Goldilocks Signaling: How the Number of Signaling Items in an Ensemble Affects Perceptions of Consumer Authenticity

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ABSTRACT

A major motivation for consumption is the use of products to communicate or signal information about oneself to observers. The literature on this phenomenon has typically explored the use of single products as signals. This research explores how multi-product signals—consumption ensembles—are perceived by observers. Specifically, this research explores how the number of identity-signaling items (e.g., Nike items) a consumer includes in their ensemble affects observer perceptions of the consumer's identity-specific authenticity (e.g., authenticity as an athlete). Such perceptions are important to consumers' social relationships because perceived authenticity can affect interpersonal liking. If consumers wish to be seen as authentic, this research demonstrates that they have to balance self-presentation with the perception that they are trying too hard to signal. Accordingly, consumers with ensembles featuring a moderate or "just right" number of signaling items are generally (with some boundaries) perceived as most authentic in relation to the identity they are signaling—a "Goldilocks signaling" effect. Consumers make these inferences both spontaneously, without direct prompting regarding authenticity from experimenters, and reflecting the choice patterns of more versus less authentic consumers. This research is one of very few experimental papers in consumer behavior to consider ensemble signaling and provides new insights into the psychological processes underlying judgments of consumers' authenticity.

Imagine that you are staring into your closet deciding what to wear for the day. You identify as an athlete and want others to perceive you as such. If you want to look like a true athlete, should all of your clothing items feature a Nike logo to signal your athleticism? Or should you perhaps be subtler? This research explores how the number of identity-symbolic or signaling items in a consumer's ensemble affects observer perceptions of the consumer's identity-specific authenticity.[1]

Signaling theory (e.g., Spence 1973) suggests that signals must be visible in order to effectively communicate the desired trait that the signal represents. Nike only signals athleticism to others, for instance, if others can see it. One intuitive extension of this principle is that consumers who use more signaling items simultaneously to signal their desired trait will communicate that trait more effectively than consumers who use fewer signaling items simultaneously. In other words, consumers may think that more Nike items signal more genuine athleticism. Indeed, consumers have bought into this "more is more" intuition during certain periods. In the late 1990s and early 2000s, for instance, dressing head-to-toe in branded designer clothing was common, presumably intended as a signal of status (Brillson 2013). A decade later, tutorials on removing logos from clothing (e.g., "Removing the New Era Logo" n.d.) are garnering hundreds of thousands of views on YouTube, and *Business Insider* reports that "millennials can't stand logos" (Lutz 2015).

The current research suggests that logo-shunning millennials, an "authenticity obsessed" generation (Moore 2014), have perhaps correctly resisted the "more is more" intuition to adorn

[1] We use the term signal as shorthand to refer to identity-symbolic consumption. We do not intend the term to precisely denote the formal economic notion of signaling as part of a separating equilibrium.

their consumption ensembles with signaling items. Our theory suggests that, if they wish to be seen as authentic, consumers have to balance self-presentation using identity-signaling items with the perception that they are trying too hard to signal. Therefore, we show that consumers with ensembles featuring a moderate ("just right") versus greater or lesser number of signaling items are perceived as most authentic in relation to the identity they are signaling—a "Goldilocks signaling" effect. Furthermore, we show that these perceptions of consumer authenticity can affect interpersonal liking. We also demonstrate that this effect replicates even when the ensemble features brand variety (e.g., Nike and Under Armour), suggesting the effect is not driven by perceptions of the consumers' overreliance on a single brand.

Additionally, supporting the proposed theory, we show that this downturn does not happen—a boundary condition of this effect—when the consumer is signaling an identity for which there is an expectation of excessive, trying-too-hard signaling (e.g., team fan). We also demonstrate that observers make similar judgments of authenticity spontaneously (i.e., without direct prompting regarding authenticity from experimenters). Finally, turning our attention to ensemble choice, we demonstrate that inauthentic consumers who want to pass as authentic indeed tend to choose ensembles with more signaling items than authentic consumers, ironically decreasing their chances of passing as authentic.

This theory and set of findings make several contributions. First, this research is one of very few experimental papers in consumer behavior to consider ensemble signaling. Consumers virtually never consume products in isolation from other products. However, as Solomon (1988, p. 235) suggested in the 1980s, "most psychological treatments of product symbolism have been focused at the individual product level," and consumer psychologists need to "better understand

how sets of consumption stimuli are used by consumers, both for self-definition and for the categorization of others." With few exceptions since then (e.g., Bhattacharjee, Barasch, and Wertenbroch 2018), identity research in consumer behavior continues to overwhelmingly focus on how a single product can signal an identity (e.g., Berger and Heath 2007, 2008, Escalas and Bettman 2003, 2005; White and Dahl 2006, 2007). Thus, our research adds to consumer signaling research by considering both conceptually and empirically how ensembles of multiple signals, which are pervasive in consumers' lives, may or may not effectively signal the intended identity.

In addition to expanding the notion of a signal, we also broaden the scope of the signaling and authenticity literatures by exploring what causes consumer identity signals to be perceived as authentic. The nascent literature on authenticity in consumer behavior and psychology has primarily focused on the factors affecting judgments of brand or product authenticity (e.g., Beverland 2005, 2006; Grayson and Martinec 2004; Morhart et al. 2015; Newman and Dhar 2014) or consumers' feelings regarding their own authenticity (e.g., Gino, Kouchaki, and Galinsky 2015; Gino, Norton, and Ariely 2010; Kernis and Goldman 2006; Wood et al. 2008). In contrast to these prior approaches, we focus on observer judgments of consumer authenticity. Although judgments of authenticity by others are typically a primary motivation behind consumer signaling—a consumer often uses athletic identity signals to be perceived by others as an authentic athlete—they have not been the focus of prior work. Further underscoring the importance of this perception, we also find that observers often naturally, without experimenters having to ask, attend to and infer the authenticity of a signaling consumer.

In the next sections, we examine the literature on identity-signaling consumption. Then we consider how the number of identity-signaling items in a consumer's ensemble affect observers' judgments of the consumer's authenticity.

IDENTITY-SIGNALING CONSUMPTION

Identity-signaling consumption is symbolic consumption that allows consumers to convey identities that are often otherwise unobservable to others (Berger 2008; Gal 2015; Kirmani 2009). Identity-signaling research in consumer behavior has overwhelmingly focused on how a single product can signal an identity (e.g., Berger and Heath 2007, 2008, Escalas and Bettman 2003, 2005; Levy 1959; White and Dahl 2006, 2007). However, consumers rarely if ever consume products in isolation from other products. The many products that consumers use that might represent and express aspects of their self-concepts have been called consumption constellations. In particular, consumption constellations are "clusters of complementary products, specific brands, and/or consumption activities used by consumers to define, communicate, and enact social roles" (Solomon 1988, p. 235). These constellations include everything a person owns that allows them to construct, signify, or perform a certain social role. Prior research confirms that people indeed understand and create consumption constellations (Holman 1980; Solomon 1987, 1988; Solomon and Buchanan 1991), even from an early age (Chaplin and Lowrey 2010), and they store these constellations in memory, particularly for aspirational groups (Lowrey et al. 2001). These ensembles represent a useful way for consumers to simplify and understand social categories (Solomon 1988) and hence signal different traits to observers with surprising consistency (Gosling et al. 2002; Solomon 1988).

Based on previous definitions, consumption constellations do not require visible, simultaneous use of products; they are collections of everything a consumer owns pertaining to a social role. Because this research explores single instances of signaling, we focus on collections of visible and simultaneously consumed products, which we refer to as ensembles. We define a consumption ensemble as a collection of products worn, displayed, or used simultaneously. Operationally, we chose to study five-item clothing outfits as ensembles (Holman 1980) because clothing is worn daily, durable (vs., e.g., food products), and typically public (vs., e.g., home décor). Future research may extend this effect to ensembles beyond clothing, such as home décor (e.g., Gosling et al. 2002). More specifically, we chose to study five-item ensembles (vs., e.g., two or eight items) because it seemed like enough items to produce variation while still resembling the visible components of a typical outfit.

Because ensembles feature a number of pieces, they can vary in the number of individual signaling items they include. For instance, a five-item ensemble can have anywhere from zero to five signaling items. Each item in isolation may signal something about a consumer; however, the ensemble may also communicate meta-information about the consumer that may be different from what any individual item signals. In this work, we isolate the effect of varying numbers of items that all signal the same identity on perceptions of consumer authenticity (which we define in the next section), which we operationalize by placing symbolic brand logos (e.g., Nike to

signal an athlete identity) on otherwise plain (i.e., unbranded) items.[2] Hence, in this research, a five-item ensemble with zero signaling items is an ensemble with five unbranded items, whereas a five-item ensemble with five signaling items is an ensemble with five branded items.

This description of ensembles may seem reminiscent of research on loud versus subtle signaling, also called brand prominence (Berger and Ward 2010; Han, Nunes, and Drèze 2010). That research suggests that consumers with more cultural capital in a particular domain prefer subtle (vs. loud) signals because they provide differentiation from the mainstream—only those who are "in the know" are aware of what subtle signals represent. For instance, women with fashion knowledge prefer handbags that have smaller (vs. larger) or fewer (vs. more) brand logos. Similar to this research, ensembles can vary in their number of branded logos and thus vary in their "loudness." Unlike brand prominence research, however, in our work ensembles vary in their loudness across items rather than within a single item. Future studies could explore how loudness within items could interact with ensemble signaling to affect perceptions of authenticity. Furthermore, we explore observer perceptions of identity-specific authenticity as our dependent variable rather than consumer choice based on domain-specific cultural capital or status. Our proposed mechanism thus differs from the mechanism presented in the brand prominence work pertaining to choice differentiation from the mainstream. Finally, in one study (study 2), we demonstrate that the proposed effect is not driven by overreliance on a single brand; the effect replicates even when the consumer is using multiple brands and hence multiple

[2] We recognize that an unbranded item could serve as a signal. An ensemble with plain sweatpants and a plain sweatshirt, for instance, could signal athleticism, even if unbranded. In that sense, an ensemble with purely unbranded items is not necessarily a pure "no signaling" control, and we see some evidence of that in our data (study 4). But marketers often spend concerted effort to define and amplify the identity-specific associations carried by logos and brands. We suggest, therefore, that the presence of a brand logo should generally intensify the symbolism of a product when the relevant brand is closely associated with the identity.

logos to signal the same identity, which suggests that the Goldilocks signaling effect is not driven by single-brand prominence but is instead driven more generally by the degree of signaling in an ensemble.

GOLDILOCKS SIGNALING

In order to communicate the desired identity most effectively, observers must perceive that the signaling consumer is signaling authentically. However, individuals can use signals that are, to varying degrees, misleading of their genuine attitudes and behaviors; self-presentational behaviors can be motivated by accuracy or by manipulation (e.g., Baumeister 1982). Therefore, sometimes observers are skeptical of and attempt to uncover a signal's veracity (Goffman 1969). We call this truth judgment by observers perceived consumer authenticity—the degree to which a consumer's identity-signaling consumption is perceived by an observer to be in accordance with the consumer's true self (Kernis and Goldman 2006). In other words, if a consumer is signaling that he or she is an athlete (e.g., by wearing Nike), perceived consumer authenticity is the degree to which observers perceive that the consumer is a true athlete (i.e., their true self-concept includes the athlete identity). The judgment we investigate will always pertain to a certain target identity being signaled. We will not investigate general perceptions of the signaler's overall authenticity, i.e., whether the consumer is perceived to be a generally authentic person, although understanding how specific versus general perceptions of authenticity relate is an interesting area for future research. We will also not assume or measure signaling consumers' actual feelings. Observer perceptions may or may not align with how a consumer feels. For instance, a consumer may feel that environmentalist is an identity that is part of his true self-

concept; however, others may not perceive it as such based on his consumption behavior. Although the topic of intrapersonal feelings of authenticity within consumption contexts is interesting, this research focuses on interpersonal judgments of consumer authenticity. We do find preliminary evidence, however, to suggest that observer perceptions of authenticity mimic the choices of more and less authentic consumers (study 5).

How does the number of signaling items in a consumer's ensemble affect observer perceptions of the consumer's authenticity? For a signal to communicate information, it must be observable (Spence 1973; Veblen 1899). Thus, a consumer's ensemble must have some number of signaling items to demonstrate that they hold a particular identity. In other words, consumers need to self-present with their ensembles, meaning they must affect others' impression of them by presenting who they would like others to believe they are (e.g., Leary and Kowalski 1990). This principle may suggest that a consumer will be perceived as more authentic as he or she includes more signaling items in their ensemble. However, we suggest that consumers, in order to appear authentic, must avoid the perception that they are trying too hard to look like the identity they intend to signal.

People hold a lay belief that true selves are discovered rather than created (Schlegel, Vess, and Arndt 2012), which suggests that being authentic involves some degree of ease. Put differently, "Authenticity is not reflected in a compulsion to be one's true self, but rather in the free and natural expression of core feelings, motives, and inclinations" (Kernis and Goldman 2006, p. 299). Research on achievement attributions also supports the importance of effortlessness. Among adults, effort is perceived to be negatively correlated with ability—the more effort that someone has to put into a task, the less likely they are to be perceived as

fundamentally talented at that task (Kun and Weiner 1973). Finally, prior work on excessive, extreme, or conspicuous behavior suggests that these behaviors can trigger suspicion about the actor's motives (e.g., Bell et al. 1976; Ferraro, Kirmani, and Matherly 2013), and suspicion triggers attributional thinking in which the perceiver does not take the actor's behavior at face value (Fein 1996; Fein and Hilton 1994; Fein, Hilton, and Miller 1990). More specifically, excessiveness can signal desperation, which can undermine the intended signal. For instance, advertising expenditure and repetition often signal a product's quality to consumers. However, unusually large advertising expenditure (Kirmani 1990; Kirmani and Wright 1989) or viewing an unusually large number of advertisement repetitions (Kirmani 1997) can actually signal lesser product quality. These findings are based on persuasion knowledge mechanisms and schemas regarding profit motives and the naturally adversarial relationship between buyers and sellers. Sellers have an economic motive to potentially hide the true quality of their product. Furthermore, buyers have a clear stake in the potential transaction due to its financial cost, and thus they have a clear motivation for accurate judgements of sellers. These findings about the relationship between the degree of advertising and inferences of true product quality inform the current research. However, in contrast to prior work, a financial transaction is unlikely to occur in purely interpersonal interactions, and hence persuasion knowledge mechanisms may be less active. In sum, these varied streams of research suggest that ease and naturalness are prominent components of authenticity and credibility.

The ease component of authenticity suggests that including a greater number of signaling items in an ensemble will hinder perceptions of authenticity. However, as previously discussed, it is important that the consumer displays at least some signaling items to present to others that

they identify as a particular identity. For that reason, we suggest that it is important for consumers who wish to be perceived as authentic to strike a balance in their ensembles; they must present the identity but not be perceived as trying too hard to do so. Based on this theory, we predict that ensembles with a moderate or "just right" number of signaling items will be perceived by observers to be the most authentic, which we call a Goldilocks signaling effect. Importantly, we expect and focus on a downturn in authenticity from moderate to more extreme signaling. We are agnostic regarding precisely what moderate means—i.e., how many signaling items will maximize perceived authenticity—although our data suggest that this optimal number tends to be two to three signaling items in a five-item ensemble.

OVERVIEW OF STUDIES

Five studies support and elucidate boundaries of this theory regarding the relationship between the number of signaling items in consumer ensembles and perceived consumer authenticity. Study 1 demonstrates the proposed Goldilocks signaling effect—that consumers with ensembles featuring a moderate number of signaling items are perceived by observers to be the most authentic. Furthermore, study 1 demonstrates that this effect is driven by competing perceptions of the degree to which the consumer is self-presenting and trying too hard to signal the intended identity, and perceptions of authenticity are positively related to interpersonal liking. Study 2 demonstrates that this effect replicates even when the ensemble features brand variety (e.g., Nike and Under Armour), suggesting that this effect is not driven by perceptions of the consumers' overreliance on a single brand and further differentiating our work from prior work on conspicuous consumption (Berger and Ward 2010; Han et al. 2010). Study 3

demonstrates a boundary condition of this Goldilocks signaling effect that provides support for our proposed theory. Study 3 demonstrates that more signaling is associated with greater perceptions of authenticity (i.e., no Goldilocks signaling downturn) for signaled identities with a norm of excessive signaling—in which trying too hard is expected—such as team fan (i.e., a fanatic). Study 4 extends authenticity research by examining when observers spontaneously make inferences about consumers' authenticity. Unlike the prior studies, study 4 does not force observers to rate signaling consumers' authenticity and instead implicitly evaluates whether observers are considering authenticity upon observation of a signaling consumer. This study shows that spontaneous inferences of (in)authenticity mimic the pattern of inferences elicited with explicit authenticity measures. Finally, in study 5, we asked consumers to choose ensembles. Mimicking inference results from prior studies, we demonstrate that inauthentic consumers indeed choose ensembles with a greater number of signaling items than authentic consumers, and authentic consumers choose a greater number of signaling items than consumers at baseline.

STUDY 1: TEST OF THE GOLDILOCKS SIGNALING EFFECT

Study 1 presented participants with a consumer and manipulated the number of signaling items in the consumer's ensemble. We expected a Goldilocks signaling effect—that consumers with ensembles featuring a moderate number of signaling items are perceived by observers to be the most authentic—caused by a balance of perceptions of self-presentation and trying too hard.

Design and Method

In this and all subsequent studies, we aimed to recruit approximately 100 participants per experimental condition (Gervais et al. 2015). One thousand, seven participants (M_{Age} = 35.3, 47.7% female) on Amazon Mechanical Turk were randomly assigned to condition within a 5 (number of signaling items: 1, 2, 3, 4, 5) × 2 (rarity: least rare item prioritized vs. rarest item prioritized) between subject design. The number of signaling items factor was designed to test the central Goldilocks signaling hypothesis. The rarity factor was designed to test an alternative explanation, explained below.

By clicking through a detailed "photo story," participants learned about a man named Thomas getting ready for a day running errands like grocery shopping and stopping by the bank and post office (appendix A). After doing a few typical morning tasks such as waking up, brushing his teeth, showering, shaving, and eating breakfast, Thomas selected his clothes. Participants observed a series of clothing choices that Thomas made, resulting in a five-item ensemble of clothing: a t-shirt, sweatpants, baseball-style hat, jacket, and backpack. In the one signaling item condition, one item had a Nike logo digitally added to the otherwise plain item; in the two signaling item condition, two items had a Nike logo; etc. (appendix B).

Which item(s) had the logo depended on the rarity condition. Some branded items are rarer than others. For instance, a branded Nike t-shirt is not rare (Nike offers many of them), whereas a Nike backpack is rarer (Nike offers relatively few of them). Having an ensemble with a Nike t-shirt, therefore, may be a weaker or stronger signal of athleticism than having an ensemble with a Nike backpack. The rarity factor controlled and tested for these possibilities. Rarity information was collected by searching for the item name in the men's section on

Nike.com. When this study was run, the items ranked from least rare to rarest were: t-shirt, hat, jacket, sweatpants, and backpack. In the least rare prioritized condition, the least rare item(s) were prioritized in creating the ensemble. In the rarest item prioritized condition, the rarest item(s) were prioritized (table 1).

TABLE 1: STUDY 1 CONDITIONS

✓ *product presented with logo*
× *plain product presented*

Least rare item(s) prioritized

Condition	Shirt	Hat	Jacket	Pants	Backpack
1 signaling item	✓	×	×	×	×
2 signaling items	✓	✓	×	×	×
3 signaling items	✓	✓	✓	×	×
4 signaling items	✓	✓	✓	✓	×
5 signaling items	✓	✓	✓	✓	✓

Rarest item(s) prioritized.

Condition	Shirt	Hat	Jacket	Pants	Backpack
1 signaling item	×	×	×	×	✓
2 signaling items	×	×	×	✓	✓
3 signaling items	×	×	✓	✓	✓
4 signaling items	×	✓	✓	✓	✓
5 signaling items	✓	✓	✓	✓	✓

After viewing his ensemble, participants rated Thomas's authenticity as an athlete (e.g., "Indicate the extent to which you agree with the following statement: Thomas is an authentic athlete;" 1 = *strongly disagree*, 7 = *strongly agree*) with five items ($\alpha = .90$; appendix C). Next, they rated the extent to which Thomas appeared to be presenting himself as an athlete ($r = .88$): "To what extent is Thomas trying to present himself to others as an athlete" (1 = *not at all*, 7 = *very*) and "Indicate the extent to which you agree with the following statement: Thomas is trying

to show others that he is an athlete" (1 = *strongly disagree*, 7 = *strongly agree*). Next, participants rated the extent to which Thomas was trying too hard to look like an athlete: "Indicate the extent to which you agree with the following statement: Thomas is trying too hard to look like an athlete" (1 = *strongly disagree*, 7 = *strongly agree*).[3] Finally, as a measure gauging whether authenticity might affect interpersonal liking, participants were asked to rate their opinion of Thomas (1 = *strongly dislike*, 7 = *strongly like*).

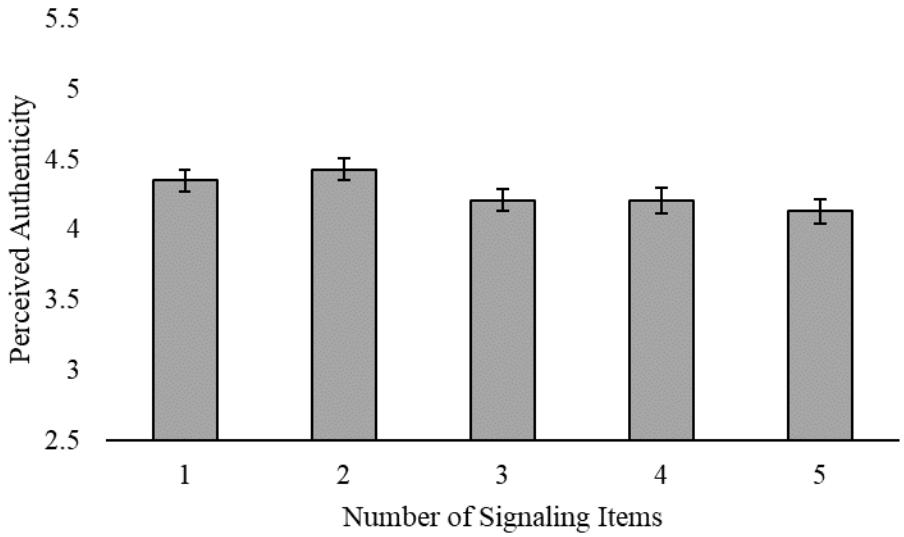
Results

Generally, we believe the hypothesized downturn is the less intuitive and more portion of our effect. Hence, as a general analysis strategy, we focus on looking for contrasts that indicate a downturn rather than statistically testing the data's general shape (e.g., a quadratic term), particularly because a significant quadratic term does not necessarily indicate that the data features a downturn (e.g., it could indicate diminishing marginal returns).

Authenticity. A two-way ANOVA revealed a main effect of number of signaling items on perceptions of authenticity ($F(4, 997) = 2.24$, $p = .063$; figure 1). The main effect of rarity ($F(1, 997) = .49$, $p = .48$) and the interaction between rarity and number of signaling items ($F(4, 997) = .32$, $p = .86$) were not significant.

[3] Bagozzi, Yi, and Phillips (1991) suggest that "Discriminant validity among traits is achieved when an intertrait correlation is significantly different from 1.00." A significant difference from 1.00 is assessable by running a correlation between the supposed constructs and collecting a 95% confidence interval, and discriminant validity between constructs is suggested when the confidence interval does not include 1.00. Using this method, the number of items, the independent variable, showed discriminant validity from both the index of self-presentation (r = .25, 95% CI [.19, .31]) and item of trying too hard (r = .32, 95% CI [.26, .38]), suggesting that our mediators are not manipulation checks. Self-presentation and trying too hard also showed discriminant validity from each other using this method (r = .66, 95% CI [.62, .71]). Finally, self-presentation (r = -.10, 95% CI [-.17, -.03]) and trying too hard (r = -.29, 95% CI [-.35, -.23]) showed discriminant validity from perceptions of authenticity, the dependent variable. Assessments of discriminant validity of constructs in remaining studies produce substantively similar results.

FIGURE 1: STUDY 1 AUTHENTICITY RESULTS [4]



Collapsing across rarity conditions, contrasts (table 2) suggested that perceptions of authenticity began to decrease after approximately two signaling items. For instance, the three ($t(1002) = 1.90$, $p = .058$, $d = .19$), four ($t(1002) = 1.82$, $p = .069$, $d = .19$), and five signaling item ($t(1002) = 2.59$, $p = .01$, $d = .25$) conditions were all marginally to significantly less liked than the two signaling item condition, representing a downturn (i.e., diminished perceptions of authenticity) as the number of signaling items increased past a certain point (in this case, two signaling items).

TABLE 2: STUDY 1 AUTHENTICITY CONTRASTS

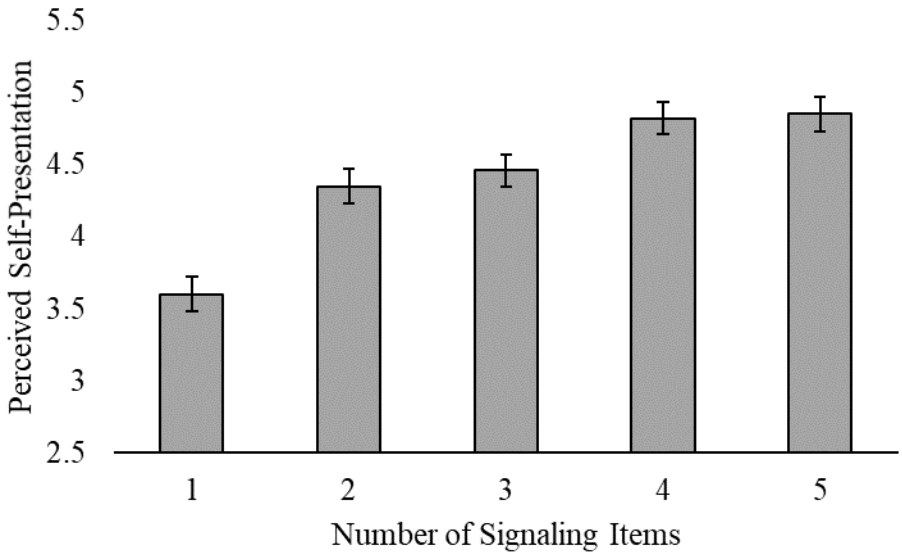
Contrast	*t*-statistic	*p*-value	Cohen's *d*
1 vs. 2 signaling items	.68	.50	.07

[4] Error bars in all figures in this work represent +/- 1 standard error.

1 vs. 3 signaling items	1.22	.22	.12
1 vs. 4 signaling items	1.14	.26	.12
1 vs. 5 signaling items	1.91	.057	.19
2 vs. 3 signaling items	1.90	.058	.19
2 vs. 4 signaling items	1.82	.069	.19
2 vs. 5 signaling items	2.59	.01	.25
3 vs. 4 signaling items	.08	.94	0
3 vs. 5 signaling items	.69	.49	.07
4 vs. 5 signaling items	.77	.44	.06

Self-presentation. A two-way ANOVA revealed a main effect of number of signaling items on perceptions of self-presentation ($F(4, 997) = 19.43$, $p < .001$; figure 2). The main effect of rarity ($F(1, 997) = 2.01$, $p = .16$) and the interaction between rarity and number of signaling items ($F(4, 997) = .32$, $p = .86$) were not significant.

FIGURE 2: STUDY 1 SELF-PRESENTATION RESULTS



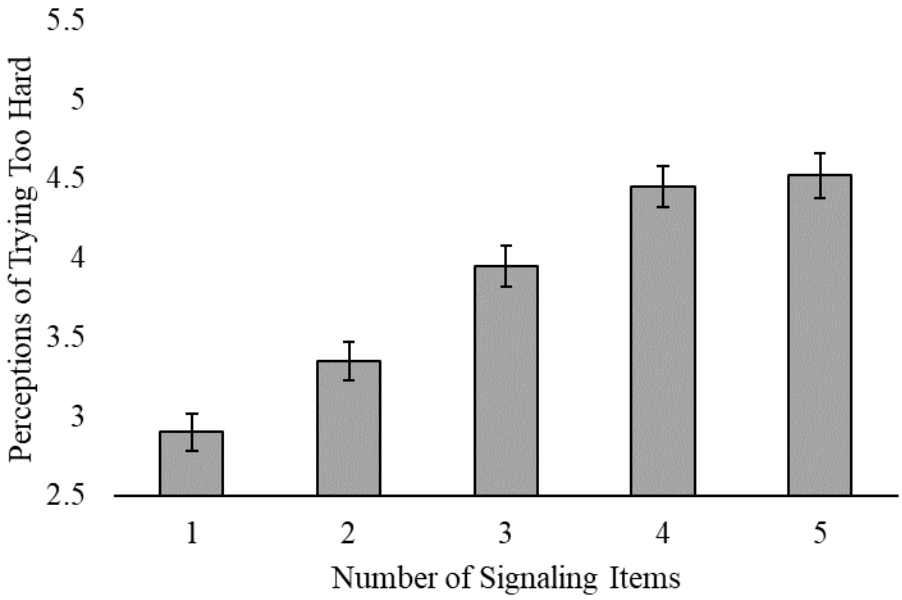
Unlike perceptions of authenticity, contrasts collapsing across rarity conditions revealed no downturns (i.e., diminished perceptions of self-presentation) as the number of signaling items increased (table 3). For instance, unlike perceptions of authenticity, the five signaling item condition was perceived to be significantly more self-presentational than the two signaling item condition ($t(1002) = 3.15$, $p = .002$, $d = .30$).

TABLE 3: STUDY 1 SELF-PRESENTATION CONTRASTS

Contrast	*t*-statistic	*p*-value	Cohen's *d*
1 vs. 2 signaling items	4.61	< .001	.46
1 vs. 3 signaling items	5.31	< .001	.53
1 vs. 4 signaling items	7.50	< .001	.76
1 vs. 5 signaling items	7.76	< .001	.74
2 vs. 3 signaling items	.69	.49	.07
2 vs. 4 signaling items	2.90	.004	.29
2 vs. 5 signaling items	3.15	.002	.30
3 vs. 4 signaling items	2.21	.03	.23
3 vs. 5 signaling items	2.46	.01	.24
4 vs. 5 signaling items	.24	.81	.02

Trying too hard. Mimicking the pattern of perceptions of self-presentation, a two-way ANOVA revealed a main effect of number of signaling items on perceptions of trying too hard ($F(4, 997) = 30.26$, $p < .001$; figure 3). The interaction between rarity and number of signaling items ($F(4, 997) = .33$, $p = .86$) was not significant, although the main effect of rarity was marginal ($F(1, 997) = 3.46$, $p = .063$) in a direction suggesting that prioritizing the rarer items made the consumer appear that they were trying harder than prioritizing the less rare items.

FIGURE 3: STUDY 1 TRYING TOO HARD RESULTS



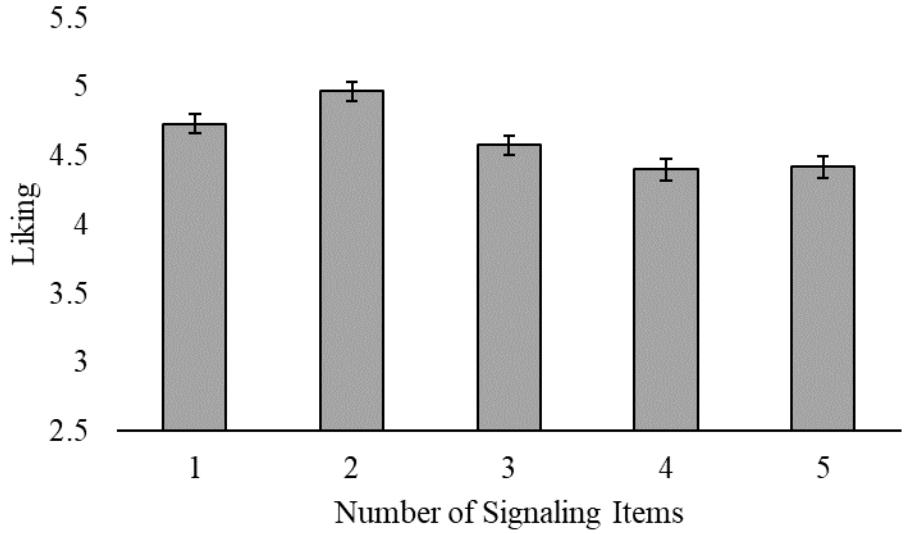
Again mimicking perceptions of self-presentation, contrasts collapsing across rarity conditions revealed no downturns in perceptions of trying too hard as number of signaling items increased (table 4).

TABLE 4: STUDY 1 TRYING TOO HARD CONTRASTS

Contrast	*t*-statistic	*p*-value	Cohen's *d*
1 vs. 2 signaling items	2.52	.012	.27
1 vs. 3 signaling items	5.82	< .001	.61
1 vs. 4 signaling items	8.60	< .001	.87
1 vs. 5 signaling items	9.01	< .001	.90
2 vs. 3 signaling items	3.30	.001	.34
2 vs. 4 signaling items	6.09	< .001	.61
2 vs. 5 signaling items	6.49	< .001	.64
3 vs. 4 signaling items	2.80	.005	.27
3 vs. 5 signaling items	3.19	.001	.31
4 vs. 5 signaling items	.39	.70	.04

Liking. Mimicking the pattern of perceptions of authenticity, a two-way ANOVA revealed a main effect of number of signaling items on interpersonal liking ($F(4, 997) = 9.39$, $p < .001$; figure 4). The main effect of rarity ($F(1, 997) = .001$, $p = .98$) and the interaction between rarity and number of signaling items ($F(4, 997) = 1.30$, $p = .27$) were not significant.

FIGURE 4: STUDY 1 LIKING RESULTS



Contrasts collapsing across rarity conditions suggested that liking began to decrease after approximately two signaling items (table 5). The three- ($t(1002) = 3.59$, $p < .001$, $d = .38$), four- ($t(1002) = 5.31$, $p < .001$, $d = .51$), and five signaling item ($t(1002) = 5.13$, $p < .001$, $d = .49$) conditions were all significantly less liked than the two signaling item condition.

TABLE 5: STUDY 1 LIKING CONTRASTS

Contrast	*t*-statistic	*p*-value	Cohen's *d*
1 vs. 2 signaling items	2.23	.03	.24
1 vs. 3 signaling items	1.35	.18	.15
1 vs. 4 signaling items	3.08	.002	.31
1 vs. 5 signaling items	2.89	.004	.29
2 vs. 3 signaling items	3.59	< .001	.38
2 vs. 4 signaling items	5.31	< .001	.51
2 vs. 5 signaling items	5.13	< .001	.49
3 vs. 4 signaling items	1.74	.08	.16
3 vs. 5 signaling items	1.54	.12	.15
4 vs. 5 signaling items	.19	.85	.01

Mediation analysis. Mediation analysis collapsing across rarity conditions (PROCESS Model 4 with 5000 bootstrap samples and parallel mediators; Hayes 2013) revealed that perceptions of self-presentation (*ab* = .11, 95% CI [.08, .14]) and trying too hard (*ab* = -.17, 95% CI [-.21, -.14]) drove the effect of number of signaling items on perceptions of authenticity in parallel. The number of signaling items increased both perceptions of self-presentation (*b* = .30, *t*(1005) = 8.19, *p* < .001) and trying too hard (*b* = .43, *t*(1005) = 10.76, *p* < .001). However, controlling for number of signaling items, perceptions of self-presentation increased perceptions of authenticity (*b* = .37, *t*(1003) = 14.14, *p* < .001), whereas perceptions of trying too hard decreased perceptions of authenticity (*b* = -.40, *t*(1003) = 16.91, *p* < .001).

Another mediation analysis collapsing across rarity conditions (PROCESS Model 4 with 5000 bootstrap samples and a single mediator; Hayes 2013) revealed that perceptions of authenticity drove the effect of number of signaling items on reports of interpersonal liking (*ab* = -.03, 95% CI [-.06, -.007]). Authenticity and interpersonal liking were also significantly correlated (*r* = .53, p < .001).

Discussion

The results of study 1 support a Goldilocks signaling effect. Consumers with a moderate number of signaling items in their ensemble were perceived to be most authentic due to balancing self-presentation of the identity with trying too hard to signal the identity. Furthermore, these results suggest that this effect is not dependent on how rare the signaling items are. Finally, this study provides preliminary evidence that interpersonal liking can mirror perceptions of authenticity, suggesting that this effect has implications for consumers' social well-being.

STUDY 2: ROBUSTNESS TEST OF THE GOLDILOCKS SIGNALING EFFECT

In study 1, we manipulated the number of signaling items in the consumer's ensemble by including items with a single brand, Nike. Study 2 tested an alternative explanation for the Goldilocks signaling effect based on overreliance on one brand rather than the ensemble's degree of signaling (through multiple complementary symbolic brands) more generally. Study 2 tested this alternative possibility of overreliance on single brand by either introducing or not introducing brand variety into the ensemble. If this effect is driven by overreliance on a single brand, we would expect the Goldilocks signaling effect to be attenuated or removed when brand variety is introduced into the signal (e.g., Nike and Under Armour). If this effect is driven by the ensemble's more general degree of signaling, we would expect that this effect would hold even with the introduction of a different brand that signals the same identity. We predicted the latter; therefore, we expected that the downturn effect of number of signaling items on perceptions of authenticity would replicate even in the presence of brand variety.

Design and Method

Four hundred fourteen participants (M_{Age} = 36.2, 51.0% female) on Amazon Mechanical Turk were randomly assigned to condition within a 2 (number of signaling items: 2 vs. 5) × 2 (brand variety: no variety vs. variety) between-subjects design. Based on the results of study 1, we eliminated many of the items conditions for simplicity of design; we kept the vital conditions, two and five signaling items, that according to study 1 should be able to demonstrate diminishing perceptions of authenticity from a moderate to larger number of signaling items.

As in study 1, participants learned about a man named Thomas getting ready for a day running errands by clicking through a detailed photo story (appendix A). Participants observed a series of clothing choices that Thomas made, resulting in a five-item ensemble of clothing: a t-shirt, sweatpants, baseball-style hat, jacket, and backpack. All of these items were branded in the five signaling item condition. The two signaling item condition featured a branded backpack and sweatpants.

In the no variety condition, each branded item featured a Nike logo, as in study 1. In the variety condition, the ensemble featured a mixture of Nike and Under Armour; one item of each brand was featured in the two signaling item condition, and three Nike items and two Under Armour items were featured in the five signaling item condition (table 6; appendix D). A separate sample of participants (N = 52) was asked to rate (within-subject) the extent to which Nike and Under Armour, among other athletic and non-athletic American brands (Adidas, Reebok, and Gap), signal athleticism (e.g., "When I see someone wearing [brand], it leads me to believe that they are athletic;" 1 = *strongly disagree*, 7 = *strongly agree*). This pretest confirmed that Nike and Under Armour are highly and equally effective signals of athleticism compared to

other brands. Nike and Under Armour were both more effective signals of athleticism than Adidas (ps < .01), Reebok (ps < .001), and Gap (ps < .001). However, Nike and Under Armour were equally effective signals when compared to each other ($t(51) = .78$, $p = .44$).

TABLE 6: STUDY 2 CONDITIONS

	No variety	Variety
2 signaling items	· Nike backpack · Nike sweatpants · Plain jacket · Plain hat · Plain t-shirt	· Nike backpack · Under Armour sweatpants · Plain jacket · Plain hat · Plain t-shirt
5 signaling items	· Nike backpack · Nike sweatpants · Nike jacket · Nike hat · Nike t-shirt	· Nike backpack · Under Armour sweatpants · Nike jacket · Under Armour hat · Nike t-shirt

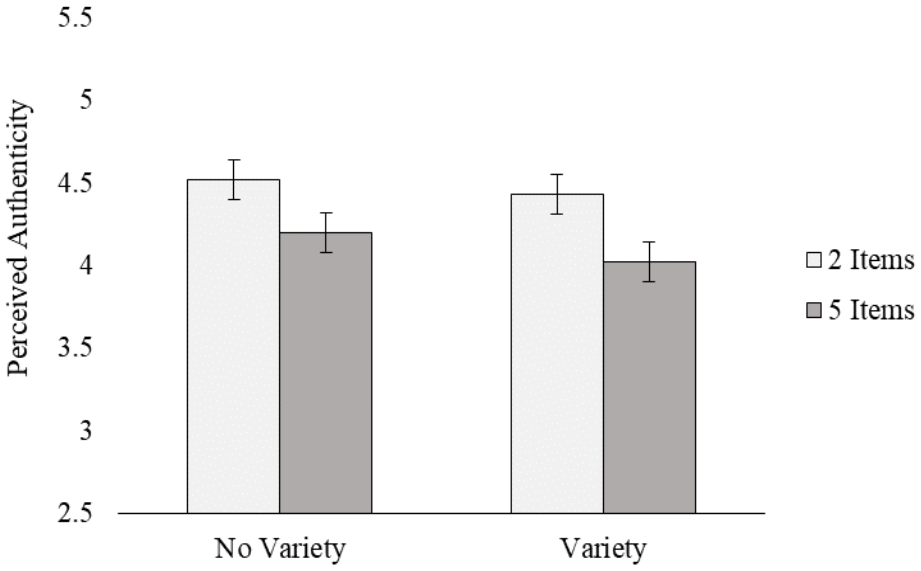
After viewing his ensemble, participants rated Thomas's authenticity as an athlete with the same five items ($\alpha = .92$) featured in study 1 (appendix C). Next, they rated the extent to which Thomas appeared to be presenting himself as an athlete with the same two items from study 1 ($r = .88$). Finally, participants rated the extent to which Thomas was trying too hard to look like an athlete with the same item from study 1.

Results

Authenticity. A two-way ANOVA revealed a main effect of number of signaling items on perceptions of authenticity ($F(1, 410) = 8.83$, $p = .003$). The main effect of variety ($F(1, 410) = 1.25$, $p = .26$) and the interaction between variety and number of signaling items ($F(1, 410) =$

.14, p = .71) were not significant. As predicted, the two signaling item condition was perceived to be more authentic than the five signaling item condition in both the variety (F(1, 410) = 5.64, p = .02, d = .33) and no variety (F(1, 410) = 3.34, p = .068, d = .25) conditions (figure 5).

FIGURE 5: STUDY 2 AUTHENTICITY RESULTS



Self-presentation. A two-way ANOVA revealed a main effect of number of signaling items on perceptions of self-presentation (F(1, 410) = 25.67, p < .001). The main effect of variety (F(1, 410) = .06, p = .80) and the interaction between variety and number of signaling items (F(1, 410) = 1.45, p = .23) were not significant. The five signaling item condition was perceived to be greater in self-presentation than the two signaling item condition in both the variety (M_5 = 4.96, SD_5 = 1.64 vs. M_2 = 4.32, SD_2 = 1.63; F(1, 410) = 7.52, p = .006, d = .39) and

no variety (M_5 = 5.12, SD_5 = 1.65 vs. M_2 = 4.07, SD_2 = 1.83; $F(1, 410) = 19.50$, $p < .001$, d = .60) conditions.

Trying too hard. Mimicking the pattern of perceived self-presentation, a two-way ANOVA revealed a main effect of number of signaling items on perceptions of trying too hard ($F(1, 410) = 36.24$, $p < .001$). The main effect of variety ($F(1, 410) = .01$, $p = .91$) and the interaction between variety and number of signaling items ($F(1, 410) = .96$, $p = .33$) were not significant. The five signaling item condition was perceived to be trying harder than the two signaling item condition in both the variety (M_5 = 4.42, SD_5 = 1.87 vs. M_2 = 3.48, SD_2 = 1.84; $F(1, 410) = 12.83$, $p <$ .001, d =.51) and no variety (M_5 = 4.58, SD_5 = 1.97 vs. M_2 = 3.28, SD_2 = 1.87; $F(1, 410) = 24.25$, $p < .001$, d = .68) conditions.

Mediation analysis. As in study 1, mediation analysis (PROCESS Model 4 with 5000 bootstrap samples and parallel mediators; Hayes 2013) revealed that perceptions of self-presentation (ab = .30, 95% CI [.18, .46]) and trying too hard (ab = -.37, 95% CI [-.54, -.24]) drove this effect in parallel. The number of signaling items increased both perceptions of self-presentation (b = .84, $t(412) = 5.06$, $p < .001$) and trying too hard (b = 1.12, $t(412) = 6.02$, $p <$ .001). However, controlling for number of signaling items, perceptions of self-presentation increased perceptions of authenticity (b = .36, $t(410) = 8.60$, $p < .001$) whereas perceptions of trying too hard decreased perceptions of authenticity (b = -.33, $t(410) = 8.88$, $p < .001$).

Discussion

The results of study 2 demonstrate that the proposed effect replicates even when the ensemble features brand variety. This finding suggests that the Goldilocks signaling effect is not driven by single-brand prominence but is instead driven more generally by the degree of signaling in an ensemble and hence perceptions of whether the consumer is trying too hard to signal the intended identity. This result further differentiates our work from prior work on conspicuous consumption (Berger and Ward 2010; Han et al. 2010) given that this prior work focuses specifically on whether consumers choose to overuse a single brand (i.e., choose a product with large or numerous logos of a single brand).

STUDY 3: MODERATING ROLE OF SIGNALING NORMS

Studies 1 and 2 suggest that ensembles with a moderate number of signaling items are perceived by observers to be the most authentic. Our theory suggests that the downturn (i.e., diminished perceptions of authenticity from moderate to larger numbers of signaling items) featured in this Goldilocks signaling effect is due to the perception that the consumer is trying too hard to signal, and the studies thus far have shown that via mediation. For some identities, though, consumers may be expected to signal excessively. For those identities, we predict that we will not see a downturn because the number of signaling items should have less of an effect on perception of trying too hard. Instead, for those identities, we predict that more signaling is perceived to be more authentic. In a pretest, we found one such identity, team fan, in which consumers are expected to signal excessively. Study 3 then tested this identity in the same

paradigm as studies 1 and 2. We predicted that we would not replicate the Goldilocks signaling effect for the team fan identity.

Pretest Design and Method

We predicted that team fan was one identity for which consumers are expected to signal excessively—after all, fan is short for fanatic. To pretest that expectation, we compared the fan identity to both the athlete identity from the prior studies and a new identity, golfer. Beyond desiring to show some generalization, we expanded our investigation to a golfer ensemble for one primary reason—the opportunity to introduce a purer no signaling control. A "golfer ensemble" without logos is a purer no signaling control than an "athlete ensemble" without logos. A golfer ensemble without logos (e.g., polo shirt, khaki pants) appears to be a typical business casual outfit without the addition of golf branding (e.g., Callaway), whereas an athlete ensemble (e.g., t-shirt, sweat pants) appears athletic even without the addition of athletic branding (e.g., Nike). Expanding our investigation to a golf ensemble, therefore, allowed for the addition of a no signaling (e.g., 0 signaling items) control. As a result, in study 3 we are able to examine the benefit of signaling at all (e.g., the benefit of one versus zero signaling items) on perceptions of authenticity.

Pretest participants (N = 189; M_{Age} = 35.9) on Amazon Mechanical Turk were randomly assigned to compare a team fan identity to either a golfer identity (golfer vs. fan comparison condition; n = 95) or an athlete identity (athlete vs. fan comparison condition; n = 94). Participants were asked, "Who is more likely to simultaneously (i.e., in a single outfit) wear as many of their preferred brand logos as possible to show their passion? For example, for team

fans, that would mean that every clothing item they wear in a single outfit would have the same team logo. For [depending on condition: golfers/athletes], that would mean that every clothing item they wear in a single outfit would have the same [golf/athletic] brand logo" (1 = *definitely [golfers/athletes]*, 4 = *neither; equally likely*, 7 = *definitely team fans*). We also asked, "Who is more likely to spend money on their passion?" and "Who is more likely to spend time on their passion?" on the same scale in order to rule out the explanation that team fans are simply perceived as doing more of everything.

Pretest Results

If participants believe that fans are more likely to signal extensively in a single ensemble, results would yield means significantly above the midpoint of the scale we presented (i.e., a significant one-sample t-test with test value = 4). Confirming this expectation, participants perceived fans as being more likely than both athletes (M = 4.80, SD = 1.84; $t(93) = 4.20$, $p < .001$) and golfers (M = 5.33, SD = 1.61; $t(94) = 8.01$, $p < .001$) to signal extensively. This perception was generally not true, however, for spending time and money. Fans were perceived as marginally more likely to spend money on their passion than athletes (M = 4.33, SD = 1.86; $t(93) = 1.72$, $p = .088$) but equally likely as golfers (M = 3.85, SD = 1.91; $t(94) = .75$, $p = .46$). Fans were perceived as significantly less likely to spend time on their passion than both athletes (M = 2.41, SD = 1.59; $t(93) = 9.67$, $p < .001$) and golfers (M = 3.11, SD = 1.59; $t(94) = 5.47$, $p < .001$).

Design and Method

One thousand, two hundred fifty-eight participants (M_{Age} = 35.3, 52.6% female) on Amazon Mechanical Turk were randomly assigned to condition within a 6 (number of signaling items: 0, 1, 2, 3, 4, 5) × 2 (signaled identity: fan vs. golfer) between-subjects design.

As in studies 1 and 2, participants learned about a man named Thomas getting ready for a day running errands by clicking through a detailed photo story (appendix A). Participants then observed a series of clothing choices that Thomas made resulting in a five-item ensemble of clothing: a hat, shirt, jacket, pants, and backpack. Each ensemble varied by item condition (table 7).

TABLE 7: STUDY 3 CONDITIONS

✓*product presented with logo*
× *plain product presented*

Condition	Hat	Shirt	Jacket	Pants	Backpack
0 signaling items	×	×	×	×	×
1 signaling item	✓	×	×	×	×
2 signaling items	✓	✓	×	×	×
3 signaling items	✓	✓	✓	×	×
4 signaling items	✓	✓	✓	✓	×
5 signaling items	✓	✓	✓	✓	✓

In the fan identity condition, each branded item featured a Durham Bulls logo. The Durham Bulls are a minor league baseball team in Durham, North Carolina. In the golfer identity condition, each branded item featured a Callaway logo. Callaway is a leading American golf brand making a range of golf equipment and apparel. As in the prior studies, the plain (i.e.,

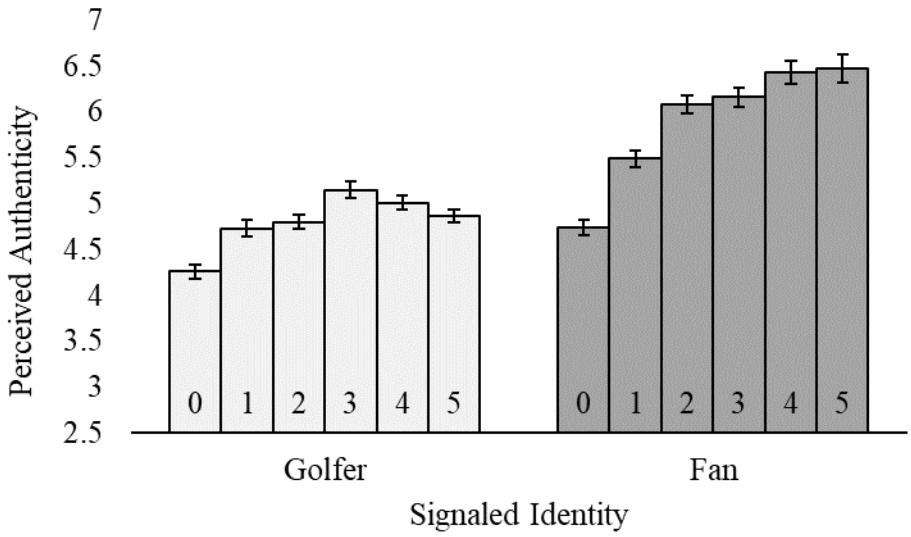
unbranded) items were identical to the branded items minus the presence of the logo (appendix E).

After viewing his ensemble, participants rated Thomas's authenticity as either a golfer or Durham Bulls fan, depending on the identity condition, with four items ($\alpha = .92$) adapted from the previous studies (items 1, 2, 3, and 5; appendix C). Next, they rated the extent to which Thomas appeared to be presenting himself as either a golfer or a Durham Bulls fan with the same two items adapted from the previous studies ($r = .86$). Finally, participants rated the extent to which Thomas was trying too hard to look like a golfer or a Durham Bulls fan with the same item adapted from the previous studies. To supplement this single measure of trying too hard ($r = .60$), participants also rated the extent to which Thomas's clothing choice seemed natural (reverse coded; 1 = *strongly disagree*, 7 = *strongly agree*).

Results

Authenticity. A two-way ANOVA revealed significant main effects of both identity ($F(1, 1246) = 377.42$, $p < .001$) and number of signaling items ($F(5, 1246) = 45.91$, $p < .001$), as well as the predicted significant interaction ($F(5, 1246) = 9.24$, $p < .001$; figure 6), on perceptions of authenticity.

FIGURE 6: STUDY 3 AUTHENTICITY RESULTS[5]



Within the golfer condition, we replicated the pattern of effects in studies 1 and 2. Contrasts (table 8) suggested that perceptions of authenticity began to decrease after approximately three signaling items; the five signaling item condition was perceived to be significantly less authentic than the three signaling item condition ($t(1252) = 2.06$, $p = .04$, $d = .21$). Furthermore, unlike the prior studies, the inclusion of the no signaling (i.e., zero item) condition in this study also allows us to view the upturn, or benefit, of signaling on perceptions of authenticity. All signaling conditions were perceived to be more authentic than the no signaling condition ($ps \leq .001$).

[5] Number of signaling items labeled within each bar.

TABLE 8: STUDY 3 AUTHENTICITY CONTRASTS IN GOLFER CONDITION

Contrast	*t*-statistic	*p*-value	Cohen's *d*
0 vs. 1 signaling item	3.29	.001	.56
0 vs. 2 signaling items	3.78	< .001	.62
0 vs. 3 signaling items	6.17	< .001	.92
0 vs. 4 signaling items	5.27	< .001	.74
0 vs. 5 signaling items	4.18	< .001	.52
1 vs. 2 signaling items	.54	.59	.08
1 vs. 3 signaling items	3.05	.002	.40
1 vs. 4 signaling items	2.06	.04	.26
1 vs. 5 signaling items	.97	.33	.11
2 vs. 3 signaling items	2.49	.01	.31
2 vs. 4 signaling items	1.50	.14	.18
2 vs. 5 signaling items	.42	.67	.05
3 vs. 4 signaling items	1.03	.30	.12
3 vs. 5 signaling items	2.06	.04	.21
4 vs. 5 signaling items	1.06	.29	.10

Within the fan condition, we see no such downturn of a greater number of signaling items on perceptions of authenticity (table 9); every signaling item condition was perceived to be equally or more authentic than conditions with fewer signaling items. For instance, unlike in the golfer condition, five signaling items was perceived to be more authentic than three items ($t(1252) = 2.26$, $p = .02$, $d = .38$).

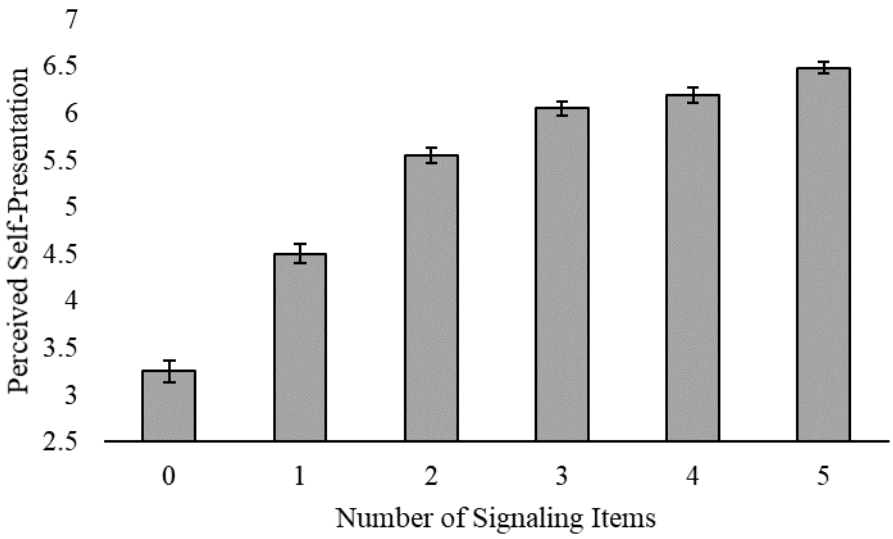
TABLE 9: STUDY 3 AUTHENTICITY CONTRASTS IN FAN CONDITION

Contrast	*t*-statistic	*p*-value	Cohen's *d*
0 vs. 1 signaling item	5.60	< .001	.82
0 vs. 2 signaling items	9.99	< .001	1.53
0 vs. 3 signaling items	10.65	< .001	1.59
0 vs. 4 signaling items	12.51	< .001	2.07
0 vs. 5 signaling items	12.71	< .001	2.18
1 vs. 2 signaling items	4.26	< .001	.64
1 vs. 3 signaling items	4.87	< .001	.71

1 vs. 4 signaling items	6.78	< .001	1.09
1 vs. 5 signaling items	7.00	< .001	1.15
2 vs. 3 signaling items	.57	.566	.09
2 vs. 4 signaling items	2.56	.01	.44
2 vs. 5 signaling items	2.81	.005	.50
3 vs. 4 signaling items	2.01	.05	.34
3 vs. 5 signaling items	2.26	.02	.38
4 vs. 5 signaling items	.26	.80	.04

Self-presentation. A two-way ANOVA revealed main effects of both identity ($F(1, 1246) = 17.86$, $p < .001$) and number of signaling items ($F(5, 1246) = 194.16$, $p < .001$; figure 7) on perceived self-presentation. Unlike perceptions of authenticity, there was no interaction ($F(5, 1246) = .66$, $p = .66$).

FIGURE 7: STUDY 3 SELF-PRESENTATION RESULTS



Collapsing across identity conditions, contrasts (table 10) suggest that every signaling items condition was perceived to be equal or greater in self-presentation than conditions with

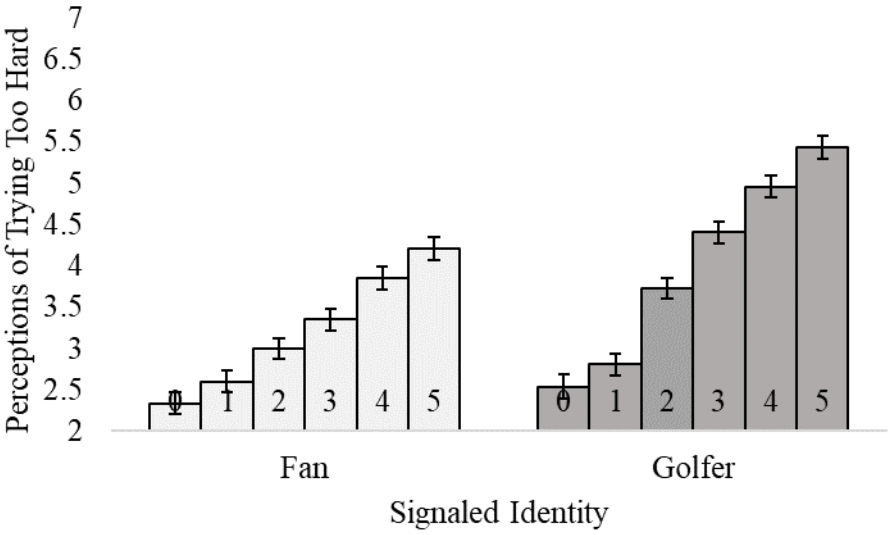
fewer signaling items. For instance, five signaling items was perceived to be greater in self-presentation than three signaling items ($t(1252) = 3.43$, $p = .001$, $d = .44$).

TABLE 10: STUDY 3 SELF-PRESENTATION CONTRASTS

Contrast	*t*-statistic	*p*-value	Cohen's *d*
0 vs. 1 signaling item	9.93	< .001	.80
0 vs. 2 signaling items	18.19	< .001	1.57
0 vs. 3 signaling items	22.21	< .001	1.99
0 vs. 4 signaling items	23.33	< .001	2.05
0 vs. 5 signaling items	25.34	< .001	2.49
1 vs. 2 signaling items	8.37	< .001	.76
1 vs. 3 signaling items	12.39	< .001	1.16
1 vs. 4 signaling items	13.51	< .001	1.24
1 vs. 5 signaling items	15.66	< .001	1.63
2 vs. 3 signaling items	3.98	< .001	.41
2 vs. 4 signaling items	5.10	< .001	.52
2 vs. 5 signaling items	7.34	< .001	.87
3 vs. 4 signaling items	1.13	.26	.12
3 vs. 5 signaling items	3.43	.001	.44
4 vs. 5 signaling items	2.31	.02	.29

Trying too hard. A two-way ANOVA revealed main effects of both identity ($F(1, 1246) = 95.27$, $p < .001$) and number of signaling items ($F(5, 1246) = 97.79$, $p < .001$), as well as the interaction ($F(5, 1246) = 5.75$, $p < .001$; figure 8), on perceptions of trying too hard.

FIGURE 8: STUDY 3 TRYING TOO HARD RESULTS



In both the golfer (table 11) and fan (table 12) condition, contrasts suggested that every signaling items condition was perceived to be trying equally hard or harder than conditions with fewer signaling items. However, the interaction suggests that this relationship between number of signaling items and perceptions of trying too hard was more intense (i.e., more positive) for the golfer and less intense for the fan identity.

TABLE 11: STUDY 3 TRYING TOO HARD CONTRASTS IN GOLFER CONDITION

Contrast	*t*-statistic	*p*-value	Cohen's *d*
0 vs. 1 signaling item	1.36	.17	.23
0 vs. 2 signaling items	6.04	< .001	.99
0 vs. 3 signaling items	9.50	< .001	1.37
0 vs. 4 signaling items	12.42	< .001	1.79
0 vs. 5 signaling items	14.60	< .001	2.27
1 vs. 2 signaling items	4.93	< .001	.73
1 vs. 3 signaling items	8.56	< .001	1.13
1 vs. 4 signaling items	11.64	< .001	1.52

1 vs. 5 signaling items	13.93	< .001	1.96
2 vs. 3 signaling items	3.60	< .001	.47
2 vs. 4 signaling items	6.56	< .001	.86
2 vs. 5 signaling items	8.93	< .001	1.25
3 vs. 4 signaling items	2.90	.004	.35
3 vs. 5 signaling items	5.37	< .001	.68
4 vs. 5 signaling items	2.53	.012	.32

TABLE 12: STUDY 3 TRYING TOO HARD CONTRASTS IN FAN CONDITION

Contrast	*t*-statistic	*p*-value	Cohen's *d*
0 vs. 1 signaling item	1.40	.16	.24
0 vs. 2 signaling items	3.59	< .001	.59
0 vs. 3 signaling items	5.58	< .001	.79
0 vs. 4 signaling items	8.24	< .001	1.14
0 vs. 5 signaling items	10.03	< .001	1.32
1 vs. 2 signaling items	2.13	< .001	.35
1 vs. 3 signaling items	4.06	< .001	.58
1 vs. 4 signaling items	6.67	< .001	.94
1 vs. 5 signaling items	8.43	< .001	1.12
2 vs. 3 signaling items	1.92	.055	.26
2 vs. 4 signaling items	4.58	< .001	.62
2 vs. 5 signaling items	6.35	< .001	.82
3 vs. 4 signaling items	2.71	.007	.34
3 vs. 5 signaling items	4.50	< .001	.54
4 vs. 5 signaling items	1.78	.08	.21

Moderated mediation analysis. Moderated mediation analysis (PROCESS Model 7 with 5000 bootstrap samples and parallel mediators; Hayes 2013) demonstrates the effect of number of signaling items on perceptions of authenticity was driven, in parallel, by both self-perception and perceptions of trying too hard. This mediation pattern, however, was dependent on the identity being signaled.

When the fan identity was signaled, self-presentation had a positive indirect effect on perceptions of authenticity (*ab* = .28, 95% CI [.25, .32]), whereas trying too hard had a negative

indirect effect (*ab* = -.14, 95% CI [-.16, -.11]). Similarly, when the golfer identity was signaled, self-presentation had a positive indirect effect on perceptions of authenticity (*ab* = .29, 95% CI [.25, .33]) whereas trying too hard had a negative indirect effect (*ab* = -.22, 95% CI [-.26, -.18]). However, the indirect effect of number of signaling items on perceptions of authenticity through trying too hard depended on the identity being signaled (index of moderated mediation = -.08, 95% CI [-.12, -.05]). As presented previously, the positive effect of number of signaling items on perceptions of trying too hard was less dramatic when the identity being signaled was fan (*b* = .38, $t(1254) = 12.17$, $p < .001$) as opposed to golfer (*b* = .62, $t(1254) = 18.94$, $p < .001$), hence explaining the attenuation observed in the fan condition. The indirect effect through perceived self-presentation did not depend on the identity being signaled (index of moderated mediation = .004, 95% CI [-.04, .05]).

Discussion

The results of study 3 demonstrate a boundary condition of the Goldilocks signaling effect that provides support for the proposed theory. Unlike the Goldilocks signaling effect, this study suggests that more signaling is associated with greater perceptions of authenticity for signaled identities with a norm of excessive signaling—in which trying too hard is expected—such as team fan. By showing that the Goldilocks signaling effect does not replicate when trying too hard is expected, this study provides further support for the theory that the downturn featured in the proposed effect is driven by perceptions of the signaling consumer trying too hard. Furthermore, the findings in study 3 help to rule out a general association of moderation with

authenticity; this study instead finds that the association between moderate signaling and authenticity is norm dependent.

STUDY 4: SPONTANEOUS ATTENTION TO AUTHENTICITY

Studies 1 through 3 demonstrate how the number of signaling items in an ensemble affects perceptions of consumer authenticity. In studies 4 and 5, we turned our attention towards whether such assessments occur spontaneously (study 4) and reflect the choice patterns of more versus less authentic consumers (study 5).

Although it seems like people generally care about authenticity, do people attend to or monitor the authenticity of other consumers? When do consumers make spontaneous judgments of the authenticity of other consumers? Studies 1 through 3 required participants to evaluate a consumer's authenticity. Understanding whether observing consumers elect to put their "phony-radars" on high alert when not prompted (i.e., asked by an experimenter to assess a signaling consumer's authenticity) is an important question. In particular, study 4 aims to demonstrate that the findings in studies 1 through 3 are not an artifact of experimenter queries, but rather that these inferences about a signaling consumer's authenticity occur naturally and replicate our previous results.

As discussed previously, excessive, extreme, or conspicuous behavior can trigger suspicion about the signaler's motives (e.g., Bell et al. 1976; Ferraro et al. 2013). Suspicion is "a state in which perceivers actively entertain multiple, plausibly rival, hypotheses about the motives or genuineness of a person's behavior," and it triggers attributional thinking in which the perceiver does not take the behavior at face value (Fein 1996; Fein and Hilton 1994; Fein et al.

1990). These prior findings not only suggest that a greater number of signaling items could negatively impact perceptions of authenticity, as demonstrated in the previous studies, but they also suggest that a greater number of signaling items will heighten attention to and result in spontaneous inferences of inauthenticity. Therefore, when consumers use a greater number of signaling items, they may be drawing observers' thoughts towards inauthenticity. Specifically, based on prior research that people tend to attend to negative attributes more than positive attributes (i.e., the negativity bias; Fiske 1980; Kanouse and Handon 1972), we expected spontaneous inferences of inauthenticity (a negative attribute) would be most greatly influenced by a greater number of signaling items, whereas spontaneous inferences of authenticity (a positive attribute) may be more weakly influenced by the number of signaling items in the ensemble.

Design and Method

One hundred eighty-eight participants in the laboratory (M_{Age} = 26.7, 69.7% female) were randomly assigned to one of three conditions: zero, two, or five signaling items. Participants were told to, "Imagine you see a man that you do not know while you are out and about running errands. Suppose that his name is Thomas." They were then shown a picture of "Thomas's" face. Thomas was a young, Caucasian man, and the picture of his face was obtained from the Chicago Face Database (Ma, Correll, and Wittenbrink 2015). They were then shown a picture of his ensemble and asked to imagine that Thomas was wearing that outfit (appendix F). In the zero signaling item condition, Thomas was wearing a plain shirt, a plain hat, a plain jacket, plain sweatpants, and a plain backpack. We included this condition as a no-branded-item control,

although, as noted previously, these items without branding may still appear athletic. In the two signaling item condition, Thomas was wearing a plain shirt, a plain hat, a plain jacket, Nike sweatpants, and a Nike backpack. Finally, in the five signaling item condition, all of the items featured Nike branding. After viewing the photos, participants were then told, "We are interested in what you think about Thomas. We realize that you do not have much information about Thomas, but please give us your first impression of him based on the information that you do have. Please write your thoughts about him below for two minutes; this page will allow you to advance after two minutes." After writing their thoughts about Thomas, participants were asked to rate his authenticity as an athlete on a separate page using the items ($\alpha = .84$) from prior studies (appendix C).

Coding Procedure

In order to assess whether participants were making inferences about the consumer's (in)authenticity spontaneously, two undergraduate research assistants who were fluent in English and naïve to our hypotheses were recruited to code the open-ended responses. The research assistants coded two variables of interest—"authentic athlete" and "inauthentic athlete"—explained below. Coders were told that these variables were not mutually exclusive; a response could include values on either, both, or neither of the variables (a point that we return to shortly). Before coding the target sample, coders practiced together on a test batch of thirty responses gathered from Amazon Mechanical Turk. During this practice coding, coders discussed any inconsistencies and the coding manual was clarified by the first author. Coders then independently coded the target laboratory sample.

Authentic athlete. For the authentic athlete variable, coders were asked, "To what degree did the participant seem to be thinking or inferring that the consumer is or could be an authentic athlete?" They then rated each participant's response on a three-point scale (0 = not at all, 1 = somewhat, 2 = very). Although coders were instructed that they were to code for the overall sentiment characterizing the response (vs. counting the presence vs. absence of certain words or phrases), they were given example words for "somewhat" (1) such as sporty, athletic, and fit. Coders were told that a "very" (2) response would include a greater degree of elaboration or certainty about the consumer's athleticism. Finally, coders were told not to count generally pleasant perceptions of the consumer (e.g., he looks nice) or inferences about the consumer's brand preferences (e.g., he likes Nike) when coding this variable; the response had to include sentiment about the consumer as an athlete to qualify for a response on the authentic athlete variable. Coders agreed on 79.1% of responses for this variable, and their intraclass correlation coefficient was .83 ($p < .001$), suggesting acceptable reliability. Therefore, coders' responses were averaged as a dependent variable. Deleting the responses for which the coders disagreed produces substantively the same results as presented below.

Inauthentic athlete. For the inauthentic athlete variable, coders were asked, "To what degree did the participant seem to be thinking or inferring that the consumer is or could be an inauthentic athlete?" As with the authentic athlete variable, they then rated each participant's response on a three-point scale (0 = not at all, 1 = somewhat, 2 = very). Again, although coders were told that they were to code for overall sentiment, they were given example words for

"somewhat" (1) such as fake athlete and phony athlete, and they were instructed that a "very" (2) response would include a greater degree of elaboration or certainty about the consumer's inauthentic athleticism. Finally, coders were told not to count generally unpleasant perceptions of the consumer (e.g., he looks weird) or inferences about the consumer's brand preferences (e.g., he likes Nike) when rating this variable; the response had to include sentiment about the consumer as an inauthentic athlete to qualify for a response on the authentic athlete variable. Coders agreed on 91.4% of responses for this variable, and their intraclass correlation coefficient was .88 ($p < .001$), suggesting acceptable reliability. Therefore, coders' responses were averaged as a dependent variable. Deleting the responses for which the coders disagreed produces substantively the same results as presented below.

Results

Prompted authenticity ratings. Although this rating did not come first in the study procedure, we present the results for prompted authenticity ratings (i.e., non-spontaneous inferences of authenticity) first for ease of exposition. A one-way ANOVA suggested significant differences between conditions on perceptions of authenticity ($F(2, 184) = 3.23$, $p = .042$). Replicating results from prior studies, the consumer in the five signaling item condition ($M = 3.96$, SD = 1.00) was perceived to be a significantly less authentic athlete than the consumer in both the two ($M = 4.30$, SD = .82; $t(184) = 2.15$, $p = .033$, $d = .37$) and zero signaling item conditions ($M = 4.32$, SD = .85; $t(184) = 2.26$, $p = .025$, $d = .39$). The zero and two signaling item conditions did not differ ($t(184) = .13$, $p = .89$, $d = .02$), suggesting, as we suspected, that

this zero signaling item condition may not be a pure no signaling control given the nature of the clothing items, but rather signals some athleticism even without any branding.

Spontaneous inferences about authenticity. A one-way ANOVA did not suggest significant differences between conditions on spontaneous inferences about the consumer's athletic authenticity ($F(2, 184) = 1.13$, $p = .33$). Although none of the conditions significantly differed, as we suspected might happen, the means were in the direction that would be expected. Spontaneous inferences about authenticity were highest in the two signaling item condition ($M = 1.03$, SD = .54), greater than inferences in both the zero (M = .88, SD = .55; $t(184) = 1.50$, $p = .13$, $d = .28$) and five signaling item ($M = .96$, SD = .62; $t(184) = .70$, $p = .48$, $d = .12$) conditions. Interestingly, however, all three conditions differed significantly from a test value of zero (all ps < .001), suggesting that participants were spontaneously considering the consumer's authenticity at a rate greater than "not at all" in all conditions.

Spontaneous inferences about inauthenticity. Unlike spontaneous inferences of the consumer's authenticity as an athlete, a one-way ANOVA showed significant differences between conditions on spontaneous inferences that the consumer was an inauthentic athlete ($F(2, 184) = 7.75$, $p = .001$). Spontaneous inferences about inauthenticity were greatest in the five signaling item condition ($M = .36$, SD = .57), greater than both the zero (M = .07, SD = .24; $t(184) = 3.85$, $p < .001$, $d = .64$) and two signaling item ($M = .16$, SD = .33; $t(184) = 2.65$, $p = .009$, $d = .41$) conditions. The zero and two signaling item conditions did not differ ($t(184) =$

1.25, $p = .21$, $d = .31$). Again, all three conditions differed significantly from a test value of zero (all ps $< .02$).

Combining inferences about authenticity and inauthenticity. Authentic athlete and inauthentic athlete were originally coded as separate variables and are thus presented above in separate analyses. However, examining responses across both variables provided additional insight. First, 84% of responses received a non-zero value on at least one of the two variables, reflecting some kind of authenticity-related inference. This result suggests that people are often making (in)authenticity inferences about the signaling consumers they observe, which underscores the importance of studying these observations.

Second, 19.3% of the responses received non-zero values on both of these variables. For example, the following response received a non-zero value on both authentic athlete and inauthentic athlete: "It seems like he is into 'athleisure.' I know this can easily be interpreted as that he actually works out a lot, but that may not be the case." Other responses receiving non-zero values on both variables are similar to this—the participant expresses that the consumer may be an athlete, but then ultimately expresses doubt. Because of the expression of doubt characteristic of these responses, we grouped them with responses that received non-zero values only on the inauthentic variable, creating one broader group of responses that doubted the consumer's authenticity to at least some extent. We also created an authentic inference group, which included responses which had a non-zero values only on the authentic variable. Finally, we created a no authenticity-related inference group, which included responses with zeros on both variables.

Analyzing the responses recoded into these three-groups (authenticity-related inference: authentic, authenticity-doubting, none) across conditions reveals the substantively similar results as discussed above. Types of responses differed overall by condition ($\chi 2$ (4, N = 188) = 12.67, *p* = .013; table 13). Inferences of authenticity were directionally highest in the two signaling item condition. Responses expressing doubt about the consumer's authenticity were significantly highest in the five signaling item condition. Making no in(authenticity)-related inference was directionally highest in the zero signaling item condition, which makes sense given that the consumer was signaling least prominently in that condition.

TABLE 13: STUDY 4 RECODED RESULTS

Inference Type		0 Signaling Items	2 Signaling Items	5 Signaling Items
None	Count	14_a	7_a	9_a
	% Within None	46.7%	23.3%	30.0%
	% Within Condition	23.0%	10.9%	14.5%
Authenticity-Doubting	Count	6_a	14_a	21_b
	% Within Doubting	14.6%	34.1%	51.2%
	% Within Condition	9.8%	21.9%	33.9%
Authentic	Count	41_a	43_a	32_a
	% Within Authentic	35.3%	37.1%	27.6%
	% Within Condition	67.2%	67.2%	51.6%

Overall $\chi 2$ (4, N = 188)= 12.67, p = .013. Each subscript letter denotes a subset of conditions within inference type whose proportions do not differ significantly from each other at the .05 level.

Finally, this analysis also demonstrated that authenticity inferences were by far the predominant type of spontaneous inference regardless of condition. What this result suggests is that observers may typically be willing to give consumers the benefit of the doubt when it comes

to authenticity, although this benefit is given less to consumers who use a larger number of signaling items. Furthermore, despite being less common, spontaneous inauthenticity inferences vary to a greater extent across the numbe**r** of signaling items than do authenticity inferences, as predicted.

Discussion

Study 4 extends this research by exploring the conditions under which observers make spontaneous inferences of (in)authenticity. Unlike the prior studies, study 4 did not force observers to rate signaling consumers' authenticity but instead examined implicitly whether observers consider authenticity upon observation of a signaling consumer. This study demonstrates that spontaneous inferences of inauthenticity mimic (in reverse) non-spontaneous inferences of authenticity, suggesting that our earlier effects on authenticity ratings are not due simply to experimenter queries, but rather occur naturally.

STUDY 5: ENSEMBLE CHOICE

In studies 1 through 3, we asked participants to act as observers of consumers with ensembles. In study 4, we examined whether authenticity inferences naturally or spontaneously follow from ensemble signaling. In study 5, we asked participants to act as consumers choosing ensembles. In the experimental conditions, we gave all participants the goal of seeming authentic (e.g., like an authentic athlete) but manipulated whether they were (hypothetically) authentic (e.g., a true athlete) or inauthentic (e.g., not athletic). We then asked them to choose from a selection of ensembles varying in their number of signaling items. If consumer choice patterns

mimic the observer inference patterns outlined in studies 1 through 3, inauthentic consumers (e.g., inauthentic athletes) should choose more signaling items (e.g., Nike items) than authentic consumers (e.g., authentic athletes), suggesting that inauthentic consumers do, in fact, try too hard to signal their desired identity. We would also expect that authentic consumers might choose more signaling items than consumers would at baseline, suggesting that authentic consumers do, in fact, engage in some degree of self-presentation of their identity with symbolic consumption.

Finally, by observing the choice patterns of consumers, this study also allowed us to explore this proportion of consumers who choose inconsistently with their given goal. In the experimental conditions, participants were given the goal of trying to seem like an athlete. Study 1, using the same stimuli as this study, suggests that two items signaling an athletic identity are most consistent with this goal (i.e., most effectively achieve the given goal by maximizing perceptions of athletic authenticity). Therefore, a relatively large proportion of participants choosing more or less than this optimal number of signaling items would signal a potential opportunity to help consumers make ensemble choices that are more calibrated with their signaling goals.

Design and Method

Two hundred eight participants (M_{Age} = 34.8, 52.4% female) on Amazon Mechanical Turk were randomly assigned to one of three conditions: control, inauthentic, or authentic. Participants were asked to imagine that they were getting ready for a day of running errands, including stopping by the post office and grocery store. They were asked to imagine approaching

their closet to choose their clothing, and then they were given a hypothetical athlete state and goal depending on their condition. In the inauthentic condition, participants were told to "Imagine that you are NOT an athlete (i.e., you are not athletic) but that you are trying to seem like an athlete with your clothing selection. In other words, you want your clothing to make you seem like an athlete to others even though you are not." In the authentic condition, participants were told to, "Imagine that you are an athlete (i.e., you are athletic) and that you are trying to show that you are an athlete with your clothing selection. In other words, you want your clothing to show to others that you are an athlete." Finally, in the control condition, participants were simply instructed to, "Please make your clothing selection from the following." In all conditions, participants were told to note that all of the products presented were of equally high quality.

As the dependent variable, participants were then asked to choose one of six clothing ensembles matched to their gender (appendix G) that varied in their number of Nike items (i.e., signaling items; table 14). As in prior studies, the plain (i.e., unbranded) items were identical to the Nike items minus the presence of the logo.

TABLE 14: STUDY 5 CHOICES

✓ *product presented with logo*
× *plain product presented*

Choice	Backpack	Pants	Jacket	Hat	Shirt
0 signaling items	×	×	×	×	×
1 signaling item	✓	×	×	×	×
2 signaling items	✓	✓	×	×	×
3 signaling items	✓	✓	✓	×	×
4 signaling items	✓	✓	✓	✓	×
5 signaling items	✓	✓	✓	✓	✓

Results

Ensemble choice. A one-way ANOVA suggested significant differences between conditions on ensemble choice ($F(2, 205) = 7.63$, $p < .001$). The inauthentic condition ($M = 3.34$, SD = 1.83) chose the greatest number of signaling items in their ensemble, significantly more than both the authentic ($M = 2.68$, SD = 1.86; $t(205) = 2.08$, $p = .04$, $d = .36$) or control conditions ($M = 2.10$, SD = 1.94; $t(205) = 3.90$, $p < .001$, $d = .66$). The authentic condition also chose a marginally greater number of signaling items in their ensemble than the control condition ($t(205) = 1.82$, $p = .071$, $d = .31$).

Proportion of goal inconsistent choice. To examine the proportion of goal-inconsistent choosers, we explored choice distributions in the authentic and inauthentic conditions, as these conditions were both given the instruction to try to seem like an athlete with their choice. In the authentic condition (n = 69), we observed the following distribution:

- Chose 0 signaling items = 21.7%
- Chose 1 signaling item = 7.2%
- Chose 2 signaling items = 16.0%
- Chose 3 signaling items = 14.5%
- Chose 4 signaling items = 17.4%
- Chose 5 signaling items = 23.2%

In study 1, observer perceptions of athletic authenticity with these stimuli were maximized at two signaling items. These choice data suggest that 55.1% of consumers in the authentic condition were choosing greater than two signaling items, and 28.9% of consumers were choosing less than two signaling items, representing a total of 84.0% of consumers choosing inconsistently with their given goal. Even if we give consumers a small margin of error

of +/- 1 item (i.e., 1 - 3 signaling items), we still observe a large proportion choosing above (i.e., > 3 signaling items; 40.6%) and below (i.e., < 1 signaling item; 21.7%) this margin of error.

In the inauthentic condition (n = 70) we observed the following choice distribution:

- Chose 0 signaling items = 12.9%
- Chose 1 signaling item = 4.3%
- Chose 2 signaling items = 17.1%
- Chose 3 signaling items = 12.9%
- Chose 4 signaling items = 7.1%
- Chose 5 signaling items = 45.7%

These choice data suggest that 65.7% of consumers in the inauthentic condition were choosing greater than two signaling items, and 17.2% of consumers were choosing less than two signaling items, representing a total of 82.9% of consumers choosing inconsistently with their given goal. Again, even if we give consumers a small margin of error of +/- 1 item (i.e., 1 - 3 signaling items), we still observe a large proportion choosing above (i.e., > 3 signaling items; 52.8%) and below (i.e., < 1 signaling item; 12.9%) this margin of error.

Discussion

The results of study 5 demonstrate that inauthentic consumers are inclined to choose ensembles with a greater number of signaling items than authentic consumers. This result suggests that inauthentic consumers do try too hard to signal their desired identity. This study also demonstrates that authentic consumers are inclined to choose ensembles with a greater number of signaling items than consumers at baseline, suggesting that authentic consumers do engage in some degree of self-presentation of their identity. Finally, these results also suggest

that a sizeable portion of consumers choose a number of signaling items that is inconsistent consistent with their signaling goal.

GENERAL DISCUSSION

In this research we explore how the number of signaling items in a consumer's ensemble affects observer perceptions of the signaling consumer's authenticity. Although it may intuitively seem like more signaling should enhance perceptions of consumer authenticity, we find support for a Goldilocks signaling effect—consumers with ensembles featuring a moderate or "just right" number of signaling items are typically perceived as most authentic in relation to the identity they are signaling. This effect is due to balancing perceptions of self-presentation with trying too hard. For consumers to be perceived as authentic by observers, they must present the identity they want to be associated with but not be perceived as trying too hard to do so. This effect is not driven by the specific properties of the signaling items, such as their rarity (study 1), or overreliance on a single brand (study 2). Furthermore, we find that there is not a simple association between moderation and authenticity driving this effect (study 3). Rather, the association between the degree of signaling and authenticity is norm dependent, and for some identities (e.g., team fan), excessive signaling is the norm and hence does not diminish perceptions of authenticity. Furthermore, underscoring the social importance of these judgments, we provide preliminary evidence suggesting that authenticity is associated with interpersonal liking (study 1).

In addition to gaining an understanding of when and how ensemble signaling affects perceptions of authenticity, we also demonstrate that observers make judgments of authenticity

spontaneously (i.e., naturally without experimenter demand). Specifically, we find that spontaneous inferences of (in)authenticity mimic (in reverse) the pattern of authenticity inferences elicited with explicit authenticity measures (study 4). Finally, turning our attention to consumers' ensemble choices, we demonstrates that inauthentic consumers indeed tend to choose ensembles with more signaling items than authentic consumers, even if they are trying to pass as authentic (study 5).

Theoretical Contributions

This theory and set of findings makes several contributions. First, this research is among few experimental papers in consumer behavior to consider ensemble signaling. Consumers rarely if ever consume products in isolation. However, with few exceptions, identity research in consumer behavior overwhelmingly focuses on how a single product can signal an identity (e.g., Berger and Heath 2007, 2008, Escalas and Bettman 2003, 2005; Levy 1959; White and Dahl 2006, 2007). This research extends signaling research by considering how ensembles of signals may or may not effectively signal the intended identity.

We also expand the scope of the signaling and authenticity literatures by exploring what causes consumer identity signals to be perceived as authentic. The nascent literature on authenticity in consumer behavior and psychology has primarily focused on the factors affecting judgments of brand or product authenticity (e.g., Beverland 2005, 2006; Grayson and Martinec 2004; Morhart et al. 2015; Newman and Dhar 2014) or consumers' feelings of their own intrapersonal authenticity (e.g., Gino et al. 2015, 2010; Kernis and Goldman 2006; Wood et al. 2008). We explore judgments of consumer authenticity, which has not typically been the focus of

prior work on authenticity, for several reasons. First, consumers often use identity signals at least in part to be perceived by others as authentic in relation to the signaled identity. Furthermore, people are often seeking information about others with which they interact or anticipate interacting with in order to define expectations for the social situation. Effective signals or "sign-vehicles" allow the social interaction to proceed with greater coherence and thus greater efficiency (Goffman 1959). Additionally and importantly, appearing authentic, as we show, can positively affect interpersonal liking. Finally, emphasizing the natural occurrence of this judgment and extending work on authenticity, we also find that observers spontaneously attend to and infer the authenticity of signaling consumers without being directly asked by researchers.

Consumer Well-Being and Marketing Implications

In addition to its theoretical contributions, the effect presented in this work has implications for consumption and marketing decisions. Our data suggest that a relatively large proportion of consumers seem to choose authenticity-suboptimal ensembles. However, as suggested earlier, consumers often use identity signals to be perceived by others as an authentic in relation to whatever identity the signal represents. This work has clear implications for what consumers should consider when crafting their ensembles in order to achieve this goal of authenticity.

Managers may also capture value for their firms by helping consumers achieve authenticity goals. Furthermore, brands invest a lot of resources into crafting and maintaining a specific image. Although prior literature often focuses on actions that a firm can take to affect its image (Loken and John 2010), some research suggests that a brand's users also affect its image.

Specifically, negative brand users can dilute a brand's image, particularly among those with lower self-brand connections whose opinions about the brand are malleable and unprotected (Ferraro et al. 2013). To capture this potential value and defend against potential image dilution, brands might subtly encourage their consumers to wear balanced, authenticity-maximizing ensembles. For instance, brands might design algorithms that target online shoppers who put too many conspicuously-branded items in their cart and suggest that they also add more subtly-branded items to their cart as well.

Also, brands might consider featuring balanced ensembles in their displays and advertising. In fact, displaying a target item as such might affect prospective consumers' attitudes towards the product. In one study, we placed a target product—a Nike shirt matched to the participant's gender—within a product display containing two or five signaling items (N = 189, between-subjects design). After viewing this display, participants rated their attitude towards the shirt. They then reported the degree to which they identify as an athlete. Self-identified athletes preferred the target product when it was displayed among two signaling items rather than five. Conversely, people who did not identify as athletes preferred the target product when it was displayed among five signaling items rather than two ($b_{\text{Interaction}}$ = -.35, $t(185) = 2.90$, $p = .004$). These results suggest that firms should carefully consider their target audience and whether or not they want to nudge that audience towards an authenticity-maximizing ensemble when crafting displays. Consumers' reactions to displays with varying numbers of signaling items represents an interesting opportunity for future research.

Future Directions

Ensembles representing multiple identities. In this work, we isolated the effect of varying numbers of items that all signal the same identity, which we operationalized by placing symbolic brand logos (e.g., Nike to signal an athlete identity) on otherwise plain (i.e., unbranded) items. Future research might explore what happens when products symbolic of multiple identities, particularly those that may be stereotypically non-complementary, are mixed in a single ensemble. For instance, an ensemble may mix products that signal athlete with products that signal "nerd." Does the inclusion of these non-complementary identities mitigate the perception that the consumer is trying too hard to signal any given identity, thus attenuating the Goldilocks signaling effect? Or, does the inclusion of these non-complementary identities intensify the Goldilocks signaling effect? Future research could explore these questions.

Signaling socially undesirable identities. In this work, we only studied ensembles that signaled identities that were presumably at least neutral if not relatively positive, and we avoided studying ensembles that signaled identities that were negative or deviant. Future research could examine how observers judge the authenticity of consumers who use ensembles to signal a socially deviant or negative identity (e.g., gothic). For such identities, signaling excessively may not diminish perceptions of authenticity.

Skill and motivation. In our studies, observers were given very little information about the consumer other than their ensemble choice. What if observers are given additional, relevant information about the consumer's identity? Specifically, future research might introduce

information about the consumer's identity-relevant skill or motivation as an additional boundary condition of the Goldilocks signaling effect. For instance, a greater number of signaling items (e.g., Nike items) might not diminish perceptions of authenticity for consumers who are able to demonstrate identity-related skill (e.g., performing push-ups with ease) or motivation (e.g., spending time at the gym). This information may come in a direct form (e.g., watching the consumer perform push-ups or enter the gym) or indirectly (e.g., seeing that the consumer has a fit physique). Consumers who demonstrate skill or motivation may be perceived as being or trying to be the identity, whereas consumers who do not demonstrate skill or motivation may be perceived as simply trying to seem like the identity. Hence, for consumers who demonstrate their skill or motivation, the negative effects of more signaling on observers' perceptions of their authenticity may be attenuated. Future work might explore this potential moderating effect of skill or motivation information on the Goldilocks signaling effect.

APPENDIX A: PHOTO STORY PROCEDURE

Please imagine a man named Thomas. Thomas is starting his day, waking up at his usual time.

Thomas gets out of bed and begins his morning routine. He brushes his teeth and showers.

After he showers, Thomas puts on his robe. He realizes that he needs to shave, so he does that as well.

Thomas heads to his kitchen to eat something for breakfast. He chooses to prepare some scrambled eggs and toast.

After eating breakfast, Thomas puts his dishes in the dishwasher and goes to his closet to decide what to wear for the day. Today, Thomas has the day off from work, but he has to run some errands, including grocery shopping and stopping by the bank and post office.

Thomas chooses a shirt and some casual pants to wear.
[photo of shirt and pant choice depending on condition]

It seems sunny outside, so Thomas also grabs a hat off of his dresser.
[photo of hat choice depending on condition]

Thomas heads towards his front door, making sure to grab his cell phone, wallet, and keys. He also puts his shoes on.

Before he leaves, he checks the temperature. It is slightly chilly this morning, so Thomas grabs a jacket.
[photo of jacket choice depending on condition]

Thomas also realizes that he might want to get a coffee and answer some emails at a local cafe. Thomas grabs a backpack and puts his laptop inside of it.
[photo of backpack choice depending on condition]

Thomas then exits his home, locks his door, and runs his errands.

APPENDIX B: STUDY 1 STIMULI

	Plain (i.e., unbranded)	Signaling
Shirt		
Pants		
Hat		

Jacket		
Backpack		

APPENDIX C: AUTHENTICITY SCALE

1. Indicate the extent to which you agree with the following statement: Thomas is an authentic athlete. (1 = *strongly disagree*, 7 = *strongly agree*)
2. Indicate the extent to which you agree with the following statement: Thomas is a fake athlete. (1 = *strongly disagree*, 7 = *strongly agree*)
3. How inauthentic or authentic an athlete is Thomas? (1 = *extremely inauthentic*, 7 = *extremely authentic*)
4. Indicate the extent to which you agree with the following statement: The clothing Thomas is wearing accurately reflects his true self, or who he really is. (1 = *strongly disagree*, 7 = *strongly agree*)
5. Indicate the extent to which you agree with the following statement: Thomas is a true athlete. (1 = *strongly disagree*, 7 = *strongly agree*)

APPENDIX D: STUDY 2 STIMULI

For Nike and plain (i.e., unbranded) study 2 stimuli, see appendix B.

APPENDIX E: STUDY 3 STIMULI

Fan stimuli	Plain (i.e., unbranded)	Signaling
Shirt		
Pants		
Hat		

Jacket		
Backpack		

Golfer stimuli	Plain (i.e., unbranded)	Signaling
Shirt		

Pants	
Hat	

Jacket

Backpack

APPENDIX F: STUDY 4 STIMULI

0 signaling items	2 signaling items	5 signaling items
		

APPENDIX G: STUDY 5 CHOICES

	Men's	Women's
0 signaling items		
1 signaling item		

2 signaling items	
3 signaling items	

4 signaling items	
5 signaling items	

REFERENCES

Bagozzi, Richard P., Youjae Yi, and Lynn W. Phillips (1991), "Assessing Construct Validity in Organizational Research," *Administrative Science Quarterly*, 36(3), 421–58.

Baumeister, Roy F. (1982), "A Self-Presentational View of Social Phenomena," *Psychological Bulletin*, 91(1), 3–26.

Bell, Linda G., Robert A. Wicklund, Gary Manko, and Chris Larkin (1976), "When Unexpected Behavior Is Attributed to the Environment," *Journal of Research in Personality*, 10(3), 316–27.

Berger, Jonah (2008), "Identity-Signaling, Social Influence, and Social Contagion," in *Understanding Peer Influence in Children and Adolescents*, ed. Mitchell J. Prinstein and Kenneth A. Dodge, New York, NY: Guilford Press, 181–99.

Berger, Jonah and Chip Heath (2007), "Where Consumers Diverge from Others: Identity Signaling and Product Domains," *Journal of Consumer Research*, 34(2), 121–34.

——— (2008), "Who Drives Divergence? Identity Signaling, Outgroup Dissimilarity, and the Abandonment of Cultural Tastes," *Journal of Personality and Social Psychology*, 95(3), 593–607.

Berger, Jonah and Morgan Ward (2010), "Subtle Signals of Inconspicuous Consumption," *Journal of Consumer Research*, 37(4), 555–69.

Beverland, Michael B. (2005), "Crafting Brand Authenticity: The Case of Luxury Wines," *Journal of Management Studies*, 42(5), 1003–29.

——— (2006), "The 'Real Thing': Branding Authenticity in the Luxury Wine Trade," *Journal of Business Research*, 59(2), 251–58.

Bhattacharjee, Amit, Alixandra Barasch, and Klaus Wertenbroch (2018), "Too Good to Be True: Imperfection as a Signal of Authenticity," *Unpublished Manuscript*.

Brillson, Leila (2013), "From Uggs To Y2K, What The '00s Meant To Us," *Refinery 29*, February.

Chaplin, Lan Nguyen and Tina M. Lowrey (2010), "The Development of Consumer-Based Consumption Constellations in Children," *Journal of Consumer Research*, 36(5), 757–77.

Escalas, Jennifer Edson and James R. Bettman (2005), "Self-Construal, Reference Groups, and Brand Meaning," *Journal of Consumer Research*, 32(3), 378–389.

——— (2003), "You Are What They Eat: The Influence of Reference Groups on Consumers' Connections to Brands," *Journal of Consumer Psychology*, 13(3), 339–48.

Fein, Steven (1996), "Effects of Suspicion on Attributional Thinking and the Correspondence Bias," *Journal of Personality and Social Psychology*, 70(6), 1164.

Fein, Steven and James L. Hilton (1994), "Judging Others in the Shadow of Suspicion," *Motivation and Emotion*, 18(2), 167–98.

Fein, Steven, James L. Hilton, and Dale T. Miller (1990), "Suspicion of Ulterior Motivation and the Correspondence Bias," *Journal of Personality and Social Psychology*, 58(5), 753–64.

Ferraro, Rosellina, Amna Kirmani, and Ted Matherly (2013), "Look at Me! Look at Me!

Conspicuous Brand Usage, Self-Brand Connection, and Dilution," *Journal of Marketing Research*, 50(4), 477–88.
Fiske, Susan T. (1980), "Attention and Weight in Person Perception: The Impact of Negative and Extreme Behavior," *Journal of Personality and Social Psychology*, 38(6), 889–906.
Gal, David (2015), "Identity-Signaling Behavior," in *The Cambridge Handbook of Consumer Psychology*, ed. Michael I. Norton, Derek D. Rucker, and Cait Lamberton, Cambridge: Cambridge University Press, 256–81.
Gervais, Will M., Jennifer A. Jewell, Maxine B. Najle, and Ben K.L. Ng (2015), "A Powerful Nudge? Presenting Calculable Consequences of Underpowered Research Shifts Incentives Toward Adequately Powered Designs," *Social Psychological and Personality Science*, 6(7), 847–54.
Gino, Francesca, Maryam Kouchaki, and Adam D. Galinsky (2015), "The Moral Virtue of Authenticity: How Inauthenticity Produces Feelings of Immorality and Impurity," *Psychological Science*, 26(7), 983–96.
Gino, Francesca, Michael I. Norton, and Dan Ariely (2010), "The Counterfeit Self," *Psychological Science*, 21(5), 712–20.
Goffman, Erving (1969), *Strategic Interaction*, Philadelphia, PA: University of Pennsylvania Press.
——— (1959), *The Presentation of Self in Everyday Life*, Garden City, NY: Anchor.
Gosling, Samuel D., Sei Ko, Thomas Mannarelli, and Margaret E. Morris (2002), "A Room with a Cue: Personality Judgments Based on Offices and Bedrooms," *Journal of Personality and Social Psychology*, 82(3), 379–98.
Grayson, Kent and Radan Martinec (2004), "Consumer Perceptions of Iconicity and Indexicality and Their Influence on Assessments of Authentic Market Offerings," *Journal of Consumer Research*, 31(2), 296–312.
Han, Young Jee, Joseph C. Nunes, and Xavier Drèze (2010), "Signaling Status with Luxury Goods: The Role of Brand Prominence," *Journal of Marketing*, 74(4), 15–30.
Hayes, Andrew F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, New York, NY: Guilford Press.
Holman, Rebecca H. (1980), "Clothing as Communication: An Empirical Investigation," in *Advances in Consumer Research Volume 07*, ed. Jerry C. Olson, Ann Arbor, MI: Association for Consumer Research, 372–77.
Kanouse, David E. and L. Reid Handon (1972), "Negativity in Evaluations," in *Attribution: Perceiving the Causes of Behavior*, ed. Edward E. Jones, David E. Kanouse, Harold H. Kelley, Richard E. Nisbett, Stuart Valins, and Bernard Weiner, Morristown, NJ: General Learning Press, 47–62.
Kernis, Michael H. and Brian M. Goldman (2006), "A Multicomponent Conceptualization of Authenticity: Theory and Research," *Advances in Experimental Social Psychology*, 38, 283–357.
Kirmani, Amna (1997), "Advertising Repetition as a Signal of Quality: If It's Advertised so Much, Something Must Be Wrong," *Journal of Advertising*, 26(3), 77–86.
——— (1990), "The Effect of Perceived Advertising Costs on Brand Perceptions,"

Journal of Consumer Research, 17(2), 160.
——— (2009), "The Self and the Brand," *Journal of Consumer Psychology*, 19(3), 271–75.
Kirmani, Amna and Peter Wright (1989), "Money Talks: Perceived Advertising Expense and Expected Product Quality," *Journal of Consumer Research*, 16(3), 344–53.
Kun, Anna and Bernard Weiner (1973), "Necessary versus Sufficient Causal Schemata for Success and Failure," *Journal of Research in Personality*, 7(3), 197–207.
Leary, Mark and Robin M. Kowalski (1990), "Impression Management : A Literature Review and Two-Component Model," *Psychological Bulletin*, 107(1), 34–47.
Levy, Sidney (1959), "Symbols for Sale," *Harvard Business Review*, 37(4), 117–24.
Loken, Barbara and Deborah Roedder John (2010), "When Do Bad Things Happen to Good Brands?Understanding Internal and External Sources of Brand Dilution," in *Brands and Brand Management: Contemporary Research Perspectives*, ed. Barbara Loken, Rohini Ahluwalia, and Michael J. Houston, New York, NY: Psychology Press, 233–70.
Lowrey, Tina M., Basil G. Englis, Sharon Shavitt, and Michael R. Solomon (2001), "Response Latency Verification of Consumption Constellations: Implications for Advertising Strategy," *Journal of Marketing*, 30(1), 29–39.
Lutz, Ashley (2015), "Millennials Are Rejecting a Strategy Coach, Abercrombie & Fitch, and Michael Kors Have Relied on for Years," *Business Insider*, December.
Ma, Debbie S., Joshua Correll, and Bernd Wittenbrink (2015), "The Chicago Face Database: A Free Stimulus Set of Faces and Norming Data," *Behavior Research Methods*, 47, 1122–35.
Moore, Karl (2014), "Authenticity: The Way To The Millennial's Heart," *Forbes*, August.
Morhart, Felicitas, Lucia Malär, Amélie Guèvremont, Florent Girardin, and Bianca Grohmann (2015), "Brand Authenticity: An Integrative Framework and Measurement Scale," *Journal of Consumer Psychology*, 25(2), 200–218.
Newman, George E. and Ravi Dhar (2014), "Authenticity Is Contagious: Brand Essence and the Original Source of Production," *Journal of Marketing Research*, 51(3), 371–86.
"Removing the New Era Logo" https://www.youtube.com/watch?v=9pJKiDLWijE&t=7s.
Schlegel, Rebecca J., Matthew Vess, and Jamie Arndt (2012), "To Discover or to Create: Metaphors and the True Self," *Journal of Personality*, 80(4), 969–93.
Solomon, Michael R. (1988), "Mapping Product Constellations : A Social Categorization Approach to Consumption Symbolism," *Psychology Marketing*, 5(3), 233–58.
——— (1987), "The Forest or the Trees? A Gestalt Approach to Symbolic Consumption," in *Marketing and Semiotics: New Directions in the Study of Signs for Sale*, ed. Donna Jean Umiker-Sebeok, Berlin, Germany: Mouton de Gruyter, 189–218.
Solomon, Michael R. and Bruce Buchanan (1991), "A Role-Theoretic Approach to Product Symbolism: Mapping a Consumption Constellation," *Journal of Business Research*, 22(2), 95–109.

Spence, Michael (1973), “Job Market Signaling,” *The Quarterly Journal of Economics*, 87(3), 355–74.
Veblen, Thorstein (1899), *The Theory of the Leisure Class*, New York, NY: McMillan.
White, Katherine and Darren W. Dahl (2007), “Are All Out-Groups Created Equal? Consumer Identity and Dissociative Influence,” *Journal of Consumer Research*, 34(4), 525–36.
——— (2006), “To Be or Not Be? The Influence of Dissociative Reference Groups on Consumer Preferences,” *Journal of Consumer Psychology*, 16(4), 404–14.
Wood, Alex M., P. Alex Linley, John Maltby, Michael Baliousis, and Stephen Joseph (2008), “The Authentic Personality: A Theoretical and Empirical Conceptualization and the Development of the Authenticity Scale,” *Journal of Counseling Psychology*, 55(3), 385–99.