

## Consumer Adoption of New Products: Independent versus Interdependent Self-Perspectives

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### **Abstract:**

In five studies, the authors examine the impact of an independent (vs. interdependent) mindset on consumer adoption of new products. Study 1 demonstrates that consumers in a predominantly independent (vs. interdependent) culture are more willing to adopt really new products, whereas consumers in a predominantly interdependent (vs. independent) culture are more willing to adopt incrementally new products. Studies 2 and 3 conceptually replicate these findings using situationally activated mindsets and demonstrate that this effect is driven by the perceived fit between the product's newness level and the optimal level of distinctiveness consumers want. Finally, Studies 4a and 4b show that the presence of distinctiveness-dampening cues (i.e., popularity cues) and distinctiveness-enhancing cues (i.e., scarcity cues) can reverse the effect of self-perspective such that the independent self becomes less willing to adopt really new products and more willing to adopt incrementally new products than does the interdependent self. These findings offer practical implications for managing innovation adoption in both domestic and international marketplaces.

**Keywords:** new product adoption | distinctiveness utility | self-construal

### **Article:**

When designing and introducing new products, firms often focus on the products' functionality—that is, the specific benefits that the products provide or the specific problems they address (Ziamou and Ratneshwar 2003). Marketers of hybrid vehicles, for example, may focus on reduced fuel costs, and marketers of smartphones may focus on the tasks the phones can accomplish. Ironically, firms often neglect the implications of a more obvious factor: owning a new product can make consumers feel different from others. Consider an early adopter of hybrid vehicles. While congratulating herself on the reduced fuel costs, the adopter may also get (dis)satisfaction from the discovery that she is the first owner of a hybrid vehicle in town. Research has shown that the differentness or distinctiveness of a product, beyond the product's functionality, can significantly affect consumer decision making (Berger and Heath 2007). Because new products vary in their degree of newness (Hoeffler 2003) and because consumers differ in how much they value being different (Berger and Heath 2007), it is important to

identify antecedents that affect consumers' valuation of the sense of distinctiveness new products offer. In this research, we propose that one of the antecedents is consumers' self-construal.

Self-construal refers to the perceptions that people have about their thoughts, feelings, and actions in relation to others (Markus and Kitayama 1991). Self-construal theory recognizes two perspectives or concepts about the self: the independent self and the interdependent self (Markus and Kitayama 1991). People whose independent self-perspective is salient ("independents") view the self as autonomous and separate from others. People whose interdependent self-perspective is salient ("interdependents") view the self as connected with others. Cultural environments can make a particular self-perspective chronically salient, resulting in cultural differences in individualism–collectivism (Markus and Kitayama 1991). Moreover, the two mindsets coexist in a person's memory, and situational contexts can activate a particular mindset (Aaker and Lee 2001). Because of the cultural and situational variations in how consumers view the self, examining the effect of self-construal on consumer adoption of new products can offer important insights on innovation management both within and across countries.

Because independents are oriented toward self–others differentiation and interdependents toward self–others assimilation, it seems intuitive to assume a simple relationship between self-construal and innovation adoption. That is, independents (vs. interdependents) should be more willing to adopt new products as means of asserting distinctiveness. The idea of a simple link between self-construal and new product adoption may also be inferred from other findings in the literature. For example, research has shown different self-perspectives to trigger different regulatory foci. Independents tend to be more promotion-focused and less prevention-focused than interdependents (Aaker and Lee 2001). Furthermore, promotion-focused consumers are more likely to adopt new products than prevention-focused consumers (Herzenstein, Posavac, and Brakus 2007). Thus, these findings also suggest that independents (vs. interdependents) would be more willing to adopt new products. However, we believe that the link between self-construal and preferences for new products is more nuanced.

Drawing on optimal distinctiveness theory, we posit that the effect of self-construal on new product adoption is contingent on the newness of the product. Specifically, we propose that independents are more likely to adopt really new products (RNPs) than interdependents. More importantly, interdependents are more likely to adopt incrementally new products (INPs) than independents. These effects, we argue, are driven by the perceived fit between the product's newness level and the optimal level of distinctiveness that the independent and interdependent selves want. Specifically, independents (vs. interdependents) derive a higher distinctiveness utility from RNPs, whereas interdependents (vs. independents) derive a higher distinctiveness utility from INPs.

To the extent that perceived distinctiveness utility drives self-related preference for newness, we further propose that socially significant contextual cues that increase or decrease the perceived distinctiveness utility of the products can reverse self-related preferences for INPs and RNPs. Specifically, distinctiveness-dampening cues (popularity cues) and distinctiveness-enhancing cues (scarcity cues) induce divergent responses between the two self-perspectives such that independents can become less willing to adopt RNPs and more willing to adopt INPs than interdependents.

## Self-Related Distinctiveness Needs

Optimal distinctiveness theory (ODT) argues that two competing needs drive the quest for social identity: the need to differentiate oneself from others and the countervailing need to assimilate oneself with others (Brewer 1991). People feel uncomfortable when they are overly similar to or different from others. They resolve the tension between the two opposing needs by seeking a desired level of distinctiveness. The ODT recognizes individual and cultural differences in distinctiveness needs. For example, the equilibrium between the needs for differentiation and assimilation occurs at lower degree of distinctiveness in collectivistic than in individualistic cultures (Triandis 1995). Thus, independents' (vs. interdependents') sense of desired distinctiveness is characterized by a greater need for differentiation (or a lesser need for assimilation).

However, interdependents' lower equilibrium on the assimilation–differentiation continuum does not preclude a need for distinctiveness. An important premise of the ODT is that distinctiveness is a universal human need and has an essential role in the very definition of self (Vignoles, Chryssochoou, and Breakwell 2000). The distinction between self and others arises very early in life, and the absence of this distinction has severe impact on psychological well-being (Damon and Hart 1988; Vignoles, Chryssochoou, and Breakwell 2000). Owing to its centrality to self-definition, distinctiveness need shapes the cognition and behavior of both interdependents and independents (Vignoles, Chryssochoou, and Breakwell 2000). Consistent with this proposition, members of collectivistic cultures (e.g., Japan) tend to view the group as consisting of interdependent yet distinct individuals rather than depersonalized constituents (Yuki 2003). Instead of gravitating toward outright undifferentiation, people in such cultures actively seek distinctiveness both cognitively and behaviorally (Hornsey and Jetten 2004; Sedikides, Gaertner, and Toguchi 2003; Vignoles, Chryssochoou, and Breakwell 2000). We can therefore posit that interdependents are motivated to engage in distinctiveness-enhancing behaviors, and more so than independents when the decision objects fit their self-related distinctiveness needs. In this research, we define self-related distinctiveness needs as a person's drive to seek an optimal level of differentiation as determined by the salient self-perspective. By this definition, self-related distinctiveness needs reflect the quest for a desired level of distinctiveness, or an optimal balance between differentiation and affiliation. This definition also implies that self-related distinctiveness needs are dynamic in that they shift with salient self-perspectives.

Prior marketing research has investigated the effect of need for uniqueness (Berger and Heath 2007; Tian, Bearden, and Hunter 2001). This line of research conceptualizes need for uniqueness as the quest for nonconformity or differentness from others. This literature stream shows that people with a higher need for uniqueness desire greater differentiation from others. Self-related distinctiveness needs and need for uniqueness are related in that they both imply the pursuit of differentiation. However, the two constructs are also distinct. Self-related distinctiveness needs emphasize the quest for a desirable balance between differentiation and assimilation. As such, its measurement should reflect these two opposing needs. In contrast, need for uniqueness emphasizes the differentiation needs and is best captured by unipolar measurements (Tian, Bearden, and Hunter 2001). Moreover, previous research has conceptualized need for uniqueness primarily as a personality trait (Chan, Berger, and Van Boven 2012). The present study

complements and extends prior research on need for uniqueness by taking a dynamic view of distinctiveness needs. We argue that distinctiveness needs vary with situationally activated self-perspectives to influence decision making. In view of the dynamic nature of distinctiveness needs, we argue that a higher (lower) need for distinctiveness associated with a particular self-view does not invariably translate into a higher (lower) propensity to adopt new products. What drives consumers' propensity to adopt an innovation is the degree to which the perceived distinctiveness utility of the product matches self-related distinctiveness needs.

### **Role of Product Newness**

A product attribute that is directly related to distinctiveness needs is the newness of the product. Although newness can be viewed from many perspectives (Garcia and Calantone 2002), we define it as the degree of discontinuity in product functionality and technological innovativeness as perceived by consumers. This definition is in line with the prevailing conceptualization of newness in extant marketing literature (Moreau, Lehmann, and Markman 2001). Prior research has distinguished RNPs and INPs in terms of newness (Hoeffler 2003). Really new products are innovations that create a new product category or subcategory rather than reallocating market shares within an established one (Moreau, Lehmann, and Markman 2001). Because RNPs typically represent one-of-a-kind products adopted by a small number of consumers, such products often have higher differentiating power. In contrast, INPs represent a refinement of established products used by the majority (Min, Kalwani, and Robinson 2006) and thus have moderate differentiating power.

However, the high (low) newness of RNPs (INPs) does not necessarily translate into high (low) distinctiveness utility to consumers. We define "distinctiveness utility" as the product's perceived ability to provide a desired sense of distinctiveness. Distinctiveness utility is not equivalent to the newness of the product. Indeed, consumers may experience a product with a given level of newness as overly assimilating, desirably distinctive, or overly differentiating depending on the consumer's salient self-perspective. Because of their radicalness, RNPs will be more congruent with the level of distinctiveness that independents (vs. interdependents) desire. In other words, independents will derive more distinctiveness utility from RNPs and, consequently, will be more likely to adopt RNPs than will the interdependents.

Perhaps more importantly, the notion of self-related distinctiveness needs also predicts that interdependents (vs. independents) will be more willing to adopt INPs. As we discussed previously, interdependents desire assimilation with others but still value self-others differentiation. Incrementally new products stem from existing products used by the majority, but they also offer new features or functionalities. Thus, INPs are ideal for satisfying interdependents' relatively high assimilation needs as well as their distinctiveness needs. Incrementally new products will not be as attractive to independents because of their lower need for assimilation and higher need for differentiation. Thus, inter-dependents will derive more distinctiveness utility from INPs and, consequently, will be more likely to adopt INPs than will the independents.

At first glance, our predictions may seem consistent with a regulatory focus-based account, making our self-related distinctiveness explanation redundant. As we mentioned previously,

independents are, in general, more promotion focused and less prevention focused than interdependents (Aaker and Lee 2001). In addition, Herzstein, Posavac, and Brakus (2007) show that promotion-focused consumers are more likely to prefer new products than are prevention-focused consumers, though their study did not explicitly distinguish INPs and RNPs. However, self-construal and regulatory focus, despite being related, are conceptually distinct, and one construct cannot substitute for the other. As an identity-related construct, self-construal is multifaceted and has a wider scope of representations than regulatory focus. Research has shown that the independent and interdependent self-concepts trigger different social orientations (Markus and Kitayama 1991), thinking styles (analytic vs. holistic; Zhu and Meyers-Levy 2009), and goal orientations (promotion vs. prevention). However, the most important difference between the two selves lies in social orientation (i.e., differentiation vs. affiliation), which is the basis for the definition of self-construal (Markus and Kitayama 1991). In contrast, regulatory focus reflects differences in approach/avoidance orientations (Higgins 1997).

The distinction between self-construal and regulatory focus suggests that the two constructs are likely to affect innovation adoption tendency for INPs and RNPs through different mechanisms. Whereas the effect of self-construal is substantiated by self-related distinctiveness, the effect of regulatory focus operates through perceived risk (Herzstein, Posavac, and Brakus 2007). Research has shown that regulatory focus affects a person's sensitivity to benefits and risks such that prevention-focused (vs. promotion-focused) consumers are more sensitive to potential risks and less sensitive to potential benefits (Chernev 2004). Thus, promotion-focused consumers will be more willing to adopt RNPs than prevention-focused consumers because of the high benefits and risks associated with such products. In summary, the independent perspective and the promotion focus both enhance the tendency to adopt RNPs, albeit through different mechanisms (distinctiveness utility vs. risk).

However, the effects of self-construal and regulatory focus will likely diverge when the decision object is an INP. Because of their greater sensitivity to losses, prevention-focused consumers tend to have a stronger status quo bias than promotion-focused consumers (Chernev 2004). In the context of product choice, the status quo bias often results in inaction or avoidance (e.g., shunning the decision object) (Chernev 2004). Given the robustness of the status quo bias associated with prevention focus across decision domains involving different risks (Chernev 2004; Higgins 1997), we expect that the avoidance tendency associated with prevention focus will override the tendency to seek benefits, thereby dampening adoption intention for both INPs and RNPs.

Although an interdependent mindset may co-occur with a prevention focus, the effect of having an interdependent mindset on risk-aversion bias, if any, will not be as pronounced as the effect of directly activating the prevention focus, given the conceptual differences between self-construal and regulatory focus. As we discussed previously, the interdependent mindset motivates consumers to seek self-relevant distinctiveness through new product adoption. This discussion leads to the following hypothesis:

H<sub>1</sub>: The effect of self-construal on consumer new product adoption is contingent on the newness of the product. Specifically, independents are more willing to adopt RNPs than

are interdependents, whereas interdependents are more willing to adopt INPs than are independents.

Our discussion also suggests that perceived distinctiveness utility associated with the product mediates the interplay between self-construal and newness. That is, independents and interdependents diverge in the sense of optimal distinctiveness they derive from INPs and RNPs. Whereas independents derive more distinctiveness utility from RNPs than interdependents, interdependents derive more distinctiveness utility from INPs than independents. The divergent perceptions of distinctiveness utility between the two self-perspectives will substantiate the self-related preferences for INPs and RNPs. In summary, we hypothesize the following:

H<sub>2a</sub>: Independents and interdependents diverge in the distinctiveness utility they derive from INPs and RNPs. Whereas independents perceive more distinctiveness utility in RNPs than interdependents, interdependents perceive more distinctiveness utility in INPs than independents.

H<sub>2b</sub>: Perceived distinctiveness utility mediates the joint effect of self-construal and newness on innovation adoption stated in H1.

### **The Role of Contextual Cues**

The distinctiveness utility mechanism suggests that independents' and interdependents' preferences for INPs and RNPs can increase or decrease if the products' perceived distinctiveness utility is shifted toward or away from self-related distinctiveness needs. One way of shifting perceived distinctiveness utility is through the use of socially significant cues. Popularity cues, which we define as extrinsic information that signals the wide acceptance of the product among consumers (Bearden and Etzel 1982), are a type of distinctiveness-dampening cue. Popularity cues often take the form of social proofs, such as a product experiencing a "growing list of customers" or gaining best-seller status (Gierl and Huettl 2010). Because popularity cues signal the product as a normative choice of the majority, they tend to decrease the differentiating power of the product.

A type of distinctiveness-enhancing cue is the scarcity cue, which we refer to as information that signals the product's rarity. Marketers often strategically deploy scarcity cues by restricting the quantity of supply or the availability period or by framing the product as a special offering (Shen 2011). Scarcity cues typically increase the perceived distinctiveness of the product (Gierl and Huettl 2010). Note that popularity cues and scarcity cues pertain to the social value of the products and do not necessarily relate to the functional risks or benefits. Thus, establishing the moderating effect of these cues on self-related product preferences can further attest to the distinctiveness utility mechanism.

Contextual cues often interact with intrinsic product attributes (e.g., newness) to affect product evaluations (Carlson 2006). However, consumers tend to process attribute-based information and contextual cues hierarchically; consequently, these types of information tend to have asymmetric effects on product evaluation (Park and Smith 1989). In general, attribute-related information assumes primacy over contextual cues such that contextual cues will not influence product

evaluation unless they provide additional diagnostic information beyond what consumers can infer from the intrinsic product attributes (Park and Smith 1989). Building on the notion of hierarchical processing, we propose that popularity cues and scarcity cues will not influence innovation adoption when they do not add to or weaken the inherent distinctiveness utility associated with the product. Therefore, contextual cues can alter, reverse, or have no effect on the pattern of self-related product preferences for INPs and RNPs, depending on how such cues influence the distinctiveness utility of the products.

### The Effect of Popularity Cues

The differentiating power of RNPs is driven largely by the small number of adopters. Providing popularity cues can result in the perception of RNPs as a normative choice and as less differentiating. As a result, popularity cues will make RNPs less congruent with independents' desired distinctiveness. Conversely, popularity cues will make the RNPs more attractive to interdependents because such cues shift the distinctiveness utility toward the level they desire. Thus, providing popularity cues will enhance (dampen) the adoption intention of interdependents (independents) toward RNPs. As a result of the divergent changes in adoption propensity, interdependents will be more willing to adopt RNPs than independents.

Unlike RNPs, INPs have inherently limited differentiating power (or relatively high assimilating power) because such products directly stem from status quo products. Therefore, popularity cues are unlikely to further decrease the differentiating power of INPs, as the hierarchical processing model predicts. Because popularity cues do not affect the differentiating power of INPs, they will have little impact on independents' or interdependents' tendency to adopt INPs.

H<sub>3a</sub>: Providing popularity cues decreases (increases) independents' (interdependents') adoption propensity toward RNPs.

H<sub>3b</sub>: Providing popularity cues makes interdependents (vs. independents) more willing to adopt RNPs.

H<sub>3c</sub>: Popularity cues do not affect independents' or inter-dependents' adoption propensity toward INPs.

### The Effect of Scarcity Cues

Likewise, scarcity cues will also have an asymmetrical effect on the adoption decision of the independents versus the inter-dependents. The differentiating power of scarcity cues will be particularly pronounced for INPs because of the inherently low uniqueness of such products. Scarcity cues are likely to enhance the perceived exclusiveness of INPs, thereby making such products more congruent with the distinctiveness needs of independents but less congruent with those of interdependents. Thus, scarcity cues will enhance (dampen) the adoption intention of independents (interdependents) toward INPs. As a result of independents' (interdependents') increased (decreased) adoption intention, independents will be more willing to adopt INPs than will interdependents.

In contrast, RNPs have inherently high differentiating power as a result of their intrinsic novelty. Thus, for both independents and interdependents, scarcity cues are unlikely to further increase the differentiating power of RNPs. As such, scarcity cues will not alter the perceived distinctiveness utility and the adoption tendency of either independents or interdependents for RNPs.

H<sub>4a</sub>: Scarcity cues increase (decrease) the adoption propensity of independents (interdependents) toward INPs.

H<sub>4b</sub>: Scarcity cues make independents (vs. interdependents) more willing to adopt INPs.

H<sub>4c</sub>: Scarcity cues do not affect the adoption propensity of independents or interdependents toward RNPs.

We test our hypotheses across five studies, using both student and general population samples and both survey and experimental methods. Study 1 operationalizes self-construal as national cultural values and examines cross-country differences in the adoption of INPs and RNPs. Study 2 examines the effect of situationally primed self-construal. Study 3 replicates Study 2 and tests the psychological mechanism using different experimental stimuli and a behavioral measure of adoption. Studies 4a and 4b test the moderating role of popularity cues and scarcity cues on self-related product preferences.

## **Study 1**

Using behavioral data from the United States and Japan, Study 1 tests the hypothesis that the effect of self-construal on consumer innovation adoption is contingent on newness (H<sub>1</sub>). We operationalize self-construal as national cultural values and examine the differences in actual adoption of INPs and RNPs between countries. Extant literature has long regarded the United States and Japan as typifying the individualistic and collectivistic cultures, respectively (Markus and Kitayama 1991). Moreover, the two countries have comparable economic development, thereby offering adequate control for cultural contrasts.

### **Participants, Procedure, and Measures**

We asked a sample of U.S. and Japanese consumers to indicate their actual purchase of INPs and RNPs through an online survey. We recruited 1,200 participants, divided equally between the two countries, from online panels administered by a market research company (Critical Mix). The median household income of the U.S. sample is \$54,000, whereas the median household income of the Japanese sample is x5,000,000 (approximately \$58,823 based on an average exchange rate of US\$1 to x85 from 2009 to 2013). The U.S. sample consists of 195 men (32.50%), whereas the Japanese sample consists of 298 men (49.67%). The average age of the U.S. and Japanese samples is 41 years (SD = 12 years) and 46 years (SD = 11 years), respectively. We had the survey questionnaire translated from English into Japanese by a professional translator and then back-translated into English by a second translator to ensure equivalency between languages.

We showed participants, in a random order, verbal descriptions of six pairs of INPs and RNPs that fall into six product categories (for details, see Table 1). Participants indicated, in a yes/no format, whether they had bought each product for their own use. For the products that they bought, they indicated the specific year of purchase. We measured chronic self-construal using the Self-Construal Scale (Singelis 1994; Singelis et al. 1995), as Appendix A shows. We indexed both self-perspectives using the average of their scale items ( $\alpha > .85$ ). We measured two control variables. The first is perceived importance of the product category (1 = “not at all important,” and 7 = “extremely important”). The second is innate innovativeness of the consumers, which we measured using two seven-point items (“In general, how willing are you to purchase new products?” and “How often do you buy products that have been adopted by very few others?”) ( $\alpha = .84$ ). To account for potential differences in response bias between countries, we standardized (z-transformed) all Likert-type variables including self-construal, importance of product category, and innate innovativeness within each country (Fischer 2004).

**Table 1.** Product Description and Study Periods in Study 1

RNPs	INPs	Study Period
Smartphone with touch screen: Cell phone that performs multiple tasks (e.g., voice, texting, web browsing) and supports third-party applications with touch screen as the primary mode of data input. Examples: Apple iPhone and Sony Xperia.	Advanced feature phone: Cell phone that has newer features (e.g., digital television, music player, camera, bar code reader, Internet connectivity) than a basic mobile phone. Examples: Nokia 6300 and Samsung Link.	2008–2013
High-definition 3-D television: Flat-panel television that can display high-definition content in 3-D mode. Examples: Panasonic Viera and Vizio Glass Razor.	High-definition 2-D television: Flat-panel television that displays 2-D contents with much higher resolution (2 million pixels per frame) than conventional televisions. Examples: Vizio Razor LCD and Sharp Aquos LCD.	2009–2013
Motion-sensing video game console: Seventh-generation video game console that features a wireless controller that can be used as a handheld pointing device and detect the gamer’s movement. Examples: Xbox 360, Nintendo Wii, and Sony PlayStation 3.	Enhanced sixth-generation video game console: Uses DVDs as game media, supports online gaming, and is slimmer than previous models. Examples: the slim version of Sony PlayStation 2 and Microsoft Xbox with broadband connectivity	2006–2012
Electric or hybrid vehicle: A vehicle powered entirely by electricity or a combination of electricity and gasoline. Examples: Nissan Leaf, Toyota Prius, and Chevrolet Volt.	Fuel-efficient gasoline based vehicle: Gasoline-based vehicle that uses new technologies such as continuous variable transmission or direct fuel injection to improve fuel efficiency. Examples: Nissan Murano and Ford Fiesta.	2008–2013
Tablet computer: One-piece mobile computer that uses a touch screen and an onscreen virtual keyboard to input data. Examples: Apple iPad and Samsung Galaxy Tab.	Ultraportable laptop: Mobile personal computer that is much lighter or smaller than a typical notebook computer (weight $\leq 2$ kg; size $\leq 13$ ”); runs full desktop operating systems. Examples: Apple MacBook Air and Toshiba Libretto 20.	2010–2013
Digital single-lens reflex camera: Digital camera that has interchangeable lenses and enables the photographer to view through the lens and see exactly what will be captured. This differs from viewfinder cameras, in which the image in the viewfinder could be different from what will be captured. Examples: Canon Rebel T3 and Nikon D3100.	Advanced compact digital camera: Digital camera designed for easy operation; it has advanced features such as autofocus and video recording as well as higher resolution ( $>7$ million pixels). Examples: Canon PowerShot and Nikon Coolpix.	2008–2013

## Products and Pretests

We selected the INPs and RNPs through an extensive literature and archival review. To be included as an RNP, a product must have established a new category or subcategory (Moreau, Lehmann, and Markman 2001). Such products are often identifiable by a distinct category label (e.g., “hybrid vehicles”). For INPs, we focused on innovations that offer significant new features relative to existing products but do not initiate a new category. Such products typically represent newer models of existing products. We matched each RNP with an INP within the same category. For example, we matched a 3-D television, a product categorized as an RNP, with a high-definition 2-D television, a product classified as an INP. To minimize extraneous effect from memory retrieval, the INPs and RNPs in the study were primarily products that have been introduced recently. We validated the newness of the products through a pretest among 120 participants recruited from the same panels (60 from each country), who rated perceived newness on two seven-point items (“new” and “novel”) ( $\alpha = .91$ ). To qualify as an RNP, a product must receive a minimum rating of 5.5 out of 7, whereas the passing score for INP is between 4 and 5. Note that these newness ratings provided a conservative measure of newness because we obtained them at the time of the present study. This screening and pretest process yielded six pairs of RNPs and INPs (see Table 1).

We took great care to ensure that the RNP and INP within each category had the same year of introduction (we allowed a one-year lag if it was not feasible to find a pair of products that had exactly the same inception year) and were available during the study period in both countries. The study period for each category began at the introduction year and ran until the year of the study (2013) or until one of the products was discontinued. Thus, the respondents in both countries had a choice between the INP and the RNP within each product category during the study period.

For each product surveyed, we first presented a detailed description of the product and examples of actual products available in both countries (see Table 1). We then asked the respondents to report whether and when they had purchased their *first* product of the kind. We focused on the first purchase to minimize potential confounds of repeated purchase of the same product. There are several cases (9%–10% on average) in which respondents adopted both the INP and RNP within a category. We performed the analysis with and without these “double-adoptions” included. Because we found no substantive differences in the results, we report our findings using the full data set.

## Analysis and Results

A one-way analysis of variance (ANOVA) of trait self-construal showed that the U.S. participants were characterized by higher individualism than the Japanese participants ( $M_{U.S.} = .30$  vs.  $M_{Japan} = -.31$ ;  $F(1, 1,196) = 137.28, p < .001$ ), whereas the Japanese participants scored higher on collectivism ( $M_{U.S.} = -.13$  vs.  $M_{Japan} = .10$ ;  $F(1, 1,196) = 15.16, p < .001$ ). These findings confirmed cross-country differences in chronic self-construal.

Table 2 shows the adoption rate for each product category within each country. We defined rate of adoption for a product as the percentage of all participants who adopted the product. The U.S.

participants exhibited a higher rate of adoption than their Japanese counterparts for all RNPs. However, the Japanese participants exhibited a higher rate of adoption for all but one INP compared with their U.S. counterparts. The only exception was the incrementally new video game console, for which the Japanese participants exhibited a lower adoption rate.

**Table 2.** Study 1: Rate of Adoption by Product and Country

Description	RNPs		Description	INPs	
	U.S. Adoption Rate (%)	Japanese Adoption Rate (%)		U.S. Adoption Rate (%)	Japanese Adoption Rate (%)
Smartphone with touchscreen	53.63 <sup>a</sup>	33.71 <sup>b</sup>	Advanced feature phone	11.00 <sup>c</sup>	15.00 <sup>d</sup>
3-D television	12.48 <sup>a</sup>	5.37 <sup>b</sup>	High definition 2-D television	19.84 <sup>c</sup>	27.36 <sup>d</sup>
Motion-sensing video game console	30.75 <sup>a</sup>	14.06 <sup>b</sup>	Enhanced sixth-generation video game console	13.46 <sup>c</sup>	4.07 <sup>d</sup>
Electric or hybrid vehicle	7.96 <sup>a</sup>	5.15 <sup>b</sup>	Fuel-efficient gasoline-based vehicle	6.09 <sup>b</sup>	9.84 <sup>c</sup>
Tablet personal computer	30.30 <sup>a</sup>	13.03 <sup>b</sup>	Ultraportable laptop computer	3.93 <sup>c</sup>	6.86 <sup>d</sup>
Digital single-lens reflex camera	18.17 <sup>a</sup>	9.28 <sup>b</sup>	Advanced compact digital camera	37.43 <sup>c</sup>	49.02 <sup>d</sup>

Notes: Mean adoption rates with different superscripts on the same row indicate difference at a .05 level.

To test cross-country differences in adoption rate more formally, we used multilevel logistic regression to account for both between-subjects and within-subject variance in adoption. We tested a two-level model in which we treated the individual product as the Level 1 unit and participants as the Level 2 unit. The main explanatory variable at Level 1 is newness, and the main explanatory variable at Level 2 is country. Central to the test of  $H_1$  is the cross-level interaction between country and newness. We treated innate innovativeness, perceived importance of product category, age, gender, and income as Level 2 covariates. We estimated the model using SAS GLIMMIX procedure (version 9.2).

Age showed a negative effect on adoption likelihood ( $\beta = -.02$ ,  $F(1, 1,189) = 106.09$ ,  $p < .001$ ), whereas income had a positive effect ( $\beta = .07$ ,  $F(1, 1,189) = 43.64$ ,  $p < .001$ ). Gender showed no effect ( $p > .30$ ). Innate innovativeness had a positive influence on adoption likelihood ( $\beta = .27$ ,  $F(1, 1,189) = 81.82$ ,  $p < .001$ ), but its interaction with newness was not significant ( $p > .12$ ). Not surprisingly, perceived importance of product category had a positive effect ( $\beta = .06$ ,  $F(1, 1,189) = 15.97$ ,  $p < .001$ ).

We found no simple effect of country ( $p > .40$ ). The simple effect of newness was significant ( $\beta = .64$ ,  $F(1, 1,189) = 11.06$ ,  $p < .001$ ), indicating that consumers are more likely to adopt INPs than RNPs. However, this main effect was qualified by an interaction between newness and country ( $F(1, 1,189) = 113.59$ ,  $p < .001$ ). To gain insights into this interaction, we performed follow-up contrasts between parameter estimates for different combinations of country and newness by specifying RNP as the reference level for newness and Japan as the reference level for country. This analysis showed that the U.S. participants were more likely to adopt RNPs than the Japanese participants ( $\beta_{U.S.} = .44$  vs.  $\beta_{Japan} = 0$ ;  $F(1, 1,189) = 37.60$ ,  $p < .001$ ). In terms of an odds ratio, the U.S. respondents were 1.55 times more likely to adopt RNPs than their Japanese counterparts. In contrast, the Japanese respondents exhibited a higher rate of adoption of INPs than the U.S. respondents ( $\beta_{U.S.} = .11$  vs.  $\beta_{Japan} = .64$ ;  $F(1, 1,189) = 47.06$ ,  $p < .001$ ). Put differently, the Japanese participants were 1.70 times more likely to adopt INPs than the U.S. participants. These results support  $H_1$ .

We also ran an expanded model that included trait self-construal as additional Level 2 predictors. In this model, the interaction between country and newness remained significant, albeit with reduced magnitude ( $F(1, 1,185) = 67.74, p < .001$ ). Independent self-perspective did not have a main effect ( $p > .80$ ) but did interact with newness to influence adoption ( $F(1, 1,185) = 13.63, p < .001$ ). Whereas the independent self-perspective had a positive effect on the adoption of RNPs ( $\beta = .11, F(1, 1,185) = 6.70, p < .001$ ), it had a negative impact on the adoption of INPs ( $\beta = -.09, F(1, 1,185) = 4.20, p < .05$ ). The main effect of interdependent self-perspective was not significant ( $p > .13$ ), but its interaction with newness was significant ( $F(1, 1,185) = 4.43, p < .05$ ). Whereas the interdependent self-perspective had a positive effect on the adoption of INPs ( $\beta = .10, F(1, 1,185) = 6.05, p < .05$ ), it had a directionally negative but nonsignificant effect on the adoption of RNPs ( $\beta = -.01, p > .80$ ). Self-construal did not interact with country ( $p > .10$ ). Overall, trait independent self-perspective within countries enhances the adoption of RNPs, and trait interdependent self-perspective enhances the adoption of INPs. These findings further support our hypothesis on self-related preference for newness.

## Discussion

Findings from Study 1 support the thesis that the effect of chronic self-construal on consumer adoption of new products diverges for INPs and RNPs. The U.S. consumers exhibited consistently higher adoption rates for RNPs than their Japanese counterparts across all categories examined, even for categories that Japanese firms have pioneered (e.g., video game consoles, hybrid vehicles, cameras). Conversely, the Japanese consumers showed a higher adoption rate than their U.S. counterparts for the majority of the INPs. Notably, chronic self-construal within countries contributed to adoption outcome in a manner consistent with our predictions.

## Study 2

The purpose of Study 2 is to conceptually extend Study 1 by examining the effect of situationally activated self-construal on consumer new product adoption. We discuss our methods and findings in detail in the following subsections.

### Participants, Design, and Procedure

Eighty-six undergraduate students (46 men;  $M_{\text{age}} = 24$  years,  $SD = 5$  years) from a major university in the southern United States participated in the study for course credit. The experiment featured a 2 (self-construal: independent vs. interdependent)  $\times$  2 (newness: INP vs. RNP) between-subjects design. Participants first imagined a scenario about a tennis tournament that primed different self-perspectives. Next, they assumed that they were in the market for a new vehicle and came across a news report about a new car, described as either an INP or an RNP. They then completed measures of purchase intention (PI), product knowledge, regulatory focus, and demographics (age, gender, and ethnicity).

### Stimuli

We primed self-construal by asking participants to imagine competing in a tennis tournament either as an individual player (the independent construal) or as a team player (the interdependent construal). Prior research has established the validity of these priming methods (Aaker and Lee 2001). Participants in the independent [interdependent] conditions read the following scenario:

You [Your team] are playing in a tennis tournament and have made it to the finals. [You are representing your team in the finals.] It is 4:26 P.M., and the sun is beating down on you. You count the strings on your racquet and bounce the ball a few times. At this moment, you are the center of the world. [Your coach and teammates fix their eyes on you.] You think to yourself: “This is my [our] battle. This is my [our] chance. Whether I win or lose, I will prove my worth to myself [my team].”

We manipulated newness through the product description in a purported news report. The product in the RNP condition was an autopilot car that can drive itself (Hoeffler 2003). The car was said to recognize traffic signs and other road conditions and automatically perform maneuvers such as lane keeping and making turns. The product in the INP condition was a car that featured an adaptive cruise control system, which automatically adjusts the cruise speed according to the traffic in front. At the time of this study, some auto developers (e.g., General Motors, Google) were testing cars that use autopilot technology, whereas cars that feature the adaptive cruise control technology were already available in the market (e.g., BMW 7 series).

We validated the stimuli for priming self-construal in a pretest. Sixty undergraduate students read the independent or interdependent scenarios and then completed a measure of situational self-construal using a modified version of the Self-Construal Scale (Singelis 1994; Singelis et al. 1995). Because the original scale was designed to capture chronic self-construal, we selected items that can be modified to capture situational self-construal (for the items used in the pretest, see Appendix A). To enhance the situational property of the measures, we began each item with the same stem: “At this moment, I think....” The independent and interdependent subscales yielded satisfactory reliability ( $\alpha s > .74$ ). As an additional manipulation check measure, we assessed participants’ self-related and other-related thoughts using the scale developed by Aaker and Lee (2001). A oneway ANOVA of independent self-perspective showed a main effect of self-construal manipulation ( $F(1, 59) = 9.40, p < .001$ ). Participants in the independent condition reported a higher independent self-perspective than those in the interdependent condition ( $M_{\text{independent}} = 5.45$  vs.  $M_{\text{interdependent}} = 4.97; F(1, 59) = 7.82, p < .01$ ). The ANOVA of interdependent self-perspective also showed a main effect of self-construal manipulation such that participants in the interdependent condition reported a higher interdependent self-perspective than those in the independent condition ( $M_{\text{interdependent}} = 5.44$  vs.  $M_{\text{independent}} = 4.99; F(1, 59) = 6.89, p < .05$ ). The ANOVAs on the self-related and other-related thought indexes yielded similar findings. Specifically, participants in the independent condition reported more self-related thoughts ( $M = 5.84$ ) than did those in the interdependent condition ( $M = 4.86; F(1, 59) = 13.30, p < .001$ ). In contrast, participants in the interdependent condition reported more other-related thoughts ( $M = 4.72$ ) than did those in the independent condition ( $M = 2.61; F(1, 59) = 49.16, p < .001$ ). These findings confirmed the validity of the tennis scenarios for manipulating self-construal.

We pretested the stimuli for newness among a different sample of 66 students who read either the INP or RNP stimulus and then rated perceived newness using the same scale as in Study 1 ( $\alpha = .93$ ). A one-way ANOVA of perceived newness showed that participants rated the car in the RNP condition as highly new ( $M = 6.30$ ) and the car in the INP condition as moderately new ( $M = 4.98$ ;  $F(1, 65) = 19.33, p < .001$ ). These results confirmed the validity for newness manipulation.

## Measures

We measured PI using the average of two seven-point items (“interested in purchasing,” and “likely to buy”; 1 = “not at all,” and 7 = “extremely”;  $\alpha = .92$ ). We measured product knowledge as a control variable. Participants rated how much they know about cars, how much they know about cars compared with friends and acquaintances, and how much they know about cars compared with experts (1 = “very little,” and 7 = “very much”). We used the average of the three items as an index of product knowledge ( $\alpha = .93$ ).

In addition, we measured promotion focus and prevention focus as control variables. Promotion focus was measured by the average of two items ( $\alpha = .70$ ): “When making the purchase decision, my goal was”: (1) “to ensure that the purchase decision would deliver maximal benefits to me,” and (2) “to ensure that the car that I buy would give me a positive ride experience” (1 = “strongly disagree,” and 7 = “strongly agree”). The items for the prevention focus were: (1) “My goal was to avoid making a bad purchase of a car,” and (2) “My goal was to avoid any potential pitfalls associated with the purchase” ( $\alpha = .76$ ). Prevention focus was indexed by the average of the two items.

## Analyses and Results

We performed 2 (self-construal)  $\times$  2 (newness) analysis of covariance (ANCOVA) of PI, controlling for age, gender, ethnicity, product knowledge, and regulatory foci. Age, gender, ethnicity, and product knowledge had no effect in this and subsequent studies, and we do not discuss them further. We treated regulatory foci as continuous variables and regressed PI on these variables. Promotion focus had only a positive main effect ( $\beta = .36, F(1, 77) = 20.88, p < .001, \eta^2 = .02$ ), suggesting that the stronger the promotion focus was, the more willing the consumers were to adopt new products (both INP and RNP). Prevention focus showed only a negative main effect ( $\beta = -.18, F(1, 77) = 4.83, p < .05, \eta^2 = .08$ ), indicating that higher prevention focus led to lower intention to adopt both INPs and RNPs. We replicate these same effects of regulatory foci in Studies 4a and 4b; therefore, we do not discuss them further.

More importantly, the analysis showed a two-way interaction between self-construal and newness ( $F(1, 77) = 20.10, p < .005, \eta^2 = .20$ ). Planned contrasts indicated that when the product was an RNP, independents reported a higher PI ( $M = 4.18$ ) than interdependents ( $M = 3.48$ ;  $F(1, 77) = 6.09, p < .05, \eta^2 = .10$ ). When the product was an INP, interdependents reported a higher PI ( $M = 4.16$ ) than independents ( $M = 3.11$ ;  $F(1, 77) = 9.84, p < .005, \eta^2 = .14$ ). These findings support  $H_1$ .

## Follow-Up Studies

### *Follow-Up Study A: Replication*

To test the robustness of Study 2, we conducted a follow-up study using video game consoles as product stimuli. Although our focus was on INPs and RNPs, we added existing products as an additional level of newness. We primed self-construals using the same method as in Study 2 and then randomly assigned participants (124 students) to read about one of three game consoles pretested to differ in newness: (1) RNP: a “mind-control” console enabling gamers to control the game using their thoughts, (2) INP: a game console featuring a more advanced graphic processing unit, and (3) existing product: a game console similar to most consoles in the market. We observed an interaction effect between self-construal and newness on PI ( $F(2, 115) = 6.35, p < .01, \eta^2 = .10$ ). Consistent with  $H_1$ , independents showed a higher PI for the RNP than interdependents ( $M_{\text{independent}} = 4.64$  vs.  $M_{\text{interdependent}} = 3.81$ ;  $F(1, 115) = 5.16, p < .05$ ), whereas interdependents reported a higher PI toward the INP ( $M = 4.51$ ) than independents ( $M = 3.68$ ;  $F(1, 115) = 5.16, p < .05$ ). Purchase intentions for the existing product did not differ between the two types of selves ( $M_{\text{independent}} = 3.55$  vs.  $M_{\text{interdependent}} = 2.97$ ;  $p = .10$ ).

### *Follow-Up Study B: Regulatory Focus*

As the regression analysis in Study 2 shows, prevention (promotion) focus negatively (positively) affected PI for both INPs and RNPs, suggesting that regulatory focus influenced innovation adoption (especially the adoption of INPs) differently than self-perspective did. However, Study 2 did not experimentally manipulate regulatory foci and did not include existing products, in contrast with Herzstein, Posavac, and Brakus's (2007) study. Thus, we conducted a follow-up study to examine the joint effect of regulatory focus and newness. Unlike Herzstein, Posavac, and Brakus (2007), who primarily contrasted RNPs and existing products, we differentiated newness into RNPs, INPs, and existing products. The stimuli for RNPs and INPs were the same as in Study 2. The car in the existing product condition was described as similar to the ones that most people drove. Following Herzstein, Posavac, and Brakus (2007), we manipulated regulatory focus by telling the participants (240 students) that it is very important for them to “select a car that will offer desirable ride experience” (promotion focus) or to “avoid selecting a car that will result in undesirable ride experience” (prevention focus).

In addition to PI, we measured perceived risk and perceived distinctiveness utility. We indexed perceived risk by the average of two seven-point items ( $\alpha = .78$ ): (1) “How confident are you that the car will perform as well as it should?” (reverse-coded) and (2) “Considering the possible problems associated with cars, how much risk would you say would be involved with purchasing this car?”

In line with our conceptualization of distinctiveness utility, we constructed its measurement along a continuum on which the consumer feels overly affiliative, desirably differentiated, or overly differentiated. Specifically, we used the following 11-point, three-item scales ( $\alpha = .97$ ): “Owning the car will make me feel:” (1) 1 = “too unoriginal,” 6 = “perfectly original,” and 11 = “too eccentric”; (2) 1 = “too conventional,” 6 = “desirably different,” and 11 = “too different”; and (3) 1 = “too common,” 6 = “perfectly unique,” and 11 = “too unusual.” The perfect/desirable

point on the scale (the midpoint) received the highest value, and each deviation (positive or negative) was subtracted from the highest value. For example, a participant who indicates “perfectly original” in the first item receives a score of 6. A participant who indicates “too unoriginal” or “too eccentric” receives a score of 1.

Regulatory focus and newness interacted to affect PI ( $F(2, 233) = 9.66, p < .05, \eta^2 = .15$ ). As we expected, prevention-focused (vs. promotion-focused) participants were less willing to adopt both RNPs ( $M_{\text{promotion}} = 4.67$  vs.  $M_{\text{prevention}} = 3.63; F(1, 233) = 5.08, p < .05$ ) and INPs ( $M_{\text{promotion}} = 4.40$  vs.  $M_{\text{prevention}} = 3.84; F(1, 226) = 7.38, p < .01$ ). Echoing Herzstein, Posavac, and Brakus (2007), regulatory focus did not affect PI toward existing products ( $p > .19$ ). Our mediation analysis using the bootstrapping method (Preacher and Hayes 2004) revealed that the effect of regulatory focus and newness on PI was fully mediated by perceived risks but not by perceived distinctiveness utility (details of this analysis are available upon request).

## Discussion

Study 2 replicated Study 1's findings showing that the effect of situationally activated self-construal on innovation adoption is contingent on the newness of the product. Whereas independents (vs. interdependents) were more willing to adopt RNPs, interdependents (vs. independents) were more willing to adopt INPs. The second follow-up study suggests that self-construal and regulatory focus influence innovation adoption in a different way. Whereas prevention focus decreases the adoption tendency for both INPs and RNPs, the interdependent self-perspective enhances the adoption tendency for INPs.

Notably, self-perspective and regulatory focus did not influence PI toward existing products. These findings suggest that for self-construal or regulatory focus to influence innovation adoption, the product must possess salient attributes (e.g., distinctiveness, risks) that are relevant to the consumers' social or motivational orientations. Thus, when distinctiveness or risk is not a salient attribute, such as in the case of existing products, the product will not induce divergent reactions between different self-perspectives or regulatory foci.

## Study 3

Study 3 has multiple objectives. First, we aim to uncover the mechanism underlying self-related preferences for newness ( $H_2$ ). Second, we intend to replicate the scenario-based findings of Study 2 using behavioral outcomes. Third, we aim to provide a robustness check of Study 2 using a different method (i.e., ad appeals) for priming self-construal and different stimuli for newness. Fourth, we test risk perception and need for uniqueness as alternative explanations for the effect of self-construal.

### Participants, Design, and Procedure

Participants were 144 undergraduate students recruited from a subject pool at a major Canadian university (77 male;  $M_{\text{age}} = 21$  years,  $SD = 2$  years). The experiment features a 3 (newness: existing product vs. INP vs. RNP)  $\times$  2 (self-construal: independent vs. interdependent) between-subjects design. The experiment was conducted in a lab with the ostensible purpose of evaluating

a pen and a print ad used to market the pen. We randomly assigned participants to one of the six experimental conditions. Each participant received an envelope containing one pen and one print ad for the pen. We instructed them to examine the material and provide their impressions of the pen and the print ad. They then completed measures of perceived newness, attitude toward the ad, attitude toward the pen, distinctiveness utility, perceived risk, need for uniqueness, demographics, and one behavioral measure of product adoption.

### Stimuli and Pretests

We manipulated self-construal using ad appeals (see Appendix B) adopted from Teng and Laroche (2006). The appeal in the independent condition contained the phrases “The Art of Expressing Yourself” and “Go On! Spell Out Your Own Inspiration.” The appeal used in the interdependent condition contained the phrases “The Art of Sharing” and “Go On! Write to Those You Love.”

We manipulated newness using three pens previously shown to vary on perceived newness (Radford and Bloch 2011). In the existing pen condition, participants read the following description:

For many years, the Pilot G2 Fine Pen has been an outstanding performer in the Pilot Retractable Pen family. This high-quality, refillable pen features: a proven dynamic gel ink formula; tried and trusted ink feed system for smooth, skip-free writing; classic contoured rubber grip provides writing control and comfort; and acid free and archival safe ink.

The description of the pen in the INP condition reads:

The new Pilot Precise Grip Extra Fine Pen features a highly improved design that merges style and writing performance; patented Precise Needle Point technology; better ink feed system for smooth, skip-free writing; dimpled rubber grip enhances writing control and comfort; and acid free and archival safe ink.

The description in the RNP condition reads:

Discover the game changer in penmanship! Featuring revolutionary ergonomic design, the Ergo-Sof PenAgain changes the way you write; no need to grip tightly with the fingers. The natural weight of the hand gives enough downward force to apply ink to paper; unique finger cradle ensures total writing control and comfort; sleek and compact look makes the pen highly stylish; and acid free and archival safe ink.

We pretested the stimuli for newness and self-construal among 90 students, who were randomly assigned to one of the treatment conditions. We measured situational self-construal, self-related and other-related thoughts, and perceived newness using the same scales as in the pretest for Study 2. A 3 (newness: existing product vs. INP vs. RNP)  $\times$  2 (self-construal: independent vs. interdependent) ANOVA of independent self-perspective showed only a main effect of self-construal ( $F(2, 83) = 8.15, p < .01$ ). Participants in the independent (vs. interdependent)

condition reported a stronger independent mindset ( $M_{\text{independent}} = 5.45$  vs.  $M_{\text{interdependent}} = 4.95$ ;  $F(2, 83) = 8.15, p < .01$ ). The ANOVA of the interdependent self-perspective also showed only a main effect of self-construal ( $F(2, 83) = 8.15, p < .01$ ) such that participants in the interdependent (vs. independent) condition exhibited a higher interdependent self-perspective ( $M_{\text{independent}} = 5.20$  vs.  $M_{\text{interdependent}} = 4.92$ ;  $F(2, 83) = 7.09, p < .01$ ). Analysis based on self- and other-related thoughts provided convergent results. Participants in the independent condition reported more self-related thoughts ( $M = 5.02$ ) than those in the interdependent condition ( $M = 3.70$ ;  $F(1, 83) = 18.12, p < .001$ ). In contrast, participants in the interdependent condition reported more other-related thoughts ( $M = 4.88$ ) than those in the independent condition ( $M = 3.05$ ;  $F(1, 83) = 13.78, p < .001$ ). These results confirmed the validity of the ad appeals for manipulating self-construal.

A 3 (newness)  $\times$  2 (self-construal) ANOVA of perceived newness revealed only a main effect of the newness manipulation ( $F(2, 83) = 30.99, p < .001$ ). Participants perceived the RNP pen as newer ( $M = 6.27$ ) than the INP pen ( $M = 4.10$ ;  $F(1, 83) = 24.67, p < .001$ ) and perceived the INP pen as newer than the existing pen ( $M = 2.86$ ;  $F(1, 83) = 7.78, p < .01$ ). Thus, newness was manipulated as intended.

## Measures

We measured perceived risk and perceived distinctiveness utility in the same way as in the second follow-up study of Study 2. We measured need for uniqueness using a six-item scale ( $\alpha = .79$ ) adapted from Tian, Bearden, and Hunter (2001). An example scale item is, "Often when I buy merchandise, an important goal is to find something that communicates my uniqueness" (1 = "strongly disagree," and 7 = "strongly agree"). Perceived newness was measured in the same way as in Study 2 and served as a manipulation check. Consistent with the pretest results, participants rated the pen in the RNP condition as newer ( $M = 6.26$ ) than the pen in the INP condition ( $M = 4.47$ ;  $t = 10.89, p < .01$ ) and rated the pen in the INP condition as newer than the pen in the existing condition ( $M = 2.67$ ;  $t = 9.74, p < .01$ ).

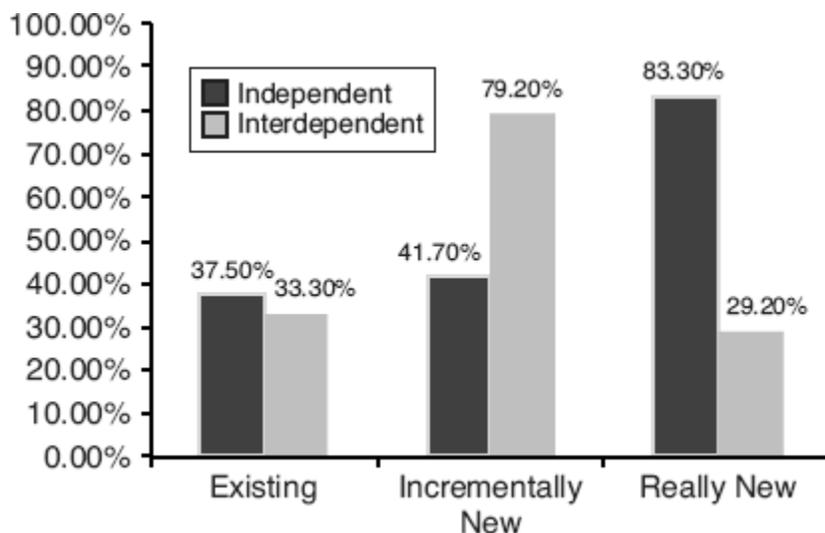
In keeping with the cover story, we asked participants to rate the quality of the pen on a seven-point scale (1 = "poor quality," and 7 = "good quality") and their attitude toward the ad on a two-item ( $\alpha = .94$ ) scale: (1 = "I do not like the ad at all," and 7 = "I like the ad very much"; and 1 = "It is a poor ad," and 7 = "It is a great ad"). Notably, newness, self-construal, and their interaction had no effect on perceived product quality ( $ps > .15$ ) or attitude toward the ad ( $ps > .70$ ). Therefore, differences in perceived quality and attitude toward the ad are not possible explanations for our subsequently reported differences in adoption outcome.

Finally, to obtain a behavioral measure of product adoption, we offered participants at the end of the study a choice between receiving one free pen or \$2 in cash. To minimize potential differences in the perceived value of the various pens, we informed participants in all the conditions that the retail value of the pen was in fact higher (\$3.49) than the \$2 cash option. Our behavioral measure of adoption consists of the proportion of consumers who chose the pen over the \$2 in cash.

## Analyses and Results

### *Product Adoption*

Consistent with H<sub>1</sub>, in the RNP condition, participants primed with an independent self-perspective were much more likely to choose the pen over the money (83.3%) than those in the interdependent condition (29.2%;  $\chi^2(1) = 14.31, p < .001$ ). Conversely, when the product was an INP, participants with an interdependent self-perspective chose the pen over the money more frequently (79.2%) than those with an independent self-perspective (41.7%;  $\chi^2(1) = 7.06, p < .01$ ). As we expected, participants in the independent (37.5%) and interdependent (33.3%) self-perspective groups did not differ in their likelihood of choosing the existing pen over the cash ( $\chi^2(1) = .09, p = .76$ ). Figure 1 offers a graphic illustration of this effect.



**Figure 1.** Study 3: Adoption Rate for INPs, RNPs, and Existing Products Across Independent and Interdependent Self-Perspectives

Logistic regression analysis further ascertained the significance of these results. We ran a model with choice of the pen as the dependent variable and self-construal, newness, and their interaction as independent factors. Age, gender, ethnicity, risk perception, and need for uniqueness served as covariates. Risk perception and need for uniqueness did not influence the adoption outcome ( $ps > .10$ ). There was no main effect of self-construal ( $\chi^2(1) = 1.00, p = .32$ ). The main effect of newness was significant ( $\chi^2(1) = 9.41, p < .01$ ). Most importantly, this main effect was qualified by a newness  $\times$  self-construal interaction ( $\chi^2(1) = 16.59, p < .001$ ). Participants in the interdependent appeal condition were more likely to adopt the INP than were those in the independent condition ( $\beta_{\text{interdependent}} = .238$  VS.  $\beta_{\text{independent}} = .44$ ;  $\chi^2(1) = 9.08, p < .005$ ). In contrast, participants in the independent appeal condition were more likely to adopt the RNP than those in the interdependent condition ( $\beta_{\text{interdependent}} = .14$  vs.  $\beta_{\text{independent}} = 2.83$ ;  $\chi^2(1) = 16.60, p < .001$ ). The independents and the interdependents, however, did not differ in their adoption of the existing pen ( $\beta_{\text{interdependent}} = 0$  vs.  $\beta_{\text{independent}} = -.41$ ;  $\chi^2(1) = .42, p = .52$ ).

### *Distinctiveness Utility*

A 3 (newness)  $\times$  2 (self-construal) ANOVA on the distinctiveness utility index revealed a main effect of newness ( $F(2, 138) = 4.31, p = .02, \eta^2 = .06$ ) and, more importantly, a newness  $\times$  self-construal interaction ( $F(2, 138) = 20.70, p < .001; \eta^2 = .23$ ). When the product was an RNP, the independents reported a higher distinctiveness utility than did the interdependents ( $M_{\text{independent}} = 4.85$  vs.  $M_{\text{interdependent}} = 2.53; F(1, 138) = 26.88, p < .001, \eta^2 = .41$ ). When the product was an INP, however, the interdependents reported a higher distinctiveness utility than did the independents ( $M_{\text{independent}} = 3.00$  vs.  $M_{\text{interdependent}} = 4.75; F(1, 138) = 15.30, p < .01, \eta^2 = .24$ ). When the product was an existing product, the two selves did not differ in perceived distinctiveness utility ( $M_{\text{independent}} = 3.08$  vs.  $M_{\text{interdependent}} = 2.90; p = .76, \eta^2 = .003$ ).

### Mediation Analysis

We next tested the hypothesis ( $H_2$ ) that distinctiveness utility mediates the joint effect of newness and self-construal, which involves a test of mediated moderation (Preacher and Hayes 2004). Because newness has three levels, we tested two mediated moderation models by recoding newness into two dummy variables, namely RNP (1 if the product is RNP and 0 otherwise) and INP (1 if the product is INP and 0 otherwise) (Hayes 2012). In the first model tested, we specified self-construal as the independent variable, INP as the moderator, distinctiveness utility as the mediator, and RNP as the covariate. The second model is the same as the first except that we treated RNP as the moderator and INP as the covariate (Hayes 2012). We assessed mediation with the bootstrapping method (Preacher and Hayes 2004) using Hayes's (2012) PROCESS macro. Table 3 summarizes the final estimation results for the two models.

**Table 3.** Study 3: The Mediating Role of Perceived Distinctiveness Utility for the Joint Effect of Self-Perspective and Newness on Adoption Behavior

Paths or Effects	Coefficient	SE
<b>Model 1</b>		
INP $\times$ Self-construal $\rightarrow$ DU (interaction effect on the mediator)	3.00**	.57
DU $\rightarrow$ Adoption (mediator to DV)	3.16**	.66
INP $\times$ Self-construal $\rightarrow$ Adoption (total effect of interaction on DV)	1.85*	.89
INP $\times$ Self-construal $\rightarrow$ Adoption, controlling for DU (direct effect of interaction on DV)	-.42	2.20
RNP $\rightarrow$ Adoption (effect of covariate on adoption)	1.02	1.12
INP $\times$ Self-construal $\rightarrow$ Adoption through DU (bootstrap results for indirect effect of interaction)	9.47** <sup>a</sup>	9.95
<b>Model 2</b>		
RNP $\times$ Self-construal $\rightarrow$ DU (interaction effect on the mediator)	-3.10**	.56
DU $\rightarrow$ Adoption (mediator to DV)	3.26**	.69
RNP $\times$ Self-construal $\rightarrow$ Adoption (total effect of interaction on DV)	-2.31*	.69
RNP $\times$ Self-construal $\rightarrow$ Adoption, controlling for DU (direct effect of interaction on DV)	1.55	2.43
INP $\rightarrow$ Adoption (effect of covariate on adoption)	-.08	1.21
RNP $\times$ Self-construal $\rightarrow$ Adoption through DU (bootstrap results for indirect effect of interaction)	-10.13** <sup>b</sup>	10.96

\* $p < .01$ . \*\* $p < .001$ .

<sup>a</sup>95% CI for the bootstrap estimate of the indirect effect = 3.76, 28.90.

<sup>b</sup>95% CI for the bootstrap estimate of the indirect effect = -31.63, -4.78.

Notes: DU = distinctive utility, and DV = dependent variable. INP: 1 = INP, and 0 otherwise; RNP: 1 = RNP, and 0 otherwise. Self-construal: 1 = interdependents, and 0 = independents. Adoption: 1 = participant chose pen, and 0 = participant chose money.

Consistent with H<sub>2</sub>, the first model revealed that the indirect effect of the INP × self-construal interaction through distinctiveness utility was significant (95% confidence interval [CI] = 3.76, 28.90). Similarly, the second model showed that the indirect effect of the RNP × self-construal through distinctiveness utility was also significant (95% CI = -31.63, -4.78). After controlling for distinctiveness utility, the direct effects of INP × self-construal and RNP × self-construal became nonsignificant, suggesting that the mediation through distinctiveness utility was a full mediation (Preacher and Hayes 2004).

### *Alternative Processes*

A 3 (newness) × 2 (self-construal) ANOVA with perceived risk as the dependent variable revealed only the main effect of newness ( $F(2, 138) = 7.76, p < .01, \eta^2 = .10$ ). Participants perceived the RNP pen to be riskier ( $M = 2.94$ ) than both the INP pen ( $M = 2.17; t = 3.62, p < .01$ ) and the existing pen ( $M = 2.35; t = 2.70, p < .01$ ). Participants viewed the INP and existing pens as equally risky ( $t = .96, p = .34$ ). Moreover, logistic regression indicated no significant effect of perceived risk on adoption behavior ( $\chi^2(1) = 1.55, p = .21$ ). Thus, perceived risk is not a key driver of our findings. Need for uniqueness could not explain our findings either, because it did not affect adoption ( $\chi^2(1) = 1.93, p = .17$ ).

### Discussion

Study 3 replicated the main findings in Study 2 using a behavioral measure of adoption, a different product category, and a different manipulation of self-construal. It ruled out risk perception and need for uniqueness as alternative explanations while providing strong support for the distinctiveness utility mechanism. Specifically, independents (vs. interdependents) perceived higher distinctiveness utility from the RNPs, whereas interdependents (vs. independents) derived higher distinctiveness utility from the INPs. Note that independents and interdependents did not differ in their perceived newness of INPs or RNPs but did differ in their adoption of these two types of new products. These findings indicate that higher (lower) newness of the product does not necessarily translate into higher (lower) distinctiveness utility. When processed through the independent or the interdependent mind, the newness of the product can result in higher or lower distinctiveness utility depending on the extent to which the newness is congruent with the self-related distinctiveness needs.

Notably, individual differences in need for uniqueness did not predict self-related preferences for newness. This finding confirms the value of a dynamic approach to uniqueness/distinctiveness needs. It indicates that uniqueness needs can vary with situationally activated self-construal to affect consumer decision making in a way that individual differences in need for uniqueness cannot predict.

### **Study 4a**

The purpose of Study 4a is to examine how popularity cues alter independents' and interdependents' adoption intention for RNPs and INPs (H<sub>3a-c</sub>). We describe and analyze the results of this study in the following subsections.

## Participants, Design, and Procedure

Participants were 140 adults (70 men;  $M_{\text{age}} = 28$  years,  $SD = 10$  years) recruited from an online panel in the United States that is commercially available from Amazon.com's Mechanical Turk. Participants received a small cash incentive (\$1). The experiment featured a 2 (self-construal: independent vs. interdependent)  $\times$  2 (newness: RNP vs. INP)  $\times$  2 (popularity cue: popular vs. control) between-subjects design. We used the same stimuli as those in Study 2 (i.e., tennis scenarios and cars) to manipulate self-construal and newness. We manipulated popularity cue through the verbal description of the product. Participants in the popular condition read:

So far, prospective buyers have been very positive about this new vehicle. According to a recent market survey, 60% of respondents from a national consumer panel said they are interested in buying the new vehicle. Another 15% of respondents said the new vehicle is a serious contender among their preferred choices of vehicle. Encouraged by the market's enthusiasm, the manufacturer expects strong first-year sales for the vehicle.

Those in the control condition received no such information. Participants then completed measures of PI, demographics (age, gender, and ethnicity), and control variables (product knowledge and regulatory foci). They also rated the expected popularity of the car as a manipulation check measure of popularity cue.

## Measures

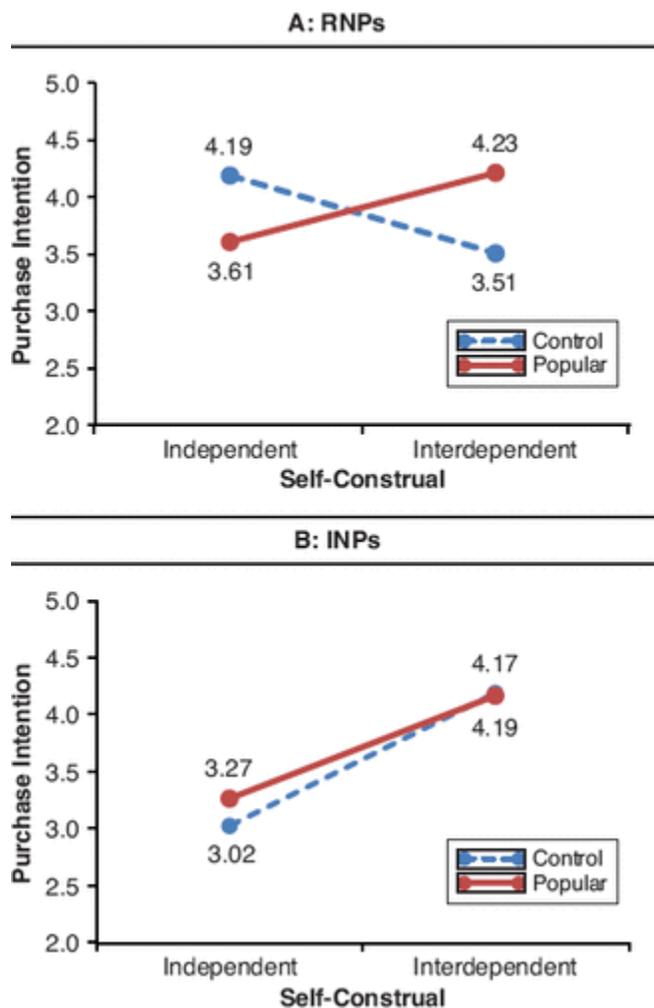
We measured PI, product knowledge, and regulatory foci in the same way as previously. As a measure of perceived popularity, participants rated on seven-point scales (1) how popular they expect the new vehicle to be after it is introduced, (2) how interested they expect other consumers to be in buying the vehicle, and (3) how many people they think would be willing to buy the vehicle (1 = "a few," and 7 = "a lot"). We used the average of the items to index expected popularity ( $\alpha = .75$ ).

## Analyses and Results

A three-way ANOVA of perceived popularity on self-construal, newness, and popularity cue revealed only a main effect of popularity cue ( $F(1, 132) = 22.39, p < .001$ ). Participants in the popular condition anticipated the product to be more popular ( $M = 5.09$ ) than did those in the control condition ( $M = 4.08$ ), indicating a successful manipulation of popularity cue.

To test  $H_{3a-c}$ , we ran a 2 (self-construal)  $\times$  2 (newness)  $\times$  2 (popularity cue) three-way ANCOVA of PI, controlling for age, gender, ethnicity, regulatory foci, and product knowledge. There were no main effects or two-way interactions between self-construal, newness, and popularity cue ( $ps > .13$ ). However, a three-way interaction between self-construal, newness, and popularity cue emerged ( $F(1, 130) = 11.39, p < .001, \eta^2 = .09$ ). Because our hypotheses predicted different patterns of interaction between self-construal and popularity cues as a function of newness, we next examined the self-construal  $\times$  popularity cue two-way interaction within each newness condition.

The ANCOVA within the RNP condition showed a two-way interaction between self-construal and popularity cue ( $F(1, 63) = 10.18, p < .005, \eta^2 = .14$ ). Figure 2, Panel A, shows this interaction effect. Planned contrasts indicated that independents reported a lower PI for RNP ( $M = 3.61$ ) when popularity cues were present than when the cues were absent ( $M = 4.19$ ;  $F(1, 63) = 4.12, p < .05, \eta^2 = .06$ ). In contrast, interdependents exhibited a higher PI for the RNP ( $M = 4.23$ ) when the popularity cues were present than when the cues were absent ( $M = 3.51$ ;  $F(1, 63) = 6.65, p < .05, \eta^2 = .10$ ). These findings supported  $H_{3a}$ . Moreover, consistent with our previous findings, interdependents (vs. independents) reported a lower PI for the RNP when popularity cues were absent ( $F(1, 63) = 5.66, p < .05, \eta^2 = .09$ ). However, when popularity cues were present, interdependents (vs. the independents) reported a higher PI for the RNP ( $F(1, 63) = 4.84, p < .05, \eta^2 = .08$ ), in support of  $H_{3b}$ .



**Figure 2.** Study 3: The Effect of Self-Construal and Popularity Cues on the PIs for RNPs and INPs

The two-way ANCOVA within the INP condition showed only a main effect of self-construal ( $F(1, 64) = 7.21, p < .01, \eta^2 = .10$ ) such that interdependents were more willing to adopt the INP than were independents ( $M_{\text{interdependent}} = 4.18$  vs.  $M_{\text{independent}} = 3.15$ ). The main effect of popularity cue and its interaction with self-construal were not significant ( $ps > .70$ ; see Figure 2, Panel B).

Thus, consistent with H<sub>3c</sub>, popularity cue did not affect independents' or interdependents' PIs for the INP.

## Study 4b

The purpose of Study 4b is to examine how scarcity cues affect independents and interdependents' new product adoption intention (H<sub>4a-c</sub>). We discuss our findings in the following subsections.

### Participants, Design, and Measures

Participants were 156 adults recruited from Amazon.com's Mechanical Turk (64 men; M<sub>age</sub> = 26 years, SD = 8 years). The experiment is a 2 (self-construal: independent vs. interdependent) × 2 (newness: INP vs. RNP) × 2 (scarcity cue: scarce vs. control) between-subjects design. We manipulated self-construal and newness in the same way as in Study 4a. We told participants in the scarce condition that the car was designed for the 50th anniversary of the automaker and would be available in a limited quantity. As such, most car dealers would receive only three or four special edition model cars, and thus preordering would be necessary on a first-come, first-served basis. Participants in the control condition received no such information. We measured PI and control variables in the same way as previously. Participants also rated the perceived scarcity of the car as a manipulation check measure on scarcity cues. Specifically, they rated how difficult it would be to buy a car described in the news report after it is introduced and how widely available they expect the car to be (reverse-coded) (1 = "not at all," and 7 = "extremely"). We indexed perceived scarcity by the average of the two items ( $\alpha = .78$ ).

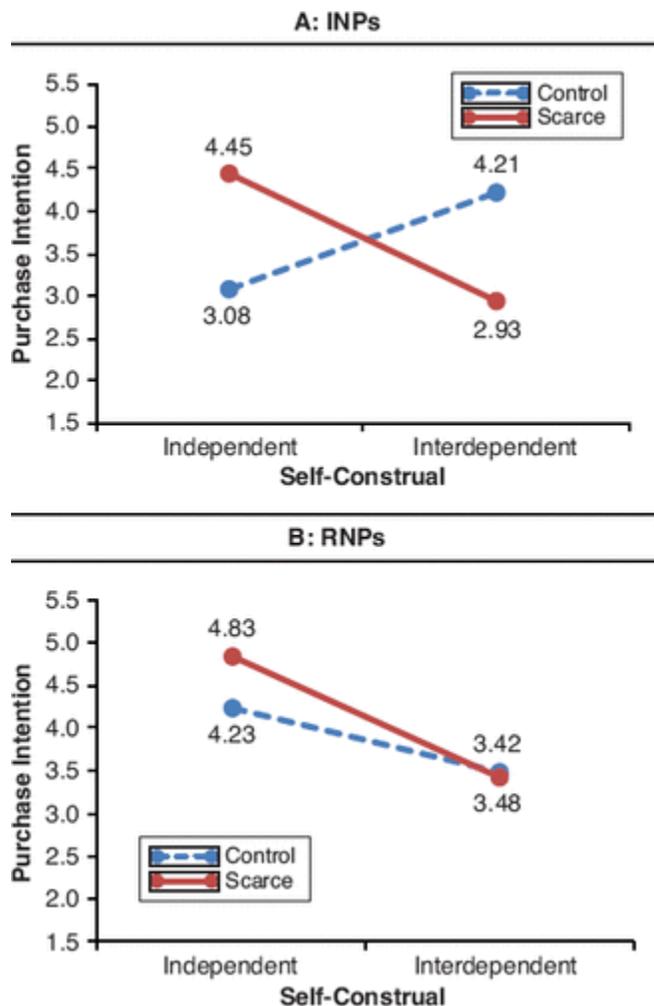
### Analyses and Results

A 2 (self-construal) × 2 (newness) × 2 (scarcity cue) three-way ANOVA of perceived scarcity revealed only a main effect of scarcity cue ( $F(1, 148) = 13.65, p < .001$ ). As we expected, participants in the scarce condition perceived the car as more scarce ( $M = 4.84$ ) than did those in the control condition ( $M = 3.92$ ). Thus, perceived scarcity was manipulated successfully.

To test H<sub>4a-c</sub>, we conducted a self-construal × newness × scarcity cue three-way ANCOVA of PI, controlling for product knowledge, regulatory foci, age, gender, and ethnic origin. As we expected, this three-way interaction was significant ( $F(1, 136) = 10.20, p < .001; \eta^2 = .10$ ). As in Study 4a, we decomposed the three-way interaction by conducting a self-construal × scarcity cue two-way ANCOVA of PI within the INP and the RNP conditions.

The two-way ANCOVA of PI for the INP revealed an interaction between self-construal and scarcity cue ( $F(1, 72) = 16.92, p < .001, \eta^2 = .18$ ). As Figure 3, Panel A, shows, independents reported a higher PI for the INP when the scarcity cue was present than when it was absent ( $M_{\text{scarce}} = 4.45$  vs.  $M_{\text{control}} = 3.08; F(1, 72) = 6.51, p < .05, \eta^2 = .08$ ). In contrast, interdependents exhibited a lower PI for the INP when the scarcity cue was present than when it was absent ( $M_{\text{scarce}} = 2.93$  vs.  $M_{\text{control}} = 4.21; F(1, 72) = 6.56, p < .05, \eta^2 = .09$ ). These results support H<sub>4a</sub>. Moreover, consistent with our findings in previous studies, independents showed a lower PI for the INP than did interdependents when the scarcity cues were absent ( $F(1, 72) = 10.58, p < .01$ ,

$\eta^2 = .12$ ). In contrast, independents showed a higher PI for the INP than did interdependents when the cues were present ( $F(1, 72) = 7.75, p < .01, \eta^2 = .10$ ). This finding supports  $H_{4b}$ .



**Figure 3.** Study 4: The Effect of Self-Construal and Scarcity Cues on PIs for INPs and RNPs

The two-way ANCOVA of PI for RNP only revealed a main effect of self-construal ( $F(1, 72) = 6.12, p < .05, \eta^2 = .08$ ) such that independents exhibited a higher PI for the RNP ( $M = 4.53$ ) than did interdependents ( $M = 3.45$ ), as Figure 3, Panel B, shows. The main effect of the scarcity cue and its interaction with self-construal were not significant ( $ps > .40$ ), suggesting that scarcity cues did not influence participants' PI toward the RNP. These results are consistent with  $H_{4c}$ .

Taken together, findings from Studies 4a and 4b suggest that the self-relevant product preferences for RNPs and INPs are not static but susceptible to the influence of distinctiveness-related cues. Enhancing or weakening the individuating power of a product can shift the product either toward or away from consumers' desired level of distinctiveness, depending on their situationally activated self-construal and the newness of the products. As a result, the popularity cues and scarcity cues can alter or even reverse the default self-related product preferences, causing independents (vs. interdependents) to be more willing to adopt INPs (RNPs).

## General Discussion

The present research examines the effect of chronic and situationally activated self-construal on consumer innovation adoption. Five studies provide converging evidence that consumers with the independent (vs. interdependent) mindset are more willing to adopt RNPs, whereas consumers with the interdependent (vs. independent) mindset are more willing to adopt INPs. These two self-perspectives, however, do not differ in preferences for existing products. Our research also shows that the self-related preferences for INPs and RNPs are driven by perceived distinctiveness utility of the product. Moreover, distinctiveness-enhancing cues and distinctiveness-dampening cues can reverse self-related product preferences such that independents (vs. interdependents) can be more willing to adopt INPs and interdependents (vs. independents) can be more willing to adopt RNPs.

### Theoretical Contribution

This research represents an initial attempt to examine the effect of self-construal on consumer innovation adoption. It contributes to extant literature in several aspects. First, this research advances our understanding of the self-construal theory. Although it is well known that independents tend to seek differentiation and interdependents desire assimilation, it remains an important question whether the different social orientations will result in independents being more receptive to novel objects than interdependents. Contrary to intuition, our findings suggest that merely being novel does not necessarily render an object more appealing to independents than to interdependents. Indeed, a novel object can be more attractive to interdependents if the newness of the object is more congruent with their distinctiveness needs or if external cues render it so. The existence of self-related distinctiveness needs calls for a more nuanced view of the social orientations associated with different self-perspectives.

Second, our study conceptually and empirically distinguishes the effect of self-construal and regulatory focus on innovation adoption. Although self-construal and regulatory focus are correlated, our findings do not support the assumption that a simple, substitutive relationship exists between the two constructs. We show that the constructs have distinct influences on consumer innovation adoption, and the divergence between them is especially evident with regard to their effect on the adoption of INPs. We reveal that this divergent effect is due to the different mechanisms (distinctiveness utility vs. risk perception). To the best of our knowledge, this is the first study to contrast the effects of self-construal and regulatory focus on innovation adoption.

Finally, our research complements extant literature on need for uniqueness (Tian, Bearden, and Hunter 2001). Whereas extant literature conceptualizes need for uniqueness as individual differences in pursuing differentiation from others, self-related distinctiveness needs reflect the quest for a desirable balance between the need for differentiation and the countervailing need for affiliation. The latter construct emphasizes the level of distinctiveness as perceived to be desirable by different selves. Thus, self-related distinctiveness needs are dynamic in that they vary with a person's salient self-perspective and socially significant cues. A dynamic approach to distinctiveness needs is fruitful because it enables us to uncover situational or contextual influences on consumer innovation adoption decisions.

## Managerial Implications

The present study offers several important managerial implications. Our cross-country study (Study 1) provides insights on the choice of global market entry strategies. A firm's optimal market entry strategies may depend on the newness of the product and the cultural orientation of the target market. When launching an RNP, firms may consider introducing the product initially in individualistic cultures and subsequently moving to more collectivistic societies. Because consumers in individualistic societies are more receptive to RNPs, using such societies as the lead markets can result in faster diffusion. Moreover, the lag time between the individualistic countries and the collectivistic countries would help the latter adapt to the radical nature of the innovation. The successful launch of many RNPs by Japanese firms (e.g., hybrid vehicles) may be partly due to these firms' ability to gain an early foothold in the U.S. market. When the product is an INP, however, it would be important for marketers to secure consumer acceptance in collectivistic societies. Because members of collectivistic societies are receptive to INPs, acceptance in such societies can speed the diffusion of INPs.

Our experimental studies show that marketers can enhance innovation adoption by increasing the fit between the newness of the product and the situationally activated self-construal of the consumers. Two approaches may be used to achieve this goal. The first is to shift the consumers' self-construal to match a particular level of newness. For example, marketers of RNPs can use communication appeals to enhance the accessibility of the independent mindset (e.g., appeals of independence or autonomy). Conversely, marketers of INPs could appeal to the interdependent self (e.g., appeals of social harmony). In Study 3, the use of an independent (vs. interdependent) ad appeal almost tripled the adoption of a RNP, and the use of an interdependent (vs. independent) appeal almost doubled the adoption of an INP. Study 3 and other studies in the literature (e.g., Aaker and Lee 2001; Teng and Laroche 2006; Zhu and Meyers-Levy 2009) suggest that such ad appeals can readily activate different self-perspectives. Note that perceived newness of an RNP can decrease as time goes by. Thus, managers are advised to adapt their communication strategies over time as the newness of the product changes. For example, managers might rely on independent appeals at the introduction stage of an RNP and gradually tone down the use of such appeals or shift to interdependent appeals as the product becomes more established in the market.

The second approach is to alter consumers' perception of the distinctiveness of the product to match a particular self-perspective. This strategy is useful when the decision context is prone to inducing a particular self-view. Marketers of RNPs may consider using popularity cues when the interdependent mindset is salient due to situational or cultural influences—for example, when marketing RNPs in a collectivistic society. The most evident popularity cue for a new product is a large volume of actual sales. Absent actual sales volume, however, firms can still convey anticipated popularity by highlighting the speed of consumer adoption or positive consumer evaluations of the product, as Study 4a shows. When a new product experiences a large volume of sales, fast rate of diffusion, or positive user evaluations, marketers can use communication techniques such as mass advertising or buzz marketing to help convey popularity.

Likewise, when introducing an INP in an individualistic culture, the use of scarcity cues would be a worthy strategy. Firms can engineer scarcity or anticipated scarcity by restricting the quantity of supply, associating the product with an elite group, requesting preordering, planning product phaseout, adding lines of special editions, and creating prestige pricing strategies. Moreover, these strategies may be combined to maximize marketing outcome. For example, while limiting quantity to convey scarcity, marketers may engage in prestige or skimming pricing. The combination of these two strategies not only reinforces a sense of scarcity but also helps ensure an adequate financial return.

### Limitations and Further Research

Although our research offers strong support for the role of self-construal in consumer innovation adoption, it is not without limitations. In an effort to minimize potential confounds, the present research did not fully explore the effect of brands on new product adoption. Although Study 3 used branded products, it did not use strong brands (e.g., Apple), which might induce a different response pattern. It is plausible that even an incremental improvement to the iPhone may lead to rapid adoption by independents. Brand extension may also be a fruitful avenue for further research. For example, independents and interdependents may have differential adoption tendencies toward product extensions when firms use new brand names (e.g., Gillette's Fusion) to signal radical innovation or use sub-brand names (e.g., Gillette's Sensor Excel) to signal incremental innovation. Finally, future studies could investigate additional boundary conditions for the effect of self-perspective on innovation adoption. For example, it may be worthwhile to examine whether the effect of self-construal can be moderated by network externalities, namely the extent to which the utility of a product increases as the number of users increases (Srinivasan, Lilien, and Rangaswamy 2004). Because independents and interdependents differ in their sensitivity to the behavior of others, they may respond differently to new products characterized by high (vs. low) network externalities.

### Appendix A Measures of Chronic Self-Construal in Study 1

Participants rated the items on a seven-point scale (1 = “strongly disagree,” and 7 = “strongly agree”). The items used as manipulation check measures for self-construal in Studies 2 and 3 are indicated by an asterisk (\*). These manipulation check measures begin from the same stem, “At this moment, I think....”

#### Interdependent Items

1. The well-being of my coworkers is important to me.\*
2. If a coworker gets a prize, I would feel proud.
3. It is important to maintain harmony within my group.\*
4. I like sharing little things with my neighbors.
5. I feel good when I cooperate with others.
6. My happiness depends very much on the happiness of those around me.\*
7. I would sacrifice an activity that I enjoy very much if my family did not approve of it.\*
8. I would do what would please my family, even if I detested that activity.
9. I usually sacrifice my self-interest for the benefit of my group.

10. Even when I strongly disagree with the group members, I avoid an argument.\*
11. I will stay in a group if they need me, even when I'm not happy with the group.\*
12. I often have the feeling that my relationships with others are more important than my own accomplishments.
13. It is important to me to respect the decisions made by the group.\*

#### Independent Items

14. My personal identity, independent of others, is very important to me.\*
15. I enjoy being unique and different from others in many respects.\*
16. I am a unique individual.\*
17. I'd rather say "No" directly to others than risk being misunderstood.\*
18. One should live one's life independently of others.
19. I enjoy working in situations involving competition with others.\*
20. It is important that I do my jobs better than others.
21. Winning is everything.
22. Competition is the law of nature.\*
23. It annoys me when other people perform better than I do.
24. Without competition, it is not possible to have a good society.
25. I prefer to be direct and forthright when discussing with people.\*
26. Having a lively imagination is important to me.

## Appendix B Examples of Print Ads Used in Study 3

A: Independent Prime for RNP Pen

**Introducing the Ergo-Soft PenAgain Pen**

**The Art of Expressing Yourself**



**Go On! Spell Out Your Own Inspiration**

Discover the game changer in penmanship! Featuring revolutionary ergonomic design, the Ergo-Soft PenAgain changes the way you write.

- No need to grip tightly with the fingers. The natural weight of the hand gives enough downward force to apply ink to paper.
- Unique finger cradle ensures total writing control and comfort.
- Sleek and compact look makes the pen highly stylish.
- Acid free and archival safe ink.

B: Interdependent Prime for INP Pen

**Introducing the Pilot Precise Grip Extra Fine Pen**

**The Art of Sharing**



**Go On! Write to Those You Love**

The new Pilot Precise Grip Extra Fine Pen features a highly improved design that merges style and writing performance.

- Patented Precise nozzle point technology
- Better ink feed system for smooth, slip-free writing
- Diamond rubber grip enhances writing control and comfort
- Acid free and archival safe ink

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