

Learning, Thinking, Buying, Using: Contextual Effects on Consumers' Adoption of
Really New Products

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
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ABSTRACT

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Abstract

Combining prior theory about really-new products with temporal construal theory, I examine how psychological differences in how consumers think about really new products (RNPs) and incrementally new products (INPs) affect consumers' formation of long-term product-purchase intentions and follow through on those intentions. In three field studies, I find that consumers form fewer long-term purchase intentions for RNPs than for INPs. They follow through on those intentions less often for RNPs than INPs and this difference in follow-through grows stronger over time after the measurement of purchase intentions. Consumers declaring intention to purchase INPs are more likely to form implementation intentions than those intending to purchase RNPs. Compared to those intending to acquire INPs, those intending to acquire RNPs are exposed to less new information and their attitude accessibility dissipates more rapidly over time. I discuss the implications of these findings for the launch of really new products and for market research on really new products.

In all of these findings, psychological newness is generally a bad thing for the product marketer. I conclude by identifying future research directions for examining the effect of product psychological newness on earlier stages of the product adoption process (Rogers 2003), where newness might be an advantage under some conditions. Psychological newness can affect consumers' initial efforts to learn about new products,

and there are conditions under which newness might facilitate learning and awareness.

A framework for product psychological newness' influence on elaboration of new product messages is proposed.

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1. Introduction

Successful new products are the “lifeblood for most organizations” (Balachandra and Friar 1997, p. 276). But success is often a challenge (Chandy and Tellis 2000; Dougherty 1990), and failure can be quite expensive. For example, Clancy and Krieg (2003) offer evidence that new product failure rates range from 80% to 95% depending on the industry; they quote an industry expert who estimates that companies spend \$9 billion to \$14 billion in marketing dollars annually on failed new food products. This is in an environment where most new products are extensions of existing brands (Bird 1991). Success introducing really new products (RNPs) is an even greater challenge, as we are just beginning to understand how traditional marketing methods must be adjusted for the high risk, high rewards of RNPs (Lehmann 1994; Moreau 1997; Urban, Weinberg, and Hauser 1996).

Definitions of newness and what makes a product “really new” vary greatly in the literature (Garcia and Calantone 2002). A product may be new to the firm or new to the market (Booz·Allen & Hamilton 1982). Several simple newness classification schemes distinguish between incremental and radical innovations both internal and external to the firm (e.g., Balachandra and Friar 1997; Bower and Christensen 1995; L. Cooper 2000; Henderson and Clark 1990). Rogers (2003) suggests a psychological perspective on newness with consumer perceptions of relative advantage, complexity, compatibility, observability, and trialability determining the rate of an innovation’s adoption. In that

tradition, Hoeffler (2003) proposes that RNPs are characterized by extremes in both their potential benefits and potential costs/constraints. RNPs allow consumers to do things they can't easily do now. At the same time, RNPs require greater change in consumers' behavior in order to reap potential benefits while consumers are less certain about those benefits and the appropriate cost-benefit tradeoffs they should make in evaluating the product.

Given the competing influences of extreme benefits and extreme costs, it is difficult to predict a priori what effect a product's psychological newness will have in an adoption stage. Rather, this prediction requires examining how contextual factors (e.g., consumers' time frame for product adoption) interact with the extremes of benefits and costs. This dissertation examines just that. In particular, a product's psychological newness is predicted to interact with different contextual factors in affecting how consumers learn about, form adoption intentions for and subsequently follow through to adopt and form expectations about their initial use of RNPs vs. incrementally new products (INPs).

I integrate Trope and Liberman's (2003) construal level theory and Hoeffler's (2003) psychological newness framework to predict differences in (a) the likelihood that consumers form long-term intentions to acquire RNPs and INPs, (b) the likelihood that consumers follow-through on those intentions, and (c) changes in the rate of intention follow-through as time passes after intention formation. I scored 28 entertainment and

communication technologies for psychological newness based on Hoeffler's definition. I found that: (a) consumers who do not own these products were less likely to intend to acquire RNPs in the next 6 months relative to INPs; (b) those consumers who intended to acquire were less likely to follow through on purchase intentions for RNPs than for INPs; and (c) the foregoing effect was weak when follow through is measured soon after intentions, but strong when measured after a longer delay.

Product psychological newness is also posited to produce abstract thinking, similar to other factors affecting construal level (Liberman, Trope, and Stephan 2007). Thinking more abstractly about RNPs is expected to lead consumers to think less concretely about when and where they would acquire RNPs (see Gollwitzer 1999) and to over- or underestimate their initial use of RNPs more than for INPs. Consistent with this reasoning, Alexander, Lynch, and Wang (2008) find that consumers who are within a week of acquiring new technology products are more poorly calibrated in their expectations of initial product use for RNPs than for INPs.

In all of these findings, psychological newness is generally a bad thing for the product marketer. This dissertation concludes by identifying future research directions for examining the effect of product psychological newness on earlier stages of the product adoption process (Rogers 2003), where newness might be an advantage under some conditions. Psychological newness can affect consumers' initial efforts to learn about new products, and there are conditions under which newness might facilitate

learning and awareness. A framework for product psychological newness' influence on elaboration of new product messages is proposed. Consumers are expected to make a quick judgment of the value of elaborating the content of a new-product message after initial exposure to that message. Product psychological newness induces both curiosity about the new product and skepticism about the claims made in the message. Curiosity increases message elaboration while skepticism decreases message elaboration.

As consumers move through the different stages of innovation adoption (Rogers 2003), differences in how they perceive the extreme benefits and costs of RNPs versus the more moderate benefits and costs of more incrementally new products likely create different patterns of adoption behavior in each of those stages. For example, as consumers learn about RNPs, the extreme benefits offered may be unexpected, inducing curiosity and a desire to learn about those products (Berlyne 1966), more so than about INPs. At the same time, the extreme costs associated with RNPs likely undermine consumers' confidence in any information they encounter, reducing their interest in learning about RNPs vs. INPs (Heath and Heath 2007). Therefore, the net effect of newness on elaboration is a function of the relative strength of these two paths. I consider variables that moderate the strength of these two paths and thus tip the balance to make the net effect of newness on elaboration positive or negative.

This dissertation makes a contribution to both marketing practice and marketing thought. The results give marketers a better understanding of how to measure demand

for RNPs and to market RNPs. The dissertation extends marketing thought by integrating product psychological newness with construal level theory to predict the relationship between product newness on intention formation and follow-through. A link is also developed between construal level theory and implementation intentions. Finally, a curiosity-skepticism framework is proposed to understand newness effects in generating awareness at earlier stages in the adoption process, linking the extreme benefits and extreme costs of RNPs to consumers' elaboration of new product messages.

1.1 Sparking Purchase Intentions, but not Purchases for RNPs

Firms launching RNPs often devote considerable resources to developing and measuring demand for those products—sometimes with little ultimate success. For example, in the late '80s, GO Corporation led a revolution in mobile personal computing by championing a pen-based personal computer (or “tablet” computer). Kaplan (1995) recounts how GO geared up to meet the demands of an enthusiastic market, accepted \$75 million from investors, and faced determined competition as ever higher expectations fed the incredible hype that grew to surround pen computing. Yet after six years, GO found itself with “a great product that doesn't sell (Kaplan 1995, p. 255)” and was soon out of business.

How does a firm that was so successful at raising awareness for its revolutionary products fail so spectacularly? GO's experience typifies the issues firms face in marketing RNPs and in estimating demand. For more than a decade, the Marketing

Science Institute has made research on the marketing of RNPs a priority (Lehmann 1994; Moreau 1997), because we have only a dim understanding of how to modify methods for marketing and market research for more standard, INPs to the higher risk, higher reward realm of RNPs.

GO, like many firms who follow traditional strategies for launching technologically new products, failed to consider how hard it is for consumers to estimate how useful a RNP would be for them. As Hoeffler (2003) has shown, this consumer uncertainty can make estimating market demand for RNPs especially hard for firms, many of whom overestimate the breadth and depth of the demand for their products. GO, for example, had the opportunity to focus on a lucrative segment of its target market, but believed it could pursue a larger opportunity that, ultimately, was too slow in materializing (Kaplan 1995).

1.2 Psychological Newness and Temporal Construal

As highlighted above, a variety of definitions exist for what makes a product “really new”, focusing on chronological, technological, or psychological newness. Booz·Allen &Hamilton (1982) distinguish products that are “new to the market” vs. “new to the firm”; Goldenberg, Lehmann, and Mazurski (2001) find that moderately new-to-market products are more successful.

Work on psychological newness has focused on the inapplicability of existing category knowledge to understand the new product (Moreau, Lehmann, and Markman

2001; Moreau, Markman, and Lehman 2001; Wood and Lynch 2002). The focus of this research is on cross-sectional variation among consumers in the perceived newness of a new product and how that variation explains processing of information about the new products.

Here, the focus is not on variation among consumers in perceived newness, but in variations among products in perceived newness in the eyes of those in the market for those products.¹ This dissertation relies most heavily on the recent work of Hoeffler (2003), who argued that RNPs produce high levels of uncertainty in consumers' perceived ability to estimate their consumption utility prior to purchase. He argued that for RNPs, compared to INPs, consumers perceive:

1. greater ability to do things that one can't easily do now with existing ways to solve similar problems;
2. greater need to change one's behavior in order to attain the potential benefits of the new product;
3. greater uncertainty about consumption benefits;
4. greater uncertainty about cost-benefit tradeoffs in consumer utility functions because consumers lack understanding of attribute-to-benefits links and have

¹ According to Rogers (2003, p. 96), 58% of extant innovation studies study cross-sectional variation in who adopts, but only 1% study the attributes of innovations that make some diffuse faster than others.

no practice making cost-benefit tradeoffs (Feldman and Lynch 1988; Hoeffler and Ariely 1999).

These dimensions can also be related to dimensions of innovations tested by prior diffusion researchers. Holak and Lehmann (1990) tested Rogers' (1983) dimensions of relative advantage, compatibility, communicability, complexity, and divisibility, as well as Bauer's (1960) notion of perceived risk, considering relationships of these dimensions to each other and to intention to acquire. They found that relative advantage, compatibility, and perceived risk were the proximal causes of intention to acquire. Hoeffler's "do new things" is similar to relative advantage, his "need to change behavior" is similar to compatibility, and his "uncertainty about benefits" and "uncertainty about cost-benefit tradeoffs" are related to perceived risk.

Further, Hoeffler argued that RNPs and INPs differ in the richness of the information networks available to help the customer assess the fit of a new product to his or her personal circumstances. RNPs have fewer unbiased sources of information and more category instability that might render old information obsolete.

Here, I marry Hoeffler's perspective with extant psychological literature on temporal construal (Trope and Liberman 2003; Trope, Liberman, and Wakslak 2007). Research on construal theory has shown that people represent actions differently when viewed from a near vs. far temporal distance (Liberman and Trope 1998). People construe distant actions in terms of abstract, high-level considerations of the desirability

of the action. They construe more near-term actions in terms of concrete, low-level considerations of the feasibility of the actions. Mapping this onto Hoeffler's distinctions between RNPs and INPs, allowing consumers to do new things is a matter of desirability, and uncertainty about benefits undercuts that desirability. Needing to change one's behavior in order to attain the benefits is a matter of feasibility. Below I present hypotheses about how these differences between RNPs and INPs make consumers less likely to form intentions to acquire RNPs, and less likely to follow through on stated intentions to acquire in comparison with INPs.

Further, I deduce predictions about the timing of follow-through for those who do eventually acquire products that they earlier said they intended to acquire. Consumers are asked whether they will acquire 28 new entertainment and communication products and services in the next 6 months. Those responding positively are presumably heterogeneous in how far into the future they expect to act. The more temporally distant the intention judgment from the expected acquisition decision, the more different will be the mental representations at the two points in time. Reasoning from construal theory, the greater the discrepancy in mental representations, the less the follow-through should be. Critically, newer products are higher in desirability (ability to do new things, according to Hoeffler 2003), and lower in feasibility (because significant change in behavior is necessary to attain the potential benefits). Consequently, RNPs should fall in acquisition hazard rate over time more than INPs.

In two field studies, Hoeffler's conception and temporal construal theory are used to predict and find that psychologically newer products:

- induce fewer consumers to form intentions to acquire them (Study 1) ;
- are less likely to be acquired by those who express intentions to do so (Study 2);
- exhibit different patterns of timing of acquisition by those who do follow through on an expressed intention to acquire (Study 2).

There are, however, other psychological factors that should affect the hazard rate of follow through after stating an intention to acquire a new product or service. Study 3, consistent with Hoeffler's (2003) conjectures, shows consumers are more frequently exposed to new information for INPs than for RNPs. Because more frequent exposures produce the kinds of "energizing events" that maintain attitude accessibility in a heightened state (Dholakia and Morwitz 2002), Study 3 predicts and finds that attitude accessibility dissipates more rapidly following intention formation for RNPs than for INPs. Moreover, consumers are found to be more likely to form implementation intentions for INPs than for RNPs.

In the following sections, a detailed explanation is provided on how construal theory implies different patterns of stating intentions to acquire new products and services and different patterns of follow-through on positive intentions to acquire. A pretest is described that allowed scoring the psychological newness of 28 entertainment

and communication products according to Hoeffler's framework. These newness scores are then used in three field studies to predict the fraction of the untapped market that intends to acquire each product in the next six months, the fraction following through, the timing of follow through, and other downstream consequences. Discussion of the implications of the results for consumer researchers and marketing practitioners is then provided.

1.3 Intentions Are Negatively Related to Perceived Newness

Consumers often form new-product purchase intentions well in advance of when they expect to buy those products. Someone seeing an ad for a new entertainment gadget may decide to buy the gadget the next time he or she is at the mall but not expect to visit the mall for a few weeks or more. Research on temporal construal shows that, when evaluating products well in advance of buying them, consumers tend to focus on the abstract, potentially positive aspects or *pros* of the products while underweighting the products' more concrete, negative aspects or *cons* (Eyal et al. 2004; Trope and Liberman 2000, 2003). So, when forming a purchase intention, our gadget acquirer likely envisions the benefits the gadget would deliver while giving little weight to barriers to adopting it.

How is this process different for RNPs than for INPs? According to Hoeffler (2003), RNPs may allow consumers to do things they could not with existing technology. However, consumers have high uncertainty about whether they will receive these

benefits, they have difficulty gauging how to trade off the benefits versus the costs, and they anticipate having to change their behavior more to attain the potential benefits. One might reason from construal theory that if RNPs are more extreme on benefits than INPs and benefits get high weight when considering purchase in the distant future, RNPs should be more attractive than INPs. However, there are several reasons to predict the opposite. When evaluating newer products, consumers have less product/category knowledge to draw on (Moreau, Lehmann, and Markman 2001; Moreau, Markman, and Lehmann 2001; Wood and Lynch 2001) and have more uncertainty about benefits (Hoeffler 2003). The result, in temporal construal terms, is that consumers are likely to generate fewer product pros for newer products, and the uncertainty they have about benefits diminishes their appeal. Indeed, Hoeffler, Moreau, and Kubowicz-Malhotra (2006) have shown that consumers' perceptions of feature importance declines with uncertainty. Similarly, Mukherjee and Hoyer (2001) find that novel attributes lead to lower evaluations of high-complexity products. .

Moreover, the literature on missing information has established that perceived absence of relevant information leads to lower evaluations as a penalty for uncertainty (Jaccard and Wood 1988; Johnson and Levin 1985; Meyer 1981; Rust et al. 1999; Simmons and Lynch 1991). In construal theory terms, consumers treat the absence of information as a product con.

Consequently, I predict:

H1: At a temporal distance, consumers' likelihood of expressing an intention to acquire should be lower for RNPs than for INPs.

This prediction is broadly compatible with the findings of Holak and Lehmann (1990), who found that intention to acquire 19 consumer durables was related to participants' perceptions of those innovations on relative advantage, compatibility, and perceived risk. My focus is on aggregate perceptions of newness, whereas Holak and Lehmann studied correlations pooling across products and respondents.

1.4 Newness and Follow-through on Stated Intentions

Stating an intention to acquire a new product in the next n months does not mean that one will actually follow through. Intentions expressed at a temporal distance may appear unwise when the event draws nearer in time. Zauberaman and Lynch (2005) describe the "Yes...Damn!" effect wherein people commit themselves to time consuming activities under the false expectation that they will be less busy in the future than they are today. Soman (1998) and Silk (2005) describe how people choose alternatives on the basis of rebates that they never getting around to redeeming.

When consumers who have stated an intention to acquire a new product go to buy it, the change in temporal frame from distant opportunity to near purchase can change their focus, leading them to construe the products differently. When judging distant purchase intention, consumers give more weight to high-level benefits like the ability of a product to allow one to do new things one couldn't easily do before, and

relatively less weight to low-level feasibility constraints such as the fact that one will have to change one's behavior to enjoy those benefits (Eyal et al. 2004; Trope and Liberman 2000, 2003). When a purchase opportunity is at hand, people tend to increase the weight given to a product's low-level considerations of feasibility and reduce the weight to high level benefits. Consequently, when our gadget acquirer goes to buy the gadget, the product is likely to look less appealing than when it was judged positively at the time of intention, as noted in Thompson, Hamilton, and Rust's (2005) work on "feature fatigue."

This devaluation effect should be stronger for RNPs than for INPs, because RNPs have profiles of more extreme benefits and extreme costs. To see this, suppose that the evaluation of an object is a weighted sum of the utility of the benefits (U_B) and the disutility of the costs = [$w_B (U_B) + w_C (U_C)$]. Suppose that the weight of benefits and costs at the time of intent is $w_B = 2$, $w_C = 1$, and that when the time of purchase arrives, these same weights are reversed, $w_B = 1$, $w_C = 2$. Now consider an INP with a profile of ($U_B = 1$, $U_C = -1$) and a RNP that is evaluated identically at the time of intention judgment, with ($U_B = 2$, $U_C = -3$): $3(1) + 1(-1) = 2(2) + 1(-3) = 1$. In that case, the evaluation of both the RNP and the INP would fall at the point of purchase. But the fall would be greater for the RNP (from 1 to $-4 = 1(2) + 2(-3)$) than for the INP (from 1 to $-1 = 1(1) + 2(-1)$). Consequently, it is more likely that the consumer intending to buy the RNP would find his or her revised evaluation to be too negative to follow through.

H2: Consumers are less likely to follow through on their intentions to buy psychologically newer products.

1.5 Newness and Timing of Follow-through on Stated Intentions

Consider a set of consumers asked about their intent to acquire each of a set of communications and entertainment products and services in the next 6 months. Those responding positively for a given product are heterogeneous in whether they expect to acquire in the next week, month, or several months. Therefore, according to construal theory, they should be heterogeneous in the relative weights they gave at the time of intention to considerations of desirability and feasibility. Later, those same consumers will be faced with a decision of whether to acquire on a given occasion. At the time of decision, construal theory implies that the weight of feasibility should be high and the weight of desirability should be low. Those making a final decision of whether to acquire a few days after expressing an intention have a relatively slight difference in temporal perspective and relative weights of desirability and feasibility between the time of intention judgment and the time of adoption decision. Those making a final adoption decision three months after stating an intention to acquire have a much greater difference in temporal perspective, and therefore much bigger difference in weights.

Combining these premises with the reasoning underlying H2, probability of follow through should be lowest when there is a large difference in temporal perspective between time of intent and time of final decision and when the product itself has a

pattern of extremely high costs rather than more moderate costs. Therefore, it follows that the effect described in H2 should become stronger with time and we should observe an interaction of newness and time on follow through. Put differently:

H3: For those stating a positive intention to acquire in N months, the probability of follow-through should decline over months, but this effect should be stronger the more psychologically new the product.

Of course, there may be other forces that produce a main effect of time on probability of follow-through that might make follow through increase or decrease over time. The key prediction, however, is that the simple effect of newness on follow-through should increase with time. Next, we report a pretest of a scale of newness of a set of 28 entertainment and communications technologies, followed by tests of H1-H3.

2. Study 1: A Newness Index Predicts Acquisition Intentions

I measured the psychological newness of 28 new communication and entertainment technologies as perceived by the average potential customer not owning these products and services who claims to intend to acquire them in the next 6 months. The aggregate newness index is then tested to see whether it predicts the fraction of those not owning the product who intend to acquire it in the next 6 months (H1). This approach avoids problems of “self-generated validity” (Feldman and Lynch 1988); the values of the independent variable come only from respondents who reported a positive intention to buy and I use this to predict the fraction of the untapped market claiming a positive intention to acquire in the next 6 months.

2.1 Method

2.1.1 Participants

In late August/early-September 2004, 12,237 members of the CBS Television City online panel were sent emails inviting them to participate in Study 1. Twenty-two percent of those invited (2,692) agreed to participate (57.7 % female, mean age of 39 ranging from 11 to 77).

2.1.2 Procedures

A link in the invitation email took participants to the survey’s home page, where participants were then presented with a list of 28 new communications and entertainment products (Table 1 lists these products). For each product, participants

were asked to indicate whether they currently owned the product and, if they did not, whether they intended to purchase (or adopt) the product in the next six months.¹

For each of the products that participants intended to buy, perceived product newness was measured using a formative index (Bollen and Lennox, 1991; Diamantopoulos and Winklhofer 2001) developed from Hoeffler's (2003) characterization of RNPs. Participants were asked to rate their agreement with each of these four statements on a 5-point scale anchored by Strongly Disagree on the left and Strongly Agree on the right:

1. I feel quite certain of the benefits I could expect to get if I bought (adopted) this product/service (reverse coded).
2. I'm quite sure of what the relevant tradeoffs are among the costs and benefits of buying and using this product/service (reverse coded).
3. I'll have to change my behavior significantly to attain the potential benefits of this new product/service.
4. Using this new product/service would allow me to do things that I can't easily do now.

¹ Those not intending to acquire any of the products were slightly older, more likely to be female, owned fewer of the 28 products, and those products that they did own were subsequently scored as slightly less new, on average.

Table 1: New Communications and Entertainment Products Used in Studies 1 & 2

Product Type	New Product	Perceived Newness	Product Ownership
Incrementally New Products (INPs)	Flat Screen (Plasma or LCD) TV	8.87	9%
	New Video Game Titles (e.g., Doom III, Halo 2, Grand Theft Auto: San Andreas, Metroid Prime 2, Metal Gear Solid 3, Half-Life 2, and Gran Turismo 4)	9.14	10%
	High Definition TV (HDTV) and HDTV Tuner	9.18	17%
	Home Theatre with Surround Sound (Dolby)	9.32	44%
	DVD Player	9.59	88%
	Broadband Internet Service (cable modem or DSL)	9.79	56%
	DVD Recorder	9.87	17%
	Products to detect and remove Internet "Spyware" (advertising supported software such as Gator) or to block popup ads (e.g., Pest Patrol, Google Popup Blocker)	9.91	66%
	Digital Cable	9.98	43%
	Digital Still Camera	10.04	48%
Neither Really New Nor Incrementally New	Camcorder	10.01	70%
	Video Game Player (e.g., X-Box, GameCube, Playstation)	10.07	46%
	MP3 Player (e.g., Apple's iPod)	10.12	26%
	Google's gmail - free email with ads keyed to the content of your emails	10.22	4%
	Premium Cable TV Service or Cable Channels (those requiring added payment beyond basic cable)	10.23	55%
	Broadband Internet Phone Service (VOIP--voice over internet protocol)	10.29	7%
Really New Products (RNPs)	On-Demand Digital Cable Services (e.g., HBO On Demand, Showtime On Demand)	10.38	12%
	DVD By Mail Service (e.g., Netflix, Walmart.com)	10.38	23%
	Digital Video Recorder (TiVo or Replay TV) or similar services integrated into cable TV or satellite boxes (e.g., DIRECTV, Dish Network, TimeWarner Cable)	10.51	24%
	Instant Messaging (computer to computer)	10.56	63%
	Cell Phone with Picture Phone Capability	10.62	19%
	Cell Phone with Internet Access	10.63	38%
	Home Computer with Microsoft Media Center	10.68	23%
	Cell Phone with Walkie-Talkie feature (e.g., Nextel)	10.70	9%
	Personal Digital Assistant (standard PDA/Pocket PC without wireless internet service)	10.76	35%
	Cell Phone with Text Messaging	11.14	66%
	Streaming Television (TV programs streamed to your computer)	11.32	3%
	Blogging (web logging)	11.77	6%

2.2 Results and Discussion

2.2.1 Mean Newness Index Scores

Participants' responses to statements 1 and 2 were reverse coded and the (1 to 5) scores for the four items were summed, producing a participant's product newness score for each product he or she intended to acquire that could range from 4 (extreme lack of newness) to 20 (extreme newness). Participants reported intentions to acquire a total of 5,207 new products. For each product, intenders' product newness scores were averaged to create a mean product newness score for that product.²

Mean newness across respondents is used to measure properties of products, not people – a measure of aggregate psychological response by people “in the market” rather than a measure of individual perception (cf. LaBay and Kinnear 1981; Moreau, Lehmann, & Markman 2001). Table 1 lists average product newness for each of the 28 new products. Higher scores indicate greater product newness. Study 2 retained the 12 products with the highest newness scores as “Really New Products” (e.g., Blogging service, Streaming TV, PDA, Digital video recorder (DVR), DVD-by-mail service). The 10 products with the lowest newness scores were retained as “Incrementally New Products” (e.g., Flat-screen TV, DVD player, home theatre system, broadband internet

² An ANCOVA examining the effect of participant characteristics on their newness scores showed a few significant effects. On average, women rated products as more new than men ($b = .28, t = 4.61, p < .001$). The more of the 28 products a person owned the less new they rated the products they intended to buy ($b = -.02, t = -2.75, p = .006$). There were no linear or quadratic effects of age on newness scores.

service). Six products with intermediate newness scores were dropped from Study 2 (e.g., Camcorder, Video Game Player, MP3 player).

Psychological newness is not a matter of chronological age. Flat screen TV and streaming TV were introduced in the same year, but flat-screen TVs are low in psychological newness because they do not allow consumers to do new things they could not do with prior products, the benefits are relatively certain, as are the cost-benefit tradeoffs, and consumers do not think they will have to change their behavior to enjoy the benefits. In contrast, for those who have never used RNPs like streaming TVs, PDAs, or blogging, these technologies allow them to do new things, but the benefits and cost-benefit tradeoffs are uncertain, and significant behavior change is required to enjoy the benefits.

2.2.2 Reliability and validity of mean newness

Given the formative nature of the product newness index, the interjudge reliability of the product newness scores was assessed across the sample of new products. The interjudge reliability of the product newness scores reflects the proportion of variance in the observed 28 product newness scores accounted for by variance in the 28 product newness true scores – the average newness scores of the complete population intending to acquire these products. Following Winer (1971, p. 290) and Lynch, Buzas, and Berg (1994, p. 181), interjudge reliability was estimated via an ANOVA decomposition of sources of variance, resulting in high reliability = .95. Interjudge

reliability for each of the product newness scale items individually ranged from .89 to .97.

Newness scores were collected from the subset of survey panelists who did not own the product but who intended to acquire in the next 6 months. Newer products had lower ownership rates in the CBS panel ($r = -.07, p < .001$).³ Ownership rates are shown in Table 1. Evidence of nomological validity is presented in the studies that follow, showing that newness scores predict various outcomes consistent with theory, controlling for ownership.

2.2.3 Correlations among components of newness

Treating product as the unit of analysis ($N = 28$) and correlating mean ratings of the components, uncertainty about benefits was highly positively correlated with uncertainty about cost-benefit tradeoffs ($r = .92, p < .001$). Both types of uncertainty were positively correlated with perceptions that one would have to change one's behavior to attain those benefits ($r = .76, p < .001$ and $r = .72, p < .001$, respectively) and negatively related to perceptions that the product made new things possible ($r = -.49, p = .008$ and $r = -.47, p = .012$, respectively). Perceptions that one would have to change one's behavior were uncorrelated with perceptions that the innovation made new things possible ($r = -.04, p = .82$). These correlations are smaller in magnitude but similar in pattern when the unit of analysis is the individual's rating of a product rather than the product.

³ On average, participants reported owning 9.3 (33%) of the 28 new products, including 42% of the 10 products classified as INPs and 27% of the 12 products classified as RNPs.

2.2.4 Newness predicts acquisition intentions

Hypothesis 1 was tested by examining whether subjects who did not own a given product were less likely to state an intention to acquire that product if it was psychologically newer. A binary logit model was fit to participants' responses to whether, in the coming six months, they intended to buy a product they did not currently own (1 = yes, 0 = no).⁴ The model included mean product newness, controlling for participant-specific fixed effects [$P(\text{Stating Purchase Intention}) = \text{logistic}(\text{mean newness, participant dummy})$]. Consistent with hypothesis 1, the probability that participants expressed purchase intentions for new products was significantly less for products with higher average product newness, $b = -.78$, $\chi^2 = 917.30$, $p < .001$. People were less likely to report an intention to buy newer products. A similar analysis controlling for participant random effects rather than participant fixed effects failed to converge on a solution.

Figure 1 shows the actual probability of stating an intention to acquire each of the 22 RNPs or INPs as a function of newness. Least-new products are shown on the left (Plasma TV, new Video Game, etc.). Most-new products are shown on the right (blogging, streaming TV, etc.). The error bars around each point show plus and minus one standard error. The solid line shows the prediction of the logistic regression model.

⁴ The 2,692 participants reported owning 24,912 of the 28 new products they were queried about leaving 50,464 products participants did not own and so were asked to report their six-month purchase intentions for.

The main finding is that respondents are, in expectation, more than 4 times more likely to intend to acquire least-new products as they are to intend to acquire most-new products.

The analysis was rerun adding price of the product (estimated mostly from bizrate.com pages in <http://www.archive.org>) as well as percent of the full Study 1 sample already owning the product as covariates. I reason that prior diffusion of the product might predict adoption intentions. Ownership ($b = 1.15$, $\chi^2 = 158.83$, $p < .001$) and price ($b = -.0001$, $\chi^2 = 45.33$, $p < .001$) were highly significant but their inclusion did not change the relationship of newness to probability of intending to acquire in the next 6 months ($b = -.92$, $\chi^2 = 826.57$, $p < .001$).

Similar results are found replacing composite newness with each individual component of newness, except that "new things possible" has a nonsignificant positive effect. If the components of newness are entered as independent predictors in a binary logit, summing the two very highly correlated uncertainty components to a single predictor, uncertainty ($b = -.87$, $\chi^2 = 110.85$), change behavior ($b = -1.16$, $\chi^2 = 72.72$), and new things possible ($b = -.23$, $\chi^2 = 14.71$) all have significant negative effects on intent to acquire. Again this result is unchanged by adding ownership rate and price to the model.

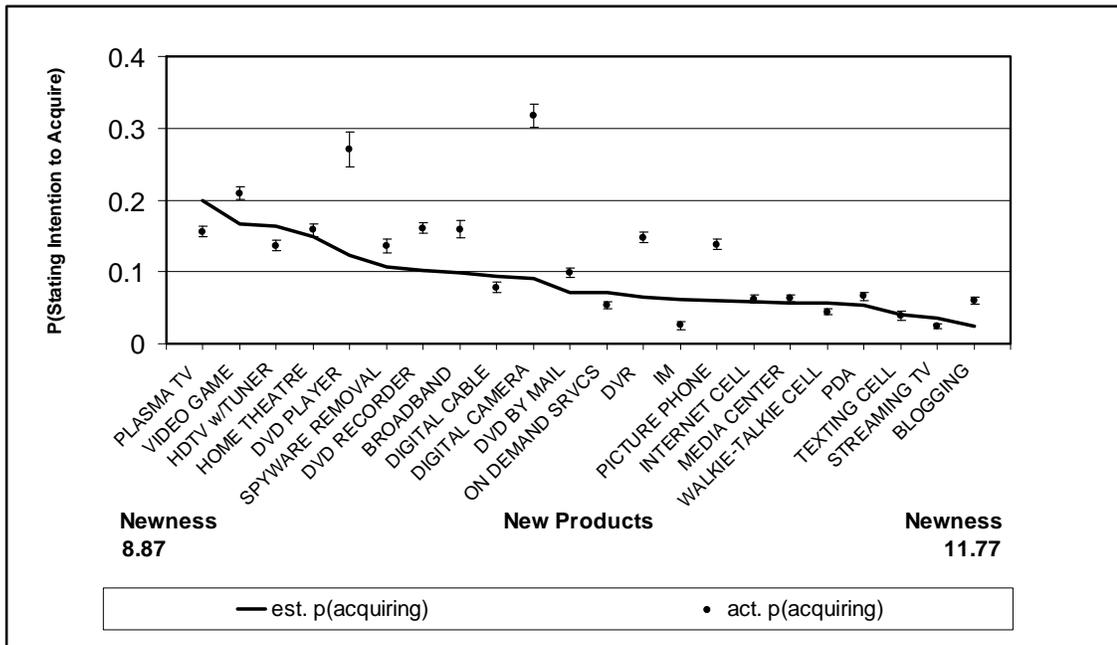


Figure 1: Probability of stating an acquisition intention as a function of mean product newness. Error bars around each mean show + and - 1 standard error. The solid line shows the prediction of a logistic regression.

In Study 1, participants have the opportunity to indicate their purchase intentions for multiple products and so are exposed to multiple levels of product psychological newness. The analyses presented here control for participant fixed effects, but assume that responses across products are independent. It has been argued that the only covariance between respondent purchase intentions and product psychological newness is observed across products while nothing is happening within products to inform the regression coefficient for product newness. This argument sees the presented analyses as overstating both sample size and statistical power. A two-stage analysis is proposed that first estimates the effect of each product on purchase intentions and then

examines the effect of product newness on the estimated product effects. This two-stage analysis allows us to control for between product effects

The single-stage analyses presented here were re-run as two-stage analyses. In Stage 1, a binary logit model was fit to participants' responses to whether, in the coming six months, they intended to buy a product they did not currently own (1 = yes, 0 = no). The model included no intercept term, dummies for each product, and controlled for a set of participant covariates that provided the best model fit. These covariates are the number of the 28 products the participant already owned, the number of the other 27 products the participant intended to buy, and a measure of participant innovativeness calculated as the average newness of the products the participant already owned [P(Stating Purchase Intention) = logistic(product dummy and subject covariates {# of products owned, # of other products being bought, participant innovativeness})].

In Stage 2, a weighted least squares regression was performed with the Stage 1 estimates of product effects as the dependent variable, their inverse squared standard errors as the weights, and product psychological newness as the predictor. Consistent with hypothesis 1, the probability that participants expressed purchase intentions for new products was significantly less for products with higher average product newness, $b = -.77$, $t = -3.80$, $p < .001$. Again including the rate of ownership among the Study 1 sample and the price of the product did not change the relationship of newness to probability of intending to acquire in the next 6 months ($b = -.84$, $t = -3.99$, $p < .001$).

Interestingly, ownership continued to show a significant effect ($b = .01$, $t = 2.42$, $p = .023$), but the effect of price was no longer significant ($p = .403$).

Replacing composite newness with the individual components of newness no longer shows significant effects (all p 's $> .185$). This likely occurs because of the significant correlation among the newness components and the reduced sample size of the regression. Individual regressions replacing composite newness with each of the newness components show significant negative effects for "benefit uncertainty" ($b = -1.88$, $t = -3.82$), "trade-off uncertainty" ($b = -2.88$, $t = -4.38$), and "change behavior" ($b = -2.33$, $t = -4.37$) and a nonsignificant positive effect for "new things possible" when it is the only predictor ($b = .20$, $t = .54$) and a nonsignificant negative effect when price and penetration rate are also included in the model ($b = -.15$, $t = -.39$).

As expected, there is little difference between the 1-stage analyses originally presented and these 2-stage analyses although there is some loss of statistical power.

The key implication of these results for marketers of new technologies is that anything that makes their product seem newer actually discourages consumers in the untapped market from forming a positive intention to acquire. Consumers' intentions to adopt are depressed by being uncertain of the benefits of a new entertainment or communication product, by being uncertain of the cost-benefit tradeoffs, and by perceiving that new things are possible but that one will have to change one's behavior to enjoy those benefits. If one is attempting to market a product that is likely to be

perceived as new under these criteria, it is in the marketer's interest to position the product as less revolutionary than it may really be, consistent with Hoeffler, Moreau, and Kubowicz-Malhotra (2006), who show that positioning RNPs on their less new attributes leads to more acceptance.

Before drawing this conclusion, the effect of newness on the likelihood that consumers will actually follow through on a stated intention to acquire a new product should be examined.

3. Study 2: Newness and Follow-through on Stated Intentions

It is common to use stated intention measures to forecast demand for new products, often by making assumptions about the percentage of those checking the top boxes in intention scales that will actually follow through to purchase (Morwitz and Schmittlein 1992; Clancy, Krieg, and Wolf 2006). Morwitz (1991) noted that intentions can change between time t and $t+n$ and that there has been virtually no research on these kinds of effects of time on intention follow-through. To investigate whether and when people follow through on their long-term purchase intentions for new products, I conducted a follow-up field Study 2 with a group of Study 1 respondents. Study 2 tested the expectation that people are less likely to follow through on their purchase intentions for newer products (H2) and that this effect of newness on follow-through grows with time after stating a positive intention to acquire (H3).

3.1 Method

3.1.1 Participants

Sixty percent (1,622) of the 2,692 Study 1 participants reported an intention to buy, in the coming six months, at least one of the 12 products classified as really new or the 10 classified as incrementally new. Approximately 4 months after Study 1, these 1,622 were invited to participate in a follow-up study; 38% (620) agreed to participate (52.7% female, mean age of 38 with ages ranging from 11 to 77 and reporting on average

owning 4.3 INPs and 3.4 RNPs in Study 1). The participants who agreed to participate in Study 2 did not differ from those who declined in terms of age, gender, or the number of the 22 products already owned; the products owned by those who agreed to participate had slightly lower average newness scores than the products owned by those who declined ($r = -.05, p < .05$).

3.1.2 Procedures

Four months after Study 1 respondents expressed an intention to acquire at least one of the 12 RNPs or the 10 INPs within 6 months, the same 1,622 individuals were emailed to ask them if they had already acquired those products. A link in the email took participants to the Study 2 survey's home page while capturing their respondent ID number. Participants entered their age and gender and were then presented with the RNPs and INPs they had said in Study 1 they intended to buy in the next six months. Participants were asked to indicate for each product whether they had bought the product since the earlier survey. For the products they had bought, participants were then asked to indicate the month (August, September, October, or November) in which the product had been bought. Participants responded to a series of questions for another related research project and were then thanked for participating.

3.2 Results

3.2.1 Following Through on Intentions

In August/September 2004, the 620 Study 2 participants had expressed intentions to buy 1738 RNPs and INPs in the coming six months. Four months later, participants reported whether they had already bought each of these products. A binary logit model was fit to participants' reports of whether they had bought a product (1 = yes, 0 = no) as a function of average product newness and participant random effects to control for within-subjects variance resulting from participants responding for multiple new products [$P(\text{Acquiring} | \text{Stated Intention}) = \text{logistic}(\text{mean newness}, \text{participant (random)})$]. Consistent with H2, participants who had stated an intention to acquire a new product were less likely to have reported acquiring the newer products, $b = -.31$, $\chi^2 = 15.71$, $p < .001$. Figure 2 shows the results, again with error bars denoting plus and minus one standard error. Figure 2 shows large effects of newness on follow-through. The predicted probability of follow-through is twice as high for least-new products as for the most-new products studied (95% confidence intervals of 28% - 37% for plasma flat-screen TVs vs. 13% - 19% for blogging services). These results are only strengthened by adding ownership rate and price to the model ($b = -.63$, $\chi^2 = 45.13$, $p < .001$).

As with Study 1, it can be argued that the disaggregated analyses performed in Study 2 suffer from inflated sample sizes and overstated statistical power. As such, I reran the follow through on intentions analyses using the same 2-stage approach

described above. In Stage 1, a binary logit model was fit to participants' reports of whether they had bought a product they had stated the intent to buy (1 = yes, 0 = no). The model included no intercept term, dummies for each product, and controlled for a set of participant covariates that provided the best model fit. The number of the 28 products the participant already owned was the subject covariate that provided the best model fit. $P(\text{Acquiring} | \text{Stated Intention}) = \text{logistic}(\text{product dummy and subject covariates } \{\text{products owned}\})$.

In Stage 2, a weighted least squares regression was performed with the Stage 1 estimates of product effects as the dependent variable, their inverse squared standard errors as the weights, and product psychological newness as the predictor. Consistent with H2, participants who had stated an intention to acquire a new product were less likely to have reported acquiring the newer products, however this effect was only significant when price and penetration were also included in the model (product newness alone, $b = -.29$, $t = -1.28$, $p = .216$; product newness with other product covariates, $b = -.53$, $t = -2.58$, $p = .019$). As expected, the 2-stage analyses are again consistent with H2, but with some loss of statistical power.

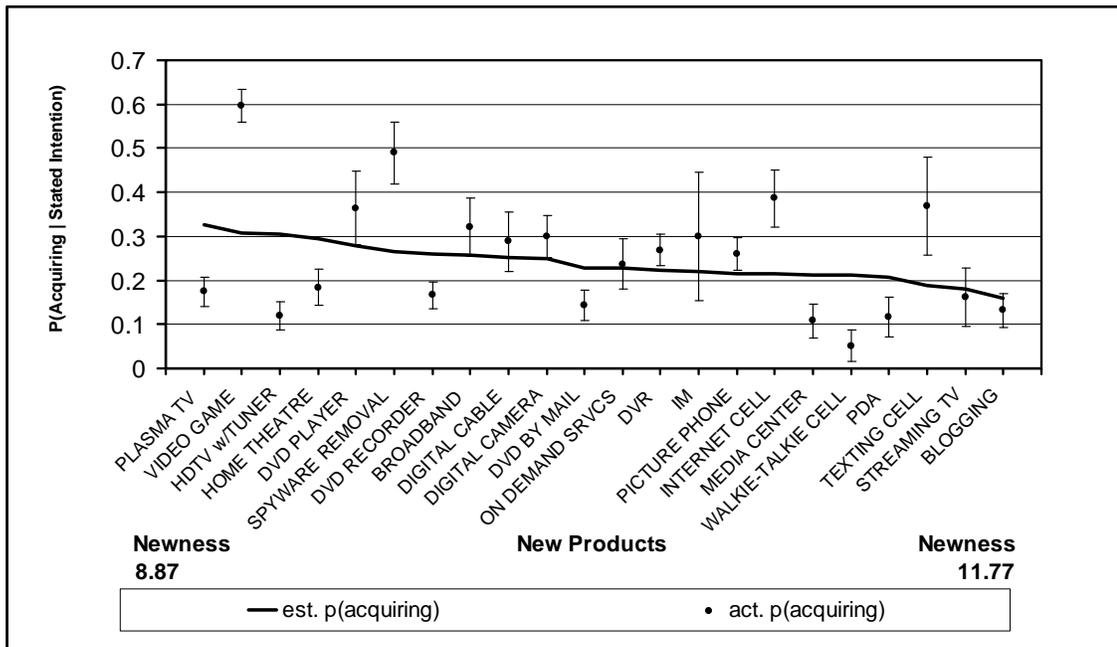


Figure 2 : Effect of newness on follow through on stated intentions to acquire. Error bars around each mean show + and - 1 standard error. The solid line shows the prediction of a logistic regression.

3.2.2 Timing of Acquisition

Hypothesis 3 is that the detrimental effect of newness on follow-through should become stronger with the passage of time after stating an intention to acquire. I examined the conditional probability that a person would buy a new product in the n th month after stating an intention to buy within 6 months, given that he or she had not bought the product in a previous month. The objective was to determine whether this conditional probability varied with time and mean product newness. For the products respondents reported buying since the Study 1 survey, participants were asked to provide the month in which they had bought the product. Per Allison (1995),

participants' responses for a given new product were structured so that a record for a participant was created in the data set for the focal product for each period after intention formation until the participant reported acquiring the product after which no further records were created for the participant.

Specifically, for each month from August/September 2004 to November 2004, the reported purchase months were used to code whether, in the given month, participants bought the products they had said they intended to buy. Participants who indicated buying a product in a given month were removed from the sample for subsequent months. Thus, someone who reported buying a product in October 2004 would have a record in the data set for that product indicating no purchase in August/September 2004, a record indicating product purchase in October 2004, and no record for that product for November 2004. The data were right censored; many participants did not report buying individual new products in the period monitored.

To estimate the conditional probabilities in the months after intention measurement, the data were modeled using a discrete-time non-proportional hazard rate function (Allison 1995). A binary logit model was fit to the data set with the mean product newness scores and time since purchase-intention measurement (in months) and their interaction as the independent variables and controlling for participant-specific fixed effects [P(Acquiring in Month n | Stated Intention & No Acquisition by $n-1$) = logistic(mean newness, month, mean newness \times month, participant dummy)].

Following procedures outlined by Irwin and McClelland (2001) to spotlight the simple effect of one interacting variable at particularly meaningful values of the other variable, newness was mean centered and month was coded so that 1 month after purchase was scored as 0. There is no simple effect of newness on follow through rate at the month coded 0 (1 month after stating intention), ($b = .12, \chi^2 = .90$). Critically, however, there is a significant interaction of newness with month ($b = -.39, \chi^2 = 16.12, p < .001$), consistent with H3. The simple effect of newness became more strongly negative with time. The interaction is shown in Figure 3. This result only strengthened when ownership rate, price, and their interactions with month were added to the model ($b = -.64, \chi^2 = 29.02, p < .001$).

H3 was stated in terms of the increasing simple effect of newness as a function of months; one can alternatively discuss the simple effect of months as a function of newness. Using the methods described in Irwin and McClelland (2001), the effect of time on the conditional likelihood of following through on purchase intentions was estimated at +2 SD (RNP) , +1 SD (RNP), -1 SD (INP) and -2SD (INP) relative to the 22 newness values. The simple effect of time was positive and significant for the -2 SD and -1 SD INPs ($b = .80, \chi^2 = 34.41, p < .001$ and $b = .51, \chi^2 = 37.01, p < .001$); the likelihood that people followed through on their purchase intentions for the INP increased with time. The simple effect of time for the +2 SD RNP was marginally negative ($b = -.35, \chi^2 = 3.64, p = .057$); the likelihood that people followed through on their purchase declined with

time since stating intention. These results were unchanged by adding ownership rate and price to the model along with their interactions with month except that the simple effect of time became significant and negative for the +1 SD RNP and +2 SD RNP ($b = -.28$, $\chi^2 = 3.98$, $p = .046$ and $b = -.76$, $\chi^2 = 11.87$, $p < .001$).

The timing of acquisition analyses were rerun using the 2-stage approach previously described. In Stage 1, a binary logit model was fit to the data set with no intercept term and dummies for each product for each time period (0, 1, and 2 months after intention measurement). It was determined that a model with no participant covariates provided the best fit across the three models estimated. [$P(\text{Acquiring in Month } n \mid \text{Stated Intention \& No Acquisition by } n-1) = \text{logistic}(\text{product dummy})$].

In Stage 2, a weighted least squares regression was performed with the Stage 1 estimates of product effects as the dependent variable, their inverse squared standard errors as the weights, and product psychological newness, time since intention measurement, and their interactions as the predictors. The spotlighting analyses described above (Irwin and McClelland 2001) were again performed. There is no simple effect of newness on follow through rate at the month coded 0 (1 month after stating intention), ($b = -.09$, $t = -.80$). Critically, however, there is a significant interaction of newness with month ($b = -.40$, $t = -2.77$, $p = .007$), consistent with H3. The simple effect of newness became more strongly negative with time. This result only strengthened

when ownership rate, price, and their interactions with month were added to the model ($b = -.46, t = -3.63, p < .001$).

H3 was stated in terms of the increasing simple effect of newness as a function of months; one can alternatively discuss the simple effect of months as a function of newness. Using the methods described in Irwin and McClelland (2001), the effect of time on the conditional likelihood of following through on purchase intentions was estimated at +2 SD (RNP), +1 SD (RNP), -1 SD (INP) and -2SD (INP) relative to the 22 newness values. The simple effect of time was positive and significant for the -2 SD INP ($b = .44, t = 2.47, p = .016$); the likelihood that people followed through on their purchase intentions for the INP increased with time. The simple effect of time for the +2 SD and +1SD RNPs were negative and significant ($b = -.62, t = -2.43, p = .018$ and $b = -.35, t = -2.06, p = .043$); the likelihood that people followed through on their purchase declined with time since stating intention. These results were unchanged by adding ownership rate and price to the model along with their interactions with month except that the simple effect of time became marginally significant and positive for the -1 SD INP ($b = .18, t = 1.87, p = .067$).

As expected, the 2-stage analyses are again consistent with H3, but with some loss of statistical power.

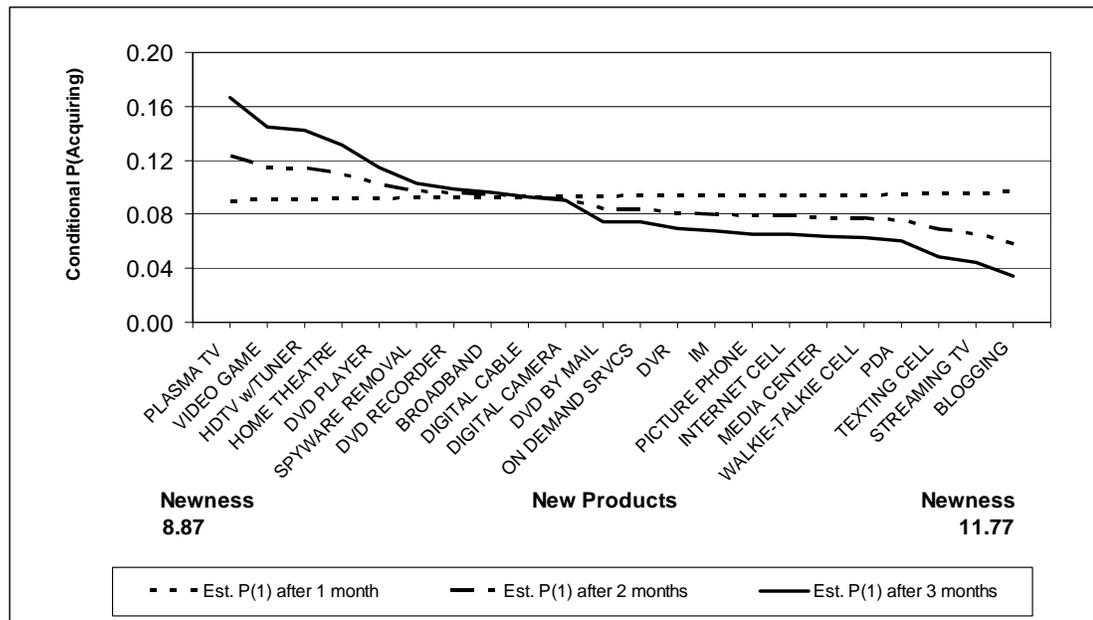


Figure 3: Interaction of newness and time on follow-through on estimated hazard rate of acquiring in month n given a stated intention to acquire in 6 months and no acquisition by month n-1.

3.3 Discussion

3.3.1 Implications for marketing research on new products

Study 2 has important implications both for the marketing of RNPs and for market research on RNPs. These findings add to the body of work on use of intentions in new product forecasting and to an emerging stream of work on how standard market research measurement techniques must be modified for RNPs (Hoeffler 2003; Urban, Weinberg, and Hauser 1996).

It is common in marketing forecasting models such as BASES to use intention to buy to forecast trial sales, often by making assumptions about the percentage of those

checking the top boxes in intention scales that will actually follow through to purchase (Clancy, Krieg, and Wolf 2006; Morwitz 2001; Morwitz and Schmittlein 1992). The implication of this research is that standard deflators will be larger for RNPs than for INPs. Moreover, prior research has not tested how the intention-to-purchase deflators may differ as a function of the temporal distance (c.f. Morwitz 1991). Figure 3 suggests that, for RNPs, people are progressively less likely to follow through with increasing temporal distance, but for INPs, the opposite is true.

3.3.2 Implications for marketing of RNPs

The implication of these findings for marketing managers trying to promote new products pertains to the value of investing in pre-launch buzz to inspire formation of intentions-to-acquire long before purchase. As discussed above, many companies (e.g., GO Corporation) work to build early buzz for their products, with that buzz failing to lead to a successful new product launch. The findings in Study 2 suggest that for a RNP, if pre-launch buzz leads to formation of purchase intentions long in advance of actual product release, very little follow-through will result. However, the results in Study 2 suggest that pre-launch buzz may be more successful for INPs.

3.3.3 Theoretical issues

The results of Studies 1 and 2 can be seen as broadly consistent with temporal construal theory (Trope and Liberman 2003), with one exception. Construal theory

implies that the probability of follow-through should decline for all products the greater the temporal distance between the time of intention judgment and the time of decision, but follow-through should decline more rapidly for psychologically newer products characterized by more high-level benefits and low-level costs. Here, however, the probability of follow-through declined with time for RNPs, consistent with Castaño et al (2008), but follow-through actually increased over time for psychologically less new products. This increase requires a theoretical explanation that goes beyond construal theory.

4. Study 3: Newness Affects Formation of Implementation Intentions, Information Exposure, and Changes in Attitude Accessibility Over Time

A variety of mechanisms might produce a positive main effect of time that might combine additively with the mechanisms of construal theory or contribute to the time × newness interaction. When an attitude is accessible and automatically activated on mere observation of the attitude object, this leads to selective perception so that only attitude-consistent information gets in and attitude-inconsistent information is filtered out (Fazio and Williams 1986). For products that people intended to buy, this could have the effect of making the positive attitude become more positive over time as the consumer is exposed to new information.

Increased attitude accessibility from intention formation is temporary and decays with time unless the attitudes are re-accessed (Feldman and Lynch 1988; Dholakia and Morwitz 2002). As time passes after an attitude was last accessed, the likelihood that it will be re-accessed decreases (Wyer and Srull 1986). Re-accessing or rehearsing accessible attitudes over time can make them more accessible (Feldman and Lynch 1988).

Dholakia and Morwitz (2002) found that measuring attitudes towards banks led to persistent influence on patronage of those banks over the course of a year. They found that the effects increase for the first six months, with the maximum impact occurring several months after the survey. They attributed this process to “energizing events” that

serve to sustain behavioral intentions over a period of time following a survey. If positive intentions lead to a temporary boost in attitude accessibility and if soon thereafter the consumer is exposed to new information, this should be an “energizing event” that would maintain attitude accessibility at an elevated level. If so, this might lead to more positive attitudes over time and more follow-through on stated intentions. However, if exposure to new information does not occur for a long lag, any temporary boost in attitude accessibility will dissipate, leading to an absence of selective perception and the absence of the kind of increasing probability of follow-through over time that was observed for INPs in Study 2.

Might such a process differentially affect RNPs and INPs? Hoeffler (2003) argues that RNPs are characterized by sparse information networks. Study 3 tests this empirically:

H4: In a period of a few weeks after stating an intention to acquire a new product, consumers should be exposed to less new information about RNPs than about INPs.

If exposure to new information produces “energizing events”, this should affect the decay in attitude accessibility over time. Therefore:

H5: Attitude accessibility should dissipate more rapidly in the time after intention measurement for RNPs than for INPs.

Another conjecture about why Study 2 found increasing hazard rate over time for INPs is that responding positively to an intention statement causes people to form an “implementation intention” (Gollwitzer 1999). An implementation intention is an intention that states a goal to perform behavior X along with procedures by which one will attain the goal to do X and the circumstances under which X will be accomplished. First, if some respondents stating a positive intent to acquire an RNP or INP form a *goal* to acquire, we know that goal priming actually leads to increasing motivation over time when the goal has not yet been realized (Bargh et al. 2001). This contrasts with concept priming that dissipates quickly over time. Perhaps goal formation contributes to an upward trend over time in likelihood of attaining as-yet-uncompleted goals. Second, it may be that implementation intentions are associated with goal formation, particularly for INPs. Dahl and Hoeffler (2004) showed that people have a hard time visualizing themselves using RNPs. Because RNPs are represented more abstractly, it is posited that:

H6: In responding to intention questions, people are more likely to form implementation intentions for INPs than for RNPs.

Study 3 is a longitudinal field study testing the predictions that consumers are less likely to form implementation intentions for RNPs than for INPs (H6), that they are less exposed to new information following exposure to RNPs (H4), and that

consequently, attitude accessibility declines more rapidly after stating an intention to acquire an RNP compared to an INP (H5).

4.1 Method

4.1.1 Participants

107 MBA students at Duke University were recruited to participate in a two-session research study and were paid \$15 for completing both sessions. Seventy-nine participants (74%) completed both research sessions.

4.1.2 Procedures

In the week before their fall break in October 2005, participants were invited to participate in a two-session research study examining people's knowledge of new products and their expectations about products they are about to buy. They were told that they would earn \$15 for completing both research sessions.

When they reported for the study, participants entered a unique identifier so that their responses in the first and second research sessions could be linked. Participants were then presented with a list of 22 new communications and entertainment products and services (e.g., satellite radio, DVD recorder, flat-screen (plasma) TV, portable video-game player). They were asked to identify those they currently owned and those they intended to acquire in the next six months. See Table 2 for the complete list of new products.

Table 2: New Communications and Entertainment Products Used in Study 3 and Replication of Study 3

New Product	Study 1 Perceived Newness	Study 3 Perceived Newness	Replication of Study 3 Perceived Newness
Flat screen (plasma) TV	8.87	9.31	9.23
Broadband Internet Service (cable modem/DSL)	9.79	9.46	9.00
Digital cable	9.98	9.93	11.09
Portable DVD player		10.01	10.18
Home theatre with surround sound (Dolby)	9.32	10.11	10.94
Satellite radio (e.g., Sirius)		10.23	10.65
Digital Photo Frame		10.40	11.75
DVD By Mail Service (e.g., Netflix)	10.38	10.43	10.31
Bluetooth cellphone headset		10.45	12.10
MP3 Player	10.12	10.45	11.00
On-Demand digital cable service (e.g., HBO On Demand)	10.38	10.68	10.53
DVD Player w/HD Up-conversion		10.75	11.73
Cell Phone with Internet/email access	10.63	10.84	11.56
GPS Navigation System		10.85	11.00
Digital camcorder	10.01	10.93	11.48
DVD recorder	9.87	11.10	11.09
Personal Digital Assistant (PDA w/o wireless internet service)	10.76	11.16	11.71
Tablet computer		11.42	12.56
Portable Video Game Player (e.g. Sony PSP)		11.48	11.63
Digital Video Recorder (e.g. Tivo, DVR from Time Warner Cable)	10.51	11.48	11.58
Computer-to-Computer telephone service (e.g., Skype)		11.87	12.10
Blogging service	11.77	13.41	13.04

For each product they did not currently own, participants first rated the four items in the formative product-newness index previously described in Study 1. Because

of the small sample size here vs. in Study 1, even those not intending to acquire were surveyed. Next, participants were asked to rate how informed they felt about the product on a 7-point scale anchored by Completely Uninformed (1) and Completely Informed (7) (Davidson et al. 1985).

Next, formation of implementation intentions was measured by asking participants to rate their agreement with the statement “I’ve thought about exactly where and when I would [buy | sign up for] a [product name| service name],” on a 5-point scale from Strongly Disagree to Strongly Agree.

Finally, attitude accessibility was measured. Participants were asked to indicate their attitude toward the focal product on a series of seven positive/negative dimensions (superior/ inferior, advanced/outmoded, good/bad, favorable/unfavorable, useful/not useful, positive/ negative, like/dislike). The order of the dimensions was the same for all products and all participants. For each dimension, participants were shown two buttons (each 2.1 inches long and .5 inches tall) separated by 3.0 inches, centered in the middle of the computer screen, and labeled with the endpoints of the dimension. Participants clicked on the button that best reflected their attitude toward the product on that dimension. After a participant clicked on a button, the next pair of dimension endpoints was displayed on the buttons. The first attitude dimension for each product was used as a practice trial. To get a better measure of attitude accessibility than that provided by a single response latency (e.g., that for the second attitude dimension), the average of the

response latencies (measured in milliseconds from endpoint-label display to button click) for the remaining six dimensions was calculated. These six response latencies showed good internal consistency as an attitude accessibility scale ($\alpha = .79$) and so the average was used as a measure of the accessibility of participants' attitudes toward the given product (Fazio 1990)¹. After participants had responded to the items for the products they did not currently own, they were told that they would be invited back to participate in the second session after fall break.

Ten days after they had participated in the first research session, participants were sent an email inviting them to participate in a second session in the coming week (i.e., their first week back in classes after their fall break). The 79 participants who reported for session 2 first entered their unique identifier to retrieve a product set developed for each participant consisting of those products that he or she did not own but that he or she either intended to buy or were somewhat to completely informed about (indicated by a response between 3 and 7 on the 7-point scale for the informed item in the first-session survey). For each product in their product set, participants were

¹ It could be argued that the response latency for the first attitude dimension after the practice dimension will be most affected across time and so is a better candidate for analysis. Indeed, a similar analysis using this single response latency results in a larger effect size ($b = .38$ v. $.15$), but at the cost of some statistical power ($p = .05$ v. $.03$). Since I am interested in the change in response latency across time for an individual responding for a particular product, the choice of using a single response latency versus a response latency scale is relatively unimportant. Any source of invalidity is likely to be in both the first and second parts of the difference scores and thus cancelling out.

first asked to rate their attitudes on the same series of positive/negative dimensions in the same order and using the same procedure as that used in the first research session.

After participants had responded to the final attitude dimension, their exposure to new information about the products in the time between sessions 1 and 2 was measured, using the following four items:

1. How many opportunities did you have to [buy | sign-up for] a [product name | service name] in the last 2 weeks?" (0, 1, 2, 3, 4, 5, or 6 or more).
2. Think back over the last 10 days. For each product/service listed below, please tell us how many people you know who acquired the product/service (0, 1, 2, 3, 4, more than 4).
3. Again, think back over the last 10 days. For each product/service listed below, please tell us how many new ads (incl. TV, radio, print, etc) you saw/heard for the product/service. (0, 1, 2, 3, 4, more than 4).
4. And again, thinking back over the last 10 days, please tell us how much new information about each product/service you were exposed to (6-point scale from 0 [None] to 5 [A lot]).

Participants' responses to these four items were standardized (with mean=0 and SD=1) within participant across the products he or she rated that had not been acquired between the research sessions. The standardized items were summed to provide a

measure of relative exposure to new information for a given product for the participant ($\alpha = .57$). Participants were then debriefed, thanked, paid, and released.

4.2 Results

4.2.1 Indexing Product Newness

Product newness was indexed exactly as done in Studies 1 and 2, with two exceptions. First, the list of 22 products and services only partially overlapped, because of the lapse of time in the conduct of the studies. Thirteen products were included in the product lists for both Study 1 and Study 3 (e.g., blogging service, digital cable, digital video recorder, DVD by mail service, etc.). The correlation of the average product newness scores across these two studies for these thirteen products is .86. Given that more than a year had elapsed between Study 1 and Study 3, these results imply that relative psychological newness of products is stable over time for consumers in the untapped market. Moreover, in Study 1 I relied only on perceptions of those intending to acquire; in Study 3, the mean ratings were dominated by the more numerous consumers not intending to acquire, yet I obtained very similar results.

Second, as before, participants rated the four formative newness items only for products they did not already own, but responses both from those intending to acquire and from those not intending to acquire who expressed at least moderate familiarity with the product or service were included. Table 2 lists average product newness for the

twenty-two products used in Study 3. As in Study 1, interjudge reliability was calculated for mean newness (.91) and for the 4 newness components (.86 to .89).

4.2.2 Implementation intentions.

For the products participants intended to acquire, implementation intentions were regressed against mean-centered average product newness, a mean-centered measure of how informed people felt about the product, and a participant dummy [II = $f(\text{mean newness, informedness, participant dummy})$]. Consistent with H6, product newness had a significant, negative effect on the formation of implementation intentions ($b = -.29, F(1, 45) = 8.87, p = .005$). People formed implementation intentions more often for INPs than for RNPs; that is, they thought more specifically about where and when they might acquire. Formation of implementation intentions was also positively related to how informed they felt about the product or service ($b = .29, F(1, 42) = 11.36, p = .002$).

4.2.3 Exposure to New Information

The composite measure of relative exposure to new information was regressed on the mean product newness score for that product and a dummy variable for whether the participant intended to acquire the product [Rel. Info Exposure = $f(\text{mean newness, acquisition intention})$]. Because individual fixed effects were removed by standardizing the exposure-to-new-information items within participant, the ANCOVA measured the within participant effects of average product newness and intention to acquire the

product. Consistent with hypothesis 4, average product newness had a significant, negative effect on the relative amount of new information people were exposed to after purchase-intention measurement ($b = -.11$, $F(1, 78) = 12.69$, $p < .001$).

4.2.4 Changing Attitude Accessibility

Study 3 tested hypothesis 5 by looking at the rate of change in participants' attitude accessibility from purchase-intention measurement to the second research session for those products they expressed the intention to acquire. Participants' responses were excluded for products they reported being completely or substantially uninformed about (responses of 1 or 2 on the informed item's 7-point scale) in either the first or second research session: 15 % of participants' responses for products they intended to acquire were excluded in this manner. An ANCOVA examined the log of second session average response latency as a function of average product newness, the log of first session average response latency, and an individual participant dummy [$\ln AA_2 = f(\text{mean newness}, \ln AA_1, \text{participant dummy})$]. Consistent with hypothesis 5, average product newness had a significant, negative effect on time 2 attitude accessibility, controlling for time 1 attitude accessibility ($b = .15$, $F(1, 30) = 5.18$, $p = .03$). That is, response latencies increased (attitude accessibility decreased) at a faster rate for newer products.

Study 3 also tested whether the effect of newness on changes in attitude accessibility was mediated by the greater exposure to new information for INPs than for

RNPs. However results showed that the partial effect of newness on attitude accessibility remained significant $F(1, 30) = 4.98, p < .05$) with exposure to new information in the model.

4.3 Discussion

The results of this study show that RNPs differ from INPs in several ways that may contribute to changes in follow-through over time for RNPs and INPs in Study 2. People are less likely to form implementation intentions for RNPs than for INPs. Moreover, they are less exposed to new information for RNPs, and attitude accessibility dissipates more rapidly over time for RNPs.

There is one key limitation of Study 3 in drawing the conclusion that attitude accessibility dissipates more rapidly for RNPs than for INPs. This account implicitly assumes that attitude accessibility dissipates gradually over time. But the results obtained could occur if RNPs simply received a greater momentary boost than INPs from making an intention judgment, not because both were boosted equally but attitude accessibility for INPs was revived more over time by “energizing events” -- i.e., exposure to new information. Therefore Experiment 3 was replicated with 51 more MBA students who participated in a 3-wave study with the same 22 products. Again, they indicated which products they owned in session 1, made intention judgments for those they did not own, rated their familiarity with these products, rated newness for products that they did not own and that they were at least moderately familiar with,

then responded to attitude measures to give a measure of attitude accessibility from Session 1. Subjects returned 1 or 2 days later for a second session, and attitude accessibility was measured again; they returned 4 weeks later and attitude accessibility was measured for the third time. Forty-seven participants completed all three sessions for \$15.

Newness ratings again showed good interjudge reliability (.84), and mean newness for the 22 products correlated .81 with mean newness from Study 3 participants. The measure of attitude accessibility was also reliable ($\alpha = .77$). To test hypothesis 4, an ANCOVA similar to that used in Study 3 was employed, examining the log of third-session average response latency for the products participants did not own and had not acquired, as a function of average product newness, the log of second-session average response latency, and an individual dummy. Participants' purchase intention for the product was also controlled for. As expected, the results of the ANCOVA provide support for hypothesis 5. Response latencies increased at a greater rate from sessions 2 to 3 for newer products ($b = .14$, $F(1, 46) = 18.09$, $p < .001$). These results suggest that the H5 findings in Study 3 were not a function of the greater elevation of attitude accessibility (faster response times) from judging intention for RNPs than for INPs, but rather from the more rapid dissipation over time of attitude accessibility for RNPs.

5. General Discussion

5.1 Summary

This dissertation's objective is to examine how a product's psychological newness interacts with contextual factors in affecting how consumers learn about, form adoption intentions for and subsequently follow through to adopt, and form expectations about their initial use of RNPs vs. INPs. As an entry point for this examination, the link between newness and consumers' purchase intentions across time is explored. This is a particularly relevant topic for marketers of RNPs as typified by the experiences of GO Corporation; GO was successful at raising awareness for a revolutionary product that just wouldn't sell (Kaplan 1995). The extreme costs associated with RNPs are posited to make consumers less willing to form long-term purchase intentions for more-new products and less likely to then follow through on positive intentions. Studies 1 and 2 find just that. In Study 1, members of the CBS Television City online panel were surveyed about their purchase intentions for 28 new communications and entertainment products. Respondents were less likely to express positive purchase intentions for more-new products. In Study 2, among a subset of Study 1 participants who expressed intentions to buy RNPs or INPs, follow-through on those intentions was lower for those intending to buy more-new products. Further, as the months passed after participants expressed new-product purchase intentions, the

likelihood of following through on those intentions increased for INPs and decreased for RNPs. That is, a momentum towards product purchase grew in participants intending to buy INPs, but that momentum never developed in participants intending to buy RNPs. For marketers of RNPs like GO, this implies that marketing actions intended to build demand for RNPs far in advance of launch may provide little value post-launch.

A number of psychological mechanisms may have contributed to this pattern. Temporal construal theory predicts that follow-through should be lower for RNPs than for INPs, because the former are characterized by more extreme benefits and more extreme costs or constraints. The bigger the difference in temporal perspective between the time of intention judgment and the more extreme the profile of costs, the more likely the consumer should be to fail to follow through on an intended purchase.

Study 3 tested other possible mechanisms that may have contributed to the patterns of follow-through observed in Study 2. The study finds that consumers are less likely to form implementation intentions for RNPs than for INPs, perhaps contributing to lower likelihood of fulfillment over time in Study 2 (Gollwitzer 1999). Consistent with Hoeffler's (2003) characterization that information environments are sparser for RNPs than for INPs, people reported less exposure to new information about RNPs in a 2 week interval after intention judgments. Exposure to new information allows consumers to rehearse their attitudes for the products they intend to buy, keeping those attitudes accessible (Dholakia and Morwitz 2002; Feldman and Lynch 1988). When a

positive intention judgment heightens attitude accessibility, and this heightened accessibility is maintained by “energizing events” in the period that follows, this should lead to increasingly positive attitudes over time for those stating an intention to acquire a new product. Given INPs’ greater opportunities for exposure to new information, attitude accessibility was predicted and found to decay more slowly for INPs than RNPs.

5.2 Newness Affects Usage Expectations for RNPs: Related Research

5.2.1 Psychological Newness as a Psychological Distance Dimension

In Study 3, I found that consumers think less specifically about purchasing psychologically newer products. These results are consistent with product psychological newness behaving as another dimension of psychological distance (Trope and Liberman 2003; Liberman, Trope, and Stephan 2007). RNPs are more distant than INPs from consumers’ here and now experiences and so actions involving them should be represented in higher-level, more abstract terms. These more abstract representations of product adoption have important implications for marketers of RNPs. Consumers expectations about their initial adoption experiences, because they are more abstract, are also likely less well calibrated. Consumers’ initial experiences with RNPs are likely to be more discrepant (both positively and negatively) than are consumers’ initial experiences with INPs.

These discrepant initial experiences are particularly important for marketers of RNPs. When a product is purchased but not used as expected, this is likely to lead to negative word-of-mouth that will dampen others' purchases (Moldovan, Goldenberg, and Chattopadhyay 2006). Moreover, those who buy a product and use it less than expected will be less inclined to invest further in the technology (Farley et al. 1987). Further, if consumers' expectations of their initial use of a new product are wrong, there would seem to be little value in involving consumers in the product development process—despite the consensus position that success in new product development benefits from the significant participation of consumers (Alam 2005; Boike, Bonifant, and Siesfeld 2005; Dougherty 1990; Griffin 2005; Maidique and Zirger 1985; Urban and Hauser 1980).

5.2.2 Supporting Results from a Related Research Project

The author is participating in a related research project examining the effect of personal and social factors on usage patterns for high-tech consumer products (Alexander, Lynch, and Wang 2008). This project offers direct support for the posited effect of product psychological newness on both the representation of initial product adoption and the accuracy of initial expectations of product use. The project identified consumers who were within a week of acquiring one of the 22 new technology product and services used in Studies 1 and 2 and asked them to describe in their own words how

they expected to use the technology in the first week after acquisition. In their usage descriptions, participants construed newer products more abstractly.

Participants were also asked their expectations of their initial product use. As product newness increases, participants became worse at accurately predicting their use of their new products. Participants who expected to use more product features than the average person overestimated their feature usage to a greater degree for newer products. Participants who expected to use less product features than the average person, on the other hand, underestimated their feature usage to a greater degree for newer products. A similar pattern of results was found in participants' overestimation of the time they would spend using a new product.

5.3 Implications

The results presented in this dissertation are important for both consumer researchers and marketing practitioners. For consumer researchers, these findings extend our understanding of the link between consumers' purchase intentions and their purchase behavior across time. Specifically, the results show that for long-term purchase intentions, the intention-behavior link grows weaker as consumers experience greater uncertainty in evaluating the products they intend to buy. Few product-newness driven differences in purchase-intention follow-through are expected when consumers' expect to buy a product shortly after expressing a purchase intention. However, significant

product-newness driven differences in follow-through rates are expected when purchase intentions are formed well in advance of expected purchase opportunities.

A second implication of these findings is that reducing perceived product newness strengthens follow-through on positive long-term purchase intentions. For consumers intending to purchase a new product, the accessibility of their product attitudes may interact with exposure to new information, increasing product purchase by reinforcing their attitudes and beliefs (Fazio and Williams 1986) while enhancing attitude accessibility (Dholakia and Morwitz 2002).

For marketing practitioners, our findings highlight the challenges in marketing RNPs. As marketers consider how to position a RNP, they must be aware that consumers are less likely both to form intentions to buy RNPs and to follow through on those intentions. Marketers may be better served positioning a product as an incremental rather than a revolutionary improvement (c.f. Hoeffler, Moreau, and Kubowicz-Malhotra 2006). These results also offer clear distinctions between the newness of a product and the newness of the technology underlying the product (cf. Chandy and Tellis 2000). For example, PDAs – a chronologically old technology – scored high on psychological newness for those who had not yet acquired one. RNP marketers must be cautious in adopting marketing strategies tied to the technological innovativeness of their target consumers (c.f. Moore 1999).

Moreover, the Alexander et al. (2008) finding that consumers are so miscalibrated about their extent of use of RNPs implies that sellers of RNPs should expect to have more delighted customers, but also more seriously disappointed customers than would be typical of INPs. This may imply that RNPs may have higher returns and more detractors (Reichheld 2006), with negative word-of-mouth from those who find their RNP to be less useful than anticipated (Moldovan, Goldenberg, and Chattopadhyay 2006).

Similarly, these findings have implications for market research methods that use intentions to forecast demand. It is common in new product forecasting models (e.g. BASES) to deflate intention-to-buy measures. These findings show that the more psychologically new the products, the more deflating purchase intentions require, particularly long term intentions.

These findings also highlight the effect of differences in new products' information environments. Marketers whose products provide rich, well-developed information environments for consumers may benefit from marketing strategies that develop early product demand among consumers. In rich information networks, consumers have opportunities to encounter new information about their intended product, keeping their positive attitudes about the product top of mind. These highly accessible positive attitudes may lead to a positive bias in interpreting the new information (Fazio and Williams 1986), reinforcing consumers' positive attitudes and

beliefs and increasing the likelihood that they'll buy the product. RNPs are characterized by relatively information-poor information environments (Hoeffler 2003), implying that marketers should eschew marketing strategies that emphasize building early hype for their products (cf. Montaguti, Kuester, and Robertson's [2002] advice to preannounce radically new products). Only firms that can quickly create an information-rich environment for their target consumers may escape this fate. For example, Microsoft may have enough resources to hype X-Box far in advance of launch so that positive intentions formed long before launch may be maintained and fulfilled. But firms with more modest resources, such as GO Corporation, may find that resources spent on pre-launch hype produce disappointing returns.

5.4 Newness Affects RNP Message Elaboration: Future Research Directions

The results presented in this dissertation show product newness to be an unalloyed negative. I conjecture that newness may be a positive under some circumstances when one looks at key responses earlier in the adoption process than when intentions are formed. RNPs can convey the unexpectedness that allows a product idea to stick with consumers (Heath and Heath 2007) beyond any initial buzz that gets generated. The originality of a RNP can increase word-of-mouth activity, increasing consumer interest as the product becomes available (Moldovan, Goldenberg, and

Chattopadhyay 2006). An examination of earlier steps in the adoption process may identify contexts where product newness is a positive for marketers of RNPs.

5.4.1 Curiosity & Skepticism: A Framework for RNP Message Elaboration

As consumers learn about new products, marketers face the challenge of capturing consumers' attention and interest so those consumers will elaborate the product messages being communicated. This is particularly true for marketers of RNPs. The extreme benefits and extreme costs characterizing RNPs offer both advantage and curse. The advantage is that the extreme benefits may capture consumers' imagination, and the curse is that the extreme costs may make attending to the message not seem worthwhile. Future research is proposed that examines these effects within a dual mediator model, illustrated in Figure 4, wherein a product's psychological newness affects message elaboration indirectly by increasing consumers' curiosity about the new product and their skepticism toward the claims made in the message. When consumers initially encounter positively-framed new product messages they are posited to make an immediate judgment about the value of elaborating the content of that message. The extreme benefits characterizing a RNP pique consumers' curiosity through their unexpectedness and originality—stimulating consumers' desire for more information (Berlyne 1966). Curiosity towards the product described in the message increases elaboration of the message's content. At the same time, the extreme costs/constraints

characterizing a RNP generate skepticism toward the message claims — reducing the perceived value of the encountered product message. Skepticism towards the message’s content reduces elaboration of that content.

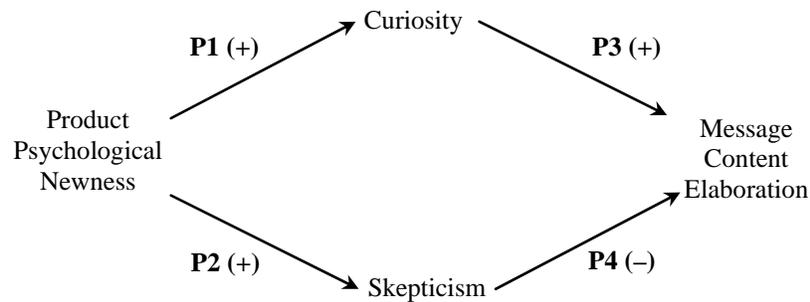


Figure 4: The effect of product psychological newness on new product message content elaboration.

The model is summarized in these hypotheses:

- H7:** When encountering positively framed new information about a new product, product psychological newness affects consumers’ elaboration of message content by a) increasing product curiosity (P1) and b) increasing message claim skepticism (P2).
- H8:** Product curiosity increases consumers’ elaboration of the content of new product messages (P3).
- H9:** Message claim skepticism decreases consumers’ elaboration of the content of new product messages (P4).

It should be evident from this framework that the net effect of newness on message content elaboration is a function of the relative strength of the four paths. Research is needed to identify moderator variables that strengthen or weaken particular paths and thus tip the balance so the effect of newness on elaboration is positive or negative. The extreme benefits and costs characterizing RNPs create a challenge for marketers—maximize the advantages derived from the benefits while minimizing the disadvantages resulting from the costs. Future research can help marketers by identifying new-product-message contexts in which the product newness-curiosity link (P1) is strengthened, the product newness-skepticism link is weakened (P2), or both. Contexts increasing the perceived originality/innovativeness of a new product message should strengthen the newness-curiosity link (P1). For example, a new product message delivered through a magazine such as *Scientific American* might foster more curiosity and greater learning than the same message delivered through *Newsweek* magazine. Contexts increasing the perceived credibility of a new product message should weaken the newness-skepticism link (P2). For example, a new product message delivered by a trusted, qualified friend should generate less skepticism and more learning than the same message delivered by a sales-motivated marketer.

5.4.2 RNP Messages: Engines of WOM?

The curiosity and skepticism generated by new product messages may also affect whether and how recipients pass on what they learn about a new product to others.

Such WOM communications play an important role in the success of both new and existing products (Arndt 1967; Day 1971; Dye 2000; Herr, Kardes, and Kim 1991; Kumar, Petersen, and Leone 2007). Indeed, Reichheld (2003) argues that companies interested in growth need only focus on what customers tell friends about their experiences with the company and its products. The curiosity generated by new products' unexpected extreme benefits is posited to increase the spread of WOM about those products (Derbaix and Vanhamme 2003; Moldovan, Goldenberg, and Chattopadhyay 2006).

Moldovan, Goldenberg, and Chattopadhyay (2006) argue that while this curiosity may increase WOM activity, curiosity, in and of itself, doesn't drive the valence of that WOM. Rather, it is a new product's perceived usefulness that determines whether WOM communication is positively or negatively valenced. Consumers are likely to balance RNPs' extreme benefits with their extreme costs/constraints in judging usefulness. Thus, the product curiosity generated by product psychological newness is expected to increase the positive valence of WOM while the generated message claim skepticism is expected to increase the negative valence of WOM.

The effect of a product's psychological newness on the spread of WOM about that product can be summarized in this hypothesis:

H11: When encountering positively framed new information about a new product, a product's psychological newness affects the spread of WOM about the product:

- a) by generating product curiosity which increases WOM activity; and
- b) by generating product curiosity which increases the positive valence of WOM and by generating message claim skepticism which increases the negative valence of WOM.

One can imagine contextual factors that affect the relative weight of the curiosity and skepticism paths. For instance, when communicating to another consumer very early in the decision process, it might be perceived to be more helpful to communicate about something that might be really useful than to warn about something that might be problematic. In that case, communication valence might become more positive with newness when communicating with others who are far from purchase, but more negative with newness when communicating with others who are near to purchase.

5.4.3 Future Directions

Future research can validate the curiosity and skepticism framework proposed here. Gaining an understanding of when product newness may actually be a positive is particularly important for marketers of RNPs who face a marketplace crowded with competitors. Linking consumers' early learning about RNPs and their subsequent spreading of WOM is also particularly important. Studies 2 and 3 highlight the importance of creating active and robust information networks for new products; these networks strengthen the link between early purchase intentions and intention follow-through. Contexts that strengthen the newness-curiosity link can increase WOM activity,

providing more of the “energizing events” that maintain attitude accessibility in a heightened state (Dholakia and Morwitz 2002). These contexts can also lead to more positively valenced WOM. Contexts that weaken the newness-skepticism link can reduce the negative valence of WOM about a new product. For marketers recruiting consumers to be agents of WOM (e.g., Kiviat 2007), the links between product newness and consumers’ early learning about new products take on a greater importance as they can affect both the new products marketed and the WOM networks being developed. These insights will also prove valuable to consumer researchers as we begin to explore the implications of marketer recruited and managed WOM networks on consumer behavior.

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Biography

David Lyle Alexander was born on January 17, 1963 in a military hospital in Frankfurt am Main, Germany at the height of the Cold War, a birth the US government had tried to prevent by keeping his parents apart. Fortunately, his mother Beatrice defied the US Department of Defense's ban on dependent travel to Germany put in place after the tensions created by the building of the Berlin Wall. She moved her three toddlers (Scott, Susan, and Diane) from southern California to Frankfurt in 1962 and the rest, as they say, is history. David's father Lyle was a dedicated soldier and so David grew up an Army brat, pulling up stakes and moving every 2-3 years—a habit that continued up until he entered the PhD program at Duke when he was 39.

David graduated from Alexander M. Patch American High School in Stuttgart, Germany in 1981 with an appreciation for traveling the world and a nerdish desire to write computer software. He pursued a B.S. in Computer Science from Tennessee Technological University in 1985. He indulged his love of travel by spending college summers taking trains all over Europe and then taking jobs after graduation in Singapore and London. During this time David worked as a computer programmer, technology consultant, consulting manager, product manager, and CEO of a company he founded.

David pursued his MBA at the Fuqua School of Business at Duke University from 1993-1995. While at Duke, David had the opportunity to work for and study under

Dr. Robert E. Whaley, an experience that would change his professional and personal life. Dr. Bob opened his eyes to the possibilities an academic career offered and pushed and prodded for 7 years until David accepted the challenge (although in Marketing and not Finance, much to Dr. Bob's chagrin).

David entered the Marketing PhD program at Duke University in 2002 with the intent to unlock the secret of marketing success for start-up companies. His research looks at how consumers' perceptions of a product's newness affect their willingness to adopt that product. He has benefited from the patient guidance of the marketing faculty at Duke, but he has grown as a scholar because Dr. John G. Lynch, Jr. has been willing to provide the guidance, patience, and support he has needed to move from marketing manager to marketing scholar. Without John's support this transition would not have happened.

At the same time David was contemplating the move to academia, he met the woman who would change his life. Quite by accident, and so certainly by fate, Robin White and her friend bumped into David and his friends at a Millennium New Year's celebration in Alexandria, Virginia. Robin and David were engaged during David's first year in the PhD program (resulting in weekly 600 mile commutes from North Carolina to Maryland and back). They were married during David's second year in the PhD program and Robin has provided the love and support David has needed to complete the doctoral student journey and to begin a new life as a marketing faculty member.