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## Hiding in the Crowd: Secrecy Compels Consumer Conformity

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## ABSTRACT

This research investigates how secrecy (i.e., a state in which people have an active intention to conceal information from others) affects individuals' consumption behavior. Six studies reveal that making consumers' secrets salient increases their tendency to conform in their consumption, and show that this effect is driven by the desire to avoid social attention. This effect is moderated by consumers' perceived self-control capacity. This research uncovers a novel downstream consequence of secrecy on consumer behavior and provides insight into when conforming consumption can serve as a strategy to help consumers avoid unwanted social attention. This research has important practical implications concerning using notions of secrecy in marketing strategies and promoting conforming products.

*Keywords:* secrecy, social attention, attention avoidance, consumer conformity, self-control

*“The soul has no secret that the behavior does not reveal.” —Lao Tzu*

Secrecy is the state in which people have an active intention to conceal information from others, and secret is the information that is purposely hidden or concealed (Slepian, Chun, and Mason 2017). Secrecy is not an obscure concept in the marketing and consumption domain (e.g., Goodwin 1992; Paasonen et al. 2015; Rodas and John 2020; Vanhamme and de Bont 2008). Consumers often keep consumption-related secrets such as the gifts they buy for others or an adult magazine or video delivered by mail in a nondescript package. Also, ads sometimes depict people engaging in secret consumption-related activities. As an example, a Breyers ad shows a couple anxiously waiting for their kids to go to bed so they can secretly enjoy creamy Breyers Gelato. Despite the prevalence of secrets, only recently have researchers started to explore the consequences of keeping secrets on consumers. The limited empirical research in this area shows that holding consumption as a secret can polarize product evaluation among women (Rodas and John 2020) and enhance self-brand connections (Thomas and Jewell 2019). Holding financial secrets is associated with higher preferences for discreet payment methods and products in unmarked packaging (Garbinsky et al. 2020). From firms' perspective, research has found that strategically concealing the image of an attractive product can increase consumers' curiosity and thus enhance their aesthetic evaluation of the product (Sevilla and Meyer 2020).

In the current research, we examine the impact of secrecy on consumer conformity—a domain that, at first glance, would seem unlikely to be affected by secrecy. Drawing on insights from research on secrecy, social attention, and consumer conformity, we propose that secrecy instigates a general desire to avoid social attention, even in situations far removed from circumstances related to the secret. This desire to avoid social attention in turn leads consumers to conform in their consumption activities. We call it a “hide-in-the-crowd effect”: “hide” refers to “secret keepers' intention to avoid social attention” and “in the crowd” means

that this attention-avoidance is achieved through “conforming to the crowd”. Furthermore, we predict that this hide-in-the-crowd effect will be moderated by consumers’ perceived self-control capacity. Specifically, we predict that the relationship between secrecy and consumer conformity will be weakened when consumers perceive themselves as having high self-control.

We begin by developing our theoretical framework. Then we present six experiments that yield insights into how and why secrecy compels consumer conformity. We conclude with a discussion of the theoretical and practical implications of the current work and potential directions for future research.

## **THEORETICAL FRAMEWORK**

### Secrecy

Keeping secrets is a ubiquitous part of life (Kelly 2002; Finkenauer et al. 2009), and it has been argued that most adults keep some secrets in their daily lives (Caughlin et al. 2009; Slepian et al. 2017). For example, participants in a research study each reported keeping secrets—13 on average (Slepian et al. 2017), and a 2013 worldwide survey found that 43% of men and 33% of women are keeping a major secret from their partners (Northrup, Schwartz, and Witte 2013). Additionally, in today’s society there is an ever-increasing level of drug and alcohol use, and this consumption is often kept secret from others (e.g., Kelly 2002; Slepian et al. 2017). One of the key benefits of organizations like Alcoholics Anonymous and Narcotics Anonymous is that group members are encouraged to share their secrets with other members—and they are not supposed to tell anyone outside the group about others’ secrets (Groh, Jason, and Keys 2008).

People keep different types of secrets from others. The secret might be positive information such as a surprise party to celebrate a friend's birthday or the consumption of delicious ice cream; it could also involve negative information such as a poor performance on an exam or an affair that if exposed might ruin one's marriage. Although the contents of positive and negative secrets are very different, the keeping of any type of secret has a common element, that is, the intention to hide information (e.g., Slepian et al. 2017; Uysal, Lin, and Knee 2010). As with other types of unresolved personal concerns, people often catch themselves thinking about their secrets outside concealment settings, a phenomenon called "mind-wandering" (e.g., Smallwood and Schooler 2006). Once the secret is activated in mind, the intention to conceal it from others is triggered, regardless of whether the person from whom the secret is being kept is physically present (Slepian et al. 2017). Therefore, in the current paper we define secrecy as *a state in which people have an active intention to conceal information from others*, instead of relatively narrow definitions such as deliberate information hiding (Kelly 2002), active disclosure inhibition (Pennebaker 1989), or information omission and deception (Lane and Wegner 1995).

It should be noted that secrecy is not equal to information inhibition (e.g., Pennebaker 1985, 1989; Slepian et al. 2017) or self-concealment (e.g., Kelly 2002; Larson and Chastain 1990; Uysal et al. 2010). People may suppress information because of many reasons, such as social norm, personal traits (e.g., shyness), or impression-management motives (Cheek and Buss 1981; Friedman and Miller-Herringer 1991; Slepian et al. 2017), to name a few. Secret-keeping is just one of the reasons why people suppress information. Secrecy is also not equal to self-concealment, which refers to the intention to actively conceal distressing or negative personal information from others (Larson and Chastain 1990). In a sense, self-concealment can be seen as a specific type of secrecy; secrecy is a broader concept than self-concealment: the information people hide as a secret is not limited to negative personal information.

Secrecy has been found to have substantial impacts on the secret-keeper. For example, Slepian et al. (2012) showed that people who are occupied with secrets feel like they are carrying physical weight, which influences their perception and judgment, such as estimating hills to be steeper, perceiving distances to be farther, and indicating that physical tasks seem more effortful. Secrecy leads to increased feeling of inauthenticity (Slepian et al. 2017) and regret (McDonald et al. 2020). Negative secrets are often associated with physical complaints and depression (Kelly 2002), physical symptoms (Larson and Chastain 1990), and feelings of loneliness (Cramer and Lake 1998). Keeping a secret can have benefits too. For instance, young secret-keepers feel that having their secret(s) gives them a greater sense of autonomy (Finkenauer, Engels, and Meeus 2002). Moreover, keeping positive secrets may increase enjoyment of oneself and others (Vrij et al. 2002).

As we reviewed above, secrecy not only affects the physical perception of secret-keepers, it also affects their psychological experiences. In the current research, we extend this stream of research by investigating a novel impact of secrecy in contexts removed from the secret itself, namely, its influence on social-attention avoidance and consumer conformity.

### Secrecy and the General Desire to Avoid Social Attention

Although most people have secrets, their secrets may not always be salient in mind. The frequency of thinking about secrets differs from person to person and from situation to situation. For example, a romantic relationship secret may not be accessible in one's mind when concentrating on solving a mathematical problem, yet it may be activated upon reading an article about romance or when asked about one's past or present romantic relationships. Given that people tend to make decisions based on the knowledge or stimulus that is mentally accessible at the time of decision-making (Förster and Liberman 2007; Wyer 2008), the

impacts of secrets on people's behavior are most likely to occur when their secrets become salient.

As a core component of the state of secrecy, people worry about leaking information related to their secret (e.g., Kelly and McKillop 1996; Lane and Wegner 1995; Larson and Chastain 1990; Kelly 2002; Slepian et al. 2017; Wegner, Lane, and Dimitri 1994). Concerns about information leakage come from real or imagined consequences that revelation of a secret would bring (Lane and Wegner 1995; Wegner 1989). Revealing negative secrets such as cheating, poor performance, or stigmatized identity may result in direct negative outcomes (e.g., condemnation by others, ruined reputation, or social exclusion; Kelly 2002; Maas et al. 2012; McDonald et al. 2020; Vrij et al. 2002); revealing positive secrets such as a planned marriage proposal, surprise party, or secret recipe may decrease expected positive outcomes (e.g., predicted enjoyment, performance, or financial gains; Yang, Deng, and Jia 2018). Since secret revelation often brings negative consequences (i.e., direct negative outcomes or the reduction of positive outcomes), when a secret pops into mind, people may consciously worry that their appearance or behaviors might result in an unintentional leakage of information related to the secret (Lane and Wegner 1995). Consistent with this assumption, researchers have found that secret-keeping during social interaction triggers cognitive processes of monitoring for and suppressing leakages of information (Critcher and Ferguson 2014; Smart and Wegner 1999).

Being alone, which eliminates the possibility of secret revelation, is obviously an effective way to guard one's secret. However, humans are social beings (Aronson 1972); for many reasons (e.g., shopping, job, social or family events) people cannot, or do not want to, avoid others' social presence entirely. Thus, it is not uncommon that people need to hide their secrets in social contexts. For example, employees may need to hide their support for the new CEO when chatting with colleagues at their workplace; people may need to hide their



financial difficulties when meeting with old friends. Given that complete solitude is not a practical or desirable way to maintain secrets, avoiding attention becomes an alternative strategy for secret-keepers.

Receiving attention from others may increase the probability of involuntary leakage of information (i.e., information is discovered by others). People can infer a person's inner states by observing his or her behaviors, and the more attention people receive, the more likely it is that others will discover their true inner self (Sanbonmatsu, Shavitt, and Gibson 1994). Moreover, people have biased beliefs about how much others can detect their inner states. The literature on illusion of transparency suggests that individuals have the tendency to overestimate the extent to which their inner thoughts "leak out" (e.g., Gilovich, Savitsky, and Medvec 1998). Accordingly, once people are in the state of secrecy, they may worry that others will "see" information related to their secrets when they receive social attention. Therefore, in the current research, we predict that secrecy will trigger a desire to avoid social attention. We further predict that secrecy will induce a desire to avoid social attention even in domains unrelated to the secret. When secret-keepers mind-wander to their secrets outside secret-related settings, they still worry that they may give away their secret somehow when receiving attention from others because they think others can discern their thoughts (though the attention received from others may not really cause their secret to be revealed). For example, Susan is trying to hide a secret about supporting her new CEO from others, and she catches herself thinking about this secret in a shopping mall. She may still worry about potential leaking of the secret and thus behave in a way that attracts less attention (e.g., speaking softly). In addition, given that secrecy is accompanied by the concerns about information leaking regardless of whether positive or negative secrets are made salient, the effect of secrecy on the desire to avoid social attention should be independent of the valence of secrets.

## Desire to Avoid Social Attention and Consumer Conformity

Consumer choices are not made in a social vacuum. When it comes to consumption decisions, individuals may have to consider whether they should conform to the majority or not (e.g., Berger and Heath 2007; Huang et al. 2014; Mead et al. 2011; Wan, Xu, and Ding 2014). Conformity refers to the act of changing one's behavior to match the responses of others (Cialdini and Goldstein 2004). Conformity occurs for different reasons. For example, some consumers conform to others in order to gain accuracy, since following others often leads to more accurate outcomes (e.g., Huang et al. 2014). Alternatively, conformity can satisfy consumers' affiliation motives, since being similar to others produces liking (e.g., Mead et al. 2011; Wan et al. 2014; Zhu and Argo 2013). Many situational factors can render consumers more or less likely to conform. For example, a warm temperature can dispose consumers toward using others' opinions as the basis for their own decision-making, because warm temperature increases perceived social closeness to other decision makers, which makes people perceive the opinion of others to be reliable (Huang et al. 2014).

Consistent with the above literature, we argue that the desire to avoid social attention can influence consumers' tendency to engage in conformity behavior. This prediction has its root in the social-attention literature. Attention in the social environment is selective (Wyer 2008) and influenced by many factors, such as types of goals (Snyder 1981), affect (Bower, Gilligan, and Monteiro 1981), and environmental cues such as scent (Morrin and Ratneshwar 2000). One major determinant of attention is whether the focal object is similar to, or different from, the objects surrounding it (Sanbonmatsu et al. 1994). People pay more attention to targets that stand out in a crowd (e.g., Griskevicius et al. 2006; Irwin et al. 2000). For example, research about the "minority spotlight effect" shows that the members of

minority groups perceived themselves to be conspicuous and the focus of others' attention (e.g., Crosby, King, and Savitsky 2014; Gilovich, Medvec, and Savitsky 2000). Since conformity by definition makes people similar to others, it should help conformists be less easily noticed by observers and attract less attention. Previous research offers evidence to support the link between social attention and conformity (e.g., Bellezza, Gino, and Keinan 2014; Griskevicius et al. 2006; Maslach, Stapp, and Santee 1985; Ridgeway 1978, 1981). For example, Ridgeway (1981) found that confederates who engaged in conforming behavior attracted less attention from others compared to nonconforming behavior, reflected by the amount of information other people remembered about those confederates. Griskevicius et al. (2006) showed that men with a mate-attraction motive tend to engage in nonconforming behavior since nonconformity is believed to be an effective way to attract attention from potential mates, compared to conformity. Putting this research in the context of conformity and consumer choice, we expect that a desire to avoid social attention will lead consumers to "hide in the crowd" by selecting conforming (vs. nonconforming) products, because consumers believe that they will draw less attention by "fitting in" and conforming to others.

## **THE CURRENT RESEARCH**

We have argued that secrecy induces a general desire to avoid social attention. We also noted that the desire to avoid social attention increases conformity. Putting them together, we predict that secrecy will increase consumers' tendency to engage in conforming (vs. nonconforming) consumption. Specifically, we predict that secrecy will increase consumers' desire to avoid social attention, which in turn predicts increased consumer conformity (i.e. a hide-in-the-crowd effect). Stating these hypotheses formally:

*H1: Secrecy will increase consumers' tendency to make conforming consumption choices.*

*H2: The effect of secrecy on consumer conformity will be mediated by the desire to avoid social attention.*

We have argued that people with their secret salient are motivated to avoid social attention because they are afraid of the leakage of secret-related information, a key component of the state of secrecy. For example, such information may come out of their mouth accidentally during a conversation. If this is true, then the effect of secrecy on conformity should be attenuated or eliminated if consumers are less concerned about self-disclosure. Consistent with this assumption, we further predict that consumers' perceived self-control capacity is likely to moderate the proposed effect of secrecy on conformity. Self-control refers to the ability to control or override one's initial responses in order to adhere to standards or long-term goals (Baumeister, Vohs, and Tice 2007). Individuals with high self-control capacity tend to be good at managing their lives, saving money, keeping secrets, fulfilling promises, controlling their emotions, and so forth (e.g., Baumeister 2002; Mukhopadhyay and Johar 2005; Tangney, Baumeister, and Boone 2004). If secret-keepers believe that they can inhibit themselves from enacting a problematic desire (i.e., a temptation) or can override a problematic desire with a preferred behavior (Baumeister, Vohs, and Tice 2007; Hofmann et al. 2012), they should be less motivated to take precautionary actions (e.g., conforming consumption, staying alone) to prevent themselves from leaking secrets. These individuals are confident of their ability to keep their secret and thus have less worry about drawing attention from others. Consequently, we hypothesize that the proposed effect of secrecy on consumer conformity will be weakened when consumers consider themselves to have high (vs. low) self-control. Stating this formally:

*H3: The effect of secrecy on consumer conformity will be attenuated when consumers consider themselves to have high self-control (vs. low self-control).*

Six studies explored these possibilities. Study 1 demonstrates that secrecy results in higher desire to avoid social attention. Studies 2A and 2B show, through various manipulations of secrecy and measurements of consumer conformity, that secrecy increases consumers' conforming tendencies in product choice; these studies also rule out the alternative explanation of mood. Studies 3A and 3B confirm our theoretical model (i.e., secrecy → attention avoidance → conformity) through mediation analyses (see figure 1 for the theoretical model). Studies 2B and 3B also bolster the external validity of this effect in incentive-compatible real consumer choice contexts. Finally, study 4 further explores the nature of the observed effect by testing a moderator: perceived self-control capacity. We find that the effect of secrecy on consumer conformity is mitigated when participants view themselves as having a high capacity for self-control. The target sample size in these studies was selected based on previous consumer-conformity research (e.g., Wan et al. 2014) and power analyses through G\*Power (e.g., Faul et al. 2009; see web appendix B2 for details). We report all data exclusions (if any), all manipulations, and all hypothesis-related measures. Details about data exclusions, manipulations and measures, and additional analyses are reported in the web appendix.

The current studies contribute to several streams of research. This work extends the consumer-conformity literature (e.g., Bellezza et al. 2014; Huang et al. 2014; Wan et al. 2014) by revealing a novel psychological antecedent of consumer conformity. It also contributes to the secrecy literature in social psychology (e.g., Kelly 2002; Slepian, Camp, and Masicampo 2015; Slepian et al. 2012, 2017) by uncovering a novel cross-domain effect of secrecy that is manifested in the consumption domain. Furthermore, the current work adds

to the growing literature on social attention (e.g., Gilovich et al. 2000; Gilovich and Savitsky 1999; Lee and Shrum 2012) by shedding light on factors that stimulate a person's desire to avoid social attention. The findings bear important implications for marketers when they utilize the concept of secrecy in their marketing practice or promote conforming products.

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## STUDY 1

Study 1 provides initial support for our proposed association between secrecy and avoidance of social attention. In this study, we first made a secret mentally accessible in the minds of participants through a writing task, then measured their intention to avoid social attention through a group photo-taking task.

### Method

Two hundred twenty-nine US adults took part in this study on Amazon's Mechanical Turk (mTurk) for a nominal payment. Twenty-eight participants who did not correctly follow our instructions in the secrecy manipulation task (e.g., participants who did not recall any secret or who recalled irrelevant content) were excluded (see web appendix B1 for details about data exclusion criteria, procedures, and exclusion percentage in each condition for each study), which left us with 201 participants ( $M_{\text{age}} = 38.13$ ,  $SD = 12.09$ ; 56.7% females) for further data analyses.

Participants were randomly assigned to one of the two (secrecy vs. control) between-subjects conditions. To make the secret mentally accessible, we followed past secrecy literature (e.g., Slepian et al. 2012; Slepian and Bastian 2017; Slepian, Masicampo, and Galinsky 2016) and asked participants in the *secrecy* condition to write down a personal secret without elaborating on its details. It was further required that the secret written down be the participants' own secret and something kept to themselves until now. Meanwhile, participants in the *control* condition were asked to write about a personal event that they had disclosed to others (see web appendix A1 for the manipulation). Next, in an ostensibly unrelated task, we assessed consumers' avoidance of social attention (Akimoto, Sanbonmatsu, and Ho 2000). Specifically, for a group photo-shoot, participants were asked to make a choice between a less attention-grabbing position (i.e., in the back row of the group) and a more attention-grabbing position (i.e., in the center of the front row; see appendix). Finally, as a manipulation check, participants in both conditions rated to what extent they agreed with the statement "I have a secret that I cannot share with others" on a 9-point scale (1 = strongly disagree, 9 = strongly agree).

## Results

As expected, participants in the secrecy condition were more likely to think that they were keeping a secret ( $M = 7.06$ ,  $SD = 2.01$ ) than were those in the control condition ( $M = 4.73$ ,  $SD = 3.02$ ;  $F(1, 199) = 39.21$ ,  $p < .001$ ,  $\eta_p^2 = .17$ ). More importantly, consistent with our expectation, participants in the secrecy condition were significantly more likely to choose the less attention-grabbing position ( $M = 56.7\%$ ) than were those in the control condition ( $M = 39.6\%$ ;  $\chi^2(1) = 5.78$ ,  $p = .016$ ;  $OR = 1.99$ ).

We assumed that the effect of secrecy on the desire to avoid social attention should be independent of the valence of the secret. To test the assumption, we conducted an ancillary analysis to investigate the impact of secret valence on our data. We found no significant impact of secret valence on participants' desire to avoid social attention (see web appendix E5 for details about the ancillary analysis). This result demonstrates the generalizability of the observed secrecy effect.

## Discussion

Findings of study 1 indicated that secrecy has a significant impact on individuals' desire to avoid social attention. One could argue that the observed effect may be driven by other factors such as mood, self-esteem, perceived self-uniqueness, feeling of isolation, depletion, or moral perception. An additional study we conducted provides evidence to rule out these alternative mechanisms (see web appendix F1). To further test the role of secret valence in our paradigm, we conducted another study in which we directly manipulated secret valence. We found that the salience of positive secrets and negative secrets similarly increased the desire to avoid social attention (see web appendix F2 for this additional study).

## **STUDY 2**

Study 2 tested our main hypothesis that secrecy increases consumer conformity in product choice. In past literature, consumer conformity has been measured in two ways. It can be operationalized by varying the level of visual distinctiveness of the product design (e.g., Bellezza et al. 2014) so that participants are likely to consider visually distinctive products to be less conforming than non-distinctive products. Alternatively, conformity was



frequently captured in prior literature by the extent to which participants adopted the majority-endorsed option (e.g., Berger and Heath 2007; Huang et al. 2014; Wan et al. 2014; Wang, Zhu, and Shiv 2012). Products that are majority-endorsed (i.e., products with high market share) are considered more conforming than products that are minority-endorsed (i.e., products with low market share).

We utilized both consumer-conformity measurements in the current study. In study 2A, we investigated whether salient positive or negative secrets will have a similar impact on participants' choice between two bikes that are either majority-endorsed or minority-endorsed. Study 2B utilized a behavioral manipulation of secrecy, in which participants needed to hide a piece of personal information when completing a task (e.g., Lane and Wegner 1995). After making their secrets salient, we measured consumer conformity with incentive-compatible real choice behaviors. Specifically, we looked at participants' real choice among four fans with conforming or nonconforming visual designs.

### Study 2A

In study 2A, we plan to show that making positive or negative secrets salient has a similar impact on participants' conforming tendency. In addition, it is possible that the valence of the salient secrets may influence secret-keepers' mood. Given the widespread assumption that mood can be the direct cause of behavior (Baumeister et al. 2007), and observations that mood can influence individuals' conforming tendency (Tong et al. 2008), one may argue that our secrecy manipulation may evoke emotional reactions that lead to conformity. Thus, we measured mood to rule it out in this study.

One hundred eighty-eight US adults took part in this study on mTurk for a nominal payment. They were randomly assigned to one of the three (positive-secrecy vs. negative-

secrecy vs. control) between-subjects conditions. Thirty-eight participants who did not follow our manipulation instructions (e.g., participants who did not recall any secret or who recalled irrelevant content) were excluded (see web appendix B1 for details), which left us with 150 participants ( $M_{\text{age}} = 35.01$ ,  $SD = 11.56$ ; 60.0% females) for further data analyses.

We first manipulated secrecy through a similar writing task as used in study 1. Specifically, in the *positive-secrecy* condition, participants wrote about a positive secret that they were keeping. For example, they wrote about secrets such as surprise gift, secret trip, surprise party, secret skill, or secret habit. By contrast, in the *negative-secrecy* condition, participants wrote about a negative secret that they were keeping, such as car accident, extra-relationship thoughts, financial problem, addiction, or cheating. Participants in the *control* condition completed the same writing task as in study 1—they wrote about a personal event that they had disclosed to others. After the writing task, participants in all conditions completed the same secrecy manipulation check as in study 1.

Participants then proceeded to a purportedly unrelated task, in which we captured consumer conformity by observing their choice between a majority-endorsed product option and a minority-endorsed one. Specifically, we provided market-share information for each product option to convey whether a product is chosen by the majority or the minority (e.g., Berger and Heath 2007; Wan et al. 2014). Participants imagined that they were planning to buy a mountain bike and made a choice between two available options: one liked by a large number of consumers (i.e., having a 76% market share) and the other preferred by a small number of consumers (i.e., having a 24% market share; see appendix). Participants also indicated how much they experienced positive or negative feelings via the Positive and Negative Affect Schedule (PANAS; Watson, Clark, and Tellegen 1988) on 9-point scales (1 = not at all, 9 = very much).

Participants in the positive-secrecy condition were more likely to think that they needed to keep a secret ( $M = 5.16$ ,  $SD = 2.56$ ) than were those in the control condition ( $M = 3.36$ ,  $SD = 2.73$ ;  $F(1, 147) = 13.31$ ,  $p < .001$ ,  $\eta_p^2 = .11$ ). Similarly, participants in the negative-secrecy condition were more likely to think that they had a secret to keep ( $M = 6.60$ ,  $SD = 2.37$ ) than were those in the control condition ( $M = 3.36$ ,  $SD = 2.73$ ;  $F(1, 147) = 37.64$ ,  $p < .001$ ,  $\eta_p^2 = .28$ ). However, there was an unexpected significant difference between the positive-secrecy and negative-secrecy conditions on secrecy perception ( $F(1, 147) = 7.00$ ,  $p = .009$ ,  $\eta_p^2 = .08$ ).

More importantly, participants in the positive-secrecy condition were more likely to choose the conforming bike ( $M = 68.6\%$ ) than were those in the control condition ( $M = 49.2\%$ ;  $b = .82$ ,  $SE = .40$ ,  $Wald = 4.20$ ,  $p = .040$ ;  $\text{Exp}(B) = 2.26$ ). Similarly, participants in the negative-secrecy condition were more likely to choose the conforming bike ( $M = 72.5\%$ ) than were those in the control condition ( $M = 49.2\%$ ;  $b = 1.00$ ,  $SE = .44$ ,  $Wald = 5.21$ ,  $p = .022$ ;  $\text{Exp}(B) = 2.73$ ). Participants in the positive-secrecy and negative-secrecy conditions did not differ significantly in their product choices ( $b = .19$ ,  $SE = .47$ ,  $Wald = .16$ ,  $p = .688$ ;  $\text{Exp}(B) = 1.21$ ), suggesting that both positive and negative secrecy lead to a similar effect on consumer conformity.

The PANAS scale includes 10 items about positive emotions (e.g., excited, enthusiastic) and 10 items describing negative emotions (e.g., upset, hostile). We combined the 10 positive- and 10 negative-emotion items to form a positive-mood index ( $\alpha = .92$ ) and a negative-mood index ( $\alpha = .95$ ), respectively. The two indexes were averaged to form a general mood index ( $\alpha = .86$ ) with the negative-mood scale being reverse-coded; higher score indicates a more positive mood. We then analyzed the impact of secrecy on general mood. As expected, participants in the negative-secrecy condition had a less positive mood ( $M = 5.80$ ,  $SD = 1.16$ ) than both those in the positive-secrecy condition ( $M = 6.41$ ,  $SD = 1.16$ ;  $F(1, 147)$

= 6.64,  $p = .011$ ,  $\eta_p^2 = .07$ ) and those in the control condition ( $M = 6.61$ ,  $SD = 1.06$ ;  $F(1, 147) = 12.42$ ,  $p < .001$ ,  $\eta_p^2 = .12$ ). There was no difference in mood between the positive-secrecy and control conditions ( $F(1, 147) = .86$ ,  $p = .355$ ,  $\eta_p^2 = .01$ ). Moreover, we performed a mediation analysis (PROCESS Model 4; Hayes 2017) with 5,000 bootstrapping samples to demonstrate that mood cannot mediate the effect of secrecy on conformity. We dummy-coded secrecy and used the control condition as the reference group (dummy 1: control = 0, positive secrecy = 1, negative secrecy = 0; dummy 2: control = 0, positive secrecy = 0, negative secrecy = 1). Mediation analyses confirmed that the effects of both positive secrecy on product choice (i.e., positive-secrecy vs. control; Index = -.06, SE (boot) = .08; 95% CI: [-.2502, .0704]) and negative secrecy on product choice (i.e., negative-secrecy vs. control; Index = -.24, SE (boot) = .15; 95% CI: [-.5872, .0097]) were not mediated by mood. After that, we analyzed the mediation effect of positive mood and negative mood, determining that the effects of both positive secrecy on product choice and negative secrecy on product choice were not mediated by positive mood or negative mood (see web appendix E1 for analysis after computing positive and negative mood separately from PANAS).

Study 2A demonstrated that our observed effect is independent of the valence of secrets, that is, the salience of both positive and negative secrets can increase consumer conformity in consumption choice. Interestingly, in this study we found that the intention to hide was higher in the negative-secrecy condition than in the positive-secrecy condition, but these two conditions did not differ in conformity. We further noticed that the differences in the intention to hide a secret between negative-secrecy and control conditions, and between positive-secrecy and control conditions, are large. However, the difference in the intention to hide between negative-secrecy and positive-secrecy conditions, although significant, is much smaller. Thus, we speculate that the differences in the intention to keep a secret between negative-secrecy and positive-secrecy conditions may not have been sufficient to produce a

difference in conformity. Furthermore, it might be argued that conformity in this study is somewhat confounded with perceived quality (i.e., products with higher market share may be perceived as being of higher quality). Therefore, we used a different measurement of conformity in study 2B.

## Study 2B

In previous studies, we utilized *inherent* secrecy manipulations in which we asked participants to recall their own secret. However, we believe that the proposed effect should still hold if we utilize an *incidental* secrecy manipulation—that is, asking participants to temporarily hide a piece of information from others (e.g., Lane and Wegner 1995). Incidental secrecy has important implications for marketers because, in the consumption context, secrecy often appears when marketers ask consumers to hide a secret from others (e.g., the jewelry brand Gorjana & Griffin asked its Twitter followers to hide a coupon campaign from others; and Mercedes-Benz encouraged its members to keep its secret sale event as a secret). To test whether incidental secrecy triggers the same psychological mechanism as inherent secrets, we adopted an incidental-secrecy manipulation in study 2B. In addition, we tested our effect with incentive-compatible real choice behaviors in this study.

One hundred sixty-five undergraduate and postgraduate students ( $M_{\text{age}} = 23.93$ ,  $SD = 5.11$ ; 51.5% females) from mainland China participated in this study online for a nominal payment. They were randomly assigned to 2 (secrecy vs. control) between-subjects conditions. All participants followed our instructions, so we did not eliminate anyone from further analyses.

Upon joining the study, participants were told that they were going to complete a 5-minute survey about their hobbies, to be used for training our artificial intelligence (AI)

algorithms. We manipulated secrecy by asking them to hide a piece of personal information (i.e., their gender) when responding to the hobby survey. Specifically, participants in the *secrecy* condition were instructed to hide their gender as a secret and not to disclose any information related to their gender while completing the hobby survey, because we are testing whether our artificial intelligence can correctly identify people's gender (and their answers to the hobby questions will be used to train the AI algorithms to better identify people's gender). In the *control* condition, participants were simply asked to complete the hobby survey, without any secret-related instruction. None of the questions in the hobby survey, however, actually involved gender-related information (see web appendix A2 for the survey questions).

The hobby survey contained two parts. After completing the first half of the survey, participants were interrupted with a gift choice in which we assessed conformity. Participants were told that to thank them for their participation, they would each receive a free fan after completing the study. Participants were presented with four fans, of the same shape and size but differing in their visual design (see appendix). Two of the fans have conforming visual designs, and the other two feature nonconforming visual designs. An independent pretest confirmed that consumers indeed believed that using the two conforming fans represented a higher level of conformity than using the two nonconforming ones, but these four fans did not differ on attractiveness (see web appendix D1 for details of this pretest). After participants selected their fan, they responded to the second part of the hobby survey. Finally, participants completed a secrecy manipulation-check question by rating to what extent they agreed with the statement "During the hobby survey, I was keeping a secret that I could not tell others" on a 9-point scale (1 = strongly disagree, 9 = strongly agree). After the study, participants received their selected fan as a free gift via mail.

Participants in the secrecy condition were more likely to think that they were keeping a secret ( $M = 6.56$ ,  $SD = 3.01$ ) than were those in the control condition ( $M = 3.25$ ,  $SD = 2.82$ ;

$F(1, 163) = 53.30, p < .001, \eta_p^2 = .25$ ) during the hobby survey. Importantly, participants in the secrecy condition were more likely to pick a conforming fan as their free gift ( $M = 45.0\%$ ) than were participants in the control condition ( $M = 28.2\%$ ;  $\chi^2(1) = 5.01, p = .025$ ; OR = 2.08; see web appendix E2 for the number of participants choosing each fan option).

## Discussion

In different contexts, studies 2A and 2B provided converging support for our main hypothesis that secrecy increases consumer conformity in product choice. We found that once their secrets were made salient, participants were more likely to select a majority-endorsed product over a minority-endorsed product (study 2A), or to pick a product with a conforming visual design over a product with a nonconforming visual design (study 2B).

The evidence from studies 2A and 2B argues against mood as an alternative explanation. First, we utilized a neutral-valenced secrecy manipulation in study 2B and still found the predicted effect. Second, although the positive- and negative-secrecy conditions in study 2A did lead to a mood difference, the effects on consumer conformity did not differ, nor did mood mediate the effect of secrecy on conformity. Together, these findings suggest that the effect we observed is unlikely to be driven by mood. Moreover, one may argue that the proposed effect is driven by depletion, as keeping secrets could deplete one's mental resources, which may subsequently lead to higher conformity because depletion increases heuristic-based decision making (e.g., following the choice of the majority; Cheema and Patrick 2012; Huang et al. 2014). An additional study we conducted provides evidence to rule out the alternative mechanism (see web appendix F3).

## STUDY 3

We argued that secrecy will increase consumers' desire to avoid social attention, which in turn drives them to conform. We tested this full theoretical model in studies 3A and 3B with mediation analyses. In addition, similar to study 2B, study 3B measured consumer conformity with incentive-compatible real choice behaviors.

### Study 3A

One hundred and twenty-nine US adults took part in this study on mTurk for a nominal payment. They were randomly assigned to one of the two (secrecy vs. control) between-subjects conditions. Twenty-four participants who did not follow our manipulation instructions (e.g., participants who did not recall any secret or who recalled irrelevant content) were excluded (see web appendix B1 for details), which left us with 105 participants ( $M_{\text{age}} = 36.62$ ,  $SD = 13.53$ ; 53.3% females) for further data analyses.

We first manipulated secrecy through the same writing task that we used in study 1, followed by the same secrecy manipulation check. Participants in the *secrecy* condition wrote about a secret, and those in the *control* condition wrote about a personal event they had disclosed to others. Then we assessed consumer conformity through a headphone-choice task. Specifically, participants imagined that they were going to buy a pair of headphones and made a choice between two options. These two pairs of headphones were identical in brand name, shape, and size, except that one of them had a more conforming visual design than the other (see appendix). An independent pretest from the same subject pool confirmed that consumers indeed believed that wearing the conforming headphones represented a higher level of conformity than wearing the nonconforming set, but these two headphones did not differ on attractiveness and gender perception (i.e., the headphones were considered suitable



for both males and females; see web appendix D2 for details of this pretest). Afterwards, we measured participants' desire to avoid social attention with three questions ("I do not want to be noticed by others," "I do not want to get others' attention," "I do not want to stand out in a crowd";  $\alpha = .89$ ), all on 9-point scales (1 = strongly disagree, 9 = strongly agree).

Participants in the secrecy condition were more likely to think that they were keeping a secret ( $M = 7.11$ ,  $SD = 2.05$ ) than were those in the control condition ( $M = 4.13$ ,  $SD = 2.86$ ;  $F(1, 103) = 37.75$ ,  $p < .001$ ,  $\eta_p^2 = .27$ ). Participants in the secrecy condition also showed a higher intention to avoid social attention ( $M = 6.65$ ,  $SD = 2.05$ ) than those in the control condition ( $M = 5.26$ ,  $SD = 1.77$ ;  $F(1, 103) = 13.71$ ,  $p < .001$ ,  $\eta_p^2 = .12$ ). More importantly, participants in the secrecy condition were more likely to choose the conforming headphone set ( $M = 88.7\%$ ) than were participants in the control condition ( $M = 73.1\%$ ;  $\chi^2(1) = 4.14$ ,  $p = .042$ ;  $OR = 2.89$ ). We coded the valence of the secrets that participants wrote and found no significant impact of valence on participants' avoidance of attention and conforming tendency (see web appendix E5).

To test the mediational role of attention avoidance, we conducted a mediation analysis (PROCESS model 4; 5,000 samples; Hayes 2017) with secrecy as the independent variable, attention avoidance as the mediator, and conformity as the dependent variable. The mediation chain (secrecy  $\rightarrow$  attention avoidance  $\rightarrow$  conformity) was supported by the bootstrapping results (Index = .54, SE (boot) = .26; 95% CI: [.1009, 1.1183]) (see web appendix E3 for the path model with estimated coefficients).

Study 3A provided further support for our full theoretical model holding that secrecy will increase consumers' desire to avoid social attention, which then predicts increased consumer conformity. The results of mediation analyses confirmed that attention avoidance mediated the effect of secrecy on consumer conformity.

### Study 3B

One hundred and six Hong Kong undergraduate and postgraduate students participated in this study for a nominal payment. They were randomly assigned to 2 (secrecy vs. control) between-subjects conditions. Thirteen participants who did not follow our manipulation instructions were excluded (e.g., participants who did not recall any secret or who recalled irrelevant content; see web appendix B1 for details), leaving us with 93 participants ( $M_{\text{age}} = 20.86$ ,  $SD = 1.96$ ; 75.3% females) for further data analyses.

Upon arrival at the lab, participants first completed the same secrecy and disclosure writing manipulation, followed by the same secrecy manipulation check as used in study 1. Specifically, participants in the *secrecy* condition wrote about a secret, and those in the *control* condition wrote about a personal event they had disclosed to others. Then they were told that to thank them for participating, they would each receive a free airbag cellphone stand (i.e., a small gadget that attaches to the back of the cellphone as both a grip and a stand). Participants were presented with four cellphone stands, of the same shape and size but differing in visual design (see appendix). Two stands have conforming visual designs, and the other two feature nonconforming visual designs. An independent pretest from the same subject pool confirmed that consumers indeed believed that using the two conforming cellphone stands represented a higher level of conformity than using the two nonconforming ones, but these four cellphone stands did not differ on attractiveness (see web appendix D3 for details of this pretest). After participants selected one cellphone stand as their free gift, we measured the potential mediator—social-attention avoidance—with the same measure used in study 3A. At the end of the study, participants received their selected cellphone stand.

Participants in the secrecy condition were more likely to think that they were keeping a secret ( $M = 6.22$ ,  $SD = 1.99$ ) than were those in the control condition ( $M = 4.20$ ,  $SD = 2.38$ ;

$F(1, 91) = 19.85, p < .001, \eta_p^2 = .18$ ). Similar to study 3A, participants in the secrecy condition also showed a higher intention to avoid social attention ( $M = 5.95, SD = 1.76$ ) than those in the control condition ( $M = 4.65, SD = 1.80; F(1, 91) = 12.23, p < .001, \eta_p^2 = .12$ ). More importantly, participants in the secrecy condition were more likely to pick one of the two conforming cellphone stands as their free gift ( $M = 83.7\%$ ) than were participants in the control condition ( $M = 63.6\%; \chi^2(1) = 4.86, p = .027; OR = 2.93$ ; see web appendix E4 for the number of participants choosing each cellphone stand option). Furthermore, we coded the valence of the secrets that participants wrote and found no significant impact of secret valence on participants' avoidance of attention and conforming tendency (see web appendix E5 for details).

To test the mediational role of attention avoidance, we conducted bootstrap analyses with 5,000 samples (PROCESS Model 4) using secrecy as the independent variable, attention avoidance as the mediator, and conformity as the dependent variable. The mediation chain (secrecy  $\rightarrow$  attention avoidance  $\rightarrow$  conformity) was supported by the bootstrapping results (Index = .41, SE (boot) = .21; 95% CI: [.0742, .8925]; see web appendix E4 for the path model with estimated coefficients).

## Discussion

Findings of studies 3A and 3B provide converging evidence for the underlying mechanism of the proposed secrecy effect. Mediation analyses in both studies confirmed that attention avoidance mediated the effect of secrecy on consumer conformity. Study 3B demonstrated our effect on incentive-compatible real choice behavior, supporting the external validity of our findings. Moreover, confirming our assumption, we found that our secrecy

manipulations indeed influenced participants' concerns about information leakage (see web appendix E3 and E4 for measurement of information-leakage concern and related results).

#### STUDY 4

We have argued that consumers whose secrets are made salient avoid social attention because a key component of the state of secrecy is the concern about potential leaking of personal information. The likelihood of disclosing one's personal information, however, should also depend on the individual's self-control capacity (e.g., Critcher and Ferguson 2014; Larson and Chastain 1990). When people believe that they have high self-control, they may conform less because they are confident of their ability to keep the secret and thus worry less about drawing social attention. This leads to our prediction that the effect of secrecy on conformity will be attenuated or eliminated if consumers perceive themselves as having a high (vs. low or vs. baseline) capacity for self-control. From another perspective, we also expected consumers with their secrets salient to have lower likelihood of choosing the conforming option when the perceived self-control capacity is high (vs. low or vs. baseline). With greater self-control, people are less motivated to adopt a conformity strategy to avoid social attention. However, when people's secrecy is not made salient, the likelihood of choosing conforming products should not differ across conditions of high, baseline, and low perceived self-control. Study 4 tests these possibilities.

#### Method

Three hundred eighty-eight US adults took part in this study on Amazon's Mechanical Turk for a nominal payment. They were randomly assigned to conditions of a 2 (secrecy:

secrecy vs. control)  $\times$  3 (perceived self-control capacity: high vs. low vs. baseline) between-subjects design. Sixty-nine participants who did not follow our manipulation instructions were excluded (e.g., participants who did not recall any secret or who recalled irrelevant content; see web appendix B1 for details), which left us with 319 participants ( $M_{\text{age}} = 35.81$ ,  $SD = 12.09$ ; 60.5% females) for further data analyses.

We first manipulated participants' perceived self-control capacity with a reading-comprehension task (e.g., Wan et al. 2017). In the *high self-control capacity* condition, participants read a fictitious scientific article from *Discover* magazine arguing that human beings today are good at self-control. In the *low self-control capacity* condition, participants read a similar article arguing that human beings today are not good at self-control. An independent pretest among the same subject pool confirmed that this manipulation can indeed influence individuals' perceived self-control capacity (see web appendix D4 for pretest details). In the *baseline* condition, participants read an article describing the lifestyle of parrots (see web appendix C for the articles we used).

Next, participants completed the same secrecy and disclosure writing manipulation, followed by the same secrecy manipulation check, as used in study 1. Participants in the *secrecy* condition wrote about a secret, and those in the *control* condition wrote about a personal event they had disclosed to others.

Participants then proceeded to a purportedly unrelated product-choice task, in which we captured consumer conformity by observing their choice between a conforming product option and a nonconforming one. Participants imagined that they were planning to buy an umbrella and made a choice between two available options that were identical in shape and size, with one featuring a more conforming visual design than the other (see appendix). An independent pretest among the same subject pool confirmed that consumers indeed believed

that using the conforming umbrella represented a higher level of conformity than using the nonconforming one, but the two did not differ on attractiveness (see web appendix D5).

## Results

Participants in the secrecy conditions were more likely to think that they were keeping a secret ( $M = 6.64$ ,  $SD = 2.26$ ) than were those in the control conditions ( $M = 3.47$ ,  $SD = 2.85$ ;  $F(1, 313) = 122.47$ ,  $p < .001$ ,  $\eta_p^2 = .28$ ).

Binary logistic regression analyses on product choice with secrecy, perceived self-control capacity, and their interaction as independent variables revealed a significant interaction effect of secrecy and perceived self-control capacity ( $Wald = 6.33$ ,  $p = .042$ ; see figure 2). We then created dummy variables to more thoroughly examine the effect of secrecy and perceived self-control capacity on conformity. Conformity was dummy-coded as 1 if the conforming option was chosen and as 0 if the nonconforming option was chosen. Perceived self-control capacity was recoded into three binary dummy-coded variables: LowDummy (1 = low, 0 = baseline, 0 = high), HighDummy (0 = low, 0 = baseline, 1 = high), and BaselineDummy (0 = low, 1 = baseline, 0 = high). In addition, we recoded secrecy into two dummy variables: Secrecy (1 = secrecy, 0 = control) and Secrecy1 (0 = secrecy, 1 = control).

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We first tested our hypothesis that secrecy leads to a higher conforming tendency in the baseline condition, with the effect disappearing when perceived self-control capacity is high. Binary logistic regression analyses with Conformity as the dependent variable, and Secrecy, BaselineDummy, LowDummy, Secrecy  $\times$  BaselineDummy, and Secrecy  $\times$

LowDummy as independent variables, revealed a significant 2 (secrecy vs. control)  $\times$  2 (baseline vs. high self-control) interaction ( $b = 1.21$ ,  $SE = .56$ ,  $Wald = 4.68$ ,  $p = .030$ ;  $\text{Exp}(B) = 3.35$ ). When perceived self-control capacity was high, the simple effect of secrecy on conformity was not significant ( $M_{\text{secrecy}} = 37.0\%$  vs.  $M_{\text{control}} = 46.8\%$ ;  $b = -.41$ ,  $SE = .40$ ,  $Wald = 1.04$ ,  $p = .309$ ;  $\text{Exp}(B) = .67$ ). As expected, when secrecy was not made salient, there was no significant difference in consumer conformity between baseline and high perceived self-control capacity conditions (46.6% vs. 46.8%;  $b = -.01$ ,  $SE = .37$ ,  $Wald < .01$ ,  $p = .981$ ;  $\text{Exp}(B) = .99$ ). Binary logistic regression analyses with Conformity as the dependent variable, and Secrecy1, HighDummy, LowDummy, Secrecy1  $\times$  HighDummy, and Secrecy1  $\times$  LowDummy as independent variables, revealed that for participants in the baseline condition, secrecy led to a higher likelihood of choosing the conforming option (66.0%) than for those in the control condition (46.6%;  $b = .80$ ,  $SE = .39$ ,  $Wald = 4.20$ ,  $p = .040$ ;  $\text{Exp}(B) = .45$ ). Consistent with our expectation, participants with their secrets salient had a lower likelihood of choosing the conforming option when the perceived self-control capacity was high (vs. baseline; 37.0% vs. 66.0%;  $b = -1.20$ ,  $SE = .42$ ,  $Wald = 8.10$ ,  $p = .004$ ;  $\text{Exp}(B) = .30$ ).

We then tested our hypothesis that the effect of secrecy on conformity does not differ between the baseline and low self-control capacity conditions. Binary logistic regression analyses with Conformity as the dependent variable, and Secrecy, BaselineDummy, HighDummy, Secrecy  $\times$  BaselineDummy, and Secrecy  $\times$  HighDummy as independent variables, revealed that the 2 (secrecy vs. control)  $\times$  2 (low self-control vs. baseline) interaction was not significant ( $b = -.04$ ,  $SE = .57$ ,  $Wald = .01$ ,  $p = .938$ ;  $\text{Exp}(B) = .96$ ). For participants in the low self-control capacity condition, secrecy led to a higher likelihood of choosing the conforming option (66.7%) than for those in the control condition (46.2%;  $b = .85$ ,  $SE = .41$ ,  $Wald = 4.20$ ,  $p = .041$ ;  $\text{Exp}(B) = 2.33$ ). As expected, when participants' secrets were not made salient, there was no significant difference in conformity between

baseline and low perceived self-control capacity conditions (46.6% vs. 46.2%;  $b = .02$ ,  $SE = .38$ ,  $Wald = .002$ ,  $p = .967$ ;  $Exp(B) = 1.02$ ). Binary logistic regression analyses with Conformity as the dependent variable, and Secrecy1, HighDummy, LowDummy, Secrecy1  $\times$  HighDummy, and Secrecy1  $\times$  LowDummy as independent variables, revealed that for participants with their secrets salient, there was no significant difference in conformity when perceived self-control capacity was low (vs. baseline) (66.7% vs. 66.0%;  $b = .03$ ,  $SE = .42$ ,  $Wald < .01$ ,  $p = .947$ ;  $Exp(B) = 1.03$ ), which is consistent with our expectation. These results suggest that low perceived self-control is the default state for our participants, because the results are virtually identical in the low perceived self-control capacity and baseline conditions.

We finally tested our hypothesis that secrecy leads to a higher conforming tendency when participants are in the low self-control capacity condition, with the effect disappearing when the perceived self-control capacity is high. Binary logistic regression analyses with Conformity as the dependent variable, and Secrecy, BaselineDummy, LowDummy, Secrecy  $\times$  BaselineDummy, and Secrecy  $\times$  LowDummy as independent variables, revealed a significant 2 (secrecy vs. control)  $\times$  2 (high self-control vs. low self-control) interaction ( $b = 1.25$ ,  $SE = .57$ ,  $Wald = 4.76$ ,  $p = .029$ ;  $Exp(B) = 3.50$ ). As expected, when secrecy was not made salient, there was no significant difference in consumer conformity between the high and low perceived self-control capacity conditions (46.8% vs. 46.2%;  $b = -.03$ ,  $SE = .38$ ,  $Wald < .01$ ,  $p = .947$ ;  $Exp(B) = .98$ ). Binary logistic regression analyses with Conformity as the dependent variable, and Secrecy1, BaselineDummy, LowDummy, Secrecy1  $\times$  BaselineDummy, and Secrecy1  $\times$  LowDummy as independent variables, revealed that participants with their secrets salient had a lower likelihood of choosing the conforming option when the perceived self-control capacity was high (vs. low) (37.0% vs. 66.7%;  $b = 1.23$ ,  $SE = .43$ ,  $Wald = 8.05$ ,  $p = .005$ ;  $Exp(B) = 3.41$ ), which is consistent with our



expectation. The results indicated that when secrecy was not made salient, participants' conforming tendency did not differ significantly across the three self-control conditions. Therefore, self-control matters only when participants have concerns about leaking secrets.

In addition, we coded the valence of the secrets that participants wrote and found no significant impact of secret valence on participants' conforming tendency (see web appendix E5 for details).

## Discussion

The results of study 4 extend our understanding of the observed effect by showing the moderating role of self-control capacity. The effect of secrecy on consumer conformity occurred when participants perceived themselves as having low self-control capacity; the effect disappeared when participants believed that they could control themselves well.

## GENERAL DISCUSSION

The present research found that salience of one's secret(s) compels consumer conformity. This effect occurs because secrecy induces the desire to avoid social attention, which in turn predicts increased consumer conformity. Six experiments provide convergent evidence for this proposed hide-in-the-crowd effect and its underlying mechanism. Participants with their secret salient showed a heightened motivation to avoid social attention (study 1). The avoidance of social attention elicited by the salience of secrecy resulted in consumers' conforming tendencies in product choice (studies 2A and 2B). After testing our full theoretical model (i.e., secrecy → attention avoidance → conformity) in studies 3A and

3B, we further demonstrated that the secrecy effect was diminished when participants perceived themselves as having high self-control (study 4).

The current research contributes to the fast-growing marketing literature on secrecy (e.g., Garbinsky et al. 2020; Rodas and John 2020; Thomas and Jewell 2019) by revealing a novel impact of secrecy on consumer behavior. Although secret has been utilized as a marketing tool for decades, only recently have researchers started to examine the consequences of keeping consumption as a secret on consumers. For example, Rodas and John (2020) show that holding consumption of products such as cookies or chocolates as a secret can polarize product evaluation among women. Thomas and Jewell (2019) demonstrate that hiding brand consumption as a secret can increase consumers' self-brand connections. Instead of focusing on products or services that are consumed secretly, in the current research, we took a broader perspective and examined the impact of secrecy on consumers' subsequent (secret-unrelated) product preferences. We hope our findings will stimulate future research on additional impacts of secrecy on consumer behavior.

Our research also contributes to the literature on consumer conformity (e.g., Bellezza et al. 2014; Huang et al. 2014; Mead et al. 2011; Wan et al. 2014) by introducing secrecy as a novel psychological antecedent of conformity. Most extant literature in this area shows that people conform because they are motivated to receive certain benefits from conforming to others, such as gaining social acceptance (Mead et al. 2011), achieving the goal of accuracy (Huang et al. 2014), or maintaining a positive self-concept (Cialdini and Goldstein 2004). To the best of our knowledge, the only research examining conformity through a prevention-focused lens is the work of Griskevicius et al. (2006), who found that people conformed to others when they were concerned about self-protection. Adding to this stream of research, the current paper reveals another situation in which people regard conformity as a precautionary

strategy when they need to avoid social attention and decrease the possibility for information leakage.

Our findings provide theoretical implications for the research on interpersonal attention in the consumption context (e.g., Blair and Roese 2013; Dahl, Manchanda, and Argo 2001; Griskevicius et al. 2007; Lee and Shrum 2012; Song, Huang, and Li 2017; Zwebner and Schrift 2020). During the consumption process, consumers sometimes seek social attention (e.g., Griskevicius et al. 2007; Neave, Tzemou, and Fastoso 2020; Sedikides et al. 2007), whereas other times, they may want to avoid attention from others (e.g., Blair and Roese 2013; Song et al. 2017; Zwebner and Schrift 2020). Past research has examined the strategies that consumers used to attract or avoid social attention. For example, consumers who want to gain attention from others show greater preferences for high-end products with conspicuous brand logos (Lee and Shrum 2012), while consumers who wish to avoid drawing attention to themselves indicate lower preference for products with salient brand logos (Song et al. 2017). Adding to this stream of research, the current paper shows that, in addition to the above strategies, consumers can also avoid social attention by conforming to other consumers.

In a broader sense, we contribute to the secrecy literature in social psychology by showing the cross-domain impact of secrecy on conformity. Traditional research on secrecy in the social psychology literature has had a limited scope, such as how active secret concealment influences people's well-being, physical health, self-perception, or relationship quality (e.g., Finkenauer et al. 2009; Kelly 2002; Slepian et al. 2017; Uysal et al. 2010). In the current research, we provide an example of this influence by showing the impact of secrecy on consumption conformity. Upon first impression, this domain might seem unlikely to be affected by secrecy. Our research demonstrates that the salience of secrecy, regardless of whether the secret is inherent or incidental or is positive or negative, increases consumer

conformity. These findings attest to the extent to which secrets weigh on people, since such research documents several effects that are very far removed from situations in which keeping the secret might be important for impression-management reasons or for interpersonal relationships. This research contributes to our understanding of the impact of social influence on consumer behavior (e.g., Duclos, Wan, and Jiang 2013; Lee and Shrum 2012; Mead et al. 2011; Rucker, Galinsky, and Dubois 2012; Su et al. 2017; Su, Wan, and Jiang 2019) as well.

The current research has several limitations. For example, a considerable percentage of data was excluded from further analyses in the current set of studies (see web appendix B1 for a list of the percentage of data exclusion across studies) because some of the participants did not correctly follow our instructions in the secrecy-manipulation task (e.g., people did not recall any secret or recalled irrelevant content). This is not surprising, given the private nature of recalled secrecy. Future research in this area may need to take this into consideration and think of ways to improve participant cooperation. Moreover, in study 2A, we found that participants in the positive-secrecy and negative-secrecy conditions differed in their need to keep a secret, possibly because participants in the negative-secrecy condition recalled more serious secrets and thus perceived a stronger need to keep secrets than those in the positive-secrecy condition. Future research is needed to further investigate the role of secret valence on secret-keepers' behavior. And to further validate the role of self-control capacity in the observed effect, it would be important for future research to examine the complete moderated-mediation model depicted in figure 1.

Consistent with our theorizing that secrecy increases people's avoidance of social attention, we found that secrecy led to an increased tendency to choose conforming product options over nonconforming ones. It should be noted that the products we examined in the current paper are largely products that are likely to be consumed publicly. For many reasons

(e.g., jobs, social gatherings, or family events), people often do not want to, or cannot, avoid others' presence. In those situations, consuming conforming products may be an effective method to protect one's secrets because it decreases social attention. This effect, however, is likely to be weakened or dismissed when there is no social presence during consumption, since social attention will not be a concern in that situation.

The results of our research suggest several other avenues for future investigation. For example, future research can examine whether the nature of purchases, for example, whether the purchases are experiential (e.g., concert, sightseeing boat ride) or material (e.g., laptops, bikes), makes a difference. In the current paper, most of the purchase decisions we examined involved material products (e.g., bike decision, headphone decision). Compared to material purchases, experiential consumption is less publicly visible and cannot be retained over time (e.g., Tully, Hershfield, and Meyvis 2015). Therefore, it's possible that experiential consumption is less likely to attract broad social attention and reveal information about the users exhibiting this behavior. Thus, we predict that the observed effect will be weakened when secret keepers make purchase decisions regarding experiential products. Future research can validate this prediction.

Another potential avenue for future research is the further exploration of other consequences of attention avoidance, such as conspicuous consumption. Past research shows that one function of conspicuous consumption is calling attention to the self to impress others (Lee and Shrum 2012). Accordingly, consumers often engage in conspicuous consumption to signal their status, power, wealth, good taste, or other desired personalities (Griskevicius et al. 2007; Rucker et al. 2012; Wang and Griskevicius 2014). Given that conspicuous luxury possessions are publicly attention-grabbing and can communicate users' information to others, consumers exercising secrecy might avoid purchasing conspicuous or luxury products.

Future research can also explore the factors that govern the extent to which secrecy affects conformity. The nature of secrecy, such as the importance of secrets or the number of secrets people keep, may moderate the effect of secrecy on conformity. Thinking about important secrets, compared to thinking about trivial ones, could trigger more worry about information leakage and higher avoidance of social attention. Consequently, the observed effect will be stronger. Similarly, the number of secrets kept could influence the effect. When the secrets are equally important, people should feel more worry about information leakage and higher avoidance of social attention when they have more (vs. less) secrets. Therefore, we speculate that the observed effect will be stronger when consumers think about more (vs. fewer) secrets.

Findings of the current research have important managerial implications. The current research suggests that companies should take into account the product type (e.g., majority-endorsed vs. minority-endorsed) when designing marketing strategies (Kohli and Haenlein 2021). Today, many companies use the concept of secrecy in their marketing practice. For example, companies include secrecy-related concepts in their brand names or product names (e.g., Haagen-Dazs' "Secret Sensations" ice cream), brand positioning (e.g., secret recipe), advertising appeals (e.g., the chocolate brand Galaxy's suggestion, "Hide me. Don't tell anyone"), and product promotion strategies (e.g., secret sales). These marketing strategies are utilized because marketers believe that secrecy-related concepts can induce positive responses from consumers such as word-of-mouth about the brands, enjoyment, better memory, and consumer-brand connection. Despite the popularity of secrecy-related marketing strategies, the current research suggests that it may not be an appropriate strategy for all kinds of products. Our findings imply that these secret-keeping strategies might be more effective when promoting majority-endorsed brands and products, because these secret-related strategies could trigger consumers' intention to hide. When promoting majority-

endorsed brands or products, marketers can consider utilizing secrecy-related concepts in branding names, positioning strategies, advertising strategies, or promotion strategies.

Meanwhile, marketers should avoid using secrecy as a selling point when their products are niche or unique.

Our research also has implications regarding customer segmentation and targeting. It is common to see companies segment their customers and target specific customer segments, and firms can spend a significant amount of resources on these targeted marketing practices. To maximize the effectiveness of these practices, practitioners must understand which kinds of consumers they should target and how to reach those consumers. Our research suggests that firms with products that are majority-endorsed should target consumers who are under secrecy and have lower desire for information exchange. Some consumers are more likely to be under secrecy than others, such as registered users of Ashley Madison (a dating website for individuals who are currently married or in relationships), people who browse pornography websites, or consumers who have stigmatized identities. Firms with products that are majority-endorsed should seek to reach this customer segment through targeted advertising. However, if companies position their products as minority-endorsed, they should avoid targeting consumers who are likely to have salient secrets in mind.

Finally, the current research also has implications for managing consumers' post-purchase behavior. Since consumers want to avoid social attention when they are under secrecy and these consumers tend to be less self-expressive, they might not share their purchase experience with others after purchasing products. As consumers' decisions are often influenced by the WOM of other consumers (Chevalier and Mayzlin 2006), companies might need to take action to encourage consumers to share their purchase experience with others in such situations.

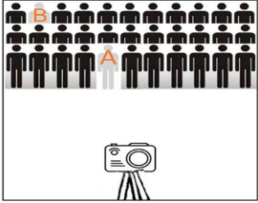










































### **DATA COLLECTION INFORMATION**

The first author collected the data reported in the current paper. The data for study 2B were collected in Summer 2020 at Zhejiang University in China, and the data for study 3B were collected in Winter 2018 at the Hong Kong Polytechnic University. The data for study 1 were collected in Autumn 2020, the data for studies 2A, 3A, and 4 were collected in Summer 2018, all on mTurk. All data were analyzed by the first author through consultation with the second and the third authors. The data are currently stored in a project directory on the Open Science Framework.



APPENDIX

STUDY STIMULI

<p>Photo task used in study 1</p>	<p>Bikes used in study 2A (bike pictures were shown in a counterbalanced order)</p>												
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<p>Option A: 24% market share</p>	<p>Option B: 76% market share</p>												
<p>Fans used in study 2B</p>	<p>Headphones used in study 3A</p>												
<table border="1" style="width: 100%;"> <tr> <td data-bbox="220 779 357 994">  </td> <td data-bbox="357 779 494 994">  </td> <td data-bbox="494 779 632 994">  </td> <td data-bbox="632 779 769 994">  </td> </tr> <tr> <td data-bbox="220 994 357 1037"> <p>A</p> </td> <td data-bbox="357 994 494 1037"> <p>B</p> </td> <td data-bbox="494 994 632 1037"> <p>C</p> </td> <td data-bbox="632 994 769 1037"> <p>D</p> </td> </tr> </table>					<p>A</p>	<p>B</p>	<p>C</p>	<p>D</p>	<table border="1" style="width: 100%;"> <tr> <td data-bbox="868 779 1098 994">  </td> <td data-bbox="1098 779 1327 994">  </td> </tr> <tr> <td data-bbox="868 994 1098 1037"> <p>A</p> </td> <td data-bbox="1098 994 1327 1037"> <p>B</p> </td> </tr> </table>			<p>A</p>	<p>B</p>
													
<p>A</p>	<p>B</p>	<p>C</p>	<p>D</p>										
													
<p>A</p>	<p>B</p>												
<p>Cellphone stands used in study 3B</p>	<p>Umbrellas used in study 4</p>												
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<p>Option A</p>	<p>Option B</p>	<p>Option C</p>	<p>Option D</p>										
													
<p>A</p>	<p>B</p>												

\* Note that the option A used in study 2A was retrieved on June 10, 2018 from <https://item.jd.com/28287893117.html#none>, the option B used in study 2A was retrieved on June 10, 2018 from <https://wiki.smzdm.com/p/qxzzrzz/canshu/>, the option A used in study 3A was retrieved on May 5, 2018 from <https://www.cool-style.com.tw/wd2/archives/153048>, the option B used in study 3A was retrieved on May 5, 2018 from <https://www.pinterest.com/pin/465770786432850159/>, and the option A used in study 4 was retrieved on May 20, 2018 from <https://www.amazon.co.uk/UHONEY-Compact-Umbrella-Universe-Carrying/dp/B01HI4F118>.

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