipulation Check.* An ANOVA on perceptions of whether the ad was matched to the participant’s information revealed a significant effect of condition ($F(2, 185) = 5.87, p < .01, \eta^2 = .06$). Bonferroni-adjusted contrasts revealed that participants in the behaviorally targeted condition ($M = 4.35$) believed that the advertisement was matched to information collected about them during the study session more than participants in the non-targeted condition ($M = 3.50; F(1, 185) = 11.73, p < .001, \eta^2 = .06$) but not more than those in demographic targeting condition ($M = 3.95; F(1, 185) = 2.57, p = .11$). Participants in the demographic targeting condition also believed that the ad was matched to their information to a marginally greater extent than those in the non-targeted condition ($F(1, 185) = 3.27, p = .07, \eta^2 = .02$), indicating that my manipulations were successful.

*Implied Social Labels.* An ANOVA on the labeling index revealed a significant difference between conditions ($F(2, 185) = 7.11, p < .01, \eta^2 = .07$). Bonferroni-adjusted contrasts revealed that participants in the behaviorally targeted condition ($M_{\text{behavioral}} = 4.80$) recognized an implied label to a greater extent than did participants in the demographically targeted ($M_{\text{demographic}} = 4.34; F(1, 185) = 4.02, p < .05, \eta^2 = .02$) and non-targeted conditions ($M_{\text{non-Targeted}} = 3.95; F(1, 185) = 14.21, p < .001, \eta^2 = .07$). Participants
in the demographically targeted condition recognized an implied label marginally more
than those in the non-targeted condition ($F(1, 185) = 3.06, p = .08, \eta^2 = .02$). Thus, as
expected, consumers in the behaviorally targeted ad condition recognized that the ad
implied a social label to a greater extent than those in the other conditions.

*Implied Social Labels Mediate Purchase Intentions.* An ANOVA on purchase
intentions for the restaurant Groupon revealed a significant difference between the
conditions ($F(2, 185) = 3.81, p < .05, \eta^2 = .04$). Bonferroni-corrected contrasts revealed
that participants in the behaviorally targeted ($M = 4.18$) condition were more likely to
purchase the Groupon than participants in the demographically targeted ($M = 3.39; F(1,
185) = 6.90, p < .05, \eta^2 = .04$) and non-targeted conditions ($M = 3.56; F(1, 185) = 4.24, p
< .05, \eta^2 = .02$). There was no difference in willingness to purchase the Groupon between
participants in the demographically targeted and non-targeted conditions ($F(1, 185) = .35,
p = .56$); see figure 1.

To test whether the effect of behavioral targeting on purchase intentions is driven
by recognition of an implied social label, I conducted a mediation analysis using
PROCESS Model 4 (Hayes 2013). The model estimated a significant indirect effect ($b =
.06, SE = .04, 95% CI [.0046, .1719]), indicating that behavioral targeting increases
purchase intentions for the advertised product through the recognition of the implied
social label.

Discussion
The results from study 1 provide initial support for the hypothesis that behaviorally targeted advertisements can act as implied social labels, resulting in adjustments to behavior consistent with the label. Consumers in the behaviorally targeted condition and the demographically targeted condition felt equally that the ad was matched to personal information from earlier in the experimental session (to a significantly greater extent than participants in the control, non-targeted condition). However, participants in the behaviorally targeted condition recognized a label from the marketer as a result of this individual-level information matching to a greater extent than participants in the demographic targeting condition and non-targeting condition, and subsequently demonstrated higher willingness to purchase the advertised product because of its consistency with this implied identity. These results suggest that mere awareness of being targeted does not drive the observed effects on purchase intentions, as this feature was present in the demographically targeted condition; such awareness must be coupled with a behavior-based characterization in order for an ad to function as an implied social label. Demographic targeting, while based on the notion that others in one’s broad demographic group share the same behaviors, does not imply a social label because it is not directly based on one’s own individual-level behavior. The data also show that the effects of behavioral targeting are not due to differences in liking for the advertisement, as consumers liked the ad equally in all conditions.

Unanswered questions about the nature of the label implied by a behaviorally targeted ad remain, however. Does the implied label simply indicate that the consumer is someone who would like the particular brand or product being advertised or does it speak
to something deeper about the consumer’s identity? Study 2A sheds further light on this process by measuring consumers’ self-perceptions.

Study 2A

Study 2 has three primary purposes. First, in order to test the full serial mediation proposed in hypothesis 2, I measure both the extent to which consumers recognize an implied social label when receiving a behaviorally targeted ad (vs. non-behaviorally targeted ad) and their subsequent self-perceptions. Second, I increase the external validity of my work by manipulating awareness of whether the ad is behaviorally targeted using the industry-standard AdChoices icon. Finally, given that activating an identity can lead to identity-consistent behavior, such as buying an identity-consistent product (Reed 2004), I also seek to provide evidence to empirically distinguish the effects of an implied social label stemming from receiving a behaviorally targeted ad from the effects of identity salience. I do so by directly comparing the effects of behaviorally targeted ads to those of making an identity salient. I also collect two behavioral measures: one collected at the time of the main study and one collected 10-19 days later. Simply making an identity salient during the initial study should not produce effects on behavior approximately two weeks later, as identity salience is a temporary state (Forehand et al. 2002; Reed 2004). In contrast, if consumers adjust self-perceptions in response to behaviorally targeted ads, then I would expect to see behavior consistent with these adjusted self-perceptions even after a time delay.
Participants and Procedure

One hundred fifty-four undergraduate students (54% females; \( M_{age} = 20.9 \)) participated in exchange for course credit. The study involved two phases: a behavioral lab session and a follow-up online survey made available to participants 10 days later that remained open for nine days. I separately detail the procedure for these sections below.

*Lab Session.* The behavioral lab study included two parts. In part 1, all participants were instructed to create a personal shopping WishList (i.e., a list of products that they would like to own) composed of items from identity relevant product categories that I provided (e.g., footwear, entertainment media, books, clothes, and sporting goods; Berger and Heath 2007). Participants browsed the Internet to find these items and then pasted URLs of the websites displaying their chosen products into provided text boxes. In part 2 of the lab session, all participants were directed to an “advertisement evaluation” study. The procedure for this task was manipulated between-subjects within a 3 cell design (Condition: behaviorally targeted ad vs. identity salience vs. control, non-targeted ad). Participants in the behaviorally targeted and non-targeted conditions were advanced directly to the ad after completing the WishList task. The ad in the behaviorally targeted condition was purportedly “based on the items you chose for your WishList,” and the ad was presented without any additional information in the non-targeted condition. The perception of behavioral targeting was plausible because participants had been asked to browse a variety of product categories online. The behavioral targeting manipulation also
included the following information:

The advertisement that you view will be behaviorally targeted. Behaviorally targeted ads are advertisements that are displayed to consumers online based on the sites they have visited while browsing the Internet. In this session, the advertisement you see will be based on the websites you visited during the WishList task. Since many consumers are unaware that marketers are using technology to track what they view online, the advertising industry is implementing a new practice. The practice involves the use of the following symbol. [The AdChoices icon shown in Appendix B was then displayed.]

All participants then viewed an ad for a Pebble brand smartwatch; the copy was designed to highlight the product’s distinctiveness and the uniqueness of its users—see Appendix B. Participants in the identity salience condition completed an additional step in the study procedure. They were first, before viewing the ad, asked to write about what being unique means to them, and to write (for at least two minutes) about an event in which they felt unique in order to activate this aspect of their identity (adapted from Reed 2004). Uniqueness was chosen as it is an identity likely to be accepted by the Millennial-aged undergraduate students participating in the study (Zarka 2013). Neither participants in the identity salience condition nor those in the non-targeted condition read the information about behavioral targeting, and the ad in these conditions did not include the AdChoices icon.

After viewing the ad, all participants reported their liking for the advertisement (1 = not at all, 7 = very much; $M_{behavioral} = 3.43$ vs. $M_{identity salience} = 3.69$ vs. $M_{non-targeted} = 3.86$; $F(2, 151) = 1.06, p = .35$) and indicated how likely they would be to purchase the smartwatch (1 = not at all likely, 7 = very likely). To measure self-perceptions of uniqueness (the trait with which I expected those in the behaviorally targeted ad
condition to feel labeled), participants were then asked to complete the twelve-item Consumer Need for Uniqueness Scale (Tian, Bearden, and Hunter 2001; $\alpha = .91$, $M = 2.89$, $SD = .71$). Sample items include: “I actively seek to develop my personal uniqueness by buying special products or brands” and “I often try to find a more interesting version of run-of-the-mill products because I enjoy being original.” Finally, participants completed the same labeling items used in study 1 adapted to a unique product context ($\alpha = .74$, $M = 3.77$, $SD = 1.21$) and the same manipulation check to assess perceptions that the ad was matched to their personal information.

**Follow-up Survey.** Everyone who completed the lab session was invited to participate in a follow-up survey. The cover story indicated that researchers were interested in participants’ memory for the WishList items they selected during the lab session. Thus, everyone was asked to recall as many WishList items as they could and respond to several related filler questions. The real purpose was to assess the extent to which participants reported being “in the market” for the advertised Pebble smartwatch (1 = not at all, 7 = very much). Fifty-eight participants (47% females; $M_{\text{age}} = 20.6$) completed the follow-up survey; these response rates did not vary by condition ($M_{\text{behavioral}} = 34\%, M_{\text{non-targeted}} = 40\%, M_{\text{identity salience}} = 26\%; \chi^2(58) = 1.69, p = .43$).

Results

**Manipulation Check.** An ANOVA on the targeting manipulation check yielded a significant difference between conditions ($F(1, 151) = 8.72, p < .001, \eta^2 = .10$). Tukey-
Kramer contrasts revealed that participants in the behaviorally targeted condition ($M_{\text{behavioral}} = 4.02$) believed that the ad was matched to their information to a greater extent than did participants in either the identity salience ($M_{\text{identity salience}} = 3.08$; $F(1, 151) = 11.06, p < .01, \eta^2 = .07$) or control, non-targeted condition ($M_{\text{non-targeted}} = 2.92$, $F(1, 151) = 14.86, p < .001, \eta^2 = .09$); these latter two conditions did not differ from one another ($F(1, 151) = .30, p = .58$).

**Implied Social Labels.** An ANOVA on the labeling index yielded a significant difference between conditions ($F(2, 151) = 5.37, p < .01, \eta^2 = .07$). Orthogonal contrasts revealed that participants in the behaviorally targeted condition ($M_{\text{behavioral}} = 4.21$) recognized an implied label to a greater extent than did participants in the identity salience ($M_{\text{identity salience}} = 3.50$) and non-targeted conditions ($M_{\text{non-targeted}} = 3.62$, $F(1, 151) = 10.45, p < .01, \eta^2 = .06$); the latter conditions did not differ from one another ($F(1, 151) = .27, p = .60$). Thus, participants recognized that receipt of the ad implied a social label to a greater extent in the behaviorally targeted condition.

**Self-Perceptions.** A one-way ANOVA with participants’ scores on the Consumer Need for Uniqueness scale as the dependent variable revealed a significant difference between conditions ($F(2, 151) = 3.01, p = .05, \eta^2 = .04$). Orthogonal contrasts revealed that participants in the behaviorally targeted condition ($M_{\text{behavioral}} = 3.08$) perceived themselves as desiring unique products to a greater extent than did participants in the identity salience ($M_{\text{identity salience}} = 2.79$) and non-targeted conditions ($M_{\text{non-targeted}} = 2.79$; $F(1, 151) = 6.02, p < .05, \eta^2 = .04$), which did not differ from one another ($F(1, 151) = 0.00, p = .99$); see figure 2.
Implied Social Labels and Self-Perceptions Mediate Purchase Likelihood for Advertised Product. I conducted three mediation analyses to separately test the components of my conceptual model. First, using PROCESS Model 4, I assessed whether condition affected purchase intentions for the advertised product because participants recognized an implied label about their identity; as expected, condition affected purchase intentions for the advertised smartwatch through the labeling index (b = .07, SE = .04, 95% CI [.0102, .1751]). Next, using the same model, I examined whether behavioral targeting affected purchase intentions by increasing self-perceptions of uniqueness. As predicted, the model estimated a significant indirect effect of condition on purchase intentions through higher self-perceptions of consumer uniqueness (b = .10, SE = .05, 95% CI [.0176, .2342]). Finally, I analyzed whether these effects occurred sequentially by conducting a serial mediation analysis using PROCESS Model 6, with the labeling index entered as the primary mediator and self-perceptions of uniqueness entered as the secondary mediator. In support of my hypothesized process, this serial mediation was significant (b = .02, SE = .01, 95% CI [.0037, .0680]), whereas mediation was not present when the order of the mediators was reversed (b = .0054, SE = .0058, 95% CI [-.0004, .0274]).

Effects of Behaviorally Targeted Ads on Behavior after Time Delay. An ANOVA on the extent to which participants reported being in the market for the Pebble smartwatch in the online survey conducted after the initial lab session revealed a marginally significant difference between conditions ($F(2, 55) = 2.63, p = .08$). Orthogonal contrasts revealed that participants in the behaviorally targeted condition
were more likely to be considering purchasing the smartwatch than were participants in the identity salience ($M_{\text{identity salience}} = 2.27$) and non-targeted conditions ($M_{\text{non-targeted}} = 2.52$, $F(1, 55) = 5.17, p < .05, \eta^2 = .09$), which did not differ from one another ($F(1, 55) = .32, p = .57$).

Discussion

The results of study 2 show that consumers recognize an implied social label to a greater extent when receiving a behaviorally targeted ad versus a non-behaviorally targeted ad and demonstrate that this recognition prompts adjustments to self-perceptions that serially mediate behavioral intentions, as proposed in hypothesis 2. Importantly, given that activating an identity can lead to identity-consistent behavior like buying an identity-relevant product (Reed 2004), study 2 also provides empirical evidence that the effects of recognizing the implied label from receipt of a behaviorally targeted ad are distinct from the effects of making an identity salient. I observe the predicted changes in self-perceptions only in the behaviorally targeted ad condition and not in the condition in which the related identity was made salient using a traditional identity salience manipulation (Coleman and Williams 2013; Reed 2004).

I also note that the identity salience manipulation did not produce increased self-perceptions of uniqueness relative to the control, non-targeted ad condition. This is likely due to the fact that the advertisement in all three conditions could be argued to prime the
identity of uniqueness since this identity is referenced in the ad copy. It is only in the behaviorally targeted ad condition, where identity is not just made salient but adjusted upwards due to the implied social label, that significant differences in self-perceptions of uniqueness are observed. Further, the results of my follow-up study demonstrate that this change in self-perceptions impacts related behavior even after a time delay, whereas making an identity salient during the initial study did not produce effects on behavior approximately two weeks later.

Study 2B

Study 2B has two primary purposes. First, in order to test the replicability of the full serial mediation proposed in hypothesis 2, I once again measure both the extent to which consumers recognize an implied social label when receiving a behaviorally targeted ad (vs. non-behaviorally targeted ad) and their subsequent self-perceptions. Second, given that receiving a behaviorally targeted advertisement (vs. non-targeted ad) may activate some sense of being unique because the delivery process in itself has unique elements to it, I use a self-perception orthogonal to behavioral targeting: sophistication. As in study 2A, I collect two behavior measures: one collected at the time of the main study and one collected 7-14 days later.

Participants and Procedure
One hundred and ninety-seven undergraduate students (56% females; \( M_{\text{age}} = 20.7 \)) participated in exchange for course credit. The study involved two phases: a behavioral lab session and a follow-up online survey made available to participants one week later that remained open for seven days. I separately detail the procedure for these phases below.

**Lab Session.** The behavioral lab study included two parts. In part 1, all participants were instructed to create a personal shopping WishList (i.e., a list of products that they would like to own) composed of items from identity relevant product categories that I provided (e.g., footwear, entertainment media, books, clothes, and sporting goods; Berger and Heath 2007). Participants browsed the Internet to find these items and then pasted URLs of the websites displaying their chosen products into provided text boxes. In part 2 of the lab session, all participants were directed to an “advertisement evaluation” study. The procedure for this task was manipulated between-subjects within a 3 cell design (Condition: behaviorally targeted ad vs. identity salience vs. control, non-targeted ad). Participants in all conditions read information about behaviorally targeted ads and how to identify when an ad has been behaviorally targeted using the AdChoices icon (see Appendix B) and then viewed an ad for Movado brand watches; the ad copy was designed to highlight the product’s sophistication (see Appendix C). Sophistication was chosen as my focal trait after a pretest revealed that participants in this population valued it as a positive characteristic—59 participants were asked to respond to the following statement: “If someone were to describe you as sophisticated, would you consider that a negative or positive description of yourself? (1 = very negative, 7 = very positive).”
expected, participants viewed sophistication as significantly more positive than the midpoint of the scale ($M = 5.83, SD = 1.26; t(58) = 11.15, p < .0001$). The ad in the behaviorally targeted condition included the AdChoices icon and was purportedly “based on the websites you visited during the WishList task.” The ad in the other two conditions was presented without this information and did not include the AdChoices icon.

Importantly, before reading the information about behavioral targeting and seeing the ad, participants in the identity salience condition completed an additional step in the study procedure. They were first asked to write about what being sophisticated means to them and to write (for at least two minutes) about an event in which they felt sophisticated in order to activate this aspect of their identity (adapted from Reed 2004).

Recall that my theoretical model proposes that consumers’ response to behaviorally targeted ads is a conscious process involving recognition that the ad being delivered to them is being shown because of a marketer’s inference about their identity. This awareness of being characterized by an external agent is a key distinction between my proposed process and the process that occurs when an identity is made internally salient. Therefore, to ensure that participants correctly understood the nature of the advertisement shown to them, I excluded 50 participants who failed an instructional manipulation check (administered after exposure to the ad but before measuring the dependent variables) by incorrectly identifying the ad they received as behaviorally targeted or not, which depended on the experimental condition to which they were assigned (“Is this ad behaviorally targeted?” [yes/no]), resulting in a sample of 147 (59% females; $M_{age} = 20.6$) for all analyses.
After responding to the instructional manipulation check, all participants then reported their liking for the advertisement (1 = not at all, 7 = very much; $M_{\text{behavioral}} = 4.74$ vs. $M_{\text{identity salience}} = 4.44$ vs. $M_{\text{non-targeted}} = 4.15$; $F(2, 144) = 1.97$, $p = .14$) and indicated how likely they would be to purchase a Movado watch (1 = not at all likely, 7 = very likely). All participants then rated the extent to which they agreed with the following items as a measure of their self-perceptions of their own sophistication (1 = strongly disagree, 7 = strongly agree): “I am a sophisticated consumer,” “I seek out sophisticated versions of most products because I enjoy being refined,” “I would describe myself as a sophisticated consumer,” and “When it comes to the products I buy and the situations in which I use them, I like to cultivate a sense of refinement.” These items were then collapsed into a sophistication index that served as my self-

\[ SHUFHSWLRQPHDVXUH = 86, \quad M = 4.59, \quad SD = 1.27 \]. To assess the degree to which participants recognized an implied label, participants responded to the following statements (1 = strongly disagree, 7 = strongly agree): “The advertiser thinks I am the kind of person who likes sophisticated products,” “I received this ad because the marketer inferred that I have sophisticated taste in products,” and “The advertisement I received was selected for me based on an inference about the type of person I am.” These items were collapsed into a single labeling index (\( \alpha = .88, \quad M = 4.49, \quad SD = 1.51 \)). Finally, participants completed the same manipulation check used in study 1 to assess perceptions that the ad was matched to their personal information.

*Follow-up Survey.* Everyone who completed the lab session was invited to participate in a follow-up online survey one week later. The cover story indicated that
researchers were interested in participants’ memory for the WishList items they selected during the lab session. Thus, everyone was asked to recall as many WishList items as they could and to respond to several related filler questions. The real purpose was to assess the extent to which participants reported being “in the market” for a Movado watch (1 = not at all, 7 = very much). One hundred and eight participants (61% females; \(M_{\text{age}} = 20.7\)) completed the follow-up survey; these response rates varied marginally by condition (\(M_{\text{behavioral}} = 25\%\), \(M_{\text{non-targeted}} = 42\%\), \(M_{\text{identity salience}} = 33\%\); \(\chi^2(2, 147) = 4.77, p = .09\)).

Results

**Manipulation Check.** An ANOVA on the targeting manipulation check yielded a significant difference between conditions \((F(2, 147) = 15.47, p < .0001, \eta^2 = .18)\). Bonferroni-corrected contrasts revealed that participants in the behaviorally targeted condition (\(M_{\text{behavioral}} = 5.00\)) believed that the ad was matched to their information to a greater extent than did participants in either the identity salience (\(M_{\text{identity salience}} = 3.25\); \(F(1, 147) = 22.18, p < .0001, \eta^2 = .13\)) or control, non-targeted condition (\(M_{\text{non-targeted}} = 3.07\); \(F(1, 147) = 28.24, p < .0001, \eta^2 = .17\)); these latter two conditions did not differ from one another (\(F(1, 147) = .38, p = .81\)).

**Implied Social Labels.** An ANOVA on the labeling index yielded a significant difference between conditions \((F(2, 144) = 8.19, p < .001, \eta^2 = .10)\). Bonferroni-adjusted contrasts revealed that participants in the behaviorally targeted condition (\(M_{\text{behavioral}} = \))
recognized an implied label to a greater extent than did participants in the identity salience ($M_{identity \ salience} = 4.37; F(1, 144) = 10.28, p < .01, \eta^2 = .07$) and non-targeted conditions ($M_{non-targeted} = 4.15; F(1, 144) = 15.70, p < .001, \eta^2 = .10$); the latter conditions did not differ from one another ($F(1, 144) = .69, p = .41$). Thus, participants recognized that receipt of the ad implied a social label to a greater extent in the behaviorally targeted condition.

**Self-Perceptions.** An ANOVA with participants’ scores on the sophistication index as the dependent variable revealed a significant difference between conditions ($F(2, 144) = 4.18, p < .05, \eta^2 = .05$). Bonferroni-corrected contrasts revealed that participants in the behaviorally targeted condition ($M_{behavioral} = 5.15$) perceived themselves as consumers with more sophisticated preferences than did participants in the identity salience ($M_{identity \ salience} = 4.54; F(1, 144) = 4.70, p < .05, \eta^2 = .03$) and non-targeted conditions ($M_{non-targeted} = 4.36; F(1, 144) = 8.21, p < .01, \eta^2 = .05$), which did not differ from one another ($F(1, 144) = 0.61, p = .44$); see figure 2.

**Implied Social Labels and Self-Perceptions Mediate Purchase Likelihood for Advertised Product.** I conducted three mediation analyses to separately test the components of my conceptual model. First, using PROCESS Model 4, I assessed whether condition affected purchase intentions for the advertised product because participants recognized an implied label about their identity; as expected, condition affected purchase intentions for the advertised watch through the labeling index ($b = .07, SE = .04, 95\% CI [.0130, .1832])$. Next, using the same model, I examined whether condition affected purchase intentions by increasing self-perceptions of sophistication. As predicted, the
model estimated a significant indirect effect of condition on purchase intentions through higher self-perceptions of sophistication (b = .04, SE = .03, 95% CI [.0006, .1295]). Finally, I analyzed whether these effects occurred sequentially by conducting a serial mediation analysis using PROCESS Model 6, with the labeling index entered as the primary mediator and self-perceptions of sophistication entered as the secondary mediator. In support of my hypothesized process, this serial mediation was significant (b = .01, SE = .01, 95% CI [.0003, .0560]), whereas mediation was not present when the order of the mediators was reversed (b = .0123, SE = .0115, 95% CI [-.0000, .0501]).

Effects of Behaviorally Targeted Ads on Purchase Intentions after a Time Delay.

An ANOVA on the extent to which participants reported being in the market for a Movado watch in the online survey conducted after the initial lab session revealed a significant difference between conditions ($F(2, 105) = 3.05, p = .05$). Bonferroni-corrected contrasts revealed that participants in the behaviorally targeted condition ($M_{behavioral} = 3.07$) were more likely to be “in the market” for a Movado watch than were participants in the identity salience ($M_{identity\ salience} = 2.28; F(1, 105) = 5.41, p < .05, \eta^2 = .05$) and non-targeted conditions ($M_{non-targeted} = 2.40; F(1, 105) = 4.24, p = .08, \eta^2 = .04$), which did not differ from one another ($F(1, 105) = .17, p = .69$). A serial mediation analysis with the labeling index entered as the primary mediator and self-perceptions of sophistication entered as the secondary mediator revealed significant mediation of these purchase intentions (b = .01, SE = .01, 95% CI [.0003, .0618]).

Discussion
The results of study 2B show that consumers recognize an implied social label to a greater extent when receiving a behaviorally targeted ad versus a non-behaviorally targeted ad and demonstrate that this recognition prompts adjustments to self-perceptions that serially mediate behavioral intentions, as proposed in hypothesis 2. Importantly, given that activating an identity can lead to identity-consistent behavior like buying an identity-relevant product (Reed 2004), study 2 also provides empirical evidence that the effects of recognizing the implied label from receipt of a behaviorally targeted ad are distinct from the effects of making an identity salient. I observe the predicted changes in self-perceptions only in the behaviorally targeted ad condition and not in the condition in which the related identity was made salient using a traditional identity salience manipulation (Coleman and Williams 2013; Reed 2004).

I also note that the identity salience manipulation did not produce increased self-perceptions of sophistication relative to the control, non-targeted ad condition. I believe that this is because an identity salience prime serves as an internal reminder of one’s level of sophistication but does not lead to a change in one’s perceptions of one’s sophistication. It is only when an implied social label introduces information about how an external agent views one’s level of sophistication that self-perceptions change (in this case, being adjusted upwards as a result of a marketer’s characterization that one is sophisticated). This explanation for my results is consistent with my finding that behaviorally targeted ads result in higher purchase intentions for the advertised product after a one to two week time delay whereas making a relevant identity temporarily salient
does not. The changes in self-perception brought about by an implied social label from receiving a targeted ad appear to be relatively persistent, at least over short time delays, driving increased interest in the advertised product. Since identity salience manipulations make aspects of one’s identity temporarily more salient but do not change one’s identity, I would not expect identity salience primes to produce changes in purchase intentions after a time delay. The results of study 2 therefore support my proposition that the effect of receiving a behaviorally targeted ad is distinct from that of identity salience manipulations, but they do not necessarily imply that targeted ads are more impactful under all circumstances. I speculate on the conditions that strengthen and weaken each of these processes in the General Discussion.

Study 3

One of the purposes of study 3 is to test a boundary condition for the effects of behaviorally targeted ads on self-perceptions and behavior. I expect that participants will be more likely to accept the inferred social label from a behaviorally targeted ad when that label carries positive connotations about the consumer (i.e., that they have sophisticated restaurant preferences) than when it carries negative connotations (i.e., that they have unsophisticated restaurant preferences). This prediction is consistent with previous literature on explicit social labeling (e.g., Allen 1982; Kraut 1973) suggesting that negative social labels are not as effective at changing behaviors as positive social labels, as well as with people’s general desire to accept positive information about
themselves and to maintain positive self-views (Baumeister 1998; John and Robins 1994). I therefore manipulate the label consumers can infer from the behaviorally targeted ad in study 3 to be either positive or negative.

Additionally, despite the unique qualities of behaviorally targeted ads that enable them to act as social labels (i.e., personalization based on past individual-level behavior), they are still advertisements, and their effects therefore likely depend on attitude toward the ad and advertising in general (Mackenzie et al. 1986; Muehling 1987). People who dislike behaviorally targeted ads in general would be expected to dislike a particular behaviorally targeted ad based on nearly all of the antecedents of attitude toward an ad (e.g., ad credibility, ad perceptions, attitude toward advertiser, and attitude toward advertising in general; Mackenzie and Lutz 1989; Lutz 1985). This dislike of the ad would then reduce the likelihood that the recipient would accept the advertisement’s messages. Consistent with the literature on source credibility, this research also suggests that consumers who like behaviorally targeted ads in general (i.e., have generally positive attitudes toward this type of advertising) are more likely to accept the labels they infer from behaviorally targeted ads while those who dislike behaviorally targeted ads are more likely to reject these labels, potentially reacting against them.

I therefore predict that when consumers like behaviorally targeted ads, they trust them as valid sources of information and respond accordingly, altering their self-perceptions and consumer behavior to be consistent with the implications of the ad. In contrast, consumers who do not like behaviorally targeted ads will not accept the inferred label and may even reject it. Consistent with research showing that consumers may react
against even positive self-relevant information (Wu et al. 2011), I propose that consumers with extreme levels of dislike for behaviorally targeted ads may actually move their self-perceptions and behavior away from the label, consistent with research on reactance against marketing appeals (Bhattacharjee et al. 2014; Clee and Wicklund 1980; Fitzsimons and Lehmann 2004; White et al. 2008). Therefore, I predict that the effect proposed in hypothesis 1 depends on the extent to which consumers like behaviorally targeted advertisements.

Another goal of study 3 was to test my hypothesis that changes in self-perceptions mediate changes in behavior using purchase intentions for the advertised product as the dependent variable (rather than a trait-related behavior distinct from the advertised product like that used than in study 2). I also sought to increase the external validity of my work in two ways: (1) by using targeting purportedly based on the consumer’s browsing history (as opposed to purchase history), which is common in online behavioral targeting and (2) by manipulating awareness of whether the ad is behaviorally targeted using the industry-standard AdChoices icon.

Method

Two hundred and thirty-four undergraduate students (117 females; \( M_{\text{age}} = 21.3, \) \( \text{SD}_{\text{age}} = 2.44 \)) participated in this study for course credit. The study employed a 2 (Advertised restaurant: sophisticated vs. unsophisticated) x 2 (Ad identified as behaviorally targeted: yes vs. no) x liking for behaviorally targeted ads (LBTA) between-
subjects design. In the first part of the study, participants were instructed to put together a plan for a visit to Atlanta, Georgia as part of a study ostensibly on how people create travel itineraries. They were asked to do so by browsing the Internet to find a flight, hotel arrangements, restaurant, and activities to do while in town on the dates listed in the instructions. All participants were given 10 minutes to complete the task and were told that they could browse the Internet if they finished early, as the computer screen that would move them to the next study task would not advance until the allotted 10 minutes had elapsed. The timing was set at 10 minutes to ensure that the majority of participants would finish the task, and the experimenters confirmed that participants used the extra time to browse the Internet. The task was designed to create a “browsing history” which could plausibly form the basis of a behaviorally targeted advertisement in the next part of the study.

When the 10 minutes were up, all participants were informed that, for the next task, they would be asked to view an advertisement and respond to questions about it. Those in the behaviorally targeted condition were provided with an example of the AdChoices icon and the following description of behavioral targeting:

Behaviorally targeted ads are advertisements that are displayed to consumers online based on the sites they have visited while browsing the Internet. Since many consumers are unaware that marketers are using technology to track what they view online, the advertising industry is implementing a new practice. This practice involves the use of the following symbol.

Further, participants were told that “the advertisement will be targeted specifically to you based on your online activities in today’s session, including the websites you
looked at while planning your trip to Atlanta and other websites you may have visited.”

The ad they were shown featured the AdChoices icon. Participants in the non-behaviorally targeted condition were not given a description of behavioral targeting and the ad they were shown did not contain this icon. All participants viewed an advertisement for a fictitious restaurant called Eatery 21 (see appendix E). As in previous studies, the ad was not actually behaviorally targeted in any conditions; it was merely the belief that the ad was behaviorally targeted that varied. In the sophisticated condition, the copy read “Refreshingly Sophisticated American Classics,” whereas the copy in the unsophisticated condition read “Refreshingly Unsophisticated American Classics.”

Participants were then asked to respond to the following statement on a seven point scale (1 = “strongly disagree,” 7 = “strongly agree”): “I enjoy upscale dining.” This dependent variable was designed to increase the generalizability of my findings by capturing a more specific self-perception directly related to the advertisement (vs. the more general trait assessed in study 2).

On the next screen, each participant was then shown a Groupon for Eatery 21 (i.e., a deal that offers participants the chance to pre-pay for food at the restaurant for a discounted price) and asked how likely they would be to purchase it on a seven-point scale (1 = “Very unlikely,” 7 = “Very likely”). This served as my measure of purchase intentions for the advertised restaurant. Participants used the same scale to create a LBTA measure (“I like ads tailored specifically to me”), as well as two manipulation check items: “The ad was matched to my browsing history from earlier in today’s session,” and “Eatery 21 is a sophisticated restaurant.”
Pretest

One hundred and sixteen undergraduate students completed a pretest to ensure that sophistication was generally seen as a positive trait and lack of sophistication was seen as negative. Each participant answered a single question as a filler task for an unrelated study: “If someone were to describe you as (un)sophisticated, would you consider that a negative or positive description of yourself” (1 = “very negative”, 7 = “very positive”). As expected, “sophisticated” was rated as a significantly more positive ($M = 5.83, SD = 1.26$) descriptor than “unsophisticated” ($M = 2.16, SD = 1.25$; $t(114) = -15.74, p < .0001$). The two attributes were both significantly different from the midpoint of the scale ($t$s $> ±11.12, ps < .0001$) and were not significantly different in distance from the midpoint of the scale from each other ($t(114) = .05, p = .96$).

Results

Manipulation checks. A 2 (Advertised restaurant: sophisticated vs. unsophisticated) x 2 (Ad identified as behaviorally targeted: yes vs. no) ANOVA revealed that participants believed the ad was targeted to a greater extent in the behaviorally targeted than the non-behaviorally targeted condition ($M_{Behaviorally \ Targeted} = 4.49, M_{Non-behaviorally \ Targeted} = 3.57; F(1,230) = 19.46, p < .0001, d = .58$). There was not a main effect of advertised restaurant type on this measure ($F(1,230) = 1.68, p = .20$).
There was, however, a significant interactive effect of these factors \( (F(1,230) = 4.23, p < .05, d = .27) \), such that when the advertisement featured a sophisticated product, participants in the behaviorally targeted condition were more likely to believe that the ad was matched to their browsing history \( (F(1,117) = 21.53, p < .0001, d = .86) \). When the advertised product was unsophisticated, participants in the behaviorally targeted and non-targeted conditions differed only marginally in the extent to which they believed the ad to be targeted \( (F(1,113) = 2.70, p = .10) \). This is consistent with my expectation that consumers reject negative inferred labels and that one way to do so is to discount the source. Using the same predictors in another ANOVA with perceptions of how sophisticated the restaurant was as the dependent variable revealed that participants who received the ad portraying Eatery 21 as sophisticated rated it as more sophisticated than did those seeing the ad portraying Eatery 21 as unsophisticated \( (M_{\text{Sophisticated}} = 5.19, M_{\text{Unsophisticated}} = 4.77; F(1,230) = 6.29, p < .05, d = .33) \). The targeting manipulation did not significantly affect perceptions of restaurant sophistication \( (F(1,230) = .96, p = .33) \), and there was no interactive effect of these factors on perceptions of restaurant sophistication \( (F(1,230) = .21, p = .65) \).

**Self-Perceptions.** I regressed the self-perception measure on type of restaurant (sophisticated vs. unsophisticated), whether the ad was labeled as behaviorally targeted (yes vs. no), LBTA, and the interactions of these variables. This analysis yielded a main effect of type of restaurant \( (F(1,226) = 10.58, p < .01, d = .43) \), such that participants receiving the unsophisticated restaurant ad reported greater enjoyment of upscale dining, and a main effect of LBTA \( (F(1,226) = 11.12, p < .01, d = .44) \), such that participants
who like behaviorally targeted ads reported more enjoyment of upscale dining. The interactions between targeting and type of restaurant \((F(1,226) = 3.37, p = .07, d = .24)\) and between LBTA and type of restaurant \((F(1,193) = 9.90, p < .01, d = .42)\) were also marginally significant or significant. Most importantly, as in study 2, the predicted interaction of behavioral targeting condition, restaurant type, and LBTA was significant \((F(1,226) = 4.93, p < .05, d = .30)\). All other main effects and interactions were non-significant (all \(F \leq .06, p > .80, d \leq .03\)). In order to examine the nature of the three-way interaction, I ran regressions of dining taste self-perceptions with LBTA, restaurant sophistication, and the interaction of these variables as predictor variables within the behaviorally targeted and non-behaviorally targeted restaurant conditions separately.

As expected, the results revealed a significant interaction between restaurant type and LBTA in the behaviorally targeted condition \((F(1,114) = 17.41, p < .0001, d = .78)\) but not in the non-behaviorally targeted condition \((F(1,112) = .36, p = .55)\). Follow-up analyses in the behaviorally targeted condition revealed that, consistent with prior studies, LBTA had a significant impact on self-perceptions when the restaurant was advertised as sophisticated and hence the inferred label was positive \((F(1,58) = 24.41, p < .0001, d = 1.30)\), such that those who like behaviorally targeted ads saw themselves as enjoying upscale dining significantly more than participants who do not like behaviorally targeted ads. When the restaurant was advertised as unsophisticated (and thus the inferred label was negative), LBTA did not affect self-perceptions \((F(1,56) = .96, p = .33)\).

*Self-Perceptions Mediate Purchase Intentions.* To test my hypothesis that changes in self-perception mediate changes in behavior in response to a behaviorally targeted ad, I
conducted a bias-corrected analysis using PROCESS Model 7 (Hayes 2013) within the behaviorally targeted condition using restaurant type, LBTA, and their interactions as predictors of self-perceptions of upscale dining enjoyment, which were in turn used to predict purchase likelihood for the Groupon. When the restaurant was advertised as sophisticated, self-perceptions of upscale dining enjoyment significantly mediated willingness to purchase the Groupon ($\beta = .13$, 95% CI (.0529 to .2438)). This mediation was not significant when the restaurant was advertised as unsophisticated ($\beta = -.0024$, 95% CI (-.0831 to .0813)).

Discussion

The results of study 3 replicate prior results by showing that ads labeled as behaviorally targeted can affect consumer self-perceptions and behavior. I replicate prior results by finding that altered self-perceptions drive changes in behavior or behavioral intentions, as predicted in hypotheses 1 and 2, and that the effect of behaviorally targeted ads on behavior is moderated by liking for behavioral targeting in general, as predicted. These results support my theory that behavioral targeting can act as an inferred social label. This study also generalizes previous results to behavioral targeting that is based on online browsing (vs. purchase) behavior and that is indicated using the industry standard AdChoices icon. Finally, study 3 also documents an important boundary condition for the impact of behaviorally targeted ads: Consumers appear to only accept inferred social labels from behaviorally targeted ads when the label they can infer from the ad is positive.
Study 4

In study 4 I examine whether receiving a behaviorally targeted ad for an environmentally-friendly, “green” product causes consumers to adjust their self-perceptions of their own environmental values, which may then affect their subsequent donation behavior for an environmental charity. I also include an additional control condition with an ad that has ostensibly been behaviorally targeted but that does not imply a label that is diagnostic of the self-perceptions and behavior I measure.

Participants and Procedure

Undergraduate students (n = 178, 48% females, \( M_{\text{age}} = 20.8 \)) participated in the study for course credit and were randomly assigned across conditions in a 2 (Ad identified as behaviorally targeted: yes vs. no) x 2 (Product: environmentally-friendly vs. control) between-subjects design. In part one of the study, participants completed a simulated shopping task in which they were asked to choose one product from a set of four options from eight different product categories (e.g., light bulbs, laundry detergent—see Appendix D). Five of these choice sets contained options that a pretest (n = 45 from same population as the main study) indicated were perceived as relatively environmentally-friendly. Once participants completed the initial shopping task, they
were directed to an “advertisement evaluation” study.

In this purportedly unrelated study, participants were shown an advertisement for a Houd brand wooden acoustic speaker. I manipulated the advertisement copy to either highlight the speaker’s environmentally friendly attributes or not (see Appendix E). In the environmentally-friendly condition, the speaker was advertised as a “Green, energy-free speaker crafted from sustainably sourced Colombian wood,” whereas in the control condition it was described as a “sleek, powerful speaker crafted from the hollow body of Colombian wood.” I also manipulated whether the ad was identified as behaviorally targeted. In the behaviorally targeted condition, participants were informed that “Our software will customize an advertisement for you based on your responses from the shopping task you completed earlier,” and were then presented with an ad including the AdChoices icon. In the non-targeted condition, participants were directed to an ad that did not include the AdChoices icon and was not preceded by any information about software matching the ad to their choices. Participants then indicated their liking for the advertisement (1 = not at all, 7 = a lot) and purchase likelihood for the speaker (1 = very unlikely, 7 = very likely).

After viewing the ad, all participants completed the six-item Green Consumption Values scale (Haws, Winterich, and Naylor 2014). This scale assesses consumers’ tendency to express the value of environmental protection through purchases and consumption behaviors by measuring their agreement (on a seven-point scale) with statements like, “It is important to me that the products I use do not harm the environment.” The six items were averaged to form an overall Green Consumption
Values score ($\alpha = .92, M = 4.37, SD = 1.15$), which serves as my measure of self-perceptions. As a check of my manipulations, participants completed the same item assessing whether their information was used to deliver an ad to them as in prior studies and rated their agreement that Houd speakers are an eco-friendly product (1 = strongly disagree, 7 = strongly agree). As in previous studies, participants’ liking for the ad did not differ across conditions, as there was neither a main effect of targeting ($M_{behavioral} = 4.15, M_{non-targeted} = 4.16; F(1, 174) = .01, p = .94$) nor product positioning ($M_{environmentally-friendly} = 4.21, M_{control} = 4.09; F(1, 174) = .27, p = .60$), and no interactive effect ($F(1, 174) = .36, p = .55$) of these factors. Finally, everyone completed the following items assessing the extent to which they recognized an implied label of environmental-friendliness ($\alpha = .91, M = 4.04, SD = 1.47$): “The advertiser thinks I am the kind of person who likes environmentally friendly products,” “The advertisement was selected for me based on an inference about the type of person I am,” and “The algorithm that presented me with an advertisement inferred that I have environmentally friendly preferences.”

All participants then proceeded to an ostensibly unrelated survey which informed them that the committee in charge of the behavioral lab “has decided to feature a different charity each month during lab studies,” and that the current “Charity of the Month” was the Rainforest Alliance, an environmental charity focused on rainforest protection. Everyone was given information about the mission of the Rainforest Alliance and was then directed to a new screen which displayed the following:

“All participants in today's study will automatically be entered into a drawing to receive $10.00. Five winners will be randomly chosen from
participants in this study. If you are selected as one of the winners, you may choose to donate some of the winnings to the Rainforest Alliance (http://www.rainforest-alliance.org/). The rest will be given to you in cash. The researchers will match any donation that you make to the charity, so you could, for example, keep $5 of your winnings and cause $10 in rainforest-protecting donations.”

Participants then indicated what they would prefer to do if they were selected as a winner of the raffle (“have all of the winnings given to you in cash” or “make a donation to the Rainforest Alliance”) and, if they selected “make a donation,” they were asked to specify how much money they wished to donate on a sliding scale from $0 to $10. Participants who declined to donate were recorded as donating $0, and these responses were combined with those who chose to donate to form my donation amount measure. Winners were randomly selected and the prize money was distributed to participants and the charity.

Results

*Manipulation Checks.* A 2 (Ad identified as behaviorally targeted: yes vs. no) x 2 (Advertised product: environmentally-friendly vs. control) ANOVA on the manipulation check for how “eco-friendly” the advertised speaker was revealed only a main effect of product positioning, such that participants viewed the speaker as more “eco-friendly” in the environmentally-friendly positioning condition ($M_{\text{environmentally-friendly}} = 4.97$, $M_{\text{control}} = 3.79$; $F(1, 174) = 24.68$, $p < .0001$, $\eta^2 = .12$), indicating that this manipulation was successful. The same ANOVA on the targeting manipulation check item revealed only a
main effect of targeting ($M_{behavioral} = 4.37, M_{non-targeted} = 3.46; F(1, 174) = 14.37, p < .001, \eta^2 = .08$).

*Implied Social Labels.* An ANOVA on the labeling index revealed that participants recognized an implied green label to a greater extent in the behaviorally targeted condition ($M_{behavioral} = 4.35, M_{non-targeted} = 3.76; F(1, 174) = 7.98, p < .01, \eta^2 = .04$) and when the product was positioned as environmentally-friendly ($M_{environmentally-friendly} = 4.48, M_{control} = 3.64; F(1, 174) = 15.96, p < .0001, \eta^2 = .16$). There was no significant interactive effect of these factors ($F(1, 174) = .31, p = .58$).

*Self-Perceptions.* A two-way ANOVA on the Green Consumption Values Scale yielded neither a main effect of behavioral targeting ($M_{behavioral} = 4.47, M_{non-targeted} = 4.30; F(1, 174) = .90, p = .34$) nor a main effect of product positioning ($M_{environmentally-friendly} = 4.44, M_{control} = 4.33; F(1, 174) = .38, p = .54$). However, as expected, a significant interaction qualified these results ($F(1, 174) = 4.89, p < .05, \eta^2 = .03$). Simple effects analyses revealed that, when the speaker was advertised as environmentally-friendly, behavioral targeting had a significant positive effect on consumers’ self-perceptions of greenness ($M_{behavioral} = 4.71, M_{non-targeted} = 4.17; F(1, 174) = 4.88, p < .05, \eta^2 = .06$); see figure 3. In contrast, when the speaker was not positioned as environmentally-friendly, there was no difference in self-perceptions of greenness as a function of behavioral targeting ($M_{behavioral} = 4.22, M_{non-targeted} = 4.44; F(1, 174) = .82, p = .37$). Additionally, the effect of behavioral targeting on green consumption values was marginally higher in the environmentally-friendly positioning condition (vs. the control positioning condition) ($F(1, 174) = 3.14, p = .08, \eta^2 = .02$).
to test each of the components of my conceptual model, I conducted several mediation analyses. First, using PROCESS Model 7, I tested whether targeting would affect purchase intentions for the advertised speakers through the labeling index, but only when the speakers were positioned as environmentally-friendly. As expected, the effect of targeting on willingness to purchase the speakers was mediated by the labeling index in the environmentally-friendly condition (b = .09, SE = .05, 95% CI [.0179, .2027]) but not in the control condition (b = .06, SE = .04, 95% CI [-.0034, .1722]). Next, I used the same model to test whether behavioral targeting affected purchase intentions by boosting participants’ self-perceptions of greenness, but only in the environmentally-friendly positioning condition. Indeed, the analyses revealed that self-perceptions of greenness significantly mediated the effect of behavioral targeting on purchase intentions when the speaker was positioned as environmentally-friendly (b = .14, SE = .06, 95% CI [.0396, .2932]) but not in the control positioning condition (b = -.06, SE = .07, 95% CI [-.2011, .0682]).

Finally, I sought to identify whether the effect of behavioral targeting on purchase intentions was driven by serial mediation through the labeling index and self-perceptions, as in study 2. To test this proposition, I conducted a serial mediation analysis using PROCESS Model 6 with the labeling index as the primary mediator and self-perceptions as the secondary mediator. As expected, behavioral targeting affected purchase intentions through recognition of being labeled and the resultant self-perceptions of greenness (b =
Implied Social Labels and Self-Perceptions Mediate Donation Behavior. To analyze the effects of behavioral targeting on donation behavior, I followed a similar procedure as with purchase intentions. First, using PROCESS Model 7, I tested whether behavioral targeting affected donation amounts to the Rainforest Alliance through the labeling index, but only when the advertised product was positioned as environmentally-friendly. As expected, the effect of behavioral targeting on donation amount was mediated by the labeling index in the environmentally-friendly condition (b = .17, SE = .12, 95% CI [.0079, .4907]) but not in the control condition (b = .11, SE = .09, 95% CI [-.0142, .3684]). Next, I used the same model to test whether behavioral targeting affected donation amount by boosting participants’ self-perceptions of greenness, but only in the environmentally-friendly positioning condition. Indeed, the analyses revealed that self-perceptions significantly mediated the effect of behavioral targeting on donation amount when the speaker was positioned as environmentally-friendly (b = .25, SE = .12, 95% CI [.0685, .5482]) but not in the control condition (b = -.10, SE = .13, 95% CI [-.4455, .0980]). Finally, I also sought to identify whether the effect of targeting on donation amount was driven by serial mediation through the labeling index and self-perceptions, just as it was for purchase intentions for the advertised speaker. I conducted serial mediation analysis using PROCESS Model 6 with the labeling index as the primary mediator and self-perceptions as the secondary mediator. As was true with purchase intentions for the speaker, behavioral targeting affected donation amounts through
recognition of being labeled and the resultant self-perceptions of greenness (b = .06, SE = .04, 95% CI [.0132, .1966]), and this effect was not present when the order of the mediators was reversed (b = .0046, SE = .02, 95% CI [-.0297, .0607]).

Discussion

The results of study 3 replicate previous results by showing that ads identified as behaviorally targeted can affect consumer self-perceptions and, hence, behavior. Specifically, consumers receiving a behaviorally targeted ad for an environmentally-friendly, “green” product viewed themselves as possessing stronger green consumption values. These increased self-perceptions of greenness mediated their willingness to purchase the advertised product and the amount they wished to donate to an environmental charity. This effect did not occur within the control condition in which the ad had purportedly been behaviorally targeted, but which featured a product positioning that did not imply a label diagnostic of green consumption values or pro-environmental behavior. Although I designed this study to demonstrate that not all behaviorally targeted ads result in adjustments to self-perceptions by including a condition in which a behaviorally targeted ad did not communicate a clear trait label, it is still possible that the ad in which the speaker was not positioned as environmentally friendly implied a different trait label to some participants, albeit not one captured by my measures of self-perceptions of greenness. However, the variance for specific item ratings was high, as the midpoint of the seven-point scale (1 = not at all green, 7 = very green) fell within one
standard deviation of the mean in 90% of the options. As a result, these perceptual differences allowed for a plausible manipulation of behavioral targeting based on prior choices but did not provide enough differentiation to test my hypothesis about the important role of accuracy on the effects of behaviorally targeted ads. I return to this issue in study 4, where I use choice sets with options that are clearly differentiable on the relevant trait in order to directly test hypothesis 3.

Study 5

The primary purpose of study 5 is to test hypothesis 3 by exploring whether acceptance of an implied social label (and subsequent adjustments to self-perceptions and behavior) depends on the accuracy of the behavioral targeting—that is, the extent to which the label is plausibly connected to consumers’ past behavior.

Participants and Procedure

Two hundred and sixty-nine adults (46% females, $M_{\text{age}} = 34.9$) were recruited on MTurk (Goodman, Cryder, and Cheema 2013; Paolacci, Chandler, and Ipeirotis 2010) and were paid for their participation in this study. In the first part of the study, participants were asked to engage in a shopping task. They were presented with 20 binary choice sets from a variety of product categories (e.g., boots, blankets; see Appendix F), ten of which featured a choice between an item associated with outdoor activities like
camping and hiking and an item not associated with the outdoors (e.g., hiking boots vs. fashion boots). A pretest (n = 49 undergraduate students) confirmed that the items significantly differed in how outdoors-related they were perceived to be (see Appendix F for details). This allowed me to create a scale from 0-10 for the number of outdoors-related products each participant selected ($M = 5.90$, $SD = 2.17$). The purpose of this task was not only to collect data to make the behavioral targeting manipulation plausible, as in prior studies, but also to measure participants’ a priori interest in the outdoors.

All participants were then presented with an advertisement for hot chocolate. The hot chocolate (“A comforting, creamy cup of hot chocolate from a premier chocolatier”) was manipulated to be positioned as appropriate for enjoying indoors (“Perfect for the great indoors”) or outdoors (“Perfect for the great outdoors;” see Appendix G). As in prior studies, the ad was identified as behaviorally targeted or not. In the behaviorally targeted condition, participants read the following: “The advertisement you view will be behaviorally targeted. In this session, the advertisement you see will be based on the choices you made in the previous task.” In the non-targeted condition, participants were immediately directed to the ad without reading any additional information. Thus, I utilized a 2 (Ad identified as behaviorally targeted: yes vs. no) x 2 (Hot chocolate positioning: outdoors vs. indoors) between-subjects design. Since participants were randomly assigned to an ad, some participants with very low a priori interest in the outdoors were shown an outdoors positioned ad and vice versa. I was therefore able to create conditions in which participants received either accurate or inaccurate behaviorally targeted ads. I elaborate on this element of the study design in the results section.
After viewing their assigned ad, all participants were then asked to rate how likely they would be to purchase the hot chocolate (1 = very unlikely, 7 = very likely) and to rate their liking for the ad (1 = not at all, 7 = very much). An ANOVA on liking for the ad revealed only a main effect of product positioning, such that participants liked the ad better when the hot chocolate was positioned for the indoors ($M_{\text{outdoors}} = 4.85, M_{\text{indoors}} = 5.25, F(1, 265) = 5.91, p < .05, \eta^2 = .02$). A marginal interaction qualified the results ($F(1, 265) = 2.75, p = .10, \eta^2 = .01$). Simple effects analysis revealed that when the hot chocolate was positioned for the outdoors, participants liked the ad marginally more when it was identified as behaviorally targeted ($M_{\text{behavioral}} = 5.07, M_{\text{non-targeted}} = 4.63, F(1, 265) = 3.57, p = .06, \eta^2 = .03$); there was no difference in liking for the ad as a result of behavioral targeting ($M_{\text{behavioral}} = 5.20, M_{\text{non-targeted}} = 5.30, F(1, 265) = .19, p = .66$) when the hot chocolate was positioned for the indoors.

After viewing the ad and rating their purchase intention for the advertised hot chocolate, all participants then rated the extent to which they agreed with the following items as a measure of their self-perceptions of their own outdoorsiness (1 = strongly disagree, 7 = strongly agree): “Camping and hiking are my idea of a good time,” “I like to explore nature whenever possible,” “I am someone who chooses products that are suitable for an outdoorsy lifestyle,” and “I am an outdoorsy person.” These items were collapsed into an outdoorsiness index that served as my measure of self-perceptions (α = .90, $M = 5.09, SD = 1.67$). Everyone then completed the labeling measures from study 1 (adapted for an outdoorsy product context; α = .81, $M = 4.57, SD = 1.53$) and the same manipulation check used in prior studies to assess perceptions of whether the
advertisement was believed to be matched to the information they had provided during the shopping task. Finally, at the end of the study, participants were shown a real Groupon for a portable solar charger designed for outdoor use and asked to indicate how likely they were to purchase it (1 = not at all likely, 7 = very likely). Thus, I assessed purchase likelihoods for two different products that vary in how associated they are with the focal self-perception of outdoorsiness: hot chocolate (which can be positioned as suitable for both indoor and outdoor consumption) and the solar charger (which is intended for outdoor use only).

Results

*Manipulation Check.* A 2 (Ad identified as behaviorally targeted: yes vs. no) x 2 (Advertised product positioning: indoors vs. outdoors) ANOVA on the targeting manipulation check revealed a main effect of targeting condition (M_{behavioral} = 5.31, M_{non-targeted} = 4.24, F(1, 263) = 26.64, p < .0001, \eta^2 = .09) and product positioning (M_{outdoors} = 4.99, M_{indoors} = 4.57, F(1, 263) = 4.06, p < .05, \eta^2 = .02), such that participants felt that the hot chocolate ad was targeted to them based on their choices to a greater extent in the behaviorally targeted condition and when they saw an ad featuring the outdoors positioning. These results were not qualified by a significant interaction (F(1, 263) = .73, p = .39).

*Implied Social Labels.* To identify the interactive effect of accuracy, product positioning, and targeting on participants’ recognition of an implied outdoorsy label, I
performed a regression analysis with scores on the labeling index as the dependent variable. Independent variables were targeting (ad identified as behaviorally targeted: yes vs. no), hot chocolate positioning (indoors vs. outdoors), a priori interest in outdoors-related products (i.e., number of outdoors-related choices in the binary shopping task, mean-centered), and the interactions of these variables. This analysis revealed that participants recognized an implied outdoorsy label to a greater extent in the behaviorally targeted condition (b = .27, t(259) = 3.39, p < .001, η² = .04) and when the hot chocolate was positioned as appropriate for the outdoors (b = .66, t(259) = 8.20, p < .0001, η² = .21). Participants also recognized an implied outdoorsy label to a greater extent when they had higher a priori interest in outdoors-related products (b = .13, t(259) = 3.35, p < .001, η² = .04). A significant interaction between targeting and positioning qualified these results (b = .25, t(259) = 3.15, p < .01, η² = .04; all other interactions p > .28). When the hot chocolate was positioned as appropriate for the outdoors, participants recognized an implied outdoorsy label to a greater extent in the behaviorally targeted (vs. non-targeted) condition (b = .52, t(262) = 4.64, p < .0001, η² = .07); however, participants’ recognition of an implied label that they were outdoorsy did not differ by targeting condition in the indoors ad condition (b = .02, t(262) = .24, p = .81), which is in accord with the fact that the labeling items assessed the extent to which participants felt labeled as outdoorsy (and not indoorsy).

Given that there was not a significant three-way interaction between the factors and that I wished to examine the role of accuracy on recognizing an implied label, I next examined the results separately in the indoors and outdoors positioning conditions. I note
that greater a priori interest in outdoors-related products corresponded to increasingly accurate targeting when the hot chocolate was positioned as appropriate for the outdoors, whereas this pattern reversed when the hot chocolate was positioned as appropriate for the indoors.

In the outdoors positioning condition, regressing the labeling index on targeting, a priori interest in outdoors products, and their interaction revealed that participants recognized an outdoorsy label to a greater extent in the behaviorally targeted (vs. non-targeted) condition (b = .53, t(131) = 5.14, p < .0001, η² = .17) and as their a priori interest in outdoors products increased (b = .09, t(131) = 2.03, p < .05, η² = .03). An interaction did not qualify these results (b = -.05, t(131) = -1.08, p = .28). To further explicate these results, I classified individuals into one of three categories based on their a priori interest in outdoors-related products (i.e., the number of outdoors-related choices they made during the initial shopping task): low (0-3 choices), medium (4-6 choices), and high (7-10 choices). Simple effects analysis at each level of this trichotomous variable indicated that participants in the behaviorally targeted condition recognized an implied label to a greater extent than those in the non-targeted condition at low (Mbehavioral = 5.74, Mnon-targeted = 4.19; F(1, 127) = 13.8, p < .01, η² = .10), moderate (Mbehavioral = 5.76, Mnon-targeted = 4.60; F(1, 127) = 27.9, p < .0001, η² = .18), and high levels of accuracy (Mbehavioral = 5.78, Mnon-targeted = 5.01; F(1, 127) = 6.65, p < .05, η² = .05).

The same regression model within the indoors positioning condition revealed only a significant positive effect of a priori interest in outdoors products (b = .15, t(132) = 2.69, p < .01; all other p > .60). Simple effects analysis at each level of the trichotomous
measure of a priori interest in outdoors-related products revealed that participants in the behaviorally targeted and non-targeted conditions did not differ in the extent to which they recognized an implied outdoorsy label at low ($M_{\text{behavioral}} = 3.26$, $M_{\text{non-targeted}} = 3.22$; $F(1, 132) = .01, p = .94$), moderate ($M_{\text{behavioral}} = 3.80$, $M_{\text{non-targeted}} = 3.76$; $F(1, 132) = .02, p = .89$), or high levels of accuracy ($M_{\text{behavioral}} = 4.33$, $M_{\text{non-targeted}} = 4.29$; $F(1, 132) = .01, p = .93$). Thus, receiving an ad positioning hot chocolate as appropriate for the indoors did not cause participants to feel labeled as outdoorsy regardless of whether the ad was behaviorally targeted. I note that if the measure of feeling labeled had instead asked about feeling labeled as indoorsy, I would expect to see differences by targeting condition, such that those who received a behaviorally targeted indoors positioned ad would recognize being labeled as indoorsy to a greater extent.

Self-Perceptions. To identify the interactive effect of accuracy, hot chocolate positioning, and targeting on participants’ self-perceptions, I performed a regression analysis with self-perceptions of outdoorsiness as the dependent variable. Independent variables were targeting (Ad identified as behaviorally targeted: yes vs. no), hot chocolate positioning (indoors vs. outdoors), a priori interest in outdoors products (i.e., number of outdoors-related choices in the binary shopping task, mean-centered), and the interactions of these variables. This analysis revealed that participants perceived themselves to be more outdoorsy in the outdoors positioning condition ($b = .27, t(261) = 3.11, p < .01, \eta^2 = .04$) and when they had greater a priori interest in outdoors products ($b = .38, t(261) = 9.47, p < .0001, \eta^2 = .26$). There were also significant interactions between targeting and product positioning ($b = .30, t(261) = 3.44, p < .001, \eta^2 = .04$) and between positioning
condition and a priori interest in outdoors products ($b = -0.09$, $t(261) = -2.32$, $p < 0.05$, $\eta^2 = 0.02$); all other main or interactive effects were nonsignificant (all $p > 0.29$).

In order to test hypothesis 3 and interpret these interactions, I examined the impact of targeting accuracy on self-perceptions by running separate regressions within the outdoors and indoors conditions. In the outdoors positioning condition, regressing the self-perception index on targeting condition, a priori interest in outdoors-related products, and their interaction revealed that participants felt more outdoorsy in the behaviorally targeted (vs. non-targeted) condition ($b = 0.32$, $t(131) = 2.76$, $p < 0.01$, $\eta^2 = 0.06$) and as their a priori interest in outdoors-related products increased ($b = 0.29$, $t(131) = 5.31$, $p < 0.0001$, $\eta^2 = 0.18$). An interaction did not qualify these results ($b = 0.02$, $t(131) = 0.43$, $p = 0.66$).

Simple effects analyses using the trichotomous measure of a priori interest in outdoors-related products indicated that when the ad was inaccurate (i.e., at low levels of a priori interest in outdoors-related products), there was no difference in self-perceptions as a function of targeting ($M_{\text{behavioral}} = 4.62$, $M_{\text{non-targeted}} = 4.22$; $F(1, 127) = 0.71$, $p = 0.40$). However, self-perceptions of outdoorsness were significantly higher in the behaviorally targeted condition at moderate ($M_{\text{behavioral}} = 5.47$, $M_{\text{non-targeted}} = 4.87$; $F(1, 127) = 5.81$, $p < 0.05$, $\eta^2 = 0.04$) and high levels of accuracy ($M_{\text{behavioral}} = 6.32$, $M_{\text{non-targeted}} = 5.51$; $F(1, 127) = 5.59$, $p < 0.05$, $\eta^2 = 0.04$); see figure 4. Floodlight analysis using the Johnson-Neyman technique (Spiller et al. 2013) confirmed this pattern: there was a significant positive effect of behavioral targeting on participants’ self-perceptions of outdoorsiness only among participants who made four through nine outdoors-related choices in the shopping task. The lack of significance at the absolute top of the scale (i.e., 10 out of 10 choices)
likely reflects either a ceiling effect (due to the fact that participants who made 10 outdoors-related choices already perceive themselves as so outdoorsy that there is no room for movement as a result of an implied social label) or a lack of power (as only seven people made 10 outdoors-related choices: $M_{\text{behavioral}} = 6.80, M_{\text{non-targeted}} = 7.00; F(1, 5) = .36, p = .58$). Thus, changes in self-perception as a result of behavioral targeting only occur when targeting is at least moderately accurate.

The same regression model within the indoors positioning condition revealed that participants viewed themselves as less outdoorsy when the ad was identified as behaviorally targeted ($b = -.27, t(134) = -2.16, p < .05, \eta^2 = .01$) and when they had made fewer outdoors-related prior choices ($b = .47, t(134) = 8.03, p < .0001, \eta^2 = .33$). These results were not qualified by a significant interaction ($b = .06, t(134) = 1.03, p = .30$).

Follow-up simple effects analysis at each level of the trichotomous measure of a priori outdoor product choices revealed that when the ad was inaccurate (i.e., at high levels of a priori interest in outdoors-related products) there was no difference in self-perceptions as a function of targeting ($M_{\text{behavioral}} = 5.95, M_{\text{non-targeted}} = 5.89; F(1, 134) = .02, p = .88$). However, self-perceptions of outdoorsiness were lower in the behaviorally targeted condition at moderate ($M_{\text{behavioral}} = 4.09, M_{\text{non-targeted}} = 4.80; F(1, 134) = 6.77, p < .05, \eta^2 = .05$) and high levels of accuracy ($M_{\text{behavioral}} = 2.23, M_{\text{non-targeted}} = 3.71; F(1, 134) = 7.60, p < .01, \eta^2 = .05$); see figure 5. A floodlight analysis revealed that there was a negative effect of behavioral targeting on self-perceptions of outdoorsiness among participants who selected one to six outdoors products in the shopping task. These results indicate that receiving an ad accurately targeted for someone who does not like outdoor activities can
lead the consumer to feel even less like they like outdoor activities. Thus, implied social labels appear to be able to lower participants’ self-perceptions on a trait as long as the behavioral targeting is at least moderately accurate.

**Implied Social Labels and Self-Perceptions Mediate Purchase Likelihood.** Next, I sought to test my prediction that recognizing an implied outdoorsy label would mediate the effect of targeting on purchase intentions for the portable solar charger, a product that is clearly associated with being outdoorsy, but not for the hot chocolate, a product that may be enjoyed by people across a wide variety outdoorsiness (regardless of its positioning in a particular ad). I tested this by conducting two separate mediation analyses using PROCESS Model 4. In support of my expectation, the analyses revealed that the outdoorsy labeling index mediated the effect of targeting on purchase intentions for the solar charger \( b = .04, \ SE = .02, \ 95\% \ CI [.0064, .1146] \) but not the hot chocolate \( b = -.01, \ SE = .02, \ 95\% \ CI [-.0578, .0309] \).

Next, I tested whether acceptance of the implied social label (i.e., self-perception adjustments) mediated the effect of targeting on purchase intentions for both products. I first considered the results for hot chocolate separately by positioning. In the condition in which the hot chocolate was positioned as appropriate for the outdoors, I expected significant mediation only at moderate and high levels of a priori interest in outdoorsy products (i.e., when targeting was at least moderately accurate). In contrast, in the condition in which the hot chocolate was positioned as appropriate for the indoors, purchase intentions should be non-contingent on self-perceptions at any level of a priori interest in outdoorsy products because perceiving oneself as more or less outdoorsy
should not have much influence on interest in purchasing hot chocolate for indoor use—even outdoorsy people may drink hot chocolate indoors. I tested both of these predictions using PROCESS Model 7 and found that, within the outdoors condition, the effect of targeting on willingness to purchase the hot chocolate was mediated by increases in self-perceptions of outdoorsiness at moderate (b = .08, SE = .05, 95% CI [.0129, .2175]) and high levels of accuracy (b = .11, SE = .07, 95% CI [.0189, .2784]), but not when the ad was inaccurate (b = .05, SE = .08, 95% CI [-.0711, .2711]), as predicted. Further, in the indoors positioning, self-perceptions did not mediate willingness to purchase the hot chocolate at any level of accuracy (all confidence intervals contained zero).

I then conducted the same analysis on purchase intentions for the portable solar charger, a product for which higher and lower self-perceptions of outdoorsiness have clearer implications for behavior. I expected that mediation of purchase intentions by self-perceptions would occur only at moderate and high levels of accuracy. I tested this using PROCESS Model 7 and found that, in the outdoors positioning condition, the effect of targeting on willingness to purchase the solar charger was mediated by increases in self-perceptions of outdoorsiness at moderate (b = .11, SE = .06, 95% CI [.0203, .2459]) and high levels of accuracy (b = .14, SE = .06, 95% CI [.0390, .2991]), but not when the ad was inaccurately targeted (b = .08, SE = .11, 95% CI [-.1003, .3221]). In short, greater purchase intentions were mediated by higher self-perceptions of outdoorsiness. Within the indoors positioning condition, the effect of targeting on willingness to purchase the solar charger was mediated by decreases in self-perceptions of outdoorsiness at moderate (b = -.15, SE = .07, 95% CI [-.2933, -.0356]) and high levels of accuracy (b = -.31, SE =
.13, 95% CI [-.5902, -.0953]), but not when the ad was inaccurate (b = .02, SE = .06, 95% CI [-.1106, .1414]). That is, lower purchase intentions were mediated by lower self-perceptions of outdoorsiness.

Finally, I also sought to identify whether the effect of targeting on purchase likelihoods was driven by serial mediation through the labeling index and self-perceptions as in prior studies. I conducted a serial mediation analysis on purchase intentions for the hot chocolate using PROCESS Model 6, with the labeling index and self-perceptions entered as primary and secondary mediators, respectively. In support of my hypothesized process, this serial mediation was significant in the outdoors positioning condition (b = .07, SE = .03, 95% CI [.0256, .1498]), in which there were differences in perceptions of labeling by targeting, but not the indoors positioning condition (b = -.0047, SE = .01, 95% CI [-.0476, .0095]), in which there were no differences in perceptions of being labeled as outdoorsy, as expected. Further, the significant mediating effect in the outdoors condition was not present when reversing the order of the mediators (b = -.0082, SE = .01, 95% CI [-.0484, .0088]). For purchase intentions for the portable solar charger, the serial mediation path was significant in the outdoors condition (b = .08, SE = .03, 95% CI [.0373, .1769]) but not in the indoors condition (b = .01, SE = .02, 95% CI [-.0318, .0610]), and the significant mediating effect in the outdoors condition was not present when the order of the mediators was reversed (b = -.0083, SE = .01, 95% CI [-.0433, .0029]).

Discussion
The results of study 5 demonstrate that the accuracy of a behaviorally targeted advertisement moderates the direct effect on self-perceptions and the mediated effect on behavior through self-perceptions. Specifically, I found that labels that are unconnected to prior behavior (i.e., inconsistent with consumers’ a priori interest in trait-related products) do not prompt adjustments to self-perceptions and affect behavior; low levels of accuracy yield no effect, while moderate to high levels of accuracy produce social labeling effects. The results further indicate that while consumers recognize even inaccurately behaviorally targeted ads as implied social labels, it is accuracy (i.e., the match between this prior behavior and the implied label) that determines whether this label is perceived to be relevant to the self, leading to adjustments in self-perceptions that play a mediating role in subsequent trait-related behavior.

Study 6

The primary purpose of study 6 is to examine the effects of behavioral targeting in a more naturalistic context in which consumers are not directed to pay attention to the AdChoices icon, experience some degree of cognitive load, and where all participants are given information about the process behind behavioral targeting.

Participants and Procedure
One hundred ninety six (58% females, $M_{age} = 34.6$) were recruited on MTurk and were paid for their participation in this study. In the first part of the study, participants were asked to engage in the same shopping task as in study 5: everyone made product choices from sets of outdoorsy and non-outdoorsy items.

All participants were then directed to an “online media consumption” study. At the outset of the study, everyone was given information about the AdChoices icon and what it represents. Everyone was then presented with an article from a digital newspaper (i.e., New York Times Online) and was directed to pay close attention to its contents, as they would be asked questions about it later. To mirror the way in which consumers encounter behaviorally targeted ads in their daily lives, an advertisement for an outdoorsy brand (Victorinox-“Swiss Army Knives”) was positioned in multiple places within the article (i.e., on the right banner, in the center of the scrolling page) and two of which were animated. As in prior studies, the ads were identified as behaviorally targeted or not. The advertisements in the behaviorally targeted condition included the AdChoices icon whereas the advertisements in the non-targeted condition did not.

After reading the article and responding to filler questions about it, all participants were then asked to rate how likely they would be to purchase products from the brand featured in the ads (1 = very unlikely, 7 = very likely) and then rated the extent to which they agreed with the following items as a measure of their self-perceptions of their own outdoorsiness (1 = strongly disagree, 7 = strongly agree): “Camping and hiking are my idea of a good time,” “I like to explore nature whenever possible,” “I am someone who chooses products that are suitable for an outdoorsy lifestyle,” and “I am an outdoorsy
person.” These items were collapsed into an outdoorsiness index that served as my measure of self-perceptions ($\alpha = .94, M = 4.45, SD = 1.97$). Everyone then completed the same manipulation check used in prior studies to assess perceptions of whether the advertisement was believed to be matched to the information they had provided during the shopping task. Finally, at the end of the study, participants were shown a real Groupon for a portable water filter and asked to indicate how likely they were to purchase it (1 = not at all likely, 7 = very likely).

Results

**Manipulation Check.** A 2 (Ad identified as behaviorally targeted: yes vs. no) ANOVA on the targeting manipulation check revealed a marginal main effect of targeting condition ($M_{behavioral} = 3.83$, $M_{non-targeted} = 3.52$, $F(1, 188) = 2.65$, $p = .10$, $\eta^2 = .01$), indicating that participants recognized that the ads were behaviorally targeted.

**Self-Perceptions.** Outdoorsiness self-perception ratings were regressed on targeting (Ad identified as behaviorally targeted: yes vs. no), a priori interest in outdoors products (trichotomized) and the interactions of these variables. This analysis revealed that participants perceived themselves to be more outdoorsy when they had greater a priori interest in outdoors products ($F(2, 188) = 35.81$, $p < .0001$, $\eta^2 = .28$) and when the advertisements were identified as behaviorally targeted ($F(1, 188) = 6.31$, $p < .05$, $\eta^2 = .03$). Simple effects analyses using the trichotomous measure of a priori interest in outdoors-related products indicated that when the ad was inaccurate (i.e., at low levels of
a priori interest in outdoors-related products), there was no difference in self-perceptions as a function of targeting ($M_{\text{behavioral}} = 2.92, M_{\text{non-targeted}} = 2.26; F(1, 35) = 1.70, p = .20$). However, self-perceptions of outdoorsiness were significantly higher in the behaviorally targeted condition at moderate ($M_{\text{behavioral}} = 4.83, M_{\text{non-targeted}} = 4.24; F(1, 113) = 2.97, p < .09, \eta^2 = .03$) and high levels of accuracy ($M_{\text{behavioral}} = 6.27, M_{\text{non-targeted}} = 5.43; F(1, 37) = 5.75, p < .05, \eta^2 = .13$). Thus, changes in self-perception as a result of behavioral targeting only occur when targeting is at least moderately accurate.

**Self-Perceptions Mediate Purchase Likelihood.** Next, I sought to test the prediction that self-perceptions of outdoorsiness would mediate the effect of targeting on purchase intentions for the advertised products. I tested this by conducting two separate mediation analyses using PROCESS Model 4. In support of my expectation, the analyses revealed that the outdoorsy self-perception index mediated the effect of targeting on purchase intentions for the Victorinox brand ($b = .10, SE = .05, 95\% \text{ CI [.0135, .2170]}$) and the portable water filter ($b = .13, SE = .06, 95\% \text{ CI [.0193, .2276]}$).

**Discussion**

The results of study 6 demonstrate that results of previous studies replicate in a more naturalistic setting in which participants are not explicitly told that the advertisements they view are behaviorally targeted and in which the advertisements are presented on the computer screen as they might in the marketplace.
Chapter 3: Summary and Conclusions

3.1 Summary

Evidence from the field suggests that behavioral targeting enhances advertising response rates, with click-through rates increased by as much as 670% relative to online ads that are not behaviorally targeted (Beales 2010; Yan et al. 2009). Unsurprisingly, given its effectiveness, revenues for behaviorally targeted advertising are poised to reach $7.1 billion in 2015 (Sullivan 2011). In light of this tremendous growth, it is important to understand how consumers’ psychological responses to behaviorally targeted ads may differ from responses to non-behaviorally targeted ads and to ads that use more traditional forms of targeting (e.g., demographics) and whether measures like click-through rates adequately capture the consequences of this growing form of advertising.

Across seven studies, I demonstrate that behaviorally targeted ads can act as implied social labels (despite the ad itself containing no explicit label about the consumer or any groups of which he or she is a member), leading consumers to adjust their self-perceptions to be consistent with the implied label and to draw on these self-perceptions for guiding their future behavior. Receiving a behaviorally targeted ad leads consumers to adjust their self-perceptions and draw on these adjusted self-perceptions to determine not only purchase intentions for the advertised product, but also their willingness to engage in
other label consistent behavior, as I show in studies 3 and 4. Importantly, however, I find that adjustments in consumer self-perceptions in response to behaviorally targeted advertisements depend on the plausibility of the connection between the label and past behavior. When their past behavior is not at all indicative of the label (i.e., the behavioral targeting is inaccurate), consumers do not treat the implied label as a valid source of self-information and do not alter their self-perceptions to be consistent with the label.

3.2 Theoretical Contributions

My findings offer several important theoretical contributions. First, I provide an early and novel inquiry into the effects of behaviorally targeted ads. I identify how behavioral targeting is distinct from traditional forms of targeting and empirically demonstrate the conditions under which these characteristics prompt unique, theoretically interesting psychological consequences for consumers. Whereas prior work has examined the inferences consumers make about firms (e.g., Aaker, Vohs, and Mogilner 2010; Morales 2005), I investigate the effects of consumer awareness of the inferences firms make about consumers. Specifically, by showing that consumers viewing a behaviorally targeted ad recognize an implied label from a marketer, I integrate the literatures on marketplace metacognition (Brown and Krishna 2004; Hamilton and Srivastava 2008; Williams et al. 2004; Wright 2002) and consumer response to firms’ digital marketing efforts (e.g., Hoffman and Fodor 2010; Hoffman and Novak 2011; Lambrecht and Tucker 2013; Naylor et al. 2012; Schumann et al. 2014; Stephen and Galak 2012; Tucker 2014;
Yadav and Pavlou 2014). I also add to the growing body of literature exploring how consumers’ online behavior can affect their self-concept (Belk 2013; Valkenburg, Peter, and Schouten 2006; Wilcox and Stephen 2013).

In addition, my work contributes to the literature on social labeling (Allen 1982; Kraut 1973; Miller et al. 1975; Strenta and DeJong 1981; Tybout and Yalch 1980) by introducing a new type of implied social label. Specifically, I show that mere receipt of a behaviorally targeted ad can cause consumers to recognize that the marketer has labeled them as a particular type of consumer, even when the ad itself contains no descriptive information about the individual consumer. In doing so, I contribute to the literature by demonstrating that labels do not have to reference the consumer to have an effect (as has been shown in past research), but that consumers can be affected by implied labels supplied by external sources. I also contribute to the broader literature on self-learning (Baumeister 1998; Wu et al. 2011) by demonstrating that implied social labels such as those from behaviorally targeted ads can be a source of self-learning and that such learning is contingent on the connection between this implied information and a person’s prior behavior.

This research also contributes to the literature on identity marketing. Specifically, I add to past work on identity, which has explicitly defined identities as social category labels (Oyserman 2009; Reed et al. 2012), by empirically demonstrating that behaviorally targeted ads provide consumers with additional information about themselves from an external source (i.e., that they have engaged in behavior consistent with possessing a particular trait)—in contrast to many forms of identity marketing which instead serve as
an internal reminder that a consumer possesses a given trait. Further, while much research within the identity literature has investigated the effects of identity appeals that are embedded within the advertising context and are unconsciously processed (Kirmani 2009; Oyserman 2009), the results of my studies show that a key driver of the effects of behaviorally targeted advertising is consumers’ conscious reflection about the marketers’ tactics in delivering the ad to them. Behavioral targeting may, therefore, be a way for marketers to circumvent consumers’ feelings of reactance to explicit identity referencing (Bhattacharjee et al. 2014; Wu et al. 2011) in advertising because such labels are merely implied versus explicit.

3.3 Managerial Contributions

As a result, my findings also have implications for managers. My studies show that consumer responses to behaviorally targeted ads are sensitive to several important variables under managerial control. First, although there is increasing pressure from consumer privacy advocates to disclose when an ad is behaviorally targeted, disclosure is not currently mandated by law (Dave 2013). In general, the results of my studies suggest that online advertisers should adopt the AdChoices icon to disclose when an ad has been behaviorally targeted and continue to educate consumers on its meaning. Given that behaviorally targeted ads act as implied labels only when consumers know that the ad was behaviorally targeted, the icon can prompt positive effects among consumers whose past behavior is plausibly connected to an implied label.
Second, my results also suggest that when an ad has been identified as being behaviorally targeted through the use of the AdChoices icon, it is critical that the targeting be at least moderately accurate in order for the behaviorally targeted ad to be effective. The results of study 4 suggest that investing in technology that ensures that ads are accurately targeted is a worthwhile managerial expenditure. One of the challenges in delivering accurately targeted ads is that many household computers are shared by multiple users. Managers may be able to deal with this challenge by a) tailoring ads based only on browsing history from a single browsing session, b) allowing for multiple user profiles on a single computer, or c) utilizing behavioral targeting to a greater extent on smart phones, which are less likely to have multiple users. It seems likely that perceived accuracy plays an even bigger role than objective accuracy in determining consumer’s acceptance of behaviorally targeted ads as a valid social label, so marketers could also benefit from informing consumers about the basis of individual behaviorally targeted ads or about the accuracy of behaviorally targeted ads in general.

Third, my research suggests that behaviorally targeted ads are likely to be more lucrative for companies with a large share of a category associated with a personality attribute, such as Whole Foods (being “healthy”) or NorthFace (being “rugged” or “outdoorsy”). This is likely easier to accomplish for lifestyle brands (Chernev, Hamilton, and Gal 2011) and brands with strong personalities (Aaker 1997).

Finally, I suggest that the adjustments to self-perceptions produced by behaviorally targeted ads may not only improve sales of the product featured in the advertisement at the time of ad exposure, but also future sales of the product and,
potentially, of the entire category. Specifically, when consumers accept the label they infer from a behaviorally targeted ad, the extent to which they use these self-perceptions as a basis for making a purchase decision increases. This suggests that sales of other related products and services may be expected to increase to the extent that they are consistent with the same label. Thus, behaviorally targeted ads may be more beneficial for a company’s profits than previously believed, especially for category-leaders, and analyzing click-through rates for behaviorally targeted ads (e.g. Yan et al. 2009) may provide a limited measure of their effectiveness.

3.4 Future Research

The results of my studies suggest several interesting avenues for future research. To people who look for them, the world is full of clues into others’ perceptions of them, and each of these implied social labels can affect self-perceptions and behavior. However, little is known about the many potential sources of these implied social labels or the personal or contextual factors that determine sensitivity to them. Future research could explore other sources for implied social labels in addition to behaviorally targeted ads. For example, word-of-mouth recommendations from friends and compliments from salespeople can both likely act as implied social labels (e.g., “You can really tell a quality product when you see one” could be interpreted as an implied label that one is particularly discerning). However, the compliment would have to clearly imply a trait label of some type in order to have similar effects to those observed in my studies; simple
gratitude for the compliment or liking for the salesperson who issued it are unlikely to produce changes in self-perceptions.

Future research is also required to illuminate the intersection between marketplace metacognition, persuasion knowledge, and behaviorally targeted ads. As discussed, the potential for a behaviorally targeted ad to serve as a social label depends on the consumer’s recognition that the marketer has made an inference about their identity in order to serve them the ad. Some level of marketplace metacognition, specifically the understanding that behaviorally targeted ads are delivered to the recipient based on his or her online behavior, is therefore required for these effects to occur. However, some consumers may take their persuasion knowledge a step further and conclude that marketers are purposefully using behaviorally targeted ads as implied social labels in order to change consumers’ self-perceptions. If so, the consumer could react against the persuasion attempt, minimizing its effectiveness (Campbell and Kirmani 2000; Friestad and Wright 1994; Wei, Fischer, and Main 2008; Wu et al. 2011). Exploring the potentially interactive effects of cognitive load and suspicion may shed light on this possibility. Future research should also explore whether implied social labels from marketers induce the same level of persuasion knowledge as explicit social labels from marketers (Cornelissen et al. 2007).

Exploring differences in the labels consumers believe the same behaviorally targeted ad implies would also be an interesting avenue for future research, as consumers could draw different implications about the self from an identical behaviorally targeted ad. For example, a behaviorally targeted advertisement for a Wendy’s salad may make
some people believe themselves unhealthy (because they have received an ad for a fast food restaurant) while making others believe they are healthy (because they have received an ad for a salad; Irmak, Vallen, and Robinson 2011). Within my theoretical framework, receipt of a behaviorally targeted ad prompts consumers to consider why the ad is being shown to them. Given that the ad is based on prior online actions, consumers would then consider what they had done in the recent past that could have resulted in an ad for a salad or fast food. Reflecting on his or her recent online behavior in this way would likely affect the perceived plausibility of the different implied labels (i.e. health conscious or not). I expect that the consumer will only accept, and subsequently exhibit behavior consistent with, the label that he or she perceives to be most connected to past behavior. I do note, however, that motivated reasoning (Kunda 1990) may also play a role in determining which label consumers believe the ad is implying, as consumers may be motivated to accept the more socially desirable or more positively valenced, aspirational label.

Additionally, it would be worthwhile to investigate the role of the importance (to the self) of the trait implied from the label (Reed 2004). On one hand, consumers are more interested in information about where they stand on traits and identities that are important to them, which may make the effects of behaviorally targeted ads stronger for important traits (Markus 1977; Tesser 1988). On the other hand, consumers’ self-perceptions on traits that are very important to them are arguably less malleable (Aquino and Reed 2002; Sirgy 1982), which may mute these effects. Identity importance may also influence what label a consumer believes that receipt of an ambiguous behaviorally
targeted ad implies (e.g., the Wendy’s salad ad in the example above), as consumers may be more motivated to believe that they have been labeled with an identity that is of central importance to them.

Future research is also required to explore the commonalities and distinctions between identity salience and changes in self-perceptions due to social labeling. Given that advertisements can precipitate both processes, it is worthwhile to consider when each process would have more impact on purchase behavior. If the consumer has neither engaged in any trait consistent behavior nor has incorporated the category label as part of her identity, then neither social labeling nor identity priming would likely have an influence. Social labeling only (and not identity salience) should have an effect when the consumer has engaged in trait-relevant and observable past behavior but has not yet incorporated the label as part of their identity (in this case the social label may instigate the identity process), and identity priming likely uniquely has an influence under the opposite circumstances. Research is required to determine which process has more impact when consumers have both engaged in trait-relevant past behavior and have incorporated the label as part of their identity. My theoretical model suggests that social labels may be more impactful here because they carry additional, externally provided information. Other potential moderators may also differentially impact the effects of implied social labels and identity salience. For example, source credibility should only moderate the effect of social labels.

Another potential boundary condition that could be fruitfully explored is the degree to which consumers exhibit impression management in their online actions. In my
studies, labels were generated as a result of consumers engaging in behaviors before they knew that this information would be tracked and used to serve them an ad, implying that impression management concerns would not be activated. However, if consumers know in advance that their browsing or shopping choices are being monitored specifically for the delivery of an ad, they might strategically change their behaviors to receive different ads or might be unwilling to accept a label that has been generated from such inauthentic, impression-managed behaviors. A related possibility is that consumers may engage in behavior designed to be consistent with how others perceive them, including changing their behavior to be consistent with targeted ads. This desire for consistency may have contributed to my results.

Finally, future research could explore whether an advertisement has to explicitly designate that it has been behaviorally targeted through words or icons (as I have done in my studies) or if there are more subtle cues that lead consumers to believe that an ad has been behaviorally targeted. Many behaviorally targeted advertisements today are labeled with the AdChoices icon, and this labeling may soon be mandatory (Federal Trade Commission 2010). In the absence of this explicit labeling (or the understanding of it), there could be psychologically interesting predictors of believing a given ad has been behaviorally targeted, including whether the implied label is positive (vs. negative) or relevant to a central identity for that consumer. It is also possible that as consumers become more familiar with behavioral targeting, over time they may come to assume most or all digital ads are behaviorally targeted. Future research could address whether the effects I observe are as strong when a consumer infers that an ad has been targeted
compared to when the marketer discloses targeting. Similarly, future research could also address whether inferring behavioral targeting (vs. seeing that the marketer is disclosing that an ad has been behaviorally targeted) is more likely to raise concerns about privacy and hence potentially to create negative attitudes toward behavioral targeting. The push among industry groups to disclose the use of behavioral targeting using the AdChoices icon suggests that this may well be the case.
References


Hoffman, Donna L. and Marek Fodor (2010), "Can You Measure the ROI of Your Social Media Marketing?" *Sloan Management Review*, 52 (Fall), 41-49.


Appendix: Figures and Tables
Figure 1. Results for study 1
Figure 2. Results for study 2A
Figure 3. Results for study 2B
Figure 4. Results for study 3
Figure 5. Results for study 4
Figure 6. Results for study 5
Figure 7. Results for study 5
Figure 8. Results for study 6
Figure 9: Study 1 stimuli
Figure 10: Study 2A stimuli
Some online advertisements are behaviorally targeted ads, which are advertisements that are displayed to consumers online based on the sites they have visited while browsing the Internet.

This practice involves the use of the following symbol:

AdChoices

Whenever an ad is based on individual consumer data, the symbol will be included somewhere on the ad.

HOW TO SPOT THE ICON
WHERE WILL YOU SEE THE ICON?
Quite simply, wherever companies are engaged in behaviorally targeted advertising. Just look near the corner of your online banner ad. Just like displayed below:

Figure 11: Study 2B stimuli
Figure 12: Study 3 stimuli
Figure 13: Study 4 stimuli
Figure 14. Study 5 stimuli
Figure 15. Study 6 stimuli.
<table>
<thead>
<tr>
<th>Category</th>
<th>Brands</th>
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<th>Standard Deviation in Pretest</th>
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Table 1. Shopping task product categories for green and non-green products