Research Article

Tablets, touchscreens, and touchpads: How varying touch interfaces trigger psychological ownership and endowment

S. Adam Brasel a,⁎, James Gips b

a Boston College, Marketing Department, Fulton Hall, 140 Commonwealth Ave, Chestnut Hill, MA 02467, USA
b Boston College, Information Systems Department, Fulton Hall, 140 Commonwealth Ave, Chestnut Hill, MA 02467, USA

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Abstract

As mouse-driven desktop computers give way to touchpad laptops and touchscreen tablets, the role of touch in online consumer behavior has become increasingly important. This work presents initial explorations into the effects of varying touch-based interfaces on consumers, and argues that research into the interfaces used to access content can be as important as research into the content itself. Two laboratory studies using a variety of touch technologies explore how touchscreen interfaces can increase perceived psychological ownership, and this in turn magnifies the endowment effect. Touch interfaces also interact with importance of product haptics and actual interface ownership in their effects on perceived product ownership, with stronger effects for products high in haptic importance and interfaces that are owned. Results highlight that perceptions of online products and marketing activities are filtered through the lens of the interfaces used to explore them, and touch-based devices like tablets can lead to higher product valuations when compared to traditional computers.

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Introduction

As computer usage has shifted from desktop computers to laptops and tablets, interfaces have shifted from computer mice to touchpads and touchscreens. These interface changes may, in turn, generate changes in the response of consumers viewing identical content as digital interfaces fundamentally change the experience of the content they access (Rokeby, 1998). Prior marketing work has explored how touching a product can increase the endowment effect, but interface touch remains unexplored. As touchpads and touchscreens rapidly become the primary means of computer interaction, touch interfaces may generate implied endowment, and ownership of the interface may transfer to viewed objects.

These issues are especially relevant as interfaces, as opposed to content, remain a rare focus of consumer research. Yet the shifting nature of interfaces is increasingly important in online consumer behavior. Industry research suggests that over 8% of e-commerce website visits come from tablets, and the 2012 Black Friday weekend saw almost 20% of online sales from tablets and smartphones (IBM, 2012). Consumers are migrating to touchscreen devices, but is all touch the same?

The purpose of this research is to explore the effects of touch interfaces in online consumer behavior. First, do varying levels of interface touch create varying levels of psychological ownership in online shopping scenarios, creating increased endowment? Second, what role does the importance of product haptics (i.e. “touchability”) play in the effects of touch interfaces? Finally, does touch interact with interface ownership on perceived product ownership? Two studies using multiple touch interfaces highlight the role of interface touch and illustrate the importance of research into the interfaces used for accessing content.

Marketing interfaces and the rise of touch

Touch in consumer behavior is a recent area of inquiry (Jansson-Boyd, 2011; Peck & Childers, 2003a), and is used to obtain both non-haptic (a product is picked up to be smelled) and haptic (to gauge a product’s weight or texture) information. 

⁎ Corresponding author.
E-mail addresses: brasels@bc.edu (S.A. Brasel), gips@bc.edu (J. Gips).
Tactile cues have been explored in product selection and evaluation (Holbrook, 1983; Marlow & Jansson-Boyd, 2011), yet there remains concern that touch is underexplored (Peck, 2010). Most traditional research on touch focuses on touch-imagery, interpersonal touch, or touching products (Krishna, 2011); the role of touch in computer marketing interfaces is little explored.

**Touch and endowment**

The endowment effect causes consumers to overvalue items that they perceive they own (Franciosi, Kujal, Michelitsch, Smith, & Deng, 1996), leading to a gap between what someone is willing to pay to acquire an item (WTP) and what they will accept to part with it (WTA: Kahneman, Knetsch, & Thaler, 1990). Ownership is a fluid concept, however, of which actual product ownership is only one type. Merely touching a product increases perceived ownership (Peck & Shu, 2009), and touching is employed in social contexts to communicate temporary territorial ownership over public goods (Werner, Brown, & Damron, 1981). Even imagining touch can generate perceived ownership similar to actually touching an object (Peck, Barger, & Webb, 2013), and implied ownership feelings can create strong endowment effects (Pierce, Kostova, & Dirks, 2003; Reb & Connolly, 2007). Shu and Peck (2011) highlight that psychological ownership is a consistent mediator of product valuation, but is merely touching an object’s image on an interface enough to generate psychological ownership?

Imagery processing cues mental simulation of product behavior (Schlosser, 2003), and visual cues play a large role in mental simulation (Elder & Krishna, 2012). In addition, object interactivity increases the vividness of mental product images (Schlosser, 2006), and imagery vividness increases perceptions of ownership (Peck et al., in press). We propose that the act of reaching out to touch a product image is a more direct visual metaphor for choosing a product than indirect touch with a touchpad or mouse. Thus, we predict that touchscreens will generate increased endowment (reflected in a greater WTA price) when compared to indirect or non-touch interfaces, and that this relationship is mediated by psychological ownership.

**Product haptic importance and interface ownership**

Consumers respond differently to products that naturally elicit touch versus products that do not, and product dimensions such as smoothness and surface complexity affect a product’s perceived “touchability” even without direct touch (Klatzky & Peck, 2012). The perceived touchability of highly haptic products could increase the ease of mental simulation, which in turn would lead to higher feelings of ownership (Schlosser, 2003). The relative importance of haptics varies across product categories (McCabe & Nowlis, 2003), and tactile input is more important in product categories where haptics are diagnostic (Grohmann, Spangenberg, & Sprott, 2007). Thus, we predict that the relationship between the level of interface touch and psychological ownership is moderated by the importance of haptics for a product, where products high in haptic importance have a stronger relationship between touch and psychological ownership.

Endowment research has focused primarily on the role of product ownership. Yet in online contexts, consumers also have varying levels of interface ownership. For example, one might be using his/her own computer versus a public lab or library computer. But do interface ownership feelings transfer onto the products viewed through that interface? Research into this “ownership transfer” is limited, but prior work suggests that mere association can cause endowment effects (Gawronksi, Bodenhausen, & Becker, 2006).

Ownership of touch interface devices may be especially salient due to perceived control and self-association. Due to the direct nature of touch, consumers may feel more direct control over touchscreen devices, and perceived control is a key precursor and driver of psychological ownership (Rudmin & Berry, 1987). In addition, touch devices such as smartphones and tablets have a more direct association with a consumer’s extended self (Hein, O’Donohoe, & Ryan, 2011), and this self-association is also a key precursor and driver of psychological ownership (Pierce et al., 2003). In effect, selecting a product on an owned touch-interface device may be more analogous to touching the product itself when compared to a non-owned device. This suggests that owned direct touch interface devices such as tablets will generate stronger and more salient psychological ownership perceptions, and this increased ownership salience may transfer to explored products. Thus, we propose that interface ownership moderates the effect of touch on psychological ownership, where owned interfaces increase the effect of touch on perceived ownership.

In summary, we predict that direct touch interfaces such as touchscreens generate increased endowment when compared to other interfaces such as touchpads or mice, that this relationship is mediated by psychological ownership, and that the relationship between touch interface and psychological ownership is moderated by the importance of product haptics and interface ownership (see Fig. 1). To test these research questions, we conducted two studies. The first uses a multi-interface computer to explore levels of touch and product haptics, while the second uses laptops and tablets to further support the proposed framework while exploring interface ownership.

**Study 1: Touch interfaces and product haptics**

To explore the effects of touch and product haptic importance on psychological ownership and the endowment effect, a 3 (touch interface: mouse vs. touchpad vs. touchscreen) by 2 (product haptic importance: sweatshirt vs. city tour) mixed design study...