EFFECTS OF SECRECY IN CONSUMER BEHAVIOR

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Effects of Secrecy in Consumer Behavior

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CERTIFICATE OF ORIGINALITY

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ABSTRACT

Keeping secrets is a ubiquitous part of life. Almost everyone keeps a secret at some point in time, be it a surprise party, a secret job, a stigmatized identity, or an affair. Secrecy is also not an obscure concept in the marketing and consumption domain. Consumers often keep consumption-related secrets about, for example, the gifts they buy for others, their consumption of chocolates, or an adult magazine delivered by mail in a nondescript package. Despite the growing academic attention paid to secrecy in the field of psychology, a more systematic investigation is needed of the consequences of secrecy as well as the psychological mechanism underlying its impact on consumers. The current research addresses this important theoretical gap by examining two downstream consequences of secrecy in the consumption domain: consumer conformity and consumer decision regret.

In this thesis, I first review the existing literature on the nature of secrecy and its consequences. Then, in chapters 3 and 4, I examine two downstream consequences of secrecy in the consumption domain. In chapter 3, I investigate how the experience of secrecy affects consumers' consumption behavior. Specifically, six studies reveal that secrecy increases consumers' tendency to conform in their consumption and show that this effect is driven by concern about information leakage and the desire to avoid social attention. Furthermore, the effect of secrecy on consumer conformity is moderated by consumers' sense of the amount of attention that others pay to them, their perceived capacity for self-control, and whether the product is used in a private or public context. I demonstrate that the relationship between secrecy and consumer conformity is weakened when consumers believe that others do not pay much attention to them, when they perceive themselves as having high self-control, and when the

product in question is used in private contexts. In chapter 4, I investigate how the experience of secrecy affects consumers' self-perception and judgment of their decisions. Three studies demonstrate that the experience of secrecy increases consumers' regret for decisions made during the period of secret-keeping and show that this effect is driven by perceived decision inauthenticity. The effect of secrecy on consumer decision regret is weakened when the decision is not made during the period of secret-keeping.

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CHAPTER 1. INTRODUCTION

As human beings, most of us have secrets. Our secrets might be, for example, a surprise party to celebrate a friend's birthday, poor performance on an exam, or an adulterous affair. Secrecy is an unavoidable outcome of our socialization process (Kelly 2002; Simmel 1950); thus, most adults keep some secrets in their daily lives (Caughlin et al. 2009). The average person is estimated to be keeping 13 secrets at any given moment (Slepian, Chun, and Mason 2017), and a recent worldwide survey found that 43% of men and 33% of women were keeping a relationship secret from their significant other (Northrup, Schwartz, and Witte 2013). Additionally, today's society has 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). In fact, one key benefit of organizations like Alcoholics Anonymous and Narcotics Anonymous is that group members are encouraged to share their secrets with other members—secrets they are not supposed to tell anyone outside the group (Groh, Jason, and Keys 2008).

As in other domains, secrecy is not an obscure concept in the marketing and consumption domain (e.g., Goodwin 1992; Kendrick 1987; Moon 2000; Paasonen et al. 2015; Vanhamme and de Bont 2008). Consumers often keep consumption-related secrets about, for example, their consumption of junk food, the gifts they buy for others, or an adult magazine or video delivered by mail in a nondescript package. In a national poll based on 2,000 women aged 21 to 45, 73% of participants admitted that they hide snacks to avoid sharing them with family members (Siebert 2018). Secrecy is also frequently utilized as a theme in advertisements. For example, a Breyer's television commercial features a couple anxiously waiting for their children to go to bed so they can secretly enjoy creamy Breyer's gelato (YouTube 2014). Also, one Pantene shampoo ad starts with a celebrity, Priyanka Chopra, asking whether people want to know her biggest

beauty secret; then the celebrity reveals that her secret is the new Pantene shampoo (YouTube 2017).

Despite the prevalence of secrecy, relatively little research has explored the consequences of keeping secrets, especially in the consumer arena. The limited research on secrecy in psychology indicates that keeping a secret can have both positive and negative effects on secret-keepers. For example, keeping secrets from parents provides an adolescent with a sense of autonomy (Finkenauer, Engels, and Meeus 2002); secrets may even give people a feeling of enjoyment (Vrij et al. 2002). However, secrecy can also increase mental stress (Kelly 1999; Kelly and Yip 2006), a sense of exclusion (Finkenauer et al. 2009), and psychological burden (Slepian et al. 2012). The scant research on secrecy in the consumer domain has mostly focused on the impact of secrecy on consumers' attitude toward a brand or product that they secretly consume (e.g., Rodas and John 2019; Thomas and Jewell 2018). However, we know little about how secrecy affects consumers' consumption choice in secrecy-unrelated domains or how secrecy affects people's judgment of consumption decisions they make during a period of secret-keeping.

This thesis is aimed at investigating two issues: (1) how secrecy affects consumers' tendency to conform in their consumption and (2) how and why secrecy influences consumers' regret about decisions they make. The remainder of the thesis is organized as follows. Chapter 2 provides the literature review about secrecy and its consequences. Chapter 3 investigates the motivational consequences of keeping secrets, namely, whether secrecy leads to a higher tendency to conform in the consumption domain. I show that secrecy increases consumers' concerns about information leakage, which fosters the 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. Furthermore, I find that the relationship between secrecy and consumer conformity is weakened when consumers believe that others do not pay much attention to them, when they perceive themselves as having high self-control, and when a product is used in private contexts. Chapter 4 focuses on another consequence of keeping secrets. Specifically, I investigate how secrecy influences consumers' perception of decisions made during a period of secret-keeping and their level of regret about those decisions. I demonstrate that the experience of secrecy increases consumers' regret for decisions they make during the period of secret-keeping and show that this effect is driven by perceived decision inauthenticity. The effect of secrecy on consumer decision regret is weakened when the decision is not made during the period of secret-keeping.

CHAPTER 2. SECRECY AND ITS CONSEQUENCES

2.1. SECRECY

We live in a world full of secrets; nearly everyone has them (Slepian et al. 2012, 2017). People are motivated to keep secrets for different reasons. For example, some keep secrets to reap positive benefits, such as creating fun and enjoyment by preparing a surprise party or increasing personal attractiveness by being mysterious (e.g., Vrij et al. 2002, 2003). Others keep secrets to avoid negative consequences, such as embarrassment or shame if the secrets were revealed (e.g., Kelly 2002; Maas et al. 2012), social condemnation (Bok 1983; Hill et al. 1993), or social exclusion (Caughlin et al. 2009; Maas et al. 2012; Vrij et al. 2002). To keep secrets, people adopt various strategies such as staying alone, providing vague or incomplete information

to others, suppressing their emotions, and controlling their behavior (e.g., Critcher and Ferguson 2014; Lane and Wegner 1995; Pennebaker 1989; Uysal et al. 2010).

Many secrets are dark, such as infidelity or illegal behavior, but others can be neutral or even positive, such as personal hobbies, financial situations, work performance, indulgent consumption, or the preparation of surprise parties and surprise gifts (e.g., Slepian et al. 2017). No matter what types of secrets people are keeping, however, one common characteristic among secret-keepers is that they intend to hide the secret from others. This intention exists even in the absence of real social interaction. Therefore, secrecy was recently defined more broadly as the intention to conceal information from one or more individuals (Slepian et al. 2017), 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).

Note that secrecy differs conceptually from information inhibition during conversation (i.e., social inhibition). As an intention, secrecy exists beyond the situation when the person from whom the secret is being kept is physically present. Indeed, people frequently catch themselves spontaneously thinking about their secrets not only in relevant social interactions but also outside of them; secrecy is there in the presence of others as well as when the person is alone (Slepian et al. 2017). However, social inhibition only occurs during social interaction when a person actively inhibits the passage of information from him- or herself to others (Buck et al. 1992; Pennebaker 1989). Although some social inhibitions can be the result of the intention to keep a secret, many such inhibitions are driven by reasons unrelated to secrecy, such as social norms, personal traits (e.g., shyness), or impression-management motives (Asendorpf 1989; Latane and Darley 1968; Slepian et al. 2017). In addition, secrecy is not equal to self-concealment. Rather, secrecy is

conceptually broader than self-concealment. Self-concealment refers to the intention to actively conceal distressing or negative personal information from others (Larson and Chastain 1990), while secrecy does not limit the type of information people hide.

2.2. CONSEQUENCES OF KEEPING SECRETS

Secrecy has substantial impacts on the secret-keeper. Physically, keeping a secret is an uncomfortable experience. It is often associated with physical symptoms such as back pain, headache, and cardiovascular reactivity (e.g., Larson and Chastain 1990; Pennebaker and Chew 1985; Vögele and Steptoe 1992). Psychologically, secrecy makes people feel stressed, anxious, and sometimes distressed (e.g., Finkenauer et al. 2002; Lenton et al. 2013; Maas et al. 2012; Pennebaker 1989). Also, given that secret-keeping distances oneself from others, secrecy may lead to a feeling of loneliness and poor relationship quality (Finkenauer et al. 2009; Frijns and Finkenauer 2009). Secret-induced psychological stress even extends to perceptions of physical burdens. For example, Slepian et al. (2012) showed that people who are occupied with secrets feel that they are carrying a physical weight that influences their perception and judgment, such as estimating hills to be steeper, perceiving distances to be farther, and indicating that physical tasks require more effort. Keeping a secret can also have benefits in some contexts. For instance, adolescents have higher feelings of emotional autonomy when they are hiding secrets from their parents since secret-keeping facilitates their process of individualization and maintenance of an autonomous self. Moreover, secrecy, if positive, can increase enjoyment of oneself and others (Vrij et al. 2002).

Recently, researchers have started to explore the impacts of secrecy in marketing contexts. For example, Hannah et al. (2014) argued that keeping appealing trade secrets (e.g., secret recipe) creates high strategic value for firms and high marketing value for customers. Rodas and John (2019) investigated how secret consumption affects consumers' product evaluation; they showed that women who hid their consumption of cookies, chocolate, or chips reported more favorable product evaluation. Thomas and Jewell (2018) examined how secrecy influences consumers' perception of brands and found that consumers who kept brand consumption as a secret reported a stronger self-brand connection. However, we know little about how secrecy influences consumers' choices in consumption contexts or how secrecy affects consumers' judgment of consumption decisions they make during secret-keeping. In addition, the existing research in marketing has mainly studied the impact of secrecy in secrecy-related domains but has not explored its broad impact in domains unrelated to secrecy.

CHAPTER 3. HIDING IN THE CROWD: SECRECY COMPELS CONSUMER CONFORMITY

3.1. INTRODUCTION

In this chapter, I examine the impact of secrecy on consumer conformity. Drawing on insights from research on secrecy, social attention, and consumer conformity, I propose that secrecy instigates the 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. Furthermore, I predict that this effect is moderated by

the amount of attention that consumers sense others pay to them, their perceived capacity for self-control, and whether the product in question is used in a private or public context. Specifically, I predict that the relationship between secrecy and consumer conformity is weakened when consumers believe that others do not pay much attention to them, when they perceive themselves as having high self-control, and when the product in question is used in private contexts.

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

3.2. CONCEPTUAL BACKGROUND

3.2.1. Secrecy, Concerns about Information Leakage, and the Desire to Avoid Social Attention

People worry about leaking information related to their secret when they are keeping one (e.g., Kelly and McKillop 1996; Lane and Wegner 1995; Larson and Chastain 1990; Ragins, Singh, and Cornwell 2007; Slepian et al. 2017). Concerns about information leakage come from real or imagined consequences that exposure of secrets would bring (Lane and Wegner 1995; Wegner 1989). Given that the revelation of a secret may result in negative consequences (e.g., condemnation by others, ruined reputation, social exclusion; Caughlin et al. 2009; Kauffman 2011; Maas et al. 2012; Vrij et al. 2002), when a secret pops into mind, people will naturally 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). Similarly, a positive correlational relationship has been found between self-concealment (i.e., concealing negative personal information) and fear of disclosure (Cruddas, Gilbert, and McEwan 2012; Larson et al. 2015).

I predict that secret-keepers' concerns about information leakage will trigger a desire to avoid social attention. 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). For example, Gilovich and colleagues (1998) found that participants who told lies overestimated the number of observers who could identify them as liars, and participants who sampled drinks in this study and were told to conceal their reactions to the taste overestimated the number of observers who could read their real emotional state and identify which drinks were foul-tasting. Accordingly, secret-keepers may worry that others will "see" information related to their secrets when they receive social attention.

In addition to revealing hidden information nonverbally, secret-keepers worry that social attention can increase the probability of disclosing secret-related information to others verbally, because social attention often leads to social interaction. Staying alone might be an effective way

to guard one's secret. However, for many reasons (e.g., jobs, family gatherings, or social events) people do not want to, and cannot, entirely avoid social interaction. In these situations, social attention can be regarded as a prerequisite of social interaction. People often reveal information about themselves during social interactions to enhance relationship intimacy (Altman and Taylor 1973), but with social interaction comes the risk of unintentional disclosure of information related to the secret (Altman and Taylor 1973; Ashton, Lee, and Paunonen 2002; Sprecher et al. 2013). As a result, social attention increases the risk of disclosing secrets for secret-keepers in the social contexts of their lives.

3.2.2. Consumer Conformity and Social Attention

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., Bellezza, Gino, and Keinan 2014; Berger and Heath 2007; Huang, Dong, and Mukhopadhyay 2014a; Huang et al. 2014b; 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; Nail, MacDonald, and Levy 2000). 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. 2014b; Quinn and Schlenker 2002). 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. 2014b).

In the current research, I argue that the desire to avoid social attention could be another factor influencing consumers' tendency to engage in conformity behavior. This argument 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 social relationships (Ohtsubo et al. 2014). One major determinant of attention is whether the focal object is similar to, or different from, the objects surrounding it (Sanbonmatsu et al. 1994; Vuilleumier 2005). 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; Sekaquaptewa, Waldman, and Thompson 2007). 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 conformity and social attention (e.g., Bellezza et al. 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, I expect that compared to

nonconforming products, the usage of conforming products will attract less social attention; thus a desire to avoid social attention will increase consumers' tendency to select conforming (vs. nonconforming) products.

3.3. THE CURRENT RESEARCH

I have argued that secrecy induces concern about information leakage, which in turn leads to a general desire to avoid social attention. I also noted that consumer conformity decreases social attention. Putting these observations together, I predict that secrecy will increase consumers' tendency to engage in conforming (vs. nonconforming) consumption. Specifically, I predict that secrecy will increase concern about leaking secret-related information and motivate consumers to avoid social attention, which in turn will increase consumer conformity. Stating these hypotheses formally:

H1: Secrecy increases consumers' tendency to make conforming consumption choices.

H2: The effect of secrecy on consumer conformity is mediated by concerns about information leakage and the desire to avoid social attention.

I have posited that people who keep secrets are motivated to avoid social attention because they are afraid of the leakage of secret-related information. 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. One way to test this possibility is to see whether consumers'

perceived self-control capacity moderates the proposed effect. 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). People 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., Mukhopadhyay and Johar 2005; Tangney, Baumeister, and Boone 2004; Zhang and Shrum 2008). If people believe that they have a relatively high self-control capacity, they should be less concerned about information leakage, and the effect of secrecy on the avoidance of social attention and the tendency toward consumer conformity should be weakened. Stating this formally:

H3: The effect of secrecy on consumer conformity is attenuated when consumers consider themselves to have high self-control.

Another assumption following from my prediction is that the high conformity tendency in product choice by consumers keeping a secret should be moderated by the context in which a product is to be used. The products a person uses can generate social attention directed toward him/her, which is exactly the reason why many consumers are attracted to conspicuous products (e.g., Ferraro, Kirmani, and Matherly 2013; Huang, Dong, and Wyer 2017; Lee and Shrum 2012). But what if consumers are not purchasing a product that will be used in a public context but instead will be used in a private context? In that case, social attention is not involved since others do not see the product the person chose. This leads to the prediction that the proposed effect of secrecy on consumer conformity will be weakened when a secret-keeping consumer

chooses a product for private-use purposes, because social attention will be of less concern. Stating this formally:

H4: The effect of secrecy on consumer conformity is attenuated when the product in question is used in a private (vs. public) context.

These possibilities are explored in six studies. Study 1a demonstrates that making individuals' secrets salient results in their desire to avoid social attention. Study 1b reveals that this effect is driven by secret-keepers' concern about information leakage. Study 2 confirms my full theoretical model (i.e., secrecy → information-leakage concern → attention avoidance → conformity) through mediation analyses. Study 3 provides further support for my proposed underlying mechanism by showing the moderating effect of perceived social attention. Finally, studies 4 and 5 explore the nature of the observed effect by testing two additional moderators: perceived self-control capacity and usage context. I find that the effect of secrecy on consumer conformity is mitigated when participants view themselves as having a high capacity for self-control (study 4) and when the product chosen is used in private contexts (study 5). I report all data exclusions (if any), all manipulations, and all hypothesis-related measures. Additional measures and related analyses are reported in the 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. 2014a, 2014b; Wan et al. 2014) by revealing a novel psychological antecedent of consumer conformity. This research 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

holding secrets that is manifested in the consumption domain. Furthermore, I add 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 of this research bear important implications for marketers when they utilize the concept of secrecy in their marketing practice.

3.4. EMPIRICAL INVESTIGATION

3.4.1. Study 1: Secrecy Increases Concerns about Information Leakage and the Desire to Avoid Social Attention

Studies 1a and 1b provided initial support for my proposed association between secrecy and avoidance of social attention. In study 1a, I first made the secret mentally accessible in the minds of participants through a writing task; then I measured participants' intention to avoid social attention through a group photo-taking task. Study 1b explored the mediating role of information-leakage concern in the effect of secrecy on social-attention avoidance, while also ruling out several alternative mechanisms.

3.4.1.1. Study 1a

One hundred and seventy-two US adults took part in this study on Amazon's Mechanical Turk (mTurk) for a nominal payment. Six participants who did not correctly follow the instructions in the secrecy manipulation task (e.g., people who did not recall any secret or people

who recalled irrelevant content) were excluded, which left 166 participants (M_{age} = 37.7, 58% females) for further data analyses.

Participants were randomly assigned to one of the two (secrecy vs. food-control) between-subjects conditions. To make the secret mentally accessible and activate the secret-keeping intention, I followed past secrecy literature (e.g., Slepian et al. 2012; Slepian, Masicampo, and Galinsky 2016) and asked participants in the *secrecy* condition to write down a personal secret without elaborating on its details. The secret had to be the participants' own secret and something they had previously kept to themselves. Meanwhile, participants in the *food-control* condition were asked to write down all the food items that they consumed during a recent day. After the writing task, as a manipulation check, participants in both conditions rated the extent to which 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). Next, in an ostensibly unrelated task, I assessed consumers' avoidance of social attention (Akimoto, Sanbonmatsu, and Ho 2000). Specifically, for a group photo shoot, participants were asked to choose 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 A).

As expected, participants in the secrecy condition were more likely to think that they were keeping a secret (M = 7.42, SD = 2.25) than those in the food-control condition (M = 5.22, SD = 3.04; $F(1, 164) = 27.60$, $p < .001$). More importantly, consistent with my expectation, participants in the secrecy condition were significantly more likely to choose the less attention-grabbing position (M = 70.9%) than those in the food-control condition (M = 50.6%; $\chi^2(1) = 7.13$, $p = .008$).

3.4.1.2. Study 1b

I have argued that secrecy triggers concern about information leakage, which in turn leads to a desire to avoid social attention. Study 1b tested this possibility by examining the mediating role of information-leakage concerns in the effect of secrecy on the avoidance of social attention. In this study, I also ruled out multiple alternative mechanisms by showing that secrecy does not influence factors such as mood, anxiety, general worry, self-esteem, perceived self-uniqueness, feeling of isolation, feelings of depletion, or moral perception.

One might argue that the writing manipulations I used in study 1a differ not only in the activation of secrecy but also in the amount of interpersonal contents (i.e., writing about eating food may involve less interpersonal contents than writing about secrecy) and temporal distance (i.e., the experience of eating that participants wrote about may be temporally closer than the secrecy experience others wrote about). To address these concerns, I added a second control condition in study 1b—an information-disclosure condition (adapted from Slepian, Masicampo, and Ambady 2014)—which should not have led participants to the concerns mentioned above.

One hundred and sixty-three US adults took part in this study on mTurk for a nominal payment. Participants were randomly assigned to one of the three (secrecy vs. disclosure-control vs. food-control) between-subjects conditions. Twenty participants who did not correctly follow the instructions in the secrecy manipulation task (e.g., people who did not recall any secret or people who recalled irrelevant content) were excluded, which left 143 participants (M_{age} = 35.1, 63% females) for further data analyses.

Similar to study 1a, to make the secret mentally accessible and present in their mind, participants in the *secrecy* condition were asked to write down a personal secret (Slepian et al.

2012, 2016). Participants in the *disclosure-control* condition were asked to write down a piece of personal information that they had told others about, and participants in the *food-control* condition were asked to recall and write down all the food items they had consumed during a recent day. After the writing task, as a manipulation check, participants in all conditions rated the extent to which 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).

Also on 9-point scales (1 = strongly disagree, 9 = strongly agree), I then measured participants' concern about information leakage with three statements ("I worry about leaking personal information," "I am concerned that others will know my personal information," "I worry that I may disclose information about myself to others"; α = .88; Malhotra, Kim, and Agarwal 2004) and their desire to avoid social attention with three statements ("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"; α = .92; Huang et al. 2017).

Next, on 9-point scales (1 = not at all, 9 = very much), participants indicated how intensely they experienced positive or negative feelings via the Positive and Negative Affect Schedule (PANAS; Watson, Clark, and Tellegen 1988), which included an item to measure guilt. Participants also indicated how strongly they felt other negative emotions (see Appendix B for the measures and results of other emotions). In addition, on 9-point scales (1 = strongly agree, 9 = strongly disagree; see Appendix B for details of measurements used) and in a randomized order, I measured other variables that may have provided alternative explanations of the observed effect: perceived morality (e.g., "I feel I'm moral/dependable/trustworthy…"; Walker and Hennig 2004), self-esteem (e.g., "I am satisfied with myself"; Rosenberg 1965), perceived self-uniqueness (e.g., "I feel I'm unique"; Şimşek and Yalınçetin 2010), feelings of depletion

(e.g., “I feel depleted”; Chan and Wan 2012), and feelings of isolation (e.g., “I feel isolated from others”; Russell, Peplau, and Cutrona 1980).

Participants in the secrecy condition were more likely to think that they were keeping a secret (M = 6.64, SD = 2.49) than those in the disclosure-control condition (M = 4.06, SD = 2.77; $F(1, 92) = 22.23$, $p < .001$) and those in the food-control condition (M = 3.61, SD = 2.89; $F(1, 91) = 28.89$, $p < .001$). However, there was no significant difference between the disclosure-control and the food-control conditions ($F(1, 97) = .62$, $p = .434$).

Given that participants in the two control conditions did not differ significantly on information-leakage concern, attention avoidance, or other measures (all ps > .153), I pooled the two control conditions in later analyses. As expected, participants in the secrecy condition were more concerned about information leakage (M = 5.28, SD = 2.30) than those in the two control conditions (M = 3.82, SD = 2.34; $F(1, 141) = 11.95$, $p < .001$); participants in the secrecy condition (M = 6.30, SD = 2.22) also showed a greater desire to avoid social attention than those in the two control conditions (M = 5.09, SD = 2.11; $F(1, 141) = 9.65$, $p = .002$). Importantly, participants in the secrecy condition and in the two control conditions did not differ significantly on other measured variables such as mood, guilt, perceived morality, perceived self-uniqueness, self-esteem, or feelings of depletion or isolation (see Appendix B for detailed statistics).

Mediation analyses were conducted to validate that secrecy drives individuals to avoid social attention because they are concerned about information leakage. Following Baron and Kenny (1986), regression analyses showed that (1) secrecy increased attention avoidance ($\beta = 1.21$, $p = .002$), (2) secrecy increased information-leakage concern ($\beta = 1.46$, $p < .001$), and (3) regressing attention avoidance on both secrecy and information-leakage concern resulted in a significant effect of information-leakage concern ($\beta = .34$, $p < .001$) but a non-significant effect

of secrecy (β = .72, p = .060). These results suggested that the effect of secrecy on attention avoidance was mediated by information-leakage concern. Moreover, bootstrapping procedures (5,000 samples, PROCESS Model 4; Hayes 2012) with secrecy as the independent variable, information-leakage concern as the mediator, and attention avoidance as the dependent variable yielded a 95% confidence interval that excluded zero (Index = .49, SE (boot) = .18; 95% CI: [.1768, .8775]), confirming the mediating role of information-leakage concern.

3.4.1.3. Discussion

Findings of studies 1a and 1b demonstrated that secrecy has a significant impact on individuals' desire to avoid social attention. Study 1b provided further evidence that this effect is driven by individuals' concern about information leakage. This is consistent with my theorizing that people whose secrets are made salient do not want social attention because it increases the risk of voluntary or involuntary information leakage. In addition, this study showed that the secrecy manipulation did not influence participants' mood, guilt, self-esteem, perceived morality, perceived self-uniqueness, or feelings of depletion or isolation. This helped to rule out these alternative explanations.

Critcher and Ferguson (2014) showed that secret-keeping can lead to depletion. For example, they found that people showed a deficit in intellectual acuity and responded with less politeness after actively hiding personal information during a 10-minute interview. Thus, one can argue that since secret-keeping is cognitively depleting, the effect of secrecy on conformity may be driven by the feeling of depletion. In the current study, however, I did not observe an effect of secrecy on depletion—likely because the manipulations I used merely made the secret mentally

accessible in participants' minds, without forcing them to actively hide the secret, whereas participants in the secrecy condition in Critcher and Ferguson (2014) had to spend constant executive effort to monitor their social interactions to hide their secrets, which led to the feeling of depletion. Given that the secrecy manipulation did not deplete participants, the effect I observed cannot be attributed to depletion.

Moreover, past literature has shown that concealing secrets, especially negative secrets, can lead to negative mood or emotions (e.g., Kelly 2002; Larson and Chastain 1990; Uysal et al. 2010). However, in the current study, I found that the secrecy manipulation did not influence people's feelings or emotions. I speculated that the effect of secrecy on mood and emotions depends on the valence of secrets activated. In a departure from past secrecy research (e.g., Larson and Chastain 1990; Uysal et al. 2010) that mainly studied negative personal secrets, in the current secrecy manipulation participants wrote about both positive and negative secrets they kept. This might be why the secrecy manipulation did not influence participants' mood or emotions.

3.4.2. Study 2: The Mediating Role of Information-Leakage Concern and Attention Avoidance

I have argued that secrecy induces concerns about information leakage among consumers, motivating them to avoid social attention, and attention avoidance in turn drives consumers to conform. I tested this full theoretical model in study 2 with mediation analyses. In addition, I measured consumer conformity with incentive-compatible real choice behaviors.

3.4.2.1. Method

One hundred and six undergraduates participated in this study for a nominal payment. They were randomly assigned to a 2 (secrecy vs. disclosure-control) between-subjects condition. Thirteen participants who did not correctly follow the instructions in the secrecy manipulation task (e.g., people who did not recall any secret or people who recalled irrelevant content) were excluded, which left 93 participants (M_{age} = 20.9, 75% females) for further data analyses.

Upon arrival, participants completed the same secrecy and disclosure writing manipulation, followed by the same secrecy manipulation check, that I used in the previous studies. Then participants were told that to thank them for their participation, they would each receive a free airbag cellphone stand (i.e., a small gadget that can be attached to the back of a 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 A). Two of the stands had conforming visual designs and two featured 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 stands, but these four cellphone stands did not differ on attractiveness (see Appendix C for details of this pretest). After participants selected one cellphone stand as their free gift, I measured two potential mediators—social attention avoidance and information-leakage concern—with the same measures used in study 1b.

3.4.2.2. Results and Discussion

Participants in the secrecy condition were more likely to think that they were keeping a secret (M = 6.22, SD = 1.99) than those in the disclosure-control condition (M = 4.20, SD = 2.38; $F(1, 91) = 19.85$, $p < .001$). Similar to study 1b, participants in the secrecy condition were more concerned about leaking personal information (M = 6.29, SD = 1.40) than those in the disclosure-control condition (M = 4.77, SD = 1.76; $F(1, 91) = 21.60$, $p < .001$). Participants in the secrecy condition also showed a higher intention to avoid social attention (M = 5.95, SD = 1.76) than those in the disclosure-control condition (M = 4.65, SD = 1.80; $F(1, 91) = 12.23$, $p = .001$). 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 disclosure-control condition (M = 63.6%; $\chi^2(1) = 4.86$, $p = .027$; OR = 2.94).

Regressions were conducted to test the mediating roles of information-leakage concern and attention avoidance (Baron and Kenny 1986). First, secrecy increased participants' choice of the conforming product option ($\beta = .20$, $p = .028$). Second, secrecy led to higher information-leakage concern ($\beta = 1.53$, $p < .001$) and higher attention avoidance ($\beta = 1.29$, $p = .001$). Third, when I included both mediators in the model, the effect of secrecy on conformity became non-significant ($\beta = .63$, $p = .267$). These findings suggested that the effect of secrecy on conformity was mediated by information-leakage concern and attention avoidance. In addition, to test the full sequential mediation model, I conducted bootstrap analyses for estimating multi-step mediation with 5,000 samples (SPSS Macro PROCESS, Model 6) using secrecy as the independent variable, information-leakage concern as the first mediator, attention avoidance as the second mediator, and conformity as the dependent variable. The sequential mediation chain (secrecy → information-leakage concern → attention avoidance → conformity) was supported by the bootstrapping results, with a 95% confidence interval (CI) excluding zero ([.0157, .4227]).

The alternative model, in which I altered the sequence between information-leakage concern and attention avoidance (secrecy → attention avoidance → information-leakage concern → conformity) was not supported, with a 95% CI including zero ([-.0702, .1828]).

Study 2 provided further support to the full theoretical model holding that secrecy increases information-leakage concern, which motivates consumers to avoid social attention, and the attention avoidance then leads to consumer conformity. The results of mediation analyses confirmed that information-leakage concern and attention avoidance sequentially mediated the effect of secrecy salience on consumer conformity, and showed that the sequential mediation did not hold when the order of the two mediators was reversed. I believe that this is because in the mediation model, concern about information leakage is more linked to secrecy salience since the main goal of secret-keepers is to avoid leaking secrets. Avoiding attention is just one strategy that secret-keepers can take to avoid information leakage. Therefore, the proposed order of the two mediators cannot be changed. In addition, study 2 demonstrated the effect on incentive-compatible real choice behavior, supporting the external validity of my findings.

3.4.3. Study 3: The Moderating Role of Perceived Social Attention

Study 3 further tested the proposed underlying mechanism through a process-by-moderation approach (Spencer, Zanna, and Fong 2005). If people with a secret increase conformity in their product choice because they think that choosing conforming product options can result in receiving less attention from others, I would expect this effect to be mitigated when consumers already believe that they receive a low level of social attention from others. Study 3 tested this possibility.

3.4.3.1. Method

Three hundred and forty-eight US adults recruited on mTurk took part in this study for a nominal payment. They were randomly assigned to conditions using a 2 (secrecy: secrecy vs. disclosure-control) × 3 (perceived social attention: low vs. high vs. baseline) between-subjects design. Sixty-nine participants who did not correctly follow the instructions in the secrecy manipulation task (e.g., people who did not recall any secret or people who recalled irrelevant content) were excluded, which left 279 participants (M_{age} = 35.6, 55% females) for further data analyses.

I first manipulated participants' perceived social attention using a reading-comprehension task (e.g., Wan, Chen, and Jin 2017). Specifically, participants were asked to read and comprehend a scientific article about social attention purportedly taken from *Science* magazine. In the *low attention* condition, the article argued that people actually receive much less attention from others than they think. In the *high attention* condition, the article argued that people actually receive much more attention from others than they think. An independent pretest from the same subject pool confirmed that this manipulation can indeed influence people's perceived attention from others (see Appendix D for the articles and Appendix C for details of the pretest). In the *baseline* condition, participants read an article describing the lifestyle of parrots.

Next, participants completed the same secrecy and disclosure writing manipulation, followed by the same secrecy manipulation check, as used in studies 1a, 1b, and 2. Specifically, participants in the *secrecy* condition wrote about a secret, and those in the *disclosure-control* condition wrote about a personal event they had disclosed to others. Participants then proceeded

to a purportedly unrelated product-choice task, in which I captured consumer conformity by observing their choice between a conforming product option and a nonconforming one. Specifically, participants imagined that they were planning to buy an umbrella and choosing between two available options (e.g., Huang et al. 2014a). The two umbrellas were identical in shape and size, with one featuring a more conforming visual design than the other (see Appendix A). An independent pretest from the same subject pool confirmed that consumers indeed believed that using the conforming umbrella represented a higher level of conformity than using the nonconforming umbrella, but these two umbrellas did not differ in attractiveness (see Appendix C for details of this pretest).

3.4.3.2. Results and Discussion

Participants in the secrecy condition were more likely to think that they were keeping a secret (M = 6.83, SD = 2.17) than those in the disclosure-control condition (M = 3.78, SD = 2.85; $F(1, 273) = 96.13$, $p < .001$).

To examine the effects of secrecy and perceived social attention on conformity, I first created dummy variables. Conformity was dummy coded as 1 if the conforming option was chosen and as 0 if the non-conforming option was chosen, and secrecy was dummy coded as 1 if having a secret and as 0 if not. Perceived social attention was recoded into three binary dummy coded variables: LowDummy (1= low, 0 = baseline, 0 = high), HighDummy (0= low, 0 = baseline, 1 = high), and BaseDummy (0= low, 1 = baseline, 0 = high).

Binary logistic regression analyses with Conformity as the dependent variable and Secrecy, BaseDummy, HighDummy, Secrecy × BaseDummy, and Secrecy × HighDummy as

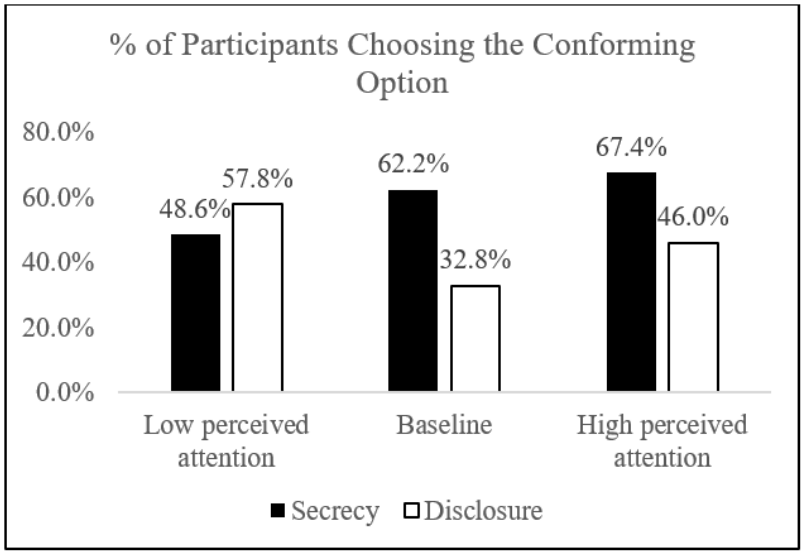
independent variables revealed a significant 2 (secrecy vs. disclosure-control) × 2 (high attention vs. low attention) interaction (b = 1.26, SE = .62, *Wald* = 4.11, p = .043) and a significant 2 (secrecy vs. disclosure-control) × 2 (baseline vs. low attention) interaction (b = 1.59, SE = .62, *Wald* = 6.67, p = .010). Specifically, when perceived attention was *low*, the simple effect of secrecy on conformity was not significant (48.6% vs. 57.8%, respectively; b =-.37, SE = .45, *Wald* = .67, p = .413; see figure 1).

Binary logistic regression analyses with Conformity as the dependent variable and Secrecy, BaseDummy, LowDummy, Secrecy × BaseDummy, and Secrecy × LowDummy as independent variables revealed that the 2 (secrecy vs. disclosure-control) × 2 (high attention vs. baseline) interaction was not significant (b = .33, SE = .59, *Wald* = .31, p = .576). In particular, for participants in the *high attention* conditions, secrecy led to a higher likelihood of choosing the conforming option (67.4%) than for those in the disclosure-control condition (46.0%; b =.89, SE = .42, *Wald* = 4.38, p = .036; see figure 1).

Binary logistic regression analyses with Conformity as the dependent variable and Secrecy, HighDummy, LowDummy, Secrecy × HighDummy, and Secrecy × LowDummy as independent variables revealed that for participants in the *baseline* conditions, secrecy led to a higher likelihood of choosing the conforming option (62.2%) than for those in the disclosure-control condition (32.8%; b =1.22, SE = .42, *Wald* = 4.59, p = .003; see figure 1).

Figure 1

% OF PARTICIPANTS CHOOSING THE CONFORMING OPTION AS A FUNCTION OF SECRECY AND ATTENTION—STUDY 3



Study 3 showed that the effect of secrecy on consumer conformity was mitigated when participants were induced to believe that the level of attention others pay to them is low. Using a process-by-moderation approach, this study provided further process evidence of the proposed attention-avoidance account.

3.4.4. Study 4: The Moderating Role of Self-Control Capacity

I have argued that consumers who are reminded of their secrets avoid social attention because they are concerned about the potential leaking of personal information. The likelihood of disclosing one's personal information, however, also depends on the individual's capacity for self-control (e.g., Critcher and Ferguson 2014; Larson and Chastain 1990). People with high self-control should be less likely to believe that they will leak personal information to others. This leads to the prediction that the effect of secrecy on conformity is attenuated or eliminated if

people perceive themselves as having a high capacity for self-control. Study 4 tested this possibility.

3.3.4.1. Method

Three hundred and eighty-eight US adults recruited on mTurk took part in this study for a nominal payment. They were randomly assigned to conditions of a 2 (secrecy: secrecy vs. disclosure-control) × 3 (perceived self-control capacity: high vs. low vs. baseline) between-subjects design. Sixty-nine participants who did not correctly follow the instructions in the secrecy manipulation task (e.g., people who did not recall any secret or people who recalled irrelevant content) were excluded, which left 319 participants (M_{age} = 35.8, 61% females) for further data analyses.

I first manipulated participants' perceived capacity for self-control 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 from the same subject pool confirmed that this manipulation can indeed influence people's perceived capacity for self-control (see Appendix E for the articles and Appendix C for details of the pretest). In the *baseline* condition, participants read an article describing the lifestyle of parrots.

Next, participants completed the same secrecy and disclosure writing manipulation, followed by the same secrecy manipulation check, as used in the previous studies. Then I assessed consumer conformity through the same umbrella choice task used in study 3.

3.4.4.2. Results and Discussion

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

I created dummy variables before examining the effects 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 non-conforming option was chosen, and secrecy was dummy coded as 1 if having a secret and as 0 if not. 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 BaseDummy (0= low, 1 = baseline, 0 = high).

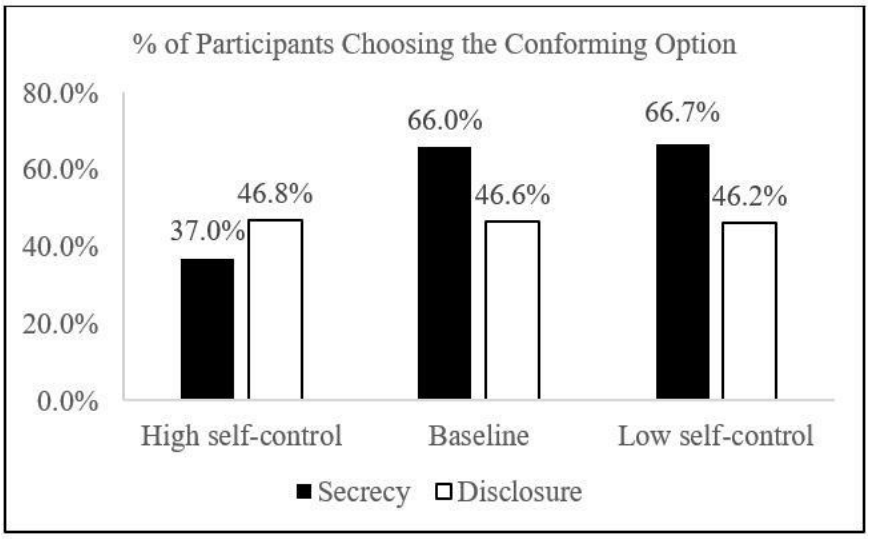
Binary logistic regression analyses with Conformity as the dependent variable and Secrecy, BaseDummy, LowDummy, Secrecy × BaseDummy, and Secrecy × LowDummy as independent variables revealed a significant 2 (secrecy vs. disclosure-control) × 2 (high self-control vs. low self-control) interaction (b = 1.25, SE = .57, $Wald$ = 4.76, p = .029) and a significant 2 (secrecy vs. disclosure-control) × 2 (baseline vs. high self-control) interaction (b = 1.21, SE = .56, $Wald$ = 4.68, p = .030). Specifically, when perceived self-control capacity was *high*, the simple effect of secrecy on conformity was not significant (37.0% vs. 46.8%, respectively; b = -.41, SE = .40, $Wald$ = 1.04, p = .309; see figure 2).

Binary logistic regression analyses with Conformity as the dependent variable and Secrecy, BaseDummy, HighDummy, Secrecy × BaseDummy, and Secrecy × HighDummy as independent variables revealed that the 2 (secrecy vs. disclosure-control) × 2 (low self-control vs. baseline) interaction was not significant (b = -.04, SE = .57, *Wald* = .01, p = .938). Specifically, for participants in the *low self-control capacity* conditions, secrecy led to a higher likelihood of choosing the conforming option (66.7%) than for those in the disclosure-control condition (46.2%; b = .85, SE = .41, *Wald* = 4.20, p = .041; see figure 2).

Binary logistic regression analyses with Conformity as the dependent variable and Secrecy, HighDummy, LowDummy, Secrecy × HighDummy, and Secrecy × LowDummy as independent variables revealed that for participants in the *baseline* conditions, secrecy led to a higher likelihood of choosing the conforming option (66.0%) than for those in the disclosure-control condition (46.6%; b = .80, SE = .39, *Wald* = 4.20, p = .040; see figure 2).

Figure 2

% OF PARTICIPANTS CHOOSING THE CONFORMING OPTION AS A FUNCTION OF SECRECY AND SELF-CONTROL CAPACITY—STUDY 4



The results of study 4 extended our understanding of the observed effect by showing the moderating role of self-control capacity. The effect of secrecy on consumer conformity was salient when people perceived themselves as having low capacity for self-control; however, the effect disappeared when people believed themselves to have high capacity for self-control.

3.4.5. Study 5: The Moderating Role of Product Usage Context

Study 5 tested an additional moderator, usage context, of the effects of secrecy on consumer conformity. Consistent with the theoretical framework and the findings in earlier studies, in study 5, I again expected that after being reminded of a secret, participants would attempt to avoid social attention by conforming to other consumers. However, I also expected this effect to be less likely to occur when people chose products for use in private contexts because social-attention concerns would be relatively less salient for them under those circumstances. I manipulated usage context in this study and therefore predicted that the effect of secrecy on consumer conformity is mitigated when people purchase a product that is used in a private context (vs. a public context).

3.4.5.1. Method

Two hundred and fifteen US adults recruited on mTurk took part in this study for a nominal payment. They were randomly assigned to conditions of a 2 (secrecy: secrecy vs. disclosure-control) × 2 (usage context: private vs. public) between-subjects design. Thirty-five

participants who did not correctly follow the instructions in the secrecy manipulation task (e.g., people who did not recall any secret or people who recalled irrelevant content) were excluded, which left 180 participants (M_{age} = 34.4, 52% females) for further data analyses.

Participants first completed the same secrecy and disclosure writing manipulation, followed by the same secrecy manipulation check, as were used in the previous studies. After that, the private versus public choice context was manipulated using a method adapted from past literature (e.g., Ratner and Kahn 2002; Wan et al. 2014). Specifically, in the private-usage condition, participants imagined that they would purchase a set of pajamas to be worn in their own bedroom where others could not see them; in the public-usage condition, participants imagined that they would purchase a T-shirt to be worn in public. Then I measured consumer conformity by observing their choice between a majority-endorsed and minority-endorsed product option (e.g., Berger and Heath 2007; Wan et al. 2014). Specifically, participants were asked to choose between two available options: one liked by a large number of consumers (i.e., having a 68% market share; the conforming option) and the other preferred by a small number of consumers (i.e., having a 32% market share; the nonconforming option).

3.4.5.2. Results and Discussion

Participants in the secrecy conditions were more likely to think that they were keeping a secret (M = 6.94, SD = 2.17) than those in the disclosure-control conditions (M = 4.00, SD = 2.80; $F(1, 176) = 61.79$, $p < .001$).

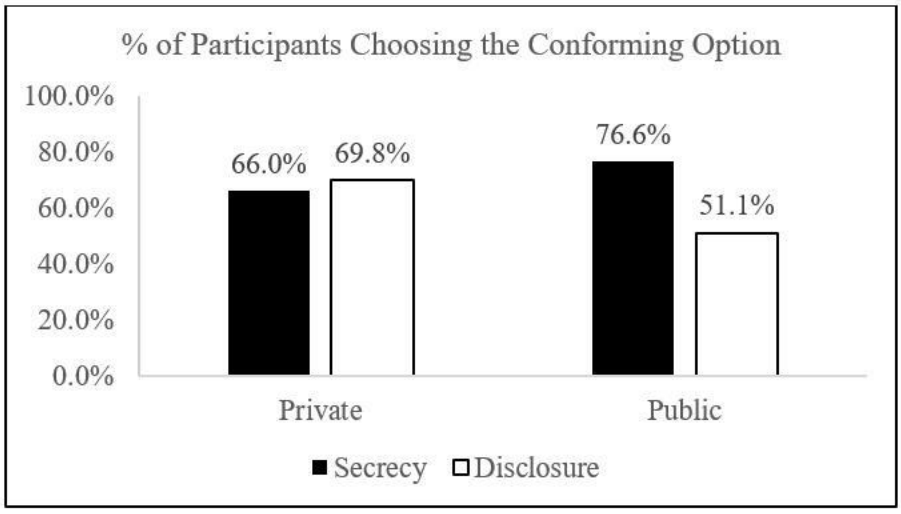
I performed a logistic regression to examine the effects of secrecy and usage context on conformity. Conformity was dummy coded as 1 if the conforming option was chosen and as 0 if

the non-conforming option was chosen. Binary logistic regression analyses with Conformity as the dependent variable and Secrecy (1 = secrecy, 0 = disclosure-control), usage context (1 = public, 0 = private), and Secrecy × Usage context as independent variables revealed a significant interaction effect of secrecy and usage context (b = 1.31, SE = .65, *Wald* = 4.14, p = .042; see figure 3). Specifically, I found that the likelihood of participants in the *private-usage* conditions choosing the conforming option did not differ across the secrecy and disclosure-control conditions (66.0% vs. 69.8%, respectively; b = -.18, SE = .45, *Wald* = .15, p = .699).

Binary logistic regression analyses with Conformity as the dependent variable and Secrecy (1 = secrecy, 0 = disclosure-control), usage context (0 = public, 1 = private), and Secrecy × Usage context as independent variables revealed that when participants were in the *public-usage* condition, secrecy led to a higher likelihood of choosing the conforming option (76.6%) than it did for those in the disclosure-control conditions (51.1%; b = 1.14, SE = .46, *Wald* = 6.13, p = .013).

Figure 3

% OF PARTICIPANTS CHOOSING THE CONFORMING OPTION AS A FUNCTION OF SECRECY AND USAGE CONTEXT—STUDY 5



The results of study 5 extended our understanding of the underlying mechanism by showing the moderating effect of usage context: The effect of secrecy on consumer conformity was attenuated when the chosen product was to be used in a private context. This was presumably because when consumers purchased a product to be used in private contexts, they were less worried about the level of social attention they might receive upon using the products. This finding again supported the proposed attention-avoidance mechanism.

3.5. GENERAL DISCUSSION

The present research found that secrecy compels consumer conformity. This effect occurs because secrecy induces concerns about information leakage, which activates the desire to avoid social attention. The desire to avoid social attention in turn increases consumer conformity. Six experiments provide convergent evidence for the proposed effect and its underlying mechanism. Secret-keeping participants showed a heightened motivation to avoid social attention (studies 1a and 1b), driven by their concerns about information leakage (study 1b). After testing the full

theoretical model (i.e., secrecy → information-leakage concern → attention avoidance → conformity) in study 2, I further demonstrated that the secrecy effect was diminished when participants believed that others did not pay much attention to them (study 3), when participants perceived themselves as having high self-control (study 4), and when the product in question was to be used in private contexts (study 5).

This research contributes to a number of different literature streams, including the secrecy literature in social psychology (e.g., Kelly 2002; Slepian et al. 2012, 2015, 2017) by noting a cross-domain impact of secrecy on consumer conformity. Traditional research on secrecy in the social psychology literature has mainly looked at secrecy in a narrow 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; Kelly and Yip 2006; Slepian et al. 2017). Recently, Slepian and colleagues (2017) suggested that a broader definition of secrecy (i.e., the intention to conceal information from others) should be adopted, and secrecy could well be shown to have much broader impact on human behavior than researchers originally assumed. Answering Slepian et al.'s (2017) call for more investigations on cross-domain effects of secrecy, in the current research I provide an example of this type of cross-domain effect by showing the impact of secrecy on consumption conformity—a domain that, at first glance, would seem unlikely to be affected by secrecy. This research demonstrates that the experience of secrecy leads to the avoidance of social attention and thus increases consumer conformity. These findings testify to just how much secrets weigh on people, since they document effects very far removed from situations where keeping the secret might be important for impression-management reasons, or for the sake of interpersonal relationships.

This research contributes to the literature on consumer conformity (e.g., Bellezza et al. 2014; Huang et al. 2014b; Mead et al. 2011; Wan et al. 2014) by introducing secrecy as a novel psychological antecedent of conformity. Most past 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. 2014b), or maintaining a positive self-concept (Cialdini and Goldstein 2004). As far as we know, the only research looking at conformity from a prevention-focused lens is Griskevicius et al. (2006), in which researchers 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 information leakage. I hope the finding stimulates future research investigating other potential functions of consumer conformity.

Theoretical implications of my findings for the social attention literature (e.g., Gilovich et al. 2000; Gilovich and Savitsky 1999; Lee and Shrum 2012) are also worth noting. Past research shows that people's motivation to attract or avoid social attention is often driven by impression management (e.g., Akimoto et al. 2000; Lau-Gesk and Drolet 2008; Leary et al. 1992; Riess and Rosenfeld 1980). For example, people avoid social attention when they are experiencing an embarrassing event or having a poor performance, which may potentially lead to negative social impressions (e.g., Lau-Gesk and Drolet 2008; Leary et al. 1992); meanwhile, people long for social attention when they want to convey their status, leadership, and attractiveness (Akimoto et al. 2000; Riess and Rosenfeld 1980). The current research found that people's motivation to attract or avoid social attention can be driven by their desired level of information exchange as

well: when people worry about the leakage of information (i.e., unwanted information exchange), they show an avoidance of social attention.

Consistent with my theorizing that secrecy increases people's avoidance of social attention, I found that secrecy led to an increased tendency to choose conforming product options over nonconforming ones. It should be noted that the products I 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. This is consistent with the findings in study 5 that the effect of secrecy on consumer conformity was attenuated when the product was to be used in private contexts.

Findings of the current research have important managerial implications. Nowadays many companies use the concept of secrecy in their marketing practice. Marketers believe that highlighting secrecy can induce positive responses from consumers such as curiosity, word-of-mouth around the brands, enjoyment, and consumer–brand connectedness. Although secrecy is a prevalent marketing strategy, the current research suggests that it may not be an appropriate strategy for all kinds of products. The findings of the research demonstrates that when marketers aim to promote conforming products, they can consider activating consumers' intention to hide a secret. On the contrary, marketers should avoid using secrecy as a selling point when their products are non-conforming products.

In addition, the current research indicates that if firms produce conforming products, markers may consider two ways to induce consumers' intention to hide secrets from others if they are promoting conforming products. One is targeting consumers who are hiding secrets from others. For example, the active users of the online dating website Ashley Madison are likely to have relationship related secrets such as secret sexual fantasies and affairs. Firms with conforming products can have pop-up ads on this kind of websites. Another way to increase the sales of conforming products is providing consumers with an incidental secret. Assigning consumers an incidental secret may also lead to high conformity. Marketers sometimes use strategies such as secret sales to encourage consumer to hide their sales as a secret. It is likely that the events such as secret sales can increase the purchase of conforming products.

The current research has some limitations that need to be noted. For example, in all studies, I only utilized a recall task to activate consumers' intention to hide. Given that most of the secrets were negative, the observed results may be influenced by the valence of secrecy. To address the limitation, future research can adopt a different approach to manipulate secrecy, such as the secrecy-assignment manipulation (e.g., ask participants in the secrecy condition to keep the same word "photo" a secret) used in the past secrecy literature (e.g., Lane and Wegner 1995), this approach can be helpful for controlling the secrecy valence. Besides, I observed that the effect of secrecy on conformity was weakened when people perceived themselves as having high capacity for self-control. The moderation effect may only occur when the perceived capacity for self-control is a perception about one's general self-control, we may not observe the moderation effect if we manipulate one's perceived capacity for specific self-control in secrecy-unrelated domains, such as the ability to control oneself from eating unhealthy food. Moreover, study 1B did not rule out depletion sufficiently, future study can directly manipulate depletion to see

whether there is a difference between the secrecy and depletion conditions in conformity. If participants in the secrecy condition still have a higher conforming tendency than those in the depletion condition, then depletion is not a valid alternative explanation.

Future research also can look at the consequences of keeping secrets for others. In the current research, I focused on one's own secrets. In addition to one's own secrets, people sometimes keep secrets for others (e.g., their friends, family members, or colleagues). Importantly, people mind-wander to confided secrets just like they mind-wander to their own secrets, and people wander more to the secrets as the relationship closeness between the confider and receiver increases (Slepian and Greenaway 2018). Consequently, people who keep secrets for others should have similar information-leakage concerns. Therefore, I speculate that keeping others' secrets should also increase consumer conformity, and this effect is likely to be moderated by the relationship closeness, such that the effect will be enhanced when the secret-keeper has a close relationship with the confidant.

The findings also open the door for future researchers to investigate the relationship between the concealment of information (i.e., secrecy) and other types of information manipulation in social interaction. For example, instead of hiding information, one can intentionally alter or distort the information to mislead others in one's social interaction, and that constitutes a lie (e.g., DePaulo et al. 1996). The topic of lying has attracted renewed interest in the consumer-behavior arena in recent years (e.g., Anthony and Cowley 2012; Argo, Dahl, and White 2011; Argo and Shiv 2012; Argo, White, and Dahl 2006; Mazar, Amir, and Ariely 2008; Sengupta, Dahl, and Gorn 2002). An inspection of the data across the current studies reveals that virtually all the secrets recalled were ones that participants simply chose not to tell other people, but they were not lies (across the studies only about 2% of participants wrote about a secret that

was a lie). However, I wonder what would happen if the secret that a person harbored was a lie that they were telling. Presumably, if the secret that the person is keeping is that he or she has been telling an outright lie, the desire to avoid social attention and to conform when choosing products would be at least as great as what I found with the secrets I examined in the current research, but this has yet to be tested.

Moreover, what about a white lie? People typically assume that telling a white lie is not that bad, especially if telling the truth will hurt someone's feelings (DePaulo and Rosenthal 1979). However, recent consumer research suggests that this may not be the case (Argo and Shiv 2012). Argo and Shiv (2012) found that telling a white lie results in discomfort and cognitive dissonance in the person who tells it, which leads them to try to reduce their discomfort/dissonance. One question that the present research puts forth for future research to explore is whether the means that the person uses to reduce dissonance when they tell a white lie includes trying to avoid social attention, even in contexts unrelated to the telling of the white lie.

CHAPTER 4. NOT THE REAL ME! EFFECTS OF SECRECY ON CONSUMER DECISION REGRET

4.1. INTRODUCTION

In chapter 4, I have investigated another consequence of keeping secrets in the marketing context, that is, consumers' judgment of the consumption decision they made during the secret-keeping period when the decision was not related to the secret(s) they were keeping. Specifically, I looked at how secrecy influences consumers' decision regret. Based on past literature on secrecy (e.g., Kelly 2002; Lane and Wegner 1995; Slepian et al. 2012, 2017), decision authenticity (e.g., Goldman and Kernis 2002; Miller 1979; Schlegel et al. 2009, 2013), and regret (e.g., Inman and Zeelenberg 2002; Tsiros and Mittal 2000; Zeelenberg and Pieters 2007), I predicted in the current research that the experience of secrecy induces a sense of decision inauthenticity because people feel "a divided self" during secrecy (e.g., Sedlovskaya et al. 2013; Uysal, Lin, and Knee 2010). This perceived decision inauthenticity in turn leads to regret about the consumption decisions that people made within the period of secret-keeping (e.g., Goldman and Kernis 2002; McGregor and Little 1998; Schlegel et al. 2013). I further predicted that the effect of secrecy on consumer decision regret is mitigated when the decision is not made during the period of secret-keeping, when the choice is driven by external incentives, and when the choice is made for others.

Three studies were conducted to test these hypotheses, and the results provide insights into how and why holding a secret influences consumers' regret over consumption decisions made during the period of secret-keeping. In so doing, the current research contributes to the

following streams of literature. First, this project contributes to the secrecy literature (e.g., Kelly 2002; Slepian et al. 2012, 2017) by demonstrating a novel consequence of secrecy in the consumption domain, namely, decision regret. Second, this work adds to the regret literature (e.g., Inman and Zeelenberg 2002; Tsiros and Mittal 2000; Zeelenberg and Pieters 2007) by revealing a novel factor driving consumers' post-decision regret. Third, this research contributes to the growing number of studies on authenticity (e.g., Goldman and Kernis 2002; Miller 1979; Schlegel et al. 2009, 2013) by revealing the impact of perceived decision inauthenticity in a marketing context. Fourth, the paper contributes to the broad domain of social influence on consumer behavior (e.g., Argo, White, and Dahl 2006; Dahl 2013; Lee and Shrum 2012; Mead et al. 2011; White and Dahl 2007) by demonstrating the impact of secrecy—a unique phenomenon caused by the interpersonal concealment of information—on the reflection of oneself and subsequent consumer behavior. Finally, in a departure from past research that mainly focuses on the impact of secrecy on secret-related products/brands (e.g., Rodas and John 2019; Thomas and Jewell 2018; Yang, Deng, and Jia 2018), the current research investigates secrecy's impact on unrelated domains, providing more possibilities for marketing practitioners to utilize the concept of secrecy in their promotions and outreach.

4.2. CONCEPTUAL BACKGROUND

4.2.1. Secrecy and Decision Inauthenticity

In the current research, I argue that the experience of secrecy could also make people perceive the decision they made during secret-keeping as less authentic. Authenticity is the

awareness of being one's true self (e.g., Lenton et al. 2013). Authentic people are autonomous and self-determined (e.g., Deci 1980; Deci and Ryan 1985; Kernis and Goldman 2006; Schlegel and Hicks 2011); they behave in alignment with their personal desires and values instead of being constrained by external factors (Kernis and Goldman 2006). Being authentic is important and meaningful. It has been shown that people like their true self more than the actual self despite the true self potentially being less socially desirable (Schlegel et al. 2009). Moreover, living according to the authentic self leads to a satisfying and meaningful existence (e.g., Miller 1979; Schlegel et al. 2013), while not following one's authentic self has been shown to be associated with negative consequences such as decreased life satisfaction (Kernis and Goldman 2006), decreased relationship satisfaction (Wickham 2013), reduced well-being (Heppner et al. 2008), and lower self-esteem (Wood et al. 2008).

The perception of authenticity is also important in the decision-making context, a situation in which people tend to use the true self as a guide and are motivated to find consistency between the true self and their choices—that is, decision authenticity (Lecky 1945; Niedenthal, Cantor, and Kihlstrom 1985). Accordingly, the outcome satisfaction is influenced by the extent to which a choice is aligned with one's true self-concept. Research has shown that people feel uncomfortable when the self–choice consistency is not achieved (e.g., McGregor and Little 1998; Schlegel et al. 2009, 2013). For instance, Schlegel et al. (2013) found that true self-related information was rated as more important than other sources of information in decision-making, and not using authentic self-knowledge was exclusively related to low decision satisfaction. McGregor and Little (1998) showed that people tend to experience more meaning in life when they believe their behaviors reflect their true self.

Several streams of research support the prediction that secrecy is likely to lead to the perception of decision inauthenticity. For example, because people who are occupied with secrets constantly monitor and suppress their thoughts to avoid leaking their secrets, they cannot freely express who they are and what they like (e.g., Lane and Wegner 1995). This monitoring process is highly controlled, and it leads to low perceived autonomy (Uysal et al. 2010). Thus, it is possible that the controlled or low-autonomy aspect of secret-keeping will induce a sense of inauthenticity. Moreover, the controlled self-expression or public–private schematization during secrecy leads to a "divided self": Secret-keepers' public self and private self are different (Sedlovskaya et al. 2013). Given that the inconsistency of true self (who a person really is inside) and actual self (how a person behaves outwardly) is the core feature of inauthenticity (e.g., Baldwin, Biernat, and Landau 2014; Schlegel et al. 2013; Wood et al. 2008), the awareness of a "divided self" and the suppression of true self should further bolster the felt inauthenticity (English and John 2013; Rogers 1961). This sense of inauthenticity can be induced by the secret-keeping process itself and the awareness of violating social communication norms. Revealing one's true self is crucial for social functioning (Kernis and Goldman 2005; Swann and Pelham 2002), and people are expected to share information with others to reveal who they really are (Finkenauer et al. 2005; Smetana et al. 2006). It has been shown that the frequent thinking about a secret reminds people of the fact that they are not upholding usual relationship standards and values (Slepian et al. 2017). The awareness of violating the social communication norm may induce the feeling that they are inauthentic in social interaction (Slepian et al. 2017).

Putting together these tendencies and associations, I predict that under secrecy people are likely to perceive themselves as inauthentic in both secret-related and secret-unrelated domains.

Reminders of the ongoing secret-keeping experience thus may make people perceive themselves to be inauthentic in a consumption decision if it is made during the period of secret-keeping.

4.2.2. Decision Inauthenticity and Consumer Regret

I further propose that perceived decision inauthenticity under secrecy will increase the likelihood that consumers feel regret about the decisions they made during secrecy. Regret is defined as the emotion that appears when people realize or imagine that their current situation would have been better if they had decided or acted differently (Zeelenberg and Pieters 2007). Past research demonstrates that regret can be influenced by various factors, such as sense of responsibility (Zeelenberg, van Dijk, and Manstead 1998), information on the forgone option (Tsiros and Mittal 2000), valence of prior experience (Inman and Zeelenberg 2002), and counterfactual thinking (Kahneman and Miller 1986).

People are all motivated to make good decisions (Higgins 2000). But how do people judge whether a decision is good or not? The traditional criterion is that a decision is regarded as good when it produces positive outcomes in terms of its objective utility. When making a choice among several options, a decision is good if the mix of objective benefits and losses is the most positive (Higgins 2000). However, people may not judge a decision simply on objective value, often considering psychological utility as well; and a decision is bad when a chosen option leads to a low perceived psychological utility. For example, people may judge a decision based on its ensuing social benefits, so a "politically incorrect" decision is thus seen as bad. As another example, people may perceive their decisions as less indicative of their preference, when their belief about the association between choice and preference is challenged through the activation

of the self-control concept (Sela, Berger, and Kim 2017). Following this logic, I argue that perceived decision inauthenticity could be an important criterion for consumers to judge whether the consumption decision(s) they made was good or bad. As noted above, people are fundamentally motivated to maintain consistency between their decisions and their authentic self (Lecky 1945), and they believe that a decision made based on the true self is more satisfying and meaningful for them (e.g., Ryan and Deci 2001; Schlegel et al. 2009). If a consumption decision is not made in accord with one's authentic self, consumers are likely to be less satisfied with the chosen option, despite its objective utility. Consequently, consumers are likely to regret the decision they made. Therefore, perceived decision inauthenticity drives decision regret.

4.3. THE CURRENT RESEARCH

I argued above that the experience of secrecy will affect individuals' self-perception, making people perceive themselves as inauthentic in decision-making within the period of secret-keeping. I also argued that perceived decision inauthenticity will increase the level of regret for the decision made. Putting these observations together, I propose that secrecy will increase consumers' decision regret. Specifically, I predict that the experience of secrecy increases consumers' perceived decision inauthenticity, which in turn leads to their increased regret for the consumption decision(s) made during the period of secret-keeping. Stating these hypotheses formally:

H1: Secrecy increases consumers' regret for the consumption decisions they made within the period of secret-keeping.

H2: The effect of secrecy on consumers' decision regret is mediated by perceived decision inauthenticity.

One prerequisite of the above hypotheses is that the consumption decision is made during the period of secret-keeping. People regret those decisions because they believe that secrecy reduced their decision authenticity, and thus those decisions were not made according to their true self. This only happens for decisions made during the period of secret-keeping. For consumption decisions made either before or after the secret-keeping experience, consumers' decision authenticity during decision-making should not be influenced by secrecy, thus I do not expect to observe the proposed effect in that case. Stated formally,

H3: The effect of secrecy on consumers' decision regret is mitigated when the consumption decision occurs outside the period of secret-keeping.

I tested these hypotheses in three studies. Study 1 demonstrated that consumers are more likely to regret their consumption decisions (and consequently switch to a different option) when decisions are made during the period of secret-keeping. Study 2 replicated the observed effect with an inherent secrecy manipulation and further revealed that this effect is driven by the perceived decision inauthenticity under secrecy. Using incidentally induced secrecy, study 3 probed deeper into the nature of the observed effect and showed that it is limited to decisions made during the period of secret-keeping (i.e., the effect does not apply to decisions made either before or after the experience of secrecy). I have reported all data exclusions (if any), all manipulations, and all hypothesis-related measures.

4.4. EMPIRICAL INVESTIGATION

4.4.1. Study 1: Secrecy Increases Decision Regret

Study 1 tested the basic hypothesis in a lab experiment with both self-indicated decision regret and the behavioral consequence of decision regret: consumer switching behavior. Past research on decision regret has demonstrated that when people feel regretful about a decision, they are motivated to switch to the forgone alternative when given a second chance to make the decision (e.g., Inman and Zeelenberg 2002). Thus, if secrecy increases consumers' decision regret, I would expect participants in the secrecy condition to be more likely to switch to a different decision option when given an opportunity to change their mind. I tested these possibilities in study 1.

I employed an incidental secrecy manipulation in this study. Specifically, I asked participants to hide a piece of personal information when they were completing a survey (adapted from Lane and Wegner 1995). To rule out the possibility that the effect was driven by particular types of secrets, I included two secrecy conditions in this study: one about participants' gender, the other about their undergraduate major.

4.4.1.1. Method

One hundred and seventy-five undergraduates (M_{age} = 21.1, 129 females) participated in this study for a nominal payment. They were randomly assigned to one of three (secrecy-gender vs. secrecy-major vs. control) between-subjects conditions.

Upon arrival, participants were told that they were going to complete a 10-minute survey about college students' hobbies. I manipulated secrecy by asking participants to hide a piece of personal information (either gender or major) during the process of answering the hobby survey. Specifically, participants in the *secrecy-gender (secrecy-major)* condition wrote down their gender (undergraduate major) first and were instructed to hide it as a secret and not to disclose any information related to their gender (undergraduate major) while completing the student hobby survey because that information was likely to influence the researchers' interpretation of the survey data. After the secret-keeping instruction, participants were given one minute to think about how to hide their gender/major before the survey started. I assumed that participants' secret-keeping intention was already salient before taking the survey. In the *control* condition, participants were not instructed to hide any personal information during the hobby survey.

Before they started to work on the survey, all participants were told that in addition to their payment they would receive a gift pen at the end of the study, and they were asked to choose a pen from four available options (see Appendix F). Given that participants in secrecy conditions were told to hide their secrets before making the pen choice, I assumed that the pen choice was made during the period of secret-keeping. Participants then completed the 10-minute hobby survey, in which the questions were carefully designed to avoid a direct relationship to either gender or major (see Appendix G for sample questions). After completing the survey, participants in the two secrecy conditions were reminded that they did not need to hide the secret information any longer. Then, after a short filler task, all participants were told that this was the

end of the study, and they were given another chance to decide which pen they wanted as a gift. Switching behavior was captured by recording whether participants changed their pen choice; I coded switching behavior as 1 if the participant switched to a different pen option and 0 if the participant did not change the pen choice. Using 9-point scales (1 = strongly disagree, 9 = strongly agree), participants also completed a three-item measurement assessing their regret about their initial pen choice ("After making the choice, I'm curious about what would have happened if I had chosen differently"; "After making the choice, I would like to get information about how the other alternatives turned out"; "If the choice turns out well, I still feel like something of a failure if I find out that another choice would have turned out better"; α = .79; Schwarz et al. 2002).

To rule out self-esteem as an alternative explanation, I measured participants' state self-esteem by asking them to indicate the extent to which they agreed with three statements ("I take a positive attitude toward myself"; "I think I am not good at all"; "On the whole, I am satisfied with myself"; Rosenberg 1979; α = .61; 1 = strongly disagree, 9 = strongly agree). As a manipulation check, on a 9-point scale (1 = strongly disagree, 9 = strongly agree), participants also indicated the extent to which they agreed with the statement "I have a secret that I cannot share with others" while they were answering the hobby survey. In the end, all participants received their chosen gift pen and were thanked and dismissed.

4.4.1.2. Results and Discussion

Consistent with my prediction, participants in the secrecy-gender condition were more likely to think that they were keeping a secret (M = 4.59, SD = 2.27) than those in the control

condition (M = 2.80, SD = 1.52; F(1, 115) = 25.19, $p < .001$). Similarly, participants in the secrecy-major condition were also more likely to think that they were keeping a secret (M = 3.95, SD = 2.14) than those in the control condition (F(1, 115) = 11.31, $p = .001$). No significant difference existed between the secrecy-gender and the secrecy-major conditions (F(1, 114) = 2.43, $p = .122$).

Given that participants in the secrecy-gender condition and those in the secrecy-major condition did not differ significantly on regret and switching measures (all *p*s > .167), I pooled these two secrecy conditions in later analyses. As expected, participants in the control condition were significantly less likely to switch their pen choice (M = 5.1%), compared with those in the secrecy conditions (M = 23.3%; χ^2 (1) = 9.11, $p = .003$; OR = 5.65). Participants also had more regrets about their initial pen choice if they were in the secrecy conditions (M = 4.41, SD = 1.90) than if they were in the control condition (M = 3.71, SD = 1.65; F(1, 173) = 5.69, $p = .018$; $\eta_p^2 = .032$).

Mediation analyses were conducted to test whether participants switched because of decision regret. The bootstrapping procedure (5,000 samples, PROCESS Model 4; Hayes 2012) with secrecy as the independent variable, decision regret as the mediator, and switching behavior as the dependent variable yielded a 95% confidence interval that excluded zero ([.0677, .8604]), confirming that the effect of secrecy on switching behavior was indeed mediated by decision regret.

Given that the experience of secret-keeping may decrease one's self-esteem (Ichiyama et al. 1993; Kelly 2002), and consumers with low self-esteem may feel less confident about their choices (e.g., Baumeister and Tice 1985; Campbell 1990), it is possible that secret-keepers regret their choices more because secrecy lowers one's self-esteem. To rule out this alternative

explanation, I tested the effect of secrecy on state self-esteem. I found that participants' state self-esteem in the secrecy conditions (M = 5.79, SD = .99) did not differ significantly from that of participants in the control condition (M = 5.73, SD = .79; F(1, 173) = .16, p = .694), suggesting that the observed effect was not caused by negative self-evaluation triggered by the experience of secrecy.

Findings of study 1 confirmed that secrecy has a significant impact on consumers' decision regret. Specifically, it showed that consumers who experience secrecy have more regret about decisions made during the period of secret-keeping (H1). The effect was found for both self-reported decision regret and the behavioral downstream consequence of decision regret—consumer switching behavior.

4.4.2. Study 2: The Mediating Role of Decision Inauthenticity

Different from the incidental secrecy manipulation I used in study 1, in study 2, I induced participants to think about inherent personal secrets that they were keeping. I expected that once consumers' personal secrecy was made salient, they would perceive a heightened feeling of inauthenticity in their decision-making, which consequently would lead to more decision regret (H2).

4.4.2.1. Method

One hundred and sixty-one adult consumers took part in this study via mTurk for a nominal payment. Participants were randomly assigned to one of the two (secrecy vs. control)

between-subjects conditions. Forty participants who did not correctly follow the instructions in the secrecy manipulation task (e.g., people who did not recall any secret or people who recalled irrelevant content) were excluded, which left us with 121 participants (M_{age} = 33.7, 58 females) for further data analyses.

Participants first imagined that they were purchasing a painting for their living room at a flea market. They were presented with five paintings and were told that all were of the same price and quality (see Appendix F). After they examined all the paintings, they were asked to indicate which painting they would choose to buy.

Next, to manipulate secrecy, participants completed an episodic recall task (Slepian et al. 2012, 2017), disguised as a writing exercise. Specifically, participants in the *secrecy* condition were asked to write down a personal secret without elaborating on its details. Given that I asked participants to write down a secret that they were keeping before they participated in the study, I assumed that the painting choice was made during the period of secret-keeping. Participants in the *control* condition were asked to recall and write down an event in which they disclosed personal information to others. Following the writing task, participants completed the same secrecy manipulation-check measure as used in study 1.

I then asked participants to recall the painting purchasing choice they made previously and complete the same three-item measurement assessing any regret over their purchasing choice that was used in study 1 (α = .88). In addition, I measured participants' perceived decision inauthenticity by asking them to respond to three items (i.e., "I feel that I was holding back my 'true self' at the time of making the decision"; "I was NOT true to myself at the time of making the decision"; "I didn't express the 'real me' at the time of making the decision"; adapted from Wood et al. 2008; α = .88; 1 = strongly disagree, 9 = strongly agree).

4.4.2.2. Results and Discussion

As expected, participants in the secrecy condition were more likely to think that they were keeping a secret (M = 6.75, SD = 2.17) than those in the control condition (M = 3.26, SD = 2.82; F(1, 119) = 57.80, $p < .001$).

Consistent with my expectation, participants in the secrecy condition reported greater regret for the painting choice they made at the beginning of the study (M = 4.45, SD = 2.51) than did those in the control condition (M = 3.55, SD = 2.30; F(1, 119) = 4.26, $p = .041$; $\eta_p^2 = .035$). Participants in the secrecy condition also perceived themselves as being more inauthentic in decision-making (M = 4.10, SD = 2.48) than did those in the control condition (M = 2.56, SD = 2.00; F(1, 119) = 14.08, $p < .001$). A mediation analysis with PROCESS Model 4 showed a significant indirect effect of perceived decision inauthenticity (5,000 samples, 95% confidence interval: [.4636, 1.5188]), confirming its mediational role.

With different manipulations of secrecy and regret for different choices, studies 1 and 2 provided convergent support for my hypothesis that the experience of secrecy increases consumers' regret for the choice they make. In addition, I have shown that the effect of secrecy on decision regret was driven by the heightened perception of decision inauthenticity during secrecy. This effect was observed under both incidental secrecy (study 1) and inherent secrecy (study 2); thus, it was less likely driven by specific types or characteristics of secrecy.

4.4.3. Study 3: When the Secrecy-Regret Effect Occurs

Study 3 took a deeper look into the underlying mechanism of the observed effect. I have argued that secrecy makes consumers feel that they are less authentic in making decisions. If this is true, this effect should only occur when the focal consumption decision is made during the period of secret-keeping because people feel that their decisions are influenced by secrecy in that period. The observed effect would be unlikely to occur for decisions made before or after the secret-keeping period. In study 3, I manipulated both the time of decision-making and the period of secret-keeping to test this possibility. In addition, this study ruled out negative mood as a potential alternative explanation for the results.

4.4.3.1. Method

Three hundred and forty-six adult consumers (M_{age} = 35.5, 199 females) participated in this study via mTurk for a nominal payment. Participants were randomly assigned to conditions of a one-way four-cell (choice-before-secrecy vs. choice-during-secrecy vs. choice-after-secrecy vs. control) between-subjects design.

I manipulated secrecy through instructions about a game that participants would play. Participants in the three secrecy conditions were instructed that the researchers were interested in people's tactics when playing social games with others and that participants would be playing a game called "Spy Game" with other online participants. Participants were then given the instructions for the game, which indicated that players would be randomly assigned to one of the two roles, spy or average, and the averages had to identify the spies through online interaction. Then, all participants in the three secrecy conditions were told that they were assigned to the role of spies and they needed to keep their role a secret during the whole game. Participants were also

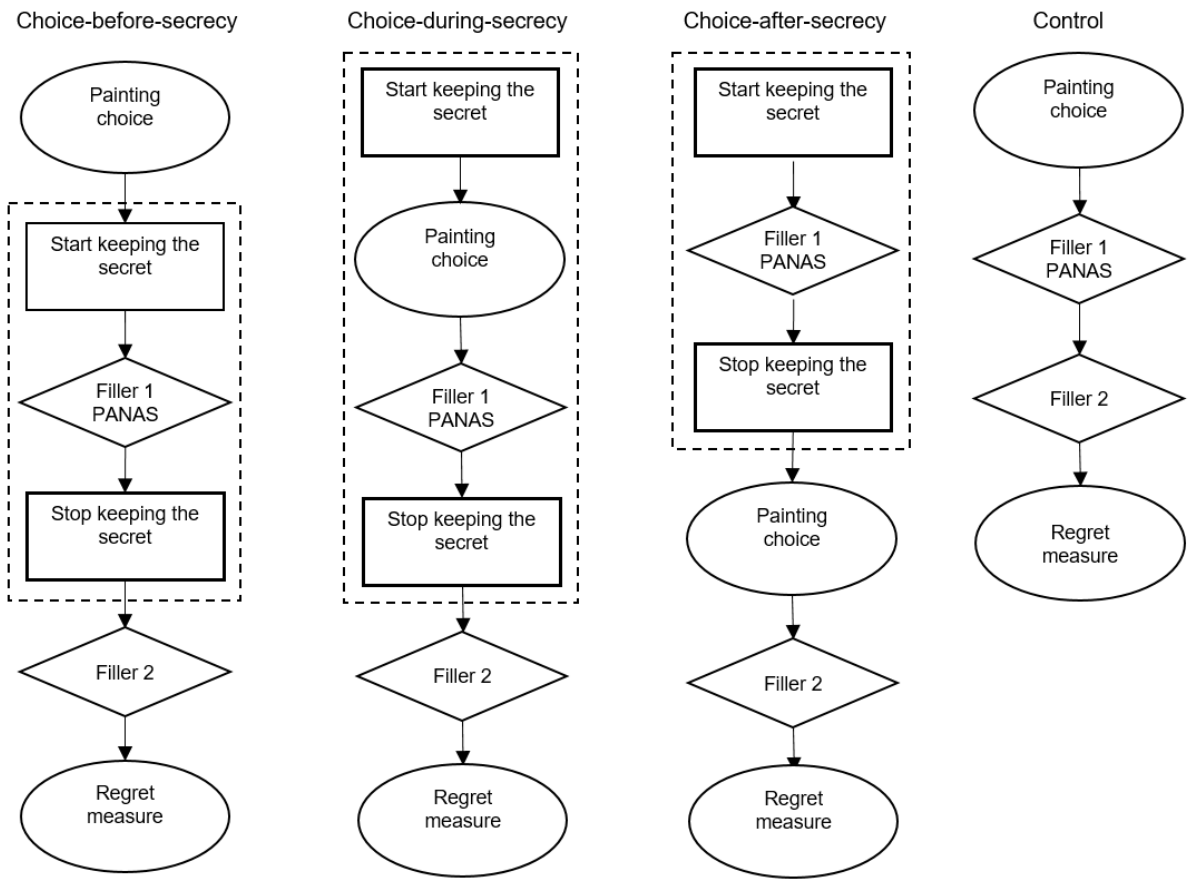
told that they needed to complete a few small tasks while waiting for enough players to start the game. In the first filler task, I measured participants' mood with the 20-item PANAS (Watson, Clark, and Tellegen 1988). After completing one or two filler tasks, participants were told that the game was canceled due to an insufficient number of players and they did not need to keep their spy role a secret any longer.

Importantly, the focal consumption choice (i.e., the same painting choice as used in study 2) was introduced at different time points (see figure 4 for the experimental procedures in different conditions). In the *choice-before-secrecy* condition, participants chose the painting at the beginning of the study and before they were given the game instructions; thus, it was clear to participants that this choice was made before they started to keep the secret (i.e., their spy role in the game). In the *choice-during-secrecy* condition, participants chose the painting after receiving game instructions and their game role assignment; thus, their choice was made during the time that they were keeping the secret (i.e., their spy role in the game). In the *choice-after-secrecy* condition, participants chose the painting after they were told that the game was canceled and they no longer had to keep their spy role a secret. In the *control* condition, participants did not receive any instruction about the spy game; they simply chose the painting.

After completing a second filler task, participants were asked to recall the painting choice they made previously and indicate any regret for their choice on the same three-item scale used in studies 1 and 2 (α = .80).

Figure 4

PROCEDURES OF STUDY 3



4.4.3.2. Results and Discussion

Comparing each secrecy condition with the control condition on decision regret, I found a significant difference between the choice-during-secrecy (M = 2.77, SD = 1.79) and control condition (M = 2.25, SD = 1.46; F(1, 178) = 4.74, p = .031; η_p^2 = .026). However, there was no significant difference on decision regret between the choice-before-secrecy condition (M = 2.53, SD = 1.82) and the control condition (F(1, 178) = 1.39, p = .241) or between the choice-after-secrecy condition (M = 2.23, SD = 1.66) and the control condition (F(1, 174) = .002, p = .963).

Consistent with my expectation, the choice-before-secrecy condition, the choice-after-secrecy condition, and the control condition did not differ significantly from each other (F(1,

258) = .91, p = .403). Thus, I pooled these three conditions and compared the result with the choice-during-secrecy condition. As expected, an analysis of variance (ANOVA) revealed a significant effect of secrecy on decision regret. Specifically, participants who made the consumption choice within the period of secret-keeping reported significantly higher regret for their choice (M = 2.77, SD = 1.79) than those who made the consumption choice before the secret-keeping period, after the secret-keeping period, or without keeping a secret (M = 2.34, SD = 1.64; F(1, 344) = 4.34, p = .038; η_p^2 = .012).

The secrecy manipulation did not have a significant impact on participants' positive (ps > .24) or negative mood (ps > .34).

The results of study 3 shed light on the proposed underlying mechanism of the effect. Consistent with my theorizing, I found that consumers' decision regret arose only when they felt that the choice was influenced by the secret-keeping (i.e., when the choice was made during the secret-keeping period). The effect disappeared when participants were aware that the choice was made either before they started to keep the secret or after they stopped keeping the secret.

An alternative explanation for the findings so far is that secret-keeping is aversive; thus it induces negative mood, which subsequently leads consumers to doubt and regret the choices they made under the negative mood (e.g., Creyer and Ross 1999). However, past literature has suggested that secrecy does not necessarily lead to negative mood (e.g., Vrij et al. 2002, 2003). Consistently, in the current study, I measured participants' mood and did not find any significant impact of the secrecy manipulation on mood. Therefore, it is unlikely that the observed effect was driven by mood.

4.5 GENERAL DISCUSSION

The present research found that the experience of secrecy increases consumers' regret about consumption decisions made during the period of secret-keeping. This effect occurs because secrecy makes consumers perceive themselves to be less authentic in decision-making; the perceived decision inauthenticity in turn increases the level of regret for the decision(s) made. Three experiments provide convergent evidence for this effect and the proposed underlying mechanism. Secret-keeping participants were more likely to regret the previous decisions they made and switch to other options (study 1). This effect was indeed mediated by the perceived inauthenticity during secrecy (study 2), and it only occurred when the decision was made during the period of secret-keeping (study 3).

The current research contributes to the secrecy literature (e.g., Kelly 2002; Slepian et al. 2012, 2017) by demonstrating a novel consequence of secrecy in the consumption domain, namely decision regret. Existing research about secrecy in the social psychology literature has mainly looked at the concealment of negative personal information and its consequences, such as secret-keepers' well-being, distress, spatial judgment, and physical health (e.g., Kelly 2002; Larson and Chastain 1990; Slepian et al. 2012). Only recently have researchers started to look at the impact of secrecy on consumer behavior (e.g., Rodas and John 2019; Thomas and Jewell 2018; Yang, Deng, and Jia 2018). This research adds to this stream of literature by demonstrating that the experience of secrecy leads to perceived decision inauthenticity and in turn influences secret-keepers' attitude toward their decisions made within the period of secret-keeping. In addition, I show that secrecy can affect people's decision regret in situations where keeping the

secret seems to be unrelated to the decisions made, testifying to just how much secrets weigh on people.

The current research contributes to the literature on regret by identifying a new antecedent of regret—secrecy. Existing literature suggests that regret can be induced by decision-related factors such as choice nature, outcome feedback, and information about alternatives (Inman and McAlister 1994; Inman and Zeelenberg 2002; Tsiros and Mittal 2000; Zeelenberg, van Dijk, and Manstead 2000). However, little research pays attention to factors that are not directly related to the decision made. Consistent with the argument that people may not judge a decision solely on its objective value but also on its psychological utility, and that psychological utility can be influenced by decision-unrelated factors such as incidental experiences (e.g., Kramer and Block 2008; Ma and Roese 2014), I find in the current research that decision regret can be induced by one incidental factor—the experience of keeping secrets. I show that the experience of secret-keeping influences consumers' decision regret by changing their perceived decision authenticity during secret-keeping. I hope that this research can stimulate future studies on the incidental antecedents of decision regret.

Maintaining a sense of authenticity in daily life is critical for human beings (Ryan and Deci 2000). Authenticity is shown to be associated with positive states of consciousness such as decision satisfaction, well-being, perceived meaningfulness, and self-development (Kernis and Goldman 2005; Schlegel and Hicks 2011; Schlegel et al. 2009). Exploring the antecedents and consequences of decision (in)authenticity in the consumption domain, the current research extends this stream of literature by demonstrating that people's perceived decision authenticity can be influenced by incidental factors such as keeping a secret. I further show that once consumers feel that the decision they made was inauthentic, they are more likely to experience

regret and switch to other alternative options. Further research on antecedents and consequences of decision (in)authenticity is called for.

Last but not least, I contribute to the broad domain of social influence on consumer behavior. It is widely accepted that consumers' judgment and decision-making processes do not take place in a social vacuum (Dahl 2013). Most (if not all) decisions that consumers make are influenced by others surrounding them. For example, past research demonstrates the impact of various social influences on consumer behavior, such as social presence (e.g., Argo, Dahl, and Manchanda 2005; Dahl, Argo, and Morales 2012; Dahl, Manchanda and Argo 2001), social relationships (e.g., Duclos, Wan, and Jiang 2013; Lee and Shrum 2012; Mead et al. 2011; Wan, Xu, and Ding 2014), social comparison (e.g., Argo et al. 2006; Chan and Sengupta 2013; McFerran et al. 2010), and social status (e.g., Jiang, Zhan, and Rucker 2014; O'Guinn, Tanner, and Maeng 2015; Rucker and Galinsky 2008). Adding to this stream of research, I look at the impact of secrecy—a unique phenomenon caused by the interpersonal concealment of information—on the reflection of oneself and subsequent consumer behavior. Being among the first to examine the impact of this novel interpersonal construct on consumer behavior, I expect to see more marketing research on it.

Several alternative explanations were ruled out in the studies. As previously noted, it can be argued that the observed effect is driven by negative mood or ego threat (i.e., low self-esteem). Given that some personal secrets are negative secrets (e.g., cheating behavior, stigmatized identity, or bad work performance), and negative aspects of self can affect secret-keepers' self-evaluation, negative self-view may make people feel less satisfied with their decisions. Keeping negative personal secrets is shown to be associated with some negative consequences, such as negative mood (e.g., Frable, Platt, and Hoey 1998; Miranda and Storms

1989) or low self-esteem (e.g., Frable et al. 1998; Kelly and McKillop 1996). Therefore, mood or self-esteem may be alternative explanations when participants are keeping negative personal secrets. However, the current research studies secrecy from a broad perspective, including positive, neutral, and negative secrets that people keep. To completely rule out these alternatives, in Study 1 and Study 3 I employed an incidental secrecy manipulation in which participants were asked to hide neutral secrets (i.e., gender, study major, or game identity), and I found that the effect of secrecy still exists. In addition, I measured self-esteem in Study 1 and mood in Study 3, and found that the manipulation did not influence these variables. Considering all these factors, I believe it is not likely that the effects I observed were caused by these alternative explanations.

Findings of the current research have important managerial implications. The current research demonstrates one potential downside of highlighting secrecy in marketing promotion. That is, secrecy makes people perceive themselves to be less authentic in decision-making, which in turn increases their level of regret for decisions made. Since regret may negatively influence consumers' post-purchase behavior, such as repeat purchases, recommendations, product returns, and brand-switching behaviors, companies should avoid inducing consumer regret for their decisions. The findings suggest that when companies plan to highlight secrecy-related concepts in their television commercials or marketing campaigns, they should think carefully about the impact of evoking secrecy-related concepts on consumers' post-purchase regret and switching behavior. Secrecy may not be the optimal solution when companies aim to foster a long-term consumer-brand relationship.

The findings of this research offer practical insights into the factors that affect consumer regret. Customer satisfaction and loyalty are important in creating long-term value for companies (e.g., Anderson, Fornell, and Lehmann 1994; Bolton, Kannan, and Bramlett 2000) and, therefore,

companies are motivated to adopt marketing strategies (e.g., loyalty reward programs) to reduce decision regret and increase customer retention. In the current research, I have shown that consumers' decision regret and their subsequent switching behavior are influenced by their perceived authenticity during decision-making: Consumers who perceive that their consumption decisions are made based on their inauthentic self are more likely to regret and switch. These findings suggest that companies should encourage consumers to make consumption decisions by following their true self. Marketers can use advertisements to remind people to display their authentic self through the decision process. For example, Coke's "Be Yourself" campaign featured a girl realizing that she needed to be her genuine self and changing her formal clothes to casual ones before she drinks a bottle of Coke. Dove's "Real Beauty" campaign also encourages consumers to be authentic and true.

The current research has some limitations that must be noted. One limitation of this research is the order of the secrecy manipulation and product choice in studies 1 and 2. In studies 1 and 2, I asked participants to make a painting choice before they recall a secret that they were keeping. It is not clear whether participants perceived their choice to be made within the secret-keeping period or before the secret-keeping period. Future studies may adopt incidental manipulation used in study 3 to avoid the problem. Another limitation of this research is that I did not test the whole theoretical framework (i.e., secrecy → decision inauthenticity → regret → switching behavior) in study 2. Thus, future research could examine the whole link.

Several research directions are worthy of future exploration by marketing researchers. For example, it will be interesting to further examine the differences between incidental and inherent secrecy. Incidental secrets are task-based and usually personal and trivial compared to inherent secrets (Slepian et al. 2017), and people only hide incidental secrets for a short time.

However, an inherent secret is something that people voluntarily keep; it is longer lived than the incidental secret. Although both incidental secrecy and inherent secrecy manipulations have been adopted in previous research (e.g., Lane and Wegner 1995; Slepian et al. 2017), little is known about the difference in the consequences of the two kinds of secrets. The current research has shown that inherent secrets and incidental secrets have similar impacts on perceived decision inauthenticity and decision regret. Future research can further examine whether these two types of secrecy have similar effects on other consumer behavior.

As the current research has mainly examined the impact of keeping a personal secret on decision regret, future research can investigate how people perceive their previous decisions when they keep another's secret. People do not always keep their own secret—sometimes they hide information for others, especially for people to whom they feel close. It is likely that hiding others' secrets has the same impact on decision regret as keeping one's own secret since the hiding behavior itself makes people infer that they are inauthentic. On the other hand, hiding secrets for others is seen as a way to help others avoid negative consequences. It is also possible that keeping others' secrets reduces regret since people infer themselves to be good people based on their hiding behavior, and this general positive self-perception may enhance their confidence in their decision. Future research is needed to test these possibilities.

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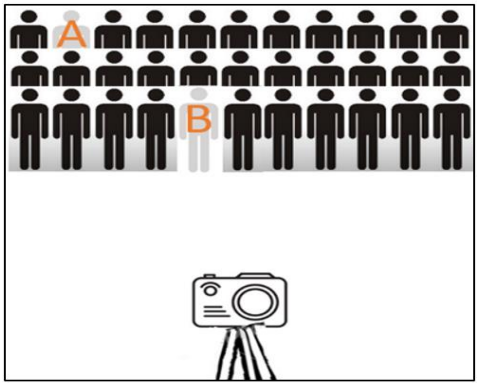
APPENDIXES

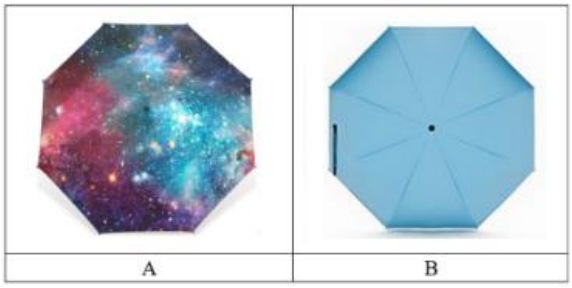
APPENDIX A

STUDY STIMULI (IN CHAPTER 3)

Photo task used in study 1a



Umbrellas used in studies 3 and 4



Airbag cellphone stand options used in study 2

APPENDIX B

MEASURES OF ALTERNATIVES IN STUDY 1B (IN CHAPTER 3)

1. Positive and Negative Affect Schedule (PANAS; Watson, Clark, and Tellegen 1988**)**
Please indicate how much you feel each of the following state descriptors. (1 = not at all, 9 = very much)

- Interested
- Excited
- Guilty
- Distressed
- Upset
- Strong
- Scared
- Hostile
- Enthusiastic
- Proud
- Irritable
- Alert
- Ashamed
- Inspired
- Nervous
- Determined
- Attentive
- Jittery
- Active
- Afraid

2. *Please indicate how much you feel the following state descriptor. (1 = not at all, 9 = very much)*

- **Anxiety**

3. *Please indicate how much you feel the following state descriptor. (1 = not at all, 9 = very much)*

- **Fear**

4. *Please indicate how much you feel the following state descriptor. (1 = not at all, 9 = very much)*

- **General Worry**

5. Feelings of depletion (Chan and Wan 2012**)**
Please indicate how much you feel each of the following state descriptors. (1 = not at all, 9 = very much)

I feel _____.

- Depleted
- Tired
- Fatigued

6. Feeling of isolation (Russell, Peplau, and Cutrona 1980**)**
To what extent do you agree with the following statements? (1 = strong disagree, 9 = strongly agree)

- There are people I feel close to. (R)
- I feel alone.
- I feel left out.
- I feel isolated from others.
- There are people I can turn to. (R)

7. Perceived morality (Walker and Hennig 2004**)**
Please indicate how much you feel each of the following state descriptors. (1 = not at all, 9 = very much)

I feel that I'm _____.

- Moral
- Generous
- Cooperative
- Helpful
- Loyal to others
- Dependable
- Trustworthy
- Reliable
- Caring
- Respectful

8. Perceived self-uniqueness (Simsek and Yalınçetin 2010**)**
To what extent do you agree with the following statements? (1 = strong disagree, 9 = strongly agree)

- I feel that some of my characteristics are completely unique to me.
- As people get to know me more, they begin to recognize my special features.
- I feel I'm unique.
- I cannot think of many special characteristics that distinguish me from others. (R)
- I think that the characteristics that make me up are different from others.

9. Self-esteem (Rosenberg 1965**)**
To what extent do you agree with the following statements? (1 = strong disagree, 9 = strongly agree)

- On the whole, I am satisfied with myself.
- At times I think I am NO good at all. (R)
- I feel that I have a number of good qualities.

- I am able to do things as well as most other people.
- I feel I do NOT have much to be proud of. (R)
- I certainly feel useless at times. (R)
- I feel that I'm a person of worth, at least on an equal plane with others.
- I wish I could have more respect for myself. (R)
- All in all, I am inclined to feel that I am a failure. (R)
- I take a positive attitude toward myself.

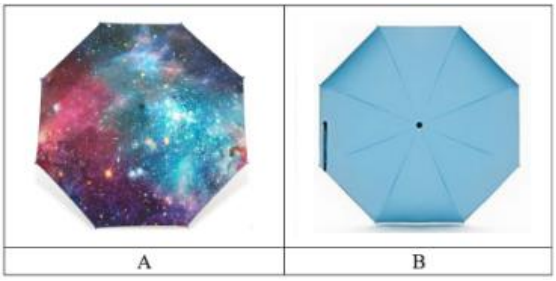
C. STATISTICS OF ALTERNATIVES IN STUDY 1B

Alternative	Cronbach's α	$M_{secrecy}$	$M_{control}$	p
Mood (i.e., PANAS)	*.90*	6.62	6.68	*.784*
Guilt (measured in PANAS)	/	2.84	2.20	*.127*
Anxiety	/	3.64	3.15	*.338*
Fear	/	2.68	2.15	*.208*
General Worry	/	3.05	2.75	*.512*
Feeling of depletion	*.90*	3.53	3.44	*.839*
Feeling of isolation	*.83*	3.10	3.10	*.997*
Perceived morality	*.95*	7.63	7.59	*.880*
Perceived self-uniqueness	*.83*	6.90	6.62	*.316*
Self-esteem	*.91*	6.89	6.86	*.907*

APPENDIX C

PRETEST OF THE DEPENDENT MEASURES AND ARTICLES (IN CHAPTER 3)

1. Dependent measure in studies 3 and 4



To validate that these two umbrellas did differ in perceived conformity, I conducted an independent pretest from the same subject pool (N = 44). In the pretest, after being introduced to the definition of conformity, participants saw the two umbrellas and judged the extent to which

using each umbrella indicates conformity or nonconformity, on a 9-point scale (1 = conformity, 9 = nonconformity). They also judged the attractiveness of the umbrellas on a 9-point scale (1 = not attractive at all, 9 = very attractive). As expected, participants believed that using the conforming umbrella (M = 2.93, SD = 2.41) represented a higher level of conformity than using the nonconforming umbrella (M = 5.86, SD = 2.22; $t(43) = 4.93$, $p < .001$), but the two umbrellas did not differ on attractiveness (M = 5.07, SD = 2.23 vs. M = 5.52, SD = 2.61, respectively; $t(43) = .81$, $p = .421$).

2. Dependent measure in study 2

			
Option A	Option B	Option C	Option D

An independent pretest from the same subject pool (N = 32) validated that the two conforming product options and the two nonconforming ones differed in perceived conformity. In the pretest, after being introduced to the definition of conformity, participants indicated how much using each option showed conformity (1 = conformity, 9 = nonconformity) and how attractive each product option is (1 = not attractive at all, 9 = very attractive). Results revealed that the four options did not differ in attractiveness (M = 3.25, SD = 2.06; M = 3.56, SD = 1.91; M = 3.78, SD = 2.01; M = 3.56, SD = 1.92; all ts < 1.22, all ps > .232). There was also no significant difference in perceived conformity between the two conforming options (M = 4.72, SD = 1.78; M = 4.94, SD = 1.95; $t(31) = -.793$, $p = .434$), and no significant difference in perceived conformity between the two nonconforming options (M = 5.75, SD = 2.17; M = 5.72, SD = 1.65; $t(31) = .082$, $p = .935$). However, there was significant difference between each conforming option and nonconforming option in perceived conformity (all ts > 2.29, all ps < .029). After pooling over the two conforming options, and pooling over the two nonconforming options, I found that the two conforming options were viewed as representing a higher level of conformity (M = 4.83, SD = 1.70) than the two nonconforming ones (M = 5.73, SD = 1.60; $t(31) = 4.47$, $p < .001$), but they did not differ in attractiveness (M = 3.67, SD = 1.52 vs. M = 3.41, SD = 1.64, respectively; $t(31) = -1.07$, $p = .294$).

3. Pretest of articles used in study 3

I did an independent pretest from the same subject pool (N = 89) to validate the effectiveness of the perceived attention manipulation. Participants were randomly assigned to either a high-attention condition or a low-attention condition. Participants read the article and answered three manipulation-check questions (α = .91): 1) ___ people pay attention to me than I think (1 = few, 9 = more); 2) I receive ___ attention from others than I think (1 = less, 9 = more);

and 3) I think my behavior is ___ noticed by others (1 = not easily at all, 9 = very easily). Results indicated that participants in the high-attention condition felt that they got more attention from others (M = 6.65, SD = 1.80), compared to those in the low-attention condition (M = 3.30, SD = 2.11; $F(1, 87) = 65.06$, $p < .001$).

4. Pretest of articles used in study 4

I did an independent pretest (N = 80) to validate the effectiveness of the self-control manipulation. Participants in this pretest were randomly assigned to either a high self-control condition or a low self-control condition. Participants in the high (vs. low) self-control condition read the article showing that people are good (vs. bad) at self-control, then they indicated their agreement with four statements regarding their perceived self-control capacity (e.g., "I can control my own behavior"; α = .94; Tangney et al. 2004) on 9-point scales (1 = strongly disagree, 9 = strongly agree). Results indicated that participants in the high self-control capacity condition (M = 7.67, SD = 1.20) reported a higher level of self-control than did participants in the low self-control condition (M = 5.89, SD = 1.92; $F(1, 78) = 24.07$, $p < .001$).

APPENDIX D

ARTICLES USED IN STUDY 3 (IN CHAPTER 3)

Low-attention condition:

Research shows that people actually receive much less attention from others than they assume.

By Frank Tarlach December 29, 2017 8:32 am

We sometimes find ourselves in situations where our behavior may potentially attract other people's attention—for instance, when we spilled our drink on a stranger, put our foot in our mouth during an important conversation, tripped on the stairs in a crowded area, or simply had to face the world on a real bad hair day.

When we find ourselves in one of these situations, we naively believe that there will be many people watching us. However, according to social psychology research, the number of people who will notice our behavior is likely to be much smaller than we imagine, as we tend to overestimate how much our actions and appearance are noticed by others—something social psychologists call the "spotlight effect."

The "spotlight effect" refers to the illusion that one's actions and appearance are more likely to be noticed, judged, and remembered by others than is actually the case. Dozens of studies in social psychology have supported this perception bias. In one test conducted by Tom Gilovich and colleagues, some students wore bright yellow Barry Manilow t-shirts to a large introductory psychology class. The participants were then asked to estimate how many people in the class they thought had noticed. They greatly overestimated the number of people who paid attention to them.

Findings from this stream of research suggest that we get much less attention from others than we think.

High-attention condition:

Research shows that people actually receive much more attention from others than they assume.

By Frank Tarlach December 29, 2017 8:32 am

We sometimes find ourselves in situations where our behavior may potentially attract other people's attention—for instance, when we spilled our drink on a stranger, put our foot in our mouth during an important conversation, tripped on the stairs in a crowded area, or simply had to face the world on a real bad hair day.

When we find ourselves in one of these situations, we naively believe or hope that there will not be many people watching us. However, according to social psychology research, the number of people who will notice our behavior is likely to be much larger than we imagine, as we tend to underestimate how much our actions and appearance are noticed by others—something social psychologists call the "floodlight effect."

The "floodlight effect" refers to the illusion that one's actions and appearance are less likely to be noticed, judged, and remembered by others than is actually the case. Dozens of studies in social psychology have supported this perception bias. In one test conducted by Tom Gilovich and colleagues, some students wore bright yellow Barry Manilow t-shirts to a large introductory psychology class. The participants were then asked to estimate how many people in the class they thought had noticed. They greatly underestimated the number of people who paid attention to them.

Findings from this stream of research suggest that we get much more attention from others than we think.

Baseline condition:

Parrots: Are They the Humans in Birds' Realm?

By Frank Tarlach December 29, 2017 8:32 am

Parrots are famous for their good imitations of human words and laughter. Actually, in addition to "speaking" human words, parrots are surprisingly similar to human beings, as facts about them reveal. Parrots live in the warm areas of the Southern Hemisphere. Australia, South America, and Central America have the greatest diversity of parrot species. The most adopted habitat temperature is, like humans, around 75° F (24° C).

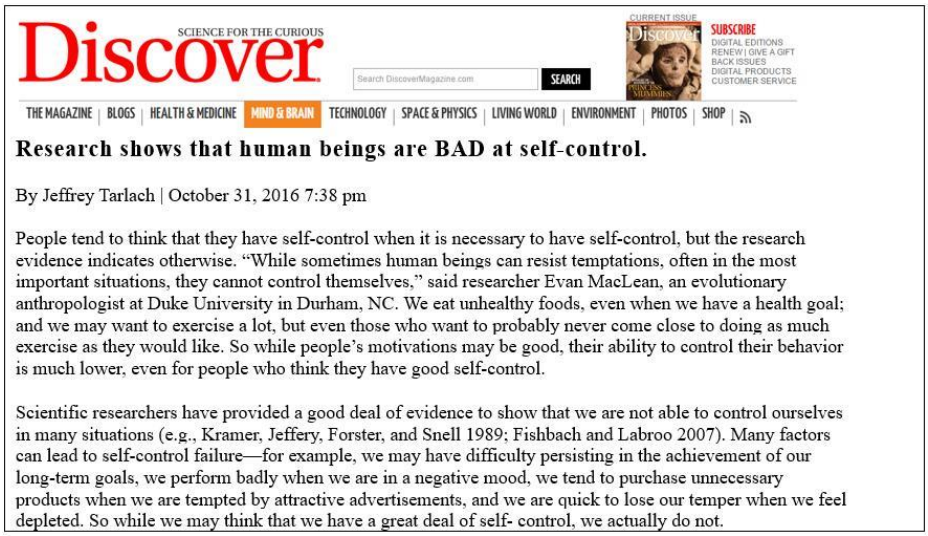
Most parrots are social birds that live in groups called flocks. African grey parrots live in flocks with 20 to 30 birds, a number that corresponds to the ideal number of people in a person's core social network. They are monogamous and spend their lives with only one mate. The mates work together to raise their young.

Parrots are also omnivores—they eat meat as well as vegetables, fruits, and legumes. Most parrots eat a diet that contains nuts, flowers, fruit, buds, seeds, and insects. Seeds are their favorite food. They have strong jaws that allow them to snap open nutshells to get to the seed that's inside. Parrots are the most popular bird pets for humans. The reason for this may not be limited to the fact that they can talk like a human, but that they are actually the closest to humans in the birds' realm.

APPENDIX E

ARTICLES USED IN STUDY 4 (IN CHAPTER 3)

Low self-control condition:



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Research shows that human beings are BAD at self-control.

By Jeffrey Tarlach | October 31, 2016 7:38 pm

People tend to think that they have self-control when it is necessary to have self-control, but the research evidence indicates otherwise. "While sometimes human beings can resist temptations, often in the most important situations, they cannot control themselves," said researcher Evan MacLean, an evolutionary anthropologist at Duke University in Durham, NC. We eat unhealthy foods, even when we have a health goal; and we may want to exercise a lot, but even those who want to probably never come close to doing as much exercise as they would like. So while people's motivations may be good, their ability to control their behavior is much lower, even for people who think they have good self-control.

Scientific researchers have provided a good deal of evidence to show that we are not able to control ourselves in many situations (e.g., Kramer, Jeffery, Forster, and Snell 1989; Fishbach and Labroo 2007). Many factors can lead to self-control failure—for example, we may have difficulty persisting in the achievement of our long-term goals, we perform badly when we are in a negative mood, we tend to purchase unnecessary products when we are tempted by attractive advertisements, and we are quick to lose our temper when we feel depleted. So while we may think that we have a great deal of self- control, we actually do not.

High self-control condition:

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Research shows that human beings are GOOD at self-control.

By Jeffrey Tarlach | October 31, 2016 7:38 pm

Human beings are good at self-control, and it is common to see them successfully regulate their behavior and resist temptations and impulses. "In the most important situations, usually we can control ourselves," said researcher Evan MacLean, an evolutionary anthropologist at Duke University in Durham, NC. Scientists have developed a large body of evidence to explain why we have evolved to be so good at controlling ourselves relative to other species.

Scientific researchers offer evidence to show that we are able to control ourselves when pursuing beneficial, healthful, and virtuous goals (e.g., Kramer, Jeffery, Forster, and Snell 1989; Fishbach and Labroo 2007). We can successfully resist the temptation of unhealthy food when pursuing a health goal, control our bad temper, refuse things that are bad for us, stop ourselves from doing something wrong, work effectively toward long-term goals, keep everything neat and clean, avoid drugs and alcohol, exercise regularly, spend less and save more, or act after carefully thinking through all the alternatives.

Baseline condition:

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APPENDIX F

STUDY STIMULI (IN CHAPTER 4)

Pens used in Study 1

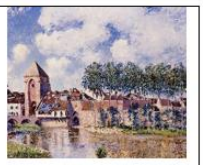
Paintings used in Studies 2 and 3

Painting A

Painting B

Painting C

Painting D



Painting E

APPENDIX G

SAMPLE QUESTIONS OF THE HOBBY SURVEY USED IN STUDY 1 (IN CHAPTER 4)

How often do you swim?

( ) Never

( ) Sometimes

( ) About half the time

( ) Most of the time

( ) Always

Please write down one or two sentences to describe anything **you know about badminton, such as equipment, players, skills, etc.**

_____

_____

Please rank the following hobbies according to your preference (1 being the favorite hobby).

Watching TV; visiting museums; singing; playing table tennis; making coffee

1._____

2._____

3._____

4._____

5._____

Please write down the name of a movie you like**, and** use one to three sentences to summarize the movie.

_____

_____