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Can smartphones be specialists? Effects of specialization in mobile advertising

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ABSTRACT

Based on the Computers Are Social Actors (CASA) paradigm, this study extends the expectations regarding the superiority of specialists over generalists to mobile technology by examining whether the specialization of a hardware agent (i.e., a smartphone) and a software agent (i.e., an application) has psychological effects on smartphone users who are exposed to mobile advertisements. Results from a between-subjects experiment ($N = 80$) show that specialist smartphones and applications induce greater trust in advertisements and an increased purchase intention toward the advertised products than generalist smartphones and applications. In addition, the effects of specialization on purchase intention are mediated by trust in advertisements. Theoretical and practical implications of these findings are discussed.

1. Introduction

Would you consult with a brain surgeon or general practitioner if you were diagnosed with brain cancer? Would you meet with a professor of Korean history or professor of East Asian history if you were writing an essay on the Korean War? Chances are you would be more inclined to seek advice from the brain surgeon and the professor of Korean history because they are regarded as specialists in their fields. The term "specialist" in this sense does not refer to individuals who are higher in authority or socioeconomic status, but denotes expertise in a certain field or task, such that specialists are expected to be more "consistent" in practicing their specialties, more "representative" of their roles, and simply "better" at their jobs than generalists (Nass et al., 1996). However, do we have the same expectations when we interact with technology (e.g., computers, robots, smartphones, websites)?

A large corpus of human–computer interaction (HCI) research based on the Computers Are Social Actors (CASA) paradigm has consistently demonstrated that human–computer interactions follow the social rules and expectations that govern human–human interactions (Nass et al., 1995; Reeves and Nass, 1996; Sundar and Nass, 2000; Lee, 2010; de Melo et al., 2011; Kim et al., 2013). Individuals mindlessly apply social rules in interactions with computers that exhibit anthropomorphic cues or social categories even when they are aware that they are interacting with non-human agents or machines. For example, individuals are found to concede more to computers that express emotions (de Melo et al., 2011), apply the social exchange theory when interacting with artificial agents (Kim et al., 2013), and respond more socially to computers with anthropomorphic cues (Lee, 2010). By extension, individuals may also be likely to apply the same expectations regarding the superiority of specialists over generalists (as they do in human–human interactions) when interacting with computers that are perceived to be more specialized at a certain task because, psychologically, specialization functions as a social cue that triggers the automatic social response to computers (Koh and Sundar, 2010a).

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In order to empirically validate the effects of specialization under the CASA paradigm, the present study examines whether the specialization of a hardware agent (i.e., a smartphone) and a software agent (i.e., an application) has any psychological effects on users who are exposed to mobile advertisements. Recent smartphones are equipped with technological capabilities that are similar to those of conventional computers and are utilized as ubiquitous tools for communication. Therefore, mindless social responses to the perceived superiority of specialists over generalists are also likely to be observed in individuals interacting with smartphones, if the CASA paradigm is applicable to mobile digital media.

2. Theoretical background

2.1. Effects of specialization

A plethora of literature on specialization has demonstrated that when a technology is dedicated to a particular role or area of specialty, individuals' evaluations and expectations of the technology follow and accept that role (Nass et al., 1996; Leshner et al., 1998; Koh and Sundar, 2010a,b). For example, Nass et al. (1996) conducted an experiment with two conditions in which participants watched identical news and entertainment segments on television sets labeled as "News TV" and "Entertainment TV" (i.e., specialist) or "News/Entertainment TV" (i.e., generalist). Participants who watched the news and entertainment segments on the specialist TVs rated the segments higher in quality and liked them more than participants who watched them on the generalist TV. This suggests that labeling is a simple yet effective way of assigning the role of a specialist to media technology, which in turn makes significant psychological differences in user perceptions.

According to categorization theory, labels function as strong signifiers of a given object that automatically activate a set of related social category-based perceptions (Ashforth and Humphrey, 1995, 1997). Social categories (e.g., social class, profession, expertise) are well-learned and universal, and convey easily retrieved and often stereotypical schemas that shape individuals' perceptions of objects belonging to specific social categories. That is, individuals form their initial impressions of an object primarily based on social categories triggered by a salient cue, which is then perceived as a key characteristic of the object (Fiske and Neuberg, 1990; Foroni and Rothbart, 2013). Once a TV is labeled as "News TV," for example, individuals perceive that the social category (i.e., expert on news) associated with the label (i.e., specialist in news) is a central attribute of the TV and tend to overlook other characteristics that may contradict this attribute (Hamilton et al., 1990). Labeling allows individuals to mindlessly process the specialist TV to be superior in its domain compared to the generalist TV, without investing much cognitive effort in evaluating the relevance of TV-conveyed information (Maddux and Rogers, 1980).

In a similar vein, Leshner et al. (1998) demonstrated that individuals who watched news stories on specialist channels (e.g., CNN) rated the stories more positively and as more newsworthy than those who watched the same stories on generalist channels (e.g., ABC). Once the source of the news stories is identified as a specialist source, category-based perception is triggered and individuals heuristically perceive that news stories originating from the specialist source are more trustworthy and representative of news content. Collectively, these studies demonstrate that individuals respond to media technologies by mindlessly applying expectations about the superiority of specialists over generalists, as they would do in human–human interactions.

Furthermore, specialization has been found to have positive effects on consumer trust and online shopping behavior (Koh and Sundar, 2010a,b). In a study investigating the effects of specialization in e-commerce, Koh and Sundar (2010a) instructed participants to engage in a wine-purchasing task on a specially constructed website using a virtual shopping cart. Participants in the specialist condition were exposed to a web agent, a website, and a computer labeled "Wine Agent," "Wine Shop," and "Wine Computer", respectively, whereas participants in the generalist condition used media technologies labeled "E Agent," "E Shop," and "Computer." Participants showed greater trust in the specialist media technologies and spent less time on purchase decisions than did those using the generalist media technologies. Given that expertise is known to have positive effects on trust in e-commerce and web-based communication (Guido et al., 2010; Pennanen, 2011; Yi et al., 2013), the greater perceived expertise in wine generated by the specialist labels might have allowed participants to heuristically experience greater trust in the media technologies, thereby reducing their cognitive effort when making purchase decisions.

2.2. Conceptual model and hypotheses

The literature reviewed thus far suggests that (1) assigning specialist roles confers an expectation of greater expertise in a given domain by triggering category-based perceptions, (2) cues signaling specialization can be implemented at multiple layers, and (3) perceived expertise associated with specialization has positive effects on trust in economic transactions. Extending these findings to the mobile advertising domain, smartphones and smartphone applications labeled as specialists in certain products or services are likely to be perceived as conveying greater expertise and knowledge compared with smartphones and applications labeled as generalists. This perceived expertise then positively affects user trust in ad-conveyed information, ultimately leading to greater purchase intention for the advertised products.