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The effect of fan-themed apparel products' signal explicitness on fans' perceptions: the moderating effect of fanship

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Abstract

This study investigated how film franchise fans with varying levels of fanship perceive subtle versus explicit signals featured on fan-themed apparel products. A between-subjects experimental design was conducted with two fan-themed t-shirt designs (explicit vs. subtle) × fanship (low vs. high). In this study, the joint effect between subtle vs. explicit designs and fanship was examined to address perceived differentiation, social connection, and purchase intention. For perceived differentiation and social connection, fans with high fanship perceived the subtle design to be more effective than explicit designs. While fans with low fanship perceived the subtle design to be more effective for differentiation, they perceived that the explicit design facilitated social connection more than the subtle design. When fans perceived that signals featured on fan-themed apparel products differentiated themselves from others and facilitated social connection, their purchase intentions increased. The study yielded several theoretical and practical implications. First, the study contributed to the literature on signaling theory, extending the definition of subtle signals to include a more diverse range of design details, such as the content of graphics rather than the visibility and size of brand logos. The study also extended the use of signaling theory and optimal distinctiveness theory to new research areas of fan-themed products. Second, practical implications for producers, marketers, and retailers of fan-themed apparel included the consideration of developing fan-themed apparel with subtle signals, co-creating products with fans, and targeting female fans through more inclusive merchandising practices.

Keywords: Fans, Fanship, Signals, Optimal distinctiveness theory, Signaling theory

Introduction

Fan-themed merchandise related to film franchises is important to the entertainment industry, as many of its companies are top licensors that generate billions of dollars in merchandise sales, thus making merchandise a highly profitable sector of the film industry (Affuso & Santo, 2018). In the worldwide licensed merchandise industry, entertainment/character-based merchandise sales were the fourth-largest category among licensed merchandise in 2017, rising to the top category in 2019 when it generated $128.4 billion in sales revenue (Licensing International, 2021). The significant growth of this industry may be due in part to the recent mainstreaming of fans and the subsequent de-stigmatization of fan products, as

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well as the entertainment industry's efforts to transform film franchises into lifestyle brands and reframe fan-themed merchandise as a lifestyle category (e.g., apparel). For example, in 2018, Vans, a footwear company, collaborated with Marvel to develop a broad range of apparel products featuring superhero graphics. This collaboration led to a 35% increase in sales in the third quarter of 2018 (Kumar, 2018). Given the significant market share of entertainment/character-licensed apparel and increased sales for fashion brands, fans of film franchises are an important market for fashion retailers.

Fan-themed apparel products often contain logos and graphics related to film series. The logos and graphics can be classified as either explicit or subtle according to the graphic's visibility and content (Greenberg et al., 2020; Smith-Glaviana, 2016). For example, a big and/or very visible brand logo is characterized as explicit, while small and/or hidden brand logos are considered subtle. Considering the content of the graphics, the "'Many Expressions of Darth Vader' t-shirt" contains a highly recognizable (explicit) character that overtly references the *Star Wars* film series (Affuso & Santo, 2018, para 8), whereas a scarf printed with the motif from wallpaper used in the set design of *Sherlock*, a BBC television series (Gatiss & Moffat, 2010–2017), features a motif that may be recognized only by fans who pay close attention to the series (subtle) (Cherry, 2016). As the explicit and subtle graphics related to film series include signaling elements that deliver symbolic meanings, they can be used for interpersonal communication and identity representation, often motivated by consumers' needs for inclusion and distinctiveness (Berger & Ward, 2010; Han et al., 2010). For example, some fans wear explicitly-marked t-shirts to help to facilitate social connection with others (i.e., inclusion), while others wear subtly-marked t-shirts to differentiate themselves from mainstream fans (Smith-Glaviana, 2016).

Fan-themed explicit and subtle graphics may be perceived differently depending on the wearer's interests and knowledge of the series (Shipley, 2010; Smith-Glaviana, 2016). For this reason, we adopted the concept of fanship, an individual's identification towards a fan interest, such as a film series, which encompasses commitment, investment of time and money towards the interest, and knowledge of the interest (Keaton, 2013; Pentecost & Andrews, 2010; Reyesen & Branscombe, 2010). It is important to understand the interaction effects of signal explicitness and fanship on fans' perceptions because certain types of signals, such as specific references to a film series (subtle signals), might be interpreted only by those with specific knowledge of and/or an interest in the series (Berger & Ward, 2010; Connelly et al., 2011). Although fans' level of fanship is expected to influence their perceptions of subtle vs. explicit signals, to our knowledge, no researchers have examined the joint effect of subtle vs. explicit signals and fanship.

To explain the underlying mechanisms of how fans respond to explicit vs. subtle graphics on fan-themed apparel, we drew from signaling theory (Connelly et al., 2011) and optimal distinctiveness theory (Brewer, 2011). According to signaling theory, there are two crucial characteristics of efficacious signals during the signaling process: *observability* (i.e., the explicitness of the signal) and *signal cost* (i.e., the resources signalers need to form signals). Signaling theory explains that observability is insufficient without signal cost because the two characteristics play an important interactive role in forming efficacious signals. This provides a justification why fanship (representing the level of resources, interest in, and knowledge of a film series) should be considered as a moderator on the relationship between signal explicitness and the fans' perceptions. In addition, because optimal distinctiveness theory posits

that individuals desire an optimal balance between desires for inclusion and distinctiveness (Brewer, 2011), the theory provides a justification for investigating perceptions that are driven by fans' desires for inclusion and distinctiveness, as well as theoretical support for why fans perceive explicit vs. subtle signals differently.

Although the explicitness of the signals has been investigated in the luxury branding context—by examining consumer preferences of brand prominence on luxury products (e.g., Aw et al., 2021; Byun et al., 2020)—there has been little research into how explicit vs. subtle graphics influence perceptions of fan-themed apparel related to film series. Much of the existing research on fan-themed merchandise has explored only the functions of and motivations for wearing fan-themed apparel, while researchers have yet to investigate how specific design elements (e.g., explicit vs. subtle graphics) influence fans' perceptions. Furthermore, despite abundant literature on signal explicitness, a gap remains in branding research. While most branding researchers have examined the effect of explicitness of brand logos regarding visibility (dependent on size, location, and/or existence of the logo) on perceptions (Berger & Ward, 2010; Han et al., 2010; Shao et al., 2018; Wilcox et al., 2009), few researchers, if any, investigated the signal explicitness of graphic content not considered to be logos.

Thus, in this study, we investigated how fans perceive subtle vs. explicit signals featured on fan-themed apparel. Specifically, we examined the interaction effects of subtle vs. explicit signals and fanship on perceived differentiation (i.e., distinctiveness) and social connection (i.e., inclusion) and how these perceptions influence purchase intentions. An investigation into how fans with varying levels of fanship perceive explicit vs. subtle signals could have important marketing implications for both producers and retailers.

Literature review

Theoretical background

Signaling theory

To understand how the explicitness or subtlety of a signal impacts fans' perceptions of fan-themed apparel, we drew on concepts from signaling theory. In its original form, signaling theory has been used to explain behaviors that aim to reduce the information asymmetry occurring between two parties when one party has access to information that the other party does not (Connelly et al., 2011). To reduce information asymmetries between two parties, one party (the sender) communicates or signals information to the other (the receiver). Connelly et al. (2011) described four primary elements of signaling theory: the signaler (i.e., the individual/person, product, or firm/organization with private information), signals (i.e., private information), receivers (i.e., individuals who would like to gain information from signalers), and feedback (i.e., a response sent to the signaler).

Signalers are insiders who obtain information about the underlying quality of some aspect of an individual, product, or organization/firm (Connelly et al., 2011). For example, a signaler (e.g., a company selling a product) may use a signal to communicate the product's quality. Consumers (i.e., the receivers) receive and interpret the signal. Signaling occurs not only between companies and consumers but also between consumers who engage in signaling behaviors to communicate their desired self-image (Aw et al., 2021). Through the signaling process, consumers define, reinforce, and communicate their desired self-concepts and identities (Aw et al., 2021). When using signaling theory to explain consumer intentions, consumers who use signals to communicate aspects of

their identities are signalers, and other consumers are receivers. Thus, we situate fans of a film series as signalers who communicate their fan identities through signals in the form of fan-themed graphics.

During the signaling process, o*bservability* and *signal cost* are the two main characteristics of efficacious signals because not all signals sent by a sender are informative to receivers (Connelly et al., 2011). *Observability* refers to the extent to which other parties (outsiders) notice the signal or the explicitness or subtlety of a signal. *Signal costs* are personal resources and expenses (e.g., money, time, and effort) that signalers pay to signal to others and guarantee their competitive superiority and interest in the signal (Bird & Smith, 2005). Signals have associated costs that some signalers are better able to absorb than others (Connelly et al., 2011). These costs make it difficult for signalers who do not possess the underlying quality connected to the signal to use it falsely and ensure that the signals are not overused. Berger and Ward (2010) argued that signal cost not only includes resources, such as money and time to acquire a reliable signal, but also the signalers' knowledge (domain-specific cultural capital) and ability to express their desired identities and facilitate interactions with others in the know. In other words, how strong the signal is (i.e., its observability; explicit vs. subtle signals) and whether fans (signalers) have devoted sufficient resources (i.e., the signal cost; time, money, and knowledge/cultural capital) are crucial elements for successful communication via the signal.

Optimal distinctiveness theory

To identify consumers' perceptions as responses to subtle vs. explicit signals and to provide theoretical support for why fans prefer one over the other, we drew from optimal distinctiveness theory. Optimal distinctiveness theory posits that individuals desire an optimal balance between inclusion and distinctiveness (Brewer, 2011). Although these needs oppose each other, they are manifested as individuals construct both an inclusive social identity and a distinctive personal identity. Identities are optimal when both desires are satisfied simultaneously. Although the need for inclusion and distinctiveness are always in flux (Brewer, 2011), the need for inclusion is most salient when individuals first enter a new group since they have not yet obtained group membership status. Differentiation becomes a more salient need once an individual's membership status is established and the desire for inclusion is satisfied.

Because the fan-related symbols featured on apparel products serve as signals for group membership, distinction, and status, Chadborn et al. (2017) argued that these symbols are consistent with optimal distinctiveness theory. Driven by the need for inclusion, new fans may buy fan-themed apparel to achieve group membership status (Chadborn et al., 2017) and establish legitimacy within their fan cultures (Santo, 2018). These fans may specifically use signals that clearly communicate their fan identity to achieve these goals. As Chadborn et al. (2017) pointed out, fan-related symbols "serve a purpose to attract others who share their interest to increase their chances for new friendships," and their consumption is driven by the need for in-group belonging (p. 93). Once membership status is firmly established, fans may be driven by the need for differentiation and use fan-themed apparel to communicate a distinct fan identity and stand out within their fan cultures (Chadborn et al., 2017).

Hypotheses development

Subtle vs. explicit signals

According to signaling theory, observability (i.e., the signal's explicitness) is a crucial component of efficacious signals (Berger & Ward, 2010; Connelly et al., 2011). A brand mark/signal is classified as subtle or explicit according to two design elements: (1) the size and visibility of the brand mark and (2) the content of the brand mark (i.e., logo, brand name, distinctive patterns or colors that identify a brand) (Greenberg et al., 2020). Explicit signals can be defined as brand names, logos, or other distinctive marks that are visible because they are large in size or placed on highly visible areas, such as across the chest, or are easily recognizable "loud" patterns that identify the brand (e.g., the Burberry check pattern) (Greenberg et al., 2020). Explicit signals can be noticed, discerned, or recognized by a wide consumer base (Han et al., 2010). Explicit signals in fan-themed apparel feature logos/graphics related to a film series that are: (1) large in size and/or (2) depict the main logos, main characters, or iconic objects, patterns, or color palates, and therefore effectively identify fans of the film series (Cherry, 2016; Smith-Glaviana, 2016).

In contrast, subtle signals indicate the absence or decreased visibly of a logo or recognizable brand mark (due to its small size or discrete placement) (Berger & Ward, 2010; Greenberg et al., 2020). Products with subtle signals may be composed of plain materials with no obvious brand markings (Shao et al., 2019) or contain markings not easily recognizable or are less discernable (Ting et al., 2018; Wilcox et al., 2009). Such brand marks may consist of understated design features such as fine forms and dim colors (Greenberg et al., 2020). Subtle signals are less observable or, in some cases, entirely undetectable for most receivers and, therefore, are less effective than explicit signals (Ting et al., 2018). For fan-themed apparel products, subtle signals include distinctive marks that identify, in this case, a film series that are less visible, such as smaller surface design patterns. Subtle signals also include text or graphics that refer to specific aspects of the series that require more extensive knowledge of the film series to successfully recognize and interpret and may include quotes from the series or images of lesser-known characters or objects (Smith-Glaviana, 2016).

Signal explicitness has been extensively investigated by researchers in the areas of luxury branding, often as a form of brand prominence (e.g., Aw et al., 2021; Berger & Ward, 2010; Byun et al., 2020; see Table 1). Aligning with the optimal distinctiveness theory (Brewer, 2011), researchers have examined needs for distinctiveness, inclusion, and behavior intentions as outcomes of signal explicitness. For example, Berger and Ward (2010) found that consumers with insider knowledge (cultural capital) prefer subtle signals because they are concerned with signaling to fellow consumers who are also "in-the-know" (i.e., inclusion) while still setting themselves apart from mainstream consumers (i.e., distinctiveness). Similarly, Han et al. (2010) found that only consumers in the know can recognize the signals and prefer subtle over explicit signals to associate with particular groups (i.e., inclusion) and disassociate from other groups (i.e., distinctiveness). Despite abundant research focusing on signal explicitness and brand prominence in branding literature, the explicitness or subtlety of fan-themed logos or graphics (signals) has been rarely investigated.

Table 1 Characteristics of explicit and subtle signals as defined in previous research

Study	Objective	Context	Variables used that are similar to or synonyms of explicit vs. subtle signals	Methodology and Manipulation/stimulus of explicit vs. subtle signals	Findings
Aw et al. (2021)	To examine the effect of brand prominence on the purchase intention of luxury goods, with the mediating role of self-congruence and value-for-money perception	Luxury products	Brand prominent: a brand mark that is visible and observable vs. less obstructive logos placed at the corners of the goods	Experimental design Manipulation/stimulus: Wallets with big and very visible logos vs. wallets with small and unnoticeable logos	No direct effect was found between brand prominence and purchase intentions. Rather an indirect effect was found, which was that the brand prominence increased purchase intention by evoking self-congruence and/or value-for-money perception
Berger and Ward (2010)	To examine how signal explicitness influences consumer preference to communicate social identities, focusing on the moderating role of cultural knowledge	Luxury products	Signal explicitness: explicit signals include large logos or brand names that are more visible and loud patterns, vs. subtle signals include those that are less visible such as discreetly placed distinctive patterns	Experimental design Manipulation/stimulus: handbags with an explicit logo (e.g., visible Coach or Chanel pattern) vs. handbags without a logo (e.g., plain colors or brand-unrelated pattern)	Participants with more cultural capital in a particular domain prefer subtle signals because they provide differentiation from the mainstream
Byun et al. (2020)	To investigate drivers (susceptibility to normative influence and conspicuous, social, and unique values of luxury consumption) and dynamics (age, gender, income, and time lived in the US) of preferences for brand prominence among the Chinese little emperors (LEs) residing in the US	Luxury products	Brand prominence: Products with high brand prominence that are noticeable by a wide customer base	Online survey	Conspicuous, social, and unique value perceptions were driven by the susceptibility to normative influence among the Chinese LE generation residing in the US; perceived conspicuous and social values of luxury consumption were the Chinese LEs' primary drivers of preference for brand prominent luxury fashion bags

Table 1 (continued)

Study	Objective	Context	Variables used that are similar to or synonyms of explicit vs. subtle signals	Methodology and Manipulation/stimulus of explicit vs. subtle signals	Findings
Greenberg et al. (2020)	To explore the impact of personality traits and related motives on brand prominence and design extravagance	Luxury products	Brand prominence: large and visible brand logos vs. small logos or no logos	Within-subject experimental design Manipulation/stimulus: handbags, pullovers, and sneakers with vs. without brand logos	Extraversion was associated with the need for status, which increased preferences for brand prominence and design extravagance Openness to experience was associated with the need for uniqueness, which increased consumer preferences for design extravagance
Han et al. (2010)	To examine consumers' preferences for conspicuously or inconspicuously branded luxury goods corresponds with their desire to associate or dissociate with members of their own and other groups	Luxury products	Brand prominence: the extent to which a product has visible markings that aid in brand recognition among observers: loud (conspicuous branding) vs. quiet (discreet branding) products	Experimental design Manipulation/stimulus: Handbags with a big logo and signature pattern (e.g., classic green and red striped pattern from Gucci) vs. handbags without a logo	Wealthy consumers with low need for status want to associate with their own kind and pay a premium for quiet goods only they can recognize. Wealthy consumers with a high need for status use loud luxury goods to signal to the less affluent that they are not one of them
Kauppinen-Räisänen et al. (2018)	To examine how the relationship between personality traits (need for uniqueness and self-monitoring) and social traits (self-expression and self-presentation) determines consumer preferences for high vs. low brand prominence and investigate the mediating effects of gender and culture	Luxury products	Brand prominence (extent of the visual conspicuousness of the brand): loud (more prominent brand logo) vs. quiet (discreet/inconspicuous)	Online survey	Individuals with a need for uniqueness prefer products with low brand prominence, whereas individuals concerned with self-monitoring negatively affect the preference for high brand prominence Social traits such as self-expression and self-presentation do not influence brand prominence

Table 1 (continued)

Study	Objective	Context	Variables used that are similar to or synonyms of explicit vs. subtle signals	Methodology and Manipulation/stimulus of explicit vs. subtle signals	Findings
Shao et al. (2019)	To examine consumer preference for explicit vs. subtle brand visibility as it is conditional upon consumer motivation and the exposure to different types of ad copy	Luxury products	Explicit brand visibility (products that feature brand-themed colors) vs. subtle brand visibility (products manufactured in plain material with no obvious brand markings)	Experimental design Manipulation/stimulus: Gucci watch with bold Gucci-themed colors (gold, green, and red) on the band vs. Gucci watch with plain stainless-steel band with no obvious Gucci markings	Extrinsically motivated respondents showed a greater preference for the luxury product, irrespective of signal type, than intrinsically motivated respondents, while intrinsically motivated respondents who were high in need for uniqueness and low in self-monitors preferred subtle brand visibility In a social-adjustive advertisement, consumers prefer a luxury product with an explicit brand mark
Suh et al. (2016)	To verify the moderating effects of self-construal and implicit theory in relation to preferences for brand signal explicitness	Luxury products	Brand signal explicitness: Explicit signal product vs. Subtle signal product	Experimental design Manipulation/stimulus: handbag with brand logo vs. handbag with indirect brand marker	Independent self-construal primed respondents preferred subtle than explicit signal products, while interdependent self-construal priming respondents and entity theorists preferred an explicit to a subtle signal product
Ting et al. (2018)	To examine the influence of subjective norm, perceived behavioral control, and social-adjustive value-expressive, hedonic, and utilitarian function of attitude on purchase intention towards subtle luxury fashion goods	Luxury products	Products with subtle signals are discreetly marked. They either do not contain a visible logo or feature a monogram and signature print that is not easily recognizable	Survey	The social-adjustive and hedonic functions of attitudes positively affected consumers' purchase intention towards subtle luxury fashion goods, as did subjective norm and perceived behavioral control, with perceived behavioral control being the strongest predictor influencing consumers' purchase intention towards subtle luxury fashion goods

Table 1 (continued)

Study	Objective	Context	Variables used that are similar to or synonyms of explicit vs. subtle signals	Methodology and Manipulation/stimulus of explicit vs. subtle signals	Findings
Wilcox et al. (2009)	To investigate the moderating effect of brand conspicuousness on the relationship between consumers' desire regarding social motivations and consumer preferences for counterfeit and real brands	Luxury and counterfeit products	Brand conspicuousness: visible vs. less discernible and visible logos	Experimental design Manipulation/stimulus:handbag with a large, prominent logo located at the center of product exterior vs. handbag with no discernable logo	When products had a luxury brand logo, purchase intention was greater among social adjustive consumers than value-expressive consumers. However, when products featured no logo, there was no difference in purchase intentions among social-adjustive and value-expressive consumers
Affuso (2018)	To investigate implications of branded fan fashion objects targeted to female fans for fan practices	Fan-themed products	Fans subtly signal their fanship through fan-themed cosmetics, which are considered a wearable and less visible "form of fan merchandise" (p. 188)	Qualitative formal and textual analysis of branded makeup products related to advertising and social media discourse	Branded makeup products are sophisticated, adult, and fashion-forward and not designed to be recognized as fan-themed products. Thus, they are set apart from more explicit products associated with juvenilia. The lines allow consumers to participate in everyday cosplay in which only they are aware
Affuso and Santo (2018)	To review previous literature focusing on the relationship between merchandise and the film industry	Fan-themed Products	Fan-themed products vary in explicitness	Review paper	Identified topics for future research, including the role merchandise plays in fan practices

Table 1 (continued)

Study	Objective	Context	Variables used that are similar to or synonyms of explicit vs. subtle signals	Methodology and Manipulation/stimulus of explicit vs. subtle signals	Findings
Cherry (2016)	To explore the ways fans incorporate their fan interests in their handicrafting and use handicrafting to construct fan identity, form online fan communities, and remediate cult media stories/texts	Fan-themed products	Emblematic elements that vary in the extent that they are obvious to nonfans: Extratextual material: logos, images of characters/iconic objects, color palettes, or patterns Interpretive items that do not directly represent specific objects or contain recognizable iconography	Qualitative case studies	The analysis led to the creation of *A Taxonomy of Fan Handicrafting,* in which fan handicrafted items were categorized as one of three types: mimetic, emblematic, and interpretive. Most relevant to the current research are emblematic and interpretive handicrafting
Smith-Glaviana (2016)	To explore female fans' motivations for wearing inconspicuous forms of fan dress (including fan-themed clothing)	Fan-themed products	Conspicuous signals: more visible (larger) graphics and graphics/content that was recognizable by a wide/mainstream audience (e.g., film series' main logos or main characters) vs Inconspicuous signals: less visible (small) graphics such as small logos and graphics/content that was less recognizable (e.g., quotes from the films, images of lesser-known characters or objects, graphics that incorporated a unique or unusual artistic style, or mashups/crossovers that refer to more than one film series/brand)	An exploratory qualitative study utilizing semi-structured wardrobe interviews and photo analysis	Motivations for wearing fan dress included communicating expression of personal identity and social identity, facilitating interaction with other fans, and setting themselves apart from other fans, which varied depending on the conspicuousness or inconspicuousness of fan dress items

This table summarizes the objectives, methods, and findings of relevant research on explicit vs. subtle signals in addition to similar variables used to refer to explicit and subtle signals

Fanship

According to signaling theory, signal cost is another crucial element of efficacious signals (Connelly et al., 2011). As the signal cost is the signaler's resources (e.g., time, money, and/or cultural capital) used to form signals, the signal cost may vary depending on the level of interest in and knowledge of a fan interest. Since signal cost is an important component in the signaling process, we position it as an indicator of fanship and argue that fans with high fanship will possess more resources (i.e., signal cost) than fans with low fanship.

As previously mentioned, fanship is an individual's identification with or towards a fan interest that is similar to involvement because it encompasses several different concepts, such as commitment (Keaton, 2013), investment of time and money (Reysen & Branscombe, 2010), and interest in or knowledge of the fan interest (Pentecost & Andrews, 2010). Previous researchers have found that fans with high fanship were more involved and invested more time and money in their interests than fans with low fanship and, as a result, were also more knowledgeable about their fan interest than fans with low fanship (Choi et al., 2006; Wann & Branscombe, 1993). Thus, we define fans with high fanship as those who devote considerable time and money to the film series and have the knowledge and resources (i.e., signal cost) to interpret subtle cues from the series. In contrast, fans with low fanship are those who are relatively less knowledgeable about or involved in the film series and have no or fewer resources needed to send subtle signals. Fans with low fanship may be viewed by fans with high fanship as "mainstream fans" who are only interested in what is popular and easily accessible due to widespread media exposure instead of having a genuine fan interest (Scott, 2019).

Previous research on fan-themed products has identified distinct differences in perceptions of and purchase intentions toward fan-themed apparel among fans with varying levels of fanship (Kim, 2013; Kwak et al., 2015; Walker & Kent, 2009). Due to their higher degree of attachment and commitment to their fan interest, fans with high fanship exhibited more bias towards their fan interest and evaluated fan-themed products more highly on emotional and social value than fans with low fanship (Kwak et al., 2015). We, therefore, expect differences in perceptions and purchase intentions among film series fans with high vs. low fanship.

Fans' perceptions: perceived differentiation and social connection

Perceptions of products may differ by how they satisfy fans' underlying needs (Kwak et al., 2015). According to optimal distinctiveness theory, individuals have two opposing desires of distinctiveness and inclusion. In previous branding literature, these needs are often discussed as consumers' perceptions and values towards explicit vs. subtle signals (e.g., Berger & Ward, 2010, Han et al., 2010). In this study, we investigated variables related to distinctiveness and inclusion (i.e., perceived differentiation and social connection) as outcomes of explicit vs. subtle signals in the fan-themed apparel product context.

Perceived differentiation refers to the effort to make oneself stand out by appearing unique (Byun et al., 2020). Previous research has shown that fans demonstrate their desire for personal distinctiveness within these communities by displaying their accomplishments, knowledge, and skills related to their particular fan interest, as well as by

consuming fan-themed products that are unique, rare, exclusive, or uncommon (Greenberg et al., 2020; Schau et al., 2009). Unique fan-themed products express a fans' level of personal status within their fan culture by marking them as "real" or "true" fans while also differentiating them from mainstream fans (Chadborn et al., 2017; Smith-Glaviana, 2016). *Social connection* refers to creating, building, and maintaining relationships with like-minded others through the display of in-group symbols (Chadborn et al., 2017). Wearing fan-related symbols successfully facilitates interaction with other fans and is used to seek out new friendships, as well as maintain connections and strengthen bonds with family and friends (Smith-Glaviana, 2016). As a result of examining these two perceptions, we proposed the hypotheses discussed in the next section.

Effects of subtle vs. explicit signals on perceived differentiation

Perceived differentiation may differ due to differences in resources among fans with high vs. low fanship. According to signaling theory, fans with high fanship are likely to have paid the appropriate signal cost (personal resources, knowledge, and interests) to form efficacious signals, in this case, subtle signals (Bird & Smith, 2005; Connelly et al., 2011). They may also perceive subtle fan-themed graphics as a type of efficacious signal that can communicate superior knowledge of and interest in the film series (Berger & Ward, 2010; Connelly et al., 2011). Further, according to optimal distinctiveness theory, fans with high fanship are likely to be more established members within their fan cultures driven by needs of distinctiveness. Thus, considering these two theories, fans with high fanship may have the resources to form and send subtle signals and use the subtle signals to communicate their superior knowledge of and interest in the film series to fulfill their desire for distinctiveness. Previous literature supports this notion as luxury consumers who had insider knowledge (cultural capital) used subtle signals to set themselves apart from mainstream consumers (Berger & Ward, 2010) and to disassociate them from particular groups (Han et al., 2010). Smith-Glaviana (2016) also found that fans with high fanship differentiated themselves by wearing apparel containing specific references to a film series that mainstream fans could not interpret. Thus, we hypothesized that fans with high fanship would perceive that subtle signals would differentiate themselves from mainstream fans more than explicit signals would.

In contrast, there may be no difference in perceived differentiation between explicit vs. subtle signals among fans with low fanship. According to optimal distinctiveness theory, individuals who enter a new fan culture have a strong desire for inclusion rather than for distinctiveness until they establish their membership status (Brewer, 2011; Chadborn et al., 2017). In alignment with the theory, fans with low fanship (who might view themselves as mainstream fans) may focus less on differences between in-group and out-group members and, therefore, be disinclined to differentiate themselves from other fans (Scott, 2019; Wann & Branscombe, 1993). Furthermore, because fans with low fanship have yet to attain the appropriate resources (e.g., cultural capital and interests), they may not perceive subtle signals as meaningful and put little effort into forming signals that are unfamiliar to them (Zaggl et al., 2019). Therefore, due to their lack of desire for differentiation and inability to signal subtle cues, fans with low fanship may use neither explicit nor subtle signals to differentiate themselves from mainstream fans. The following hypothesis is proposed:

H1 (a) For consumers with high fanship, subtle signals increase perceived differentiation more than explicit signals. (b) For consumers with low fanship, perceived differentiation is no different for explicit and subtle signals.

Effects of subtle vs. explicit signals on social connection

Unlike the desire for distinctiveness, fans with low and high fanship may be concerned with fulfilling desires for inclusion. However, with whom they desire to build social connection may differ depending on the level of fanship. According to optimal distinctiveness theory, the need for inclusion is most salient when individuals enter a new group, and to establish membership, they may broadly define group boundaries (Brewer, 2011). In other words, to establish membership status, they may desire social connection with a broad range of people rather than limit their social interactions and connections to a specific type of person. Fans with low fanship may perceive that explicit signals could assist them in achieving group membership status and satisfy the need for inclusion because explicit signals are unlikely to require a high signal cost and are interpretable by a broad range of people, including other fans, friends, family, and strangers. Furthermore, fans with low fanship may be afraid of connecting with fans with high fanship since they do not possess sufficient resources (e.g., cultural capital) to interact with those with a deeper knowledge and interest (Smith-Glaviana, 2016). Therefore, they may choose to wear explicit signals instead of subtle signals for social connection. Research on fan-themed apparel supports our argument that fans may perceive explicit signals as effective for facilitating social connection. For example, Godwin (2018) found that wearing *Harry Potter* house merchandise, which is widely recognized due to the popularity of the film series, connected people with strangers who identified with the same house. Similarly, Smith-Glaviana (2016) found that conspicuous fan-themed dress (i.e., explicit signals) functioned as ice-breakers facilitating conversation and friendships. We, therefore, argue that fans with low fanship would perceive explicit signals to be more effective than subtle signals for facilitating social connection.

Fans with high fanship may also desire inclusion and social connection because, according to optimal distinctiveness theory, most people want to achieve a balance between distinctiveness and inclusion (Brewer, 2011). However, some individuals may create tighter group boundaries, narrowing the range of individuals who may achieve in-group membership (Brewer, 2011). Previous research on fanship supports this idea since fans with high fanship view fans similar to them as special and feel compelled to bond with them (Wann & Branscombe, 1993). In other words, fans with high fanship may prefer to limit their interactions with other like-minded fans. Because fans with high fanship are likely to have sufficient resources (e.g., insider knowledge/cultural capital), they may prefer to signal exclusively to others who also have the sufficient resources to interpret subtle cues. Berger and Ward (2010) found that consumers with insider knowledge preferred subtle signals because they were concerned with restricting signaling to fellow consumers who are in the know. Similarly, Han et al. (2010) found that only consumers in the know were able to recognize the signals and preferred subtle signals because they served to associate them with particular groups. Likewise, Smith-Glaviana (2016) found that subtle signals helped fans to communicate their status as a "big" or "real" fan more

accurately, allowing them to restrict their communication to other "real" or true fans (Smith-Glaviana, 2016). Thus, fans with high fanship may prefer to use subtle signals to interact exclusively with like-minded others who have the appropriate resources (e.g., knowledge and cultural capital) to interpret those signals.

H2 (a) For consumers with high fanship, subtle signals increase their perceptions of social connection more than explicit signals. (b) For consumers with low fanship, perceptions of social connection are higher for explicit than subtle signals.

Mediating effects of perceived differentiation and social connection among fans on the relationship between explicit vs. subtle signals and purchase intentions

According to optimal distinctiveness theory, individuals evaluate a given behavior more positively when they perceive that it will help them achieve their goals related to inclusion and distinctiveness (Leonardelli et al., 2010). For example, individuals had positive perceptions toward purchasing and wearing a team sweatshirt featuring in-group symbols when they perceived that it would satisfy their need for inclusion (Leonardelli et al., 2010). The mediating effect of the two desires—distinctiveness (perceived differentiation) and inclusion (social connection)—on signal explicitness and purchase intentions is further supported by previous literature. Branding researchers have found that preferences of marked luxury products, whether subtle or explicit, were driven by a desire for differentiation from mainstream consumers (Berger & Ward, 2010), which led them to purchase products with the type of signal they preferred. Therefore, it is anticipated that fans' purchase intentions will be higher for the type of signal that they feel will fulfill relevant needs related to inclusion and distinctiveness. For example, the perception of social connection may motivate fans with both low and high fanship to purchase fan-themed apparel products. Fans with low fanship may perceive that the explicit signals loudly announce their fan identity to others, lead to social connection, and fulfill the need for inclusion. This perception may increase their purchase intention for products with explicit signals. In contrast, fans with high fanship may perceive that subtle signals would allow them to connect exclusively with other true fans while simultaneously differentiating them from mainstream fans, consequently increasing their purchase intentions toward products with subtle signals. Therefore, we hypothesize that:

H3 (a) Perceived differentiation and (b) social connection mediate the relationship between explicit vs. subtle signals and purchase intentions.

Methods

We designed an experimental study to investigate how fans with varying levels of fanship perceive subtle vs. explicit signals featured on fan-themed apparel products related to film series' regarding perceived differentiation (H1) and social connection (H2). The experiment also examined the mediating effects of perceived differentiation and social connection on the relationship between explicit vs. subtle signals and purchase intentions (H3).

Stimuli development

We conducted Pretest 1 to select appropriate subtle vs. explicit signals to be used for the main study. First, we selected several popular film series with large numbers of fans based on the number of "likes" on each of their official Facebook pages. We chose five film series (e.g., *Batman* and *Star Wars*) with 13,000,000 to 20,000,000 likes. We then found a pool of images related to each film series (e.g., the main character and film still) and chose four images per series with two explicit and two subtle images based on taxonomic definitions provided in previous research (Smith-Glaviana, 2016). We added the film series title for the explicit condition and a quote from the film series for the subtle condition. Each t-shirt graphic contained one image and one text to control the image vs. text effect. Then we added the graphics to a white basic crewneck t-shirt to reduce any compounding effect attributable to aesthetic preferences, such as t-shirt color and design details.

A total of 20 t-shirts were developed, which contained four graphics for five different film series. Following the approval of the University Institutional Review Board (IRB), a total of 118 participants were recruited from Amazon Mechanical Turk (MTurk) for Pretest 1. Each participant was randomly assigned to five t-shirt images (one t-shirt per film series) and asked to evaluate the explicitness (i.e., subtle–explicit) and conspicuousness (i.e., inconspicuousness–conspicuousness) of the film series graphics and the overall likability of the t-shirt design (e.g., unfavorable–favorable; Cox & Cox, 2002) on a 7-point scale. We also asked participants to answer "yes" or "no" to whether they recognized the film series from the graphics. To select explicit vs. subtle t-shirt graphics, we used four criteria—the evaluation of explicitness, conspicuousness, film series recognition, and the likability of the t-shirt design. The t-shirt designs differed in film series recognition, while the likability of the t-shirt design was not different to control for the visual attractiveness of the design. As a result, we selected one explicit and one subtle design from *Star Wars* that differed in explicitness ($t = 4.11$, $p \leq 0.001$, $M_{\text{Explicit}} = 5.33$, $M_{\text{Subtle}} = 3.28$) and conspicuousness ($t = 5.85$, $p \leq 0.001$, $M_{\text{Explicit}} = 5.83$, $M_{\text{Subtle}} = 3.07$). For the explicit graphic, 94% of participants recognized the film series, while 45% recognized the film series from the subtle graphic ($\chi^2 = 15.12$, $p \leq 0.001$). Finally, two graphics did not differ in the likability of the t-shirt design ($t = 1.10$, $p > 0.05$, $M_{\text{Explicit}} = 5.09$, $M_{\text{Subtle}} = 4.64$) (see Fig. 1).

Pretest 2 was conducted to confirm subtle vs. explicit designs for the selected graphics from Pretest 1. In Pretest 2, we tested explicitness for images and texts separately and combined graphics of images and texts. Because previous studies did not statistically test the manipulation of explicitness, where there is no established measurement for signal explicitness (e.g., Berger & Ward, 2010; Shao et al., 2019), we adapted the brand prominence measurement, which was included to measure whether the film series was recognizable from an image, text, or a combined graphic of both, as well as whether the graphic was visible on the t-shirt (Aw et al., 2021). A total of 53 responses were collected via MTurk, and participants were randomly assigned to either explicit or subtle graphics. The results showed that participants were better able to recognize the film series ($t = 5.05$, $p \leq 0.001$, $M_{\text{Explicit}} = 6.29$, $\text{M}_{\text{Subtle}} = 3.68$) and rated explicitness ($t = 5.05$, $p \leq 0.001$, $M_{\text{Explicit}} = 5.74$, $\text{M}_{\text{Subtle}} = 3.18$) and conspicuousness higher for explicit than subtle image ($t = 3.93$, $p \leq 0.001$, $M_{\text{Explicit}} = 5.52$, $M_{\text{Subtle}} = 3.55$).



Fig. 1 Stimuli of fan-themed t-shirts with explicit (left) vs. subtle (right) signals

Furthermore, compared to the subtle text, the explicit text was rated higher for recognizability of the film series ($t = 9.45$, $p \leq 0.001$, $M_{\text{Explicit}} = 6.68$, $M_{\text{Subtle}} = 3.82$), explicitness ($t = 3.85$, $p \leq 0.001$, $M_{\text{Explicit}} = 6.10$, $M_{\text{Subtle}} = 4.18$), and conspicuousness ($t = 3.67$, $p \leq 0.001$, $M_{\text{Explicit}} = 6.03$, $M_{\text{Subtle}} = 4.23$). We also confirmed that the combined graphic of image and text showed higher recognizability of the film series for explicit than subtle graphics ($t = 4.58$, $p \leq 0.001$, $M_{\text{Explicit}} = 6.65$, $M_{\text{Subtle}} = 5.23$). As the interest of our study was to manipulate the explicitness of graphic content than the visibility of the graphic, we asked, "How visible is the graphic on the t-shirt?" anchored between "Not visible at all" and "Extremely visible." We confirmed that explicit and subtle graphics did not differ in terms of the visibility of the graphics on the t-shirt ($t = 1.86$, $p > 0.05$, $M_{\text{Explicit}} = 6.58$, $M_{\text{Subtle}} = 6.27$).

Main study procedure and instruments

The experimental design was used with two fan-themed t-shirts (explicit vs. subtle graphics) × two levels of fanship (high vs. low) between-subjects design. Fanship was a measured variable and was blocked to create two groups of participants considered high or low for fanship based on a median split. After obtaining approval from the University's IRB regarding the use of human subjects, the data were collected using an online survey via MTurk because MTurk workers are relatively representative of the overall population of the United States (Paolacci et al., 2010). To ensure the quality of our data, we distributed a questionnaire to MTurk users who held over a 97% approval rating and had logged over 1000 approvals.

We randomly assigned participants to one of two conditions: explicit vs. subtle fan-themed t-shirts. After reviewing the assigned t-shirt, participants were asked to rate the cues used to identify the film series as subtle-explicit (i.e., explicitness) and inconspicuous-conspicuous (i.e., conspicuousness; Berger & Ward, 2010). We also asked about

their perceived differentiation (Berger & Ward, 2010), social connection (Chadborn et al., 2017), and purchase intentions (Grewal et al., 1998) towards the assigned t-shirt, anchored between "Strongly disagree" and "Strongly agree." After answering these questions, participants were asked to rate their level of fanship, anchored between "Strongly agree" and "Strongly disagree" (Reysen & Branscombe, 2010). All items were measured on a 7-point scale (see Table 2).

Sample description

We initially collected a total of 436 responses from MTurk. We excluded careless responses that took less than one standard deviation (178 s) of average time spent (299 s) and answered questions containing simple attention checks incorrectly, resulting in 356 responses. As we defined high vs. low fanship in the literature review, our particular interest in this study was to compare fans with high and low fanship without non-fans. Thus, we screened participants who answered "No" to "Are you a fan of *Star Wars*

Table 2 Confirmatory factor analysis results

Factor/items	Factor loading	CR	AVE	Correlation matrix			
				FS	DM	SC	PI
Fanship (FS)		.93	.61	.78[a]			
I am emotionally connected to *Star Wars*	.80						
I spend a considerable amount of money on *Star Wars*	.75						
I want everyone to know I am connected to *Star Wars*	.81						
I would devote all my time to *Star Wars* if I could	.64						
I would be devastated if I were told I could not pursue my interest in *Star Wars*	.71						
I strongly identify with *Star Wars* films and/or television series	.89						
When *Star Wars* is popular, I feel great	.78						
Star Wars is part of me	.88						
I want to be friends with people who like *Star Wars*	.76						
Differentiation from mainstream fans (DM)		.72	.56	.09	.75[a]		
This t-shirt would differentiate me from mainstream *Star Wars* fans	.73						
This t-shirt would avoid things that typical mainstream *Star Wars* fans would buy	.77						
Social connection (SC)		.85	.66	.51	.28	.81[a]	
Wearing this t-shirt would provide me an opportunity to share my interest in *Star Wars* with my family and bring us closer	.82						
Wearing this t-shirt would provide me with an activity to share my interest in *Star Wars* with my existing friends/ways to stay connected	.85						
Wearing this t-shirt provides me with a chance to expand my circle of friends	.77						
Purchase Intentions (PI)		.98	.94	.46	.39	.50	.97[a]
I would consider buying this t-shirt	.95						
There is a strong likelihood that I would buy this t-shirt	.97						
I would purchase this t-shirt	.98						

CR: Composite Reliability; AVE: Average Variance Extracted

[a] Square root of AVE value for each construct

series?" to remove non-*Star Wars* fans (32%), resulting in a total of 242 responses for data analyses. All participants lived in the United States. Over half were female (54%); 46% were male. The majority of participants were aged between 25 and 44 (63%), Caucasian (83%), and received some college education (70%). Most household incomes ranged between $20,000 and $49,999 (39%).

Data analysis

In the preliminary analysis, we used SPSS for the manipulation check and AMOS for confirmatory factor analysis (CFA). A PROCESS analysis (Preacher & Hayes, 2008) was conducted using SPSS to test all hypotheses (H1, H2, and H3).

Results

Preliminary analysis

From the manipulation check, we found that the cues used to identify the film series for the explicit fan-themed t-shirt was rated as more explicit ($F_{(1,240)} = 155.93$, $p \leq 0.001$, $M_{\text{Explicit}} = 6.53$, $M_{\text{Subtle}} = 4.12$) and conspicuous ($F_{(1,240)} = 52.62$, $p \leq 0.001$, $M_{\text{Explicit}} = 6.03$, $M_{\text{Subtle}} = 4.42$) than the subtle cue. All participants in the explicit condition recognized the film series, while 81% in the subtle condition recognized it from the subtle graphic ($\chi^2 = 10.88$, $p \leq 0.001$). The likability of the t-shirt design was not different across the explicit vs. subtle graphics ($F_{(1,240)} = 0.001$, $p > 0.05$, $M_{\text{Explicit}} = 5.07$, $M_{\text{Subtle}} = 5.06$), thus showing successful manipulation.

CFA was conducted to assess the measurement model with the four latent variables of fanship, perceived differentiation, social connection, and purchase intention (see Table 2). Confirming convergent validity, factor loadings, composite reliabilities, and average variances extracted (AVE) for all constructs were over 0.64, 0.72, and 0.56, respectively (Hair et al., 2010). We also confirmed discriminant validity because the square root of the AVE values for all constructs were larger than the corresponding correlation coefficients between the factors. The model demonstrated a good fit to the data ($\chi^2/df = 1.91$, CFI = 0.97, NFI = 0.97, TLI = 0.96, RMSEA = 0.06). The CFA result is shown in Table 2.

Hypotheses testing

We conducted a PROCESS analysis to test all hypotheses. The explicit vs. subtle design was coded as a dummy variable (explicit = 0, subtle = 1). Furthermore, participants were divided into low vs. high fanship groups using a median split (median = 3.88, $M_{\text{low fanship}} = 2.75$, $M_{\text{high fanship}} = 4.73$) and were coded as a dummy variable (low = 0, high = 1). We included perceived differentiation and social connection as two mediators in the Model 8 of the PROCESS analysis. The result showed that the effects of the explicit vs. subtle t-shirt design on perceived differentiation ($B = 0.72$, $t = 3.35$, $p \leq 0.001$; B is unstandardized coefficient) and social connection ($B = -0.43$, $t = -0.22$, $p \leq 0.01$) were significant. The interaction effect was not significant for perceived differentiation ($B = -0.52$, $t = 1.54$, $p > 0.05$). Specifically, compared to the explicit t-shirt design, the subtle t-shirt increased perceived differentiation for both fans with high (H1a: $B = 1.24$, $t = 5.49$, $p \leq 0.001$) and low fanship (H1b: $B = 0.72$, $t = 3.35$, $p \leq 0.001$), thus

supporting H1a but rejecting H1b. In contrast, the result showed a significant interaction effect between explicit vs. subtle design and fanship on social connection ($B = 0.89$, $t = 3.20$, $p \leq 0.01$). For consumers with high fanship, subtle signals increased the perception that fan-themed apparel can facilitate social connection more than explicit signals (H2a: $B = 0.46$, $t = 2.30$, $p \leq 0.05$), while the perception of social connection was higher for explicit than for the subtle t-shirt design among fans with low fanship (H2b: $B = -0.43$, $t = -0.23$, $p \leq 0.05$), thus supporting both H2a and H2b. Furthermore, both perceived differentiation ($B = 0.31$, $t = 3.84$, $p \leq 0.001$) and social connection ($B = 0.48$, $t = 5.26$, $p \leq 0.001$) increased purchase intentions. For the high fanship group, the effects of explicit vs. subtle design on purchase intentions were mediated by perceived differentiation ($B = 0.39$, $0.16 < CI < 0.67$) and social connection ($B = 0.22$, $0.05 < CI < 0.42$). Likewise, perceived differentiation ($B = 0.23$, $0.16 < CI < 0.67$) and social connection ($B = -0.21$, $-0.42 < CI < -0.02$) mediated the relationship between explicit vs. subtle design and purchase intention among participants in the low fanship group. Thus, H3a and H3b are supported for both high and low fanship groups.

Discussion

This study provided an understanding of how fans with high vs. low fanship perceive subtle and explicit fan-themed graphics. First, we found that fans with high fanship perceived that subtle signals differentiated themselves from mainstream fans better than explicit signals. Because these fans have a greater desire to separate themselves from mainstream fans, they avoid explicit signals that are recognized by a wide customer base (Chadborn et al., 2017). These results support previous research on signaling theory (Brewer, 2011) and identity signaling (Berger & Ward, 2010) since they suggest that fans with high fanship have sufficient knowledge and cultural capital (i.e., signal cost) that enable them to signal via subtle cues. Because subtle signals might be considered weak when communicating with a wide consumer base, signalers perceived that subtle signals differentiated themselves from other fans who lacked the necessary cultural capital to interpret them. The results also support optimal distinctiveness theory by providing evidence that fans with high fanship may be more established members within their fan cultures driven by the need for differentiation to display more distinct fan identities through their apparel choices (Chadborn et al., 2017). The results confirm previous research by demonstrating that subtle graphics serve to differentiate fans from other mainstream fans and mark them as "real" or "true" fans (Smith-Glaviana, 2016). In addition, subtle signals assist fans in creating and communicating a more distinct fan identity within their fan group.

One unexpected result of this study was that fans with low fanship perceived that the subtle rather than an explicit graphic was more effective for differentiation. Drawing from optimal distinctiveness theory, we predicted that these fans would be new to the fan culture and would seek to establish a legitimate fan identity. As a result, they would desire and value inclusion over distinctiveness and differentiation. Therefore, our finding cannot be explained by optimal distinctiveness theory. However, we may conclude that fans with low fanship perceived that the subtle signal could differentiate themselves from other fans because it was unique or uncommon compared to designs sold at mainstream retailers (Smith-Glaviana, 2016). Although we predicted that these fans would lack

sufficient resources (knowledge/cultural capital) needed to interpret and send subtle signals, it is possible that fans with low levels of fanship may have had sufficient knowledge to use the subtle signal due to the increased accessibility of insider knowledge via the internet (Berger & Ward, 2010). Also, the abundance of media attention surrounding the release of *Star Wars* films and the growing popularity of the franchise in recent years may have increased the recognition of more specific fan-related symbols among the general public. Previous researchers have acknowledged the role of film franchise popularity in increasing brand recognition among fans and non-fans alike (Godwin, 2018; Smith-Glaviana, 2016).

We also found that fans with high levels of fanship perceived that the subtle design could facilitate social connection, while fans with low fanship perceived that the explicit design could better facilitate social connection. Fans with high fanship value building social connections with true fans (like-minded fans or others in the know) more highly, rather than having a similar connection with a broad range of fans (including mainstream fans) (Wann & Branscombe, 1993). Thus, they likely prefer to signal their fan identity in ways that only fans with a deeper knowledge of the film series can understand. Conversely, to distinguish them from fans with high levels of fanship, fans with lower levels of fanship may look for social connection with general fans, friends, and family. These fans may believe that explicit signals can create, build, and maintain relationships with a broad range of fans since the explicit signal is easier to interpret. These findings further support signaling theory and optimal distinctiveness theory since both subtle and explicit designs function as symbols of group identity that satisfy the need for inclusion by connecting fans with varying levels of fanship (Brewer, 2011; Chadborn et al., 2017). As signaling theory identified two characteristics of efficacious signals in the form of observability and signal cost (Connelly et al., 2011), these elements interactively influence consumers' perceptions, particularly their desire for social connection.

Lastly, the results showed that perceived differentiation and social connection mediated the effects of subtle vs. explicit signals on their purchase intentions. When fans perceived that signals could differentiate themselves from mainstream fans and facilitate social connection, their purchase intentions increased. Additionally, we found that fans with high fanship are more likely to purchase fan-themed apparel with subtle rather than explicit signals to differentiate themselves, achieve distinctiveness with their fan cultures, and build and maintain relationships with other "true" fans. The results support optimal distinctiveness theory as well as previous studies on branding, which have shown that individuals desire to fulfill the two opposing needs of inclusion and differentiation. Fans perceive that these needs can be fulfilled by wearing fan-themed apparel, and these perceptions influence their purchase intentions (Berger & Ward, 2010; Kwak et al., 2015).

Surprisingly, like fans with high fanship, purchase intentions increased more for the subtle signal than explicit signal among those with low fanship when they perceived that it would differentiate themselves from mainstream fans. In contrast, their purchase intentions increased for the explicit signal when they perceived it could facilitate social connection. As fans with low fanship are more likely to be mainstream fans and may not have strong intentions to connect with true fans of the film series, they may prefer to purchase apparel with explicit graphics to generate casual conversation with a broad range of people, including friends, family, and strangers (Smith-Glaviana, 2016).

Conclusion

Theoretical implications

By studying subtle signals in a new context and examining the film fans' perceptions of subtle vs. explicit signals as a function of fanship, we contribute to the literature on signaling and fan-themed apparel consumption. This study extends the definition of subtle signals to include a more diverse range of design details (e.g., graphics that refer to more specific aspects of a film series) and that might be used in other consumption contexts. Because most of the branding literature exploring explicit vs. subtle signals focused on the visibility and size of brand logos rather than on the content of non-logo graphics (e.g., Han et al., 2010; Kauppinen-Räisänenan et al., 2018; Ting et al., 2018), this study contributes to the understanding of design elements that influence explicit and subtle signals.

We also explored the perceptions that drive the consumption of fan-themed apparel from a quantitative perspective, which provides generalizable results from data with a larger number of consumers and adds to the literature on mass-produced fan-themed products. While our findings supported the results of previous qualitative studies (Cherry, 2016; Smith-Glaviana, 2016), the focus of the latter was on motivations for making and/or wearing fan-themed clothing rather than on the perceptions of mass-produced products and their influence on purchase intentions. Also, qualitative methods did not permit an examination of cause and effect, which was achieved through the experimental design of the present study.

Another implication of the study is to extend the use of signaling theory and optimal distinctiveness theory to new research areas of fan-themed products regarding explicit vs. subtle signals. Through using signaling theory, we found that fanship, which encompasses knowledge/cultural capital and involvement (i.e., signal costs), plays a key role in the observability of subtle signals. Further, by adopting optimal distinctiveness theory, we found that perceptions of subtle vs. explicit fan-themed graphics may be partially explained by the need for inclusion and differentiation and the degree of fanship. While we found that those with low levels of fanship perceived that the subtle signal would differentiate themselves from mainstream fans, it is unclear whether these fans hold this perception due to the appeal of the uncommon or unique design or a desire for differentiation. Such questions may be the subject of future research.

Practical implications

The present study yielded practical implications for producers, marketers, and retailers of fan-themed apparel. Based on our findings, subtle signals elicit positive perceptions of the products and increase purchase intention more than explicit signals, especially among those with high levels of fanship. Although fans with lower fanship prefer explicit signals to facilitate social connection with others, they prefer subtle signals to differentiate themselves from those they see as mainstream fans. Because fans with high fanship are more likely to purchase fan-themed products than those with low fanship, it is advisable to cater to their preferences. Thus, the most obvious implication is that apparel brands and designers should consider developing fan-themed apparel with subtle signals—those that only fans with deeper knowledge and a greater interest in the film series can interpret and communicate—rather than applying design clichés (e.g., simply

presenting the main logos or characters of the film series). Subtle signals are more likely to elicit perceived differentiation from mainstream fans and social connection with like-minded fans, resulting in the purchase of products with subtle fan-themed graphics.

Another implication is that more companies may consider co-creating products with fans. Currently, companies such as Redbubble sell fan-themed apparel with fan-created designs via online platforms (Santo, 2018). Fans have noted such products to be subtler and preferred due to their signaling benefits of facilitating social connection and communicating a distinct fan identity (Smith-Glaviana, 2016). Not only can these partnerships deepen the manufacturers' understanding of fan tastes and yield profitable product designs, but they might also help to reduce cases of copyright and trademark infringement brought against fan creators (Santo, 2018).

In this study, women comprised over half of the sample, which raises questions about to whom fan-themed apparel with subtle signals appeal. Previous researchers have found that female fans prefer to express their fanship in subtle ways, such as by wearing licensed makeup or clothing with subtle graphics because items that explicitly refer to film franchises are often associated with juvenilia (Affuso, 2018; Smith-Glaviana, 2016). As Santo (2018) pointed out, manufacturers and retailers use fan-themed products to suit their own needs by fitting them into established lines and consumer categories (i.e., merchandising products according to age and gender). Santo (2018) argued that by merchandising fan-themed products primarily in tween and male departments, they reinforce gender expectations and suggest that females are expected to age out of film series fanship, but males are not. These merchandising strategies also reinforce the association of fan-themed products with juvenilia. Thus, a final practical implication is that manufacturers and retailers may consider producing more subtle products for female fans and targeting that consumer group through more inclusive merchandising practices.

Limitations and future study

Although we conducted the experiment with care, the study has some limitations. Because we examined only one film series and one type of apparel product, the results may not be generalizable to other fan-themed apparel related to other fan interests. Future researchers may replicate this study and apply it to sports, music, and film genres other than science fiction and fantasy. Another limitation is the use of a median split to divide participants into two groups—low and high levels of fanship—to test the proposed hypotheses. Participants classified as low fanship in this study may be classified as high fanship in another, and future researchers might develop a research model where fanship is a continuous variable to reflect the full spectrum of fanship.

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Author contributions
DS identified the topic of the study, conducted a literature review, and wrote the manuscript Introduction, Discussion, and Conclusion sections of the manuscript. JEL assisted with locating and interpreting articles for the literature review, collected and analyzed the data, and wrote the results section of the manuscript. Both authors copy-edited, revised the final manuscript. Both authors read and approved the final manuscript.

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Availability of data and materials
The datasets generated and/or analyzed during the current study are not publicly available due privacy and human subject considerations under the IRB, but are available from the corresponding author on reasonable request and after obtaining an approval from the IRB.

Declarations

Ethics approval and consent to participate
This research was conducted under the approval and supervision of the Virginia Tech Institutional Review Board (IRB No. 19-978) regarding ethical issues including consent to participate. The study was categorized as Exempt, under 45 CFR 46.104(d) category(ies) 2(i), 2(ii).

Competing interests
The authors declare that they have no competing interests.

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References

Affuso, E. (2018). Everyday costume: Feminized fandom, retail, and beauty culture. In M. A. Click & S. Scott (Eds.), *The Routledge companion to media fandom* (pp. 184–192). Routledge.
Affuso, E., & Santo, A. (2018). Mediated merchandise, merchandisable media: An introduction. *Film Criticism, 42*(2), 72–87. https://doi.org/10.3998/fc.13761232.0042.201
Aw, E. C. X., Chuah, S. H. W., Sabri, M. F., & Basha, N. K. (2021). Go loud or go home? How power distance belief influences the effect of brand prominence on luxury goods purchase intention. *Journal of Retailing and Consumer Services, 58*, 102288. https://doi.org/10.1016/j.jretconser.2020.102288
Berger, J., & Ward, M. (2010). Subtle signals of inconspicuous consumption. *Journal of Consumer Research, 37*(4), 555–569. https://doi.org/10.1086/655445
Bird, R. B., & Smith, E. (2005). Signaling theory, strategic interaction, and symbolic capital. *Current Anthropology, 46*(2), 221–248.
Brewer, M. B. (2011). Optimal distinctiveness theory: its history and development. In P. A. M. Van Lange, A. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (2nd ed., pp. 81–98). Sage.
Byun, S. E., Long, S., & Mann, M. (2020). Drivers and dynamics of brand prominence preferences among the Chinese little emperors residing in the US. *Journal of Fashion Marketing and Management: An International Journal, 24*(1), 6682. https://doi.org/10.1108/JFMM-01-2019-0007
Chadborn, D., Edwards, P., & Reysen, S. (2017). Displaying fan identity to make friends. *Intensities: the Journal of Cult Media, 9*, 87–97. Retrieved 06 May 2022 from https://www.intensitiescultmedia.com
Cherry, B. (2016). *Cult media, fandom, and textiles: Handicrafting as fan art*. Bloomsbury.
Choi, G. D., Park, J. O., & Lee, J. Y. (2006). A study on buying behavior of sports apparel brands according to the involvement of the professional football team. *Journal of the Korean Society of Clothing and Textiles, 30*(5), 807–817. Retrieved 06 May 2022 from https://www.koreascience.or.kr/article/JAKO200626813040906.page
Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management, 37*(1), 39–67. https://doi.org/10.1177/0149206310388419
Courbet, D., & Fourquet-Courbet, M. P. (2014). When a celebrity dies… Social identity, uses of social media, and the mourning process among fans: The case of Michael Jackson. *Celebrity Studies, 5*(3), 275–290. https://doi.org/10.1080/19392397.2013.872361
Cox, D., & Cox, A. D. (2002). Beyond first impressions: The effects of repeated exposure on consumer liking of visually complex and simple product designs. *Journal of the Academy of Marketing Science, 30*(2), 119–130. https://doi.org/10.1177/03079459994371
Gatiss, M. & Moffat, S. (2010–2017). *Sherlock* [TV series]. Hartswood Films, BBC Wales, and Masterpiece Theatre BBC.
Godwin, V. L. (2018). Hogwarts house merchandise, liminal play, and fan identities. *Film Criticism*. https://doi.org/10.3998/fc.13761232.0042.206
Greenberg, D., Ehrensperger, E., Schulte-Mecklenbeck, M., Hoyer, W. D., Zhang, Z. J., & Krohmer, H. (2020). The role of brand prominence and extravagance of product design in luxury brand building: What drives consumers' preferences for loud versus quiet luxury? *Journal of Brand Management, 27*(2), 195–210. https://doi.org/10.1057/s41262-019-00175-5

Grewal, D., Krishnan, R., Baker, J., & Borin, N. (1998). The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions. *Journal of Retailing, 74*(3), 331–352. https://doi.org/10.1016/S0022-4359(99)80099-2
Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Prentice Hall.
Han, Y. J., Nunes, J. C., & Drèze, X. (2010). Signaling status with luxury goods: The role of brand prominence. *Journal of Marketing, 74*(4), 15–30. https://doi.org/10.1509/jmkg.74.4.015
Kauppinen-Räisänen, H., Björk, P., Lönnström, A., & Jauffret, M. N. (2018). How consumers' need for uniqueness, self-monitoring, and social identity affect their choices when luxury brands visually shout versus whisper. *Journal of Business Research, 84*, 72–81. https://doi.org/10.1016/j.jbusres.2017.11.012
Keaton, S.A. (2013). Sport team fandom, arousal, and communication: a multimethod comparison of sport team identification with psychological, cognitive, behavioral, affective, and physiological measures [Unpublished doctoral dissertation]. Louisiana State University. Retrieved 06 May 2022 from https://digitalcommons.lsu.edu/gradschool_dissertations/2155?utm_source=digitalcommons.lsu.edu%2Fgradschool_dissertations%2F2155&utm_medium=PDF&utm_campaign=PDFCoverPages
Kim, H. (2013). *Factors influencing consumer's purchasing intention towards licensed sport team merchandise: A study of the Korean market [Unpublished doctoral dissertation]*. Seoul National University. Retrieved 06 May 2022 from https://s-space.snu.ac.kr/bitstream/10371/127293/1/000000018023.pdf
Kumar, U.S. (2018). VF Corp raises full-year forecast, propelled by soaring Vans sales. *Reuters*. https://www.reuters.com/article/us-vf-results/vf-corp-raises-full-year-forecast-propelled-by-soaring-vans-sales-idUSKBN1KA1FX
Kwak, D. H., Kwon, Y., & Lim, C. (2015). Licensing a sports brand: Effects of team brand cue, identification, and performance priming on multidimensional values and purchase intentions. *Journal of Product & Brand Management, 24*(3), 198–210. https://doi.org/10.1108/JPBM-05-2014-0579
Leonardelli, G. J., Pickett, C. L., & Brewer, M. B. (2010). Optimal distinctiveness theory: A framework for social identity, social cognition, and intergroup relations. *Advances in Experimental Social Psychology, 43*, 63–113. https://doi.org/10.1016/S0065-2601(10)43002-6
Licensing International (2021). *Global licensing survey*. Licensing International. https://licensinginternational.org/get-survey/
Meyer, H. M., & Manika, D. (2017). Consumer interpretation of brand prominence signals: Insights for a broadened typology. *Journal of Consumer Marketing, 34*(4), 349–358. https://doi.org/10.1108/JCM-11-2014-1226
Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on Amazon mechanical turk. *Judgment and Decision Making, 5*(5), 41–419. Retrieved 06 May 2022 from https://ssrn.com/abstract=1626226
Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879
Pentecost, R., & Andrews, L. (2010). Fashion retailing and the bottom line: The effects of generational cohorts, gender, fashion fanship, attitudes and impulse buying on fashion expenditure. *Journal of Retailing and Consumer Services, 17*(1), 43–52. https://doi.org/10.1016/j.jretconser.2009.09.003
Reysen, S., & Branscombe, N. R. (2010). Fanship and fandom: Comparisons between sport and non-sport fans. *Journal of Sport Behavior, 33*(2), 176–193. Retrieved 06 May 2022 from https://psycnet.apa.org/record/2010-09707-004
Santo, A. (2018). Fans and merchandise. In M. A. Click & S. Scott (Eds.), *The Routledge companion to media fandom* (pp. 329–336). Routledge.
Schau, H. J., Muñiz, A. M., Jr., & Arnould, E. J. (2009). How brand community practices create value. *Journal of Marketing, 73*(5), 30–51. https://doi.org/10.1509/jmkg.73.5.30
Scott, S. (2019). *Fake geek girls: Fandom, gender, and the convergence culture industry*. NYU Press.
Shao, W., Grace, D., & Ross, M. (2019). Investigating brand visibility in luxury consumption. *Journal of Retailing and Consumer Services, 49*, 357–370. https://doi.org/10.1016/j.jretconser.2019.04.017
Smith-Glaviana, D.C. (2016). Inconspicuous fandom: Exploring subtle female's expressions of science fiction and fantasy fandom through dress [Unpublished doctoral dissertation]. Louisiana State University. Retrieved 06 May 2022 from https://digitalcommons.lsu.edu/gradschool_dissertations/3085/
Suh, M. J., Hwang, S. J., & Yeo, J. S. (2016). Differences in preference depending on signal explicitness when selecting fashion luxury brand—the moderating effects of self-construal and implicit theory. *Journal of the Korean Society of Costume, 66*(1), 13–27. https://doi.org/10.7233/jksc.2016.66.1.013
Ting, M. S., Goh, Y. N., & Isa, S. M. (2018). Inconspicuous consumption of luxury fashion goods among Malaysian adults: An investigation. *Global Business and Management Research, 10*(1), 313–330. Retrieved 06 May 2022 from https://www.proquest.com/docview/2131782757?pq-origsite=gscholar&fromopenview=true
Walker, M., & Kent, A. (2009). Do fans care? Assessing the influence of corporate social responsibility on consumer attitudes in the sport industry. *Journal of Sport Management, 23*(6), 743–769. https://doi.org/10.1123/jsm.23.6.743
Wann, D. L., & Branscombe, N. R. (1993). Sports fans: Measuring degree of identification with their team. *International Journal of Sport Psychology, 24*, 1–17.
Wilcox, K., Kim, H. M., & Sen, S. (2009). Why do consumers buy counterfeit luxury brands? *Journal of Marketing Research, 46*(2), 247–259. https://doi.org/10.1509/jmkr.46.2.247
Zaggl, M. A., Hagenmaier, M. A., & Raasch, C. (2019). The choice between uniqueness and conformity in mass customization. *R&D Management, 49*(2), 204–221. https://doi.org/10.1111/radm.12327

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